

Attitude Change: Multiple Roles for Persuasion Variables

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OVERVIEW

The O.J. Simpson “trial of the century” in the mid-1990s captured the attention of the American populace more than any other public spectacle since the kidnaping of the Lindberg baby in the 1920s. A prominent football player and popular sportscaster was charged with a gruesome double homicide. The attorneys for the prosecution and defense were of various races and genders. The evidence presented on each side was at times amazingly simple, visual, and emotional, and at times was verbal, abstract, and probably incomprehensible to jurors. The witnesses included individuals of diverse styles, demeanors, and credibility. The jurors, the recipients of the messages from these various sources, were themselves a mixed group of people of diverse backgrounds, beliefs, and personal experiences who had to sift through the trial material and arrive at a decision as to whether the defendant had been proven guilty or not. The context in which all of this took place was at times tense and sad, and at times filled with humor and positive feelings. Not surprisingly, no experiment has ever captured the extraordinary complexity inherent in this situation, yet almost all of the variables present in this trial (and many not present) have been examined in the social psychological literature on attitude formation and change. This chapter provides an overview of research on these diverse variables and addresses the processes by which these variables are thought to result in influence.

Although it has become a cliché to say that the attitude construct is the most indispensable concept in contemporary social psychology, this statement appears as true today as when Allport (1935) initially wrote it in the first *Handbook of Social Psychology* (Murchison, 1935; see Allport, 1935, and Fleming, 1967, for historical reviews of the attitude concept). Attitudes remain important as we enter the 21st century because of the fundamental role that individuals’ attitudes, both explicit and implicit (Greenwald & Banaji, 1995), play in the critical choices people make regarding their own health and security as well as those of their families, friends, and nations. From purchase decisions provoked by liking for a product to wars spurred by ethnic prejudices, attitudes help to determine a wide variety of potentially consequential outcomes.

Before turning to the relevant studies, it is useful to address some definitional issues. The term attitude is used to refer to a person’s overall evaluation of persons (including oneself), objects, and issues. Thus, one’s attitude refers to how favorably or unfavorably or how positively or negatively in general one views some object of judgment such as “the defendant,” “capital punishment,” or “ice-cream.” These global evaluations can vary in a large number of ways in addition to their extremity such as whether they are based on emotions (e.g., “seeing the defendant makes me anxious”), beliefs (e.g., “capital punishment does not deter crime”), or past experiences and behaviors (e.g., “the last time I ate ice-cream, I had an unpleasant allergic reaction”; see Breckler, 1984; Zanna & Rempel, 1988), and whether they are internally consistent (e.g., being associated largely with positive feelings, attributes, and behaviors) or ambivalent (e.g., composed of a combination of positive and negative attributes, e.g., Kaplan, 1972). Much research has assumed that evaluative processing of information is quite natural, pervasive and fundamental (Markus & Zajonc, 1985; Osgood, Suci, & Tannenbaum, 1957) in large part because of the adaptive and functional purposes of holding attitudes (see Breckler, Pratkanis, & Greenwald, 1989; Eagly & Chaiken, this volume; for discussions of the structure and function of attitudes). Jarvis and Petty (1996) suggested, however, that just as there are situational factors that influence one’s motivation to evaluate (e.g., the need to form an opinion about an upcoming decision), so too are there individual differences in this need. They observed that some people were higher in their “need to evaluate” than others and these individuals were more likely to engage in on-line evaluation of a variety of stimuli and were more likely to hold opinions on a diverse set of social issues than were those low in this need (see also Petty & Jarvis, 1996). Nevertheless,

regardless of the overall level of one's propensity to evaluate, it is still the case that nearly everybody forms evaluations of most common stimuli in their environment at some point (e.g., Bargh, Chaiken, Raymond, & Hymes, 1996; Fazio, 1995; see Petty, Wegener, & Fabrigar, 1997, for more detailed discussion).

Given the power of attitudes to determine many actions, it is not surprising that billions of dollars, deutchmarks, and yen are spent annually in an attempt to influence and change peoples' evaluations of various objects, issues, and people. Attitude change simply means that a person's evaluation is modified from one value to another. Change is often assessed relative to the person's initial attitude. Polarization occurs when people move in the direction of their initial tendency (e.g., an initially favorable person becomes even more favorable) and depolarization occurs when they move in the opposite direction. In persuasion settings, change is typically examined with respect to the position advocated in a communication. These change outcomes fall on a continuum anchored at one end by maximal acceptance (e.g., changing the maximal amount in the direction of some target position even if the change exceeds the target) and at the other by maximal boomerang (changing the maximal amount in the direction away from the advocated position). It is important to distinguish these attitude change outcomes from the processes that produce them. Acceptance processes are those that tend to move people in the targeted direction, whereas rejection or resistance processes are those that help people resist change and perhaps even move them significantly away from the target view. For each acceptance process documented in the literature, there is typically a corresponding resistance process (e.g., pro versus counterarguing; positive versus negative affect).

A categorical distinction between attitude formation versus attitude change is not used because the accumulated research suggests that it is more useful to regard attitudes that are changed as falling along a continuum ranging from non-attitudes (see Converse, 1970) to strong attitudes (see Fazio, 1986). That is, the factors involved in moving an individual with no attitude to adopt a position favorable toward an advocacy are more similar to the factors involved in making a person with a weak but existent attitude become more favorable toward the advocacy than to the factors involved in making the same change in an individual with a strong initial attitude (see Petty, Wegener, Fabrigar, Priester, & Cacioppo, 1993). The non-attitude/strong attitude continuum is indexed by features such as how accessible the attitude is (e.g., Fazio, 1995), how much knowledge an individual has about the attitude object (e.g., Wood, Rhodes, & Biek, 1995), and other factors (see Petty & Krosnick, 1995, for reviews of the dimensions of attitude strength). Although this chapter focuses on attitude change, the processes of change that are described and the general principles of change are also applicable to changing more specific evaluative judgments -- such as whether the defendant in a trial is guilty or not. In fact, even though there are functional differences between evaluative and non-evaluative beliefs, many of the principles that are outlined for attitude change are also relevant to changing non-evaluative judgments. Therefore, although the thrust of our chapter is on processes of attitude change, the term "belief change" would often be equally applicable.

Bringing about change in attitudes (or beliefs) by presenting facts and information in a relatively objective fashion can be called education, whereas bringing about change by slanting information and evidence is often referred to as propaganda (Zimbardo, Ebbesen, & Maslach, 1977). The latter term was popular in the earlier part of this century (e.g., Doob, 1935), but because of its pejorative connotations has been replaced by the more neutral terms, persuasion and attitude change (see Petty & Cacioppo, 1981). In the following sections, some historical foundations of contemporary work on attitude change are reviewed and, using the Elaboration Likelihood Model (ELM; Petty & Cacioppo, 1986a, 1986b) as a guide, the high- and low-effort processes that have been hypothesized to account for changes in attitudes are discussed. Then, using the multiple roles aspect of the ELM, work is reviewed on the effects of specific source, message, recipient, and context variables on attitude change.

Historical Foundations

The formal discussion of principles of attitude change can be traced to the ancient Greeks (see Aristotle's Rhetoric and Topics), but as McGuire (1969) documented, also flourished in Cicero's Roman Republic and during the Italian Renaissance (see Quintillian's Institutio Oratoria). It was not until the current century, however, that ideas about persuasion were linked to empirical observations. Early work ranged from content analyses of political propaganda in which the authors speculated about the attitudinal and behavioral consequences of propaganda messages (e.g., Lasswell, Casey, & Smith, 1935), to case studies of the ebb and flow

of public opinion in which the authors speculated about the causes of observed shifts in attitudes (e.g., Lazarsfeld, Berelson, & Gaudet, 1944).

In reviewing the history of research on communication and persuasion, Delia (1987) noted that in contrast to the mostly correlational approaches adopted in sociology and political science, the social psychological approach (e.g., Allport, 1924) was largely experimental. That is, features of some influencing agent (e.g., a propaganda message) were manipulated and their effects on attitudes were observed. For example, in the 1930s, the Motion Picture Research Council conducted a series of studies to examine the impact of different movies on children's knowledge, attitudes, and behavior (e.g., Peterson & Thurstone, 1933). The results of these studies were rather complex and provided an early warning that attitude change effects would depend on a host of individual and situational factors. In addition to these large scale field studies, researchers in the 1930s also conducted individual experiments with a more limited set of independent and dependent variables that have more in common with current research practices (e.g., Knower, 1935).

Although research on attitude change had a significant presence in the first half of the 20th century, the pioneering efforts of Carl Hovland and the eminent investigators he assembled at Yale in the 1950s, were instrumental in making the study of attitude change one of the central foci of social psychology. During World War II, Hovland directed the mass communication program within the Army's Information and Education Division. The research that emanated from this effort (e.g., Hovland, Lumsdaine, & Sheffield, 1949) as well as the investigations conducted when Hovland returned to Yale after the war, continue to be highly influential. In many instances, the Yale group was the first to examine systematically the variables that continue to be of interest today such as source credibility (Hovland, Janis, & Kelley, 1953), individual differences (Hovland & Janis, 1959), attitude structure (Hovland & Rosenberg, 1960), message order effects (Hovland, 1957), ego-involvement (Sherif & Hovland, 1961), and many others.

If social psychological research on attitude change in the 1950s was dominated by the work of the Yale group, research in the 1960s was led by the consistency theorists -- especially Leon Festinger (1957) and his students and colleagues (see Abelson, Aronson, McGuire, Newcomb, Rosenberg, & Tannenbaum, 1968). In contrast to the Hovland group which explored a wide variety of external variables and explained the persuasion outcomes of these variables with a diversity of learning-type formulations, the consistency theorists were more focused conceptually -- emphasizing the internal tension that was thought to result when people engaged in actions that were inconsistent with their beliefs, attitudes, and values. The approaches taken by the Hovland and Festinger groups are still influential today (for a recent discussion of the divergent research styles of these groups, see McGuire, 1995a).

Contemporary Conceptualizations

By the 1970s, attitude change research had become so abundant that the whole enterprise was threatened with collapse due to an embarrassment of conflicting findings and theories. Reviewers of the literature noted that there were literally thousands of empirical efforts, but little conceptual coherence (e.g., Fishbein & Ajzen, 1972; Kiesler & Munson, 1975). Sherif (1977, p. 370) bluntly stated that there was "reigning confusion in the area" and a "scanty yield in spite of a tremendously thriving output." Fortunately, this state of affairs did not last long as new multi-process frameworks developed that accounted for many of the apparently conflicting findings. The two most popular of these models, the Elaboration Likelihood Model (ELM) and the Heuristic-Systematic Model (HSM) originated in doctoral dissertations in the late 1970s (Chaiken, 1978; Petty, 1977), and were subsequently expanded into full persuasion theories (Chaiken, 1987; Chaiken, Liberman, & Eagly, 1989; Petty & Cacioppo, 1981, 1986a, 1986b). These models placed greater focus on the moderation and mediation of attitude change effects and explained how the same variable (e.g., source credibility, mood) could have different effects on attitude change in different situations, and how a given variable could produce the same persuasion outcome by different processes in different situations. A key idea in these new frameworks was that some processes of attitude change required relatively high amounts of mental effort, whereas other processes of persuasion required relatively little mental effort. Thus, Petty and Cacioppo (1981) reasoned that most of the major theories of persuasion were not necessarily competitors or contradictory, but operated in different circumstances. Later in this chapter, this notion is used to organize the major processes of persuasion. Although these models share many notions, the ELM and HSM had somewhat different conceptual parents. The ELM's high effort central route was based on cognitive response theory (Greenwald, 1968; Brock, 1967) whereas the HSM's view of

detailed (systematic) message processing, in some early treatments at least, emphasized “effort exerted in comprehending message content, not effort exerted in cognitive responding or thinking about message content” (Eagly, Wood, & Chaiken, 1978). Today the models have more similarities than differences and can generally accommodate the same empirical results, though the explanatory language and sometimes the assumed mediating processes vary (additional coverage of some differences between the models is presented later).

Before undertaking our review, it is useful to consider the generic mediational analysis of attitude change that has explicitly or implicitly guided most persuasion research in the 20th century. Some independent variable has an impact on one’s affect (emotions), cognitions, or behavior toward some object, and this in turn has an impact on one’s attitude toward that object. For example, a television commercial might induce pleasant feelings in connection with a political candidate. Associating these pleasant feelings with the candidate could produce favorable attitudes toward the candidate (i.e., commercial --> positive mood --> favorable attitude). Sometimes the hypothesized causal sequence is more complex. For example, in the dissonance paradigm, a individual is enticed to act in a way that is inconsistent with his or her attitude (behavior), which induces an aversive state of tension (affect), which in turn leads to bolstering thoughts (cognition), which finally results in an attitude that is consistent with the behavior (Cooper & Fazio, 1984).

Almost every conceivable causal sequence of affect, cognition, and behavior has been proposed to account for attitudes in at least some circumstances. For example, in their two stage model of message repetition, Cacioppo and Petty (1980) argued that moderate repetition enhanced people’s ability to cognitively respond to the message in a relatively objective manner (stage 1). However, as repetition becomes excessive (stage 2), negative affect sets in (i.e., the message becomes obnoxious and irritating) and this negative affect biases subsequent cognitive responses to the message. It is also possible for a variable to exert parallel effects on affect and cognition. For example, in his analysis of fear appeals, Leventhal (1970) postulated that fear induced both cognitive responses designed to protect oneself from danger (such as accepting the advocacy) and emotional responses aimed at protecting oneself from aversive arousal (such as avoidance). Roselli, Skelly, and Mackie (1995) argued that persuasion in response to cognitive arguments was mediated by cognitive responses to the message, but persuasion in response to affective arguments was mediated by both cognitive and affective responses (see also Zuwerink & Devine, 1996). The accumulated literature makes it clear that although the affective, cognitive, and behavioral bases of attitudes can be independent (Zanna & Rempel, 1988), they are often inextricably interlinked as postulated by the consistency theorists. That is, if one’s affect changes, one’s cognitive responses and behavioral tendencies typically change as well (e.g., Rosenberg, 1960). To the extent that this does not occur, people remain in an ambivalent state that can itself be aversive (Priester & Petty, 1996; Thompson, Zanna, & Griffin, 1995).

Although much of the early work on attitude change dealt with relatively complex issues (such as whether atomic submarines should or should not be built, Hovland & Mandell, 1957), tenets of contemporary theories have also been tested using simpler objects such as consumer products (e.g., Petty, Cacioppo, & Schumann, 1983; Snyder & DeBono, 1989). Thus, although many of the examples in this chapter use complex issues as attitude objects, many of these same attitude change processes are also applicable to simpler attitude objects.

PROCESSES OF ATTITUDE CHANGE

As noted previously, contemporary persuasion theorists recognize that different processes can lead to attitude change in different circumstances. Some of these processes require diligent and effortful information processing activity whereas others proceed with relatively little mental effort. In this section, the Elaboration Likelihood Model of persuasion is described, and some prominent factors that determine whether people will tend to exert high or low amounts of mental effort in a persuasion situation are reviewed (the HSM is discussed subsequently). Next, the persuasion processes that tend to require relatively high amounts of mental effort are described in more detail. Following this, the persuasion processes that tend to require relatively low amounts of mental effort are described.

The Elaboration Likelihood Model of Persuasion

The Elaboration Likelihood Model of persuasion (ELM; Petty & Cacioppo, 1981; 1986a) is a theory about the processes responsible for attitude change and the strength of the attitudes that result from those processes. A key construct in the ELM is the elaboration likelihood continuum. This continuum is defined by

how motivated and able people are to assess the central merits of a person, issue or a position (i.e., the attitude object). The more motivated and able people are to assess the central merits of the attitude object, the more likely they are to effortfully scrutinize all available object-relevant information. Thus, when the elaboration likelihood is high, people will assess object-relevant information in relation to knowledge that they already possess, and arrive at a reasoned (though not necessarily unbiased) attitude that is well articulated and bolstered by supporting information (central route). When the elaboration likelihood is low, however, then information scrutiny is reduced and attitude change can result from a number of less resource demanding processes that do not require effortful evaluation of the object-relevant information (peripheral route). Attitudes that are changed by low effort processes are postulated to be weaker than attitudes that are changed the same extent by high effort processes. The hypothesis of both high and low effort attitude change comes from recognizing that it is neither adaptive nor possible for people to exert considerable mental effort in thinking about all of the messages and attitude objects to which they are exposed. In order to function in life, people must sometimes act as "cognitive misers" (Taylor, 1981), but at other times it is more adaptive to be generous with one's cognitive resources.

The elaboration likelihood continuum incorporates both a quantitative and a qualitative distinction (see Petty, 1996). That is, as one goes higher on the elaboration continuum, central route processes increase in magnitude, and as one goes down the continuum, central route processes diminish in magnitude. This quantitative variation suggests that at high levels of elaboration, people's attitudes will be determined by their effortful examination of all relevant information, but at lower levels of elaboration, attitudes can be determined, for example, by less effortful (careful) examination of the same information, or effortful examination of less information (e.g., the person critically examines just the first argument in a message, but not the remaining arguments). In addition, however, the ELM incorporates a qualitative distinction. For example, consider a person who is exposed to a message with ten arguments. The high elaboration (central route) processor would tend to think about most or all of the information. If motivation or ability to think was reduced, the recipient might think about each argument less carefully, or think about fewer arguments (quantitative difference). However, the ELM proposes that other (peripheral) mechanisms that do not involve thought about the substantive merits of the arguments could also influence attitudes when the elaboration likelihood is low. For example, a low elaboration processor might simply count the arguments and reason that "if there are ten reasons to favor it, it must be worthwhile" (see Petty & Cacioppo, 1984). Note that this process is qualitatively different from the argument elaboration process in that this mechanism does not involve on-line consideration of the merits of the arguments but instead involves reliance on a rule of thumb or heuristic that the person generates or retrieves from memory (see also Chaiken, 1987). Other relatively low effort peripheral mechanisms that are capable of producing attitude change without processing the substantive merits of the arguments include: classical conditioning (Staats & Staats, 1958; Cacioppo, Marshall-Goodell, Tassinary, & Petty, 1992), identification with the source of the message (Kelman, 1958), misattribution of affect to the message (Petty & Cacioppo, 1983; Schwarz & Clore, 1983), and mere exposure effects (Bornstein, 1989; Zajonc, 1968).

Two ELM notions -- the "tradeoff" hypothesis, and the "multiple roles" hypothesis -- have been the subject of some confusion in the literature (e.g., Eagly & Chaiken, 1993; Stiff, 1986). The first hypothesis postulates a tradeoff between the impact of central and peripheral processes on judgments along the elaboration likelihood continuum. That is, as the impact of central route processes on judgments increases, the impact of peripheral route processes on judgments decreases. Note that the tradeoff is not in the occurrence of central and peripheral processes, but in the impact of these processes on judgments. For example, the presence of one's friend might invoke the heuristic, "I agree with people I like" (Chaiken, 1980), but under high elaboration conditions, this heuristic would be subjected to careful scrutiny just as the arguments in a message are subjected to scrutiny (Petty & Cacioppo, 1986a; Petty, 1994). If the heuristic is found to lack merit as an argument for supporting the advocated view, then it would have little impact on one's summary judgment. On the other hand, if the heuristic was deemed cogent, then it would. This scrutiny of the heuristic for merit would be less likely under low elaboration conditions where the mere invocation of the heuristic would be sufficient for persuasion. It is important to note that the ELM tradeoff hypothesis implies a number of things. First, at most points along the continuum, central and peripheral processes would co-occur and jointly influence judgments (Petty, Kasmer, Haugtvedt, & Cacioppo, 1987). Second, however, movement in either direction along the continuum would tend to enhance the relative impact of one or the other process (e.g., effortful scrutiny for merit versus reliance on a

heuristic) on judgments.

It is important to note that changing the relative impact of one process over another on attitudes does not imply that the impact of any given variable (e.g., source expertise, mood) on judgments must increase or decrease as one moves along the continuum. This is because of the multiple roles hypothesis. In essence, the multiple roles notion is that any given variable can influence attitudes by different processes at different points along the elaboration continuum (Petty & Cacioppo, 1986a). Thus, for example, consider whether a manipulation of “beautiful scenery” in an advertisement for a vacation location should increase or decrease in impact as the elaboration likelihood is increased. If a person was not thinking about the ad very much (low elaboration likelihood), then the beautiful scenery might have a positive impact simply due to its mere association with the target location much as it might have a similar positive impact on evaluations of a new car that was located in the scenery (peripheral route). However, as the elaboration likelihood is increased and the scenery is processed for its merits with respect to the product, then the impact of the scenery on attitudes could be increased in the ad for the vacation location due to its perceived relevance and merit (or have the same impact but for a different reason), but show decreased impact in the ad for the car due to its perceived irrelevance for this product (central route; see also the later section on multiple roles for persuasion variables).¹¹

Determinants and Dimensions of Elaboration

In sum, the ELM notes that attitude change can vary in the extent to which it is based on mental effort. Persuasion researchers have identified a number of ways to assess the extent to which persuasion is based on effortful consideration of information. Perhaps the most popular procedure has been to vary the quality of the arguments contained in a message and to gauge the extent of message processing by the size of the argument quality effect on attitudes (e.g., Petty, Wells, & Brock, 1976). Greater argument quality effects suggest greater argument scrutiny. Other procedures include assessment of the number and profile of issue relevant thoughts generated (Petty, Ostrom, & Brock, 1981). High elaboration conditions are associated with more thoughts (e.g., Burnkrant & Howard, 1984) and thoughts that better reflect the quality of the arguments presented (e.g., Harkins & Petty, 1981). Also, correlations between message-relevant thoughts and post-message attitudes tend to be greater when argument scrutiny is high (e.g., Chaiken, 1980; Petty & Cacioppo, 1979b), and high message elaboration can produce longer reading or exposure times than more cursory analyses (e.g., Mackie & Worth, 1989).

According to the ELM, in order for high effort processes to influence attitudes, people must be both motivated to think (i.e., have the desire to exert a high level of mental effort) and have the ability to think (i.e., have the necessary skills and opportunity to engage in thought). There are many variables capable of affecting the elaboration likelihood and thereby influencing whether attitude change is likely to occur by the high or low effort processes that are described in more detail shortly. Some of these motivational and ability variables are part of the persuasion situation, whereas others are part of the individual. Some variables affect mostly the amount of information processing activity whereas others tend to influence the direction or valence of the thinking.

Perhaps the most important variable influencing a person's motivation to think is the perceived personal relevance or importance of the communication (see Petty & Cacioppo 1979b;1990; Johnson & Eagly, 1989). When personal relevance is high, people are more influenced by the substantive arguments in a message and are less impacted by peripheral processes (e.g., Petty, Cacioppo, & Goldman, 1981). Of course, variables other than relevance can modify a person's motivation to think about a message. For example, people are more motivated to scrutinize information when they believe that they are solely responsible for message evaluation (Petty, Harkins, & Williams, 1980), when they are individually accountable (Tetlock, 1983), when they recently have been deprived of control (Pittman, 1994), and when they expect to discuss the issue with a partner (Chaiken, 1980). Increasing the number of message sources can enhance information processing activity (e.g., Harkins & Petty, 1981; Moore & Reardon, 1987), especially when the sources are viewed as providing independent assessments of the issue (Harkins & Petty, 1987). Messages that are moderately inconsistent with an existing attitude schema can enhance processing over schema-consistent messages presumably because the former could pose some threat that needs to be understood or some incongruity that needs to be resolved (Cacioppo & Petty, 1979b). Other incongruities can also increase information processing activity, such as when an expert source presents surprisingly weak arguments (Maheshwaran & Chaiken, 1991), when the message does not present the

information in a form that was expected (Smith & Petty, 1996), and when people feel ambivalent rather than certain about the issue (Maio, Bell, & Esses, 1996). In addition to factors associated with the persuasive message, issue, or the persuasion context, there are individual differences in people's motivation to think about persuasive communications. For example, people who enjoy thinking (i.e., those high in need for cognition; Cacioppo & Petty, 1982) tend to form attitudes on the basis of the quality of the arguments in a message rather than on peripheral cues (see Cacioppo, Petty, Feinstein, & Jarvis, 1996, for a review).

Among the important variables influencing a person's ability to process issue-relevant arguments is message repetition. As noted previously, moderate message repetition provides more opportunities for argument scrutiny (e.g., Cacioppo & Petty, 1979b; Gorn & Goldberg, 1980), which will prove beneficial for processing as long as tedium is not induced (Cacioppo & Petty, 1989; Cox & Cox, 1988). External distractions (e.g., Petty et al., 1976), fast presentations (Smith & Shaffer, 1995) external pacing of messages (such as those on radio or TV rather than in print; Chaiken & Eagly, 1976; Wright, 1981), time pressures on processing (e.g., Kruglanski & Freund, 1983), enhancing recipients' physiological arousal via exercise (e.g., Sanbonmatsu & Kardes, 1988), placing recipients in an uncomfortable posture (Petty, Wells, Heesacker, Brock, & Cacioppo, 1983), and rendering the message difficult to understand (e.g., Ratneshwar & Chaiken, 1991) all decrease substantive message processing and should increase the impact of peripheral processes. Interestingly, even though a number of studies have examined differences in the actual ability of recipients to process a persuasion message, little work has examined differences in perceived ability to process. Thus, a message that appears technical or overly quantitative (Yalch & Elmore-Yalch, 1984) may reduce processing not because it interferes with actual ability, but because it interferes with a person's perceived ability to process (e.g., "it's probably too complicated for me, so why bother").

Individual differences also exist in the ability of people to think about a persuasive communication. For example, as general knowledge about a topic increases, people can become more able (and perhaps more motivated) to think about issue-relevant information (Wood et al., 1995). Knowledge is only effective to the extent that it is accessible, however (e.g., Brucks, Armstrong, & Goldberg, 1988). When knowledge is low or inaccessible, people are more reliant on simple cues (e.g., Wood & Kallgren, 1988). To date, researchers have not examined differences in perceived knowledge. It is reasonable that even if actual knowledge differences were constant, people with less perceived expertise might be less likely to process a message and be more influenced by peripheral processes.

