

Perspectives on Persuasion, Social Influence, and Compliance Gaining

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The Elaboration Likelihood Model of Persuasion

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The Art of Persuasion: The Early Years

The study of persuasion and rhetoric dates back to the time of the ancient Greeks. In those times, persuasion was seen as the instrument by which debates could be resolved, individuals could be educated, and ideas could be communicated to an audience. Given that persuasion was such a vital aspect of Greek society, understanding the factors responsible for social influence was crucial. Recognizing this, Aristotle, one of the great thinkers of the time, provided a theory that specified what a speaker needed to know in order to understand how to persuade others. Aristotle reasoned that to be successful at persuasion, one had to understand characteristics of the source (*ethos*), the message (*logos*), and the emotions of the audience (*pathos*; Aristotle, 1954). For example, Aristotle remarked that if a source were well respected, it would be easier to persuade others of his views than if he was not well respected.

In the 2,400 years that have passed since the time of the ancient Greeks, the art of persuasion has become an even more integral part of society. Persuasion has become the chief tool by which important legislation gets passed, products get sold, and parents influence their children. Furthermore, it is Aristotle's ideas that provided the foundation for much of the early work on persuasion in the twentieth century. Nowhere is this more evident than in the work and theorizing of Carl Hovland and his colleagues who began assessing the effects of variables related to the source, the message, and the audience on the impact of persuasive attempts (Hovland, Janis, & Kelley, 1953; Hovland, Lumsdaine, & Sheffield, 1949; Hovland & Weiss, 1951). Early research in persuasion was guided by the belief that any given variable, for example, source credibility, had a single and unitary effect on persuasion: A variable was thought either to enhance the success of a persuasive attempt or reduce it. Furthermore, there was an assumption that there was one mechanism

by which the effect was produced, for example, source credibility enhanced persuasion by increasing learning of the message. In essence, this research followed a "single effect" and "single process" approach to understanding the impact of variables on persuasion (see Petty, 1997). Thus, the goal of this research was to determine what the single effect of a variable was and what the process was by which this variable worked.

Initial endeavors following this approach appeared promising. For example, following Aristotle's notion of ethos, researchers found that credible sources increased persuasion (Hovland & Weiss, 1951). Following Aristotle's concept of logos, researchers found that increasing the number of arguments in favor of a position increased the overall amount of persuasion (Calder, Insko, Yandell, 1974). Finally, researchers following Aristotle's concept of pathos found that placing the audience in a negative emotional state reduced persuasion (Zanna, Kiesler, & Pilkonis, 1970). Furthermore, the researchers tied the effects of these variables to single processes. For example, negative emotion was said to reduce persuasion because of classical conditioning (Staats & Staats, 1958).

Although some early research was consistent with the idea that a variable had a single effect on persuasion via one mechanism, the single-effect and single-process approach soon became untenable. Research on persuasion began to experience a period of chaos and turmoil because subsequent research findings contradicting early results began to appear in the literature. For example, subsequent research on increasing the number of arguments in a message found that more arguments did not always lead to greater attitude change (Norman, 1976). Subsequent research on source credibility and negative emotions found that sometimes highly credible sources could be associated with reduced persuasion (e.g., Sternthal, Dholakia, & Leavitt, 1978) and that negative emotions could be used to increase persuasion (Rogers, 1983). Uncovering different findings led researchers to postulate different processes by which the variables worked. Even when researchers could agree on the single effect that was to be observed, they often disagreed on the process by which the effect came about (e.g., was it dissonance or self-perception?; Greenwald & Ronis, 1978). This state of affairs crippled the approach of searching for the single effect of a given variable and its single process. However, conflicting findings did more than simply destroy this approach: They placed the entire field of attitude change in a state of confusion (e.g., Himmelfarb & Eagly, 1974). This left the state of attitude research in need of a resolution of these apparent contradictions.

The Elaboration Likelihood Model (ELM) (Petty & Cacioppo, 1981, 1986b) was developed to explain and organize past conflicts in the persuasion literature as well as to guide new research. The goal of this chapter is to provide an understanding of the basic tenets of the ELM as a framework for understanding and investigating the effects of persuasive communications. To this end, the key postulates of the ELM are reviewed, and the utility of the model for resolving conflicting findings in the literature and guiding research is highlighted. Furthermore, misconceptions, misinterpretations, and challenges to the model are considered and addressed.

Overview of the Elaboration Likelihood Model.¹

As articulated in more detail shortly, the ELM outlines a finite number of ways in which variables can impact judgments, and it specifies when variables take on these roles, as

well as the consequences resulting from these different roles. That is, the ELM is a theory about the processes underlying changes in attitudes, the variables that induce these processes, and the strength of the judgments resulting from these processes. Unlike the single-process and single-effect approaches described earlier, the ELM does not hold that a given variable has only a single effect on persuasion or influences persuasion by only one process. Instead, the ELM posits that any one variable can influence attitudes in a number of different ways. The same variable, depending on the role it plays, can act either to increase or decrease persuasion. Furthermore, whether the variable serves to increase or decrease persuasion, it can do so through several different mechanisms.

At the core of the ELM is the elaboration continuum. The elaboration continuum is based on a person's *motivation and ability* to think about and assess the qualities of the issue-relevant information available in the persuasion context. When both motivation and ability to think are high, individuals are inclined to scrutinize carefully all issue-relevant information stemming from the source, message, context, and themselves (e.g., their emotions) in an attempt to make an accurate judgment about the merits of the issue (called the *central route* to persuasion). However, when either motivation to process is low (e.g., if personal relevance is low) or ability to process is hindered (e.g., if a person is distracted) attitudes can be changed by one or more of a family of relatively low-effort processes (called the *peripheral route* to persuasion).

Thus, the ELM posits that for the sake of simplicity, persuasion can be thought of as following one of two routes to persuasion: central and peripheral. More specifically, in their pure form the two routes to attitude change correspond to anchoring points on an elaboration continuum. The central route entails attitude change that requires much effort and thought to reach a decision. For example, carefully scrutinizing the merits of the substantive information in a message and integrating one's thoughts into a coherent position are prototypical actions based on the central route to persuasion. The second route, the peripheral route, entails attitude change that occurs primarily when elaboration is low, and it can involve thought processes that are quantitatively or qualitatively different from the high-elaboration central route. For example, a low-elaboration processor might carefully scrutinize only the first argument or two rather than all of them (quantitative difference in processing) or might process all of the arguments by counting them rather than scrutinizing them for merit (qualitative difference; see Petty, Wheeler, & Bizer, 1999). What these two processors have in common is the relatively low amount of thought involved in attitude change. The ELM specifies that whether attitude change occurs by the central or the peripheral route has important implications for the strength of the resulting attitude. That is, attitude changes brought about through high-elaboration processes tend to be more persistent, resistant, and predictive of behavior than changes brought about because of low elaboration processes (Petty, Haugtvedt, & Smith, 1995). This issue is discussed further later in this chapter. Of course, since elaboration is a continuum, attitude change is sometimes brought about by a medium amount of thought (rather than very high or low amounts) and can be determined by some combination of central and peripheral route processes.

