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Over the past several decades, researchers have documented a large number of variables that have an impact on persuasion, and a plethora of theories have developed around these variables to account for the underlying processes responsible for attitude change (cf. Kieler, Collins, & Miller, 1969; Petty & Cacioppo, 1981; Smith, 1982). In this chapter, we are concerned primarily with attitude changes that take place as a result of exposure to persuasive communications and we highlight the role of affect in the process of attitude change. By attitudes, we mean the general evaluations that people hold of various objects, issues, or other people. These evaluations can be based on a person’s assessment of feelings (positive or negative affective states), beliefs (information and knowledge), behaviors (overt movements and action) or some combination of elements (cf. Cacioppo & Petty, 1982; Petty & Cacioppo, 1986; Zanna & Rempel, in press).

Our goal in this chapter is to present a general framework for organizing, categorizing, and understanding the basic processes underlying the effectiveness of persuasive communications. This scheme, called the Elaboration Likelihood Model (ELM) of persuasion, describes the specific roles that variables can have in producing attitude change and it specifies the consequences of attitude changes induced by different processes. Before beginning our discussion of the role of affect in persuasion and the ELM, it is necessary to provide a brief overview of the theory.
OVERVIEW OF THE ELABORATION LIKELIHOOD MODEL

In the typical persuasion situation, an individual or group receives a communication from another individual in a particular setting. The communication, which usually presents reasons or arguments in favor of an advocated position, may be delivered in person or via some print, audio, or video medium. Each of the various elements of the persuasion situation (i.e., source, message, recipient, channel, context) has been studied in depth and has been shown to account for some of the variance in attitude change (McGuire, 1969, 1985). Yet, the accumulated literature on the effects of these variables is hardly consistent. For example, although it might seem quite reasonable to propose that by associating a message with an expert source, agreement can be increased (e.g., see Aristotle’s *Rhetoric*), contemporary research findings suggest that expertise effects are considerably more complicated than this. Sometimes expert sources have the expected effects (e.g., Kelman & Hovland, 1953), sometimes no effects are obtained (e.g., Rhine & Severance, 1970), and sometimes reverse effects are noted (e.g., Sternthal, Dholakia, & Leavitt, 1978). Unfortunately, no consensus exists as to the conditions under which each of these effects can be obtained and the processes involved in producing them. Similar patterns of contradictory results have been observed for many of the other variables examined by persuasion researchers.

Central and Peripheral Routes to Persuasion

The Elaboration Likelihood Model represents an attempt to integrate the many seemingly conflicting findings regarding source (and other) factors under one conceptual umbrella by specifying a finite number of ways in which source (and other) variables have an impact on persuasion. The ELM is based on the notion that people want to form correct attitudes as a result of exposure to a communication (because these will normally prove most adaptive in functioning in one’s environment), but that there are a variety of ways in which a reasonable position may be adopted.

The most effortful procedure for evaluating an advocacy involves carefully scrutinizing and elaborating the issue-relevant arguments in the persuasion situation along the dimensions that are perceived central to the merits of the attitude object. Of course, the dimensions that are perceived central to the merits of any stimulus may vary across attitude objects and across different individuals (cf. Katz, 1960; Snyder & DeBono, 1985). For example, consider three people who are watching a film extolling the virtues of taking a skiing vacation in Colorado. Person A, who is a sensation seeker (see Zuckerman, this volume), may engage in sports activities primarily because of the feelings of exhilaration that they bring. When Person A watches the film, he is attuned to his bodily responses. An attempt is made to extrapolate the current bodily sensations to those that might be experienced when actually skiing and to compare the present or anticipated feelings to memories of the affect induced by other sports activities, all in an attempt to evaluate the merits of the skiing vacation. Person B, on the other hand, selects sports activities primarily on the basis of the perceived ease or difficulty of engaging in the behavior per se. This person carefully scrutinizes the behavior of the skiers in the film and calls to mind his own behavioral repertoire. During this process he might call to mind his past behaviors that are perceived similar to the target behavior (e.g., water skiing) and his performance on these behaviors. Finally, Person C selects recreational activities primarily on the basis of cost. This person carefully attends to the information presented about the room and meal rates at the resorts, the cost of equipment rentals, and he compares this information to his stored knowledge about the cost of previous vacations.

Importantly, each person in this example is attempting to elaborate upon the message in order to determine the true merits of the advocated skiing vacation. That is, each person is attempting to access relevant associations, images, and experiences from memory and to evaluate the appeal in light of this stored information. In short, each person has engaged in considerable cognitive effort in order to evaluate the fundamental merits of the advocated vacation. Of course, this extensive scrutiny provides no guarantee that a subjectively (or objectively) veridical opinion will be formed. For example, all three people may decide to sign up for skiing vacation and discover that it does not meet expectations. Nevertheless, according to the ELM, attitudes formed via this central route are expected to be relatively persistent, predictive of behavior, and resistant to change until they are challenged by cogent contrary information along the dimension or dimensions perceived central to the merits of the object.