Finally, it is important to note that in most communication settings, a confluence of factors determines the nature of information processing rather than one variable acting in isolation. For example, ending arguments with rhetorical questions rather than statements can increase thinking about a persuasive message if the questions follow the arguments and motivation to think about the message would normally be low (Petty, Cacioppo, & Heesacker, 1981). On the other hand, if people are already motivated to think about the message or the rhetorical questions precede the message arguments, then the use of rhetorical questions can actually disrupt the normal processing that would have occurred (see Howard, 1990; Petty et al., 1981). Although the effects of many individual variables on information processing have been examined, there is a shortage of studies examining the potential interactions possible when multiple ability and motivational variables are combined.

Relatively Objective Versus Biased Information Processing

The variables already discussed, such as distraction or need for cognition, tend to influence information processing activity in a relatively objective manner. That is, all else being equal, distraction tends to disrupt whatever thoughts a person is thinking (Petty et al., 1976). The distraction per se does not specifically target one type of thought (e.g., favorable or unfavorable) to impede. Similarly, individuals with high need for cognition are more motivated to think in general than people low in need for cognition (Cacioppo, Petty, & Morris, 1983). They are not more motivated to think certain kinds of thoughts over others. Some variables, however, are selective in their effects on thinking. For example, people are facilitated in thinking favorable thoughts and disrupted from thinking negative thoughts when they are instructed to move their heads in an up and down ("yes") manner. Moving one's head in a side to side ("no") manner, appears to facilitate negative thinking and disrupt positive thinking (Wells & Petty, 1980; see also Förster & Strack, 1996).

Default biases. Before considering other variables, like head nodding, that induce specific biases in information processing, it is useful to consider the default biases that can influence judgment. Specifically,

research has suggested that in the absence of contrary information, people tend to assume that what others say is true (Gilbert, 1991), and that unfamiliar objects and people in our environment are good. The latter has been called the positivity bias (Kanouse & Hanson, 1971; Peeters & Czapinski, 1990) or the positivity offset (Cacioppo & Berntson, 1994). However, if a source is known to be a liar, and this information is retrieved, statements from this source would not be assumed to be true even if no specific issue-relevant information to the contrary was available. Also, even though unfamiliar objects and people are generally assumed to be good, people would not necessarily assume that an unfamiliar insect was good even if no explicit negative information about the new insect was available (since the category “insect” contains many negative instances whereas the category person contains more positive instances). Interestingly, however, Cacioppo, Gardner, and Berntsen (1997) have suggested that there is a default positive bias to evaluative processing. They demonstrated that when people were presented with 6 completely neutral statements about an unfamiliar insect, judgments were more positive than when this information was not available. This could be because of a default positive bias to evaluative processing as suggested by Cacioppo et al., or it might result from application of Gricean rules of conversation. Grice (1975) argued that people expect information from others to be informative and relevant. If the most relevant information the experimenter can provide about an insect is neutral, one might safely assume that there is little negative information to convey (e.g., the insect must not be poisonous, or surely this would have been included). The Gricean interpretation would suggest that if the experimenter presented 6 neutral items about an unfamiliar vacation location however, people might assume that if this is the most relevant information, there must be little positive information to convey and attitudes could be less positive than in the absence of any information.

Motivational and ability factors in bias. The ELM accommodates both relatively objective and relatively biased information processing by pointing to the motivational and ability factors involved. Regarding motivation, the ELM holds that motivation is relatively objective when no apriori judgment is preferred and a person’s implicit or explicit goal is to seek the truth “wherever it might lead” (Petty & Cacioppo, 1986b). In contrast, a motivated bias can occur whenever people implicitly or explicitly prefer one judgment over another. This is similar to what Kruglanski (1990) has called a “need for specific closure.” A wide variety of motivations can determine which particular judgment is preferred in any given situation. For example, if the reactance motive (Brehm, 1966) is aroused, people will prefer to hold whatever judgment is forbidden. If balance motives (Heider, 1958) are operating, people would prefer to adopt the position of a liked source but distance themselves from a disliked source. If impression management motives (Tedeschi, Schlenker, & Bonoma, 1971) are operating, people would prefer to hold whatever position they think would be ingratiating. If self-affirmation motives (Steele, 1988) are high, people would prefer the position that would make them feel best about themselves, and so forth. Importantly, many of these biasing motives could have an impact on judgments by either the central or the peripheral route. For example, invocation of reactance could lead to simple rejection of the forbidden position without much thought or to rejection because of intense counterarguing of the position. Which occurs (central or peripheral bias) would depend on other variables such as whether the person was motivated (e.g., high personal relevance) or able (e.g., high distraction) to think.

The ELM holds that biased processing can occur even if no specific judgment is preferred (i.e., if based on motivational factors alone, processing would be relatively objective). This is because ability factors can also determine bias. For example, some people might simply possess a biased store of knowledge compared to other people. If so, their ability to process the message objectively can be compromised. Recipients with a biased store of knowledge typically will be better able to see the flaws in opposition arguments and the merits in their own side compared to recipients with a more balanced store of knowledge (cf., Lord, Ross, & Lepper, 1979). In addition, variables in the persuasion situation can bias retrieval of information even if what is stored is completely balanced and no motivational biases are operating. For example, a positive mood can increase access to positive material in memory (e.g., Bower, 1981). In general, biases in processing a persuasive message are fostered when the message contains information that is ambiguous or mixed rather than clearly strong or weak (Chaiken & Maheswaran, 1994).

Bias not only impacts judgments by influencing the nature of on-line information processing, but also can influence judgments by biasing the integration of information. For example, even if people have an unbiased store of information in memory, and a balanced set of elaborations is generated, certain ideas might be given

greater weight than others in forming a judgment (e.g., Anderson, 1981). In fact, considerable evidence exists for the proposition that negative information is often given more weight than equally extreme positive information (see Fiske, 1980; Kanouse & Hanson, 1971; but see Skowronski & Carlston, 1989). This might account for the finding that in order to move one's rating from the bad to the good side of a rating scale requires not 51% positive attributes associated with an object, but over 60% (Lefebvre, 1985). Although, there are a number of ways to account for this negativity bias in information integration (see Cacioppo & Berntsen, 1994; Peeters & Czapinski, 1990), one appealing explanation is that the negativity bias stems from the default tendency that was noted earlier for people to prefer and expect positive information. That is, if people expect positive information, then negative information would seem especially diagnostic and would be weighted more heavily. In addition, if positive information is expected and preferred, then negative information would be more surprising or threatening either of which could enhance attention to the information and processing of it (Baker & Petty, 1994). This suggests, however, that in situations in which negative information is expected or preferred, positive information should be perceived as more diagnostic or processed more (Smith & Petty, 1996).

Bias correction. It is important to note that just because some motivational or ability factor results in biased information processing, this does not mean that a biased judgment will result. This is because people sometimes attempt to correct for factors they believe might have unduly biased their evaluations (e.g., Petty & Wegener, 1993; Wilson & Brekke, 1994). Initial discussions of such phenomena described these corrections as proceeding only in one direction (i.e., a "partialling" process moved "corrected" assessments away from reactions activated by the biasing stimulus; e.g., Martin et al., 1990; Schwarz & Bless, 1992). More recent discussions have noted (and empirically shown) that corrections can proceed in different directions depending on recipients' theories of how the biasing event or stimulus (e.g., an attractive source) is likely to have influenced their views (e.g., Wegener & Petty, 1995). Specifically, according to the Flexible Correction Model (see Wegener & Petty, 1997), in order for corrections to occur, people should: (a) be motivated and able to identify potentially biasing factors, (b) possess or generate a naive theory about the magnitude and direction of the bias, and (c) be motivated and able to make the theory-based correction. In some cases, integrative processing of the information (e.g., Schul & Burnstein, 1985) could make it difficult for people to correct for the biasing effect of an individual piece of information that contributed to an overall evaluation. That is, even if motivated to correct, people might not have the ability to do so. When people are motivated and able to correct, however, theory-based corrections can result in reversals of typical persuasion effects. For example, in one study, when people were made aware of possible biases due to source attractiveness, an overcorrection led an unattractive source to be more persuasive than an attractive one (Petty & Wegener, 1995; see Wegener & Petty, 1997, for additional discussion of correction processes in persuasion and other settings).

High Effort Processes

As outlined above, a number of factors influence the likelihood that people will allocate mental effort in persuasion situations. However, when people engage in high effort processing, what do they do? Through the years, a number of high effort processes have been proposed. Many of the theoretical positions discussed in this section were originally proposed -- and some still hold them to be -- general models of attitude change (e.g., see Fishbein & Middelstadt, 1995). As was noted previously, however, within the ELM, the impact of these high effort processes on attitudes is viewed as falling along a continuum such that these processes have a larger impact on judgments when ability and motivation to scrutinize the central merits of a position or object are relatively high.

A variety of relatively high-effort processes have been discussed over the years. These include message learning/reception processes, cognitive responses, probabilistic/expectancy-value processes, information integration, and at least in its original formulation, dissonance-produced reassessments of attitude-relevant thoughts and actions.

Message Learning/Reception Processes

Our starting point in discussing contemporary high-effort information processing approaches is the Communication-Persuasion matrix model outlined by William McGuire in previous editions of this handbook (1969, 1985). McGuire began as a valuable contributor to the Hovland group and as an important consistency theorist (e.g., McGuire, 1960a). His matrix model and related work provided an essential bridge from the Yale/Hovland work to more contemporary information processing models (e.g., McGuire, 1964).

McGuire's analysis is generally compatible with the Hovland/Yale view that attitude change depends on a series of information processing stages described as: attention, comprehension, learning, acceptance, and retention of the message and its conclusion (Hovland et al., 1953). A person was assumed to engage in these "output" or "mediating" steps to the extent that the persuasive source, message or context ("input" factors) provided incentives (i.e., rewards) for doing so. McGuire's (1968; 1989) model incorporates and significantly elaborates these ideas. At the same time, McGuire proposed an elegant simplification of the output factors by noting that persuasion is often most dependent upon factors related to the reception of message arguments and yielding to them. Thus, some variables might decrease the likelihood of attitude change by making reception more difficult (e.g., distraction from the message content by a secondary task), whereas others might decrease persuasion by making yielding less likely (e.g., a poorly reasoned message). From this perspective, some of the most interesting variables were those that might influence reception and yielding in opposite ways. For example, as the self-esteem or intelligence of message recipients increased, reception might increase (i.e., because higher levels of these characteristics would likely increase attention and comprehension) but yielding might decrease (e.g., because these people would likely have greater confidence in their initial opinions or would be more critical of new information; Eagly & Warren, 1976). For variables that have opposite effects on reception and yielding, persuasion should be maximal at a moderate level of the variable -- the "compensation principle" (McGuire, 1968). This perspective provided considerable flexibility over the original message learning approach in that either reception or yielding could become more important in a given persuasion setting. For example, if a message consisted of complex but compelling arguments, factors affecting reception might be most related to persuasion outcomes (because most people would yield to compelling arguments), but if a message consisted of simple but somewhat weak arguments, factors related to yielding might take on greater importance (see McGuire, 1968).²²

Although some studies have examined the curvilinear hypothesis from this model (see Rhodes & Wood, 1992, for a review), most of the attention devoted to the reception/yielding perspective has examined the notion that reception is a prerequisite to persuasion. In particular, research has focused on the question of whether an audience needs to comprehend and remember the message arguments in order for persuasion to occur. Regarding comprehension of the arguments, research clearly suggests that if a message is gibberish, persuasion can be reduced when compared to a comprehensible message (Eagly, 1974), unless, perhaps, if the arguments in the message were very weak, and processing the intact message would have produced boomerang.

Considerable attention has been paid to the issue of whether people must learn and remember the message arguments in order for persuasion to occur. Consequently, researchers have examined the extent to which argument learning (and retention), as assessed by message recall or recognition, is related to persuasion. Perhaps surprisingly, early research provided little evidence for a link between message recall and either initial persuasion or its persistence over time (see Eagly & Chaiken, 1993; McGuire, 1969, for reviews).

There are several possible reasons for low attitude change-argument memory relationships. Perhaps the most important is that a pure reception/learning model does not take into account the idiosyncratic evaluations individuals have of the arguments. That is, one person can find an argument very compelling and relevant, another only slightly convincing, and a third might find the same argument to be completely ridiculous and irrelevant (Petty, Ostrom, & Brock, 1981; see section on cognitive responses). Consistent with McGuire's (1968) suggestions, however, when recalled information is weighted by a person's idiosyncratic evaluation of it, attitude-recall relationships are increased (e.g., Chattopadhyay & Alba, 1988).

In some situations, however, there might be a substantial relation between memory for message arguments and attitude change. For example, if a judgment is to be made when no information has been presented on the topic for some time, or if people were distracted from careful on-line evaluation of the information when it was presented, then people are more likely to base attitudes or other judgments on the implications of the information that can be recalled if that information is perceived relevant at the time of judgment (Hastie & Park, 1986). However, because the messages in the persuasion studies showing recall-attitude correlations (e.g., Haugtvedt & Petty, 1992; Mackie & Asuncion, 1990) contained reasonably strong arguments, it is not clear if the memory-recall relationships that were observed were due to the fact that people favorably evaluated the arguments they recalled at the time of judgment, or whether they simply made inferences of validity based on the mere number of arguments that they could recall (Petty & Cacioppo, 1984). That is,

attitude-memory correlations can stem from either central or peripheral routes to persuasion.

It is somewhat ironic that although the learning/reception perspective was originally formulated in a way that suggests a high-effort process, the circumstances in which message recall relate most closely to attitudes might actually be those in which relatively little on-line evaluation of message arguments takes place (i.e., passive learning of arguments used as a cue or evaluated later rather than active on-line consideration of them). Specifically current research suggests that the correlation between message recall and attitudes should be relatively high if: (a) the likelihood of elaborating the message arguments at the time of message exposure is relatively low, (b) an unexpected judgment is required following message exposure, and c) no simple cues (e.g., source expertise; strong prior attitude) are available or attended to by the recipient that could produce an attitude at the time of judgment in the absence of on-line argument scrutiny. In such circumstances, in order to express an opinion, people would likely attempt to recall the information presented and base their judgment on what they can remember.

In sum, although the reception hypothesis has a long history, and some consider it to be proven (Chaiken, Wood, & Eagly, 1996), our view is that accurate understanding or learning of message arguments is not necessary for persuasion to occur. Rather, as emphasized by the cognitive response approach discussed shortly, a person's subjective perception of understanding the arguments is more important than actual understanding or learning of the information presented. A person can completely misperceive the message arguments (score zero on accurate reception) and nevertheless generate favorable responses to what was inaccurately perceived. In addition, peripheral processes (e.g., classical conditioning) can influence attitudes in the absence of reception of message arguments. Nevertheless, it is likely that the role of message reception is probably underestimated in the typical persuasion study, in part because the variance in reception is often too low to detect effects (Eagly & Chaiken, 1984; 1993).

Cognitive Responses

Thoughts in response to messages. In response to numerous findings of low attitude-recall correlations (which challenged the message learning view implied by the Yale approach of the 1950s), researchers -- especially at Ohio State University -- developed the cognitive response approach to persuasion (e.g., Brock, 1967; Greenwald, 1968; Petty, Ostrom, & Brock, 1981). For example, Greenwald (1968) proposed that it was not the specific arguments in a message that were associated with the message conclusion (or attitude object) in memory. Rather, a person's idiosyncratic cognitive responses or reactions to the message arguments were paired with the conclusion and were thus responsible for persuasion or resistance (see also, Kelman, 1953; McGuire, 1964). The decay of these cognitive responses were also postulated to be responsible for the persistence of attitude change (Love & Greenwald, 1978). Of course, at the most basic level, individuals can only cognitively respond to something that they have received. In the cognitive response analysis, however, a person's thoughts can be in response to incorrectly perceived arguments as well as correctly perceived arguments. In fact, the thoughts can be to the message conclusion in the absence of receipt of any arguments. The original cognitive response approach was also sufficiently general that it accommodated cognitive responses elicited by the tone of the message or by extra-message factors such as the source or context of the message. In any case, to the extent that a person's cognitive responses were favorable, persuasion was the postulated result, but to the extent that they were unfavorable (e.g., counterarguments, source derogations, emotion-laden thoughts), resistance or even boomerang was possible.

The cognitive response approach has generated a considerable body of evidence consistent with the view that in certain situations people spontaneously produce thoughts during message presentation and the favorability of these thoughts is a good predictor of post-message attitudes and beliefs (see reviews by Eagly & Chaiken, 1993; Petty & Cacioppo, 1986a). In a typical cognitive response study, message recipients list or verbally report their thoughts either during or after the message. Studies in support of the cognitive response approach have shown that: (a) physiological activity indicative of information processing (e.g. facial EMG) is elevated when cognitive responding is presumed to occur (e.g., Cacioppo & Petty, 1979a); (b) thought profiles show the same pattern as the attitude measure in response to some manipulation (e.g., the manipulation produces increased persuasion and increased favorable thoughts and/or decreased unfavorable thoughts; e.g., Osterhouse & Brock, 1970); (c) the polarity of these thoughts (e.g., positive minus negative thoughts) is a good predictor of the post-message attitude (e.g., Mackie, 1987), and (d) removing the effect of some manipulation on thoughts eliminates

its effect on attitudes, whereas the reverse does not occur (e.g., Insko, Turnbull, & Yandell, 1974; see Cacioppo & Petty, 1981b, for a review).

Although most studies simply categorize thoughts into the valence dimension of favorable, unfavorable, and neutral categories, other coding schemes are possible. For example, thoughts can be based mostly on affect or cognition (e.g., Ickes, Robertson, Tooke, & Teng, 1986) and can reiterate the message content or include self-generated material (e.g., Greenwald, 1968). It is also possible to distinguish between cognitive responses that are based on argument scrutiny (e.g., counterarguments) versus thoughts that are based on simple cues (e.g., source derogations). Consistent with the multi-process models, it is the former type of cognitive response that best predicts attitudes when elaboration is high; the latter category of thoughts predicts attitudes best when elaboration is low (e.g., Chaiken, 1980; Petty & Cacioppo, 1979b, 1984). Although considerable work has addressed factors that determine the extent of thinking and the content of thinking about a persuasive message at the time a message is presented, little work has addressed the recurrence of thinking in persuasion contexts. That is, what factors determine whether people return to thinking about the message or issue at some point following a communication (see Martin & Tesser, 1996; Petty, Jarvis, & Evans, 1996; for discussion).

Thoughts when no message is present. Thoughts do not only determine the direction and extent of attitude change when a message is presented. The powerful and persisting effects of completely self-generated messages were shown in early research on "role-playing" (e.g., Janis & King, 1954; Watts, 1967). A consistent research finding is that active generation of a message is a successful strategy for producing attitude change (e.g., McGuire & McGuire, 1996). It doesn't seem to matter whether people generate the message because they are assigned a position to take, or they select a position based on a desire to communicate with another person. For example, people tend to tell others what they want to hear (Tesser & Rosen, 1975), and construction and delivery of such biased messages can produce attitude change in the transmitter (see Higgins, 1981). Change tends to be greater when people generate messages regarding attributes that a target possesses than attributes that a target lacks (McGuire & McGuire, 1996).

Furthermore, self-generated attitude changes tend to persist longer than changes based on passive exposure to a communication (e.g., Elms, 1966). Attitude changes that come about due to active generation of arguments might be more persistent to the extent that they are based on more extensive processing of attitude relevant information than are attitude changes due to passive receipt of messages (and argument generation might make the arguments more accessible than when they are passively received; Greenwald & Albert, 1968; Slameka & Graf, 1978). Similarly, people who are asked to imagine hypothetical events come to believe that these events have a higher likelihood of occurring than before thinking about them (e.g., Sherman, Cialdini, Schwartzman, & Reynolds, 1985). Furthermore, self-generation of explanations has been shown to be a powerful way to establish or change beliefs, and beliefs based on the generated explanations are remarkably impervious to change (e.g., Anderson, Lepper, & Ross, 1980; Sherman, Zehner, Johnson, & Hirt, 1983).

Tesser (1978) and his colleagues have examined the effects of merely asking someone to think about an issue, object, or person. In one early study, Sadler and Tesser (1973) introduced research participants to a likable or dislikable partner (via a tape-recording). Some participants were instructed to think about the partner whereas others were distracted from doing so. The thinking manipulation polarized judgments of the partner. More recent research shows that the polarization effect requires that people have a well-integrated and consistent schema to guide processing and that they are motivated to utilize this issue-relevant knowledge (e.g., Chaiken & Yates, 1985). In the absence of these conditions, such as when motivation to think is low or when the issue-relevant information in memory is not highly interconnected (and consistent), mere thought is associated with attitude moderation (e.g., Judd & Lusk, 1984; see Tesser, Martin, & Mendolia, 1995, for a review of mere thought research).

In a variation of this mere thought procedure, Wilson and colleagues have examined the effects of asking people to think about why they hold the attitudes they do (e.g., why do you like strawberry ice-cream? see Wilson et al., 1989). The primary conclusion from a series of studies is that evaluations following a reasons analysis tend to be overinfluenced by cognitive factors and underinfluenced by affective factors. Thus, decisions following an analysis of reasons can be maladaptive because people consider only a subset of the real reasons they like or dislike something. In a similar vein, Levine, Halberstadt, and Goldstone (1996) demonstrated that when asked to analyze why they liked a target object prior to making judgments of a series of previously

unfamiliar (and not very important) stimuli, people use different dimensions of judgment on different trials. Thus, when analyzing reasons, judgments of objectively similar objects were rated as less similar than when reasons were not analyzed prior to evaluating the objects.

Probabilistic and Expectancy/Value Processes

Although the probabilistic (e.g., McGuire, 1960b; Wyer, 1974) and expectancy/value (e.g., Fishbein & Ajzen, 1975; Rosenberg, 1956) models have largely been discussed in relation to the underlying structure of attitudes (see Eagly & Chaiken, this volume; Petty, Priester, & Wegener, 1994), each is also applicable to thoughtful processes of attitude change. For example, the underlying structure of at least some attitudes might consist of 2 premises that lead to a conclusion:

Premise 1: Candidate A favors tax reduction.

Premise 2: Tax reduction is good for the country.

Conclusion: Candidate A is good for the country.

Therefore, one could change the attitude toward Candidate A by changing either of the premises, either in terms of the content of the premise (e.g., candidate A doesn't really favor tax reduction) or in terms of the likelihood that the premise is true (e.g., there is a .2 rather than a .9 probability that premise 1 is true; McGuire, 1960a, 1960b; Wyer, 1974). To the extent that the attitude has an extensive horizontal or vertical structure (McGuire, 1981), it might take change in a greater number of premises in order to effect noticeable change in the target attitude. Such a view also indicates that one might find changes in attitudes that are not even mentioned in a persuasive message if the attitudes are logically related to claims in the message. Consistent with this view, research shows that a message about abortion attitudes can produce changes in people's attitudes toward the unmentioned issue of contraception (e.g., if abortion is viewed as especially bad, then avoiding abortion by using contraception might be viewed as more desirable than would otherwise be the case; see Mugny & Perez, 1991; Dillehay, Insko, & Smith, 1966). This "indirect change" might even occur if the "direct change" of the targeted attitude is not evidenced (e.g., if change of the targeted attitude is inhibited by social pressure such as a norm against agreeing with a minority source, but no such pressure is associated with the indirect conclusion; Mugny & Perez, 1991). In fact, simply responding to an attitude item on one issue can produce an attitude polarization effect on a related issue (Henninger & Wyer, 1976; Judd, Drake, Downing, & Krosnick, 1991), perhaps because of respondents perceiving links between the issues – links that dictate changes in the related opinion as a means of maintaining consistency among attitudes in the system.

Versions of the probabilistic model have addressed both the likelihood and desirability of premises of syllogisms like that presented above (McGuire, 1960a; McGuire & McGuire, 1991; Wyer, 1973). That is, researchers have examined the determinants of both the desirability and likelihood of various belief statements. For example, consider Premise 1 above that "Candidate A favors tax reduction." If this was an argument in a message advocating Candidate A for president, it would be effective to the extent that people found tax reduction to be desirable and they believed that it was true that Candidate A really favored tax reduction. A theme of this chapter is that desirability (evaluative) judgments can be made based on effortful or non-effortful analyses, but it is less commonly recognized that likelihood or truth judgments can also vary in the extent of effort required. Some theorists, for example, have posited that likelihood judgments involve a relatively effortful consideration of the potential antecedents of the event (McGuire & McGuire, 1991). Other theorists, however, have argued that likelihood judgments can be based largely on perceptions of familiarity of the idea (Arkes, Boehm, & Xu, 1991; Wyer, 1991). As noted earlier, research suggests that propositions are initially assumed to be true unless contradictory information is retrieved which allows one to determine that the proposition is false (Gilbert, 1991). To the extent that this formulation is valid, people should be biased toward assuming truth when the elaboration likelihood is low (Gilbert et al., 1993). Similarly, as noted earlier, people might be biased toward assuming goodness when the elaboration likelihood is low (Cacioppo & Berntsen, 1994; Peeters & Czapinski, 1990). Repetition under low elaboration conditions appears to enhance these default biases. That is, when the elaboration likelihood is low, repeated exposure to statements can make them seem more true (Arkes et al., 1991) and repeated exposure to objects can make them seem more good (Zajonc, 1968). As the elaboration likelihood increases, however, propositions and objects should be judged either true or false and good or bad, depending on the outcome of one's effortful processing.

