

## Need for Cognition and Advertising: Understanding the Role of Personality Variables in Consumer Behavior

Curtis P. Haugtvedt, Richard E. Petty, and John T. Cacioppo  
*The Ohio State University*

Three studies were conducted to examine the role of need for cognition on attitudes formed as a result of exposure to advertisements. Prior research on need for cognition has used only long messages, counterattitudinal topics, or employed instructions that specifically told participants to evaluate products. Results of our studies reveal that need for cognition also affects the processes of attitude change when no explicit evaluation instructions are provided and when exposures are to relatively short, unfamiliar advertising messages presented in either self-paced or externally controlled formats. Consistent with prior research, attitudes of high need for cognition individuals were based more on an evaluation of product attributes than were the attitudes of low need for cognition persons (Studies 1 and 2). In addition, the attitudes of low need for cognition individuals were based more on simple peripheral cues inherent in the ads than were the attitudes of high need for cognition persons (Study 3). Implications for the study of personality variables in consumer behavior are discussed.

Interest in the relationship of personality variables and consumer behavior has existed since the importance of marketing was first recognized. Unfortunately, past attempts to understand and predict consumer behavior through the use of personality variables have yielded disappointing results (Engel, Blackwell, & Miniard, 1986; Kakkar & Lutz, 1981; Robertson, Zielinski, & Ward, 1984; Wells & Beard, 1973). In classic reviews of the literature, Kassirjian (1971) and Kassirjian and Sheffet (1981) observed that research examining personality effects on consumer behavior was often conducted without the guidance of general theoretical frameworks. As a result, little understanding of the processes by which a personality variable ultimately influenced preferences or behavior has been gained. The study of a personality variable in the context of more general conceptual frameworks was suggested as a way to enhance the usefulness of personality variables in consumer behavior research.

In the years following Kassarian and Sheffet's initial reviews, relatively few researchers have followed their recommendations. In a recently updated review, Kassarian and Sheffet (1991) identified at least 300 consumer behavior studies using personality variables. Despite the continued accumulation of research, Kassarian and Sheffet (1991) observed that they still could not characterize the influence of personality variables on consumer behavior as being any more than "equivocal."

Two personality variables that have been used in the context of theoretical frameworks and that seem to offer a great deal of promise for understanding consumer behavior were not included in Kassarian and Sheffet's (1991) most recent review. These personality variables—self-monitoring (Snyder, 1974) and need for cognition (Cacioppo & Petty, 1982)—are useful for understanding consumer behavior because they are closely linked with general theoretical frameworks.

The self-monitoring construct has been successfully linked to functional theories of attitudes (cf. Katz, 1960; Katz & Stotland, 1959; Smith, Bruner, & White, 1956) by DeBono (1987) and Snyder and DeBono (1985). In this research, different kinds of advertisements and persuasive appeals have been shown to interact with individual differences in self-monitoring to determine the extent of persuasion. In the studies reported in this article, we focus on need for cognition and its relationship to the Elaboration Likelihood Model of persuasion (ELM; Petty & Cacioppo, 1981, 1986b) to test hypotheses that certain aspects of an advertisement will differentially influence the attitudes formed by high and low need for cognition individuals.

Conducting studies of a personality variable with stimuli and exposure conditions closer to the typical consumer situation is an important first step in programs of research aimed at understanding the role of personality factors in advertising. Indeed, as pointed out by Kassarian (1971) and others, part of the reason for weak results in previous personality and consumer behavior research may be the tendency of researchers to ignore important differences between the kinds of situations and stimulus conditions that provided initial support for a personality variable in basic research and the kinds of situations that consumers naturally confront in their everyday lives.

### NEED FOR COGNITION

Need for cognition, as conceived by Cacioppo and Petty (1982), is primarily a motivational factor.<sup>1</sup> Persons scoring high on the Need for Cognition Scale intrinsically enjoy thinking, whereas persons scoring low on the scale tend to

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<sup>1</sup>Cacioppo and Petty's conceptualization of need for cognition is different than that of Cohen, Stotland, and Wolf (1955). Although the original need for cognition scale was never published, Cohen et al. (1955) conceptualized need for cognition as "a need to understand and make

avoid effortful cognitive work. Low need for cognition individuals are not characterized as unable to differentiate cogent from specious arguments, but rather they typically prefer to avoid the effortful, cognitive work required to derive their attitudes based on the merits of arguments presented. Indeed, the results of a series of studies by Cacioppo, Petty, and their colleagues revealed that high need for cognition individuals reported expending more cognitive effort in evaluating messages, and that verbal intelligence and need for cognition accounted for independent sources of variance in message recall and persuasion (Cacioppo, Petty, Kao, & Rodriguez, 1986; Cacioppo, Petty, & Morris, 1983).

