

## Chapter 16

# Attitude change: the elaboration likelihood model of persuasion

Richard Petty & Pablo Briñol

### Introduction

Governments spend millions of euros, dollars, and yen each year in attempts to persuade people to take care of themselves and their environment, and to engage in safe and healthy physical and mental behaviours. Social influence, whether intended or not, is a major component of politics, as well as religion, psychotherapy, and day to day social interaction. Social influence through persuasion is the most prevalent as well as the most civil means of social control available to governments as well as to individuals.

The goal of this chapter is to explicate the primary psychological processes that are responsible for attitude change, and to outline a general framework for understanding these processes. An understanding of current thinking regarding the basic mechanisms by which persuasion is achieved should enhance the likelihood of selecting appropriate intervention strategies for social influence. The framework we use to organize and understand the literature on attitude change is called the elaboration likelihood model of persuasion (Petty & Cacioppo, 1981, 1986; Petty & Wegener, 1999).

### Overview of approaches to persuasion

Social scientists concerned with the study of human influence have focused on the concept of "attitudes." Attitudes refer to global and enduring favorable or unfavorable feelings about or evaluations of people (including oneself), groups, objects, or issues (Petty & Cacioppo, 1986). People are aware of most of their attitudes (explicit attitudes), but sometimes people come to have favorable or unfavorable predispositions of which they are unaware (implicit attitudes). In addition, sometimes people are aware of the causes of their attitudes, and sometimes they are not (Greenwald & Banaji, 1995; Wilson, Lindsey & Schooler, 2000).

Social psychologists have been concerned with the concepts of attitudes and attitude change for several reasons. First, attitudes are important for the acquisition of new knowledge since attitudes are a fundamental dimension along which people relate and assimilate incoming social information. Second, attitudes - whether implicit or explicit - often have a direct impact on people's behaviours. That is, attitudes affect how people think about and act with respect to objects and people. Third, if the attitudes of a large number of individuals change, then societal norms presumably will change as well. Normative pressure can produce behaviour change even if an individual's own attitudes do not change (Fishbein & Ajzen, 1975). Fourth, attitudes are of interest to study because they help us to understand instances of conflict between cognitive and affective states such as when emotional experiences lead people to be persuaded in situations that defy logic (e.g., cult

influence), or when people show inexplicable emotional resistance to appeals that are so obviously to their benefit to adopt (e.g., as in the case of people's refusal to wear seatbelts).

Over the past 50 years, researchers have developed numerous theories of attitude change and models of knowledge-attitude-behaviour relationships (see reviews by Eagly & Chaiken, 1993; Petty & Wegener, 1998). One of the earliest assumptions in theories of attitude change was that effective influence required a sequence of steps (e.g., exposure, attention, comprehension, and yielding) for the messages to be learned (e.g., McGuire, 1985). However, the existing evidence shows that message comprehension and learning can occur in the absence of attitude change, and that a person's attitudes can change without learning the specific information in the communication (Petty & Cacioppo, 1981). That is, a person might be able to comprehend all of the intended information perfectly, but not be persuaded either because the information is counter-argued, or seen as personally irrelevant. On the other hand, a person might get the information all wrong (scoring zero on a knowledge test), but think about it in a manner that produces the intended change. That is, misunderstanding the message can sometimes produce more change than correct understanding.

Cognitive response theory (Greenwald, 1968; Petty, Ostrom & Brock, 1981) was developed explicitly to account for the low correlation between message learning and persuasion observed in many studies, and for the processes responsible for yielding to messages. In contrast to the traditional view that acceptance of a message depended upon learning the message content, the cognitive response approach contends that persuasion depends on the extent to which individuals articulate and rehearse their own idiosyncratic thoughts to the information presented. The cognitive response perspective maintains that individuals are active participants in the persuasion process who attempt to relate message elements to their existing repertoires of information. According to this framework, an appeal that elicits issue-relevant thoughts that are primarily favorable toward a particular recommendation would be expected to produce agreement, whereas an appeal that elicits issue-relevant thoughts that are predominantly unfavorable toward the recommendation would be expected to be ineffective in achieving attitude change. Recent research has shown that in addition to generating mostly favorable thoughts, individuals also need to have confidence in the validity of their thoughts in order for attitudes to change (Petty & Briñol, 2000; Petty, Briñol & Tormala, in press)