Regardless of whether the likelihood and desirability of a proposition are determined effortfully or not,

these parameters need to be combined. The most common approach to combining likelihood and desirability comes from expectancy-value theories which analyze attitudes by focusing on the extent to which people believe that the attitude object is linked to important values or is associated with positive versus negative outcomes (e.g., Rosenberg, 1956; see Bagozzi, 1985 for review). In the most influential formulation, Fishbein and Ajzen (1975) hold that the desirability of each attribute associated with an object is weighted by the likelihood that the object possesses the attribute, and the products of the likelihood and desirability components are summed over all attributes. The major implication of expectancy-value theories for attitude change is that a persuasive message will be effective to the extent that it produces a change in either the likelihood or the desirability component of an attribute that is linked to the attitude object (see Fishbein & Ajzen, 1981; Petty & Wegener, 1991, for discussions). Given the wide applicability of the Fishbein and Ajzen model and the extensive number of studies documenting the link between attitudes and the likelihood and desirability components of beliefs, it is surprising that relatively little work on attitude change has been guided explicitly by this framework. Nevertheless, existing research supports the view that messages can influence attitudes by changing either the desirability or the likelihood component of beliefs (e.g., Lutz, 1975; MacKenzie, 1986). Although some advocates of this perspective assume that virtually all attitude change takes place through relatively effortful processes for changing likelihood or desirability components (e.g., Fishbein & Middlestadt, 1995), there are some indications that these processes account for more variance in attitudes when elaboration likelihood is high (e.g., when message recipients are high in need for cognition, Wegener, Petty, & Klein, 1994; or have high levels of topic-relevant knowledge, Lutz, 1977).

Information Integration

Regardless of whether one conceptualizes high elaboration processes as cognitive responses, assessments of likelihood and desirability of attributes of the attitude object, or as learning and retention of attitude-relevant information, these information units must be combined in some manner to form an overall attitudinal reaction. Two combinatory rules have generated the bulk of research attention. Fishbein and Ajzen's expectancy-value formulation described earlier provides one such model (i.e., summation of the likelihood X desirability products for each unit of information). An alternative integration formula is provided by Anderson's (1971) information integration theory. In contrast to the additive rule specified by Fishbein and Ajzen, Anderson posits that the pieces of information in a communication (or one's cognitive responses; Anderson, 1981) are typically combined by a weighted averaging process. Specifically, the person's evaluation of the salient information is weighted by the importance of the information for the judgment and is averaged with the person's weighted initial attitude to form a new attitude.

Perhaps the biggest strength of the information integration model is simultaneously its greatest weakness, namely, the very flexible use of the weighting parameter (Eagly & Chaiken, 1984; Petty & Cacioppo, 1981). That is, the fact that the weighting parameter can take on either positive or negative values of different magnitudes across different situations gives the model a virtually unlimited domain of applicability. Unfortunately, the lack of a priori prediction concerning when and why the weighting parameter for certain variables changes magnitude or sign makes the model more useful as a descriptive rather than explanatory tool for understanding attitude change.³³

Cognitive Dissonance Theory

Of the various theories proposing a motive to maintain cognitive consistency (e.g., Heider, 1958; Osgood & Tannenbaum, 1955), the most prominent is the theory of cognitive dissonance (Festinger, 1957, 1964). In Festinger's original formulation of the theory, two elements in a cognitive system (e.g., a belief and an attitude; an attitude and a behavior) were said to be consonant if one followed from the other. The elements were dissonant if one belief implied the opposite of the other. Of course, two elements could also be irrelevant to each other. Festinger proposed that the psychological state of dissonance was aversive and that people would be motivated to engage in cognitive activity in order to reduce it. Because people in a dissonant state are motivated to achieve a particular outcome, their effortful information processing activity is clearly biased (i.e., of two equally plausible interpretations, the interpretation most consistent with the other salient cognitive elements is clearly preferred). The most obvious solution to dissonance is to engage in cognitive work to modify one of the dissonant elements (i.e., self-generated attitude change). Strategies other than changing the dissonant elements are also possible, however. For example the person could try to generate cognitions that make the dissonant

elements consistent with each other (bolstering). Alternatively, the person could try to minimize the importance of one of the dissonant cognitions (see Simon, Greenberg, & Brehm, 1995).

Perhaps the most studied dissonance situation involves inducing people to engage in some behavior that is inconsistent with their attitudes (Brehm & Cohen, 1962). For example, one common way of producing dissonance in the laboratory is by inducing a person to write an essay that is inconsistent with the person's attitude under high choice conditions and with little incentive (e.g., Zanna & Cooper, 1974). Because behavior is usually difficult to undo, dissonance can be reduced by changing beliefs and attitudes to bring them into line with the behavior (i.e., convincing oneself that the behavior reflects one's true position). In the most famous dissonance experiment, students at Stanford University engaged in the quite boring task of turning pegs on a board (Festinger & Carlsmith, 1959), and then were induced to tell a waiting subject that the task was interesting for either a sufficient (\$20) or an insufficient (\$1) incentive. When later asked how interesting they actually found the task to be, students reported that the task was more interesting the less they were paid. A large number of studies have examined the novel reverse-incentive predictions of dissonance theory in a wide variety of situations. For example, dissonance theorists have discovered that people will come to like a group more the more unpleasant the initiation required to get into the group (Aronson & Mills, 1959). People were found to report liking an exotic food more the more dislikable the person who induced them to try the food (Zimbardo, Weisenberg, Firestone, & Levy, 1965). Also, it was found that people's evaluations of two objects was more discrepant after a choice between them than before the choice took place. Following a choice, biased cognitive activity renders the chosen option more favorable and the unchosen option less favorable (Brehm, 1966).

It is now clear that many of the situations described by Festinger as inducing dissonance produce the physiological changes and perceptions of unpleasantness predicted by the theory. Evidence for this proposition has been found both with self-report (Elliot & Devine, 1994) and physiological measures (e.g., Elkin & Leippe, 1986; Losch & Cacioppo, 1990). In addition, the dissonance effect has been shown to disappear when people can misattribute their unpleasant feelings to some other source (e.g., Fried & Aronson, 1995; Zanna & Cooper, 1974), or people are tranquilized to reduce their presumed discomfort (e.g., see Fazio & Cooper, 1983). Recent work has also suggested that the attitude change associated with dissonance is more likely undertaken in order to avoid the negative affective experiences rather than the physiological "tension" proposed by the theory (Elliot & Devine, 1994; Losch & Cacioppo, 1990).

It is also important to note that the mere performance of an inconsistent action does not always produce dissonance. One reason for this is that some people may not have a need for consistency (Cialdini, Trost, & Newsom, 1995). Alternatively, some theorists have questioned Festinger's view that inconsistency per se produces discomfort in people, and have suggested that it is necessary for people to believe that they have freely chosen to bring about some foreseeable negative consequence for themselves or other people (e.g., Cooper & Fazio, 1984). Thus, if telling a waiting research participant that a boring task is interesting (Festinger & Carlsmith, 1959) results in no harmful consequence (e.g., because the waiting participant doesn't believe you), there is no dissonance. But, if the harmful consequences are high (e.g., the waiting participant decides to stay and take part in the experiment rather than study for an exam), dissonance occurs and attitude change toward the task results (see Calder, Ross, & Insko, 1973). Other theorists argue that inconsistency is involved, but the inconsistency must involve a critical aspect of oneself or a threat to one's positive self-concept (e.g., Aronson, 1969; Greenwald & Ronis, 1978).

Interestingly, theorists from both camps have argued that proattitudinal advocacy (making a speech that is consistent with one's attitudes) can also produce dissonance under certain conditions. Advocates of the negative consequences view argue that proattitudinal advocacy can induce dissonance if the proattitudinal advocacy ends up having negative consequences (Scher and Cooper, 1989; but see Johnson, Kelly, & LeBlanc, 1995). Advocates of the self-inconsistency view also argue that proattitudinal advocacy can produce dissonance if, as a result of the advocacy, people feel hypocritical (which threatens self-esteem; Stone, Aronson, Craine, Winslow, & Fried, 1994).

Although research has supported both the negative consequences and the self-inconsistency predictions, disentangling these viewpoints has proven difficult. The reason for this is that each framework generally can accommodate the results generated by the other. The conceptual problem stems from the fact that freely choosing to bring about negative consequences is clearly inconsistent with most people's views of themselves as

rational, caring individuals. That is, choosing to bring about negative consequences is inconsistent with one's positive self view. However, it is also true that when people do something inconsistent with their positive self-views, the resulting feeling of guilt, shame, stupidity, or hypocrisy is an aversive consequence (Aronson, 1969). That is, by choosing to violate one's self view, one has freely chosen to bring about an aversive outcome (see Petty, 1995).

A third viewpoint on the causes of dissonance is provided by self-affirmation theory (Steele, 1988). According to this framework, dissonance is not produced by inconsistency per se, being responsible for negative consequences, or the distress of self-inconsistency in particular, but rather stems from a violation of general self-integrity. According to this viewpoint, actions produce dissonance only when the behavior threatens one's "moral and adaptive adequacy" (see also Tesser & Cornell, 1991). The self-consistency and self-affirmation points of view have much in common, but they differ in their predictions of whether high or low self-esteem people should be more susceptible to dissonance effects. The self-consistency point of view argues that high self-esteem individuals would experience the most dissonance by engaging in esteem threatening behavior because such actions are most inconsistent with their favorable self-conceptions. The self-affirmation point of view suggests that low self-esteem individuals should show stronger dissonance effects because high self-esteem individuals can more easily restore self-integrity by thinking about the many positive traits they have. Unfortunately, the research evidence on this question is mixed with some studies showing greater dissonance effects for low self-esteem individuals (Steele, Spencer, & Lynch, 1993), and other studies showing greater dissonance effects for high self-esteem persons (Gerard, Blevans, & Malcolm, 1964).

In sum, it is not clear whether dissonance results from cognitive inconsistency per se, the production of aversive consequences, inconsistency in specific aspects of the self-concept, threats to general self-integrity, or some other process. In fact, each of these mechanisms might be responsible for dissonance, but in different situations. One attempt at integration is Stone and Cooper's (1996) proposal that dissonance results whenever one's behavior violates some self-standard (see Higgins, 1989). That is, Stone and Cooper argue that dissonance can stem from failure to behave in a manner consistent with how a person thinks he or she wants to be (ideal-self) or how the person thinks he or she should be (ought-self), or how others want you to be or think you should be (i.e., normative standards). In this framework, depending on which self-standard is salient, any given act may or may not induce dissonance. Among the most important implications of this integration are that the self-consistency view of dissonance prevails whenever personal self-standards are salient and violated, but the negative consequences view holds whenever normative standards are salient and violated. In addition this view holds that self-affirmation will only reduce dissonance when the affirmation is on dimensions irrelevant to the dissonant act. Relevant affirmations will serve to increase dissonance suggesting self-consistency motives remain at the core of dissonance theory.

Regardless of the exact motivational underpinnings of dissonance, the evidence clearly indicates that attitudinally discrepant actions can result in a reanalysis of the reasons why a person engaged in a certain behavior (or made a certain choice), and cause a person to rethink the merits of an attitude object. The end result of this effortful but generally biased cognitive activity can be a relatively enduring change in attitude toward the object.

Low Elaboration Processes

If the high effort processes just outlined were the only ones that could produce attitude change, it would appear that changes typically require a diligent message recipient -- one who is willing (at a minimum) to passively learn the information presented, and might also assess the likelihood and desirability of the attributes of the object, generate new information and implications of the information, and weight and combine the information to form an overall judgment. If so, attitude change should become less likely as such processes are impaired. According to contemporary multi-process perspectives, however, there are a variety of situations in which attitudes are formed or changed without a great deal of effortful attention or consideration of the substantive information. When this occurs, a number of "peripheral" mechanisms can be responsible for changing attitudes. In fact, a number of theories that were first proposed as general theories of attitude change were comprised of mechanisms that do not require much (if any) effortful scrutiny of the merits of attitude objects. Our discussion of relatively low effort change processes begins with conditioning and priming mechanisms that associate affect with the attitude object, and concludes with a consideration of simple cognitive

inference and other processes that can produce attitude change in the absence of learning or effortfully evaluating the substantive information or arguments presented. Although these peripheral mechanisms vary in the extent of mental effort they require, none requires the recipient to personally evaluate the relevant pieces of information for their central merits.

Associating Affect with the Attitude Object

Classical conditioning. One of the most primitive means of changing attitudes involves the direct association of "affect" with objects, issues, or people through classical conditioning. Considerable research has shown that attitudes can be modified by pairing initially neutral objects with stimuli about which people already feel positively or negatively. For example, people's evaluations of words (e.g., Staats & Staats, 1958), other people (e.g., Griffit, 1970), political slogans (e.g., Razran, 1940), products (e.g., Gresham & Shimp, 1985), and persuasive communications (e.g., Rogers, 1983) have been modified by pairing them with affect producing stimuli (e.g., unpleasant odors and temperatures, the onset and offset of electric shock, harsh sounds, pleasant pictures, and elating versus depressing films; e.g., Gouaux, 1971; Staats, Staats & Crawford, 1962; Zanna, Kiesler, & Pilkonis, 1970). Contractions of muscles associated with positive or negative experiences (e.g., smiling versus frowning; Strack, Martin, & Stepper, 1988; or flexing arm muscles associated with moving objects toward rather than away from oneself; Cacioppo, Priester, & Berntson, 1993) can also influence evaluative responses. That is, when an initially unconditioned (neutral) stimulus (UCS) is encountered along with a conditioning stimulus that is already strongly associated with positive or negative experiences (CS), the initially neutral stimulus can come to be associated with the positive or negative experiences (the conditioned response).

Consistent with the view that conditioning effects can be obtained by non-thoughtful means, DeHouwer, Baeyens, and Eelen (1994) reported evidence of evaluative conditioning even when the unconditioned stimuli were presented subliminally. Also consistent with the notion that conditioning processes largely act as a peripheral means to establish or change attitudes, Cacioppo et al (1992) showed that classical conditioning using electric shock had a greater impact on initially neutral non-words (which, of course, were not associated with any preexisting meaning or knowledge) than on initially neutral words; see also Shimp, Stuart, & Engle, 1991). Similarly, isometric flexion versus extension of upper arm muscles during evaluative processing (i.e., processes associated with approach and withdrawal, respectively) has been shown to influence preferences for neutral non-words more than for neutral words (Priester, Cacioppo, & Petty, 1996).

Affective Priming. In a procedure similar to conditioning, people are presented with affect-inducing positive or negative material (e.g., pictures) just prior to receipt of the target stimulus. This "backward conditioning" or "affective priming" procedure has proven successful in modifying attitudes. For example, research participants who were exposed to subliminal positive photos (e.g., a group of smiling friends) subsequently rated a target person performing normal everyday activities more positively than participants exposed to negative photos (e.g., a bucket of snakes; Krosnick, Betz, Jussim, & Lynn, 1992). Murphy and Zajonc (1993) found that the effectiveness of this type of affective priming procedure may be dependent on presenting the primes outside of conscious awareness. That is, when positive and negative affective primes (smiling and frowning faces) were presented just prior to a target stimulus (a Chinese ideograph), attitudes toward the target were influenced when the primes were presented subliminally, but not when they were presented visibly (see also Murphy, Monahan, & Zajonc, 1995). One possible reason for such an effect might be that visibly presented priming stimuli are noticed as obviously irrelevant to perceptions of the targets. Therefore, this "blatant priming" might instigate an intentional avoidance of the perceived effects of the emotional primes (Martin et al., 1990; Petty & Wegener, 1993).

In sum, studies of affect association (i.e., classical conditioning and affect priming) show that primitive affective processes are most likely to influence attitudes toward objects that have little meaning and for which people possess little or no knowledge, and when opportunities for processing are low (see also Zajonc, this volume). This does not mean, however, that affect will have an impact on attitudes only when the likelihood of elaborating attitude-relevant information is low. As discussed in the section on multiple roles for persuasion variables, affect can also modify attitudes when the elaboration likelihood is quite high. In such cases, however, the processes that lead to those changes are different than those discussed here.

Inference-Based Approaches

Attribution theory. Although attributional processes can, themselves, vary in the amount of cognitive

effort required (see Gilbert, this volume), some attributional processes (e.g., inferring that a favorable view of an object is responsible for one's seeking of it) likely require somewhat less effort than the active scrutiny of attitude-relevant information. Because of this, self-perception might be used at times as a short cut for assessing the validity of a stance toward an attitude object (perhaps so that effortful processing of information about the object can be foregone). Various forms of the attributional approach have been studied in relation to the attributions about attitude object itself, as well as attributions about the source of information about an attitude object. Most generally, the attributional approach focuses on people inferring underlying characteristics about themselves and others from the behaviors that they observe and the perceived situational constraints that are imposed on those behaviors (e.g., Bem, 1965; Jones & Davis, 1965). Bem (1965) suggested that people sometimes have no special knowledge of their own internal states and therefore must infer their attitudes in a manner similar to that by which they infer the attitudes of others (i.e., from the observed behavior and context in which it occurred).

During much of the 1970s, Bem's self-perception theory was thought to provide an alternative account of dissonance effects (Bem, 1972). For example, in the classic Festinger and Carlsmith (1959) study described earlier, a person who observed an individual saying a task is interesting after being given \$20 might infer that this person liked the task less than a person who said it was interesting for only \$1. If an external observer might make this reasonable inference, so too might the person him or herself, Bem argued. Subsequent research indicated, however, that self-perception processes could not account for all dissonance effects (e.g., Beauvois, Bungert, & Mariette, 1995). Rather, the two processes operate in different domains. In particular, the underlying internal discomfort mechanism of dissonance theory operates when a person engages in attitude-discrepant action that is disagreeable (e.g., advocating a discrepant position in one's latitude of rejection; Fazio, Zanna, & Cooper, 1977; performing self-deprecating behavior; Jones, Rhodewalt, Berglas, & Skelton, 1981), whereas self-perception processes are more likely when a person engages in attitude-discrepant but more agreeable behavior (e.g., advocating a discrepant position in one's latitude of acceptance; Fazio et al., 1977; performing a self-enhancing behavior; Jones et al., 1981). Also, self-perception processes do not require scrutiny of the central merits of an attitudinal position (i.e., "viewing" the behavior is all that is necessary), but dissonance reduction is conceived as a thorough (but biased) form of information processing (Festinger, 1957). Thus, in elaboration likelihood terms, one would expect self-perception processes to be more likely when elaboration likelihood is low, but dissonance processes to be more likely when elaboration likelihood is high (e.g., the cognitions are very important or self-relevant; Petty & Cacioppo, 1986a). Of course, especially difficult or complex attributions might be less likely to occur under such low-effort settings.

Self-perception theory also accounted for some unique attitudinal phenomena. For example, the overjustification effect occurs when a person is provided with more than sufficient reward for engaging in an action that is already highly regarded (e.g., Lepper, Greene, & Nisbett, 1973). To the extent that the person comes to attribute the action to the external reward rather than to the intrinsic enjoyment of the behavior, attitudes toward the behavior will become less favorable (Deci, 1975). Thus, if people are provided with extrinsic rewards for advocating a position that they already like, they may come to devalue the position when the external rewards stop to the extent that they have come to view their attitude expression as caused by the rewards rather than by the true merits of the position (e.g., Scott & Yalch, 1978).

As noted earlier, according to the ELM, people should be more likely to rely on simple self-perception inferences when elaboration likelihood is low. Consistent with this notion, in one study, Taylor (1975) asked women to evaluate pictures of men who they believed they would actually meet (high personal relevance/elaboration), or not (low personal relevance/elaboration). Participants received false feedback about their "positive physiological responses" toward some of the men (Valins, 1966). The information about physiological reactions influenced the women's reported attitudes only when there was no expected meeting with the man in the picture but not when the consequences were high (see also, Chaiken & Baldwin, 1981; Wood, 1982, for conceptually similar findings).

The attribution approach has also been useful in understanding how inferences about message sources can influence attitudes. For example, Eagly, Chaiken, and Wood (1981) argued that people often approach a persuasion situation with some expectation regarding the position a communicator will take. They argued that, if the pre-message expectation is confirmed by the communicator's presentation, the recipient attributes the message

to the traits and pressures that generated the expectation rather than to the validity of the position espoused. Thus, in these cases, the person needs to process the message to determine its validity. However, when the premessage expectation is disconfirmed, the communicator is viewed as relatively trustworthy, the message as veridical, and persuasion can occur without the need to process message arguments (e.g., Eagly, Wood, & Chaiken, 1978). The reduced processing of trustworthy sources is especially evident among people low in need for cognition (Priester & Petty, 1995). In addition, disconfirmation of a pre-message expectancy only leads to perceiving the source as trustworthy when the disconfirmation entails the source violating his or her own self-interest. If disconfirmed expectancies occur in the absence of a self-interest violation, then the surprise of the disconfirmation enhances message processing (Harasty, Petty, & Priester, 1996).⁴⁴

Heuristic/systematic model. Like the ELM, the heuristic/systematic model of persuasion (HSM) considers multiple processes of persuasion. Importantly, the HSM identified a unique peripheral persuasion process. Specifically, Chaiken (1980; 1987; Chaiken et al., 1989) proposed that in contrast to "systematic" (or central route) processes, many source, message, and other cues are evaluated by means of simple cognitive heuristics that people have learned on the basis of past experience and observation. Unlike attributional inferences which can be novel and generated on-line, the use of heuristics was proposed to be dependent on their availability and accessibility in memory.

According to the HSM, the likelihood of systematic processing increases whenever confidence in one's attitude drops below the desired level of confidence (the "sufficiency threshold"). Whenever actual and desired confidence are equal, heuristic processing is more likely. For example, because of prior personal experience, people could base acceptance of a message on the expertise of the message source by retrieving the heuristic "experts are usually correct" (Chaiken, 1980; Petty et al., 1981). Heuristics that are available in memory and accessible (activated from memory) are the most likely to be used. Furthermore, the HSM holds that as the motivation and ability to process increase, there is also an increased likelihood of heuristic processing. This is because any factor that increases the importance of assessing the validity of support for a position should also increase the salience (accessibility) of heuristics relevant to accomplishing that goal (Chaiken et al., 1989, p. 225). Although this enhancement of heuristic processing is hypothesized to occur, the increased scrutiny of the merits of the attitude object might provide information that contradicts accessible heuristics, and thus might attenuate the impact of heuristic cues (attenuation effect). As long as the two processing modes do not yield conflicting reactions, however, increases in the importance of assessing attitude validity should increase the impact of heuristic cues within this model (additivity effect).

The expanded HSM also deals with biased processing (Chaiken et al., 1989). According to this model, bias can occur in at least two ways. First, Chaiken et al. argue that in some circumstances, heuristic processing can bias systematic processing (e.g., accessing the heuristic that "experts are correct" can lead people to engage in favorable elaboration of a message). Second, in addition to postulating an "accuracy motive" that produces relatively objective information processing, two other motives (defense and impression management motives) operate to produce biased processing either through biasing systematic or heuristic processing. When defense motives are operating, for example, people are motivated to defend their existing attitudes but can do so either by biased systematic processing or selectively using heuristics (Eagly et al., 1996).

Although considerable research supports the general predictions of the HSM (and typically the ELM as well), little research has addressed the defining feature of the HSM -- the notion that people have learned and stored in memory various persuasion heuristics that are used to evaluate a message. Some research has varied the accessibility (Roskos-Ewoldsen & Fazio, 1992) or vividness (Pallak, 1983) of the peripheral cues in a message -- and presumably the accessibility of the associated heuristics -- yet, relatively little evidence has been collected relating to the accessibility of the heuristics themselves. In perhaps the most relevant research, Chaiken (1987) had people memorize 8 phrases relevant to the length implies strength heuristic (e.g., "the more the merrier") or 8 irrelevant phrases. Memorizing the relevant phrases led to greater impact of a source claiming to have 10 versus 2 reasons than memorizing the irrelevant phrases. This effect occurred only for people classified as low in need for cognition (Cacioppo & Petty, 1982) who would presumably be most likely to rely on a low effort heuristic strategy. Cialdini (1987) analyzed several other heuristics that might be effective in influencing behavior (see Cialdini, this volume). For example, although people might reason that the more people endorsing an object, the better it is, they can also reason that the object is better if relatively few rather than many are available (i.e., the

"scarcity heuristic;" see Brock, 1968). Although many such cues have been shown to influence attitudes (mostly when the elaboration likelihood is low), it has not been clearly demonstrated that such cues operate primarily through stored heuristics rather than one of the other peripheral processes. Nevertheless, the heuristic notion has itself served as a very useful heuristic for guiding interesting persuasion research.

Although the HSM and ELM share many features (e.g., attitude change can result from both high and low effort mental processes which can be relatively objective or biased), a number of differences do exist regarding the impact of cues in high-thought situations and mechanisms hypothesized to account for biased processing outcomes. Recall that in the ELM, increased elaboration likelihood can lead to salient cues being evaluated for strength just as the message arguments are evaluated (Petty, 1994). Thus, if a potential cue (e.g., attractive source) is scrutinized and found lacking (e.g., "it is biasing to go along just because he/she is attractive"), then the cue can actually reduce persuasion if effortful processing leads to an overcorrection for the perceived bias induced by the cue (see Wegener & Petty, 1997). If the cue is deemed relevant and informative when scrutinized, however, then it would add to the impact of the other information. Note that in the ELM, this additive impact is not a result of a low effort heuristic adding to the impact of high effort central/systematic processing (cf., Maheswaran & Chaiken, 1991), but is due to the fact that the cue/heuristic is effortfully scrutinized as a potential argument supporting the advocacy of the message.

Consider the notion of biased processing in the expanded HSM. In general, the idea that heuristic processing can bias systematic processing is similar to the ELM multiple roles notion (Petty & Cacioppo, 1986a) that variables that serve a cue (or heuristic) function when the elaboration likelihood is low can bias information processing when the elaboration likelihood is high (though, in the ELM, the variable producing a bias need not do so by invoking a heuristic; e.g. positive mood can make positive thoughts more likely to come to mind even if a mood heuristic is not invoked). As noted previously, the ELM holds that objective processing occurs when people have no a priori position to favor and that motivated biased processing (via either the central or the peripheral route) can be produced when people prefer one position over another. Importantly, in the ELM, people can come to prefer one position over another for a variety of motivational reasons (e.g., consistency, reactance, self-esteem, etc.). Of most interest, accuracy motives can also lead to biased processing if people are highly confident that their current view is correct and are motivated to defend it because of its presumed validity. If people are confident that their attitudes are correct, any increase in the motivation to be accurate would increase motivation to defend their attitudes. Conversely, reducing the need to be accurate would free people to go along with others and abandon their presumably accurate views. Consider another way in which accuracy motives can produce biased processing. If the elaboration likelihood is high and people are confronted with an ambiguous argument, people may be more likely to elaborate it in a way that is favorable to the advocacy if the source is perceived to be an expert than if the source is not (Chaiken & Maheswaran, 1994). This favorable interpretation of the arguments could be motivated by wanting to have the most accurate interpretation of the evidence and the assumption that an expert source is more likely to hold accurate opinions than a non-expert. Alternatively, it might be that people prefer to identify with the position of experts for reasons of self-esteem maintenance, or because of aversive feelings of imbalance or confusion if experts are wrong, and thus these motives rather than accuracy could account for the biased processing. Thus, within the ELM framework, accuracy motivation per se can bring about biased outcomes that look "defensive," and additional motivations other than defense or impression management can be responsible for biased outcomes (in addition to the ability factors discussed earlier).