A key idea of the ELM is that multiple persuasion processes operate along the elaboration continuum, and different persuasion processes require different amounts of thought. That is, the ELM recognizes that attitude change is influenced by a variety of specific processes such as cognitive responses (Greenwald, 1968; Petty, Ostrom, & Brock,

1981), integration of beliefs (Fishbein & Ajzen, 1981), self-perception (e.g., Bem, 1972), classical conditioning (e.g., Staats & Staats, 1958), reliance on heuristics (e.g., Chaiken, 1987), and cognitive dissonance (e.g., Festinger & Carlsmith, 1959). Some of these processes are more likely to influence attitudes at low levels of elaboration (e.g., classical conditioning), others require some minimal amount of thinking (e.g., self-perception), and still others are more likely to influence attitudes at high levels of elaboration (e.g., cognitive responses).

In short, the ELM is a multiprocess theory of persuasion that views persuasion processes as falling along an elaboration continuum. When attitudes change as a result of relatively high amounts of issue-relevant elaboration, people are said to follow the central route, but when attitudes change as a result of relatively low amounts of issue-relevant elaboration, they are said to follow the peripheral route. Whether persuasion occurs through the central or peripheral route is determined by a person's motivation and ability to think about the issue-relevant information available. A schematic representation of the ELM is depicted in figure 5.1. Having provided the basic outline of the model, we now discuss its specific postulates.

Postulates of the Elaboration Likelihood Model

Petty and Cacioppo (1986b) presented the ELM in seven postulates (see also Petty & Wegener, 1999). We do not present the full formal postulates here, only the gist. That is, we explain the essence of the postulates, along with a sampling of research relevant to each.

Postulate 1: The Correctness Postulate

The first postulate of the ELM states that people are motivated to hold what they believe to be "correct" attitudes. Correct attitudes need to be correct, not necessarily logically but in the sense of an individual's subjective appraisal. Correct attitudes are helpful because they often allow people to gain rewards and avoid punishments by approaching helpful objects and avoiding dangerous ones. Holding correct attitudes is important if people want to act on their attitudes.

People can determine which attitude is most correct in a number of ways. When motivation and ability to think are high (such as when the issue is an important one), perhaps the most obvious way for a person to gain confidence in the correctness of one's view is to consider carefully all of the issue-relevant information available. However, if either motivation or ability to think is low, one might attain sufficient confidence, for example, by simply relying on an expert source. If the issue is important but there is insufficient time for processing right now, the person might tag the issue for later scrutiny (see Petty, Jarvis, & Evans, 1996).

The assumption that people want to be correct does not imply that people cannot be biased in their assessment of evidence, however. In fact, being certain that one is correct and wanting to maintain one's correct attitude can lead to defensive processing of contrary information (Petty & Wegener, 1998). The first postulate of the ELM merely assumes that people are rarely explicitly motivated to be biased. Rather than explicitly being motivated

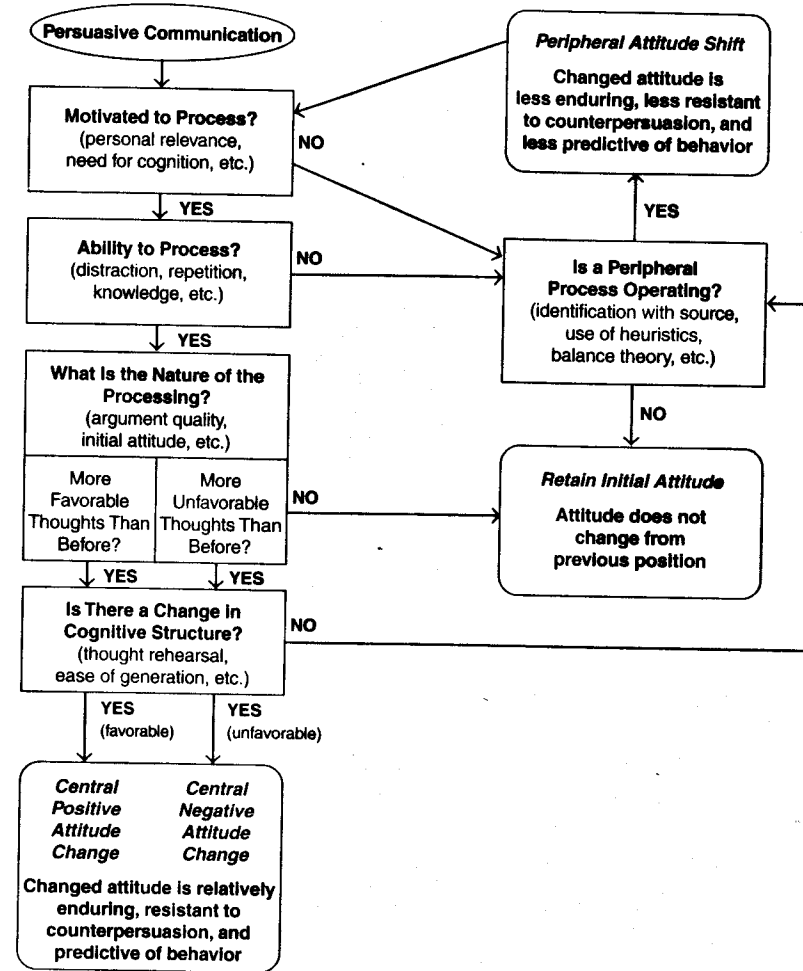


FIGURE 5.1 The Elaboration Likelihood Model of Attitude Change

Adapted from Petty & Cacioppo, 1986b.

to be biased, individuals may possess various goals or motivations that will promote bias. For example, people are sometimes motivated to be consistent over time (which can cause them to defend their attitudes), or they can be motivated to impress others, which might lead them to try to see the merits in whatever position a liked individual has (Kelman, 1961).

Postulate 2: The Elaboration Continuum Postulate

The second postulate states that the amount of mental processing (i.e., elaboration) in which a person engages regarding a message varies along a continuum. As stated earlier, at one end of the continuum, the person engages in no thought whatsoever about the issue-relevant information available in the persuasion context. Conversely, at the other end of the continuum, the person engages in extensive elaboration of all information available. Because a continuum exists between extreme and zero elaboration, people can engage in any middling degree of thinking about a persuasive communication.

