

# Increasing the Effectiveness of Communications to Consumers: Recommendations Based on Elaboration Likelihood and Attitude Certainty Perspectives

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*This article makes suggestions about how to effectively communicate the risks associated with products and services to consumers. The authors realize this goal by drawing on several rich streams of literature on the psychology of persuasion. Specifically, they provide guidelines for developing effective communications based on the elaboration likelihood model of persuasion and integrating emerging research on attitude certainty. On the basis of these research areas, the authors further discuss how to diagnose why a particular communication may not have proved effective. Finally, they provide examples to help illustrate the actual steps policy makers and others might take in developing communications to warn or inform consumers.*

**A**n important challenge for policy makers is designing effective methods to communicate health risks and developing the best methods to promote consumer awareness of the potential dangers of various products (e.g., cigarettes). Indeed, a great deal of time, effort, and money is invested each year in the creation of public service announcements (PSAs).<sup>1</sup> For example, in 1998, the U.S. Congress allocated \$1 billion to the Office of National Drug Control Policy for mass-media prevention campaigns and evaluations. These PSAs were designed to inform consumers about the potential dangers of various substances, such as tobacco and alcohol, and maladaptive behaviors, such as engaging in unprotected sex and not wearing a seat-belt. Furthermore, for alcohol and cigarettes, there have been considerable efforts in the development of package warning labels to alert consumers to the health risks that accompany the use of these products. The goal of these efforts is to help consumers help themselves by providing them with a reasonable understanding of the associated risks of these products and behaviors.

Perhaps one of the most important goals lying at the intersection of public policy and marketing is the development of effective methods of communicating risk information to consumers that will produce more healthful behaviors. This is not a simple task, and efforts to communicate risk information to consumers have given way to mixed results. Some

streams of research have shown that health communications in advertising have significantly influenced consumers' awareness of health risks and health-relevant attitudes and behaviors. For example, Ippolito and Mathios (1991) discuss how advertising the link between fiber intake and the reduced risk of colon cancer increases consumers' knowledge of the health benefits of fiber intake. In addition, analysis of the truth<sup>tm</sup> campaign demonstrated that it was positively correlated with reductions in the smoking behavior of youths and young adults (Thrasher et al. 2004). Unfortunately, scholars have also noted that the effectiveness of other campaigns has been more modest. For example, Hankin, Sloan, and Sokol (1998) conclude that the utility of warning labels in reducing alcohol consumption during pregnancy was only slightly effective, and a review of the effectiveness of several state antismoking advertising campaigns found that several campaigns had mixed or even ineffective results (Pechmann and Reibling 2000). In recognition of the challenges in communicating risk information and in changing consumers' attitudes and behaviors (e.g., Stewart and Martin 1994), researchers have made efforts to prescribe methods for designing optimal communication strategies. For example, Bettman, Payne, and Staelin (1986) provide general guidelines for developing warning labels to deliver risk information.

## Overview

In this article, we tackle designing effective PSAs and warning labels by drawing on the rich literature on the psychology of persuasion. Essentially, PSAs and warning labels are persuasive communications that are designed to alert consumers to risks associated with using a particular product or substance or engaging in a particular behavior. These are messages designed to change people's specific beliefs (e.g., safe or unsafe) or more global attitudes (e.g., good or bad) about a particular product (e.g., cigarettes) or action (wear-

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<sup>1</sup>We use the term PSA in a general way to reflect health or risk communications directed at educating consumers.

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ing seatbelts) and, ultimately, their behaviors. As such, we believe that such messages can draw on the extensive and well-developed literature on persuasion and attitude change to enhance their effectiveness. In particular, the goal of this article is to focus on how to create effective public policy communications by applying the elaboration likelihood model (ELM) of persuasion (Petty and Cacioppo 1986b) and by integrating more recent developments on attitude certainty (Rucker and Petty 2004; Tormala and Petty 2002).

The ELM of persuasion (Petty and Cacioppo 1981, 1986b) was developed as an organizing framework for understanding attitude change and persuasion, though it can be applied to nearly any judgment (Petty and Wegener 1999).<sup>2</sup> The ELM explains how persuasion operates by focusing on two routes to persuasion: a relatively thoughtful route in which people focus on scrutiny of the issue-relevant information presented (called the “central route”) and a less thoughtful route in which attitudes can be changed as a result of simple associations and cues (called the “peripheral route”). An understanding of each of these routes is critical to knowing how a given variable (e.g., source expertise, audience mood) will influence attitudes. Furthermore, as we discuss subsequently, the route taken has important consequences for the resulting attitudes. This theory addresses the production of initial changes in attitudes, and it distinguishes attitude changes that are likely to be more consequential from those that are likely to be less consequential. Consequential attitudes are typically held with greater confidence or certainty than those that are less impactful, and thus we also discuss a growing literature on the creation of attitudes that are held with certainty (Gross, Holtz, and Miller 1995; Rucker and Petty 2004, 2006).

Our analysis is divided into three parts. First, on the basis of the ELM, we provide a series of recommendations about how to design effective risk communications. We focus our recommendations and analyses on PSAs and warning messages related to alcohol and cigarette use. Although warning messages might be used to refer to both simple labels on products (e.g., Danger!) and more substantive information contained on a package or in a television spot (e.g., health risks associated with smoking), we restrict our analysis to the latter because these types of message are most likely to benefit from an elaboration perspective. Second, we discuss why such messages may be ineffective in changing consumer attitudes or evaluations of risks. Third, we provide concrete examples of how the effectiveness of various communications might be experimentally tested following the guidelines provided.

## **Developing Effective Risk Communications: Input and Guidance from the ELM**

We suggest that policy makers follow a series of steps, which we outline in Figure 1. First, we argue that it is essential to consider whether the audience is disposed to scruti-

nize the information carefully or inclined to process the message in a more peripheral manner (Step 1). Second, it is important to evaluate message characteristics and, when possible, to design the message to contain information that will be persuasive on the basis of the audience’s elaboration level (Step 2). Third, it is necessary to consider whether the goal of the message is to create an enduring attitude change or simply an immediate attitude change (Step 3). Fourth, it is important to evaluate fit among audience elaboration likelihood, message characteristics, and message objectives both conceptually (Step 4) and empirically (Step 5). Finally, if there is a discrepancy between the audience elaboration level and the message characteristics or the goals of the message, it is necessary to consider how to remedy this mismatch (Step 6). We discuss each of the steps in greater detail.