The Need for Cognition Scale has been validated with a variety of techniques in several studies (Cacioppo & Petty 1982, 1984; Cacioppo et al., 1983; Lassiter, Briggs, & Bowman, 1991; Petty, Cacioppo, & Kasmer, 1985; Srull, Lichtenstein, & Rothbart, 1985). Research has shown, for example, that high need for cognition individuals report greater enjoyment of complex tasks (Cacioppo & Petty, 1982, 1984) and are less likely to reduce their efforts on cognitive tasks in situations where reduction of effort typically occurs (e.g., when groups rather than individuals are responsible for cognitive work; Petty et al., 1985).

### NEED FOR COGNITION AND THE ELM

The need for cognition personality variable was developed, in part, to account for individual differences in processing motivation in persuasion situations (Cacioppo & Petty, 1982). As such, it has the potential to serve as an operationalization of the motivational component of the ELM—a general framework for organizing, categorizing, and understanding the effectiveness of persuasive communications (Petty & Cacioppo, 1981, 1986b). According to the ELM, persuasion can be characterized as the relative operation of one of two routes to persuasion. Attitude change via the central route is likely when individuals possess both the motivation and ability to evaluate message arguments thoughtfully. In these situations, peoples' thoughts about the cogency of the issue-relevant information are the primary determinant of persuasion. In contrast, attitude change occurs via the peripheral route when individuals, lacking

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reasonable the experiential world" (p. 29) and argued that "stronger needs lead people to see a situation as ambiguous even if it is relatively structured, indicating that higher standards of cognitive clarity are associated with greater need for cognition" (p. 292). The need for cognition conceptualization of Cohen et al. focused on tension reduction. In contrast, Cacioppo and Petty's (1982) conceptualization of need for cognition is on the statistical tendency of and intrinsic enjoyment individuals derive from engaging in effortful information processing. Thus, Cacioppo and Petty's conceptualization of need for cognition is not that of a true need but rather a reflection of an individual's intrinsic motivation (see Cacioppo et al., 1986, for evidence regarding this point). The term need for cognition was retained in recognition of the pioneering work of Cohen et al. on individual differences in persuasion and cognitive motivation.

requisite motivation or the ability to scrutinize message arguments carefully, use some heuristic or cue (e.g., the sheer number of arguments presented) as the primary basis of their judgments (Petty & Cacioppo, 1984).

Several studies have shown that situational factors such as the personal relevance of an issue or the level of external distraction can influence the extent of message processing and thus the route to persuasion (see Petty & Cacioppo, 1986a, for a review). In the initial consumer study examining these effects, Petty, Cacioppo, and Schumann (1983) found that the attitudes of individuals exposed to an advertisement under relatively high situational motivation were more influenced by the quality of the attribute claims in an ad than were individuals exposed to the same ad under low motivation conditions. On the other hand, subjects in the low motivation conditions were more influenced by the celebrity status of the product endorsers than were subjects in the high motivation conditions. Subsequent consumer studies have also demonstrated a similar pattern of effects regarding the influence of situational motivation and the use of message arguments and cues in the formation of product attitudes (e.g., Burnkrant & Unnava, 1989; Miniard, Bhatla, Lord, Dickson, & Unnava, 1991; Schumann, Petty, & Clemons, 1990).

#### NEED FOR COGNITION AND THE PRODUCT-RELEVANT CONTENT OF ADVERTISEMENTS

Differences in need for cognition represent differences in peoples' chronic tendencies to engage in and enjoy effortful thinking. Thus, the kinds of effects associated with need for cognition should generally mirror the kinds of effects found for situational factors influencing motivation to think. Although several situational factors have the potential to influence motivation to process messages (e.g., personal relevance, personal responsibility, etc.), at this point in social psychological and personality research, need for cognition appears to be the primary individual difference variable identified as influencing motivation to think.