The elaboration continuum is a *quantitative* dimension. For example, two different people may be elaborating on an advertisement for a mutual fund. One person may be evaluating the message because he is considering where to invest his entire life's savings; the other may be evaluating the message because she is considering where to invest a \$50 check. The two people may both be using the arguments in the message to determine if the fund is a wise investment, but one may be evaluating the message more carefully or evaluating more information than the other. In such a case, although both people are engaging in the same *qualitative* process (i.e., thinking about issue-relevant information), they may be exhibiting *quantitative* differences in the extent of processing (cf. Friedrich, Fetherstonhaugh, Casey, & Gallagher, 1996). These quantitative differences in the amount of thought can lead to differences in the strength of the attitudes formed.

It is also possible that people may engage in different *qualitative* processes along the elaboration continuum. Returning to the above example, the individual who is carefully evaluating the message may use the quality of the arguments as the primary determinant of whether to invest in a particular fund. However, the individual who is not carefully evaluating the message may use the mere number of arguments rather than their quality to decide whether or not to invest her money in the fund. For example, if there are nine arguments in favor of the fund, the individual may conclude that since there are so many arguments, the fund must be good. Here, the two potential investors are processing the information in a different way both qualitatively and quantitatively. One person is effortfully assessing the merit of the arguments, whereas the other is using the less cognitively demanding strategy of counting the arguments. This might lead the potential investors to reach very different conclusions. For instance, if the nine arguments are all specious, the person processing the information by the counting mechanism should be more persuaded by nine weak arguments than by three strong arguments for the fund. Conversely, the person who is evaluating the merits of the arguments should be less persuaded by nine weak rather than by three strong arguments (see Petty & Cacioppo, 1984b). Thus, at different levels of elaboration, the same processes may be operating in varying degrees (a quantitative difference), or entirely different processes may be operating (qualitative difference).

Returning to the elaboration continuum, what determines where on the continuum the message recipient will fall? As noted earlier, when a person has a high degree of *motivation* and *ability* to elaborate carefully on the message arguments, processing will be further toward the central end of the continuum. When the person lacks either motivation or ability, the processing will be closer to the peripheral end. Consider an advertisement with a long list of arguments detailing the merits of a particular type of car. Whether people pay

close attention to and elaborate on those arguments has much to do with the degree of *motivation* they have to do so. For example, if a person is in the market for a new car, he or she may be highly motivated to scrutinize carefully and think about the relevant information presented. If, however, a person has no interest in purchasing a car in the near future, he or she will lack the motivation to engage in effortful processing. This person is more likely to follow the peripheral route to persuasion (Petty, Cacioppo, & Schumann, 1983).

Next, consider an article about a new antihistamine in a medical journal. If a doctor has spent years in medical school and understands medical jargon, he or she has the *ability* to process the arguments in the article carefully. However, regardless of motivation, a first-year undergraduate student likely lacks the ability to understand and process the medical jargon. This undergraduate will therefore be more likely to resort to the peripheral route to persuasion. Whereas personal relevance serves as a motivational variable in the example involving the new car, knowledge of medical jargon serves as an ability variable in the example involving the antihistamine. A lack of either motivation or ability will move people toward the low end of the elaboration continuum.

It is important to point out that the distinction between high and low elaboration should not be viewed as a distinction between "good" versus "bad" persuasion. For example, the use of the peripheral route can be an adaptive, necessary tool in people's everyday lives. When motivation or capacity is low, one might forgo decision making—which is not always possible—or postpone it until conditions foster it (Petty et al., 1996). It is also important to note that thinking does not ensure an optimal outcome, as one's thoughts can be biased by various contextual factors. For example, when people are spending a lot of time on active thought, their assessment of arguments is biased by their mood states (e.g., DeSteno, Petty, Wegener, & Rucker, 2000; Wegener, Petty, & Klein, 1994).

Postulate 3: The Multiple-Roles Postulate

The third postulate of the ELM states that variables can play multiple roles in persuasion contexts. The role in which a variable is most likely to serve depends on the situation. First, when elaboration is not constrained by other variables to be high or low, variables tend to serve as determinants of the amount of thinking that takes place. Second, when elaboration is low variables tend to serve as cues or input to low-elaboration processes such as classical conditioning and use of decision heuristics (Chaiken, 1980).

Finally, if the elaboration likelihood is set at a high level by other variables in the persuasion context (e.g., high personal relevance, high knowledge, few distractions), variables tend to serve in yet additional roles and lead to persuasion through high-elaboration processes. For example, when people are actively thinking, the variable can be processed as an argument or can bias the ongoing information-processing activity. Thus, depending on the likelihood of elaboration in any context, variables can influence attitudes in a multitude of ways.

As an example of a variable serving in multiple roles depending on context, consider a person's mood state. Depending on the situation, mood can serve in a variety of roles specified by the ELM. First, a person's mood can serve as a determinant of the extent

of elaboration when thinking is not already constrained to be high or low by other variables. Based on the Hedonic Contingency Model (Wegener & Petty, 1994) which holds that people in a positive mood are especially motivated to maintain this state, Wegener, Petty, and Smith (1995) hypothesized that being in a positive mood should enhance message elaboration relative to a sad mood if the message recipient believed that processing the message was likely to make people feel happy. Conversely, being in a positive mood should lead to less elaboration than a sad mood if an individual believed that processing the message would be likely to make people feel negative. To test this idea, Wegener and colleagues (1995) told some individuals that processing an upcoming message would be a generally positive or a negative experience. In actuality, everyone received the same message. When happy people expected processing the message to be uplifting, they processed the message more carefully than did people in a sad mood. However, when people expected processing the message to be unpleasant, happy individuals did not process the message as carefully as did individuals in a sad mood (see also Schwarz, Bless, & Bohner, 1991).

According to the ELM, when the likelihood of elaboration is low, mood can serve as a simple cue to decide whether or not to accept a message. This could be the result of a number of processes such as classical conditioning (Razran, 1940) or mood misattribution (Schwarz & Clore, 1983). In the case of mood misattribution, people mistakenly infer their attitude from their mood (e.g., "If I feel good, I must like it"). When the likelihood of elaboration is high, however, mood can serve as an argument (Martin, Abend, Sedikides, & Green, 1997) or bias the ongoing thoughts (Petty et al., 1993).