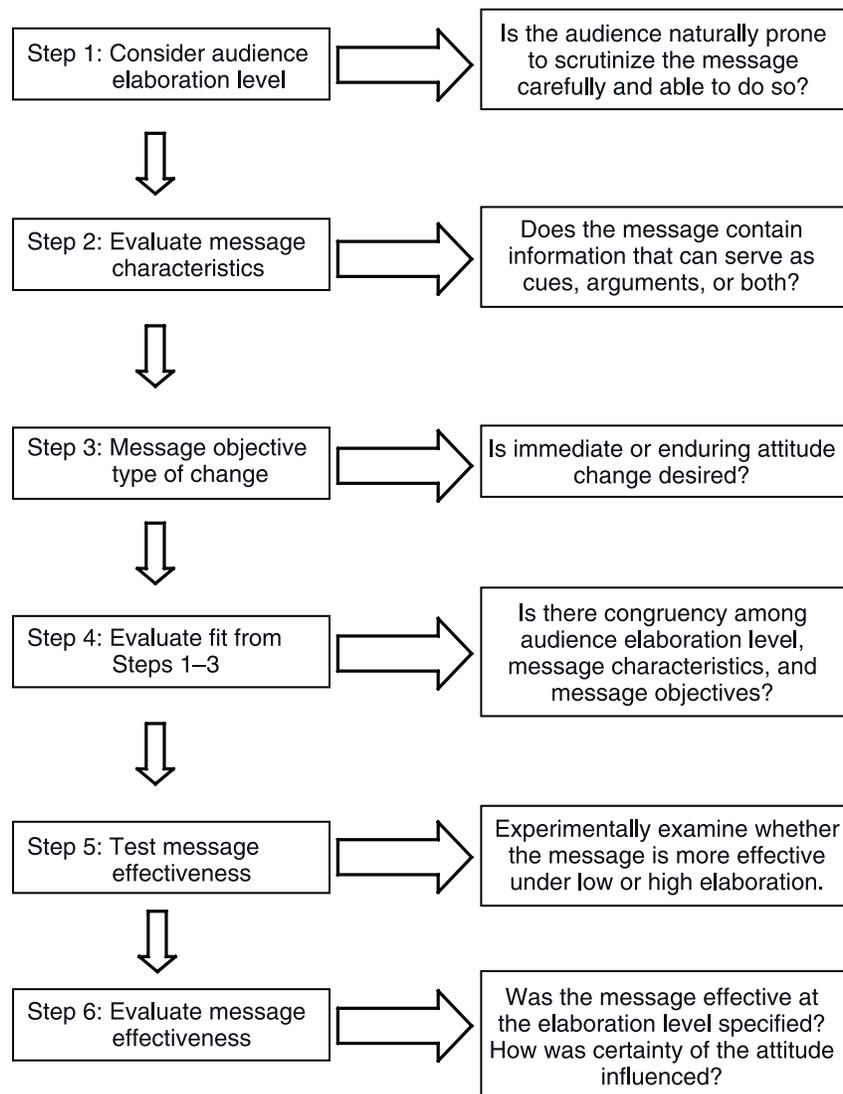
### **Step 1: Consider Audience Elaboration Level**

Step 1 in our approach is to consider whether the recipients of the message are likely to process and attend to a risk communication carefully or to process the message more peripherally. For example, consider a PSA about smoking that features a celebrity explaining why smoking is unhealthy. In this situation, some consumers might carefully attend to and think about the information being presented (i.e., negative health consequences of smoking), whereas others might simply note the celebrity and the message position (i.e., a celebrity said smoking was bad) without carefully considering the actual health risks associated with smoking.

According to the ELM (Petty and Cacioppo 1986b), the amount of thinking or “elaboration” put forth by an audience can be placed along a continuum. Where people fall along this continuum can be determined by considering their *motivation* and *ability* to process the available information. Specifically, if both motivation and ability to process a message are present, elaboration is likely to be high; however, as either motivation or ability decreases, elaboration is likely to be low. Consumers’ motivations can be influenced by several variables, such as the perceived personal relevance of an issue (Petty and Cacioppo 1979b), general enjoyment of thinking (Cacioppo et al. 1996; Haugtvedt, Petty, and Cacioppo 1992), and being personally responsible for processing the message (Petty, Harkins, and Williams 1980). Regarding ability, a person must have the resources to understand and attend to the information. Several factors can influence a person’s ability to process a message, such as a his or her level of actual or perceived knowledge (e.g., Burton, Biswas, and Netemeyer 1994; Wood and Lynch 2002; for a review, see Wood, Rhodes, and Biek 1995), the amount of distraction in the environment (Petty, Wells, and Brock 1976), intelligence (McGuire 1968; Rhodes and Wood 1992), and the number of message repetitions (Cacioppo and Petty 1979).

Although it might not be possible to consider every factor that is likely to influence the elaboration level of the audience, this is not required. This first step is to make a rough estimate of the likely elaboration level of the audience. As we discuss in Step 5, whether the predicted elaboration level of the audience is correct is something that can be examined empirically. Thus, even if a factor that may significantly influence the audience elaboration level has been over-

<sup>2</sup>Similar predictions can be derived from the heuristic-systematic model (Chaiken, Liberman, and Eagly 1989; for some distinctions, see Eagly and Chaiken 1993; Petty and Wegener 1998, 1999).

**Figure 1. Recommended Steps in Developing Risk Communications for Consumers**

looked, this level can be uncovered in experimental tests of the message.

## Step 2: Design and Evaluate Message Characteristics

Step 2 is to consider what information will be conveyed in the message and whether this information will be processed as strong arguments, powerful peripheral cues, or both. For example, a warning label placed on a cigarette package may feature a prominent source (e.g., the surgeon general) and information about the hazards of smoking (i.e., risk of cancer). The extent to which people engage in processing will determine whether they are influenced by their analysis of the available information as arguments or as simple cues. In particular, the ELM specifies that there are two routes to persuasion: central and peripheral. The route taken depends on people's elaboration level, which is determined by motivation and ability, and elaboration level can be used to

understand how people deal with the persuasive message, that is, by analyzing the information as arguments or by being influenced by simple associative and cue processes.

### *The Central Route*

When elaboration is high, people tend to engage in central route processing (Petty and Cacioppo 1986b). When taking the central route, according to the ELM, people examine *all* the information presented (as well as information generated internally) in an attempt to uncover all of the reasons in support of the proposal (e.g., avoiding or moderating alcohol consumption) and the substantive merits of these reasons. When this occurs, people's attitudes following exposure to a message are determined primarily by people's cognitive responses to or thoughts about the information presented. Specifically, people think about the available information (whether it is part of the message, the source, or their own internal state) and assess whether the information provides

cogent support for the proposal. If people generate predominantly positive issue-relevant thoughts as a result of scrutinizing the available information, a positive attitude will follow; if people generate predominantly negative thoughts, a negative attitude will result; and if people generate a mix of positive and negative thoughts, a moderate attitude will result (see Petty, Ostrom, and Brock 1981). Furthermore, the greater confidence people have in the thoughts generated under central route processing, the more these thoughts will determine their attitudes (Briñol, Petty, and Tormala 2004; Petty, Briñol, and Tormala 2002).