In the skiing vacation example, each person was diligently processing the communication. However, it is neither adaptive nor possible for people to exert considerable mental effort in processing all of the persuasive communications to which they are exposed (cf. Miller, Maruyama, Beaber, & Valone, 1976). Indeed, people often act as “lazy organisms” (McGuire, 1969) or “cognitive misers” (Taylor, 1981). This does not mean that people never form attitudes when motivation and/or ability to scrutinize a message are low, but rather attitudes may be changed as a result of relatively simple associations or inferences in these situations. For example, consider Person D who also watched the skiing vacation advocacy, but who is not motivated to think about the message in any depth (perhaps because it is perceived as irrelevant). Following the film, this person is asked to give an opinion about a skiing vacation on a questionnaire. The person reports a favorable attitude because the beautiful scenery in the film

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1Space limitations do not permit a complete explication of the ELM here. Interested readers should consult Petty and Cacioppo (1986a) for a more detailed treatment.
In the previous discussion of persuasion by serving as a persuasive argument, providing an impact on the ELQ and then serving as a central route. However, the effect is not always consistent, as illustrated in Figure 7.2, which shows that the treatment of the central route is not dependent on the argument's quality. The effects of the central route are depicted in Panel A, where the treatment serves as a type of argument, whereas in Panel B, the treatment serves as a type of argument. The figure also shows the possible roles for the same variables, serving as a peripheral cue, whereas in the case of cue-based arguments, the treatment serves as a type of argument. The model in the figure, adapted from Petty and Cacioppo (1981, 1986), is designed to explain the nature of cognitive processes involved in persuasion. The model depicts the possible components of the central route to persuasion and the peripheral route to persuasion. The central route involves a greater elaboration of the message, whereas the peripheral route involves a less elaborative processing of the message. The figure shows the possible roles for the same variables, serving as a peripheral cue, whereas in the case of cue-based arguments, the treatment serves as a type of argument. The model in the figure, adapted from Petty and Cacioppo (1981, 1986), is designed to explain the nature of cognitive processes involved in persuasion. The model depicts the possible components of the central route to persuasion and the peripheral route to persuasion. The central route involves a greater elaboration of the message, whereas the peripheral route involves a less elaborative processing of the message.
processing, the cue affects all messages equally. Note also that because cues are postulated to operate mostly when the elaboration likelihood is low, Panel II depicts a large main effect for the cue treatment, but little effect for argument quality.

Panel III in Fig. 7.2 depicts the expected results for variables that affect message elaboration in a relatively objective manner. If the treatment enhances message scrutiny over some baseline condition, then subjects should better realize the cogency of strong arguments but the flaws in weak ones (Panel IIIa); however, if a treatment reduces message scrutiny, then subjects should be less likely to realize the merits of the arguments (Panel IIIb). In short, when a treatment enhances or reduces message elaboration, an interaction between the treatment and argument quality is expected.

In Panel IV of Fig. 7.2, the treatment is also having an impact on message processing, but rather than enhancing or reducing relatively objective processing, the treatment is motivating or enabling processing in a favorable or unfavorable direction. However, unlike the operation of positive and negative peripheral cues (Panel II), the message arguments impose some constraint on the operation of variables that bias processing. For example, consider a person who is motivated to counterargue and not simply discount a message. Active counterargumentation will be easier (and result in greater resistance) to the extent that the message contains weak rather than strong arguments (see Panel IVb).

Evidence for the Two Routes to Persuasion

Our initial attempts to validate the ELM proceeded in several stages. First, we sought to demonstrate that numerous variables could have an impact on persuasion by affecting the likelihood of message elaboration. Next, we sought to demonstrate that the impact of peripheral cues on persuasion would be greater when the elaboration likelihood was low rather than high. Then, we sought evidence for the postulated consequences of the two routes to persuasion.

Motivation and Ability to Process. Many variables have been shown to have an impact on persuasion by affecting the likelihood of message elaboration. For example, in Box 1 of Fig. 7.3 the effects of the personal relevance of a message on persuasion are shown. In this study (Petty & Cacioppo, 1979b), college students were exposed to a counterattitudinal message advocating that seniors be required to pass a comprehensive exam in their major area as a prerequisite for graduation. For half of the subjects, the message arguments were strong and compelling (e.g., average starting salaries are higher for graduates of schools with the exams), and for the other half the arguments were weak and specious (e.g., by not administering the exams, a tradition dating back to the ancient Greeks was being violated). To create two levels of personal relevance, half of the subjects were led to believe that the speaker advocated that the exam policy
be instituted at their own university (high relevance), whereas half were led to believe the speaker advocated that the exam policy be instituted at a distant university (low relevance).

Importantly, previous research and theorizing (based on social judgment theory; Sherif & Sherif, 1967) had suggested that increasing the personal relevance of a counterattitudinal appeal would invariably reduce persuasion (e.g., Pallak, Mueller, Dollar, & Pallak, 1972) because increasing relevance (ego involvement) cause subjects to judge a counterattitudinal advocacy as more discrepant thereby making it more likely that the message would fall in a person's "latitude of rejection." Instead of finding increased relevance leading to greater disagreement with the communication, we found that relevance and argument quality interacted. When the arguments were strong, increasing relevance led to more agreement, but when the arguments were weak, increasing relevance led to less agreement (see Box 1, Fig. 7.3). Recall that this is the pattern that would be expected if increasing personal relevance enhances message elaboration (cf.

Panel IIIa in Fig. 7.2). This effect has been replicated by ourselves (e.g., Petty & Cacioppo, 1984) and others (e.g., Leippe & Elkin, 1987).