Research by Petty, Schumann, Richman, and Strathman (1993) provided an illustration of the multiple roles for mood under high- and low-thought conditions. In one study, Petty and colleagues had participants view a series of commercials, one of which contained an advertisement for a pen. Some participants were led to believe that they would get to select a pen as a gift at the end of the study (high-elaboration likelihood), whereas others were led to expect they would select an alternative gift (low-elaboration likelihood). The critical ad for the pen as well as other commercials was placed within a television program that invoked either a positive mood in the participants or invoked no mood. In both high- and low-elaboration conditions, participants rated the advertised pen more favorably when placed in the context of the television program that had invoked a positive mood.

Although the attitudinal effects of mood were the same in the high- and low-elaboration condition, the underlying processes were quite different. Using path analyses, Petty and his colleagues (1993) showed that, whereas mood had a direct effect on attitudes in the low-elaboration condition, the effect of mood on attitudes in the high-elaboration condition was mediated by the valence of thoughts generated. That is, being in a positive mood biased the type of thoughts people generated under high elaboration. Here, mood was not used as a simple cue; instead, mood influenced the valence of thoughts that were generated, and these thoughts in turn influenced attitudes (see Petty, Desteno, & Rucker, 2001, and Petty, Fabrigar, & Wegener, in press, for further discussion of the role of mood at different levels of elaboration). In addition to the work on emotions noted above, a variety of source, message, and recipient factors have also been shown to work in multiple

ways in different situations (see Petty, Priester, & Briñol, 2002; Petty & Wegener, 1998, for reviews).

Postulate 4: The Objective-Processing Postulate

The fourth postulate of the ELM addresses situations in which people are engaged in objective processing, that is, they are interested in achieving the "truth" from a message rather than achieving a particular attitude toward a target. In such situations, the fourth postulate states that variables impact a person's motivation and/or ability to process a message by either enhancing or reducing the scrutiny of message arguments. Some variables affect a person's overall motivation to think about the message, whereas others affect his or her overall ability to think about the message. The processing is considered to be "objective" if people follow the evidence wherever it leads. That is, the information processing does not favor one particular outcome over another.

To demonstrate this notion, consider a person who wants to know whether an insurance policy is good or bad. Prior to processing, the person has no stake in the outcome. She may simply hope to learn whether the policy is a sensible one. If motivation and ability in this scenario are high, attitudes will be impacted by how compelling the *issue-relevant arguments* within the message are. Thus, if the arguments within the message are compelling, the recipient will generate favorable thoughts and develop a positive attitude toward the policy. If the arguments within the message are weak, however, she will generate unfavorable thoughts, leading to a relatively unfavorable attitude toward the policy. If, however, motivation or ability is low, her attitude likely will not be affected by scrutiny of the arguments. Rather, attitudes may change because of a peripheral process.

Research on the ELM has identified a large number of variables that influence the amount of thinking people do when confronted with a persuasive message. For example, Petty, Wells, & Brock (1976) demonstrated that distraction can either enhance or diminish attitude change depending on what kinds of thoughts the distraction disrupts. When a message contained compelling arguments, distraction disrupted the favorable thoughts that normally would have been elicited, thereby decreasing persuasion. However, when a message contained specious arguments, distraction disrupted the unfavorable thoughts that normally would have been elicited and thereby increased persuasion. Thus, distraction itself did not impact persuasion directly. Rather, it impacted the extent to which the arguments within the message were processed and thereby influenced the extent of attitude change.

In addition to distraction, other variables that have been shown to influence a person's ability to process a message include the message's complexity (Hafer, Reynolds, & Obertynski, 1996), the time a person has to process the message (Kruglanski & Freund, 1983), the number of opportunities a person has to scrutinize the arguments (e.g., Cacioppo & Petty, 1979), and a person's knowledge of the message topic (e.g., Wood, Kallgren, & Preisler, 1985). Variables that have been shown to affect a person's overall motivation to think about a message include the personal relevance of the communication (e.g., Petty & Cacioppo, 1979, 1990), an individual's need for cognition (Cacioppo, Petty, & Morris, 1983), one's personal responsibility for evaluating the message (Petty, Harkins,

& Williams, 1980), the expectation of having to discuss the message with someone else (Chaiken, 1980), presentation of the message in an unexpected format (Smith & Petty, 1996), and presentation of a message on a topic about which people feel ambivalent (Maio, Bell, & Esses, 1996).

Postulate 5: The Biased-Processing Postulate

Variables not only affect the amount of thinking that takes place but can also influence the nature of the thought process. Thus, the fifth postulate of the ELM deals with biased processing. Some variables affect a person's motivation to generate certain kinds of thoughts, whereas other variables affect a person's ability to generate certain kinds of thoughts.

Consider, for example, a situation in which a person has just purchased a new computer. She likely holds a positive attitude toward that computer and probably wants to maintain that positive attitude because it would be dissonance-arousing to believe that one's choice was incorrect (see Harmon-Jones & Mills, 1999, for a recent review of dissonance work). If she reads a *Consumer Reports* article shortly after purchasing her new computer, it is not likely that she will process the article in an objective manner. Because the person *wants* to hold a positive attitude, she will be motivated to think positive thoughts about the message. She will try to see any arguments presented in regard to the computer she purchased in the most favorable light possible.

Other variables can induce a desire to reject the message. For example, forewarning people of a speaker's persuasive intent can motivate counterarguing and resistance to the message (Petty & Cacioppo, 1979). Ability factors can also be important in producing resistance. For example, negative emotional states might make negative thoughts and ideas more readily accessible (Bower, 1981; Forgas, 1995). On the other hand, having a great deal of knowledge in support of one's attitude might make it easier to counterargue messages against one's viewpoint (Wood et al., 1985).

Often, people are not aware of the biases that influence their information processing. However, in some cases people may become aware of a bias that they consider inappropriate and attempt to correct for it (see Petty & Wegener, 1993; Wilson & Brekke, 1994). For example, in one study Petty, Wegener, and White (1998) gave students a persuasive message in favor of a policy requiring senior comprehensive exams that came from a source that either praised the students' school (likable source) or disparaged the students' school (unlikable source). In addition, half of the participants were told that the exam policy was for their own university (high relevance) and half were told the exam was for another university (low relevance). Finally, half of the participants were told not to let their personal opinion of the speaker influence their evaluation of the message. Petty et al. (1998) found that when participants were not cautioned about using their personal opinion of the speaker to evaluate the message, and the issue was low in personal relevance, they were significantly more persuaded by the likable source than by the unlikable source. However, low-involvement participants who were cautioned about using their opinion of the source to form their evaluation were equally persuaded by both the likable and unlikable source. That is, they corrected for the source bias. When the issue was high in personal relevance and participants were not cautioned about the possible source bias, attitudes were not influenced by the source (since, as expected by the ELM, under high-relevance conditions

people focused on evaluating the substantive issue-relevant arguments). However, when issue relevance was high and people were forewarned of a possible source bias, people still corrected for a presumed bias, leading them to be more persuaded by the unlikable than by the likable source. This and other research (e.g., Wegener & Petty, 1995; Schwarz & Clore, 1983) has demonstrated that in some circumstances, people will attempt to bias their judgments. If a potential bias is made salient, people can and do correct their attitudes. This can lead them to remove the bias, though if overcorrection occurs, a reverse bias can become apparent.