### **The Peripheral Route**

Often, people lack either the motivation or the ability to process information. Indeed, imagine the feat it would require for people to scrutinize carefully each product they consider during a shopping trip or each and every commercial presented during nightly television viewing. For this reason, if either motivation or ability is lacking, this leads to low elaboration, and if people are influenced at all, it will be by the peripheral route. In the peripheral route, participants' attitudes are informed primarily by the use of simple cues or heuristics. For example, participants might agree with a message on the basis of whether the source of the message is an expert (Chaiken 1980), the incidental affect associated with a message or product (i.e., classical conditioning; Razran 1940; Staats and Staats 1958), or how many arguments are presented (Petty and Cacioppo 1984). These simple cues can be extremely effective in changing attitudes and guiding behavior, at least in the short run.

In summary, Step 2 focuses on considering what kinds of information will be built into the persuasive message and whether it can serve as arguments, cues, or both.<sup>3</sup> In some cases, this might be relatively easy to control (e.g., a television PSA), whereas other times, there may be severe restrictions (e.g., Food and Drug Administration regulations). Thus, the importance of Step 2 is to identify the options for message development and, when possible, options that already fit with the audience elaboration level (e.g., developing substantive reasons to favor the proposal, filling the message with factors that are likely to serve as simple cues). However, just because a message is filled with substantive reasons does not mean that people will process them carefully. Instead, if motivation or ability to process is low, people may simply count the reasons and be persuaded by this cue (Petty and Cacioppo 1984). Alternatively, they may treat what was intended as a cue as a substantive argument if their motivation to process is high. For example, when a celebrity is analyzed as an argument, persuasion may be increased if the celebrity's status is viewed as a relevant argument for adopting the position (for additional discussion, see Petty and Wegener 1999).

### **Step 3: Message Objectives: Immediate or Enduring Attitude Change**

Step 3 involves assessing whether the goal of the risk communication is to produce enduring or only immediate atti-

tude changes. For example, a PSA about the dangers of smoking directed toward young people might be developed with the explicit goal of creating enduring attitude change toward this behavior. Conversely, a warning message about the various dangers of overdosing on a particular prescription drug may require only short-term attitude change (i.e., considering whether taking another pill would be a good idea). Whether attitudes are likely to persist is determined by numerous factors. We organize our discussion according to two topics that have received considerable attention as determinants of how enduring attitude change is: elaboration and the certainty associated with the attitudes.<sup>4</sup>

### **Elaboration and Consequences for Attitude Change**

The ELM specifies that whether attitude change is inclined to be brief or enduring is influenced by whether attitudes are formed through the central or peripheral route. Attitudes formed through the central route have been shown to have several distinct consequences. First, these attitudes tend to persist over time. Second, attitudes formed through the central route are relatively resistant to subsequent attempts to change them. Third, these attitudes are likely to influence and predict other judgments and behavior. A large body of research has demonstrated that high levels of elaboration are associated with attitudes that are more persistent, resistant, and predictive of behavior (for a review, see Petty, Haugtvedt, and Smith 1995). There are several reasons that attitudes based on high elaboration are predicted to produce stronger attitudes. These include both operative factors (e.g., thoughtful attitudes are more accessible and likely to come to mind when needed) and metacognitive factors (e.g., attitudes that people have thought a lot about are held with greater certainty and thus are more likely to be viewed as useful guides to action; for further review, see Petty, Haugtvedt, and Smith 1995).

In short, the central route to persuasion is desirable if something more than an immediate change in attitudes is desired. However, the peripheral route could be valuable if an immediate change is all that is required. For example, the peripheral route may be useful when a PSA is attempting to influence people to vote in favor of banning smoking in public places in an election the following day or when there is a message warning placed on a product that will be used immediately when it is purchased. Similarly, sometimes persuasion through the central route is not an option (e.g., consumer motivation to process is low), and thus the peripheral route represents the best chance to induce attitude change.

### **Attitude Certainty**

Attitude certainty is a metacognition that refers to the conviction people have in their attitude, or the extent to which they believe the attitude they hold is correct (Festinger 1954; Gross, Holtz, and Miller 1995). Attitudes held with a great deal of certainty have been shown to be more likely to persist over time (Basilli 1996), to resist attempts to change them (Swann, Pelham, and Chidester 1988; Tormala and

<sup>3</sup>As we explain subsequently, according to the ELM, there are other potential roles of variables in a message, such as biasing processing, but for simplicity, we focus on argument and cue processes here (for more details, see Petty and Wegener 1999).

<sup>4</sup>These factors are not independent—elaboration can cause certainty, and certainty can affect elaboration—but much research has focused separately on one or the other of these topics (for a discussion of additional factors that influence the persistence of attitude change, see Petty and Krosnick 1995).

Petty 2002), and to influence behavior (Fazio and Zanna 1978; Rucker and Petty 2004; Tormala and Petty 2002).<sup>5</sup> Although the precise mechanism by which attitude certainty creates these effects has not been thoroughly investigated, it is likely that attitudes held with certainty are attitudes that people view as diagnostic and, thus, useful. Furthermore, these attitudes are likely to be assessed to guide action; such attitudes may also tend to become more accessible over time, which might also cause them to be more influential. This is consistent with Lynch and colleagues' (Feldman and Lynch 1988; Lynch 2005; Lynch, Marmorstein, and Weigold 1988) research, which suggests that for information to influence judgments and behavior, it must be both accessible and perceived as diagnostic. In short, it is desirable to influence the valence of consumers' attitudes toward hazardous or health-threatening products and behaviors, and it is further beneficial to foster certainty in consumers' evaluations.

Although attitude certainty can be influenced with elaboration (Barden and Petty 2006), there are also other ways to affect certainty and thus produce strong attitudes. One way to influence attitude certainty without affecting elaboration is reported in a series of studies by Rucker and Petty (2004, 2006). In this work, Rucker and Petty show that how people process a message—whether they focus on one side of the issue or on their thoughts about both sides of the issue— influences the amount of attitude certainty they exhibit, even though actual attitude change and amount of elaboration remain constant. Similarly, Tormala and Petty (2002, 2004) demonstrate that participants' attitude certainty is influenced by whether they perceive that they have resisted a strong or a weak message or a message from a low- or a high-credible source, even though there are no differences in attitude extremity or elaboration. Holland, Verplanken, and Van Knippenberg (2003) find that having people simply express their attitudes multiple times, as opposed to only once, leads to greater attitude certainty, even though there are presumably no differences in overall elaboration of the attitude. In summary, emerging work suggests that attitude certainty can be produced through mechanisms other than elaboration.