### The elaboration likelihood model of persuasion

Although the cognitive response approach provided important insights into the persuasion process, it focused only on those situations in which people were active processors of the information provided to them. The theory did not account very well for persuasion in situations where people were not actively thinking about the message content. To correct this deficit, the Elaboration Likelihood Model of persuasion (ELM) was proposed. The ELM holds that persuasion can occur when thinking is high or low, but the processes and consequences of persuasion are different in each situation (Petty & Cacioppo, 1981; 1986; Petty & Wegener, 1999). More specifically, the ELM holds that the processes that occur during the "yielding" stage of influence can be thought of as emphasizing one of two relatively distinct "routes to persuasion" (see Figure 1). We discuss each route in turn.

<sup>1</sup> Although the ELM has implications for the other stages in McGuire's information processing sequence described earlier, it does not attempt to provide a general theory of information exposure, memory, and so on. For example, even though the ELM would expect people to seek out and attend to messages of high personal relevance more so than messages of low personal relevance, the ELM provides an incomplete account of exposure since variables unrelated to yielding processes could also determine message exposure. For example, people may seek messages for purposes of excitement or mood management (e.g., see Zinbarg & Bryant, in press).

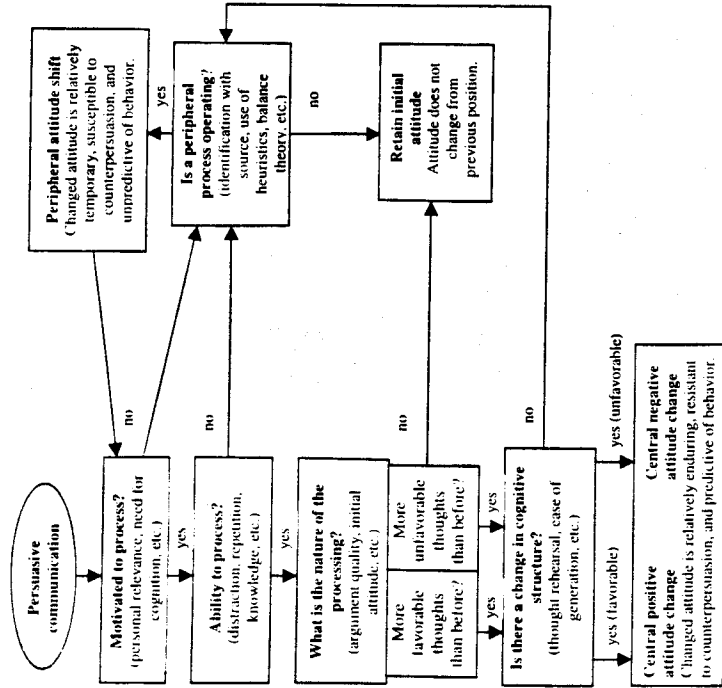


Figure 1: The Elaboration Likelihood Model

**Central and peripheral routes to persuasion**

The first, or *central route* to persuasion, involves effortful cognitive activity whereby a person draws upon prior experience and knowledge in order to scrutinize carefully all of the information relevant to determining the central merits of the position advocated (Petty, 1994; Petty & Cacioppo, 1986a).

Consistent with the cognitive response approach to persuasion, the message recipient under the central route is actively generating favorable and/or unfavorable thoughts in response to the persuasive communication. The goal of this cognitive effort is to determine if the position advocated has any merit. Of course, the particular kind of information that is perceived central to the merits of any particular issue can vary from person to person and from situation to situation. It is also important to note that just because the attitude change process in the central route involves considerable cognitive work, this does not mean that the attitude formed will be a rational or "accurate" one. The extensive information processing activity might be highly biased by factors such as one's prior attitude and knowledge, or one's current mood state. People engaged in this effortful cognitive activity have been characterized as engaging in "systematic" (Chaiken, Liberman & Eagly, 1989), "mindful" (Palmerino, Langer & McGillis, 1984), and "piecemeal" (Fiske & Pavelchak,

1986) processing (see Chaiken & Trope, 1999, for a discussion of various "dual route" models of social judgment).