Postulate 6: The Trade-off Postulate

The sixth postulate predicts a trade-off between the impact of argument elaboration and peripheral route processes on attitudes. That is, as the likelihood of issue-relevant thinking is increased, the impact of central route processes (e.g., examining information for merit) on attitudes increases, and the impact of peripheral route processes (e.g., counting arguments) on attitudes decreases. Conversely, as the likelihood of issue-relevant thinking decreases, the impact of peripheral route processes on attitudes increases, and the impact of central route processes decreases. It is important not to interpret the trade-off postulate as suggesting that certain variables (e.g., sources) are processed only when elaboration is low and others (e.g., message factors) only when elaboration is high. Rather, this postulate holds that variables are more likely to have their impact as a result of a low-effort process when the elaboration likelihood is low but by a higher effort process when the likelihood of elaboration is high. For example, a source variable can be processed under high-elaboration conditions, but it is evaluated for its evidentiary value rather than working by invoking a simple decision heuristic or other means. Likewise, message arguments can be processed under low-elaboration conditions, but the processing is either not as thorough as it is under high elaboration or represents a qualitatively different low-effort mechanism (e.g., counting the arguments rather than evaluating them for merit). It is also important to note that at most points along the elaboration continuum, both central and peripheral processes influence attitudes.

Postulate 7: The Attitude Strength Postulate

The final postulate of the Elaboration Likelihood Model deals with the outcome of message processing. Specifically, this postulate states that attitudes created or changed by the central route will be more persistent over time, will remain more resistant to persuasion, and will exert a greater impact on cognition and behavior than will attitudes changed or created through the peripheral route. That is, although attitudes can be changed to the same degree under the central and peripheral routes, the central route produces "stronger" attitudes. When attitudes are based on high levels of elaboration, people have the necessary "backing" to defend their attitudes against later counterattitudinal persuasion attempts and to maintain the attitude over time. These attitudes will also tend to be more accessible and held with greater confidence. Because of this higher accessibility and confidence, people will be more likely to act on central route attitudes. Attitudes based on peripheral processes and simple cues, however, are less likely to demonstrate these char-

acteristics. Evidence that attitudes formed under high elaboration are stronger than those formed under low elaboration has been found in several studies (e.g., Cacioppo, Petty, Kao, & Rodriguez, 1986; Chaiken, 1980; Haugtvedt & Petty, 1992; see Petty, Haugtvedt, & Smith, 1995, for review and analysis).

Putting It All Together: Resolving Conflicting Findings with the ELM

As stated at the outset of this chapter, the ELM was developed in part to organize and explain apparent contradictions in the persuasion literature. Having reviewed the elaboration continuum and the multiple roles postulates, readers may already have a good grasp of how this is accomplished. Still, an illustration is worthwhile. Consider the effects of source credibility. Recall that early research found that credible sources typically increased persuasion (Hovland & Weiss, 1951), whereas later research found that this was not always the case (Sternthal et al., 1978). Using the ELM as a framework, one can derive specific predictions regarding when a credible source is likely to lead to more, less, or equal persuasion relative to a source of questionable credibility. Consider a situation in which a person is given a message containing either weak or strong arguments and presented either by a source with high credibility or by one with low credibility. How might the credibility of the source impact persuasion? This depends on the amount of elaboration involved.

First, consider the situation in which elaboration is low due to lack of effort or ability. In this case, the individual will not devote much effort to processing issue-relevant information and will instead rely on simple cues to decide whether to accept the message or not. In particular, a high-credibility source may be used as a cue to trust and accept the message, whereas a low-credibility source may be used as a cue to mistrust the message and reject it. Thus, when elaboration is low, the credibility of the source may serve as a peripheral cue invoking a persuasion heuristic (i.e., "experts can be trusted"), leading to more or less persuasion in the absence of much issue-relevant thinking. As a result, regardless of argument quality, people may have less favorable attitudes when the message is presented by a low-credibility source than by a high-credibility source (e.g., Petty, Cacioppo, & Goldman, 1981).

Now consider a situation in which elaboration is high and, as a result, people are motivated to process the arguments of a message. In this example, the credibility of the source may be relatively unimportant as a cue for deciding whether to accept or reject the message. Instead, if the quality of the arguments is unambiguous, only the substance should matter and source expertise is likely to have little impact (Petty, Cacioppo, & Goldman, 1981). However, if the arguments are ambiguous and open to multiple interpretations, expertise might bias the interpretation of the arguments, leading to more favorable interpretations of the arguments when expertise is high (e.g., he must have meant this) rather than low (Chaiken & Maheswaran, 1994).

Finally, consider a situation in which elaboration is moderate. In this situation, learning that the source is credible may cause people to decide the message is worth pay-

ing close attention to, leading to an increase in the amount of elaboration given to the message. If the message arguments are strong, those carefully attending to the message should be more persuaded than those who are paying little attention to it. If, however, the message arguments are weak, those carefully attending to the message should actually be less persuaded than those not paying close attention to it. As a result, relative to low-credibility sources, high-credibility sources would be less persuasive when the arguments are weak but more persuasive when the arguments are strong (Heesacker, Petty, & Cacioppo, 1983).

In sum, like the effects of a person's mood state described earlier, an expert source can influence attitudes as a simple persuasion cue when the likelihood of thinking is low, can bias the processing of message arguments when the likelihood of thinking is high, and can determine the extent of thinking when the likelihood of thinking is not constrained. The ELM allows specific predictions regarding when credible sources will lead to more, equal, or less persuasion than sources of questionable credibility. It is also significant that the ELM specifies the underlying processes by which these outcomes occur (see Moore, Hausknecht, & Thamordaran, 1986, for a study documenting multiple roles for source credibility under different elaboration conditions). Similar logic can be applied to resolve other contradictions in the persuasion literature with respect to both outcome and process.

In addition to resolving conflicting findings regarding the outcomes produced and the mechanisms of change of particular variables such as source credibility and mood, the ELM also helped to resolve other conflicting results regarding attitudes. Most notably, postulate 7 regarding attitude strength helped to explain a long-standing puzzle of why some attitudes lasted over time, resisted change, and predicted behavior, whereas other attitudes of the same valence did not. Thus, the ELM is a useful framework for reconciling apparent inconsistencies in the literature and for exploring novel hypotheses.

