

Personal Involvement as a Determinant of Argument-Based Persuasion

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It was suggested that there are two basic routes to persuasion. One route is based on the thoughtful consideration of arguments central to the issue, whereas the other is based on peripheral cues in the persuasion situation. To test this view, undergraduates expressed their attitudes on an issue after exposure to a counterattitudinal advocacy containing either strong or weak arguments that emanated from a source of either high or low expertise. For some subjects, the communication was high in personal relevance, whereas for others it was low. Interactions of the personal relevance manipulation with the argument quality and expertise manipulations revealed that under high relevance, attitudes were influenced primarily by the quality of the arguments in the message, whereas under low relevance, attitudes were influenced primarily by the expertise of the source. This suggests that the personal relevance of an issue is one determinant of the route to persuasion that will be followed.

In a recent review of the numerous approaches to attitude change that have developed over the past 35 years, Petty and Cacioppo (1981) suggested that these many approaches could be seen as proposing two distinct routes to persuasion. One, called the *central route*, views attitude change as resulting from a diligent consideration of issue-relevant arguments. The approaches that fall under this route have emphasized such factors as the comprehension, learning, and retention of message arguments (e.g., Eagly, 1974; McGuire, 1968; Miller & Campbell, 1959); the self-generation of arguments (e.g.,

Cacioppo & Petty, 1979a; Greenwald, 1968; Tesser, 1978; Vinokur & Burnstein, 1974); and the combination and integration of issue-relevant arguments into an overall evaluative reaction (e.g., Anderson, 1971; Fishbein & Ajzen, 1975; Wyer, 1974).

In contrast to this focus on the arguments central to the issue under consideration, a second group of approaches to persuasion has developed that emphasizes a more *peripheral route* to attitude change (Petty & Cacioppo, 1981). Under this second view, attitudes change because the attitude object has been associated with either positive or negative "cues." The approaches that fall under this second route have emphasized associating the advocated position with such basic cues as food (e.g., Janis, Kaye, & Kirshner, 1965) and pain (e.g., Zanna, Kiesler, & Pilkonis, 1970) or more secondary cues such as credible (e.g., Kelman & Hovland, 1953), attractive (e.g., Mills & Harvey, 1972), and powerful (e.g., Kelman, 1961) sources. These cues may shape attitudes or allow a person to decide what attitudinal position to adopt without the need for engaging in any extensive issue-relevant thinking. Furthermore, these cues can presumably influence attitudes whether or not any issue-

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relevant arguments are presented or considered (e.g., Maddux & Rogers, 1980; Norman, 1976; Staats & Staats, 1958).

Enough research has now accumulated in support of both routes to persuasion to clearly indicate that both processes operate (Eagly & Himmelfarb, 1978). Attitude change is not determined exclusively by either issue-relevant argumentation or simple cue association. A profitable direction for current research, then, is to document the differing consequences of each route to persuasion (if any) and to indicate the variables that determine which route will be followed. For example, in a recent review of attitude-change research, Cialdini, Petty, & Cacioppo (1981) concluded that one consequence of the different routes to persuasion was that changes induced via the central route tended to be enduring and predictive of subsequent behavior, whereas changes induced via the peripheral route tended to be more ephemeral and less predictive of subsequent behavior (see also Chaiken, 1980; Cook & Flay, 1978). Our goal in the present study was to explore the conditions under which each route to persuasion would be taken.

Specifically, we hypothesized that when a persuasive communication was on a topic of high personal relevance, attitude change would be governed mostly by a thoughtful consideration of the issue-relevant arguments presented (central route). On the other hand, when a message was on a topic of low personal relevance, we hypothesized that peripheral features of the persuasion situation would be more potent. As Miller, Maruyama, Beaver, & Valone (1976) noted, "It may be irrational to scrutinize the plethora of counterattitudinal messages received daily. To the extent that one possesses only a limited amount of information processing time and capacity, such scrutiny would disengage the thought processes from the exigencies of daily life" (p. 623). Thus, persons must choose which stimuli should be scrutinized carefully and which are not worthy of extensive thought.¹

Recent research has indicated that the level of personal involvement with an issue is one variable that influences the extent to which issue-relevant arguments will be con-

sidered. For example, Cialdini et al. (1976) found that subjects who expected to engage in a discussion with an opponent generated more supportive arguments in anticipation of the discussion when the attitude issue had high rather than low personal relevance. Also, Petty & Cacioppo (1979a, 1979b) have reported that subjects' message-relevant thoughts showed higher correlations with message acceptance when the issue was of high rather than low personal importance. Thus, the hypothesis that issue-relevant argumentation becomes a more important determinant of persuasion as the personal relevance of an issue increases has received some support (see review by Burnkrant & Sawyer, in press).