In stark contrast to the central route to persuasion, the ELM holds that attitude change does not always require effortful evaluation of the information. Instead, when a person's motivation or ability to process the issue-relevant information is low, persuasion can occur by a *peripheral route* in which processes invoked by simple cues in the persuasion context influence attitudes. The peripheral route to persuasion recognizes that it is neither adaptive nor possible for people to exert considerable mental effort in thinking about all of the communications to which they are exposed. In order to function in contemporary society, people must sometimes act as "lazy organisms" (McGuire, 1969) or "cognitive misers" (Taylor, 1981), and use simpler means of evaluation. For example, various features of a communication (e.g., pleasant scenery in a TV commercial) can elicit an affective state (e.g., a good mood) that becomes associated with the advocated position (as in classical conditioning, Staats & Staats, 1958; see also Chapter 25 by Gordon Foxall, in this volume). Or, the source of a message can trigger a relatively simple inference or heuristic such as "experts are correct." (Chaiken, 1987) that a person can use to judge the message. Similarly, a person might simply count the arguments and reason that "if there are so many arguments it must be good." (Petty & Cacioppo, 1984)

Peripheral ways to change attitudes can be very powerful in the short term. The problem is that over time, moods dissipate, peoples' feelings about sources can change, and the cues can become dissociated from the message. These factors would then undermine the basis of the attitude. Laboratory research has shown that attitude changes based on peripheral cues tend to be less accessible, enduring, and resistant to subsequent attacking messages than attitudes based on careful processing of message arguments (Petty, Haugtvedt & Smith, 1995; see Petty & Krosnick, 1995, for an extensive discussion of the determinants of attitude strength)<sup>2</sup>.

**Persuasion processes in the elaboration likelihood model**

*Variables affecting the amount of thinking*

Our discussion of the central and peripheral routes to persuasion has highlighted two basic processes of attitude change, but the depiction of the ELM in Figure 1 outlines more specific roles that variables can play in persuasion situations. That is, some variables affect a person's general *motivation* to think about a message. Perhaps the most important determinant of interest and motivation to process the message is the perceived *personal relevance* of the communication. Literature has referred to this term as *issue-involvement* (e.g., Zimbardo, 1960), *personal involvement* (Thomsen, Borgida & Lavine, 1995), *vested interest* (Crano, 1995), *attitude importance* (e.g., Bominger, Krosnick, Berent & Fabrigar, 1995), and *ego-involvement* (Sherif, Sherif & Nebergall, 1965). Although the terms are different, the basic notion is that there are some situations in which some aspect of the persuasive message or issue is attached to some aspect of the message recipient's "self" making the message personally relevant. Linking the message to almost any aspect of the self such as one's values, one's outcomes, one's self-conception, one's identity, and so forth can enhance self-relevance (Petty & Cacioppo, 1990; Petty et al., 1992; Fleming & Petty, 2000).

<sup>2</sup> For expository purposes we have emphasized the distinction between the central and the peripheral routes to persuasion. That is, we have focused on the prototypical processes at the end points of the elaboration likelihood continuum. In most persuasion situations (which fall somewhere along this continuum), some combination of central and peripheral processes are likely to have an impact on attitudes.

When a relatively new issue is made more personally relevant by linking it to the self in some way, people engage in greater processing of information on that issue. This enhanced thinking leads to more persuasion if the arguments presented are cogent, but to reduced persuasion if the arguments presented are specious. In one study (Petty & Cacioppo, 1979b), for example, undergraduates were told that their own university (high personal involvement) or a distant university (low personal involvement) was considering implementing a policy requiring all seniors to pass an exam in their major as a prerequisite to graduation. The students then listened to a radio editorial that presented either strong or weak arguments in favor of the exam policy. As predicted by the ELM, when the speaker advocated that the exams should be instituted at the students' own campus, the quality of the arguments in the message had a greater impact on attitudes than when the speaker advocated that the exams should be instituted at a distant institution. That is, as the personal relevance of the message increased, strong arguments were more persuasive, but weak arguments were less persuasive than in the low relevance conditions (see left panel of Figure 1). In addition, an analysis of the thoughts that the students listed after the message suggested that the more extreme attitudes were accompanied by more extreme thoughts. When the arguments were strong, students exposed to the high relevance message produced more than twice as many favorable thoughts as low relevance students, and when the arguments were weak, high relevance students generated almost twice as many unfavorable thoughts as students exposed to the low relevance version.