Confusions and Misinterpretations of the ELM

Although the ELM has proved useful in resolving contradictory findings in the persuasion literature and continues to serve as a useful framework for guiding research, it has not escaped some criticism. On the one hand, criticism that points to logical flaws in a theory or a mismatch between theory and data can be useful in fixing or advancing a theory or, in some cases, for putting a theory to rest. On the other hand, criticism that arises from misunderstandings can lead researchers to reject or modify a satisfactory theory unnecessarily. Several criticisms of the ELM based on misunderstanding of the theory have been made. Below, we address some of the more salient areas of confusion or misinterpretation.

Single- versus Multichannel Information Processing

In one of the earliest questionings of the theory, Stiff (Stiff, 1986; Stiff, 1994; Stiff & Boster, 1987) suggested that the ELM does not accurately reflect the way in which people process information. Stiff argued that the ELM depicts humans as single-channel information processors, capable of processing only peripheral cues or message arguments, even

though prior research seemed to indicate that humans are capable of parallel information processing (e.g., Kahneman, 1973).

The assumption that the ELM does not allow for dual-channel (or parallel) information processing is simply wrong. Although early presentations of the ELM (Petty & Cacioppo, 1981, 1986a, 1986b) did not comment explicitly on the distinction between single versus parallel processing, the ELM never portrayed information processing as prohibiting parallel processing. This misunderstanding arose from Stiff's (1986) apparent view that because some ELM research has shown that argument quality had an impact on attitudes under high-processing conditions whereas source attractiveness did not (e.g., Petty, Cacioppo, & Schumann, 1983), people could process only arguments, but not sources, under high-elaboration conditions. In stark contrast to this assumption, the ELM holds that people process as much information as possible (including source and message factors) under high-elaboration conditions. This information can be processed either serially or in parallel. Just because information is processed, however, does not mean that it will affect attitudes. Thus, people might be cognizant of the mere number of arguments or the attractiveness of the message source under high-processing conditions but still might not view this information as a valid basis for attitude inference (Petty, Kasmer, Haugtvedt, & Cacioppo, 1987; Petty & Wegener, 1999).

Thus, as articulated in our discussion of the trade-off postulate of the ELM, it is not the case that people process only peripheral cues when elaboration likelihood is low and only central arguments when elaboration likelihood is high. Rather, both types of information may be processed. The trade-off postulate addresses the *impact* of central and peripheral processes on attitudes (see Petty et al., 1987, for further commentary on this criticism).

Confusion over Source Versus Message Factors

Perhaps the most common misunderstanding of the ELM can be traced to the multiple-roles postulate—the idea that any one variable is capable of influencing attitudes by different means in different situations. Several researchers (e.g., Stiff, 1986; Kruglanski & Thompson, 1999) have mistakenly viewed the ELM as classifying all message variables (e.g., number of arguments, argument quality) as *arguments* influencing attitudes under the central route and all nonmessage variables (e.g., source credibility, a person's mood) as peripheral *cues* influencing attitudes only under the peripheral route. This has led researchers to claim that the theory cannot explain results of studies in which nonmessage factors (such as source credibility) influenced attitudes under high-elaboration conditions, or where message factors influence attitudes under low elaboration conditions (Kruglanski & Thompson, 1999).

However, as explained in the multiple-roles postulate, the ELM holds that the same variable can serve in different roles, depending on the extent of thinking. For example, early ELM research showed that the attractiveness of the message source could serve as a simple cue and influence attitudes by a heuristic process when thinking is low, but the same manipulation could influence attitudes under high-elaboration conditions if analysis of the variable as an argument provided cogent evidence for the merits of the attitude ob-

ject (e.g., an attractive spokesperson for a shampoo might provide cogent visual testimony for the effectiveness of the product; Petty & Cacioppo, 1984a). Furthermore, just as early research showed that source variables could serve in multiple roles, so too did early research show that message variables could be processed in a heuristic manner (counting) or a more central manner (evaluating quality; Petty & Cacioppo, 1984b). Thus, source, message, recipient, and contextual variables can influence attitudes under high, low, and moderate levels of elaboration, but the underlying mechanism will vary (see Petty & Wegener, 1999; Petty et al., 1999, for further discussion).

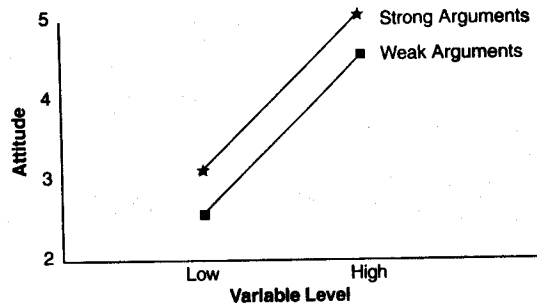
Misunderstandings of the Use of Argument Quality as a Methodological Tool

There are several confusions regarding the use of argument quality (i.e., strong versus weak messages) in research-testing predictions made by the ELM. Some researchers (Mongeau & Stiff, 1993; O'Keefe, 1990) have criticized the ELM for manipulating so-called strong versus weak arguments without specifying the underlying factors that make an argument strong or weak. These criticisms fail to recognize that ELM studies use argument quality primarily as a methodological tool to help differentiate the different roles for variables. For example, if a variable (e.g., source expertise) produces the pattern in the top panel of figure 5.2, it suggests that the variable is serving as a simple cue as the variable increases persuasion regardless of argument quality. On the other hand, if a variable produces the pattern in the bottom panel of figure 5.2, it suggests that the variable is serving to influence the extent of information processing activity (see Petty, Wegener, Fabrigar, Priester, & Cacioppo, 1993).

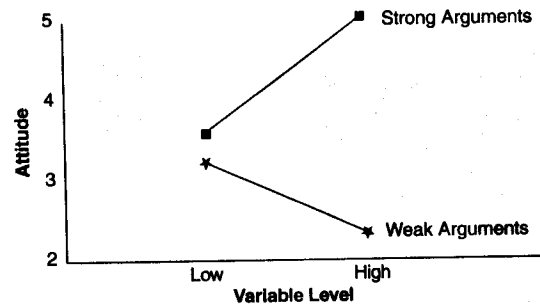
Other researchers have assumed that argument quality is defined strictly in terms of logical quality or in terms of how likely an attitude object is to possess some attribute (Areni & Lutz, 1988). However, as a methodological tool, manipulations of argument quality refer to any features of the arguments that get people to think favorable thoughts (strong arguments) or unfavorable thoughts (weak arguments) to the advocacy. Petty and Wegener (1991) suggested that strong arguments were those that pointed to highly desirable consequences that would most certainly occur if some advocacy was accepted. These arguments could be made weaker either by pointing to less desirable consequences that would occur if the advocacy was adopted or to desirable consequences that were less likely to occur. That is, arguments could be weakened by reducing either the desirability or the likelihood of the consequences proposed in the argument (see also Fishbein & Ajzen, 1981).