The complementing hypothesis—that peripheral cues in the persuasion situation become more important as the personal involvement with an issue decreases—has received less attention, although the available data are consistent with this view. For example, Johnson & Scieppi (1969) and Rhine & Severance (1970) found that a manipulation of source credibility was more impactful under low- than under high-involvement conditions. In the most directly relevant study on involvement and type of persuasion to date, Chaiken (1980) exposed subjects to a message containing either two or six arguments, from a likable or dislikable

¹ The notion that people sometimes devote considerable cognitive effort to processing a stimulus and at other times cognitive effort is minimal can also be seen in the recent psychological distinctions between mindfulness versus mindlessness (Langer & Imber, 1980), deep versus shallow processing (Craik & Lockhart, 1972), controlled versus automatic processing (Schneider & Shiffrin, 1977), and systematic versus heuristic processing (Chaiken, 1980). The notion that there are different kinds of persuasion was apparent in Aristotle's *Rhetoric*, but achieved the most contemporary recognition in Kelman's three process view of persuasion. In Kelman's (1961) system, the type of persuasion is determined primarily by the source of the message (expert sources produce internalization, attractive sources produce identification, and powerful sources produce compliance). According to the central/peripheral distinction, the central route is followed when issue-relevant argumentation is responsible for inducing change regardless of the message source. A person who changes simply because an expert, attractive, or powerful source endorses a particular position (without engaging in issue-relevant thought) would be following the peripheral route.

source, under either high- or low-involvement conditions. She found that the message manipulation had a greater impact on persuasion under high involvement but that the source manipulation had a greater impact on attitude under low involvement. Although these data are highly suggestive, they do not provide definitive support for the two routes to persuasion because the particular message manipulation employed by Chaiken (number of arguments) has the ability to serve as a simple cue much in the same way that a source manipulation (likable or dislikable source) can serve as a cue. In other words, even if subjects did not think about the message arguments at all, it is likely that they would have realized that the message they heard had either relatively few or relatively many arguments. A simple desire to identify with a side that has many rather than few arguments may have been sufficient to produce the differential persuasion for the two- and six-argument messages under the high-involvement conditions. Thus, both the source manipulation and the message manipulation may have provided simple cues for message acceptance, making a cognitive evaluation of the message content unnecessary. It is sufficient to propose that under low-involvement conditions, the source cue was more potent but that under high-involvement conditions, the message cue was more potent.

The study reported here was designed to provide a more direct test of the hypothesis that under high-involvement conditions, a thoughtful evaluation of message content is the most important determinant of persuasion but that under low-involvement conditions, peripheral cues in the situation are more impactful. In the present study, all subjects heard a counterattitudinal communication. In addition to manipulating the personal importance of the message, the quality of the arguments that subjects heard in support of the advocated position was varied, as was the expertise of the source of the communication. By manipulating the quality or cogency of the arguments used in the messages, but keeping the number of arguments in the communications constant, the ability of subjects to evaluate the advocacy on the basis of a simple message cue (length) was

eliminated. For the manipulation of message cogency to have an impact on persuasion, communication recipients must actually think about the merits of the arguments presented. Of course the expertise of the source of the communication could still provide a simple cue for message acceptance. Our hypothesis was that under conditions of high personal involvement, persuasion would be affected more by the quality of the message arguments employed but that under low-involvement conditions, persuasion would be tied more strongly to the expertise of the source.

Method

Procedure

One hundred forty-five male and female undergraduates at the University of Missouri participated in order to earn extra credit in an introductory psychology course. The design was a 2 (issue involvement: high or low) \times 2 (argument quality: strong or weak) \times 2 (source expertise: high or low) factorial. Subjects were tested in groups of 3 to 16 in cubicles designed so that no subject could have visual or verbal contact with any other subject. During any one session, it was possible to conduct all eight experimental conditions (if enough subjects were present).

The subjects were told that the University of Missouri was currently undergoing an academic reevaluation and that the new chancellor was seeking recommendations about policy changes to be instituted. To obtain a variety of opinions about the university and its future, the subjects were told that the chancellor had asked several individuals and groups to prepare policy statements. The subjects were further told that each of the policy statements had been recorded for possible broadcast on a campus radio station. The subjects were told that the psychology department was cooperating with the university administration in having the taped statements rated for broadcast quality.