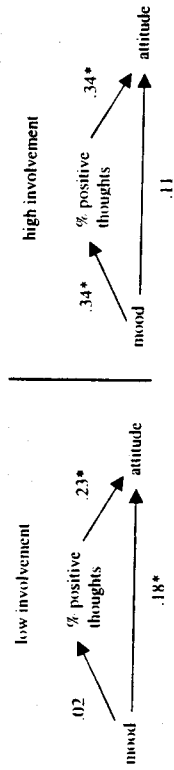


Figure 2

In this study, the message was made personally relevant by linking it to outcomes that would affect the person. According to the ELM, people would also be more likely to think about messages that are framed as relevant to values that they hold dear (e.g., "this message is relevant to environmental conservation") or to identities that are important to them (e.g., "this message is aimed at women," see Petty, Wheeler & Bizer, 2000, for a review). For example, if a person is the type of person who is attuned to maintaining a favorable social image, framing the message as dealing with image can increase message processing (DeBono & Packer, 1991; Snyder & DeBono, 1989).

In an interesting demonstration of the power of perceived self-relevance, Burnkrant & Unnava, 1989 found that simply changing the pronouns in a message from the third person (e.g., "one" or "he and she") to the second person (i.e., "you") was sufficient to increase personal involvement and processing of the message arguments. That is, when the messages contained the self-relevant pronouns, strong arguments were more persuasive and weak arguments were less persuasive than when third person pronouns were used.

Although increasing the perceived personal relevance of a message is an important way to increase thinking (see Petty, Cacioppo & Haugtvedt, 1992, for a review), it is not the only one. For example, several studies have shown that when a person is not normally motivated to think about the message arguments, more thinking can be provoked by summarizing the major arguments as *questions* rather than as *assertions* (Howard, 1990; Petty, Cacioppo & Hessecker, 1981; Swasy & Munch, 1985). Thus, if an argument in a radio commercial was followed by a question (Isn't this candidate the best one?) rather than

by an assertion (This candidate is the best one), greater processing of the arguments would result. Greater thinking about a message can also be induced by having the individual arguments presented by multiple sources rather than just one (Harkins & Petty, 1981; Moore & Reardon, 1987). The multiple source effect is attenuated if people suspect that the multiple sources are not providing independent analyses of the issue (Harkins & Petty, 1987; Wilder, 1990). When some feature of the message is unexpected, processing can be increased. For example, if a newspaper headline implied that many people favored something that the message recipient disliked or that few people favored something the recipient liked, message scrutiny can be increased over cases in which the headline implied that few favored what the recipient disliked or many favored what the recipient liked (Baker & Petty, 1994). Of course, the enhanced thinking evoked by rhetorical questions, multiple sources, or surprising headlines will aid persuasion only if the arguments in the communication are subjectively cogent. The enhanced thinking will be detrimental to persuasion if the arguments are found to be specious.

As outlined in Figure 1, having the necessary motivation to process a message is not sufficient for the central route to persuasion to occur. People must also have the ability to process a message. For example, a complex or long message might require more than one exposure for maximal processing, even if the recipient was highly motivated to think about it. The increased processing with multiple exposures should lead to more favorable thoughts and attitudes if the arguments are strong, but to more counterarguments and less favorable attitudes if the arguments are weak (Cacioppo & Petty, 1989). Of course, repetition is just one variable that has an impact on a person's ability to think about a message. For example, if a message is accompanied by distraction (Petty, Wells & Brock, 1976) or if the speaker talks too fast (Smith & Shaffer, 1991), thinking about the message will be disrupted. When strong arguments are presented, disrupting thinking should diminish persuasion, but when weak arguments are presented, disrupting thinking should enhance persuasion by reducing counter-arguing (see Petty & Brock, 1981). Different media sources have an impact on peoples' ability to think about the message. Specifically, people are generally better able to process messages that appear in the print media than those that are controlled externally (e.g., radio and television; Chaiken & Eagly, 1976; Wright, 1981).