Assertions That the ELM Is Not Falsifiable

Some researchers have argued that the ELM's multiple-roles hypothesis "allows the ELM to explain all possible outcomes of an experimental study" (Stiff & Boster, 1987, p. 251). More recently, Stiff (1994) remarked: "Until the ELM specifies a priori the conditions under which important stimulus variables reflect central processing, a peripheral cue, or both, it will remain impossible to falsify" (p. 188). As discussed earlier, the multiple-roles



Expected effects when a variable serves as a positive peripheral cue



Expected effects when a variable serves to enhance information

FIGURE 5.2 Argument Quality Versus Quantity with High or Low Involvement

hypothesis is necessary to understand fully the dynamics of persuasion. However, this postulate does not make the ELM devoid of *a priori* predictions. In fact, the ELM clearly specifies when variables take on the different roles. For example, the predictions for a person's mood and source credibility at different levels of elaboration were discussed earlier, and available research supports these predictions (see also Petty et al., 2002).

Although the ELM postulates multiple roles for variables, it does not say that any role can be assumed at any time. Thus, contrary to Stiff's claim, the ELM does make *a priori* predictions regarding when a given variable (e.g., source attractiveness, mood) has an impact on attitudes by different processes. For example, the ELM holds that variables are more likely to influence attitudes by biasing processing when the elaboration is high and invoking a heuristic when elaboration is low, and that they are more likely to affect the extent of thinking when it is not already constrained to be high or low (moderate elaboration). Therefore, the ELM could be falsified, for example, if a variable produced a

greater bias to the ongoing information processing under low- than under high-elaboration conditions, or if simple heuristics (e.g., "more is better") had a larger impact under high than low elaboration conditions.

Restricted Range of Topics

Some researchers (O'Keefe, 1990; Stiff, 1994) have criticized the ELM for relying on a limited number of message topics and message arguments. Specifically, they assert that research on the ELM is confined to message topics involving comprehensive exams and tuition increases. They further contend that a reliance on such a small number of topics challenges the generalizability of the ELM. We agree that confining message topics to comprehensive exams and tuition increases, while not damaging the validity of the theory, could limit its generalizability. However, this criticism reflects a lack of appreciation of the broader literature on the ELM rather than the topics used in some of the most widely cited studies.

While it is true that initial research on the ELM involved studies using the topics of comprehensive exams (e.g., Petty & Cacioppo, 1984a, 1984b; Petty, Cacioppo, & Goldman, 1981; Puckett, Petty, Cacioppo, & Fisher, 1983) and tuition increases (e.g., Cacioppo, Petty, & Morris, 1983), subsequent research has used a variety of diverse topics. A cursory review of the literature reveals experiments testing and confirming hypotheses of the ELM using topics such as condom use (Helweg-Larsen & Howell, 2000), the city sales tax (Desteno et al., 2001), the foster care system (Petty et al., 1993, experiment 2; Wegener, Petty, & Smith, experiment 1), nuclear power (Fabrigar, Priester, Petty, & Wegener, 1998, exp. 1; Haugtvedt & Wegener, 1994), vegetarianism (Fabrigar et al., 1998, exp. 2), and environmental conservation (Wood, Kallgren, & Priesler, 1985).

In addition to these social issues, research using the ELM framework has also been conducted with a variety of advertising messages for goods and services such as answering machines (Haugtvedt & Petty, 1992), bicycles (Haugtvedt & Strathman, 1990), cameras (Laczniak & Carlson, 1989), detergent (Shavitt & Brock, 1986), low-alcohol beer (Andrews & Shimp, 1990), food additives (Haugtvedt & Petty, 1992), pens (Petty et al., 1993, experiment 1), restaurants (Shavitt, Swan, Lowery, & Wanke, 1994), shampoo (Petty & Wegener, 1998), and vitamins (Smith & Petty, 1996).

The above research represents only a scant number of the diverse topics that have been studied under the framework of the ELM. Consequently, upon examination of the breadth of the literature on the ELM, it is clear that the ELM generalizes to multiple topics beyond senior comprehensive exams and tuition increases.

Replacing the ELM with a Single-Process Model of Persuasion

Perhaps the most ambitious critique of the ELM—and other multiprocess models of social judgment—comes from Kruglanski and Thompson (1999), who argued that a single route to persuasion was a more parsimonious way to account for the various persuasion findings generated by the ELM (and the related Heuristic-Systematic Model; Chaiken, Liberman, & Eagly, 1989). In proposing their unimodel, Kruglanski and Thompson (1999) argued that there are no *qualitative* differences between the two routes to persuasion. Instead, all

that is necessary to account for persuasion is the elaboration continuum that ranges from minimal processing on one end to maximal processing on the other. The central and peripheral routes to persuasion are then solely a function of depth or extent of processing, and no qualitatively different processes operate along this continuum as specified by the ELM.

To make this point, Kruglanski and Thompson (1999) proposed that both cues and arguments could be conceptualized as types of "evidence." In this conceptualization, all forms of evidence can fit into Kruglanski's Lay Epistemic Theory (LET; Kruglanski, 1989) in which evidence, when considered with its paired relevance, leads to attitude change. According to Kruglanski and Thompson, because both arguments and cues can be considered as "evidence," there is no need or theoretical rationale to differentiate them.