This recent work on attitude certainty is important because it shows that people sometimes reflect on the manner in which their attitudes have changed, and this reflection can affect the strength of the underlying attitudes. This research suggests that even when people have resisted the message and have not changed, there may be accompanying changes in certainty, and this could have important implications, such as increased influence of the attitude on behavior (for a review, see Petty, Tormala, and Rucker 2004). In addition, attitude certainty is relatively easy to assess, which provides a low-cost tool that can provide extremely useful results. Subsequently, we discuss how policy makers can take advantage of the recent work on attitude certainty.

<sup>5</sup>There are other aspects of attitudes that are also related to the persistence, resistance, and influence of attitudes, collectively falling under the concept of "attitude strength." We focus on certainty, given that it has received considerable attention in recent years and falls within our domain of expertise (for a detailed discussion of attitude strength, see Petty and Krosnick 1995).

In summary, Step 3 involves assessing what the goal of the message is with respect to attitude change. The question may arise whether using the peripheral route should ever be considered, given that it results in attitudes that are less persistent, resistant, and influential than attitude change stemming from the central route. Although these are certainly disadvantages associated with attitude change occurring through the peripheral route, as we discussed previously, the peripheral route may sometimes be a necessity. For example, some consumers may lack either the motivation or the ability to process the message, and providing either or both may not be an option. In such cases, the peripheral route may be the only recourse. Similarly, limitations in the PSA venue or amount of space allowed for warning labels may sometimes necessitate the use of peripheral cues. In such situations, researchers can make efforts to strengthen the certainty associated with the attitude. We discuss this in greater detail subsequently.

#### **Step 4: Evaluate Audience Elaboration, Message Characteristics, and Message Objectives**

Step 4 involves examining whether there is a fit between the audience elaboration level and the information in the message and whether this creates the type of attitude change desired. To accomplish this, it is important to consider whether the elaboration level of the audience (low, high) matches the level of elaboration at which the message is designed to be effective (low, high). For example, a message consisting mostly of variables designed to act as peripheral cues is likely to be more effective under low than under high elaboration, whereas a message consisting mostly of information designed to act as compelling arguments is likely to be more effective under high than under low elaboration. If there is an apparent match between the audience elaboration level and the message characteristics, it should then be considered whether the type of attitude change produces consequences (e.g., short-term or long-term change) that are appropriate to the purpose. If there is not a match between these constructs, efforts should be made to change either the elaboration level of the audience or the types of information contained in the message to create a match at the level of elaboration for the desired consequences.<sup>6</sup> If there is a match, we advise proceeding to Step 5.

<sup>6</sup>This perspective shares some similarities with work on cognitive resource matching (e.g., Keller and Block 1997). However, whereas that work suggests that persuasion will also be maximal when the resources available to process information are equivalent to the resources required to process information, the ELM does not restrict itself to this hypothesis. Specifically, according to the ELM, it is entirely plausible that having more resources than is needed to process a communication could lead to even greater persuasion. For example, if a message is very strong, given excess resources, people might further bolster the message position and thus increase persuasion to a greater extent than if they simply had enough resources to process the message. In addition, although a person may not have enough resources to process all the arguments presented carefully, simply counting the arguments as a peripheral cue (a low-resource-demanding process) can lead to attitude change that is equivalent to what would have been present if resources were greater (though, as we noted previously, the attitudes may not be very long lasting).

### ***The Notion of Multiple Roles: A Caution on the Assessment of Fit***

In assessing fit, it is necessary to stress an important postulate of the ELM that centers on the idea of multiple roles for variables (Petty and Cacioppo 1986b). The multiple-roles notion stresses the importance of recognizing that any particular variable can influence persuasion in multiple ways. Consequently, the same variable (e.g., source credibility, mood) may be influential under both low- and high-elaboration conditions for different reasons. More formally, the ELM recognizes that any variable can influence persuasion through a finite number of processes, depending on the context and the elaboration level. In particular, a variable might influence persuasion by (1) serving as an argument, (2) serving as a simple cue, or (3) influencing properties of participants' thoughts (amount, valence, or degree of confidence). The ability of any variable to play several roles is crucial in understanding the dynamic process of persuasion and can explain how the same variable can have different influences depending on the particular context and elaboration level.

First, when elaboration is low, if variables have any impact at all, they are most likely to influence attitudes by some simple mechanism (e.g., simple association, invoking a decision heuristic). Variables are likely to function as simple cues under low elaboration because people do not scrutinize the message-relevant information for its substantive merits. Thus, any evaluation that is formed is likely to result from simple associations or inference processes that do not require much cognitive effort. For example, a person's current mood might influence whether he or she likes the product in a mood-congruent way by simply becoming associated with or attached to the attitude object or by serving as the basis for a simple inference (i.e., "I'm feeling good right now, so this product must be great!"; see, e.g., Forgas 1995). Similarly, people may rely on the expertise of the source to ascertain the strength of a message (i.e., "The surgeon general said smoking is bad, so I guess it must be"; Petty, Cacioppo, and Goldman 1981).

Second, when elaboration is high, people have both the motivation and the ability to attend to the merits of the arguments being presented. Because people are carefully scrutinizing the available information, variables are likely to exert little impact as simple cues. Rather, each variable (item of information) is scrutinized for whether it is a reasonable argument. For example, if a message comes from an expert source, a person is likely to consider whether the source's expertise is relevant for the judgment at hand. Thus, when elaboration is high, a message about the dangers of smoking would be more influential if the source were a Harvard medical doctor who specializes in lung cancer than a Harvard medical doctor who specializes in skin cancer. These nuances of expertise should be less influential when elaboration is low. Similarly, when thinking is high, people can scrutinize their own internal states (moods) for whether they are diagnostic (see Feldman and Lynch 1988; Lynch 2005) with respect to the judgment at hand (e.g., a fearful state can indicate that a scary movie is highly effective).

Third, in addition to serving as an item of issue-relevant information, when elaboration is high, a variable might also bias the direction of people's thoughts. For example, people

might be more open-minded to a message that comes from an expert but more argumentative if the same message comes from a nonexpert (see Chaiken and Maheswaran 1994). Similarly, when thinking is high, people's mood states can color their thoughts such that they generate more positive thoughts or perceive positive consequences as more likely when they are in a good mood than when they are in a bad mood (e.g., DeSteno et al. 2004; Petty et al. 1993).