### Objective versus biased thinking

In addition to influencing a person's general motivation or ability to think about a message, Figure 1 indicates that variables that also have an impact on persuasion by influencing the nature of the thoughts that come to mind. That is, some features of the persuasion situation increase the likelihood of favorable thoughts being elicited, but others increase the likelihood of unfavorable thoughts coming to mind. Although the subjective cogency of the arguments used in a message is a prime determinant of whether favorable or unfavorable thoughts are elicited when message thinking is high, other variables can also be influential in determining whether favorable or unfavorable thoughts predominate (Petty & Cacioppo, 1990). For example, instilling "reactance" in message recipients by telling them that they have no choice but to be persuaded on an important issue *motivates* counter-arguing even when the arguments used are strong (Brehm, 1966; Petty & Cacioppo, 1979a). Thus, biased thinking often reduces the impact of message quality on persuasion (Petty & Cacioppo, 1986).

Similarly, people who possess accessible attitudes bolstered by considerable attitude-congruent knowledge are better able to defend their attitudes than those who have inaccessible attitudes or attitudes with a minimal underlying foundation (Fazio & Williams, 1986; Wood, 1982).

In general, anytime a message takes a position opposed to one's attitudes, people will be biased against it. And, when a message takes a position in favor of one's attitudes, people will be biased in favor of it. Similarly, if a message is perceived as counter to one's outcomes, or values, or identity, people will be biased against it, but if it is perceived to be supportive of one's outcomes, values, or identity, people will be biased in favor of it. To be clear, when a message is framed as simply relevant to one's outcomes, values, or identity, the extent of information processing is affected, but when a message takes a particular position with respect to one's outcomes, values, or identity, the valence of the processing can be affected (Petty & Cacioppo, 1990).

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

### Confidence in thinking

As we noted earlier, once a person has generated thoughts, it matters whether the person has confidence in the thoughts or not (Petty, Briñol & Tormala, in press). When confidence is high, the thoughts generated have a large impact on attitudes, but when confidence is low, the thoughts generated have a small impact on attitudes. Work on thought confidence is in its infancy, but already a number of variables have been shown to influence confidence. For example, when thoughts come to mind easily, people have more confidence in them than when it feels difficult to generate the thoughts. In one study on this "ease of retrieval effect,"

Tormala, Petty & Briñol, 2001 asked participants to list either two (easy) or ten (difficult) positive thoughts about a message under high or low elaboration conditions. Under high elaboration conditions, people were more confident in their favorable thoughts when they generated two rather than ten thoughts, and were thus more persuaded when they generated two rather than ten thoughts. Under low elaboration conditions, people were more persuaded when they generated ten rather than two thoughts consistent with the use of a numerosity heuristic.

### Multiple roles for variables in the elaboration likelihood model

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

come to mind, or affect structural properties of the thoughts such as how much confidence people have in them (see Figure 1).

If any one variable can influence persuasion by several means, it becomes critical to identify the general conditions under which the variable acts in each of the different roles or the ELM becomes descriptive rather than predictive (cf., Stiff, 1986). The ELM holds that when the elaboration likelihood is high (such as when perceived personal relevance is high), a variable can serve as an argument if it is relevant to the merits of the issue, the variable can determine the nature of the ongoing information processing activity (e.g., it might bias the ongoing thinking), or the variable can influence structural properties of the cognitive responses that occur. On the other hand, when the elaboration likelihood is low (e.g., low personal relevance), evaluations are likely to be the result of relatively simple associations or inferences based on salient cues. Finally, when the elaboration likelihood is moderate (e.g., uncertain personal relevance), people may examine the persuasion context for indications (e.g., is the source credible?) of whether or not they are interested in or should process the message. A few examples should help to clarify the multiple roles that a variable can have in different situations.