Despite the supportive findings in previous basic research on the need for cognition construct (e.g., Cacioppo et al., 1983; Srull et al., 1985), marketing communications and their settings may be quite different. If the need for cognition variable is to be useful in understanding consumer behavior, an important first step is to examine whether the hypothesized influences are supported in such settings. At least two important differences between the initial basic research on need for cognition and the consumer context are identified. First, published studies to date that report effects of need for cognition on message processing have used relatively long (e.g., 3- to 5-min) messages with many arguments on topics such as increasing tuition or instituting senior comprehensive exams (e.g., Cacioppo et al., 1983). Most advertisements are considerably shorter and contain less information. Because most advertis-

ing messages are relatively short, even low need for cognition subjects may be sufficiently motivated to process them because the cognitive effort required is relatively low. Alternatively, because of the very high frequency of exposure to advertisements, these messages may represent an exception in that even high need for cognition subjects may not be motivated to think about them unless they are specifically instructed to do so.

Second, most existing studies supportive of the effects of need for cognition and information processing have used counterattitudinal messages—messages advocating positions that are contrary to the attitudes initially held by the participants (e.g., raising tuition and instituting senior exams). In contrast, consumers are more likely to approach a promotional appeal for new or unknown products with relatively neutral or no initial attitudes. In this regard, it is interesting to note that in one published study using an issue about which individuals were unlikely to hold initial negative beliefs (a message arguing for probation as an alternative to imprisonment), no significant effect of need for cognition on message processing was reported (Axsom, Yates, & Chaiken 1987). One potential influence of counterattitudinal topics may be that they provide all subjects with at least some motivation to process, and it is only with this slightly greater inducement that need for cognition differences will be observed.

With this point in mind, we note that a recent advertising study by Batra and Stayman (1990) reported a Need for Cognition  $\times$  Argument Quality interaction similar to the ones in which counterattitudinal messages have been used. That is, the attitudes of high need for cognition subjects were more influenced by the cogency of the claims in an ad than were the attitudes of low need for cognition individuals. Interestingly, all subjects in this study were instructed to process the advertisements in a brand-evaluation mode (Hastak & Olson, 1989). This may suggest that the effect of need for cognition is limited to situations in which counterattitudinal messages are presented or to situations in which subjects are directed to actively engage in evaluation of the ads. If significant influences of need for cognition on attitudes are observed only in situations with long messages, counterattitudinal messages, or only under brand-evaluation instructions, the need for cognition construct would have limited utility for understanding consumer processing of advertisements. These limitations are addressed here. Specifically, we examine the utility of need for cognition to predict responses to relatively short, unfamiliar advertisements when no specific processing instructions are given.

## STUDY 1

Drawing on previous research on the effects of personal relevance on argument elaboration (e.g., Petty, Cacioppo, & Goldman, 1981; Petty et al., 1983) and previous studies on the effects of need for cognition on argument processing

(Batra & Stayman, 1990; Cacioppo et al., 1983), we predicted that the post-ad attitudes of high relative to low need for cognition individuals would be more sensitive to a manipulation of the quality of arguments presented in support of a product. That is, need for cognition will interact with argument quality in determining the extent of ad influence.

## Method

*Subjects and procedure.* Early in the semester, all students in an introductory marketing course completed the 18-item Need for Cognition Scale (Cacioppo, Petty, & Kao, 1984), along with a variety of other general survey questions. Subjects responded to the Need for Cognition Items on 5-point scales (ranging from *extremely uncharacteristic of me* [1] to *extremely characteristic of me* [5]) so that the possible range of scores was 18 (low need for cognition) to 90 (high need for cognition). Ninety-seven subjects whose need for cognition scores placed them in the bottom 30% (scores lower than 56) or top 30% (scores above 68) of the distribution were then recruited to participate in a 2 × 2 (High vs. Low Need for Cognition × Strong vs. Weak Arguments) between-subjects factorial design. Subjects participated in groups of 10 to 15 for extra course credit.

Upon arrival at the scheduled time, subjects were given a packet entitled "Consumer Research." In the middle of the title page, an introduction informed subjects that the Department of Marketing had been asked to provide ratings of an advertisement for a new brand of calculator.<sup>2</sup> Subjects were instructed to read the material as they would if they were to encounter it in a magazine or newspaper.