After reading these background comments, the subjects heard one of the tape recordings over headphones. All of the tapes were made by the same male speaker and advocated that seniors be required to take a comprehensive exam in their major area as a prerequisite to graduation. After listening to the appropriate communication, subjects completed a dependent variable booklet and were then debriefed, thanked, and dismissed.

Independent Variables

Personal involvement. In the background material that subjects read prior to message exposure, half were told that the chancellor was seeking recommendations about policy changes to be instituted the following year (high personal involvement), whereas the other half

were told that the chancellor was seeking recommendations about changes that would take effect in 10 years (low personal involvement). Clearly then, in the high-involvement conditions, the subjects would be affected personally by the advocated change, whereas in the low-involvement conditions they would not.

Source expertise. Half of the subjects learned that the tape they would hear was based on a report prepared by a class at a local high school (low expertise), whereas the remaining subjects learned that the tape was based on a report prepared by the Carnegie Commission on Higher Education, which was chaired by a professor of education at Princeton University (high expertise). Of course all subjects actually heard the same speaker.

Argument quality. Even though all subjects heard a message advocating the institution of senior comprehensive exams, the arguments used in support of the message conclusion were varied. In brief, the strong version of the message provided persuasive evidence (statistics, data, etc.) in support of the exam (e.g., institution of the exams had led to a reversal in the declining scores on standardized achievement tests at other universities). In contrast, the weak version of the message relied more on quotations, personal opinion, and examples to support its position (e.g., a friend of the author's had to take a comprehensive exam and now had a prestigious academic position). The messages were equivalent in length, and each contained elaborations of eight arguments. The strong arguments were selected from a pool that elicited primarily favorable thoughts in a pretest, and the weak arguments were selected from a pool that elicited primarily counterarguments in a pretest. The specific arguments employed in this study were adapted from the "strong" and "very weak" communications described by Petty, Harkins, & Williams (1980). Pretest ratings of the two messages indicated that they did not differ in the extent to which they were "difficult to understand," were "hard to follow," or possessed "complex structure."

Dependent Variables

Subjects were told that because their personal views on the desirability of instituting a comprehensive exam might influence the way they rated the broadcast quality of the tapes, a measure of their own opinion was desired. Two measures of attitude were included. The first asked subjects to rate the concept "Comprehensive Exams" on four 9-point semantic differential scales (good/bad, beneficial/harmful, foolish/wise, and unfavorable/favorable). Next, on an 11-point scale anchored by 1-"do not agree at all," and 11-"agree completely," subjects rated the extent to which they agreed with the proposal requiring seniors to take a comprehensive exam before graduating. The subjects' responses to the two attitude measures were converted to standard scores and averaged for an index of attitude toward comprehensive exams. The within-cell correlation between the two measures was .75.

Subjects then responded to a number of additional items including measures designed to maintain the cover story (e.g., ratings of speaker voice quality, delivery, enthusiasm, etc.). With one exception, the ancillary

measures produced no significant effects and will not be discussed further.²

Next, subjects responded to three questions designed to assess the effectiveness of the three experimental manipulations. Finally, subjects were given 4 min. to list as many of the arguments from the message as they could recall. Two judges, blind to the involvement and expertise manipulations, rated each argument listed for accuracy ($r = .92$). Similar statements of the same argument were counted only once. Disagreements between judges were resolved by consulting a third judge.

No-Message Control

Although the primary aim of the experiment was to assess how personal involvement would affect the relative importance of argument quality and source expertise in influencing subjects' postcommunication attitudes toward the topic, a no-message control condition was also conducted to assess absolute attitude change from a premessage baseline. An additional 18 undergraduates from the same subject pool were asked to participate in a "Survey of Campus Issues" study.³ These control subjects gave their opinions on a number of different contemporary issues facing universities across the country. The fifth issue in each survey booklet concerned requiring seniors at the University of Missouri to pass a comprehensive exam in their major area as a prerequisite to graduation. The crucial issue was embedded in the context of many others to reduce the likelihood that subjects would spend an undue amount of time thinking about the issue, which could result in attitude polarization (see Tesser, 1978). Half of the surveys indicated that the exam requirement was being proposed for next year, and half of the surveys indicated

² On the measure of speaker voice quality, a significant main effect for issue importance (better voice quality with low than high importance), and argument quality (better voice quality with weak than strong arguments), and a three-way interaction (uninterpretable) appeared. Since this pattern of data did not follow the pattern found on the crucial attitude measure, and since the within-cell correlation between voice quality and agreement was small and not significant ($r = .04$), this measure will not be given further consideration.