### Multiple roles for source factors

Consider first the multiple processes by which source factors, such as expertise or attractiveness, can have an impact on persuasion (see Petty & Cacioppo, 1984b). In various studies, source factors have been found to influence persuasion by serving as a peripheral cue when the likelihood of thinking was low. For example, when the personal relevance of a message was low, highly expert sources produced more persuasion than sources of low expertise regardless of the quality of the arguments they presented (Petty, Cacioppo & Goldman, 1981; see also Chaiken, 1980). On the other hand, in several studies in which the elaboration likelihood was moderate, the source factors of expertise and attractiveness affected how much thinking people did about the message (Heesacker, Petty & Cacioppo, 1983; Moore, Hauskecht & Thumodaran, 1986; Puckett, Petty, Cacioppo & Fisher, 1983).

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

Finally, under high elaboration conditions, source factors have been found to influence persuasion by affecting the confidence people have in the validity of the thoughts they have in response to the message. For example, in one study (Briñol, Petty & Tormala, 2000), participants were led to believe that the strong message they just read about was written either by a government environmental agency (high credibility) or by the detergent manufacturer (low credibility source). The credibility of the source affected the confidence with which participants hold the thoughts in response to the message. Specifically, participants reported more confidence in the validity of their cognitive responses when the message was said to have come from a high rather than a low credibility source. Consequently, when the source was credible, people's favorable thoughts were relied upon more than when the source lacked credibility – producing more favorable attitudes.

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

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

### Multiple roles for message factors

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

The mere number of arguments is only one of the message factors that can influence persuasion by serving in different roles in different situations (for a review, see Petty & Wegener, 1998). To take one more example, consider the complexity of the message (e.g., difficult vocabulary, sentence structure, etc.). Such complexity could serve as a simple cue when the elaboration likelihood is low. For example, a person might use the heuristic, "the person doesn't seem to know what he is talking about, therefore I can't agree." Alternatively, the person might reason that "the person seems to know a lot about this, therefore the position is good." Whether one inference or the other is reached might depend on factors such as the person's self-esteem or perceived knowledge on the issue. Past studies on the organization of a message indirectly supports the idea that message variables can influence attitude change by affecting attributions of source credibility. For example, McCroskey and Mehrley's, 1969 review reports that a disorganized message generally lowers the credibility of a highly credible source, whereas an organized message increases the credibility of a moderately credible and possibly a less credible source. Other message factors might similarly affect persuasion because of the simple inferences they induce about the message source.

When the elaboration likelihood is not constrained to be high or low, complexity might affect the amount of thinking that occurs. That is, some people (e.g., those high in need for cognition; Cacioppo & Petty, 1982), might be challenged by a message that seems complex, but other individuals (e.g., those low in need for cognition), might avoid processing a message that is perceived as difficult (Evans & Petty, 1998). Finally, under high elaboration conditions, other roles for message complexity are possible. In one study, for instance, it was shown that under high elaboration conditions complex information undermined confidence in people's thoughts. In this study (Brinol & Petty, 2000), participants listed their thoughts in response to several strong persuasive arguments on a

topic. Following this, half of the participants were exposed to additional arguments on the issue that were difficult to understand. As a result of these new complex arguments, people lost confidence in their favorable thoughts to the initial strong (and understandable) message thereby reducing its persuasiveness relative to the group that did not receive additional complex arguments.

### Multiple roles for recipient factors

According to the ELM, recipient factors can serve in the same multiple roles as source and message factors. Consider the impact that a person's mood state has on persuasion. According to the ELM, when the likelihood of elaboration is relatively low, a person's mood should impact attitudes by a peripheral process. Consistent with this view, a number of studies have shown that the non-thoughtful "classical conditioning" of affect to an attitude object occurs more easily when the likelihood of thinking is low (e.g., Cacioppo et al., 1992; Gorn, 1982; Priester, Cacioppo & Petty, 1996) (it is worth to note here that even at the low extreme of the elaboration continuum some mechanism, such as classical conditioning, might require more cognitive effort than others, such as mere exposure or self-perception inferences). Also under low elaboration conditions, affective states have been postulated to influence attitudes by a simple inference process in which misattribution of the cause of the mood state to the persuasive message or to the attitude object occurs (e.g., I must feel good because I like or agree with the message advocacy; see Petty & Cacioppo, 1983; Schwarz, 1990).