*Materials.* The calculator advertisement was presented on the second page of the packet that subjects received. Across the top of the page in bold print was the statement: "Announcing the New Unicalc LX-9." Two versions of the calculator advertisement were used. Both versions began with the statement, "There are several minor problems that people face with their calculators," and ended with the statements: "All of this for \$30, a special introductory price. Are there any reasons for someone to wait?" The remainder of the advertisement, consisting of seven 2-sentence paragraphs with a blank line between each, was different in the strong and weak versions. Based

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<sup>2</sup>Results of a separate survey of the student population regarding 20 common products revealed that high and low need for cognition individuals held equivalent initial attitudes toward the products used in the series of studies reported in this article (calculators and typewriters). Both calculators and typewriters were also seen as equally important and personally relevant to both high and low need for cognition individuals. It is especially important in research using individual differences to ensure equivalence of initial attitudes and levels of personal relevance.

on pretesting, the strong version of the advertisement discussed features desired by students. These features included: a triple memory system, low light-sensitive solar power, a shock resistant outer case, and buttons guaranteed never to stick. The weak version of the advertisement indicated that, although solar powered, the calculator may need to be used in considerable lighting, the outer case was a bit bulky, and the buttons had been shown to last 10% longer than the competition (see Petty & Cacioppo, 1986a, for procedures for testing strong and weak arguments).

The next page consisted of a questionnaire designed to assess subjects' attitudes toward the calculator. Attitudes were assessed via three 7-point scales anchored by *very bad* (1) to *very good* (7), *very undesirable* (1) to *very desirable* (7), and *very negative* (1) to *very positive* (7;  $\alpha = .97$ ). Cognitive responses and recall of product attributes were collected on the following two pages. Subjects were asked to write down all of the favorable and unfavorable thoughts that they recalled going through their minds while they read the information about the calculator (see Cacioppo & Petty, 1981, for details on thought assessment procedures). Then they were asked to write down everything they could remember from the calculator ad. Finally, subjects were debriefed, asked not to tell others about the nature of the study, and dismissed.

Cognitive responses were coded into positive thoughts, negative thoughts, and neutral thoughts by two judges blind to the experimental condition and subjects' need for cognition scores. Recall was coded with regard to matching the attributes contained in the advertisement. Judges agreed on cognitive response coding in over 80% of the cases and agreed on coding of recall in over 90% of the cases. Disagreements were resolved by discussion.

## Results

A  $2 \times 2$  (Strong Arguments vs. Weak Arguments  $\times$  High Need for Cognition vs. Low Need for Cognition) analysis of variance (ANOVA) on the attitude measure revealed main effects for the argument quality manipulation,  $F(1, 93) = 33.03, p < .0001$  and need for cognition,  $F(1, 93) = 10.39, p < .002$ . Low need for cognition subjects were generally more favorable than high need for cognition individuals overall, and strong arguments led both high,  $F(1, 40) = 41.72, p < .0001$ , and low need for cognition subjects,  $F(1, 53) = 4.08, p < .05$ , to express more favorable attitudes to the product than did weak arguments. Of greatest importance, however, was that these effects were qualified by the predicted Argument Quality  $\times$  Need for Cognition interaction,  $F(1, 93) = 12.50, p < .001$ . As depicted in Figure 1, this interaction resulted from the fact that argument quality had a greater impact on the attitudes of high than low need for cognition individuals.

An analysis of the number of unfavorable thoughts listed by subjects showed the same pattern as the attitude data. Specifically, main effects for the

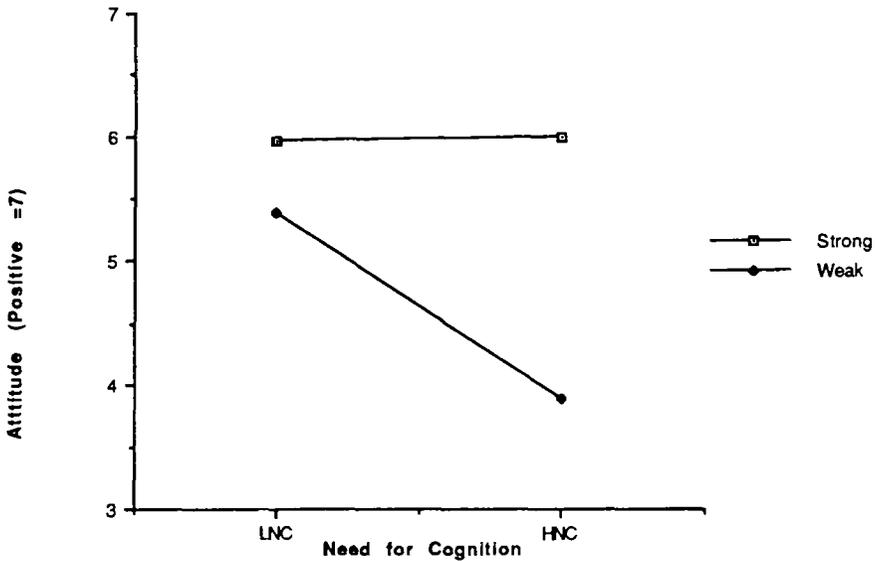


FIGURE 1 Need for Cognition  $\times$  Argument Quality on Attitudes Toward the Product interaction for Study 1.