Other Peripheral Processes

Mere exposure. When objects are presented to an individual on repeated occasions, this mere exposure is capable of making the person's attitude toward the objects more positive (see Zajonc & Markus, 1982). An early explanation of the mere exposure effect was provided by Titchener (1910), who proposed that familiar objects led people to experience a "glow of warmth, a sense of ownership, a feeling of intimacy" (p. 411). Work on this phenomenon has shown that simple repetition of objects can lead to more positive evaluations even when people do not consciously recognize that the objects are familiar. For example, Kunst-Wilson and Zajonc (1980) repeatedly presented polygon images under viewing conditions that resulted in chance reports of recognition. During a later session, pairs of polygons were presented under ideal viewing conditions. In each pair, one shape had been seen in the earlier session, but the other was new. When asked which shape they liked better and which

one they had seen before, research participants were unable to recognize beyond chance which polygon was new and which was old, but they showed a significant preference for the "old" shapes.

Just because people do not consciously recognize that a stimulus was not presented many times previously, does not mean that people are not aware at some level that these repeated stimuli are easier to perceive and process. This perceptual fluency (Bornstein, 1989; Jacoby, Kelley, Brown, & Jasechko, 1989) might be attributed to or confused with the favorability of the stimulus, but might also be attributed to other stimulus dimensions (e.g., brightness, darkness, etc.), and account for why repeated exposure produces more extreme judgments of a variety of stimulus-relevant dimensions (Mandler, Nakamura, & Shebo Van Zandt, 1987). In fact, if people attribute a sense of familiarity to the experimental procedure itself, the mere exposure effect is weakened (Bornstein & D'Agostino, 1994). In a similar vein, Downing, Judd, and Brauer (1992) found that larger numbers of repeated expressions of either evaluative or non-evaluative (i.e., color) responses led to more extreme responses (on the evaluative or non-evaluative dimension, respectively) than fewer numbers of expressions. Downing et al. (1992) reasoned that this occurred because of a link between the response and the object becoming stronger over repeated expressions.

Mere exposure effects (especially on the favorability dimension) have been shown using a variety of stimuli such as tones, nonsense syllables, Chinese ideographs, photographs of faces, and foreign words (e.g., see Bornstein, 1989, for a review). It is important to note that all of these stimuli tend to be low in prior experience and meaning to the people receiving them and thus are relatively unlikely to elicit spontaneous elaboration. In fact, mere exposure appears to be especially successful in influencing attitudes when conscious processing of a repeated stimulus is minimal (see Harrison, 1977) or impossible (e.g., when the stimulus is presented subliminally, Bornstein & D'Agostino, 1992). Manipulations that increase thinking, such as evaluation apprehension, reduce mere exposure effects (Kruglanski, Freund, & Bar-Tal, 1996; for additional discussion, see Zajonc, this volume).

When more meaningful stimuli are presented, the effect of such exposures is quite different from the usual mere exposure effect. That is, increased exposures of more meaningful stimuli enhance the dominant cognitive response to the stimuli. Thus, attitudes toward negative words (e.g., "hate") and toward weak message arguments actually become more unfavorable with increased exposures, but attitudes toward positive words (e.g., "love") and toward strong arguments become more favorable, at least until the point of tedium (e.g., Cacioppo & Petty, 1989; Grush, 1976).

Balance. Although cognitive imbalance can lead to effortful (though potentially biased) scrutiny of attitude-relevant information (Festinger, 1957), one can also conceive of less effortful means of addressing imbalance. For example, consider the relations among a person, his or her boss, and an object (the three of which make up a person-other-object triad). According to Heider (1958), balance occurs when people agree with people they like (or with whom they are strongly associated) or when people disagree with people they dislike (or are strongly dissociated). An imbalanced triad in which a person has a unit relationship with the other person (e.g., his or her boss), the person dislikes an object (e.g., a painting), but the boss likes the object, is likely to put the person in an uncomfortable state (see Heider, 1958). Because the unit relationship is likely difficult to change, the person might find that the easiest way to balance this triad is to change his or her view of the painting (see Rosenberg & Abelson, 1960). This can be done simply because it feels "harmonious" and not because the person has effortfully reconsidered the merits of the painting (as dissonance theory might suggest). In addition to preferences for "balanced" relations among entities and attitudes, people have also been shown to prefer "attraction" (i.e., positive sentiments between the two people in a triad) and "agreement" relations (i.e., when the two people agree in their attitudes toward the object regardless of their sentiments toward each other; see Miller & Norman, 1976). Importantly, such positivity preferences and any changes in attitudes that they might bring about could take place with little or no consideration of what the person perceives to be the central merits of the attitude object. One could also generate new relations among the elements in a triad by relating pairs of the elements to new elements, but such processes might also take place without consideration of the central merits of the attitude objects involved in the triad (see Insko, Songer, & McGarvey, 1974; Newcomb, 1968; for further discussions).

Summary

Thus, a variety of attitude change processes have been discussed over the years, and these processes can

be generally classified according to the overall mental effort necessary for them to affect attitudes and according to the role (or lack thereof) of scrutiny of the central merits of the attitude object (see Petty & Cacioppo, 1981). Although many of these processes were initially introduced as global models of attitude change, contemporary multi-process models emphasize the conditions under which the high- and low-effort processes are most likely to occur. In the following sections, the multiple role feature of the ELM is used to organize and review empirical work on persuasion variables. Incorporating traditional classifications of these variables, the presentation is organized into source, message, recipient, and context categories.

PERSUASION VARIABLES

From Lasswell's (1948) well-known question -- Who says what to whom with what effect? -- to Hovland et al.'s, (1953) classic Communication and persuasion volume, to McGuire's (1969, 1985) communication/persuasion matrix model (described earlier), variables having an impact on attitude change have traditionally been organized into source, message, recipient, and context categories. This organization scheme is not very conceptual, is to some extent arbitrary (e.g., mood can be considered a "recipient" variable when measured, but a "context" variable when manipulated), and breaks down as an organizational scheme when categories of variables interact (e.g., source X message). Nonetheless, this organization has provided a handy reference for those interested in selecting variables for applications of persuasion theory for over half a century. Thus, in this section an overview and updating of some of the most researched variables falling into these traditional categories is presented. First, however, it is useful to consider, in a general way at least, the variety of processes by which any given variable might have its impact on persuasion.

The earliest research on source, message, recipient, and context variables tended to assume that the particular variable under study (e.g., source credibility) had a unidirectional effect on attitude change (e.g., increasing credibility increased persuasion) and produced this effect by a particular process (e.g., increasing credibility fostered learning of the message arguments). Decades of research on attitude change clearly indicated that (unfortunately) these simple assumptions were untenable (Petty, 1996). The accumulated research indicated that even simple and seemingly obvious variables like source credibility were sometimes associated with increased influence (Kelman & Hovland, 1953) and sometimes with decreased influence (Sternthal, Dholakia, & Leavitt, 1978). One solution to this complexity was to suggest that each outcome was caused by a different psychological process. However, research on many variables indicated that the same process could sometimes lead to opposite outcomes, and the same outcome could be caused by different processes (Petty & Cacioppo, 1986a).

Thus, in order to understand source, message, recipient, and contextual variables, it is necessary to relate them to the underlying processes of persuasion. In the preceding sections of this chapter, processes that might be responsible for changes in attitudes when the mental effort allocated was particularly high or low were discussed. In addition, the factors of motivation and ability that determine whether the persuasion situation is characterized by high or low amounts of mental effort were highlighted. Next, after reviewing the multiple processes by which variables can have an impact on attitude change, the existing literature on the effects of source, message, recipient, and context variables is examined, and the observed effects are related, when possible, to the multiple roles possible for persuasion variables.

Multiple Roles for Persuasion Variables

As previously noted, across situations, people, and objects, there are differences in the extent to which people are willing and able to put a high level of effort into arriving at their evaluations. To the extent that people are both motivated and able to put effort into forming or changing their views of an object, they are likely to carefully scrutinize information relevant to that object (i.e., they are likely to effortfully assess the "central merits" of the object in order to determine the extent to which the object is good or bad; see Petty & Cacioppo, 1979b, 1986a). Thus, when motivation and ability are high, one way for a variable to influence judgments is for it to be treated as an argument -- a piece of information relevant to determining the merit of the object or issue. For example, if one wishes to assess the extent to which it would be good or bad to hire a particular person as a model for a cosmetic product, then the appearance of that person is likely a central dimension to be used in that assessment. Therefore, in such a case, variations in the attractiveness of the person could influence evaluations through effortful consideration of the person's attractiveness (along with considerations of all other information relevant to determining merit such as past modeling experience).⁵⁵

As discussed earlier, another way for a variable to influence judgments when motivation and ability are high is to bias the processing of attitude-relevant information. That is, if multiple interpretations of information are possible, a variable might make one interpretation more likely than other equally plausible interpretations.⁶⁶ For example, it has been repeatedly shown that people assume that attractive people possess other positive traits (e.g., Cooper, 1981; Thorndike, 1920). This halo effect could bias processing of information from an attractive target by making positive interpretations of ambiguous information more likely than if the target were not attractive. Thus, when motivation and ability to process attitude-relevant information are high, variables can affect judgments by serving as arguments or by biasing interpretations of ambiguous attitude-relevant information.

For some situations, people, or objects, however, either motivation or ability to process attitude-relevant information is lacking. When this is the case, people are more likely to use some kind of short-cut for determining what a reasonable view of the object might be (e.g., relying on one's first impression rather than scrutinizing all the information). That is, people low in motivation or ability are likely to form or change their views of the object on the basis of some factor that allows them to do so without engaging in the cognitive work needed to assess the central merits of the target object (e.g., Chaiken, 1980; Petty et al., 1981). Thus, when either motivation or ability to process information is lacking, a variable can impact judgments if that variable can influence attitudes by one of the relatively low effort processes that were described previously. People are sometimes aware of the operation of these low effort processes, and sometimes they are not. In either case, they arrive at a judgment of the object with relatively little mental effort expended.

Finally, some variables can affect attitudes by influencing one's motivation or ability to think carefully about judgment-relevant information. Of course, the likelihood of any given variable influencing the amount of scrutiny is constrained by all of the background variables also affecting the baseline level of scrutiny. If the baseline likelihood of elaboration is already quite low (e.g., because distraction is at a high level, Kiesler & Mathog, 1968; Petty et al., 1976) or quite high (e.g., because the attitude object is very important or personally relevant, Leippe & Elkin, 1987; Petty et al., 1981; or because the people receiving attitude-relevant information are very high in need for cognition, Cacioppo et al., 1983), then impact of a variable on attitudes is most likely to occur through the low- or high-elaboration roles outlined earlier. If background variables do not constrain elaboration to be particularly high or low, and especially if a person is not sure whether or not effortful scrutiny of information about the target is merited, however, then the variable might affect attitudes by helping to determine the level of thought given to the merits of the attitude object.

In sum, according to the ELM, variables can influence judgments 1) by serving as arguments relevant to determining the merits of an object or position, 2) by biasing processing of attitude-relevant information (both of which are most likely when motivation and ability to scrutinize attitude-relevant information are high), 3) by serving as a peripheral cue to the adequacy of a view of the target (when motivation or ability are low), and 4) by itself affecting the level of scrutiny given to attitude-relevant information (when elaboration likelihood is not constrained by other factors to be particularly high or low). Therefore, the ELM is a model of moderated mediation (see Petty et al., 1993, for further discussion). It is important to note, however, that the ELM is not aimed at predicting how every persuasion variable influences persuasion at each level of elaboration likelihood. Rather, the ELM provides an organizing framework that specifies which classes of processes operate under which levels of elaboration. Theoretical and empirical complements to the ELM framework specify the particular effects of most variables (e.g., whether and when positive moods enhance versus reduce processing of persuasive messages).

In the following sections, the ELM notion of multiple roles for variables across the elaboration continuum is used to organize the work done on four broad classes of variables (i.e., source, message, recipient, and context). Each section begins with a brief definition, and then the kinds of effects and general principles that have been found within each class of variables are described.

Source Variables

Source variables refer to aspects of the person(s) presenting the persuasive appeal. At times, the identity of a source might be made very explicit (e.g., when a candidate makes a speech on behalf of his or her candidacy), but at other times, the source is merely implied (e.g., when an unpictured narrator announces a new product, presumably on behalf of the company producing that product). Traditionally, source effects have been

organized according to a taxonomy introduced by Kelman (1958) which separated source factors into effects of credibility, attractiveness, and power (see also McGuire, 1969). Kelman (1958) discussed credibility effects as due to internalization, which entailed acceptance of information and integration of that information into one's existing cognitive system, attractiveness effects as due to identification, which relied on salience of one's bond to or relationship with the message source, and power effects as due to compliance, which would occur only as long as the source maintained control over potential rewards and punishments. Although these classifications and principles have proven quite useful, recent research suggests, for instance, that credibility can also influence attitudes when relatively little information scrutiny or internalization takes place and that attractiveness has effects even when no bond or relationship between source and message recipient is possible. An alternative framework for organizing source effects focuses on the effects of sources across levels of elaboration likelihood, with an eye toward the multiple roles that sources can play in persuasion settings. A variety of characteristics related to source credibility, attractiveness, and power have been investigated.

Credibility

In one of the earliest investigations of source credibility, Hovland and Weiss (1951) presented students with a message on one of four topics and then told them the source of the message (with the source either being high or low in credibility). Although Hovland and Weiss (1951) focused on the overall effect of source credibility (collapsed across messages), the credibility effect was more pronounced for the two topics that were less likely to directly impact students (e.g., who to blame for a steel shortage) than for the two topics more likely to be relevant to students (e.g., will TV decrease the number of movie theaters in operation). Thus, even early studies of source credibility provided some indications that variables such as source credibility might not operate in the same way (or to the same extent) in all circumstances. Although many studies of source credibility have used sources that vary in both knowledge (expertise) and presumed honesty (trustworthiness; e.g., Kelman & Hovland, 1953), a variety of studies have more directly studied the impact of differences in expertise or trustworthiness per se (see Petty & Cacioppo, 1981).

Expertise. Perhaps the most prevalent characterization of source expertise effects is as a peripheral cue. Consistent with the peripheral cue notion, highly expert sources have led to more persuasion than inexperienced sources to a greater extent when a topic is presented as low rather than high in personal relevance (e.g., Petty et al., 1981) or when a topic has little rather than great direct relation to recipients' lives (e.g., Rhine & Severance, 1970). Similarly, source expertise effects have been moderated by other variables thought to influence the amount of scrutiny given to persuasive messages. For example, source expertise has a greater impact when distraction is high rather than low (e.g., Kiesler & Mathog, 1968), when topic relevant knowledge is low rather than high (Wood & Kallgren, 1988), and when messages are externally paced (i.e., taped) rather than self-paced (i.e., written; e.g., Andreoli & Worchel, 1978).

Although less commonly studied, source expertise has also been shown to relate to the amount of scrutiny given to persuasive messages when the elaboration likelihood is not constrained at a high or low level. Specifically, Heesacker, Petty, and Cacioppo (1983) found that field-dependent message recipients (see Witkin, Goodenough, & Oltman, 1979) engaged in greater message scrutiny (i.e., were more persuaded by strong than by weak arguments) when the message was presented by an expert rather than an inexperienced source. DeBono and Harnish (1988) found that individuals low in self-monitoring (Snyder, 1974) processed messages to a greater extent when they were presented by an expert rather than an attractive source (see additional discussion in recipient variable section). Moore, Hausknecht, and Thamodaran (1986) established three levels of elaboration likelihood by presenting an advertisement at a fast, moderately fast, or normal speech rate and manipulated source expertise and argument quality. When the ad was presented rapidly, recipients were influenced by source expertise, but not the quality of the arguments (peripheral cue effect). When the ad was presented at a normal pace, the impact of argument quality was increased and the source expertise effect decreased compared to the rapid pace. These effects replicate other research on the tradeoff between cue and argument effects across the elaboration continuum. Of greatest interest, when the ad was presented at a moderately fast pace such that processing was possible but challenging, expertise interacted with argument quality such that the message received greater scrutiny when presented by an expert than a non-expert source.

Finally, the potential biasing impact of source expertise under high elaboration conditions was demonstrated by Chaiken and Maheswaran (1994). First, they showed that source expertise had a greater impact

on attitudes when unambiguous strong or weak arguments were presented on an unimportant topic rather than an important topic (similar to Petty et al., 1981). More importantly, Chaiken and Maheswaran (1994) also showed that an expert source was more persuasive than an inexperienced source under both high and low importance conditions when the arguments were ambiguous (i.e., not clearly strong or weak). When the ambiguous arguments were presented on an important topic, expertise significantly affected the valence of message-relevant thinking (i.e., biased message processing), but when the topic was unimportant, expertise did not affect message-relevant thoughts (i.e., expertise acted as a persuasion cue).

Trustworthiness. Credible sources are not only knowledgeable (i.e., expert) about the topic, but are also perceived as trustworthy (i.e., likely to tell the truth; see Hass, 1981; Petty & Cacioppo, 1981). In fact, trustworthiness per se has been shown to have effects on overall persuasion and on processing of persuasive messages. For example, as noted earlier, Eagly and her colleagues found that sources regarded as trustworthy or sincere (because of presenting a point of view that disagreed with the views of a message audience) were more persuasive than sources perceived as untrustworthy (e.g., Eagly, Wood, & Chaiken, 1978; Mills & Jellison, 1967). Trustworthiness is a clear cue to validity and if the message does not warrant processing for other reasons, it can simply be accepted if the source is presumed to be knowledgeable and trustworthy. Priester and Petty (1995) found that people who do not enjoy thinking were especially likely to accept a message from a trustworthy source without scrutiny. When the source was untrustworthy, however, people low in need for cognition (Cacioppo & Petty, 1982) engaged in as much message processing as those high in need for cognition (because the untrustworthy character of the source left them uncertain whether or not the position of the message held merit or not).

Attractiveness/Likeableness

Although some manipulations of "attractiveness" have varied physical characteristics of the source (e.g., Snyder & Rothbart, 1971), many manipulations of this construct have also incorporated likeable versus dislikeable features of the source (e.g., Petty et al., 1983; Zimbardo et al., 1965). In addition, when physical characteristics have been manipulated, the effects of physical attractiveness have appeared to be mediated by effects on liking of the communicator (see Chaiken, 1986).

As with other source characteristics, attractiveness or likeableness has been studied primarily in relation to its role as a peripheral cue (see Chaiken, 1987; Cialdini, 1987). Consistent with the cue notion, effects of source attractiveness/likeableness have been greater when elaboration likelihood is low rather than high. That is, source attractiveness or liking has been observed to exert a greater impact when relevance of the topic is low rather than high (e.g., Chaiken, 1980; Petty et al., 1983), when attitude relevant knowledge is low rather than high (e.g., Wood & Kallgren, 1988), and when messages are externally paced on audio or video tapes rather than self-paced and written (e.g., Chaiken & Eagly, 1983). In each of these experiments, arguments that were unambiguously strong or weak have been used, but if ambiguous arguments had been used, one might also have found evidence of biased processing when elaboration was high.

In addition, the attractiveness of the source has been shown to influence the amount of message scrutiny that takes place when elaboration likelihood is moderate or ambiguous. For example, Puckett, Petty, Cacioppo, and Fisher (1983) presented college students with a message advocating comprehensive exams as a graduation requirement, but the time frame for any consideration of the issue at their university was left unspecified (rendering the personal relevance ambiguous). Puckett et al. (1983) found that message recipients engaged in greater message scrutiny when the message was presented by a socially attractive rather than unattractive source. Also, DeBono and Harnish (1988) found that individuals high in self-monitoring (Snyder, 1974) processed messages to a greater extent when they were presented by an attractive rather than an expert source (see also discussion in section on recipient variables).

In a study examining multiple roles for source attractiveness, Shavitt, Swan, Lowery, and Wänke (1994) manipulated the attractiveness of an endorser in an advertisement for a restaurant, the salient (central) features of the product (either unrelated to attractiveness -- taste and aroma -- or related to attractiveness -- public image of the restaurant), and motivation to process the ad. When endorser attractiveness was unrelated to the central merits of the product (and the ELM would predict that any impact of attractiveness would be due to its impact as a peripheral cue), attractiveness had an impact on evaluations of the product under low but not high motivation (and had little impact on thoughts about the product). However, when endorser attractiveness was related to the

central merits of the product (and thus could itself act as an argument), the same variation in attractiveness influenced evaluations of the product under high but not low motivation (and under high motivation, influenced the favorability of cognitive responses to the ad).

Power

Power of the source over a message recipient has been analyzed in terms of the extent to which the source is perceived as having control over positive or negative sanctions, concern over whether the recipient complies with the request, and the ability to monitor whether or not the recipient accepts the source's position or not (see McGuire, 1969). Each of these aspects of power have been shown to affect the persuasiveness of sources (with powerful sources persuading others more than weak sources; e.g., Festinger & Thibaut, 1951; Raven & French, 1958).⁷⁷ Yet, little work has investigated the information processing consequences of message presentation by a powerful versus weak source. In some instances, change to powerful sources undoubtedly reflects mere compliance rather than a true expression of opinion (Kelman, 1958). However, it is possible that as long as the power of the source is not obviously coercive, powerful sources could induce genuine change because of the operation of low-effort or high-effort processes.

One area of research with direct implications for these processes is the work on stereotyping of and by powerful people (e.g., Fiske, Morling, & Stevens, 1996). For example, when people depend on the actions of others to reap benefits, those people form more detailed, individuated impressions (as opposed to simple, category-based impressions -- stereotypes) of the others (Fiske & Neuberg, 1990). This occurs not only in situations where people are mutually interdependent, but also when asymmetrical power exists over tangible rewards (i.e., one person depends on the other, but not vice versa). Interestingly, Fiske et al. (1996) argued that when one person possesses evaluative power over another rather than power over task outcomes, processing of information about the powerful individual is positively biased rather than accurate, presumably because people want to convince themselves that the evaluator will be generous. This work suggests that persuasive messages presented by a source with power over task outcomes might receive greater scrutiny than the same messages presented by a powerless source (so long as the elaboration likelihood is not already constrained by other factors), but that messages from sources with power over evaluations might be more likely to be processed in a biased fashion.

Each of the multiple roles outlined by the ELM would seem applicable to sources that vary in power. If processing is limited (e.g., by distraction), one might agree with a powerful source simply because it is generally good to agree with people who control one's fate. If the power of a source makes it appear more likely that a proposed policy will be enacted, it could be that people would be more likely to process information about that policy than if the source lacked the ability to institute the program. Also, if thinking is already extensive (e.g., because the topic is of great intrinsic interest or relevance), one might be disposed toward adopting interpretations of the information that agree with a powerful source. Or, if the powerful source induces reactance (e.g., from attempting overt coercion), motivation to counterargue (privately, at least) might be provoked.

Additional Source Factors Related to Credibility, Liking, and Power

A number of source characteristics have been studied that appear at least somewhat related to perceptions of credibility, liking, or power. That is, sources belonging to different groups can speak at a certain speeds, in a certain styles, using certain forms of language, and message recipients often make inferences about the credibility, likeableness, or power qualities of the source based on these variations. Thus, each of these "style" variables can potentially have an effect on message processing and persuasion at least in part because of their effects on perceptions of the source's credibility, likeableness, power, or some combination of the three.

Speed of speech. Several studies of the rate (i.e., words per minute) with which speakers present their position have shown a relation between speech rate and judged credibility of the source (i.e., speaking quickly has been associated with greater perceived credibility; Miller, Maruyama, Beaver, & Valone, 1976). This effect has not been universal, however (see O'Keefe, 1990). One reason for the lack of consistency in relations between speech rate and judged credibility might be that speech rate has also been found to influence elaboration of persuasive messages. As noted earlier, Moore et al. (1986) found that rapidly presented radio ads led to a reduced effect of argument quality than when the same ads were presented at a more moderate speed. Smith and Shaffer (1995) found that persuasive effects of faster speech were mediated by perceptions of credibility when the message was low to moderate in personal relevance, but faster speech had no direct effect on credibility or

persuasion for a message high in personal relevance (though faster speech rate did decrease processing of the messages when personal relevance was high -- presumably because it was more difficult to process the message when it was presented quickly).⁸⁸

Demographic variables. One can imagine a host of demographic variables being related to perceptions of likeableness, credibility, or power. Although many demographic source characteristics have been studied (e.g., gender, age, and ethnicity), few of these studies have considered the possible simple versus elaborative nature of such effects. To the extent that effects of these variables occur because of inferences related to credibility, likeableness, or power, demographic variables might serve the multiple roles outlined earlier for these variables.

For example, demonstrating a classic effect of source gender, Goldberg (1968) found that the scientific content of an article labeled as written by "John McKay" was rated more favorably than when the same article was attributed to "Joan McKay." Why did this occur? Depending on one's assumptions about the level of scrutiny given to the material in the article, there could be a variety of reasons (see Deaux & LaFrance, this volume). If scrutiny was relatively low, the male or female label could have acted as a simple persuasion cue. The conceptual reason for this cue impact could be, for example, that men were viewed as more expert for the particular topic involved (i.e., science). Such a possibility would also account for situations in which an article written on a traditionally feminine topic is rated more favorably when attributed to a female rather than male author (e.g., Levenson, Burford, & Davis, 1975). If scrutiny of the information is high, the effects could be because of bias in favor of the author whose gender matches the topic or against the author whose gender mismatches the topic. It could also be, however, that gender of the source influenced how much the information in the article was processed (especially if background levels of elaboration were relatively moderate, and people were unsure whether the article merited much scrutiny). Although little empirical work has attempted to explicate the processes responsible for source gender effects, such effects might include each of the multiple roles outlined earlier. Paying greater attention to the factors determining elaboration likelihood in such studies might also help to account for the heterogeneity of effects across studies (see a recent meta-analysis by Swim, Borgida, Maruyama, & Myers, 1989).