At first glance, the unimodel may seem attractive due to its parsimony. On the other hand, if it is useful to distinguish two or more qualitatively different processes of persuasion, the unimodel, though parsimonious, would not be accurate. As should be clear from our presentation earlier, the ELM highlights a continuum based on the extent of careful examination of the relevant evidence (the elaboration continuum). In fact, a considerable amount of persuasion results can be accounted for with just this continuum. However, in contrast to the unimodel, the ELM holds that different persuasion processes operate along this continuum and that some of these processes are qualitatively different from each other. Many variables can be viewed as "evidence," but how a person processes this evidence is what determines the effect that the variable has on persuasion. For example, an attractive source can be input to the heuristic "if she likes it, so do I," in which case anything that the attractive source endorses will be more persuasive (peripheral route). Alternatively, the attractive source can be evaluated as an argument so that the attractive source is persuasive when attractiveness is relevant and cogent (e.g., "if his hair looks great from using that shampoo, it must be a good product, so I'll buy it too") but is unpersuasive when irrelevant (e.g., "her hair is nice but what does that have to do with this refrigerator?"). Or to return to an example we used earlier, evaluating the arguments in a message by simply counting them (i.e., using the arguments as a numerical heuristic) versus carefully scrutinizing those arguments for merit can lead to different persuasion outcomes (Petty & Cacioppo, 1984b). Though Kruglanski and Thompson (1999) may contend that there is no interesting qualitative difference between counting and scrutinizing messages, proponents of the ELM argue that counting and elaborating are more than simple opposite ends of a quantitative continuum; they are two distinct, qualitatively different processes that can produce fundamentally different outcomes when applied to the same evidence. Furthermore, the ELM holds that there are other qualitatively different psychological processes (e.g., dissonance versus self-perception) that are of interest in understanding persuasion (Petty & Cacioppo, 1986a). The ELM specifically postulates that many of these processes operate at different points along the elaboration continuum and require different amounts of cognitive effort (i.e., a quantitative difference). But the difference in cognitive effort is not the only difference among these processes. Because of their qualitative differences, these processes often specify different mediators and moderators of persuasion effects (e.g., dissonance focuses on the presence of aversive arousal, whereas self-perception does not). This richness and predictive power is lost by focusing solely on quantitative differences in amount of thought. In sum, because of its accommodation of

both qualitative and quantitative differences in persuasion processes, we believe that the ELM remains a more satisfactory model for accounting for persuasion effects than the unimodel.

Directions for Future Research

So far we have explained the ELM and addressed various controversies that have arisen regarding the model. Before concluding this chapter, we turn to a discussion of some current directions in persuasion research that have stemmed from an appreciation of the ELM.

Self-Validation Processes

The postulate of the ELM that has received the least research attention to date is the first one, that people seek correct attitudes. This postulate has been used in two ways. First, it helps to explain why people engage in greater information processing in certain circumstances than they do in others. That is, because careful scrutiny is often a good way to determine correctness, people will engage in more effortful scrutiny when it is important to be correct, such as when a message has high consequences for the self (Petty, Cacioppo, & Haugtvedt, 1992; Petty, Wheeler, & Bizer, 2000). Second, this postulate implies that in the absence of competing motives (e.g., consistency, reactance, impression management), the default goal is to be correct and to attempt to process messages in a relatively objective way.

Recent research has suggested another consequence of the correctness motive. Specifically, in some circumstances people will reflect on the validity of their thoughts and attitudes (referred to as *self-validation* processes; Petty, Briñol, & Tormala, 2002). For example, with respect to *attitude validation*, consider a person who has just processed a message and rejected it. Because the attitude survived an attack, the person might gain confidence in this attitude. In fact, in a series of studies, Tormala and Petty (in press) showed that the stronger the attack people believe their attitude resisted, the more confidence they gain in it. Furthermore, this enhanced confidence led people to be more willing to act on their attitudes. Thus, attitude validation processes can increase attitude strength.

People may also sometimes reflect on the validity of the individual thoughts that they have in response to a persuasive message. For example, in a series of studies on *thought validation*, Tormala, Petty, and Briñol (in press), showed that the easier it was for people to generate thoughts on a message, the more confidence they had in them, and the more they relied on them in forming their attitudes. In particular, these investigators made some people feel that generating favorable thoughts to a message was easy, because their task was to generate only two favorable thoughts to the arguments. Others were made to feel that generating favorable thoughts was difficult because eight were requested (see also Schwarz et al., 1991). When it was easy to generate favorable thoughts, people had more confidence in these thoughts and were more persuaded by the message than when it felt more difficult to generate the thoughts. Conversely, when people felt it was easy to generate counterarguments to the message because only two were requested, they were

less persuaded than when they felt it was hard to generate counterarguments. Thus, research on self-validation processes suggests that another role for variables in persuasion settings is that they can help people assess the validity of their thoughts and attitudes. Numerous variables may influence attitudes and attitude strength in this way (e.g., people may be more confident in their favorable thoughts if they were generated in response to a source of high rather than low credibility).

Consequences of Objective Versus Biased Thinking

The ELM makes an important distinction between processing that is relatively objective versus that which is biased. Understanding whether a variable (e.g., source credibility, mood) is enhancing objective processing or imparting a bias to the processing is important for understanding both the valence of thoughts produced and the ultimate persuasion outcome. Recently, Rucker and Petty (2002) have discussed some implications of biased versus objective processing for the strength of the attitudes resulting from persuasion.

In an initial series of studies on this issue, Rucker and Petty (2002) compared situations in which individuals were instructed to process a message in a relatively objective manner (try to generate thoughts) or in a biased manner (try to generate negative thoughts). These participants were exposed to a message favoring a brand of aspirin that contained very strong arguments. Although both the objective and biased groups showed equivalent attitude change to these strong arguments, and equivalent amounts of cognitive effort in processing the message, individuals who had focused on finding fault with the message reported more certainty in their changed attitudes. Furthermore, the attitudes of individuals who had tried but failed to find fault were more predictive of subsequent behavioral intentions toward the aspirin. Rucker and Petty (2002) argued that people who tried to find fault but failed were more cognizant of the fact that the aspirin had no faults than were people who simply processed the message objectively. The latter group was cognizant mostly of the favorable aspects of the aspirin. Subsequent analyses confirmed that perceptions about the lack of negative features of the aspirin mediated the increased certainty in the changed attitudes. This research shows that qualitatively different approaches to processing the message can lead to differences in attitude strength even when the extent of message elaboration appears to be constant.

Conclusion

This chapter began by noting the chaos in attitude and persuasion research reflected by numerous conflicting findings in the literature and then focused on explaining how the ELM can organize past inconsistent findings in a manner that allows researchers to predict when a variable might have a given effect, and when a particular process responsible for that effect might occur. Furthermore, the chapter has provided representative examples of research based on the ELM framework throughout. Finally, in addition to stressing the utility of the model in explaining past conundrums in the literature, this chapter has focused on clarifying misconceptions about the ELM and pointing to directions for future research. In particular, recent work on people's assessment of the validity of their thoughts

and attitudes has provided new means by which variables can affect persuasion (by affecting thought confidence) and attitude strength (by affecting attitude confidence).

Notes

1. Although not discussed in this chapter, other models of persuasion and social judgment have been developed that share a number of the features of the ELM. A discussion of these models is beyond the scope of this chapter, but the interested reader is referred to a compendium of dual-process models of social judgment in Chaiken and Trope (1999) and a comparison of the ELM with some of these models by Petty and Wegener (1998, 1999) and Petty, Fabrigar, and Wegener (in press).

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