argument quality manipulation,  $F(1, 93) = 12.75, p < .001$ , and need for cognition,  $F(1, 93) = 12.73, p < .001$ , were qualified by an Argument Quality  $\times$  Need for Cognition interaction,  $F(1, 93) = 3.77, p < .06$ . Simple main effects tests revealed that low need for cognition subjects did not generate a different number of unfavorable thoughts toward the weak versus strong versions of the ad,  $F(1, 53) = 2.00, ns$ , but that high need for cognition subjects generated reliably more negative thoughts to the weak than to the strong ad,  $F(1, 40) = 14.50, p < .001$ . No significant effects emerged on the number of favorable thoughts listed, though the pattern was quite consistent (see Table 1 for means). No differences in message recall or differences on any of the

TABLE 1  
Mean Attitudes and Number of Thoughts as a Function of Need for Cognition and Argument Quality—Study 1

	Low Need for Cognition		High Need for Cognition	
	Weak	Strong	Weak	Strong
Attitude	5.39	5.96	3.89	5.99
Favorable thoughts	1.15	1.28	.95	1.65
Unfavorable thoughts	.59	.18	1.85	.56

ancillary items (e.g., rated personal importance of the product) emerged.

Correlations between attitudes and thoughts showed that for high need for cognition individuals, attitudes were positively related to the number of favorable thoughts generated and inversely related to the number of unfavorable thoughts listed. For low need for cognition persons, attitudes were not correlated with thoughts (see Table 2). Attitudes were not correlated with argument recall for either high or low need for cognition persons.

## Discussion

The results of Study 1 supported the idea that need for cognition can have an influence on message processing in situations without counterattitudinal messages and without explicit brand-evaluation instructions. Consistent with the hypotheses, high need for cognition individuals exposed to the strong argument version expressed more positive attitudes than high need for cognition individuals exposed to the weak argument version. Low need for cognition individuals were relatively unaffected by the argument quality manipulation. The general pattern of cognitive response data was also consistent with the notion that the attitudes of high need for cognition individuals were developed on the basis of elaboration of product attributes. That is, high need for cognition subjects generated more unfavorable thoughts to the weak arguments than the strong arguments, whereas the thoughts of low need for cognition subjects were unaffected by argument quality. A similar pattern emerged on the number of favorable thoughts generated, though it was not significant. In addition, attitudes were correlated with the number of thoughts listed for high but not low need for cognition persons.

Previous studies (using longer messages) have reported differences in the extent of message recall by individuals differing in need for cognition (e.g., Cacioppo et al., 1983). In our study, both high and low need for cognition individuals recalled similar numbers of product arguments. The relatively short message may have made recall quite easy and therefore attenuated recall differences. The recall and thought measures suggest that low need for cogni-

TABLE 2  
Correlations Between Thoughts and Attitudes for High and Low  
Need for Cognition Individuals—Study 1

	<i>Low Need for Cognition</i>	<i>High Need for Cognition</i>
Favorable thoughts	.11	.39*
Unfavorable thoughts	-.22	-.58*
Number of subjects	55	42

\* $p < .01$ .

tion individuals successfully encoded and recalled the information in the message, though they did not elaborate on the merits of the information as did high need for cognition individuals.

Some previous studies have also found differences in self-reported processing effort, with high need for cognition individuals reporting more effortful cognitive activity than low need for cognition individuals (Cacioppo et al., 1983). Perhaps because advertising messages are perceived as easy to process by all individuals (especially in the case of a single ad presentation), we did not find self-reported differences in processing effort in Study 1. Despite the similarities between the high and low need for cognition groups in product recall and self-reported effort, attitudes developed as a result of exposure to the advertisements clearly showed that high need for cognition individuals were more likely to base their attitudes on the quality of the product attributes than were low need for cognition individuals.