The remaining boxes in Fig. 7.3 depict the results for other variables we have found to affect message elaboration and thereby persuasion. In Box 2, it can be seen that just as increasing personal relevance motivates additional processing, providing extra opportunities for a person to consider the implications of a message via repetition can also increase argument scrutiny (see Cacioppo & Petty, 1985). On the other hand, if a message is accompanied by external distraction, people have fewer resources to allocate to the message and processing is thereby disrupted (see Box 3; Petty, Wells, & Brock, 1976). Motivation loss can also contribute to reduced message processing such as when it is made salient to a person that he or she is part of a group that is responsible for message evaluation (see Box 4; Petty, Harkins, & Williams, 1980). Other variables that we have found to affect the elaboration likelihood include the number of sources delivering the message (Harkins & Petty, 1981), whether the arguments are summarized in statement form or as rhetorical questions (Petty, Cacioppo, & Heesacker, 1981), the posture of the message recipient (standing or reclining; Petty, Wells, Heesacker, Brock, & Cacioppo, 1983), and whether the individuals show chronic differences in their tendencies to engage in and enjoy thinking (as assessed with the "need for cognition" scale, Cacioppo & Petty, 1982b; Cacioppo, Petty, & Morris, 1983).

In addition to variables affecting motivation and ability to process message arguments in a relatively objective fashion, other variables have an impact on persuasion by biasing message elaboration. These variables work by motivating or enabling favorable or unfavorable thoughts in particular. For example, because stored topic-relevant knowledge tends to be biased in favor of peoples' own attitudes (see Crocker, Fiske, & Taylor, 1984), the more issue-relevant knowledge a person has, the more they will tend to be able to counter-argue communications opposed to their opinions and cognitively bolster congruent ones (e.g., Lord, Ross, & Lepper, 1979; Wood, 1982).

In our own research we have uncovered a number of variables that appear to bias message processing. In order to bias processing in the unfavorable direction one can forewarn subjects of the persuasive intent of the speaker on an involving issue (Petty & Cacioppo, 1979a) or repeat the message a tedious number of times (Cacioppo & Petty, 1979). On the other hand, in order to bias processing in the favorable direction one can employ techniques such as presenting arguments that reflect the subjects' self-schemata (Cacioppo, Petty, & Sidera, 1982) or having subjects engage in vertical head movements during message receipt (Wells & Petty, 1980).

Peripheral Cues Versus Message Processing. Once it was clear that numerous variables could have an impact on persuasion by affecting the extent and/or direction of message processing, it was important to document the postulated
tradeoff between message processing and the operation of peripheral cues. Recall that when the elaboration likelihood is high, the ELM holds that persuasion should result primarily from the evaluation of the issue-relevant arguments presented. On the other hand, when the elaboration likelihood is low, persuasion should more likely be a function of the peripheral cues in the persuasion context. Testing this notion requires establishing conditions of high- and low-elaboration likelihood and including manipulations of peripheral cues as well as argument strength in the persuasion context.

In one investigation of the tradeoff between peripheral cues and argument processing, we asked college students to listen to a message over headphones that advocated that seniors be required to pass a comprehensive exam in their major as a requirement for graduation (Petty, Cacioppo, & Goldman, 1981). Three variables were manipulated in the study: personal relevance of the message, argument quality, and the expertise of the source. Relevance was manipulated by having the speaker advocate either that the new exam policy be instituted at the students’ own university next year (high relevance) or 10 years in the future (low relevance). The eight strong or eight weak arguments comprising the message were attributed to either a report prepared by a local high-school class (low expertise) or to a paper prepared by the Carnegie Commission on Higher Education that was chaired by a Princeton University professor (high expertise).

Following message exposure, subjects rated their attitudes toward the exams. Main effects for the source and arguments manipulations were qualified by two significant interactions. First, a relevance × argument quality interaction replicated the finding reported previously (Box 1, Fig. 7.3) that as personal relevance increased, argument quality became a more important determinant of persuasion. In addition, however, a Relevance × Source expertise interaction indicated that source expertise became a more important determinant of persuasion as relevance decreased. The results for all cells in this study are graphed in Fig. 7.4. In the top panel it can be seen that under low-relevance conditions, increasing source expertise enhanced agreement regardless of argument quality (a peripheral cue effect as depicted in Panel IIa in Fig. 7.2). In the bottom panel it can be seen that under high-relevance conditions, source expertise had no significant effect on attitudes, only argument quality was important.

Several conceptual replications of this research have been reported. For example, in one study we presented print advertisements to students and led them to believe that they either would (high relevance) or would not (low relevance) soon make a decision about the product class featured in the target advertisement (Petty, Cacioppo, & Schumann, 1983). The target ad depicted either a pair of liked (celebrity athletes) or neutral (average citizen) endorsers and presented either strong or weak arguments for the product. As in the previous study, argument quality was a more important determinant of persuasion when the relevance of the ad was high rather than low, but the celebrity status of the endorsers was a more important determinant of influence when the relevance of

![FIGURE 7.4. Issue involvement moderates the route to persuasion. The top panel shows that source expertise serves as a peripheral cue under low-relevance (involvement) conditions, and the bottom panel shows that argument quality exerts a greater impact on attitudes under high-relevance conditions (data from Petty, Cacioppo, & Goldman, 1981).]
the ad was low rather than high (see also, Chaiken, 1980; Rhine & Severance, 1970).

The accumulated research on persuasion not only supports the view that source expertise and attractiveness are more important as peripheral cues when the personal relevance of a message is low rather than high, but so too are other simple cues such as the mere number of arguments in a message ( Petty & Cacioppo, 1984), the visual salience of the message source ( Borgida & Howard-Pinney, 1983), and the nonverbal behavior of the source ( Huddleston, 1985). In addition, variables other than personal relevance that have proven to be effective moderators of the extent of argument processing have also been found to be effective moderators of peripheral cues. Thus, high distraction disrupts argument processing ( Petty et al., 1976) but enhances reliance on peripheral cues such as source expertise ( Kiesler & Mathog, 1968); people low in need for cognition show less reliance on argument quality than do people high in need for cognition ( Cacioppo et al., 1983), but more reliance on peripheral cues such as the mere number of others who endorse a position ( Chaiken, in press; Haugtvedt, Petty, & Cacioppo, 1986, Experiment 1); high prior knowledge enhances argument processing but reduces the impact of peripheral cues such as the simple length of a message (Wood, Kilgore, & Priesler, 1985) or the mere number of arguments presented ( Alba & Marmorstein, in press).