³ The no-message control attitude data were collected at the suggestion of the *JPSP* reviewers approximately 2 years after the data from the main experiment. As a check on the stability of students' attitudes toward comprehensive exams over this period, control subjects responses on the 11-point Likert scale were compared with no-message control data on the same issue and scale collected in a pilot study that was conducted at about the same time as the main experiment reported here (the semantic differential measure was not collected in the earlier pilot study). A comparison of the two sets of control data collected about 2 years apart revealed no statistically significant difference ($p > .20$), suggesting that opinions on the issue over the intervening period were relatively stable. In any case, the statistical tests of the major hypotheses of interest in the present investigation could be and were conducted *excluding* the control data.

that the exam requirement was being proposed to take effect in 10 years. Subjects recorded their attitudes on the issue on the same scales as those employed in the experimental conditions described previously. Since the manipulation of involvement in the control cells did not significantly affect the attitudes reported ($p > .20$), the data for these two conditions were combined.

Results

Experimental Groups

Preliminary 2 (personal involvement) \times 2 (source expertise) \times 2 (argument quality) \times 2 (sex of subject) analyses of variance on each dependent measure produced no significant main effects nor interactions involving sex. Thus, this factor was ignored in all subsequent analyses.

Manipulation checks. To assess the effectiveness of the message quality manipulation, subjects were asked: "How would you rate the quality of the arguments used by the speaker to support the position advocated?" On a scale where 1 indicated "not very good arguments," and 11 indicated "very good arguments," subjects hearing the strong arguments ($M = 8.9$) rated their quality as significantly higher than subjects hearing the weak arguments ($M = 4.5$), $F(1, 137) = 51.02$, $p < .001$. To assess the expertise manipulation, subjects were asked: "Regardless of how you felt about what the author had to say, how qualified did you think he was to speak on the topic?" On a scale where 1 indicated "not very qualified" and 11 indicated "very qualified," subjects hearing the high-expert speaker rated his qualifications as significantly higher ($M = 6.8$) than subjects hearing the low-expert speaker ($M = 5.7$) $F(1, 137) = 4.86$, $p < .03$. In addition, subjects hearing the strong arguments rated the speaker as more qualified ($M = 7.6$) than subjects hearing the weak arguments ($M = 4.9$), $F(1, 137) = 39.2$, $p < .001$. Finally, to assess the personal relevance manipulation, subjects were asked to rate "How likely is it that the University of Missouri will institute comprehensive exams while you are a student here?" On a scale where 1 indicated "not very likely" and 11 indicated "very likely," subjects in the high-involvement conditions rated the likelihood as higher ($M = 5.5$) than subjects in

the low-involvement conditions ($M = 2.7$), $F(1, 137) = 5.12$, $p < 0.2$. In sum, all three independent variables were manipulated successfully.

Attitude and recall measures. A three-way analysis of variance (ANOVA) on the index of attitude toward comprehensive exams produced two main effects and two interactions. A main effect for the expertise manipulation revealed that subjects agreed with the communication more when the source had high expertise ($M = .21$) than when the source had low expertise ($M = -.21$), $F(1, 137) = 16.24$, $p < .001$. Also, a main effect for argument quality revealed that subjects agreed with the message more when it contained strong ($M = .36$) rather than weak arguments ($M = -.36$), $F(1, 137) = 20.35$, $p < .001$.

Of greater interest, however, were two interactions that qualified these two main effects. First, an Involvement \times Expertise interaction, $F(1, 137) = 3.92$, $p < .05$, revealed that the expertise manipulation had a stronger effect under low personal-involvement conditions than under high (see top panel of Figure 1). In fact, a Newman-Keuls analysis of this interaction revealed that a source of high expertise produced significantly more agreement than a source of low expertise *only* under the low-involvement conditions. A complementing Involvement \times Argument Quality interaction, $F(1, 137) = 6.05$, $p < .02$, demonstrated that the argument quality manipulation had a stronger effect under high personal-involvement conditions than under low (see bottom panel of Figure 1). A Newman-Keuls analysis of this interaction revealed that the strong arguments produced significantly more agreement than the weak *only* under the high-involvement conditions.