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

When the elaboration likelihood is high, the ELM holds that affective states can influence attitudes by influencing the nature of the thoughts that come to mind. Thus, Petty, Schumann, Richman & Strathman, 1993 found that mood introduced a positive or negative bias to the thoughts generated in response to the persuasive message for those participants highly involved.

One way in which mood biases thoughts is by affecting how likely people think the consequences mentioned in the message are. Specifically, when in a good mood, people tend to believe that any positive consequences mentioned in the communication are more likely, but any negative consequences are less likely. The opposite occurs for a negative mood (e.g., Johnson & Tversky, 1983). Thus, positively framed arguments (e.g., if you stop smoking, you will live longer) are more effective when people are in a positive rather than a negative mood, but negatively framed arguments (if you don't stop smoking you'll die sooner) are more effective in a negative than in a positive mood – at least for people who are carefully considering the message arguments (Wegener, Petty & Klein, 1994). Research suggests that the effects of moods on perceived likelihoods are quite specific such that sad moods especially increase the likelihood of sad consequences and angering states especially increase the likelihood of angering consequences (DeSteno, Petty, Rucker & Wegener, 2000); see also Chapter 18 of Antony Manstead in this volume).

In addition to biasing thoughts, recent research has shown that mood states can also affect the confidence people have in their thoughts when the elaboration likelihood is high. In fact, in a series of studies, Briñol and Petty, 2000 found that high need for cognition individuals made to feel sad after message exposure came to have less confidence in the thoughts they generated during message exposure than people who were made to feel happy after message exposure. When the message was strong and elicited mostly favorable thoughts, causing doubt in these thoughts (via sad mood) led to reduced persuasion relative to causing confidence (via happy mood). But, when the message was weak and elicited mostly unfavorable thoughts, causing doubt in these thoughts led to more persuasion relative to causing confidence. In contrast, individuals low in motivation to elaborate (i.e., low need for cognition) showed more persuasion with happy than sad mood, regardless of argument quality. These individuals simply generalized their current mood state to the message.

Finally, it is important to note that the effects we have outlined for mood under different elaboration conditions assume that moods are not so salient that they are perceived as biasing. When moods are made salient, and people perceive a possible biasing impact, they will often attempt to correct their judgments for the biasing impact of the emotional state. This can cause judgments to move in a direction opposite to people's intuitive theory of bias when people overestimate this bias and over-correct for its effect (e.g., Berkowitz et al., 2000; DeSteno et al., 2000; Ottati & Isbell, 1996; Wegener & Petty, 1997; 2001).

### Consequences of multiple roles

Although we have only provided illustrative examples of particular source, message, and recipient variables, the accumulated studies support the ELM notion that variables can serve in different roles in different situations (see Petty & Wegener, 1998). Because any one variable can produce persuasion in multiple ways, it is important to understand the process by which the variable has influenced a person's attitude (see Figure 1). This is important because the process by which an attitude is formed or changed has considerable consequences for the strength of the attitude. For example, our discussion of the two routes to persuasion suggests that if a good mood has produced persuasion by serving as a simple cue under low elaboration conditions, the attitude induced will be less accessible, less persistent, less resistant, and less predictive of behaviour than if a good mood produced the same amount of persuasion, but worked by increasing positive thoughts to the message arguments under high elaboration conditions.

### Conclusions

We now know that social influence is a complex, though explicable process. We know that the extent and nature of a person's cognitive responses to external information may be more important than the information itself. We know that attitudes can be changed in different ways, such as central versus peripheral routes, and that some attitude changes are more accessible, stable, resistant, and predictive of behaviour than others. We also know that even apparently simple variables such as how likable a source is or what mood a person is in can produce persuasion by very different processes in different situations. A fundamental understanding of the basic mechanisms of persuasion can be useful in a wide variety of social contexts.

### Notes

Richard E. Petty, Department of Psychology, Ohio State University, 238 Townshend Hall, 1885 Neil Avenue Mall, Columbus OH 43210-1122, USA.  
E-mail: Petty,1@osu.edu

Pablo Briñol, Universidad Autónoma de Madrid, Spain.

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