Consequences of the Route to Persuasion. As we noted previously, the existing literature is quite consistent with our view that there are two fundamentally different routes to persuasion. One is based on a careful and deliberate consideration of arguments central to the merits of the advocacy, whereas the other is based on peripheral cues in the persuasion context that induce change in the absence of argument scrutiny. Importantly, changes induced via these different routes may appear quite similar immediately after message exposure, but are postulated to have quite different properties. For example, reconsider the data presented in Fig. 7.4. Two groups of subjects in this study ( Petty, Cacioppo, & Goldman, 1981) received a message from an expert source that contained strong arguments. For one of these groups the message was on a topic of high personal relevance, but for the other group the message was of low relevance. As indicated in Fig. 7.4, both of these groups showed equally favorable attitudes toward the issue after message exposure. However, according to the ELM, these two groups of subjects supposedly followed two very different routes to persuasion. Similarly, two groups of subjects in this study received a message from a low expertise source that contained weak arguments. Again, one group received the message under conditions of high relevance and the other received the message under conditions of low relevance. Both groups of subjects showed equally unfavorable attitudes toward the issue following message exposure. Again, however, the ELM postulates that even though the two groups adopted similar attitudes, the processes underlying persuasion were very different.

Although the attitudes in this study that were presumably induced by different processes do not appear any different upon immediate measurement, it should be possible to document the postulated consequences of the different routes to persuasion. In one study, for example, we validated the hypothesized difference in temporal persistence of attitudes induced via the two routes. Specifically, in this study ( Petty, Cacioppo, Haugtvedt, & Heesacker, 1986, Experiment 1) experimental subjects were exposed to the strong or weak senior comprehensive exam message under conditions of either high or low personal relevance. The strong message was always attributed to a prestigious and expert source, whereas the weak message was always attributed to a low prestige and inexpert source. Attitudes were measured immediately after message exposure and again 10 to 14 days later under the guise of a phone opinion survey. The control subjects were not exposed to either of the comprehensive exam messages but had their attitudes measured at the same times as the experimental subjects.

The results of this study are presented in Fig. 7.5. As expected, on the initial measure of attitudes, both the high- and low-relevance groups exposed to the positive communication (i.e., strong message from an expert source) did not differ from each other, but were more favorable than controls. Also, both the high- and low-relevance groups exposed to the negative communication (i.e., weak arguments from an inexpert source) did not differ from each other, but were less favorable than controls. More interestingly, the degree of personal relevance had an impact on whether or not those initial attitudes persisted. An analysis of attitudes of subjects in the high-relevance group showed only a main effect for message indicating that the attitudes of these subjects persisted over time. However, an analysis of attitudes of subjects in the low-relevance group revealed a Message × Time interaction. For these subjects, the initial difference between the two message conditions was no longer apparent at the delayed testing. In short, those subjects who formed their initial attitudes based on a careful consideration of issue-relevant arguments (high relevance) showed greater persistence of attitude change than those subjects whose attitudes were based primarily on the peripheral source cue (low relevance).2

Importantly, other persuasion studies also support the view that conditions that foster people's motivation or ability to engage in issue-relevant cognitive activity enhance the persistence of persuasion (see Cook & Flay, 1978; Petty, 1977, for reviews). In addition, the available literature is generally congenial to

2In general, attitudes based on issue-relevant thinking should persist longer than attitudes based on relatively simple cues. Two factors may produce exceptions to this principle, however. First, relative persistence may result from the repeated pairing of a peripheral cue with an advocacy. These attitudes, although persistent in a vacuum, would likely be highly susceptible to counterpropaganda because people would have great difficulty defending their positions if attacked with strong arguments. Second, enduring attitudes may be classicallly conditioned with one exposure if the cue (i.e., CS) is sufficiently intense. Persuasive communications are rarely associated with such powerful cues, however.
MULTIPLE ROLES FOR VARIABLES IN THE ELM

We have now seen that there are two fundamentally different routes to persuasion that have different antecedents and consequences. When the elaboration likelihood is high, argument processing dominates. When the elaboration likelihood is low, cue processing is more likely. One of the intriguing, but complicating aspects of the ELM, is that it holds that any one variable can serve in multiple roles. Thus, any variable may serve as a persuasive argument in some situations, act as a peripheral cue in others, and affect the extent or direction of argument elaboration in still other contexts. Importantly, the ELM specifies the general conditions under which variables operate in these different roles.

Multiple Effects of Source Attractiveness

Some examples should help to clarify the multiple roles that variables can play in persuasion according to the ELM. In our own research, for instance, we have observed that source attractiveness can affect attitudes in different ways. Based on the research presented thus far, it might seem reasonable to propose that source attractiveness serves as a peripheral cue, inducing attitude change in the absence of argument scrutiny (cf. Mills & Harvey, 1972). Indeed, we have found that the physical attractiveness of a message source can serve as a simple positive cue for people who characteristically tend to dislike thinking. In one study, for instance, people who were high and low in need for cognition (NC) were exposed to an advertisement for an electric typewriter (Haugtvedt et al., 1986, Experiment 2). One version of the ad featured two very attractive endorsers of the product and the other ad featured two unattractive endorsers. As expected, the results of this study showed that subjects who were low in NC were influenced by the attractiveness of the endorsers, but that subjects who were high in NC were not (see also, Cacioppo & Petty, 1984).