An analysis of the argument recall score revealed that subjects recalled more of the strong ($M = 4.2$) than of the weak arguments ($M = 3.2$), $F(1, 137) = 14.93$, $p < .001$, but the personal involvement and expertise manipulations did not affect argument recall, and no interactions were obtained on this measure. Consistent with previous research, within-cell correlations failed to substantiate a relationship between argument learning and agreement for either

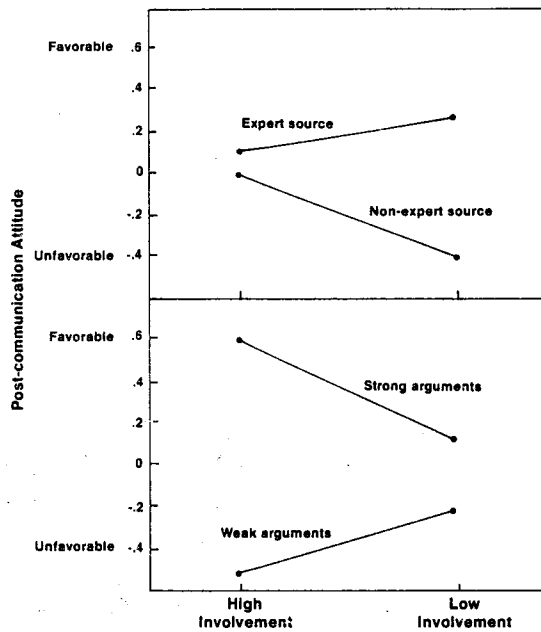


Figure 1. Top panel: Interactive effect of involvement and source expertise on postcommunication attitudes. Bottom panel: Interactive effect of involvement and argument quality on postcommunication attitudes.

the strong ($r = .05$) or weak ($r = -.09$) argument messages. When manipulations of argument quality are successful, it apparently has more to do with argument evaluation or elaboration than argument memorization (cf., Cacioppo & Petty, 1979b; Insko, Lind, & LaTour, 1976).

No-Message Control

In Table 1, the attitude scores have been restandardized to include the no-message control data. This table also provides pairwise comparisons of all eight experimental cells employing the Newman-Keuls test and a test of each experimental group with the control employing Dunnett's procedure (see Kirk, 1968).

Consistent with the two-way interactions reported previously, the Newman-Keuls analysis revealed that under high involvement, argument quality affected attitudes but source expertise did not. Under low involvement, however, the reverse pattern tended to occur. Attitudes of subjects in the no-message control condition fell in between the attitudes of subjects in the experimental

cells, suggesting that the significant differences among the various experimental conditions may have resulted from a combination of both persuasion and boomerang processes. The largest (though nonsignificant) boomerang effects occurred in the two cells where nonexpert sources presented weak arguments. It is interesting to speculate that under low involvement, the tendency toward boomerang was produced primarily by a rejection of the message source, whereas under high involvement, the tendency toward boomerang was produced primarily by a rejection of the message arguments. Two experimental groups showed significant persuasion in relation to the no-message control. This occurred when strong arguments, regardless of the source, were presented under high involvement. According to the present analysis, these are the two cells that should have resulted in the most favorable issue-relevant thinking.

Discussion

Previous research on persuasion has tended to characterize attitude change as resulting from either a thoughtful consideration of issue-relevant arguments or from associating various positive or negative cues with the attitude object. Furthermore, researchers favoring one process have tended to downplay the importance of the other. For example, in a recent paper, Fishbein & Ajzen (1981) have argued that:

The general neglect of the information contained in a message . . . is probably the most serious problem in communication and persuasion research. We are convinced that the persuasiveness of a communication can be increased much more easily and dramatically by paying careful attention to its content . . . than by manipulation of credibility, attractiveness, . . . or any of the other myriad factors that have caught the fancy of investigators in the area of communication and persuasion. (p. 359)

The present study suggests that although the message content may be the most important determinant of persuasion under some circumstances, in other circumstances such noncontent manipulations as source credibility, attractiveness, and so forth, may be even *more* important. Specifically, in the present article, we have shown that when a persuasive message concerned an issue of

Table 1
Standardized Attitude Scores for Experimental and Control Subjects

Arguments	High involvement		Low involvement		No-message control
	Expert source	Nonexpert source	Expert source	Nonexpert source	
Strong	.64 ^{a*}	.61 ^{a*}	.40 ^{a,b}	-.12 ^{a,b,c}	-.18
Weak	-.38 ^{b,c}	-.58 ^c	.25 ^{a,b}	-.64 ^c	

Note. Within the experimental cells, means without a common subscript are significantly different at the .05 level by the Newman-Keuls procedure.