Fourth, variables can also affect persuasion under high elaboration by influencing the confidence associated with participants' thoughts (Petty, Briñol, and Tormala 2002). For example, work has shown that after participants receive a message, giving them further information about the expertise (or lack of expertise) of the source can influence their confidence in the thoughts they generated (Briñol, Petty, and Tormala 2004). That is, learning that the source of a message was highly credible after processing can increase confidence in the thoughts generated, and learning that a source lacked credibility can reduce confidence. Emotional states that follow messages can have a similar effect, such that happiness enhances confidence in thoughts and sadness decreases confidence (Briñol, Petty, and Barden 2006). As people's confidence in their positive thoughts increases, their attitudes become more positive, whereas increasing confidence in negative thoughts reduces persuasion.

Finally, when elaboration is moderate (unconstrained to be high or low by other factors), variables are likely to influence the amount of elaboration in which people engage. That is, variables may either encourage additional processing, leading to a reliance on the central route, or discourage additional processing, leading to a reliance on the peripheral route. As evidence of this, Priester and Petty (1995) find that a source who is trustworthy solicits less processing than a source who is untrustworthy. Similarly, mood can influence whether people engage in extensive or superficial processing of a message (Wegener and Petty 1994; Wegener, Petty, and Smith 1995).

In summary, the multiple-roles logic of the ELM suggests that the persuasion effectiveness of any given variable cannot be tied to just one particular effect or to one particular process (Petty 1997). Rather, people must be cognizant of both the level of elaboration and the potential roles of a variable at that level. The importance of the multiple-roles logic cannot be stressed enough. The multiple-roles idea is necessary to account for the diversity of effects and processes that can result from any one variable, and it gives the ELM considerable power to understand and control the multitude of persuasion effects that are possible. Practically, the idea of multiple roles stresses the importance of carefully considering the various ways that characteristics of the communication can influence persuasion. In assessing fit, people must not only identify the variables in the communication but also be sure that these variables produce the correct effects on the basis of the level of audience elaboration.

### **Step 5: Test Message Effectiveness**

When the message has been designed to contain information to persuade the target audience, the effectiveness of the message should be examined experimentally. Although the specific type of experiment carried out will likely depend on the particular domain and number of messages under consider-

ation, several common themes will be present. First, the message should be compared with a no-message control or with alternative messages. Second, consumers' attitudes, attitude certainty, and thoughts about the message topic should be gauged. Consumers' attitudes give policy makers an overall sense of whether the message was effective in changing their attitudes relative to the no-message control and reveal which message creates the more desirable attitudes. Measuring the certainty associated with the attitude provides a useful means of assessing whether attitudes are likely to be persistent, resistant, and predictive of behavior. Finally, gauging participants' thoughts is crucial in understanding why consumers hold their attitudes. If there are many positive message-relevant thoughts and if these thoughts are predictive of the attitudes, change likely occurred because of careful scrutiny. If attitudes are positive but there are not many message-relevant thoughts or the thoughts listed do not predict attitudes, attitude change likely occurred through more peripheral mechanisms.

In addition to the assessment of thoughts, thought confidence could also be assessed. For situations in which people generate many thoughts but these thoughts do not predict attitudes, it may be that the thoughts are not viewed as diagnostic or useful for some reason. If resources permit, attitudes should be examined not only immediately after message presentation but at several later points in time as well. This would serve as a further check of the strength of the attitude change.

### **Step 6: Evaluate Message Effectiveness**

Finally, it is important to make a final determination about whether the message was effective. With the data in hand on attitudes, thoughts, and certainty from Step 5, it is possible to determine whether the message had the intended effects. Did people attend to and process the strong arguments? Did people rely on cues? Were the resulting attitudes held with certainty? If the message produced desirable consequences, it might be ready to be delivered to the public. If the message was not effective, potential problems should be considered.

## **Diagnosing Why Efforts to Communicate Risks to Consumers May Fail**

In this section, and on the basis of the perspectives offered by the ELM and recent work on attitude certainty, we discuss why even a well-executed or carefully thought-out PSA or warning message might fail to influence consumers' attitudes. In particular, we highlight what might be some of the most common reasons messages containing strong arguments or powerful cues may fail to influence consumers' attitudes or perceptions of risk associated with product use.

### **When Communications Containing Strong Arguments Fail**

Why do persuasive messages that communicate clear risks of products or behaviors fail to change consumers' risk perceptions or general attitudes toward these products or behaviors? According to the ELM, there are several possible explanations for why such communications might prove

ineffective. There are five explanations that may account for most of the problems: First, the arguments may not have been strong enough. Even if the arguments seem strong on the surface, the audience may not find them compelling or may be able to generate counterarguments. In addition, the audience on which the arguments are used may have more effective counterarguments than the audience on which the campaign was tested. Because not all audiences are alike, it is important to sample from the intended group. It may also be that some historical event intervened and changed perceptions of the arguments such that a reason that used to be compelling no longer is.

Second, perhaps the arguments are fine, but consumers may lack the motivation or ability to process information contained in the PSAs and warning labels. For the merits of strong arguments to be realized, the ELM contends that people must put forth cognitive effort; that is, elaboration must be relatively high. Given a lack of motivation or ability, consumers are likely to rely on peripheral cues. If strong cues are not readily present, a strong and compelling message may fail to influence consumers' attitudes or risk perceptions. Indeed, there is evidence suggesting that, in general, PSA and warning labels may not be processed carefully.

For example, as evidence that a lack of ability can hinder the effectiveness of strong arguments either in favor of or against a product, Burton, Biswas, and Netemeyer (1994) presented people with a product that was either healthful (e.g., low saturated fat, sodium, and carbohydrates) or unhealthy (e.g., high saturated fat, sodium, and carbohydrates). Consumers' knowledge of nutrition was assessed with a short test. Burton, Biswas, and Netemeyer found that participants who had high nutrition knowledge were more likely to distinguish the healthful product from the unhealthy product, as evidenced by their evaluations of the product's nutritional value. Presumably, only those who had a high knowledge of nutrition possessed the ability to recognize the nutritional value of the product. Even if ability is present, however, there must also be motivation. Indeed, in the previous example, it might have been that people who had low general nutrition knowledge were able to process the message, but they simply chose not to do so out of disinterest in nutritional matters. Menon and colleagues (2003) examined the extent to which consumers reported attending to technical information about the risks associated with prescription medicines when they read advertisements for these products. They found that of the respondents who reported seeing direct-to-consumer print advertisements, approximately 40% reported not attending to the risk information at all. Consequently, there is evidence to suggest that many efforts fail simply because of a lack of sufficient information processing. A remedy for this is to design PSAs and warning labels in a way that promotes information processing (e.g., increase personal relevance) or to include more powerful cues in the warning message.