Importantly, we have also observed other effects for source attractiveness. In the study just described, the attractiveness of the endorsers was completely peripheral to the merits of the product (a typewriter). For some products, however, endorser attractiveness may provide information that is central to an evaluation of merit. For example, what if the product was shampoo rather than a typewriter? Now the physical appearance of the endorsers may provide visual testimony about the effectiveness of the product. In a study that was conceptually similar to the typewriter study, we exposed students to an advertisement for a new shampoo product that featured either two very attractive endorsers or two unattractive endorsers ( Petty & Cacioppo, 1980). To manipulate the students' motivation to elaborate the ads, some were told that the shampoo would be marketed only in Europe (low relevance), whereas others were told that the product would soon be marketed in the local area. In addition, the ads employed either strong verbal arguments or weak ones for the shampoo. First, this study replicated the Relevance × Argument quality interaction that we have observed.
in previous research—the verbal arguments had a greater impact on attitudes toward the product under high- than low-relevance conditions, providing some evidence for the view that the relevance manipulation was successful in varying motivation to elaborate the message. However, unlike the study with the type-writer product just described (Haugtvedt et al., 1986), the attractiveness of the endorsers in this study was an equally potent determinant of product attitudes under both high- and low-elaboration likelihood conditions. This is just what would be expected if attractiveness served as a peripheral cue under low-relevance conditions, but served as pertinent product evidence under high relevance.

Finally, we have observed a third effect for source attractiveness. In this study, the subjects were led to believe that they were evaluating the essays produced by students in an evening continuing education course (Puckett, Petty, Cacioppo, & Fisher, 1983). Each subject was given a folder containing a typed essay along with a card containing a picture and a brief description of the author of the essay. Two major variables were manipulated in the study: the social attractiveness of the essay author (attractive authors were more physically attractive and had more prestigious hobbies and backgrounds than unattractive authors) and the quality of the arguments in the essay (strong or weak). All essays argued that seniors should be required to pass a comprehensive exam in their major as a requirement for graduation. After examining the appropriate folder, subjects provided their own opinions about the topic of the essay. The major result was an Attractiveness × Argument quality interaction indicating that the arguments were more carefully processed when they were associated with the attractive than the unattractive sources.

In summary, in separate studies we have observed that source attractiveness, when irrelevant to the central merits of the issue or object under consideration, could serve as a simple peripheral cue (Haugtvedt et al., 1986) or it could affect argument processing (Puckett et al., 1983). When attractiveness was relevant to the central merits of an issue or object, however, it could serve as a persuasive argument (Petty & Cacioppo, 1980). Given this complication, it is crucial to specify the general conditions under which variables act in each of these distinct roles postulated for variables by the ELM. For source attractiveness, the results can be summarized as follows: Under conditions of low-elaboration likelihood, source attractiveness, if it has any impact at all, will serve as a peripheral cue. Under conditions of high-elaboration likelihood, source attractiveness will not serve as a simple cue but may instead serve as a persuasive argument if it provides information central to the merits of the attitude object. Finally, under conditions of moderate-elaboration likelihood, source attractiveness may affect the extent of argument elaboration.

When the elaboration likelihood is high (e.g., high personal relevance, high knowledge, simple message, no distractions, etc.), people typically know that they want and are able to evaluate the merits of the arguments presented, and they do so. Simple peripheral cues have relatively little impact on evaluations. When the elaboration likelihood is low (e.g., low personal relevance, low knowledge, complex message, many distractions), people know that they do not want and/or are not able to evaluate the merits of the arguments presented (or they do not even consider exerting effort to process the message). Thus, if any evaluation is formed, it is likely to be the result of relatively simple associations or inferences. When the elaboration likelihood is moderate (e.g., uncertain personal relevance, moderate knowledge, moderately complex message, a few distractions, etc.), however, people may be uncertain as to whether or not the message warrants or needs scrutiny and whether they are capable of providing this analysis. In these situations they may examine the persuasion context for indications of whether or not they should attempt to process the message.

The left side of Fig. 7.6 depicts the hypothesized effects of variables serving in multiple roles under conditions of low-, moderate-, and high-elaboration likelihood. Importantly, the ELM holds that many of the traditionally studied variables known to affect persuasion are capable of operating in multiple roles as depicted in the figure. Thus, a whole list of source (e.g., expertise), message (e.g., discrepancy), audience (e.g., presence of hecklers), and other variables may affect attitudes by modifying information processing under certain conditions, serving as peripheral cues in others, and acting as persuasive arguments in still other contexts. Importantly, even though the ELM holds open the possibility that variables can affect attitudes in multiple ways, the ELM specifies, in a general manner at least, the conditions under which each process is likely to operate.

Multiple Effects for Source Expertise

We are aware of only one experiment that has examined the multiple effects of a variable across three distinct levels of elaboration likelihood and has also included a manipulation of argument quality so that the predictions of the ELM could be examined. In this study (Moore, Hausknecht, & Thamodaran, 1986), the elaboration likelihood was manipulated by varying the speed of speech in radio commercials for two products. The overall design of the study was a 2 (Product class: disposable razor or calculator) × 2 (Argument quality: strong or weak) × 3 (Source credibility: high or low) × 3 (Message exposure rate: normal, fast, very fast) factorial. Subjects listened to one of the 24 target advertisements generated by this design and the critical ad was always embedded in the third position in a tape containing five commercials.