* Experimental mean is significantly different from the control mean at the .05 level by Dunnett's test.

high personal relevance, the effectiveness of the appeal was more a function of the cogency of the arguments presented in the message than of such peripheral cues as the expertise of the message source. On the other hand, when the message concerned an issue of relatively low personal relevance, effectiveness was more a function of peripheral cues than of the arguments presented. Interestingly, the long-standing tradition of persuasion researchers to employ messages that are low in personal relevance (cf. Hovland, 1959) may be responsible for the voluminous number of studies emphasizing the influence of noncontent factors in persuasion and relatively ignoring issue-relevant arguments. Importantly, the present data suggest that it would be equally inappropriate to overemphasize the influence of issue-relevant argumentation and ignore the role of peripheral cues. Each type of persuasion occurs in some instances, and the level of personal involvement with an issue appears to be one moderator of which type of persuasion occurs.

There are at least two reasons why an increase in involvement might be associated with an increase in the importance of message arguments in producing persuasion. First, as an issue increases in its personal implications for the message recipient, it becomes more important to form a reasoned and veridical opinion. An attitude based on a careful examination of issue-relevant arguments will likely prove to be more adaptive and will certainly be easier to defend if challenged in the future. If people are motivated to hold "correct" opinions on personally important issues, and a consideration

of the arguments relevant to an issue enhances the likelihood of veridicality, then it follows that people will be more motivated to scrutinize the arguments presented when an issue has many personal consequences than when personal consequences are few. When an issue has few personal consequences, it is unlikely that people will be motivated to do the cognitive work necessary to evaluate an advocacy on the basis of its arguments. The cognitive consideration of arguments is difficult work and is presumably best undertaken when the personal consequences of an issue are high. When the personal importance of the issue is low, people may be motivated less by a desire to be correct than by a desire to minimize cognitive work (cf. McGuire's "lazy organism," 1969, p. 198) or to manage the impressions of others (cf. Cialdini, Levy, Herman, Kozlowski, & Petty, 1976).

In addition to this motivational factor, it might also be that people have a better developed schema or framework for thinking about things that are relevant to the self than things that are irrelevant (cf. Markus, 1977). Thus, a second reason why the processing of issue-relevant argumentation may be greater under high involvement than under low is that people have a greater *ability* to do so. If an issue has high personal consequences, it is likely that the person has done considerable thinking about the issue in the past and has a large structure of preexisting information that can be useful in evaluating new information. Thus, a person might find it easier to evaluate the cogency of an argument on a topic of high rather than low involvement. Of course in the present study,

prior knowledge about the issue was identical for both high- and low-involvement groups, and thus the effect of involvement in the current study presumably hinged more on motivational than on ability factors. Nevertheless, it is still possible that when a person learns that a communication has high personal relevance, a self-schema is invoked, and this framework of self-relevant cognitions increases one's ability to evaluate the implications of the message arguments.

Our reasoning that a person's motives and abilities are typically different under high- and low-involvement conditions suggests that some manipulations should be effective under high but not low involvement, but other variables should show the reverse pattern. The present study provides an example of one variable of each type. In addition, some variables might have effects under both high and low involvement, but the effects might be quite different in each case. For example, in a study on the effects of using rhetorical questions on persuasion, Petty, Cacioppo, and Heesacker (1981) found that using rhetorical questions enhanced message-relevant processing under low-involvement conditions (when thinking about the message would ordinarily have been low) but disrupted message-relevant processing under high-involvement conditions (when thinking about the message would ordinarily have been high).

The realization that an independent variable may have different (and even opposite) effects, depending on the level of personal relevance of a message, may provide some insight into the conflicting pattern of results that is said to characterize much attitude research (Fishbein & Ajzen, 1972). It may well be that there are two distinct routes to persuasion and that these routes are characterized by different antecedents and consequents (Chaiken, 1980; Petty & Cacioppo, 1979b; 1981). If so, future work could profitably be aimed at uncovering moderators other than personal involvement of the route to persuasion. These moderators could be variables within the persuasion situation or within the message recipient. In general, we suspect that any variable that increases the likelihood that people will be motivated and able to engage in the difficult task of evaluating the message arguments increases the

likelihood of the central route to persuasion. On the other hand, any variable that reduces a person's motivation and/or ability to think about the message content would make the peripheral route more likely. These moderator variables would, therefore, include such things as message repetition and distraction, the number of people responsible for message evaluation, an individual's "need for cognition," and others (cf. Cacioppo & Petty, 1979b, in press; Petty et al., 1976, 1980).

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