A third reason compelling arguments may fail to affect consumers' perceptions of risk is that under high-elaboration conditions, consumers may engage in biased processing. That is, consumers may direct their attention to counterarguing a message position with which they disagree. Under biased processing conditions, people are more

inclined to find fault and weigh faults more heavily (e.g., Killeya and Johnson 1998; Lord, Ross, and Lepper 1979), or they may seek other methods to defend their attitudes (see Jacks and Cameron 2003). For example, smokers who are addicted to nicotine and enjoy smoking may aggressively counterargue warning labels on cigarettes or PSAs that emphasize the dangers of tobacco use. Work on psychological reactance (Brehm 1966) shows that when nonsmokers believe that a message impinges on their personal freedom, they may be motivated to counterargue, even if the message is truly intended for their best interests (Petty and Cacioppo 1979a; Wood and Quinn 2003). The consequences of such perceptions can lead people to become more opposed to the advocated position than they were initially, exhibiting “boomerang” attitude changes. Similarly, strong messages that endorse extreme positions may backfire and lead to more negative attitudes and/or behaviors (Albarracín, Cohen, and Kumkale 2003). If preliminary testing of messages indicates that reactance is occurring, policy makers should consider revising the messages to avoid these reactions. This could be accomplished, for example, by using a less extreme message (e.g., Albarracín, Cohen, and Kumkale 2003).

Fourth, people may try to correct for a perceived bias (Petty and Wegener 1993; Wegener and Petty 1995). For example, people who see an advertisement in which their favorite celebrity is warning them about the dangers of cigarette smoking may be concerned that the presence of the celebrity might bias them to react more favorably. To correct for this, people may process the message more critically or simply adjust whatever evaluation they reach downward. Thus, even if the celebrity provides strong and cogent arguments about the hazards of smoking, people may fail to change their attitudes as a result of attempting to correct for a perceived bias (see Petty, Wegener, and White 1998). Thus, the use of features in a message that appear to be obvious sources of bias to consumers may actually harm the effectiveness of the message under high-elaboration conditions.

Fifth, compelling arguments may fail to affect consumers’ attitudes even when consumers have positive reactions to the arguments, because they may not be confident in their resulting thoughts. For example, Petty, Briñol, and Tormala (2002) find that people are likely to be influenced by their thoughts only if they have confidence in their resulting thoughts. As we noted previously, people’s lack of confidence in their thoughts can stem from a variety of sources other than the actual merits of their thoughts, such as being in a bad mood or perceiving their thoughts as difficult to generate (Tormala, Petty, and Briñol 2002; for a review, see Briñol and Petty 2004).

### **When Communications Containing Powerful Cues Fail**

Just as strong arguments may not always be compelling, powerful cues may fall by the wayside. There are several reasons powerful cues (i.e., the surgeon general, an admired celebrity) may not influence consumer attitudes and risk perceptions. First, if message recipients engage in a high amount of elaboration, variables are unlikely to exert an impact by simple peripheral processes (Petty and Cacioppo

1986b). Instead, consumers are likely to attend to the central merits of the information presented. If a message has little substance, this may lead to a simple discounting of the position presented (e.g., the surgeon general says it is bad, but where are the arguments to support his position?). In an examination of approximately 500 commercial advertisements and PSAs, Harrington and colleagues (2003) suggest that the majority contained nothing more than heuristics. A bulk of these would prove ineffective if the audience carefully scrutinized the message.

Second, not only might variables prove ineffective as cues under high-elaboration conditions, but they may backfire as well. For example, people motivated to resist the message might find such a message relatively easy to dismantle, which could lead to more negative attitudes than before message reception. Similarly, just as people might correct for perceptions of bias under high elaboration, to the extent that people identify an irrelevant cue (e.g., source attractiveness) as a potential source of bias, they may engage in a correction attempt *after* the message, even if they do not process the message carefully (Petty and Wegener 1993; Wegener and Petty 1995). For example, although inducing a positive mood can lead to more positive evaluations of a target, making people highly aware of the positive mood as a possible source of bias can actually lead them to be more negative toward the target (Berkowitz and Troccoli 1990). When people correct for simple cues in a message, the cue can have the opposite effect of that intended.

Finally, it is important to remember that attitude change occurring through the peripheral route results in attitudes that are, in general, less persistent, resistant, and impactful on behavior than attitude change occurring through the central route. Consequently, a potential reason persuasive attempts using powerful persuasive cues may fail is that even when the cues are powerful enough to change people’s attitudes or risk perceptions, this change is rather ephemeral. Thus, an antidrug PSA that features a celebrity may lead to a more negative attitude toward drugs, but this change may last only a few days, or any change may be quickly attenuated by peer pressure because the attitudes are not very resistant to attack (for a review, see Petty, Haugtvedt, and Smith 1995). This is one of the shortcomings associated with using the peripheral route.

### **When Attitudes Are Held with Low Certainty**

Thus far, our discussion of the central and peripheral routes to persuasion appears to suggest that attitudes changed by the central route are invariably stronger than attitudes changed by the peripheral route. In general, attitudes that are changed as a result of high amounts of thinking are held with greater certainty than attitudes that are changed with little issue-relevant thinking. However, there are circumstances in which high thinking may not produce much attitude certainty. Indeed, recent research has shown that attitudes resulting from equivalent levels of relatively high elaboration can be held with varying degrees of certainty (Rucker and Petty 2004, 2006; Tormala and Petty 2002, 2004).

For example, in a series of studies, Rucker and Petty (2004) instructed respondents to consider their thoughts,

positive thoughts, or negative thoughts while they were processing an extremely compelling message. This research found that respondents all engaged in high levels of thinking, as assessed with multiple indicators of elaboration. Furthermore, because the message was compelling, respondents who were instructed to consider their negative thoughts produced the same profile of valenced thoughts as those who were simply instructed to think about the message or consider positive thoughts (i.e., many positive thoughts and few negative thoughts). As a result, attitude change was positive and equivalent for all groups. However, although elaboration and attitude change were held constant, respondents who made an effort to find fault were more certain of their resulting attitudes than were those who processed the message by focusing on the thoughts that naturally came to mind or by focusing on their positive thoughts. Rucker and Petty (2004) explained this finding by discussing respondents' metacognitions about the methods by which they had arrived at their attitudes. Those who simply processed the thoughts that naturally came to mind or focused on their positive thoughts knew that they had mostly positive reactions to the product; however, those who considered the potential negative thoughts felt as if they were better informed because they had considered both the positive aspects of the message, which were naturally salient, and the potential negatives (i.e., they felt as if they processed both sides of the message).

As further evidence of the notion that attending to both sides of a message increases certainty, Rucker and Petty (2006) instructed their respondents to consider their thoughts, positive thoughts, or negative thoughts about a message that contained weak arguments. In the case of a poor message, the negative thoughts should be naturally salient to everybody, regardless of how people process the message. However, only respondents instructed to consider the potential positives should have a recognition that they are informed not only of the negatives of the message (which are naturally salient) but also of the potential positives. Consistent with this logic, although attitudes were equivalent for all groups, those who had been instructed to consider the potential positives expressed greater certainty in their attitudes than those who had been instructed to consider their natural thoughts or their negatives thoughts.