The target ads were initially recorded at an average speaking rate (145 words per minute) and then either presented at this rate (high-elaboration likelihood), compressed to 130% of normal (moderate-elaboration likelihood), or compressed to 160% of normal (low-elaboration likelihood). For the disposable razor, the high-credibility commercial associated the product with professional athletes, whereas the low-credibility commercial associated it with citizens from
Miami, Florida. Previous research had shown this manipulation (although conceptualized as attractiveness rather than credibility) to be effective as a peripheral cue for this product under conditions of low-elaboration likelihood (Petty, Cacioppo, & Schumann, 1983). For the calculator, the high-credibility commercial associated the information about the product with a professor of mathematics at Princeton University, whereas the low-credibility commercial associated it with a New Jersey high-school student. Finally, each commercial presented either strong or weak arguments for the product, which had been validated in pilot testing. Following exposure to one of the target ads, subjects listed their thoughts, provided their attitudes about the advertised brand, and answered a number of ancillary items.

Manipulation checks revealed that subjects viewed the athletes and the Princeton professor as both more expert and more attractive than the Miami citizens and the New Jersey high-school student. In addition, subjects rated the strong arguments as more persuasive than the weak ones. Of most interest, however, are the effects of the manipulations on attitudes toward the brand advertised in the commercial. In addition to significant main effects for credibility and argument strength (more favorable attitudes with greater credibility and argument strength), two interactions were obtained. The first interaction between argument strength and exposure rate indicated that argument quality was a less important determinant of attitudes as exposure rate increased (i.e., as the elaboration likelihood declined). In the right half of Fig. 7.6, the second three-way interaction between argument strength, exposure rate, and source credibility is depicted. To better understand this interaction, the authors conducted separate analyses at each exposure level. Under the fastest exposure conditions (lowest elaboration likelihood; top panel of graph), only a main effect for source credibility emerged, $F = 15.32, p < .0001$ (all Fs are based on 1 and 218 degrees of freedom). At the other extreme, under the normal exposure conditions (highest elaboration likelihood;

FIGURE 7.6. LEFT PANEL—Depiction of hypothesized multiple effects of a treatment under different elaboration likelihood conditions. Top panel shows the treatment serving as a cue under conditions of low elaboration likelihood. Middle panel shows the treatment affecting message processing under conditions of moderate elaboration likelihood. Bottom panel shows that the treatment has no effect under conditions of high elaboration likelihood. Instead, argument processing dominates (adapted from Petty & Cacioppo, 1984b). RIGHT PANEL—Effects of source credibility under different elaboration likelihood conditions. Top panel shows that credibility serves as a cue under conditions of low elaboration likelihood. Middle panel shows that credibility affects argument processing under conditions of moderate elaboration likelihood. Bottom panel shows that argument processing dominates under conditions of high elaboration likelihood and credibility effects are attenuated (data from Moore, Hausknecht, & Thamodaran, 1986).
the manipulation (cf. Petty & Brock, 1981), other studies have used manipulations that are more clearly affective and have achieved similar results. For example, Diliben and Brabender (1979) used the Velten (1968) mood induction procedure to create a positive mood prior to exposing subjects to a taped message either favoring or opposing motorcycle helmet laws. Only subjects who strongly favored the helmet laws were included in the study. The major result of this research was that the counterattitudinal (anti-helmet) message produced more attitude change in the direction advocated when subjects had previously read positive mood-inducing statements rather than neutral ones. Although this study appears to indicate that positive mood was associated with enhanced agreement with a counterattitudinal appeal, it is not clear why this effect occurred (see also, Biggers & Pryor, 1982).

Based on our presentation of the ELM earlier in this chapter, it should be quite clear what roles the model reserves for affect—the same as that accorded to other variables. Specifically, the ELM holds that affect may serve as a persuasive argument, it may serve as a peripheral cue, or it may affect the extent or direction of argument processing. In the remainder of this chapter we comment briefly on how affect might serve in each of these roles.

Affective Processes in the ELM

Now that we have outlined the major principles of the ELM in some detail, we can turn to an analysis of the role of affect in persuasion. The existing literature on attitude formation and change clearly indicates that affect can be instrumental in producing positive and negative evaluations. Many of the early studies were based on classical conditioning and reinforcement notions and demonstrated that the evaluations of individual words, slogans, and hypothetical people could be modified by pairing the attitude object with such affect producing stimuli as unpleasant odors (Razran, 1940) and temperatures (Griffith, 1970), the onset and offset of electric shock (Zanna, Kiesler, & Pilkonis, 1970), harsh sounds (Staats, Staats, & Crawford, 1962), and elating and depressing films (Gouaux, 1971).

The literature also suggested that reactions to a persuasive communication could be modified by pairing the message with an affect eliciting stimulus. For example, in an often cited study, Janis, Kaye, and Kirschner (1965) found that providing food (Pepsi and peanuts) to subjects while they read persuasive communications on various topics (e.g., the United States armed forces can be reduced to less than 85% of its present strength) increased attitude change over that found for a control group that received the message only; however, exposing subjects to a noxious odor did not significantly reduce persuasion. Although this study, and some others (e.g., Galizio & Hendrick, 1972), are open to the possibility that the manipulation worked because it distracted subjects from processing the cogent message arguments, and not because of any affective properties of
Fear as Information. Perhaps the most abundant literature dealing with affect and persuasion is that dedicated to the study of fear-arousing communications. The typical fear communication employed in social psychological research presents the noxious (fear-arousing) consequences resulting from specific behaviors (e.g., smoking, failure to wear seatbelts, etc.; see Beck & Frankel, 1981; Janis, 1967). Interestingly, recent reviews of this literature have concluded that the arousal of fear has no direct effect on attitude change, “but only an indirect effect via the cognitive appraisal of the severity of the threat” (Rogers, 1983, p. 165; see also, Leventhal, 1970). In short, the fear experienced by the message recipient is used to judge the validity of some of the information presented in the message.