People of different ages are also likely to be viewed as differing in expertise (or in trustworthiness, power, or likeableness) on many topics, as would people of different ethnicities or socio-economic status (e.g., consider the perceived self-interest of well-to-do members of congress arguing on behalf of tax breaks for the wealthiest segments of society). To the extent that these inferences take place, demographic variables such as age, ethnicity, or socio-economic status of the source should also assume the multiple roles taken on by the conceptual variables of credibility, likeableness, or power. Some work associating demographic characteristics with one or more of the multiple roles has taken place. For example, early work suggested a cue effect for source race (e.g., Whittler, 1984), but more recent work has studied race as it relates to processing of a persuasive message. White and Harkins (1994) found that Caucasian message recipients process information presented by an African American source more than when the same information was presented by a Caucasian source. According to White and Harkins, this occurred because message recipients held a negative attitude toward the African American social group, but did not want to appear racist (see also Fazio, Jackson, Dunton, & Williams, 1995; Gaertner & Dovidio, 1986). Consistent with this notion, White and Harkins (1994) also found more extensive processing of messages presented by a member of another group toward which message recipients held a negative attitude (i.e., Hispanics) than for messages presented by sources from other equally novel groups toward which message recipients were not as negative (i.e., Asians and Native Americans). This aversive racism view of ethnicity and message processing might also suggest that one could find biases in processing of ambiguous messages presented by African American or Hispanic sources. The multiple roles of these and other demographic variables should receive attention in the future.

Majority/minority status. Like early work on many persuasion variables, initial studies of majority/minority source status tended to ask questions such as whether majorities or minorities had greater influence (e.g., Asch, 1956; Moscovici, Lage, & Naffrechoux, 1969). Over the years, the primary research question has changed to whether majorities and minorities bring influence through the same or different persuasion processes (Moscovici, 1980; Nemeth, 1986). It has also been acknowledged recently that the majority/minority status of a source can have various effects depending on the motivational and cognitive factors present (see Kruglanski & Mackie, 1990; Mugny & Perez, 1991; and Wood, Lundgren, Ouellete, Busceme, &

Blackstone, 1994; for reviews of minority influence work).

Within the multiple roles perspective, when the elaboration likelihood is low, majority/minority source status is most likely to serve as a simple cue. Thus, whether a position is endorsed by a majority or a minority of others can provide message recipients with a simple decision rule as to whether they should agree with the message especially when people have no special interest or knowledge about the issue, or no message is even presented (Giner-Sorolla & Chaiken, 1996; Petty & Cacioppo, 1986a). These effects are presumably due to inferences about the presumed validity of the position or assumptions about the credibility, likeableness, or power of the source associated with the majority or minority view. Source perceptions do not necessarily covary directly with majority/minority status (Kruglanski & Mackie, 1990), however. For example, consistency in a source's behavior can increase attributions of competence (e.g., Moscovici & Neve, 1973) or can increase attributions of rigidity (e.g., Levine, Saxe, & Harris, 1976; see Maass & Clark, 1984).

When people are unsure whether they should carefully scrutinize the message or not, majority-minority status can determine the amount of message scrutiny. Interestingly, some researchers have concluded that majority sources foster greater elaboration, but others have concluded that minority sources foster greater elaboration. For example, Mackie (1987) found that message recipients tended to recall more majority than minority arguments, and also generated more favorable cognitive responses to the majority message. Based on these findings, she concluded that majority sources induce greater message processing that is biased in a favorable direction. However, other researchers concluded that minorities foster higher levels of elaboration (e.g., Maass & Clark, 1983). More recent research has found that either majorities or minorities can induce greater message scrutiny depending upon other factors in the persuasion situation. For example, Baker and Petty (1994) found that people engaged in greater scrutiny of a counterattitudinal message when it was portrayed as the majority position, but more scrutiny of a proattitudinal message when it was portrayed as the minority position. They reasoned that if people receive a counterattitudinal message from a majority source, this implies that the message recipient is in the minority which can be surprising and perhaps even threatening, making scrutiny of what the majority has to say more likely. If a recipient encounters a proattitudinal message, however, the same reasoning predicts greater processing when the source is a minority because a proattitudinal message from a minority implies that the message recipient is also in the minority (which can be surprising or threatening). In a somewhat similar study, Giner-Sorolla and Chaiken (1996) presented students with poll results that either supported or opposed their recently stated vested interests (rather than their attitudes per se). In this study, enhanced message processing was evident when the poll was incongruent with students' vested interests over when the poll was congenial. Although the students did not report being surprised by the poll, they may well have been threatened by it.

Finally, when the motivation and ability to process an incoming message are high, majority/minority status should impact persuasion primarily by influencing the nature of thoughts that come to mind. For example, Mackie (1987) noted that in her research, biased processing might have produced the relatively greater proportion of positive cognitive responses generated for messages from the majority source. Trost, Maass, and Kenrick (1992) found that recipients for whom the message was highly relevant derogated the minority message more than the majority communication. Thus, biased information processing of majority and minority sources might be found primarily under conditions that foster elaboration.

Similarity to receiver. A great deal of work suggests that people like other people with whom they share similar attitudes (e.g., Byrne & Griffitt, 1966) or ideology (Newcomb, 1956) and dislike those with whom they disagree (e.g., Rosenbaum, 1986). This source-receiver similarity has also been shown to increase persuasion (e.g., Brock, 1965). Sometimes there are benefits of dissimilarity, however. For example, although agreement from similar sources induces greater confidence in one's judgment when the issue is perceived to be a subjective one, agreement from dissimilar sources induces greater confidence when the issue is perceived as objective (Goethals & Nelson, 1973; see also Crano & Hannula-Bral, 1994). Unfortunately, little work has investigated the mechanisms by which persuasive effects of similarity might occur. As with the other source variables, similarity could produce attitude change by acting as a simple persuasion cue when elaboration is low, by biasing processing when elaboration is high, or by affecting the amount of processing when background levels of elaboration likelihood are relatively moderate.

One exception to this dearth of process-level investigation relates to the effects of messages presented by

an in-group versus out-group source (i.e., by a person who is similar to the message recipient by virtue of belonging to the same group as the recipient or is dissimilar by belonging to a different group). Mackie, Worth, and Asuncion (1990) presented University of California-Santa Barbara research participants with strong or weak messages on either a topic presumably irrelevant to them (i.e., acid rain in the northeast) or presumably relevant (i.e., oil drilling off the southwest coast of the U.S.). The messages were attributed to either a UCSB student (i.e., an in-group member) or to a student of the University of New Hampshire (i.e., an out-group member). When people received the message on the irrelevant topic, the in-group source was more persuasive than the out-group source, regardless of the quality of the arguments presented. That is, when the message was low in relevance, group membership of the source acted as a simple persuasion cue. When the message was on the more relevant topic, however, message recipients processed the messages presented by the in-group source more than when the same messages were presented by the out-group source. Thus, for the more group-relevant message, similarity based on group membership influenced the amount of processing of the persuasive messages.⁹⁹

Number of Sources

In addition to particular characteristics of sources, some research attention has been given to the sheer number of sources who present the arguments in a persuasive message. Although early work focused on conformity pressures (e.g., Asch, 1951) or on agreement based on a desire to appear correct (see Jellison & Arkin, 1977), additional evidence supports the view that multiple sources can influence scrutiny of message arguments. Harkins and Petty (1981a) hypothesized that when each argument in a message is presented by a different source, elaboration of the message content is enhanced (see also Moore & Reardon, 1987). In addition, this effect occurs if reception of the message is the person's only task, but is eliminated if recipients are distracted by a secondary task (e.g., Harkins & Petty, 1981b).

Why do people process information from multiple sources more than when the same information is presented by one source? It appears that this effect is due to perceptions that the sources represent independent perspectives (and thus, the converging view is more worthy of consideration). Evidence consistent with this notion includes undermining the usual multiple source processing effect by presenting the sources as part of a committee that worked together to generate the arguments (Harkins & Petty, 1987). Importantly, this method of undermining the processing of a message presented by multiple sources is only effective if it is introduced before rather than after message presentation. Also, if multiple sources are described as being similar rather than dissimilar in background, the multiple source effect is reduced (Harkins & Petty, 1987).

These studies have been conducted without specifying the relevance of the communication for message recipients. If personal relevance of the topic were extremely low (or elaboration likelihood were constrained to be low by some factor such as distraction), it seems likely that the mere number of sources would influence persuasion by a low-effort peripheral process. It is also conceivable that the number of sources could bias the thoughts that people have when elaboration likelihood is high (especially for message recipients who care about agreeing with significant others, i.e., high self-monitors).

Message Variables

Message variables refer to aspects of the communication itself. At a minimal level, a persuasion situation contains some topic (e.g., capital punishment) or attitude object (e.g., ice-cream) that is the focus of the influence attempt. Usually, the message has many more features, but sometimes the attitude object alone serves as the "message" when it is simply repeated (e.g., Zajonc, 1968) as described in our previous discussion of mere exposure effects. In addition to presenting the topic of the message, the message usually takes a particular position, includes some substantive reasons supporting the position taken, and can be organized in a variety of ways.

Message Topic, Position and Style

Issue-relevance/importance. Perhaps the most investigated aspect of the message topic is its importance or relevance to the message recipient. This feature of a message has been referred to as issue-involvement (e.g., Zimbardo, 1960), personal involvement (Thomsen et al., 1995), personal and self-relevance (Petty, Cacioppo, & Haugtvedt, 1992), vested interest (Crano, 1995), attitude importance (e.g., Boninger, Krosnick, Berent, & Fabrigar, 1995), and ego-involvement (Sherif, Sherif, & Nebergall, 1965). Although the terms are different, the basic notion is that there are some issues that people care about more than others. The primary determinant of how much a person cares about some issue is the extent to which the issue is relevant to some aspect of oneself

(i.e., one's beliefs, possessions, values, groups, etc., Boninger et al., 1995; Petty et al., 1992). In this regard, issue importance can be considered a "recipient" variable, but because the influence agent can do things to the message to enhance its perceived personal relevance (e.g., using personal rather than impersonal pronouns; Burnkrant & Unnava, 1989), it is discussed here.

Early analyses of the relevance or importance of the topic were based on the social judgment theory notion that one's attitude served as a stronger judgmental anchor when the topic was ego-involving (Sherif et al., 1965). This meant that an involving proattitudinal message would be seen as closer to one's own position than an uninvolved one (i.e., involvement led to greater assimilation) and an involving counterattitudinal message would be seen as further away from one's own position than an uninvolved one (i.e., involvement led to greater contrast). According to social judgment theory, both judgmental distortions should reduce the likelihood of attitude change. This is because discrepancy was thought to foster attitude change for agreeable communications (and perceptions of discrepancy are decreased with assimilation) but discrepancy inhibited change for undesirable communications (and discrepancy was perceived as greater with greater contrast; see subsequent discussion of message discrepancy).

In contrast to this view, Petty and Cacioppo (1979b) postulated that increased personal relevance or importance would enhance thinking about the communication which would increase persuasion if the arguments were strong, but decrease persuasion if the arguments were weak. In a meta-analytic review of research on issue-involvement, Johnson and Eagly (1989) concluded that this prediction was supported, but with qualifications. Specifically, they argued that when studies examined whether the issue concerned an important consequence for an individual or not ("outcome-relevant involvement"), involvement interacted with argument quality as predicted. However, when studies examined whether the issue concerned participants' cherished beliefs or not ("value-relevant involvement"), two effects were observed. In addition to the interaction of involvement with argument quality, a main effect of involvement was observed such that increasing involvement led to less persuasion as predicted by social judgment theory. Petty and Cacioppo (1990) argued that because the latter studies tended to be correlational rather than experimental, involvement was likely to be confounded with a number of other variables. That is, participants classified as high in value relevance were likely to have more extreme attitudes, more knowledge about their attitudes, and so forth, than did participants who were classified as low in value relevance. Thus, the self-relevance per se would increase message processing (accounting for the interaction of involvement and argument quality), but the more polarized attitudes and greater issue-relevant knowledge on high value-relevant issues would bias the processing in an attitude-congruent direction (accounting for the main effect of involvement).

A similar argument can be made regarding recent work on attitude importance. As in the early work on social judgment theory, work on importance tends to find that people are more likely to resist a messages when they consider the topic to be high rather than low in importance (e.g., Zurwerink & Devine, 1996; see Boninger et al., 1995, for a review). Again, it seems likely that this resistance is not necessarily due to issue importance per se. That is, there is no reason to reject a message simply because the topic is personally important. Rather, just as in the social judgment research on ego-involvement, investigators interested in importance have measured this construct rather than manipulated it. Thus, importance is likely to be confounded with a number of other variables such as attitude extremity, knowledge, commitment, etc., and it is these constructs that could be responsible for the resistance. Consistent with this notion, when an unfamiliar issue is made more important by introducing it as likely to personally affect the message recipient, increases in objective processing of the message arguments are the most likely result (see Petty et al., 1992). That is, importance influences the extent of information processing, but it is the other variables (many of which are likely related to attitude strength) that produce both cognitive and affective biases in the ongoing processing activity (see also Wegener, Downing, Krosnick, & Petty, 1995, for discussions about manipulations and measures of this and other strength constructs).

In addition to these information processing consequences, there are other important implications of making salient a link between a position and the message recipient. For example, people tend to like things that are associated with themselves more than things that are associated with others. Thus, research on dissonance theory showed that objects tend to be seen as more valuable as soon as an individual chooses it (e.g., Brehm, 1956). In fact, objects are also seen as more valuable even if people are simply given the items and no choice is involved (Kahneman, Knetsch, & Thaler, 1991). People overvalue members of their in-group (Tajfel, 1970), and

have even shown preferences for the letters in their own names over other letters (Nuttin, 1985). Recall that one explanation for why active generation of arguments produces more persuasion than passive exposure to them is that people find their own arguments to be superior (Greenwald & Albert, 1968). This preference for things associated with the self has been called the “ownness bias” (Perloff & Brock, 1980), the “mere ownership” effect (Nuttin, 1985), and the “instant endowment” effect (Kahneman et al., 1990). Thus, if a speaker presented a message about an object that a person just purchased, the person would presumably be especially motivated to see the merits of the object. If the object was sufficiently important, the self-linkage would presumably induce biased processing. If the object was unimportant or processing was impaired, people might simply reason that “if it’s mine, it must be good.” Research in which self-linkage produced greater processing rather than biased processing has tended to make salient the potential relevance of the object or issue to the self (e.g., you have the option of choosing this product; Petty et al., 1983) rather than the certain relevance (e.g., you will receive this product; see Petty & Cacioppo, 1990).

Position/Discrepancy. Perhaps the most salient initial feature of a message is whether it takes a position that the recipient generally finds to be agreeable (proattitudinal message) or disagreeable (counterattitudinal message). A number of investigators have proposed that attitude change should be an increasing function of message discrepancy (how far the message position is from one’s own attitude; e.g., Anderson & Hovland, 1957; Hunter, Danes, & Cohen, 1984). Social judgment theorists (e.g., Sherif & Hovland, 1961) provided a more complex hypothesis. The prediction was that attitude change was an increasing function of discrepancy as long as the message took a position in the recipient’s latitude of acceptance (i.e., the range of positions the person found agreeable), but was a decreasing function of discrepancy when the message took a position in the latitude of rejection (the range of positions the person found objectionable). Attitude change was proposed to reach a peak when the message took a position in the latitude of non-commitment (the range of positions between the latitudes of acceptance and rejection). Although many studies found an overall inverted-U pattern between message discrepancy and attitude change as expected by the theory (e.g., Hovland, Harvey, & Sherif, 1957) -- especially when the source was of low credibility (e.g. Aronson, Turner, & Carlsmith, 1963) -- careful analyses did not prove congenial to the view that recipients’ latitudes moderated the effects as expected (e.g., Eagly & Teelak, 1972).

Alternatives to the social judgment theory analysis of message position have been sparse, though a few suggestions have been made. According to the ELM (Petty et al., 1992), for example, message discrepancy could serve in several roles. Specifically, when the elaboration likelihood is low, message position could serve as a simple cue. That is, agreeable sounding messages would be accepted but disagreeable sounding messages would be rejected with relatively little scrutiny. When the elaboration likelihood is moderate, the message position will determine, in part, the extent of message processing. For example, counterattitudinal messages (which threaten a person’s views) might often receive greater scrutiny than proattitudinal messages (Cacioppo & Petty, 1979b; Edwards & Smith, 1996). When the elaboration likelihood is high, people will engage in negatively biased processing of counterattitudinal messages, but in positively biased processing of proattitudinal communications. Zanna (1993) further suggested that the bias will be greater for counter than for pro communications. That is, biased processing need not be symmetric -- people can be more biased in their assessment of messages that disagree than those that agree with them.

Although the multiple roles for message position have not been examined in research, some evidence is consistent with the proposition that counterattitudinal messages receive greater scrutiny than proattitudinal messages when other factors have not constrained the elaboration likelihood to be high or low. In one study, for example, recipients generated a greater number of counterargument thoughts as the message became more counterattitudinal (Brock, 1967). In another study, students were presented with one set of arguments that were framed as supporting either a pro or a counterattitudinal position (Cacioppo & Petty, 1979b). Recipients recalled more of the arguments when they were used in support of the counterattitudinal advocacy suggesting that this framing induced greater attention to the message content (see also Worth & Mackie, 1987). In other research, students who were given an unfavorable medical diagnosis engaged in greater thought about it than did students who were given a favorable medical diagnosis (i.e., they generated more alternative explanations for the counterattitudinal than the proattitudinal information; Ditto & Lopez, 1992). As might be expected if people scrutinize counterattitudinal information more than proattitudinal information, people take longer when

processing the latter than the former Edwards & Smith, 1996). Of course, as the issue becomes more important and emotionally involving, the enhanced processing of counterattitudinal messages should also be biased in an unfavorable direction.

Conclusion drawing. Another issue that has generated a small body of research is the question of whether the message should make its position explicit or whether the specific point being advocated should be implicit. For example, a college president can provide arguments about the benefits of a tuition increase without ever explicitly stating the conclusion that tuition should be raised by 10%. A number of studies have suggested that it is preferable to make the message position explicit (e.g., Hovland et al., 1949), though other research suggests that if the recipient draws the conclusion on his or her own, this can be superior (Fine, 1957). The problem seems to be that recipients are often either unable to draw the correct conclusion or are unmotivated to do so (McGuire, 1969). However, when people are motivated and able to draw the conclusion for themselves, such as when the message is highly involving or the recipients are high in their propensity to think, then it can be better to leave the conclusion implicit (e.g., Stayman & Kardes, 1992). Engaging in the work of self-generation is also likely to make the conclusion more memorable (Slamecka & Graf, 1978).

Use of rhetorical questions. Although the most common form of presenting an argument is to make statements, message arguments can include rhetorical questions that ask whether the argument is true. For example, one could summarize an argument with a statement that “institution of comprehensive exams will aid students who are applying to graduate schools”, or one could ask “wouldn’t institution of comprehensive exams aid students applying to graduate schools?” (e.g., Petty, Cacioppo, & Heesacker, 1981). Some research suggests that inclusion of rhetorical questions makes the speaker appear more polite and likeable (e.g., Bates, 1976). As such, use of rhetorical questions could function as a source cue when the elaboration likelihood is low, or bias processing when the elaboration likelihood is high. At times, however, rhetorical questions also make the speaker appear less confident (Newcombe & Arnkoff, 1979) which could operate as a negative rather than positive cue (or bias). In addition, Zillmann (1972) suggested that use of rhetorical questions becomes associated through socialization with strength of arguments (i.e., people only tend to use rhetorical questions when arguments are strong). Therefore, the presence of rhetorical questions could itself be used as a signal that the information is of high quality.

As noted earlier, Petty et al. (1981) proposed that the use of rhetorical questions in a message could increase message processing if people were not ordinarily inclined to think about the communication. Use of a rhetorical question literally requires the person to think about the argument just presented in order to address the question. A number of recent studies have supported this proposal (e.g., Burnkrant & Howard, 1984; Petty et al., 1981). Specifically, when messages are audio taped, it has been found that use of rhetorical questions enhances processing when baseline levels of elaboration are low, but use of rhetorical questions disrupts processing when baseline levels of elaboration are high (Petty et al., 1981). One possible reason for the latter effect is that the rhetorical questions are distracting when people are ordinarily inclined to think about the message. Consistent with this distraction notion, the presence of rhetorical questions only disrupts processing when the message is externally paced. When the message is self-paced and when rhetorical questions precede rather than follow the arguments, rhetorical questions increase message processing (e.g., Burnkrant & Howard, 1984).

Message Content

Perhaps the most studied message feature is the substantive message content (i.e., the kind of information included in the message). Among the content variables that have been studied are the quality of the message arguments, the quantity of information presented, whether the information is focused on emotions or cognitions, and whether the message includes only content favorable to the advocated side or whether it includes content on the other side as well.

Argument quality. One of the most manipulated variables in the contemporary literature is the quality or cogency of the message arguments. As documented earlier in our review, the list of variables that interact with argument quality in determining persuasion is now quite lengthy. However, despite the large number of studies, relatively little is known about what makes an argument persuasive. This is because following the initial use of it for this purpose (Petty et al., 1976), most studies have manipulated argument quality primarily as a methodological tool to examine whether some other variable increases or decreases message scrutiny, not to examine the determinants of argument cogency per se (Petty et al., 1993).

So, what makes an argument persuasive? Although arguments can take many logical forms (e.g., Fogelin, 1982), a typical argument presents some consequence that is likely to occur if the advocacy is adopted. Based on expectancy value notions (e.g., Fishbein & Ajzen, 1975), consequences that are maximally likely and desirable should be more compelling than those that are less likely or desirable (Areni & Lutz, 1988; Petty & Wegener, 1991). Of course, arguments can take other forms. For example, one could argue that a negative consequence can be avoided if the advocacy were adopted. In such cases, selecting consequences that are maximally likely and undesirable would be most persuasive (Petty & Wegener, 1991; but see discussion of fear appeals below). One particularly effective way to convince a person that a consequence is likely is to provide a causal explanation (Slusher & Anderson, 1996). Thus, a speaker arguing that “instituting comprehensive exams for college seniors will result in higher paying starting jobs” would be better off providing an explanation as to why this result occurs rather than simply citing statistical evidence that it will occur.

Some researchers have argued that arguments will be perceived as better the more they match the way a person looks at the world. For example, people who think of themselves as religious will find arguments that appeal to religion to be more persuasive than arguments that are legalistic (Cacioppo, Petty, & Sidera, 1982). This point of view is generally compatible with functional theories of attitudes (e.g., Smith, Bruner, & White, 1956; Katz, 1960) which hold that individuals and attitude objects can differ in the attributes that are most important, and cogent arguments would be those that related best to these important attributes (e.g., Shavitt, 1989; Snyder & DeBono, 1989). Thus, attribute importance might be added to desirability and likelihood in determining argument quality. For example, most students might agree that pretty flowers are very desirable, and that if tuition were raised, it is very likely that pretty flowers could be planted on campus. However, most students would probably not agree that having pretty flowers on campus is important. This would attenuate the cogency of the flowers argument.

An additional factor is the novelty of the consequences proposed. Burnstein and Vinokur (1975; Vinokur & Burnstein, 1974) have argued that all else being equal, an unfamiliar or unique argument has greater impact than a familiar one. After all, if a person has already considered an argument previously, it is unlikely to generate much in the way of new favorable (or unfavorable) responses that could lead to persuasion (or boomerang).

Whether it is necessary to add factors such as importance and novelty to the more traditional likelihood and desirability dimensions awaits further research. It may turn out that these factors are already considered when people think about the desirability of consequences. For example, the desirability of flowers may not be invariant, but may change with the situation. Thus, a student might reason that having pretty flowers is desirable in a fancy restaurant, but is not desirable on campus if it means raising tuition. If so, then perceived importance of the consequence might not contribute to overall persuasiveness above and beyond the perceived desirability of the consequence. Unfortunately, relatively few studies have examined what properties of arguments are the most critical in mediating persuasive influence. In one exception, Wegener, Petty, and Klein (1994) found that, for thoughtful individuals at least, happy and sad mood created differences in persuasion by influencing the perceived likelihoods (but not desirability) of the consequences mentioned in the message (see later discussion of mood effects).

Argument quantity. Early research suggested that increasing the number of arguments included in a message enhanced persuasion (e.g., Calder, Insko, & Yandell, 1974; Leventhal & Niles, 1965). Even if people are not thinking about the arguments, they can reason that the more arguments, the better the position is, or the more knowledgeable the source is. In fact, when the elaboration likelihood is low, such as when the issue is low in personal relevance or people have little knowledge on the topic, increasing the number of arguments (Petty & Cacioppo, 1984a) or making each argument longer (Wood, Kallgren, & Preisler, 1985) increases persuasion regardless of the quality of those arguments. However, if the elaboration likelihood is high, then increasing the number of strong arguments enhances persuasion, but increasing the number of weak arguments reduces persuasion (Petty & Cacioppo, 1984a). Furthermore, under high elaboration conditions, if weak arguments are added to strong arguments, persuasion can decrease when compared with presentation of the strong arguments alone (Friedrich, Fetherstonhaugh, Casey, & Gallagher, 1996).

Positive versus negative framing of arguments. As noted previously, arguments can take several forms. For example, an argument against smoking can be stated in a negative manner such as, “If you don’t stop smoking, you will die sooner,” or in a positive manner such as “If you stop smoking, you will live longer,”

(arguments could also be phrased as failing to take action making positive outcomes unlikely or as taking action making negative outcomes unlikely, see Petty & Wegener, 1991). Some research has suggested that negatively framed messages have greater impact on attitudes than comparable positively framed ones (e.g., Meyerowitz & Chaiken, 1987). What would account for this? If, as noted earlier, negative information gets more weight in people's judgments, this might account for the advantage of negative framing. The enhanced impact of negatively framed arguments is larger when people are motivated to think about each of the pieces of information presented (Maheswaran & Meyers-Levy, 1990; cf. Rothman, Salovey, Antone, Keough, & Martin, 1993). When people are not motivated to engage in careful message scrutiny, positively framed messages can be more impactful than negatively framed ones (Maheswaran & Myers-Levy, 1990). In these low effort situations, individuals may demonstrate a simple affinity for the more pleasant sounding communication (cf., Zajonc, 1968).