## STUDY 2

Although Study 1 provided additional support for the notion that the need for cognition construct may work with advertising stimuli in a manner consistent with effects observed in research using social and policy issues, advertising exposure situations are often quite different from the situation we used in Study 1. In Study 1, exposure to the materials was self-paced, and only one advertisement was presented. It is possible, therefore, that high need for cognition individuals may have taken more time than low need for cognition individuals to study the material (a factor that may have also operated in the Batra & Stayman, 1990, study). Although allowing individuals to examine material as long as they like captures the situation in some marketing applications (i.e., newspaper advertisements), it does not represent other marketing applications (i.e., television and radio commercials). Thus, in Study 2, our goal was to provide an additional test of the role of need for cognition in the processing of advertising messages by exposing subjects to an advertisement for a limited period of time (i.e., 15 sec) in the context of seven other advertisements.

### Method

*Subjects and procedure.* One hundred twenty-five introductory psychology students participated in a  $2 \times 2$  (High vs. Low Need for Cognition  $\times$  Strong vs. Weak Arguments) between-subjects factorial design. Subjects participated in groups of two to six for extra credit in their class. At prescheduled times, subjects were seated in one of six private cubicles and were given an information/consent form to sign prior to participation. On the form, the

study was described as an "Advertising Evaluation Study" being conducted by the Psychology Department and Journalism School, the purpose of which was to provide ratings of advertisements created by journalism students on a variety of dimensions, including overall appearance, balance, and use of open space.

Subjects were further informed that photographs of the ads would appear on the wall in front of them for a limited amount of time and that they would be viewing two sets of eight different ads. After viewing each set, they would complete advertising rating forms. They were also told that in the interest of time, each person would complete rating forms for only two of the eight ads and that exactly which two ads they would evaluate was randomly determined. In fact, all subjects completed evaluation forms for the same advertisements.

*Materials.* All ads used in the study were of similar production quality and featured fictitious brands of the following products: sunglasses, study marker, diet drink, bicycle, pen, electronic typewriter, telephone, and oscillating fan. The critical electronic typewriter advertisement consisted of photographs of a male and a female endorser along with a sketch of the product. In quotes between the endorsers' pictures was the statement, "The Sterling 1000 is a great investment." The sketch of the typewriter was positioned under the endorsers. Across the bottom of the page, four product arguments were listed.

Arguments used in the strong version of the advertisement were: 4-year unconditional warranty, different type sizes available, adjustable spacing for pica or elite, and 30,000-word automatic spelling checker. Arguments used in the weak version were: 30-day conditional warranty with purchase, manual operation for simplicity and convenience, available only in standard elite font and type size, and designed with the college student in mind. These arguments were selected during pretesting when subjects listed their cognitive responses to the arguments and rated them for strength (see Petty & Cacioppo, 1986a, for details).

The advertisements were presented on the wall in front of the subjects through a one-way mirror located behind the cubicles. The only lighting in the room emanated from individual lamps on each desk in the cubicles. Each advertisement was presented for 15 sec and was automatically controlled by a slide synchronization unit. The version of the critical typewriter ad (i.e., strong vs. weak) to be shown in a given session was randomly determined. After the eight ads were shown, subjects were instructed via audio tape and headphones to complete the rating forms. After approximately 10 min (the time necessary for subjects to complete the rating forms), instead of viewing another series of advertisements, subjects were instructed via headphones to break the seal on a second packet and complete a short questionnaire (the 18-item version of the Need for Cognition Scale; Cacioppo et al., 1984). Then

all subjects were debriefed, asked not to discuss the nature of the study with other students, and dismissed.

The first few questions in the packet asked subjects to express their attitudes about the product presented in the ad ostensibly "because (your) opinion about the products contained in the advertisement may influence (your) rating of the advertisement." Attitudes were assessed via three 9-point scales ranging from *bad* (1) to *good* (9), *unsatisfactory* (1) to *satisfactory* (9), and *unfavorable* (1) to *favorable* (9). Analyses are based on an average of these three Attitude Scale items ( $\alpha = .93$ ).