The informational value of the fear induced by a persuasive message is shown in a study by Schwarz, Servay, and Kumpf (1985). The subjects in this study were male students who reported smoking more than 10 cigarettes per day. Thus, a message on smoking would have high personal relevance. In three experimental conditions, subjects were exposed to a moderately fear-arousing anti-smoking movie that included interviews with patients suffering or dying from lung cancer and other smoking-related diseases. The movie also included statistics and interviews with scientists on the dangers of smoking, as well as available therapies and methods for changing one’s smoking behavior. Following a misattribution procedure developed by Zanna and Cooper (1974), some subjects were provided the possibility of attributing their fear arousal to a source other than the persuasive message (and the danger of smoking). Specifically, they were administered a placebo pill that was said to have arousing side effects. In the other experimental conditions, subjects were either informed that the pill had no side effects or that it was tranquilizing. A group of control subjects did not take a pill or see the movie but did complete the dependent measures.

If fear can help people evaluate the danger of smoking when the experienced affect is attributed to the noxious consequences depicted in the film, then those people who can misattribute their fear to a presumably arousing pill should evaluate the danger of smoking as 1ess severe than when no side effects are expected. In addition, subjects who expect the pill to have a tranquilizing effect, should evaluate the danger of smoking to be even more severe. The results of the study by Schwarz and colleagues indicated that the group viewing the movie under the expectation of no side effects from the pill reported reduced intentions to smoke cigarettes in the future compared to control subjects, attesting to the effectiveness of the film under “normal” conditions. However, when the subjects could misattribute their feelings to the arousing pill, intentions to stop smoking were not different from controls. As expected, the film was most effective for the group that was led to believe that the pill would produce a tranquilizing effect. As Schwarz et al. (1985) conclude, “the results suggest that subjects utilized their perceived arousal symptoms along with their explanations of them in evaluating the severity of the dangers described in the message

... and support the notion that affective states may serve informational functions” (pp. 184–185).

Biased Information Processing. In the research on fear communications, the fear experienced by message recipients was directly relevant to evaluating the merits of some of the arguments in the message (e.g., the aversive consequences of smoking). However, irrelevant affective states may also be introduced under conditions of high-elaboration likelihood. Under these conditions, affect is expected to color or bias the ongoing information-processing activity. That is, when people are actively processing a message, affect can serve as a retrieval cue for material in memory influencing what comes to mind. In general, positive affect should enhance the accessibility of positive associations and negative affect should enhance the accessibility of negative associations (Bower, 1981; Clark & Isen, 1982; see Bargh, this volume; Crockett, this volume).

As an example of the rather general biasing properties of affect, consider a series of studies by Johnson and Tversky (1983). In this research, affect was manipulated by having subjects read newspaper stories (e.g., describing tragic or happy events) that produced either positive or negative affect. Following exposure to the stories, subjects were asked to provide frequency estimates of a number of negative occurrences (e.g., fatalities due to heart disease, floods) that were either related or unrelated to the newspaper accounts. The induction of negative affect produced a global increase in the estimated frequency of the negative events, but positive affect produced a global decrease in estimates of these events. In short, the induced affect colored subjects judgments (see Isen, 1984, for a review of the biasing effects of affect on cognition).

Evidence for irrelevant affect biasing information processing in a persuasion situation was obtained in a recent experiment by Schumann (1986). In this study, subjects were exposed to a commercial for a new pen in the context of either a liked or a disliked television show. The liked show induced a positive mood in subjects, whereas the negative show induced a negative mood. The likelihood of elaboration of the pen ad was manipulated by varying whether subjects were expecting to make a choice after the experiment about which brand of pen to select as a free gift (high-elaboration likelihood) or which brand of coffee (low-elaboration likelihood). Following exposure to the ads in the context of the television program, subjects listed their thoughts about the product and commercial. Although the nature of the program tended to modify evaluations of the pen under both low- and high-relevance conditions, the program had an impact on subjects’ thoughts only when the elaboration likelihood was high. For example,

\footnote{Importantly, fear should serve in this informational role primarily when the elaboration likelihood is high and the fear is relevant to an evaluation of the arguments presented. When the elaboration likelihood is low and/or the fear is irrelevant, it should serve in the other roles postulated for variables by the ELM.}
under high-relevance conditions, subjects generated more favorable thoughts about the brand and fewer negative thoughts about the commercial when the program induced mood was positive rather than negative. Under low relevance, thoughts were unaffected by the program.

Affect Under Conditions of Moderate-Elaboration Likelihood

When the elaboration likelihood is moderate, affect is expected to have an impact on the extent of elaboration and thus moderate the route to persuasion. In this regard, it is important to realize that affective experiences may differ in both valence (e.g., happiness vs. sadness) and intensity (e.g., sadness vs. anger). A common assumption of arousal theories is that moderate arousal is most conducive to optimal performance (cf. Yerkes & Dodson, 1908). Thus, both low and high intensity affective experiences could hinder or disrupt information processing (or any ongoing behavior; Easterbrook, 1959; Young, 1961) and thereby increase the likelihood of the peripheral over the central route to persuasion (see Cacioppo & Petty, in press, for further discussion).