Although research on antecedents of attitude certainty is just beginning, initial endeavors provide an explanation for why successful persuasive attempts at the level of attitudes may prove to be short lived or show little influence on behavior. If a message produces positive attitudes held with low certainty, treatments to enhance certainty should be examined, such as repeated attitude expression (Holland, Verplanken, and Van Knippenberg 2003) or different message processing (Rucker and Petty 2004, 2006).

### **Applying the Framework: Examples of Testing the Effectiveness of Risk Communications to Consumers**

The preceding section detailed potential explanations for failed attempts to communicate risk information and produce attitudes that would guide behavior. We close this article by returning to the framework we proposed for develop-

ing effective risk communications, and we provide more concrete examples of how policy makers can evaluate the effectiveness of messages that are designed to appeal to the central and peripheral route, respectively. We use examples of possible PSAs for both routes to highlight how the same format could be used for either peripheral or central route persuasion. However, similar logic can be applied to other types of communications, such as warning messages. We recognize that the flexibility in designing both PSAs and warning messages may often depend on existing federal regulations. However, in such cases, our recommendations remain the same for matching audience elaboration, message characteristics, and message objectives. The challenge to policy makers is to find an effective strategy based on these limitations. For example, if consumers do not attend to the information contained in a warning message, a media campaign highlighting the importance of these warning messages might be instigated. Similarly, if the warning messages are not very persuasive because of limited information or space, these messages may need to be supplemented by additional information in other venues. Nonetheless, in the examples that follow, we attempt to use contexts that, to our knowledge, would be relatively appropriate given existing guidelines.

#### **Example 1: Central Route**

Imagine being given the task of designing a new PSA to educate mothers about the dangers of drinking during pregnancy. This PSA will come in the form of a print brochure given at the doctor's office to pregnant women. The PSA will outline the various risks associated with alcohol consumption at any point during the pregnancy. To begin, we consider the relative elaboration level of the audience (Step 1). We might expect that elaboration would be relatively high given that the print advertisement is for a topic of high relevance to the audience. Furthermore, because the brochure contains a substantial amount of information about the various problems that can arise from drinking during pregnancy, it is likely to require some amount of thought or elaboration to be effective (i.e., strong arguments that require elaboration; Step 2). Given that it is desirable to prevent mothers from drinking throughout their pregnancy, long-term attitude change is desired (Step 3). Next, the fit among these features is assessed (Step 4). We have an audience for which elaboration is expected to be high, a message containing strong arguments that were carefully pretested (see Petty and Cacioppo 1986a), and a desire to instill long-term attitude change. This is a situation of fit among these features, suggesting that we can proceed to the next step. In Step 5, the predicted effectiveness of the message should be tested. This could be accomplished by presenting pregnant women with a brochure on the risks of drinking during pregnancy or a brochure on an unrelated topic and then varying the level of elaboration. Elaboration could be varied by having half of the participants read the brochure in an unrestricted fashion and the other half read the brochure while being distracted with another task (for a discussion of processing manipulations, see Petty and Wegener 1998). Experimentally varying the elaboration level is important because it validates whether the message is effective under low or high levels of elaboration. Without a manipulation of

elaboration, it would not be clear whether the warning was effective because of the central or the peripheral route. Furthermore, as we discuss subsequently, thoughts will be assessed to examine the level of elaboration further. Thus, this experiment would be a 2 (elaboration: low, high)  $\times$  2 (control brochure, drinking-during-pregnancy brochure) design.

After participants are randomly assigned to receive one of the four conditions, they would be presented with the brochure. Participants in the distraction condition might read the brochure while there is loud background noise or while they are doing a secondary task, whereas participants in the undistracted condition would simply read the brochure unhindered. After reading the brochure, participants would be asked to provide their attitudes, attitude certainty, and thoughts. Examples of how to ask these questions appear in the Appendix.

If the brochure is effective in making participants more aware of the health risks of drinking during pregnancy, first, there should be a noticeable difference between receiving the drinking-during-pregnancy brochure and receiving the control brochure. This helps assess whether the message, in and of itself, is effective. Second, if the drinking-during-pregnancy brochure is more effective after careful scrutiny than peripheral (distracted) processing, participants' overall attitudes should be more negative toward drinking during pregnancy when elaboration is high than when it is low. However, if results indicate that participants' attitudes are more negative when elaboration is low (i.e., the distraction condition) than when it is high, this would suggest that the drinking-during-pregnancy brochure is more effective as a peripheral cue. It is possible that the message is equally effective under both high- and low-thinking conditions, but for different reasons. For example, careful processing of the message arguments contained in the drinking-during-pregnancy brochure might increase persuasion under high elaboration, but the brochure itself might serve as a cue under low elaboration (e.g., the brochure seems to contain a lot of reasons, so drinking during pregnancy must be bad).

Following the attitude assessment, attitude certainty could be assessed. If attitudes are the same in response to the brochure under high- and low-distraction conditions, attitudes might still differ in certainty. Finally, participants' thoughts can serve as a further indicator of whether elaboration is low or high. Specifically, given that the brochure makes salient specific dangers associated with drinking during pregnancy, there should be more negative message-relevant thoughts when elaboration is high. Furthermore, attitudes should be more strongly associated with thoughts under high- than under low-thinking conditions (for a further discussion, see Petty and Cacioppo 1986a, b). If the message is found to be more persuasive under high elaboration, the message could be deemed to be effective, given that the natural audience elaboration is expected to be high. However, if the message is more effective under low elaboration, it may need to be revised (Step 6). If the message is found to be equally effective in both conditions, other features of the attitudes, such as the amount of certainty associated with the attitudes and thought-attitude correlations, should be examined to determine whether the same amount of attitude change was induced for different reasons. If the message is effective under both low- and high-elaboration

conditions, the condition that fosters greater certainty typically would be more desirable.

## Example 2: Peripheral Route

Consider the development of an antismoking television commercial that is designed to advocate parents talking to their children about drug use. The message might feature celebrities telling parents to talk to their children, but it might not provide or disclose the specific benefits of having such conversations. Again, we begin by considering the relative elaboration level of the audience (Step 1). We might expect elaboration to be relatively low, given that the commercial will take place in a crowd of other commercials and television programming and that many parents will think that their children are not using drugs and, thus, that the message is not relevant to them. Next, we consider when the message is likely to be most effective. As with other persuasion variables, the nature of the celebrity source can play several roles in persuasion. However, assuming that we use a celebrity who is not relevant to the message and does not provide actual arguments about the benefits of talking to children, we might expect the celebrity to serve as a simple cue. Consequently, it seems likely that this advertisement will be most effective when elaboration is low (Step 2).