In the health domain, some researchers have also made a distinction between behaviors aimed at preventing versus detecting disease, with positive (gain) frames being more effective for prevention, but negative (loss) frames being more effective for detection, behaviors (e.g., Rothman et al., 1993). The prevention versus detection categorization likely proxies for one or more conceptual variables such as the extent to which the disease or other positive versus negative aspects of the behavior are salient in that setting. This might be understood by focusing on the perceived likelihoods of aspects of the message arguments (e.g., Wegener et al., 1994). Specifically, if thinking about detection behaviors makes the negative aspects of the disease more salient, then the undesirable outcomes of failing to engage in the detection behavior might seem more likely (i.e., the impact of negatively framed arguments would be enhanced). If thinking about prevention behaviors makes the positive aspects of not having the disease more salient, then the desirable outcomes of engaging in the prevention behavior might seem more likely (i.e., the impact of positively framed arguments would be enhanced; see Rothman & Salovey, in press; Salovey, Rothman, & Rodin, this volume, for additional discussion of message framing in health domains).

Individual differences can also be important in determining which framing is more effective. For example, Higgins's (1989) self-discrepancy theory notes that individuals who have a discrepancy between their actual-self (i.e., how one actually is) and their ideal-self (how the person wants to be) are oriented toward maximizing the presence of positive outcomes and minimizing their absence, whereas those with a discrepancy between their actual-self and their ought-self (how the person should be) are oriented toward minimizing the presence of negative outcomes and maximizing their absence. Based on this, Tykocinski, Higgins, and Chaiken (1995) hypothesized that a negatively framed message would "activate the vulnerability system" and cause distress for people with an actual-ought discrepancy. This distress was postulated to reduce persuasibility. For similar reasons, a positively framed message would reduce persuasion for individuals with an actual-ideal discrepancy. Consistent with this reasoning, actual-ideal discrepancy individuals were more influenced by a negatively than positively framed message, and actual-ought discrepancy individuals demonstrated the reverse. However, the mechanism by which distress reduced attitude change was not clear. Perhaps the distress reduced change by a low effort peripheral process such as classical conditioning. Or, if the message arguments were strong, perhaps the distress reduced persuasion by reducing processing of the message. Or, perhaps mismatching the message frame to one's chronic orientation increased the extent of message processing because a mismatched message was more surprising.

In an explicit attempt to link message framing to message processing, Smith and Petty (1996) demonstrated that either positive or negative framing could lead to more processing depending on which type of frame was expected. Recipients (especially those low in need for cognition) who were led to expect a positively framed message were more influenced by the quality of the arguments in a negatively framed than a positively framed message, but recipients who were led to expect a negatively framed message engaged in greater scrutiny of the arguments in the positively framed communication.

Fear/threat appeals. When very strong negative consequences (e.g., failing an important course, denial of tenure, death) are implied if an advocacy is not adopted, a threat appeal is being used. These messages are often referred to as fear appeals since it is assumed that emotional reactions are often induced as well, though empirically this is not always the case.¹⁰¹⁰ On the surface, at least, it would appear that such appeals would be very effective since they depict extremely negative consequences as being likely to occur unless the recipient

agrees with the message. Thus, in terms of an expectancy-value analysis of argument strength, threat appeals should be quite cogent. In fact, a meta-analysis of the fear appeals literature indicated that overall, increasing fear is associated with increased persuasion (Boster & Mongeau, 1984).

Yet, fear appeals are not invariably found to be more effective. One of the earliest studies on fear appeals suggested the opposite conclusion (Janis & Feshbach, 1953). There are several factors that work against the effectiveness of fear appeals. First, even if people view the threatened negative consequence as horrific, they are often motivated by self-protection to minimize the likelihood that some frightening consequence might befall them (e.g., Ditto, Jemmott, & Darley, 1988). Second, to the extent that the threat is so strong that it becomes physiologically arousing or distracting, message processing could be disrupted (Baron, Inman, Kao, & Logan, 1992; Jepson & Chaiken, 1990; cf. Baron, Logan, Lilly, Inman, & Brennan, 1994). This would reduce persuasion if the arguments were strong. Fear is especially likely to reduce message processing if recipients are assured that the recommendations are effective and the processing might undermine this assurance (Gleicher & Petty, 1992). It is important to note that when fear reduces message processing, this does not mean that use of fear will be ineffective in changing attitudes. Rather, it suggests that the effectiveness of some fear appeals could be due to disrupting processing of weak arguments, or increasing reliance on various peripheral cues (e.g., a reassuring expert).¹¹¹¹

The dominant perspective in this literature is Rogers' (1983) protection motivation theory. Consistent with expectancy-value notions, this model holds that fear appeals will be effective to the extent that the message convinces the recipient that the consequence is severe (i.e., is very undesirable) and very likely to occur if the recommended action is not followed. Importantly, this theory also holds that effective fear messages should also convey that the negative consequence can be avoided if the recommended action is followed and that the recipient has the requisite skills to take the recommended action (see also Beck & Frankel, 1981; Sutton, 1982). Considerable evidence supports these predictions and has also shown that if people do not believe that they can cope effectively with the threat, then increasing threat tends to produce a boomerang effect presumably as a consequence of attempting to restore control or reduce fear (e.g., Mullis & Lippa, 1990; Rippetoe & Rogers, 1987). Interestingly, in young children both self-efficacy and threat produce main effects on evaluations rather than an interaction as these individuals may not yet have developed a defensive avoidance mechanism (Sturges & Rogers, 1996).

Note however, that the protection motivation framework could be applied to virtually any negatively framed argument. In fact, with rewording, it could also apply to any positively framed argument (i.e., a promissory appeal will be effective to the extent that it conveys that the consequence is highly desirable, likely, the person has the skill to bring the positive outcome about, etc.). The emotional reaction of fear in this cognitive analysis plays relatively little role (see also, Leventhal, 1970; Dillard, in press). However, self-perceived fear might contribute to persuasion by leading thoughtful recipients to overestimate how bad the consequences are or how likely they are (Petty & Wegener, 1991; Rogers, 1983).

In sum, threat appeals can be analyzed just as any other message that conveys the likelihood of some positive or negative consequence occurring. To the extent that the threat appeal also induces an emotional reaction, however, this emotional reaction presumably can have an additional effect on message acceptance by serving as a simple cue, biasing message processing, or determining the extent of message scrutiny (see subsequent discussion of mood effects).

Emotion versus reason in messages. Another issue that was of considerable early empirical interest, and has re-emerged, is the question of whether emotional (affective) appeals are more or less effective than appeals to reason and evidence (cognitive appeal). This issue has its roots in the distinction Aristotle drew in his *Rhetoric* between "pathos" and "logos" (McGuire, 1969). The initial work on this question either found no overall difference in effectiveness between the two types of appeals (e.g. Knower, 1935) or tended to favor affective over cognitive messages (e.g. Hartmann, 1936).

Current research suggests that which type of appeal is superior depends on the basis of the attitude under challenge. In a series of studies, Edwards (1990; Edwards & von Hippel, 1995) concluded that matching was best. That is, it is better to match the persuasive appeal to the basis of the attitude than to mismatch. For example, if the attitude is based primarily on emotion, then an emotional appeal is more effective than a cognitive appeal in changing the attitude. On the other hand, in a separate series of studies, Millar and Millar (1990)

concluded that mismatching is best -- if the attitude is based on affect, a cognitive challenge is more effective than an affective one. These studies used very different methods and materials in testing their hypotheses and thus it is difficult to pinpoint the reason for the different results obtained. One potentially important difference between the two sets of studies is that Edwards used attitude objects about which participants had relatively little information, whereas Millar and Millar used attitude objects for which participants had already established attitudes (Olson & Zanna, 1993). This could account for the different results because with well formed attitudes, people may be better able to counterargue a direct attack on the underlying basis of their attitude (Millar & Millar, 1990). Alternatively, it may be that which effect occurs depends on the cogency of the attack. That is, if the attack is strong enough to undermine the basis of the attitude, then matching is better, but if the attack is weak, then mismatching may be superior (Petty, Gleicher, & Baker, 1991). Future work will also likely develop and rely on more advanced methods for measuring the extent to which existing or experimentally created attitudes are based on affect or cognition (e.g., Crites, Fabrigar, & Petty, 1994).

One versus two-sided messages. So far, only cases in which the content of a persuasive message presents just one side of the issue -- the side being advocated -- were considered. In contrast to these typical one-sided messages, several investigations have examined the consequences of including information on both sides of an issue. In an influential study, Lord et al. (1979) demonstrated that after examining equally strong evidence on both sides of an issue, people believed that the evidence on their side was more compelling than the evidence on the other side (called "biased assimilation"), and they came to believe that their own attitudes toward the issue had polarized. This is the expected result if one's attitude biases interpretation of the evidence. Consistent with this reasoning, Schutte and Fazio (1995) found that the biased assimilation effect was strongest when attitudes toward the topic were made highly accessible (see also Houston & Fazio, 1989) and recipients were not made apprehensive about the accuracy of their judgments. The biased assimilation effect is also stronger when people are emotionally invested in their attitudes (Edwards & Smith, 1996). However, Miller, McHoskey, Bane, and Dowd (1993) noted that the Lord et al. study and subsequent replications did not demonstrate any actual attitude change as a result of biased assimilation because only perceived attitude change (polarization) and/or biased thinking were assessed. To rectify this, they conducted conceptual replications of the Lord et al. research and included measures of participants' attitudes toward the topic. Although they replicated the biased assimilation effect and self-reports of polarization on the issue of capital punishment, after reading essays on both sides of affirmative action, participants were about equally likely to perceive they had depolarized as polarized. It is important to note that on neither topic did actual attitude polarization occur. Miller et al. speculated that participants could have held ambivalent attitudes on these topics which prevented polarization from taking place. In another relevant study, Pomerantz et al. (1995) found that polarization was only evident among individuals who were highly committed to their attitudes. Path analyses indicated that increased commitment led to attitude polarization both directly and as mediated by biased elaboration of the evidence. Finally, Giner-Sorolla and Chaiken (1996) had people read a message presenting both sides of an issue after assessing their vested interests on the issue. Consistent with past research, participants engaged in a biased evaluation of the evidence, but attitude polarization was not found. Rather, attitudes came more in line with participants' own vested interests following the message. That is, people who initially held attitudes in conflict with their own interests moved in the direction of self-interest, but people who already held attitudes in line with their interests tended to depolarize. Thus, processing a message presenting both sides of an issue does not inevitably result in polarized attitudes as suggested by the Lord et al. research. Rather, a number of variables related to the strength of one's attitude appear to determine whether processing the message will result in polarization, depolarization, or no change.

In the research using the Lord et al. paradigm, the two-sided message is balanced in that it does not clearly favor one side over the other. In another line of research, however, two-sided messages are presented in which one side is clearly the position advocated, whereas the other side is not. Furthermore, the opposition side is usually presented with weaker arguments than the focal side, or is explicitly refuted. The effectiveness of these two-sided messages are compared with the effectiveness of a one sided-message in which the opposition side is not mentioned. The initial research on this suggested that one sided-messages were more effective for those who initially favored the advocated position, and for those who were relatively low in educational level, but that two-sided messages were more effective for those in opposition to the position and of higher educational

attainment (Hovland et al., 1949).

As reasonable as these early findings appeared, a meta-analytic review of the accumulated literature failed to provide support (Allen, 1991). Specifically, across the accumulated literature, whether the recipients agreed or disagreed with the message did not moderate the results. It is possible that the original results were obtained not because of educational level or prior attitudes per se, but because people who oppose the message (or are of higher educational levels) are more likely to be aware that opposition arguments exist (and thus dealing with them directly presumably helps to undermine their implicit impact; Hass & Linder, 1972). Thus, future meta-analyses and primary research might measure the extent to which recipients are aware of the different sides of the issue in addition to the recipients' own attitudes. Allen's (1991) meta-analysis also discovered that it was important to distinguish two-sided messages that explicitly refuted the other side (two-sided refutational message) versus those that presented the other side but did not counter it (two-sided nonrefutational message). Across the relevant literature, refutational messages were more effective than one-sided communications, but nonrefutational messages were less effective than one-sided messages. This finding was confirmed in primary research using a diversity of topics and messages (Allen et al., 1990). In addition, Hale, Mongeau, and Thomas (1991) found that two sided refutational messages produced more favorable cognitive responses than two sided nonrefutational messages. Another possible benefit of two sided refutational messages is that they can be more effective than one-sided communications in instilling resistance to counterattacks (Lumsdaine & Janis, 1953).

To date, only one study has examined the possible multiple roles that two-sided messages can play in producing attitude change. In this research, Pechmann and Estaban (1994) established three levels of motivation to process an advertisement using a combination of motivational instructions and situational distraction. Participants received an advertisement containing strong or weak arguments that favorably compared an unfamiliar product to a popular product (two sided-message) or did not mention the competing popular brand (one-sided message). Consistent with the ELM multiple roles notion, under low motivation conditions, argument quality did not influence purchase intentions but the two-sided ad elicited more favorable reactions than the one-sided ad (cue effect). Because the two-sided message favorably compared an unknown brand to a highly liked brand (positive cue), a simple inference of quality could be responsible for the effect. Under high motivation, however, only argument strength had an impact. Under moderate motivation, the two-sided (comparative) ad elicited greater message scrutiny than the one-sided ad. The data further suggested that this enhanced scrutiny was biased in a favorable direction. Although research is sparse at present, it seems likely that two-sided messages would generally elicit greater scrutiny than one sided messages (given the need to make comparisons, resolve discrepancies, etc.) as long as the elaboration likelihood was not constrained by other variables to be high or low. However, whether two-sided messages serve as positive or negative cues (or biasing agents) will likely depend on the nature of the two-sided appeal or the message recipients. For example, two-sided appeals can make the source seem more fair, but might also make the definitiveness of the position seem less clear.

Message Organization

A number of variables have been studied concerning how a message is organized including whether one should start or end with the strongest arguments (e.g., Sponberg, 1946) and whether the source is presented before or after the substantive message arguments (e.g., Mills & Harvey, 1972; Pratkanis, Greenwald, Leippe, & Baumgardner, 1988; see subsequent discussion of the sleeper effect).

Perhaps the most researched variable, however, concerns the placement of competing messages on different sides of an issue. That is, all else being equal, is it to one's persuasive advantage to present one's side first or second? In the most cited study on this phenomena, Miller and Campbell (1959) relied on learning theory to predict that primacy would be expected when the two messages are presented together in time but the attitude assessment is delayed. This is because proactive inhibition would prevent the second message from being learned as well as the first and the second would have a faster decay. On the other hand, a recency effect would occur if the second message was presented some time after the first (so that proactive inhibition was minimized) and the attitude measure was taken shortly after the second message (so there was little decay of the second message). These predictions were supported in the attitude data, but there was little evidence that memory for the message arguments was responsible for the effects (see also Insko, 1964). However, if memory for one's own favorable thoughts to the communications followed the learning and decay patterns predicted by Miller and Campbell, the same attitudinal results would be expected. In any case, one moderator of primacy/recency effects

is the temporal ordering of the messages and attitude measures.

In reviewing the primacy/recency literature, Haugtvedt and Wegener (1994) noted another possible moderating factor. Specifically, they noted that several of the studies finding primacy effects tended to use controversial or familiar issues that likely instilled a high likelihood of elaboration, whereas several of those that produced recency likely instilled a low elaboration likelihood (see Lana, 1964, for an early review). Using the ELM, they argued that the greater the processing of the first message, the more likely that a strong attitude would be formed that would facilitate counterarguing of and resistance to the second message (Haugtvedt & Petty, 1992; Lund, 1925). In support of this hypothesis, Haugtvedt and Wegener (1994) found that when the personal relevance of the two messages was manipulated to be high, primacy effects were observed, but when the personal relevance of the two messages was manipulated to be low, recency was observed (see need for cognition section for additional discussion of effects of elaboration on primacy/recency effects).

Recipient Variables

Recipient variables refer to any aspects that the receiver of the influence attempt brings to the persuasion situation. That is, the "recipient" category generally refers to relatively enduring aspects of the individual such as the person's demographic category (e.g., gender, race), or personality and individual skills (e.g., self-esteem, intelligence). Characteristics of the issue-relevant attitude that the person possesses before the persuasive appeal is presented are discussed first. These initial attitudes can be determined by a variety of previous experiences, of course, but are brought to the persuasion situation by the message recipient.

Attitudinal Variables

Influence attempts can be presented to individuals who either have or do not have a prior attitude on the issue, and if the person has an attitude, this evaluation can be relatively strong or weak. A large literature now exists on the features that contribute to or are indicative of strong attitudes (Petty & Krosnick, 1995). In general, strong attitudes are more stable over time, resistant in the face of counterpressure, and have a larger impact on other judgments and behavior than weak attitudes (Krosnick & Petty, 1995). Attitudes can be strong for a wide variety of reasons. For example, the attitude can be based on a heritable component (Tesser, 1993), a consistent and organized belief structure (Chaiken et al., 1995), and so forth. Among the indicators of strong attitudes are their extremity (Abelson, 1995), accessibility (e.g., Fazio, 1995), and confidence (Gross, Holtz, & Miller, 1995).

Attitude accessibility. What impact do these strength factors have on attitude change? In general, many of these strength factors would serve in the same roles as other variables. For example, consider the accessibility of one's attitude. When the elaboration likelihood is high, then the more accessible the attitude, the more it will bias message processing in an attitude-consistent direction (Houston & Fazio, 1989). This, of course, would make movement toward counterattitudinal positions less likely. If the elaboration likelihood is constrained to be low, however, then the more accessible the attitude, the more likely the person will make snap decisions based on the salient attitude (i.e., the attitude serves as a peripheral cue; Jamieson & Zanna, 1989). Finally, if the elaboration likelihood is not constrained, increasing attitude accessibility increases the likelihood that people will scrutinize the message (Fabrigar, Wegener, Priester, & Petty, in press).

Issue-relevant knowledge. One of the most studied characteristics of attitudes in persuasion contexts is the extent to which the attitude is associated with high or low amounts of issue-relevant knowledge. Like other variables, recipient knowledge should be capable of serving in multiple roles. For example, one's perceived knowledge could function as a peripheral cue (e.g., "I'm the expert so I can reject the disagreeable advocacy") especially when the elaboration likelihood is low. Alternatively, knowledge could serve to affect the extent of information processing through either motivational ("I've never heard of that, so I'm curious about it," or "I've heard so much about that, I'm bored with it"), or ability factors (providing sufficient background to be able to discern the merits of strong arguments and the flaws in weak ones). Or, knowledge can bias information processing by motivating or enabling pro or counterarguing depending on whether the message was compatible or incompatible with one's existing attitude and knowledge (Petty & Cacioppo, 1986a; Petty et al., 1994).

In one early study, Lewan and Stotland (1961) provided students with factual information about the unfamiliar country of Andorra or not, and then exposed them to an emotional message attacking the country. People with some prior knowledge about Andorra were less influenced by the attack than people who had no prior knowledge. It is not clear, however, if high knowledge recipients resisted because knowledge instilled greater confidence in their initial opinions, because the knowledge motivated them to process the arguments and

the arguments were deemed weak, or because the prior knowledge motivated or enabled counterarguing of the attack.

More contemporary research has attempted to examine the processes by which knowledge has its impact, and has consistently demonstrated that people with high amounts of issue-relevant knowledge tend to engage in greater scrutiny of messages relevant to their knowledge than people with low amounts of issue-relevant knowledge, and are less reliant on peripheral cues (see Wood, Rhodes, & Biek, 1995, for a review). In addition, research suggests that people with high knowledge tend to resist influence on counterattitudinal issues more than people with low knowledge (e.g., Wood et al., 1985) but also tend to be more accepting of proattitudinal messages (Johnson, Lin, Symons, Campbell, & Ekstein, 1995; Wu & Shaffer, 1987). However, because most contemporary work on prior knowledge tends to measure knowledge rather than manipulate it, it is not surprising that high knowledge is associated with more attitude congenial outcomes. This is because knowledge is likely to be confounded with other variables that would foster this bias (e.g., high levels of confidence, attitude extremity, etc.). If knowledge was not confounded in this way, it would presumably be more likely to determine the extent of information processing activity with bias resulting from other motivational and ability factors (e.g., confidence, extremity). This is conceptually similar to our analysis of research on measured attitude importance or involvement. Consistent with this view, Biek, Wood, and Chaiken (1996) found that people with high measured knowledge engaged in greater biased processing of information only when their attitudes were associated with considerable affect. When knowledge was high but affect was low, processing was more objective.

Demographic Variables

Gender. Early research tended to show that women were more susceptible to influence than were men (e.g., Janis & Field, 1959; Knower, 1936). One explanation was based on culture. That is, society had greater conformity expectations for women (Hovland & Janis, 1959). Another explanation relied on the presumed greater message reception skills of women (McGuire, 1969). Early research also suggested that sometimes this effect was due to the gender of the influence agent -- when this was controlled, the gender difference disappeared (Weitzenhoffer & Weitzenhoffer, 1958). McGuire (1968) also speculated that the effect might be due to the fact that the experimental materials in most studies of the time were constructed by men.

More contemporary analysts have concluded that a small gender difference exists and is exacerbated when the study is conducted by a male investigator or influence is assessed in a group-pressure situation (Cooper, 1979). For social reasons, males might be more effective in eliciting compliance from females than are other females, and women might be more interested in social harmony than are men (due in part to their early socialization or their expected social roles; Eagly, 1978; Eagly & Wood, 1991). For example, in some situations, if one's gender is salient and motivation or ability to carefully scrutinize the merits of the issue are reduced, a cultural norm might determine the extent of influence (e.g., "as a man, I shouldn't give in").

These explanations suggest that gender differences will persist as long as cultural factors remain similar. Cultural factors do not account for all of the variance in gender effects, however. Some of the effect can be attributed to the nature of the influence topic. For example, in some cases, the topic of the message might determine how much scrutiny is given to the message (e.g., "this message is relevant to all women, so I should think about it"). Or, if the topic is one on which men have stronger attitudes than women (e.g., due to greater attitude-supportive knowledge), then women might be more influenceable since they would be less motivated or able to defend their attitudes. If the attitude strength differences are reversed, however, then men would be more influenceable (Cacioppo & Petty, 1980; Sistrunk & McDavid, 1971). In addition, the message content can be critical even if the topic is held constant. For example, different arguments might appear stronger (on average) to each gender. One study, for instance, found that women were more susceptible to an appeal to sympathy than reciprocity (Fink, Rey, Johnson, Spenner, Morton, & Flores, 1975).

Age. Effects of age on influenceability have been of intense interest in the 1990s due to charges that prosecutors had subtly (and not so subtly) influenced young children to testify to events that did not occur in some high profile child molestation cases. Early research examined susceptibility to influence by exposing individuals of different ages to various suggestion and hypnotism tests. This research suggested that young children were quite open to suggestion (e.g., Messerschmidt, 1933), and more recent studies reinforce this conclusion (e.g., Ceci & Bruck, 1993). Another approach to examining age differences has been to compare the

test-retest attitude correlations for individuals of different ages. In general, these studies have indicated greater stability in attitudes for older than younger individuals (e.g., Alwin, Cohen, & Newcomb, 1991).

A number of hypotheses have been put forth regarding the empirical relation between age and susceptibility to influence. Some investigators have argued that people generally become less susceptible to influence as they grow older (e.g., Glenn, 1980). Others have argued that the decrease in susceptibility is not gradual as one ages, but is rather abrupt as individuals leave their “impressionable” childhood and young adult years behind them (Mannheim, 1952). Still others have suggested a curvilinear relationship with younger and older individuals being most susceptible to change (e.g., Sears, 1981), though some evidence suggests that the increased susceptibility among the oldest individuals could be due to increased measurement error (Krosnick & Alwin, 1989).

Because of the general consensus that young people, at least, are more susceptible to persuasion than older adults (Visser & Krosnick, 1996), Sears (1986) argued that the typical laboratory study with college students overestimates the ease of attitude change in the general population. Of course, the goal of laboratory research is not typically to provide population estimates, but rather to examine some conceptual hypothesis. Furthermore, it seems unlikely that age per se relates to influenceability. Rather, a number of factors associated with age are probably responsible for any link between aging and attitude change and these factors could be studied within the population of college students (Petty & Cacioppo, 1996). For example, young people may appear to exhibit less stability in attitude surveys because they happen to be exposed to more challenges to their attitudes than are older individuals (Tyler & Schuller, 1991). Alternatively, as people grow older, their knowledge on many issues increases. As noted previously, knowledge can help a person resist an incoming message. In addition, some people might hold beliefs (such as “older is wiser”) that confer resistance even though other people of the same age do not hold such beliefs. In addition, individuals of different ages will likely find different topics of greater or lesser interest and different arguments as being of higher or lower quality. It is likely that each of these factors operates and accounts, at least in part, for observed age differences in different situations. Importantly, each of these conceptual questions can be studied within any given sample of individuals.

Personality/Skills

Although individual differences in the propensity to engage in evaluation and form attitudes have recently been uncovered (Jarvis & Petty, 1996), the search for a personality variable that captures a general susceptibility to persuasion across a wide variety of situations has met with little success (e.g. Hovland & Janis, 1959; see Eagly, 1981). Some early evidence indicated that individuals’ responses to various suggestibility tests showed a small positive correlation (see Eysenck & Furneaux, 1945; Hilgard, 1965) as did responses to various conformity situations (e.g., Abelson & Lesser, 1959). More success in persuasion situations has come from research examining specific individual differences in skills and personality traits. In fact, a wide number of specific traits have been linked to persuasion outcomes including: uncertainty orientation (Sorrentino, Bobocel, Gitta, Olson, & Hewitt, 1988), internal-external locus of control (e.g., Sherman, 1973), public self-consciousness (Carver & Scheier, 1982), need for closure (Webster & Kruglanski, 1994), and many others. Our focus is on the stable traits that have achieved the most research attention.