According to the ELM, the valence of affective experiences may also moderate the route to persuasion. At present, however, research is somewhat inconsistent with regard to the effects of affect on the extent of thinking (Isen, 1984). More studies have examined positive than negative affect with some research indicating that positive affect leads to attempts to reduce the load on working memory and the complexity of decisions; other studies, however, have suggested that positive affect is associated with more creative problem solving and unique responses (Isen, Means, Patrick, & Nowicki, 1982). In one directly relevant investigation modeled after the Petty, Cacioppo, and Goldman (1981) study on persuasion described previously (Fig. 7.4), Worth and Mackie (in press) manipulated argument quality (strong or weak), source expertise (high or low), and whether subjects were exposed to a communication on "acid rain" while in a positive or neutral affective state. Subjects who experienced positive affect (winning $1) prior to the communication reported attitudes that were based less on argument quality and somewhat more on source expertise than subjects who were in a more neutral mood. This research, of course, is consistent with the view that affective states may moderate the route to persuasion.

Affect Under Conditions of Low-Elaboration Likelihood

According to the ELM, if people have relatively low motivation and ability to process a persuasive communication, then affect, to the extent that it has any effect on persuasion, should serve as a simple peripheral cue. As a cue, affect would induce change that was consistent with its direction—the presence of positive affect would lead to more favorable attitudes than if no affect was present, but the induction of negative affect would lead to more unfavorable attitudes than if no affect was present.

In addition to the studies on classical conditioning of attitudes noted previously, a number of other studies are also consistent with the view that affect can serve as a relatively simple cue in a persuasion context when the elaboration likelihood is low. For example, Gorn (1982) manipulated the relevance of an advertisement for a pen by telling some subjects that they were serving as consultants to an advertising agency and that they would later get to choose a pack of pens as a gift (high relevance), whereas other subjects were given little reason to process the target pen ad (low relevance). All subjects were exposed to two different ads for a pen. One ad was attribute-oriented and provided information relevant to evaluating the product (e.g., never smudges), whereas the other ad featured pleasant music rather than information. About 1 hour after ad exposure, subjects were given a choice between the two brands of advertised pens. When conditions were of low relevance, subjects favored the pen advertised with the pleasant music; however, under high-relevance conditions they favored the pen advertised with the informational campaign. In a conceptually similar study, Srull (1983) found that manipulated mood had a significant impact on the product evaluations of people who reported having little product-relevant knowledge, but did not have an impact on the evaluations of high-knowledge subjects. Thus, just as issue-irrelevant affect appears to operate as a simple cue when motivation to process is low (e.g., Gorn, 1982), it appears to operate similarly when ability (knowledge) is low (see also Batra & Ray, 1985).

SUMMARY

In this chapter we have presented a general conceptualization of the processes by which persuasive communications induce attitude change, called the Elaboration Likelihood Model, and we have highlighted the role of affect in this framework. In particular, we have seen that affect may have much in common with other variables known to modify attitudes. That is, we have argued that affect may change attitudes by the same processes as other more commonly studied variables such as source expertise or attractiveness.

We began this chapter by noting that the literature on attitude change is characterized by many seemingly conflicting results. The ELM attempts to place these many conflicting results under one conceptual umbrella by specifying the major processes underlying persuasion and indicating how many of the traditionally studied variables relate to these basic processes. We have argued that manipulations of affect are capable of modifying attitudes in rather complex ways. The ELM elucidates, in a general manner at least, the conditions under which these different effects and processes are likely to occur. In brief, we have argued that when people are highly motivated and able to process issue-relevant
arguments, affect will either serve as an argument if it is relevant to a determination of the central merits of the issue, or it will bias the ongoing process of information processing. When people lack the requisite motivation and/or ability to process issue-relevant arguments, affect may serve as a simple peripheral cue. Finally, when people are uncertain as to whether the message warrants or needs scrutiny, affect may influence the intensity of information processing. Research on the role of affect in persuasion is very sparse at present and it is not surprising that there are insufficient studies containing the appropriate conditions to truly test the ELM hypotheses regarding affect. Nevertheless, current research suggests that affect may be capable of modifying attitudes in the multiple ways postulated by the ELM.

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Mood Management: Using Entertainment to Full Advantage

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This chapter presents a theory of stimulus arrangement that projects, among other things, that individuals consume media entertainment purposively in efforts to manage moods. More specifically, the theory posits that individuals are capable of choosing materials for exposure that modify and regulate affective experiences and mood states in desirable ways, and that these individuals frequently and habitually make choices that actually serve the specified ends. The mechanics of the proposed purposive behavior are discussed in some detail. This discussion is followed by a brief summary of research showing that exposure to a variety of entertaining messages impacts affect and mood in a consistent and therefore predictable manner. Focus is on isolating some of the principal variables that mediate this impact. Thereafter, recent research evidence is aggregated to support the initially developed theoretical proposals that project mood management via specific message choices.

MOOD MANAGEMENT BY STIMULUS ARRANGEMENTS GENERALLY

A general theory of affect-dependent stimulus arrangements has been presented elsewhere (Zillmann & Bryant, 1985). Its main premises and propositions are outlined here only to make the subsequent discussion of entertainment choices as mood management more meaningful. The objective is to show that affect and mood are strongly influenced by stimulus environments, that these environments can be controlled, and that media presentations of any kind constitute artificial stimulus environments that are (a) easily controlled by individuals and (b) more...