Next, we consider whether attitude change is desired to be immediate or long term. If the primary goal is to have parents initiate one talk with their children as soon as possible, short-term attitude change might be deemed to be sufficient (Step 3). In Step 4, we observe a clear fit among the audience elaboration, message characteristics, and messages goals, allowing us to advance to Step 5. Here, the predicted effectiveness of the message must be tested (Step 5). This could be accomplished by presenting a group of parents with an hour-long television program with the target PSA embedded in it. Furthermore, participants could be given the same commercial either with or without a celebrity endorser, and the level of elaboration could be varied. For example, elaboration could be varied by telling half of the participants to process the message carefully and by providing no instructions to the other half (if we assume that elaboration, by default, is low). Thus, this experiment would be a 2 (elaboration: low, high)  $\times$  2 (source: no celebrity, celebrity) design.

After respondents are randomly assigned to receive one of the four conditions, they would be presented with the hour-long television program featuring the PSA. After the program ends, participants could be asked to provide their attitudes, attitude certainty, and thoughts about discussing drug use with their children. If the celebrity is effective in making participants more aware of the need to perform this behavior and if this is a result of the use of the celebrity as a cue (as opposed to more careful scrutiny), participants' overall attitudes should be more positive when elaboration is low than when it is high. However, if results indicate that participants' attitudes are more positive when elaboration is high, this would suggest that the celebrity was more effective under the central route, perhaps because of biased processing. As in the previous example, the amount of attitude certainty could be used as an indicator of how stable and influential the attitude is likely to be. Finally, participants' thoughts can serve as a further indicator of whether elaboration is low or high. Specifically, given that celebrity

endorsement acts as a simple cue, participants should have few message-relevant thoughts when elaboration is low, and there should not be a strong association between attitudes and message-relevant thoughts.

If the message is found to be more persuasive under low than under high elaboration, the message could be deemed to be effective, given that the goal is to develop a message that would work under low-thinking conditions. However, if the message is more effective under high elaboration, one of two options must be considered, if it is assumed that the natural elaboration level of the target audience is low. Either the message should be revised to be effective under low-elaboration conditions, or some method of inducing greater audience elaboration should be implemented (Step 6).

The previous examples focus on PSAs to illustrate that PSAs might be hypothesized and found to be effective under both low- and high-elaboration conditions. A similar logic can be applied to warning messages. For example, warning messages on products could serve as cues when consumers are shopping in the grocery store and trying to complete their shopping list. However, warning messages could also serve as arguments when they appear on products that are extremely relevant to a person (e.g., prescription medicine; alcohol for pregnant women).

## Summary

The previous examples represent only two of an infinite number of variables and topics related to the design of effective, persuasive communications. Although the possibilities may be infinite, there are clear similarities in the approaches, and these are worth stressing. In particular, crucial to both designs is a careful consideration of whether there is a likely fit between audience elaboration and the target elaboration level for message effectiveness. Furthermore, in assessing the effectiveness experimentally, a useful feature is a control or reference group with which to compare the target message to help assess the effect of adding the variable to the message. An elaboration manipulation is also useful to gauge whether the message is indeed more effective under low or high elaboration.

In addition, three key variables that should be measured are attitudes, attitude certainty, and thoughts. Each of these variables provides a different piece of information about the effectiveness of the message. In particular, attitude certainty may be extremely useful when multiple message formats are being tested. For example, in the testing of several different messages, it may be found that all produce equivalent amounts of attitude change under high elaboration. However, if one of the messages yields attitudes that are held with greater certainty, this message would be preferred to the other three. Finally, an assessment of the experimental results could help ascertain whether the message has the desired effects or if further development is required.

## Attitude Certainty and Developing Effective Communications

Although work on certainty is in its infancy, measuring certainty and understanding the factors that influence certainty

are important directions for research. As we noted previously, attitudes held with greater levels of certainty are more likely to influence behavior, persist over time, and resist attempts to be changed (see Gross, Holtz, and Miller 1995; Petty and Krosnick 1995). Furthermore, several recent developments suggest potential methods by which risk communications could be presented to consumers to increase the amount of certainty associated with resulting attitudes.

For example, Rucker and Petty (2004, 2006) found that people held their attitudes with greater certainty when they thought that they were aware of both the potential benefits and the potential risks associated with a product rather than just one side. This was true even though the actual information presented to them was identical. Applying this to warning messages, it might be possible to increase attitude certainty not only by alerting consumers to the potential health risks associated with the product but also by emphasizing the *lack of health benefits*. Thus, cigarette packaging might not only note the health dangers associated with using the product but also specifically emphasize that the product does not offer any health benefits. This framing might lead to similar attitudes toward the product, but, consistent with Rucker and Petty's results, it may imbue people with greater levels of attitude certainty.

Testing the effectiveness of various manipulations on certainty requires the assessment of certainty. Thus, especially when multiple formats are being considered for PSAs or warning labels, practitioners would benefit from including measures to assess not only the overall attitude of consumers but attitude certainty as well.

## Conclusion

We began this article by noting the importance of persuasive communications in public policy and marketing. Although previous efforts have been mixed in their effectiveness, we believe that this article provides a conceptual framework for improving effectiveness. In particular, by familiarizing the reader with the ELM and discussing how the model can be used both to create effective public policy communications and to diagnose faulty ones, we believe that future efforts to communicate risk information to consumers can be improved. The effective communication of information enables consumers to help themselves by having the information (i.e., awareness that a product has negative features) to improve their decision making.

However, another aspect of this article is also worth mentioning. We highlighted emerging work on attitude certainty and the importance of this construct in predicting when attitudes will be persistent and resistant and when they will guide behavior. Unlike work on the ELM, less is known about attitude certainty. Therefore, another contribution of this article is to alert researchers and policy makers to the benefits of measuring attitude certainty, as well as taking proactive steps to try to increase attitude certainty and engage in additional research on certainty. Coupled with the work on the ELM, a further understanding of attitude certainty will help in the design of even more effective risk communications.

## Appendix

### Sample Attitude Items

Please tell us your attitude toward the product on the following scales:

Bad	1	2	3	4	5	6	7	8	9	Good
Negative	1	2	3	4	5	6	7	8	9	Positive
Unfavorable	1	2	3	4	5	6	7	8	9	Favorable

### Sample Certainty Items

How certain are you of your attitude toward this product?

Not at all Certain	1	2	3	4	5	6	7	8	9	Very Certain
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How convinced are you that your attitude toward this product is correct?

Not at all Convinced	1	2	3	4	5	6	7	8	9	Very Convinced
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### Sample Thought Listing

Please list any thoughts you had about the product. Please list one thought per space below. Do not worry about spelling or grammar, but focus on getting the basic idea of your thought down.

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