Intelligence. Primary studies have provided support for both positive (e.g., Cooper & Dinerman, 1951) and negative (see Crutchfield, 1955) relations between intelligence and influenceability. As noted previously, McGuire (1968) argued that which effect occurred should depend on whether reception or yielding processes were more important. For example, with a complex but cogent message, reception would be more important and thus intelligence would be positively related to persuasion. With a simple message, yielding would be more important, and intelligence would be negatively related to persuasion because highly intelligent people would be more resistant (see also Eagly & Warren, 1976). That is, intelligent individuals would likely have greater issue-relevant knowledge on many issues and thus have a greater ability to defend their current positions. However, their greater knowledge might also enable them to see the merits in complex arguments that would pass by less intelligent people.

A meta-analytic examination of the accumulated literature on intelligence and persuasion revealed that increased intelligence was generally associated with decreased persuasion (Rhodes & Wood, 1992). Given that intelligent people have a greater ability to scrutinize messages than people of less intelligence, this finding

probably implies that most counterattitudinal messages used in experiments are not so cogent that intelligent people cannot counterargue them when they are motivated to think about them. Although it has not been studied explicitly, perceived intelligence could also serve as a peripheral cue when motivation to think is low. For example, someone might reason that “I’m probably more intelligent than the source, so why should I change my view?” This inference might be less likely if the message appeared to be very complex, thus making the source appear more competent.

Self-esteem. The overall regard that a person has for him or herself -- self-esteem -- has also been subjected to McGuire’s reception/yielding analysis. As with intelligence, some research has demonstrated a positive relationship with persuasion (e.g., Berkowitz & Lundy, 1957) whereas other research has demonstrated a negative relationship (e.g., Janis, 1954). McGuire (1968) thus suggested that the relation between self-esteem and persuasion should be positive when reception processes dominate, but negative when yielding processes dominate (see also Nisbett & Gordon, 1967). If both processes operate simultaneously, then one would expect a curvilinear relationship between self-esteem and persuasion. Although a meta-analysis of the literature revealed that this curvilinear relationship holds (Rhodes & Wood, 1992), it is not entirely clear that the reception/yielding model provides the best account of these data.

For example, Skolnick and Heslin (1971) examined previously published studies on self-esteem and persuasion and had the messages used in these studies rated for their overall persuasiveness and comprehensibility. Comprehensibility (a stand-in for reception) did not account for the relation between self-esteem and persuasion, but the rated quality of the arguments did. Specifically, when Skolnick and Heslin divided the accumulated studies into those finding a positive relationship between self-esteem and persuasion and those finding a negative relationship, they found that the positive relationship studies used more cogent arguments than the negative relationship studies. This finding is consistent with the view that argument quality was more important in determining the attitudes of high than low self-esteem individuals. Low self-esteem individuals might have little need to scrutinize the merits of a communication because they would believe that most people are more competent than they are and thus, the message can be accepted on faith. A high self-esteem person, however, would have the confidence to scrutinize the message. If situational factors inhibited message processing (e.g., high levels of distraction), then one might expect high self-esteem individuals to be generally more resistant than low self-esteem individuals because they would be more likely to reason that their own opinion was as good or better than that of the source. High self-esteem individuals would presumably be more susceptible to the “ownness bias” (Perloff & Brock, 1980) that was described previously.

Self-monitoring. Snyder (1974) introduced the notion that some people -- called high self-monitors -- are very sensitive to cues that indicate socially appropriate behavior in a given situation, whereas other people -- called low self-monitors -- are more guided by their internal beliefs and values. High and low self-monitors have differed in a number of important ways. For example, because internal beliefs are more important to low self-monitors, they are more susceptible to dissonance effects (Snyder & Tanke, 1976). Most research on self-monitoring has examined the notion that attitudes serve different functions (see Katz, 1960; Smith et al., 1956) for people who are high versus low in self-monitoring, and each group should be more persuaded by messages that matched (versus mismatched) the function served by their attitudes. More specifically, attitudes should serve a social-adjustive function for high self-monitors and thus they should be especially influenced by arguments that make claims about the social images one can attain by agreeing with the advocacy. In contrast, the attitudes of low self-monitors should serve a value-expressive function and thus these individuals should be especially influenced by arguments that make claims about the underlying merits or true qualities of the issue or object under consideration. Several tests of these ideas proved congenial. That is, high self-monitors were more influenced by appeals to image or status whereas low self-monitors were more influenced by messages that made appeals to values or quality (e.g., DeBono, 1987; Snyder & DeBono, 1989).

In contrast to the functional hypothesis that focuses on the overall effectiveness of messages that match an attitude’s function, Petty and Wegener (1996) hypothesized that people would engage in greater scrutiny of message content that matched the functional basis of their attitudes. This implies that when the message arguments are strong, functional matching will lead to enhanced persuasion (as postulated by the functional theorists), but when the message arguments are weak, functional matching can lead to reduced persuasion. Some suggestive evidence for this was provided by DeBono and Harnish (1988). This study found that high and low

self-monitors engaged in greater scrutiny of a message when the message source matched the functional basis of the attitudes. That is, high self-monitors engaged in greater scrutiny of the arguments when they were presented by an attractive source (who might be expected to make an image appeal) than an expert source (who presumably would make a quality appeal), whereas low self-monitors demonstrated the reverse pattern. In this study, the actual content of the communications was the same. Thus, observed processing effects could be due to the messages not entirely matching the expectations associated with the sources of the messages. Also, in other settings, message sources that serve the needs of message recipients have led to less rather than more processing of the message content (e.g., DeBono & Klein, 1993). In order to examine whether individuals would engage in greater processing of messages when the substantive content of the message actually matched the function served by the attitude, Petty and Wegener (1996) had high and low self-monitors read image or quality appeals that contained strong or weak arguments. Consistent with the processing view, the cogency of the arguments had a larger effect on attitudes when the message matched rather than mismatched the functional basis of the attitude.

According to the ELM, functional matching should influence the extent of message scrutiny primarily when other factors in the persuasion setting have not already established the elaboration likelihood to be very high or very low. If circumstances constrained the overall likelihood of elaboration as very low, a functional match could serve as a simple cue to enhance persuasion. For example, if a source simply asserted that his or her arguments were relevant to a person's values, a low self-monitor might be more inclined to agree than a high self-monitor by reasoning, "if it speaks to my values, it must be good." On the other hand, if circumstances rendered the likelihood of elaboration as high, matching the content of the message to the functional basis of the attitude might bias processing. For example a high self-monitor would be more motivated to generate favorable thoughts to a message that made an appeal to image rather than an appeal to values.

Need for cognition. In deference to Cohen's (1957) pioneering work on scaling individual differences in cognitive motivation, Cacioppo and Petty (1982) called their scale measuring individual differences in the motivation to think, the need for cognition scale. Individuals who are high in need for cognition enjoy cognitive activities and engage in them when given the chance. Individuals who are low in need for cognition are cognitive misers who avoid effortful thinking unless situational demands require it (see Cacioppo, Petty, Feinstein, & Jarvis, 1996, for a review).

Research has supported the ELM notion that people who are inclined to engage in effortful cognitive activity are more influenced by the substantive arguments in a persuasive message (e.g., Cacioppo et al., 1983) and are less influenced by simple peripheral cues (e.g., Haugtvedt et al., 1992) than are those who are less inclined to think. It is important to note two additional findings. First, the more extensive thinking of individuals high in need for cognition is not necessarily objective. In fact, two studies have provided evidence that moods can introduce a significant bias to the thought content of people high in need for cognition (Petty, Schumann, Richman, & Strathman, 1993; Wegener et al., 1994). Second, research indicates that even low need for cognition individuals can be motivated to scrutinize the message arguments and eschew reliance on cues if situational circumstances are motivating – such as when the message is of high personal relevance (Axsom et al., 1987), the source is potentially untrustworthy (Priester & Petty, 1995), or the message content is surprising (Smith & Petty, 1996).

Two empirical discrepancies have arisen regarding need for cognition and attitude change. The first involves the mere thought effect (in which thinking about one's attitude leads to a polarization of that attitude; see Tesser, 1978). Given the greater propensity of high need for cognition individuals to engage in thought, one might expect them to show greater attitude polarization following a period of reflection on their attitudes. Although one study supported this idea (Smith, Haugtvedt, & Petty, 1994), another found the opposite (Leone & Ensley, 1986). Research by Lassiter, Apple, and Leach (1994) suggests that this discrepancy might be resolved by considering the different instructions used in the two studies. Specifically, Lassiter et al. found that when participants were instructed to think about their attitudes (as in Leone & Ensley), low need for cognition individuals showed greater polarization than high need for cognition individuals. However, when no explicit instructions to think were provided (as in Smith et al., 1994), high need for cognition individuals showed greater polarization. This suggests that when thinking is instructed rather than spontaneous, high need for cognition individuals may consider all sides of the issue and thus show moderation rather than polarization.

The second discrepancy involves primacy and recency effects. Specifically, one study found that

individuals high in need for cognition demonstrated greater primacy in judgment than individuals low in need for cognition (Kassin, Reddy, & Tulloch, 1990). This result is consistent with the view presented earlier that high amounts of thinking about early information can enhance counterarguing and rejection of later information (Haugtvedt & Petty, 1992; Haugtvedt & Wegener, 1994). However, another study found that low need for cognition individuals demonstrated greater primacy in judgments than individuals high in need for cognition (Ahlering & Parker, 1989). This result is consistent with the view that low amounts of thinking can cause individuals to freeze on the early information and ignore subsequent information (Kruglanski & Freund, 1983). Petty and Jarvis (1996) noted that this discrepancy might be resolved by considering the fact that in the studies finding greater primacy under high thinking conditions, the materials presented two clear sides to an issue (e.g., the prosecution and defense positions in a trial; Kassin et al., 1990; independent pro and con messages on an issue; Haugtvedt & Wegener, 1994), and participants first received information from one source on one side of the issue and then the other source on the other side. In contrast, studies finding greater primacy under low thinking conditions have not divided the information neatly into two sides. Rather the information came in a continuous stream (Ahlering & Parker, 1989). In the former procedure, thoughtful individuals would likely form a thoughtful opinion after the initial side and then be biased in processing the second side. When there are no clear sides, however, highly thoughtful individuals would be more likely to process all of the information prior to rendering a judgment. This would attenuate any primacy effect.

Context Variables

Context refers to any factors related to the setting in which the communication is presented. This is a broad category of variables that includes such features as any distractions that are present in the setting, whether the message is repeated or not, whether the surroundings create a pleasant or unpleasant atmosphere, whether people are forewarned of the message content or not, expect to discuss the issue with others, and so forth. The impact of these variables on the processes of persuasion are discussed next.

Distraction

It is not uncommon for people to simultaneously encounter a persuasive message and engage in one or more other tasks, or have various kinds of distracting stimuli present that tax cognitive capacity. Festinger and Maccoby (1964) proposed that distraction could increase persuasion by interfering with counterarguing. Early research supported this proposition by showing that increases in distraction resulted in increases in persuasion when attention was focused on the message, but not on the distracting events (e.g., Insko et al., 1974) and that increases in distraction led to decreases in counterarguments measured in thought-listings (e.g., Osterhouse & Brock, 1970; see Baron, Baron, & Miller, 1973, for a dissonance interpretation). Petty et al. (1976) tested a more general thought-disruption view of distraction by crossing distraction with a manipulation of argument quality. According to the disruption of processing view, distraction should lead to decreases in whatever cognitions would normally have occurred. Thus, if the dominant cognitive responses would have been favorable when no distraction was present – as would be the case if the arguments were strong -- then distraction should disrupt these favorable thoughts and reduce persuasion. However, if the dominant cognitive responses would have been unfavorable when no distraction was present -- as would be the case if the arguments were weak -- then distraction should disrupt these unfavorable thoughts and increase persuasion. The data supported this hypothesis and provided evidence for the view that distraction influences attitudes by disrupting one's thoughts. At the same time, this study provided strong support for the cognitive response model of persuasion.

Further support for an interpretation of distraction effects as due to disruption of ability to process the content of message arguments comes from studies in which manipulations of distraction have been crossed with manipulations of persuasion cues. For example, Kiesler and Mathog (1968) found that a high-credibility source led to more favorable attitudes than a low-credibility source to a greater extent when distraction was high rather than low (see also Miller & Baron, 1968, cited in Baron et al., 1973). One ironic effect of distraction is that it can lead people to favor positions they intend to disfavor. Specifically, in one study, students were asked to try not to believe in the conclusion of a message. When not distracted, those trying to disbelieve had no problem doing this. When distracted, however, the opposite resulted – those attempting not to believe came to favor the proposal more presumably because distraction prevented them from suppressing the unwanted belief (see Wegner, 1994, for discussion of this and other examples of thought suppression).

Audience Reactions

When a persuasive message is encountered, other recipients of the message might provide noticeable reactions to the message (i.e., of agreement or disagreement with the message). For example, Axsom et al. (1987) presented research participants with an audiotaped strong or weak message accompanied by taped audience reactions. The message advocacy (probation as an alternative to imprisonment) was introduced as being high in personal relevance (i.e., considered for the participants' own state) or low in personal relevance (i.e., considered for a distant state). In addition, research participants were classified as either high or low in need for cognition (Cacioppo & Petty, 1982). When elaboration likelihood was lowest (i.e., when personal relevance and need for cognition were both low), audience agreement reactions (i.e., taped applause that was consistent and enthusiastic) led to more favorable attitudes than audience disagreement (i.e., inconsistent and sparse applause). In contrast, when elaboration likelihood was high (i.e., when personal relevance, need for cognition, or both were high), audience reactions had no effect on favorability of attitudes. Instead, under such conditions, only message quality influenced attitudes. That is, when elaboration likelihood was low, audience applause acted as a persuasion cue, but when elaboration likelihood was high, the audience cue had little effect.

In this study, unambiguous strong or weak messages were used. If ambiguous messages were used, however, one might find evidence of biases in processing under high elaboration conditions (perhaps looking for reasons why other message recipients seem to agree with the ambiguous arguments). In one study relevant to potential biased processing instigated by audience reactions under high elaboration conditions, Petty and Brock (1976) investigated the effects of hecklers on persuasion. They found that when a speaker ignored hecklers or provided irrelevant responses, audience members expressed less agreement with the message than when no heckling occurred (perhaps because of negatively biased processing when others voiced their counterarguments to the message). When the source provided relevant responses to the hecklers (i.e., counterarguing the counterarguments), however, this reduced the deleterious effects of heckling.

Of course, other reactions of audiences could be studied, some of which might be likely to influence the amount of message processing if other factors do not constrain processing to be high or low. For example, one could imagine audience reactions that communicate to other message recipients that the message is interesting or important versus uninteresting or unimportant. If so, such reactions might be especially likely to affect how much other audience members process the message.

Forewarning

At times, people receive persuasive messages when they have already learned either the position to be advocated by the message or the intent of the provider(s) of the message to persuade. Some studies of forewarning have included both types of forewarning (e.g., Brock, 1967) though, as noted by Papageorgis (1968), the two types are conceptually distinct. In fact, most research has independently investigated the effects of each type of forewarning.

Forewarning of content. McGuire and Papageorgis (1962) noted that warning of the content of a persuasive message might motivate people to consider information that supports their current opinion on the issue and counterargue opposing positions in anticipation of the message. If this is the case, one should find that whether or not there is time between the forewarning and the communication creates a difference in the resistance to the message (with time for preemptive counterarguing leading to greater resistance). Consistent with such a possibility, Freedman and Sears (1965) found that forewarning teenage students of a message opposing teenage driving led to little resistance to the message if the forewarning was provided immediately before the message but to significantly more resistance if provided 10 minutes prior to the message (see also Hass & Grady, 1975).

Petty and Cacioppo (1977) found additional support for the anticipatory counterargument position by showing that thought listings revealed significantly more incidence of anticipatory counterargumentation when people were forewarned of counterattitudinal message content than when they listed thoughts but were not forewarned, and by showing increased physiological activity indicative of concentrated negative thought during the postwarning-premessage period (Cacioppo & Petty, 1979a). In addition, Petty and Cacioppo (1977) noted that it was not the forewarning per se that induced resistance to an attacking appeal, but rather the activation and consideration of attitude-relevant knowledge. That is, activation of attitude-relevant knowledge (accomplished by asking people to list thoughts on the topic without forewarning them of the content of the upcoming message) prior to receipt of an attacking message was sufficient to produce resistance to the appeal equal to that of

forewarning.

Consistent with the idea that activation of attitude-relevant knowledge was responsible for resistance when people are forewarned of persuasive content, it has been shown that resistance only occurs to the extent that the message is on a topic that is personally important or involving to the message recipient (Apsler & Sears, 1968). Attesting to the importance of motivational and ability factors, Chen, Reardon, Rea, and Moore (1992) found that a forewarning of message content on a counterattitudinal issue led people to resist the message and generate unfavorable thoughts to both strong and weak arguments primarily when the issue was personally involving and they were not distracted (see also Freedman, Sears, & O'Connor, 1964; Romero, Agnew, & Insko, 1996).

Forewarning of persuasive intent. If a person does not even know what a communication is about, it seems unlikely that he or she could generate anticipatory counterarguments. Therefore, one must look to other mechanisms to account for the effects of forewarning of persuasive intent (see Cialdini & Petty, 1981). An empirical indication that forewarning of persuasive intent works differently than forewarning of persuasive content is that forewarning of intent is equally effective, regardless of the amount of time between the forewarning and the message (e.g., Hass & Grady, 1975). It could be that intent to persuade is regarded as an intended restriction of freedom to think or act in some way. If so, a recipient of such a forewarning might experience reactance (Brehm, 1966) that would instigate counterarguing once the persuasive appeal has begun (counterarguing cannot begin until the topic of the appeal is known; see Fukada, 1986, for differential self-reports of reactance by warned and unwarned message recipients). In order to investigate whether counterarguing during the message was responsible for the effects of forewarning of persuasive intent, Petty and Cacioppo (1979a) exposed research participants to a message arguing that senior comprehensive exams be instituted after the issue was described as either high or low in personal relevance and participants were either forewarned of persuasive intent or not. Results showed that forewarning led to less favorable opinions of the advocacy, but only significantly so when the topic was high in personal relevance. This suggested that forewarning was not acting as a simple rejection cue (which would have worked under low, rather than high, relevance), but was acting to bias the processing that occurred when personal relevance was high. That is, relevance increased processing and led to greater acceptance of the strong arguments in the message when no forewarning was present, but when a forewarning was present, then the relevance-inspired processing became biased.

Additional evidence for the view that forewarning of persuasive intent biases processing of a message comes from research demonstrating that such warnings are effective in reducing persuasion when they are presented before rather than after the message (Kiesler & Kiesler, 1964) and produce resistance only when message recipients are not distracted during message presentation (Watts & Holt, 1979).

Anticipated Discussion or Interaction

A number of studies have examined how opinions are modified when people are asked to interact with or be accountable to some other person or persons. Like other variables, anticipation of discussion or accountability to others has produced a number of effects. In general, when people feel they are accountable or might have to justify their stance to others, this engages concerns about one's social appearance (Cialdini et al., 1976; Leippe & Elkin, 1987; Tetlock, 1992). How one goes about maximizing a favorable impression, however, varies with the situation. Consider first the case in which a person expects to discuss or be held accountable for an issue that is not particularly important or is somewhat unfamiliar. In such cases, if the opinions of the audience (or person to whom one is accountable) are unknown, people tend to diligently think about any information presented on the issue in an attempt to adopt the best or most justifiable position (Chaiken, 1980; Petty et al., 1980; Tetlock, 1983). If no information is presented, however, and the audience's opinion is unknown, people tend to adopt a moderate and presumably defensible position in anticipation of interaction with the audience (Cialdini et al., 1976). When the audience's opinions are known, communications to these audiences tend to be biased in favor of the audience's opinions and people tend to shift their own opinions toward those expected to be held by the audience (e.g., Chen et al., 1996; Higgins & McCann, 1984; Tetlock, 1983).

When the issue is important or people have a previous commitment to a particular position, things change. Specifically, being held accountable or expecting to discuss the issue leads people to justify their initial positions (Lambert et al., 1996; Tetlock, Skitka, & Boettger, 1989) which can result in attitude polarization rather than moderation (Cialdini et al., 1976; see Cialdini & Petty, 1981; Tetlock, 1992, for additional discussion).

Channel (Message Modality)

Any given persuasive message can be presented in various ways, through various media. Although the messages presented in social psychological studies are often written (on paper or computer screen), audiotaped, or videotaped, one conceptual variable likely represented in these categories is a distinction between self-paced and externally-paced presentation. That is, a written message is typically self-paced (i.e., a reader can go back to read and reread anything that he or she likes, e.g., Chaiken & Eagly, 1976; for an exception, see Mackie & Worth, 1989). When a communication is audiotaped or videotaped, however, it is more likely to be controlled by someone other than the message recipient (e.g., Andreoli & Worchel, 1978; Chaiken & Eagly, 1976).

What persuasive effects are such differences likely to have? Although little basic research has investigated differences in communication modality, most of the relevant work suggests that some methods of presenting a message receive greater scrutiny than others. As might be expected, self-paced messages generally receive greater scrutiny than externally paced messages (perhaps because it is more difficult to thoroughly scrutinize the content of an externally-paced message, at least when it is reasonably complex in nature). Consistent with this idea, when Eagly and Chaiken (1976) presented research participants with a complex, cogent message, they found that the message led to greater persuasion and recall of message arguments when it was written (self-paced) than when the message was audiotaped or videotaped (externally-paced). This is to be expected assuming that the message arguments were strong.

In addition, it has been shown that peripheral persuasion cues such as communicator credibility or likeableness tend to have a greater impact when the message is videotaped (i.e., externally-paced) rather than written (self-paced; e.g., Andreoli & Worchel, 1978; Chaiken & Eagly, 1983). These effects could be due to the difficulty of processing complex material when externally paced (as mentioned above), but could also be due in part to the salience of source cues across the different versions of the message. Many visual aspects of the person or setting in which a source speaks could enhance perceptions of credibility or likeableness, and these features of the person and setting can only truly affect message recipients when the person and setting are clearly pictured with the message (which can occur when a message is videotaped, but not audiotaped). Finally, the modality of the message itself could serve as a cue or a determinant of biased processing in that some people might, for example, be more impressed with messages appearing in the print media (e.g., newspapers, books, magazines) than on television.

Mood

A variety of events or aspects of one's environment can change the way one feels. In empirical investigations of effects of mood on persuasion, this has generally been accomplished by providing people with written, audiotaped, or videotaped material that is generally very pleasant or unpleasant prior to message exposure, thus setting a persuasion context in which the recipient's mood is positive, negative, or neutral. Effects of positive and negative moods have been examined across the elaboration continuum.

According to the ELM, mood can serve in the same multiple roles as other variables (Petty, Gleicher, & Baker, 1991). Thus, when the likelihood of issue-relevant thinking is low, a person's mood should impact attitudes by a peripheral process. Consistent with this view, early investigations of mood and persuasion were often guided by classical conditioning notions of a direct association between the attitude object and the person's affective state (e.g., Griffit, 1970; Zanna et al., 1970). More recently, 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). Importantly, these direct effects of mood on attitude seem to be more likely when elaboration likelihood is low than high (e.g., Gorn, 1982; Petty et al., 1993).

As the likelihood of elaboration increases, mood takes on different roles. Specifically, when the elaboration likelihood is more moderate, mood has been shown to have an impact on the extent of argument elaboration. Competing theoretical positions have been put forward to explain effects of mood on message processing. The "cognitive capacity" and "feelings-as-information" views both predict that happy moods disrupt processing of message content (see Mackie & Worth, 1991; Schwarz, Bless, & Bohner, 1991). For the cognitive capacity view, this is because happy moods activate positive thoughts in memory which occupy a person's attentional capacity and render the message recipient less able to process incoming information (Mackie & Worth, 1989, 1991). In comparison, the feelings-as-information view states that negative moods signal that

something is wrong in the environment and that some action is necessary, whereas positive moods indicate that no scrutiny of the environment is required (Schwarz, 1990). Because of this, negative states generally instigate active processing strategies in order to deal with problems in the environment, but positive states do not (although active processing can be done in positive states if other goals that necessitate such processing become salient; see Bless, Bohner, Schwarz, & Strack, 1990). Although these views have been used to account for a large number of studies, virtually all of the persuasion experiments investigating the effects of mood on processing have used counterattitudinal or depressing messages (e.g., on topics such as acid rain, gun control, student tuition increases, etc.; see Wegener & Petty, 1996, for a review). Because of this, one might also account for deficits in message processing by happy people by considering the possibility that happy people pay more attention to the hedonic consequences of their actions than people in neutral or sad states. If this were the case, then happy people might be especially avoidant of activities perceived as likely to be depressing, but might especially engage in uplifting activities. Wegener and Petty (1994) developed this hedonic contingency idea by noting that hedonic rewards (i.e., feeling better rather than worse after engaging in an activity) are more contingent on the scrutiny of the hedonic consequences of action in happy than in sad states.

Empirical tests of the hedonic contingency possibility have been encouraging. Wegener, Petty, and Smith (1995, Experiment 1) found that use of a proattitudinal message led to greater message processing from happy than neutral people (which would not be predicted by either the “cognitive capacity” or “feelings-as-information” views). Wegener et al. (1995; Experiment 2) manipulated the introduction of messages so that the same arguments could be used to support either a proattitudinal (uplifting) position or a counterattitudinal (depressing) position, and found that happy people processed the arguments more when they addressed an uplifting proposal than when they addressed a depressing proposal, whereas sad people processed the messages to the same extent, regardless of the uplifting or depressing introduction. Organized another way, this result showed that the hedonic contingency idea was capable of accounting for the past effects of mood on message processing. That is, when a depressing version of the topic was used (as in the past research, e.g., Bless et al., 1990; Mackie & Worth, 1989), happy people processed the messages less than sad people (replicating the past result). However, when an uplifting version of the topic was used, the same arguments were processed more by happy people than by sad people.

Thus, it appears that happy people do not universally process information less than neutral or sad people. Rather, happy people engage in cognitive tasks to the extent that the task is viewed as enabling the person to remain happy (or keep from feeling badly). This view might account for why happy moods have been found to enhance cognitive activities in some areas outside the persuasion domain (e.g., enhancement of creative problem solving, Isen, Daubman, & Nowicki, 1987; enhancement of generation of similarities and differences between pairs of targets, Murray, Sujun, Hirt, & Sujun, 1990). Of course, within the multiple roles framework, such effects on amount of cognitive processing should be most likely if background factors do not constrain elaboration likelihood to be extremely high or low.

When the elaboration likelihood is high and people are processing the message arguments already, the ELM holds that affective states can influence attitudes by influencing the nature of the thoughts that come to mind. Positive mood can facilitate the retrieval of positive or inhibit the retrieval of negative material from memory (e.g., see Blaney, 1986, Bower, 1981). Thus, a person's mood during message processing can be related to the favorability of the cognitive responses generated. Support for this possibility has been found in a number of studies (e.g., Breckler & Wiggins, 1991; Mathur & Chattopadhyay, 1991), some of which explicitly varied the elaboration likelihood. In two studies, Petty et al. (1993) found that positive mood had an impact on the favorability of thoughts of subjects high in elaboration likelihood (i.e., for people high in need for cognition or under high message relevance conditions), and these thoughts influenced attitudes. In contrast, when elaboration likelihood was low, mood did not influence thought valence, but rather directly influenced attitudes presumably by a low effort peripheral process.

This is not to say that positive moods should always bias processing toward being more favorable toward the position advocated or that negative moods should invariably render the message conclusion less acceptable. For example, negative moods have been shown to make negative events seem more likely than positive events (e.g., Johnson & Tversky, 1983) and positive events and behaviors are seen as more likely in positive as opposed to negative moods (e.g., Mayer, Gaschke, Braverman, & Evans, 1992). Thus, to the extent that message

arguments include statements that a plan should be followed in order to avoid negative consequences, negative moods could actually lead high elaboration recipients to view these arguments as more compelling (see Petty & Wegener, 1991; Wegener et al., 1994).

Repetition of the Message

Models of persuasion that viewed attitude change as acquisition of a new verbal habit (e.g., Hovland et al., 1953) suggested that repetition of a message would enhance persuasion. Work on this question has shown substantial variability in effects, however (see Grush, 1976), and the most common pattern of findings has been an initial increase in agreement with increased repetition, followed by a decrease in agreement with further repetition (e.g., Cacioppo & Petty, 1979b). As noted earlier, these effects can be accounted for by a two-stage model of increases in objective processing of message content, followed by increases in biased processing as tedium and irritation sets in with further repetitions (see Stewart & Pechman, 1990, for a review).

That is, at low levels of repetition, increasing the number of times a person receives the message provides the person with greater opportunity to scrutinize the merits of the object or position. This would lead to increased persuasion if the arguments are strong (as in most of the research noted above), but would actually lead to decreased persuasion if the arguments are weak (Cacioppo & Petty, 1989). This increase in processing with increased repetitions should be most evident when the messages are relatively complex (and the number of repetitions necessary for tedium might be related to the amount of complexity in the messages).

Thought-listing studies have supported the biased-processing interpretation of the tedium effect obtained with high levels of message repetition. For example, Cacioppo and Petty (1979b) found that counterarguing of strong arguments decreased from one to three message repetitions (consistent with increases in relatively objective processing with moderate repetition), but increased from three to five repetitions of the same message (consistent with irritation or reactance setting in with high levels of repetition). Favorable thoughts showed the opposite quadratic pattern, and thoughts such as complaints of boredom increased with higher message repetition. Although increases in repetition led to increases in recall of message arguments (suggesting increased processing), it was favorability of thoughts rather than amount of recall that predicted agreement. Similar effects have been found in field settings. For example, Gorn and Goldberg (1980) found that children preferred an ice cream product most with moderate repetitions of an ad for the ice cream, and that expressions of displeasure (e.g., "not again!") increased with high levels of ad repetition.

Summary of Effects of Persuasion Variables

Although it is still the case that most studies have examined just one role for any given persuasion variable, each of the possible multiple roles for persuasion variables has been observed for one or more of the source, message, recipient, and context variables that were reviewed. For example, effects of source characteristics have been found across the entire elaboration continuum. Even though the most studied role of source factors is that of persuasion cue when the elaboration likelihood is low, source characteristics have also been shown to influence persuasion when elaboration likelihood is high, but this has occurred by biasing the processing of the communication -- especially when arguments in the message are ambiguous. Finally, numerous source characteristics have been shown to influence the amount of processing of persuasive messages when background factors do not constrain elaboration to be extremely high or low. Similar multiple roles have been observed for message, recipient, and context factors. Of course, some variables have only been shown to operate in one role in existing research, and studies that examine all roles within the same study are quite rare. Future research will undoubtedly more fully explore the multiple roles by which variables can influence attitudes. In addition, use of the multiple roles framework might be used to generate unique hypotheses. For example, although distraction has been studied mostly in its role as a disrupter of processing, it is possible that mild distraction might also serve as a motivator of processing if people feel that because of the distraction they need to exert extra effort in attending to the message. If this effort is greater than is actually necessary to overcome the distraction, enhanced processing over no distraction conditions would be the result. In addition, some forms of distraction could also be annoying, which could serve as a simple disagreement cue or serve to bias processing (much as annoying message repetition has been shown to bias processing).

CONSEQUENCES OF DIFFERENT PERSUASION PROCESSES

Understanding the processes by which source, message, recipient, and context variables have their impact on attitude change is important not only for the conceptual understanding it provides, but also because there are

some very important consequences associated with the process by which attitudes are changed. In this final section, some of the important characteristics and consequences of attitudes that are changed by high- versus low-effort processes are reviewed briefly (see also Eagly & Chaiken, this volume). In particular, the temporal persistence of attitude changes, the resistance of newly changed attitudes to counterpersuasion, and the ability of newly formed or changed attitudes to predict behavior (and behavioral intentions) are highlighted.

Over the past few decades, a number of studies have addressed these topics. A general conclusion is that attitude changes that are accompanied by high levels of issue-relevant cognitive activity about the dimensions central to the attitude object are stronger than changes that are accompanied by little issue-relevant thought, or considerable thought but along dimensions that are not central to the merits of the attitude object (see Petty, Haugtvedt, & Smith, 1995, for a review). High levels of issue-relevant cognitive activity are likely to require frequent accessing of the attitude and the corresponding knowledge structure. This activity should therefore tend to increase the number of linkages and strengthen the associations among the structural elements, making the attitude schema more internally consistent, accessible, and enduring (Crocker, Fiske, & Taylor, 1984; Fazio, Sanbonmatsu, Powell, & Kardes, 1986; McGuire, 1981). In comparison, attitude change that results from simple on-line inference or heuristic processes typically involve accessing the attitude structure only once in order to incorporate the affect or inference associated with a salient persuasion cue (Petty & Cacioppo, 1986a). In general then, these attitudes should be weaker.

In the ELM analysis, attitude changes are stronger the more they are based on issue-relevant thinking and it does not matter if this thinking occurs because the experimenter instructs the person to generate a message, if the thinking is inspired naturally by the personal importance of the issue or an impending discussion, and so forth. Similarly, it doesn't matter if the enhanced thinking is relatively objective or is biased by consistency, reactance, self-esteem, impression management, or other motives. It is important to note, however, that this consequences postulate does not imply that thoughtfully changed attitudes necessarily will be stronger than one's initial attitude. It simply means that a thoughtfully changed attitude will be stronger than an unthoughtfully changed attitude. When one's attitude toward some object is changed to a new position, the "old" attitude may still exist along with the new attitude, and if the new attitude is not as strong as the old one, the old attitude could still be accessed and guide thinking and behavior. This is particularly important in many applied domains in which one wants the new attitude rather than the old one to guide action. For example, based on a health education campaign, adolescents may develop new attitudes toward safe sex. However, even if these new attitudes are induced by the central route, people may still need to think before they act so that the new attitude rather than the old attitude or salient situational cues guide behavior (Petty, Gleicher, & Jarvis, 1993).

Persistence of Attitude Change

In an attitude change context, persistence refers to the extent to which the newly changed attitude endures over time. In a comprehensive review of the experimental work on the persistence of attitude change, Cook and Flay (1978) concluded quite pessimistically that most of the laboratory studies on attitude change tended to find very little persistence. In the years since this influential paper, it has become more clear when attitude changes will persist and when they will not.

Current research is compatible with the view that when attitude changes are based on extensive issue-relevant thinking, they tend to endure (e.g., Mackie, 1987; see Petty et al., 1995). That is, conditions that foster people's motivation and ability to engage in issue-relevant cognitive activity at the time of message exposure are associated with increased persistence of persuasion. Thus, research has shown that self-generation of arguments (e.g., Elms, 1966; Watts, 1967) and autobiographical instances relevant to an issue (Lydon, Zanna, & Ross, 1988), using interesting or involving communication topics (Ronis, Baumgardner, Leippe, Cacioppo, & Greenwald, 1977), providing increased time to think about a message (e.g., Mitnick & McGinnies, 1958), increasing message repetition (e.g., Johnson & Watkins, 1971), reducing distraction (e.g., Watts & Holt, 1979) and leading recipients to believe that they might have to explain or justify their attitudes to other people (e.g., Boninger, Brock, Cook, Gruder, & Romer, 1990; Chaiken, 1980) are all associated with increased persistence. Also, people who characteristically enjoy thinking (high need for cognition) show greater persistence of attitude change than people who do not (Haugtvedt & Petty, 1992; Verplanken, 1991). Interestingly, simple cues can become associated with persistent attitudes if the cues remain salient over time (though attitudes that persist for this reason might often be relatively easy to change when challenged, see Haugtvedt, Schumann, Schneier, &

Warren, 1994). Relative persistence can be accomplished by repeated pairings of the cue and attitude object so that the cue remains relatively accessible (e.g., Haugtvedt et al., 1994) or by reintroducing the cue at the time of attitude assessment (e.g., Kelman & Hovland, 1953).

The Yale group explicitly acknowledged the role of "peripheral cues" and their impact on attitude persistence in their work on the "sleeper effect." A sleeper effect is said to occur when a message that is accompanied initially by a negative cue (e.g., a noncredible source) increases in effectiveness over time (see Cook, Gruder, Hennigan, & Flay, 1979; Hovland et al., 1949). To account for this effect, Kelman and Hovland (1953) proposed that in addition to message arguments, various cues could have an impact on attitude change. These cues were thought to add to (or subtract from) the effects of the persuasive message. Importantly, the cues and message were viewed as independent and were postulated to have different decay functions. Given this formulation, a sleeper effect would be produced if a person was exposed to a message with a discounting cue and the following conditions were met: (a) the message alone had a strong positive impact, (b) the discounting cue was sufficiently negative to suppress the positive impact of the message, and c) the message conclusion became dissociated from the discounting cue more quickly than it became dissociated from the message arguments (Cook et al., 1979). Thus, at a later point in time, it is possible for the positive residue of the message to outlast the negative effect of the cue, leading to increased agreement with the message conclusion (compared with a no-message control).

This analysis suggests that one key to producing a sleeper effect is to construct a situation in which both a strong negative cue and strong arguments have an initial impact. According to the multi-process models, however, this should be difficult to produce either because of a tradeoff between the impact of central and peripheral processes (as argument impact increases, cue impact decreases; Petty et al., 1981), or because of an attenuation effect (processing strong arguments should overpower the negative cue; Maheswaran & Chaiken, 1991), or an interaction between cues and arguments (e.g., people might ignore a message from a low credible source, overturning one of the critical conditions for the effect; Heesacker et al., 1983). A clever solution to this conceptual dilemma is to have subjects process the message arguments first so that the strength of the issue-relevant information is realized, and following this present a discounting cue that causes subjects to doubt the validity of the message (e.g., telling people the message was false). In fact, this is the procedure used in a number of successful sleeper effect studies (Cook et al., 1979; Kelman & Hovland, 1953). In a relevant series of experiments, Pratkanis et al. (1988) showed that presenting the discounting cue after the message was critical for obtaining a reliable sleeper effect (see also Petty et al., 1993).

Resistance to Counterpersuasion

Resistance refers to the extent to which an attitude change is capable of surviving an attack from contrary information. Attitudes are more resistant the less they change in the direction of contrary information when challenged. Although attitude persistence and resistance tend to co-occur, their potential independence is shown conclusively in McGuire's (1964) work on cultural truisms. Truisms such as "you should sleep 8 hours each night," tend to be highly persistent in a vacuum, but very susceptible to influence when challenged. As McGuire notes, people have very little practice in defending these beliefs because they have never been attacked. These beliefs were likely formed with little issue-relevant thinking at a time during childhood when extensive thinking was relatively unlikely. Instead, the truisms were probably presented repeatedly by powerful, likable, and expert sources. As noted above, the continual pairing of a belief with positive cues can produce a relatively persistent attitude, but these attitudes might not prove resistant when attacked.

The resistance of attitudes can be improved by bolstering them with relevant information (e.g., Lewan & Stotland, 1961). In his work on inoculation theory, McGuire (1964) demonstrated that two kinds of bolstering can be effective in inducing resistance. One form relies on providing individuals with a supportive defense of their attitudes or having them generate supportive information. For example, subjects whose initial attitudes were bolstered by recalling autobiographical instances relevant to the attitude showed greater resistance to an attacking message than subjects whose attitudes were followed by the generation of autobiographical instances that were irrelevant to the attitude issue (Ross, McFarland, Conway, & Zanna, 1983). A second type of defense relies on a biological analogy. That is, McGuire suggested that just as people can be made more resistant to a disease by giving them a mild form of the germ, people could be made more resistant to discrepant messages by inoculating their initial attitudes. The inoculation treatment consists of exposing people to a few pieces of

counterattitudinal information prior to the threatening communication and showing them how to refute this information. This presumably produces subsequent resistance because the inoculation poses a threat that motivates and enables people to develop bolstering arguments for their somewhat weakened attitude (see also McGuire & Papageorgis, 1961; Pfau et al., 1990).

There is relatively little work on the specific qualities that render attitude changes resistant to attack. However, any treatment that links the new attitude to the various factors known to be associated with strength (e.g., confidence, high knowledge, etc.; Petty & Krosnick, 1995; see Eagly & Chaiken, this volume) should increase the resistance of the attitudes. The existing data support the view that attitudes are more resistant to attack when they are accessible (Bassili & Fletcher, 1991) and have resulted from considerable issue-relevant elaboration. For example, Haugtvedt and Petty (1992) provided subjects who were high or low in need for cognition with an initial message about the safety of a food additive. This initial message, containing strong arguments from an expert source, was followed by an opposite message containing rather weak arguments from a different expert source. Although both high and low need for cognition individuals were equally persuaded by the initial message, the attitudes of the high need for cognition subjects were more resistant to the attacking message. In addition, high need for cognition individuals engaged in greater counterarguing of the attacking message. Similarly, as noted previously, Haugtvedt and Wegener (1994) found that subjects who encountered an initial message under conditions of high personal relevance (and thus processed it extensively) were relatively uninfluenced by a subsequent opposing message. In comparison, subjects who received the same messages under conditions of low relevance were more influenced by the second communication. Furthermore, subjects in the high relevance conditions engaged in more counterarguing of the second (opposing) message.

A strong initial attitude should prove especially effective in resisting a subsequent message if that message is susceptible to counterarguing (i.e., presents a counterattitudinal position with weak or mixed arguments). Consistent with this reasoning, Wu and Shaffer (1987) varied attitude strength by manipulating whether the initial attitude toward a new consumer product was based on direct or indirect experience. They found that attitudes based on direct experience were more resistant to a counterattitudinal appeal but more susceptible to a proattitudinal appeal than were attitudes based on indirect experience. Information gleaned from direct experience (e.g., the taste of the product) might be more accessible, held with greater confidence, and be linked more strongly to the attitude object allowing a person to more easily recognize the flaws in contrary information but the merits in congruent information. In addition, when initial attitudes were based on direct experience, attitudes were less influenced by the credibility of the source of the second message regardless of whether the message was pro or counterattitudinal. That is, strong attitudes were less susceptible to peripheral cues (see Petty et al., 1995, for a review).

Attitude-Behavior Consistency

Perhaps the most important quality of attitudes for those interested in applications of persuasion theory concerns the ability of attitudes to predict peoples' actions. A number of situational and dispositional factors have been shown to enhance the consistency of attitudes with behaviors (see Kraus, 1995, for a recent meta-analysis). For example, attitudes are more predictive of behavior when: (a) the persons tested are of a certain personality type (e.g., are low in "self-monitoring," Snyder & Swann, 1976; or high in "need for cognition," Cacioppo, Petty, Kao, & Rodriguez, 1986), (b) the attitudes in question are consistent with underlying beliefs (e.g., Norman, 1975); c) the attitudes are based on high rather than low amounts of issue-relevant knowledge (e.g., Davidson, Yantis, Norwood, & Montano, 1985; Kallgren & Wood, 1986); (d) the attitudinal issues are on topics of high personal relevance (e.g., Petty et al., 1983; Verplanken, 1991); and (e) the attitudes are high rather than low in accessibility (e.g., Bassili, 1993, 1995; Fazio & Herr, 1983). What these factors have in common is that each is associated with attitudes that are likely based on high amounts of issue-relevant thinking (see Petty et al., 1995, for a review).

Interestingly, if people are asked to think about the basis of their attitudes just prior to attitude measurement, attitude-behavior consistency could be reduced if thinking produces an expressed attitude that is not representative of the true one (Wilson et al, 1989). For example, if the central merits of an attitude object are affectively based, but a thinking task makes cognitive rather than affective information salient prior to attitude expression, the attitude expressed after thought will be less predictive of behavior than an attitude expressed without thought -- especially if the behavior is affectively based as well (see Millar & Tesser, 1992, for a review).

Although much research has examined how methodological factors and existing characteristics of attitudes (e.g., extent of knowledge), people (e.g., personality), and situations (e.g., time pressure) moderate attitude-behavior consistency, relatively few studies have examined whether different attitude formation or change processes are related to the ability of newly formed or changed attitudes to predict behavior. However, some research has shown that attitudes correlate to a greater extent with behavior when the attitudes were formed under high than under low personal relevance conditions (Leippe & Elkin, 1987; Sivacek & Crano, 1982). Fazio and his colleagues have examined attitudes that were formed as a result of direct or indirect experience with the object and have found that the former are more predictive of behavior (see Fazio & Zanna, 1981, for a review). A primary reason for this is that attitudes based on direct experience are more accessible and thus more able to color perception of the attitude object and guide behavior (Fazio, 1990, 1995; see Eagly & Chaiken, this volume, for additional discussion). One possible reason why attitudes based on direct experience are more accessible is that direct experience might typically lead to greater thought relevant to the attitude object than passive exposure to a persuasive message.

CONCLUSIONS

Research on attitude change has come a long way from initial assumptions that variables have unidirectional effects on persuasion (e.g., source credibility is good for persuasion), or that variables have an impact on persuasion by a single process (e.g., source credibility facilitates learning of the message). It is now clear that the many source, message, recipient, and context variables that have been studied over the past century can have complex effects -- increasing persuasion in some situations and decreasing it in others. These bidirectional effects have been the case even for variables that on the surface, at least, seemed to be “obviously” unidirectional. For example, what could be more obvious but that distraction would be detrimental to persuasion or that expert sources would be good for persuasion? Yet, contemporary research indicates that distraction can enhance persuasion if the arguments are weak because the distraction can disrupt the normal counterarguing that would take place and expertise can be bad for persuasion when it leads to enhanced thinking about weak arguments.

Just as this single effect assumption had to be abandoned, so too did the single process assumption that variables tend to have their impact on attitudes by just one mechanism. It is now clear that variables can produce attitude change by different processes in different situations. Thus, for example, a credible source or a positive mood can lead to more persuasion by invoking a simple heuristic in low-thought situations, by influencing the extent of message processing when people are unsure whether thought is merited or not, and by biasing the ongoing processing when thought is high. Furthermore, it is clear that the same outcome can be produced by different processes in different situations. Thus, a positive mood can produce more persuasion under low elaboration conditions by a simple inference process, but can produce the same amount of persuasion under high elaboration conditions by biasing the content of one’s elaborations of the message content.

Although there are multiple specific processes that can determine the extent and direction of attitude change, current research strongly indicates that it is useful to divide the theoretical processes responsible for modifying attitudes into those that emphasize effortful thinking about the central merits of the attitude object from those that do not. This framework allows understanding and prediction of what variables will affect attitudes by what processes in what general situations and what the consequences of these attitude are. This framework also helps to place the various mini-theories of attitude change in their proper domain of operation. For example, a high effort process like cognitive responses should account for attitude change in those contexts in which thinking is expected to be high, whereas a lower effort process such as balance or use of simple heuristics should be more likely to account for empirical effects in those contexts in which thinking is expected to be low. Finally, recognition of an elaboration continuum permits understanding and prediction of the strength of attitudes changed by different processes. That is, attitudes that are changed as a result of considerable mental effort tend to be stronger than those changed with little thought and thus are more persistent, resistant to counterpersuasion, and predictive of behavior than attitudes that are changed by processes invoking little mental effort in assessing the central merits of the object.

As might be expected, contemporary persuasion theories and those that will dominate in the 21st century are considerably more complicated than those that reigned in earlier periods. These theories must accommodate multiple effects of individual variables and multiple processes by which these variables have their impact.

Furthermore, these theories must specify the conditions under which the different processes operate, and any differential consequences of these processes. Attitude change researchers have made great strides over the past century in identifying the building blocks of such a multi-faceted theory, though considerable work remains to be done.

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FOOTNOTES

1.. Discussions of the tradeoff hypothesis are not meant to imply that one could not construct situations in which information relevant to a given heuristic or peripheral process is complex or difficult to assess. In such a situation, one should find an impact of that peripheral process only if people think enough to assess that information.

2.. McGuire (1995b) has recognized some limitations of this input-output matrix model. Among the most notable limitations he mentions are that many of the model's input factors have been shown to interact rather than having main effects on the output or mediating factors, and that the model "exaggerates the elaborateness with which audiences usually process persuasive communications (p. 235)." Nevertheless, the model can provide a useful way to organize a complex literature.

3.. Although these integration rules have generally been applied in attitude change settings to integration of arguments in a persuasive messages, they can also be used to model the impact of variables such as source credibility (Birnbaum, Wong, & Wong, 1976) and multiple sources (Himmelfarb, 1972). Of course, the same difficulties regarding a priori specification of changes in the weighting parameter also apply to these applications of the integration rules.

4.. If attributional processes were used to evaluate the central merits of an attitudinal position rather than the characteristics or motivations of the source of the message, such processing would have more in common with the high-elaboration processes discussed in the earlier section of this chapter. For example, in some situations, consumers might make attributions about why advertisers omit pieces of information that are noted by competitors (inferring that the product is inferior on that feature; see Kardes, 1994).

5.. It is also possible that a variable is relevant to the central merits of the attitude object (e.g., the attractiveness of the model in the current example) but under certain circumstances influences persuasion through its operation as a simple cue -- as described later in the text. For example, if a person receiving a communication about the potential model is distracted (and thus is unable to extensively think about the merits of the person), then the attractiveness of the person might influence the opinions of the message recipient through its impact as a simple cue (even though the attractiveness of the person would have been considered more carefully as a central merit if the message recipient had been able to scrutinize the information).

6.. Use of the word "bias" is not meant to imply a necessary inaccuracy or incorrectness. Rather, the term "bias" is used to denote a situation in which one of a number of equally plausible interpretations is consistently chosen based on the presence or absence of some other variable.

7.. Some researchers delineated a variety of types and sources of power. For example, French and Raven (1959) compared reward power and coercive power (stemming from the ability to deliver rewards and punishments, respectively), legitimate power (stemming from societal norms), referent power (stemming from identification with the source), expert power (stemming from perceptions of the source's knowledge), and informational power (stemming from the strength of the arguments given by the source). The first five types of power related to perceptions of the source him- or herself, but the last form of power related purely to the information conveyed by the source. It has been more common to discuss the effects of norms, identification with sources, expertise of sources, and information presented by sources separate from the label of power (with discussions of power being limited primarily to the ability to regulate rewards and punishments (i.e., reward and coercive power; see Kelman, 1958). Our discussion in this section is limited to power with regard to control over positive and negative outcomes, with discussions of the other characteristics of sources occurring under the respective labels (e.g., source expertise).

8.. Smith and Shaffer (1995) actually showed an effect of both speech rate and argument quality under low to moderate relevance, but only an effect of argument quality when relevance was high. This is consistent with the notion of a continuum of elaboration in which the impact of peripheral cue processes is maximal at the low-elaboration end of the continuum and decreases across the continuum (until the high-elaboration end is reached, when the impact of peripheral processes is minimal; see Petty & Cacioppo, 1986a; Petty et al., 1987).

9.. It is also possible that these effects are due to differences in perceived knowledge or expertise of the in-group versus out-group source. The two topics used in the study were not rated by participants as differentially important, though participants rated the in-group source as more qualified to speak to the oil drilling issue than the out-group source (but not differentially qualified for the acid rain issue).

10.. In fact, in the literature on fear appeals, a number of operationalizations are used. In some, the high fear message may include a greater number of negative consequences, or negative consequences of greater severity than in the low fear message, or the same consequences may be implied but are depicted more vividly, or are repeated more times in the high than low fear message. In still other studies, the same message is given, but recipient reactions are assessed to determine fear. Or, combinations of these features may be used to create high and low fear messages. Because of this complexity and confounding, some fear studies are open to simple alternative interpretations (e.g., the high fear message was more persuasive because it included more or better arguments).

11.. Some have argued that fear has opposite effects on some of the underlying processes of persuasion (e.g., reducing reception but enhancing yielding). If so, then an inverted-U relationship might be expected between fear and persuasion (e.g., Janis, 1967; McGuire, 1968). This has not generally been observed (Boster & Mongeau, 1984), but perhaps the high levels of fear needed to obtain it have not been present in the available research.