## Results

Individuals were categorized as high or low in need for cognition via a median split (median = 61;  $M$  low need for cognition = 53.7,  $M$  high need for cognition = 69.2). In examining the attitude scores, no main effects for argument quality or need for cognition were observed. However, the predicted Need for Cognition  $\times$  Argument Quality interaction was again obtained,  $F(1, 121) = 4.62, p < .03$  (see Figure 2). Simple main effects tests revealed that

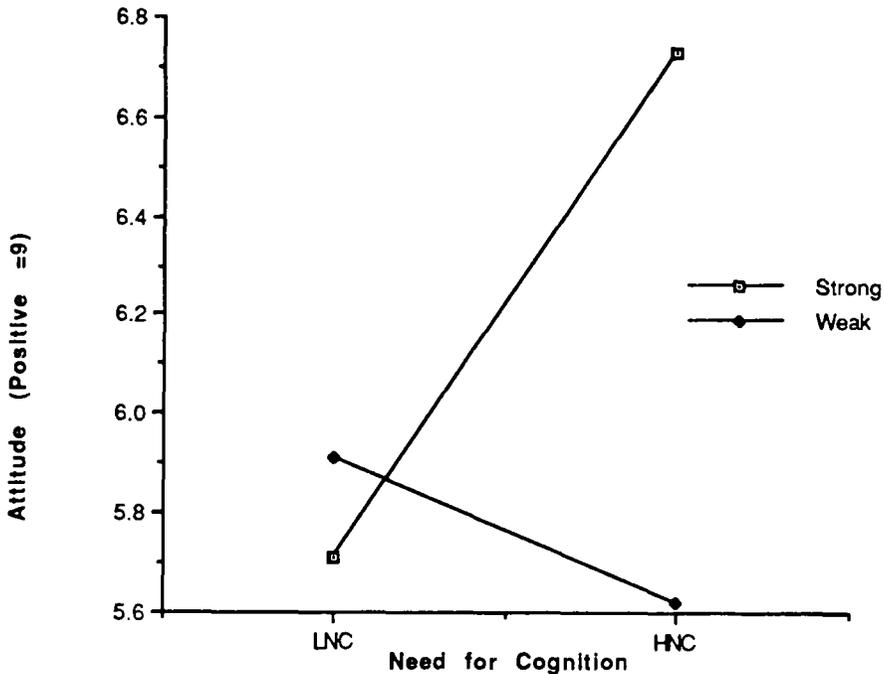


FIGURE 2 Need for Cognition  $\times$  Argument Quality on Attitudes Toward the Product interaction for Study 2.

high need for cognition subjects expressed more positive attitudes after exposure to the strong argument version ( $M = 6.73$ ) than after exposure to the weak argument version ( $M = 5.62$ ),  $F(1, 60) = 7.27$ ,  $p < .005$ , but that attitudes of low need for cognition subjects exposed to weak ( $M = 5.91$ ) and strong ( $M = 5.79$ ) ads did not differ,  $F < 1$ .

## Discussion

The results of Study 2 support the idea that high need for cognition individuals are more likely to follow the central route and base their attitudes on an evaluation of product arguments even with short message exposure times, externally paced presentations, and in the absence of explicit instructions to focus on evaluating the product or brand. Attitudes of high need for cognition individuals were quite different after exposure to the strong versus weak argument versions of the advertisement, whereas the attitudes of low need for cognition individuals were not. This pattern of results provides a conceptual replication and extension of Cacioppo et al. (1983), Batra and Stayman (1990), and Study 1, despite important differences in stimuli, message exposure duration, and experimental instructions.

Together, the Batra and Stayman (1990) findings and the results of Studies 1 and 2 strongly support the notion that need for cognition may be a useful variable for understanding and predicting consumer responses to the product relevant content in advertisements. The need for cognition construct and its link to the ELM, however, also allow predictions about the influence of non-product-relevant content in advertising and other persuasive appeals. In Study 3, we examined the relative influence of such factors on the attitudes formed by high and low need for cognition individuals.

## STUDY 3

A large body of research in consumer behavior and social psychology suggests that individuals are not always willing or able to effortlessly evaluate message arguments and product attributes (see Bettman, 1986; Cialdini, 1988; Fiske & Taylor, 1984; Petty & Cacioppo, 1981). Previous research, under the conceptual umbrella of the ELM, has demonstrated that individuals are more likely to base their judgments on simple cues associated with a persuasive message under low relevance or effort conditions. For example, Petty et al. (1983), demonstrated how the variable of product endorser could serve as a simple positive judgment cue under relatively low situational relevance.

The results of Studies 1 and 2 show that the post-ad attitudes of high need for cognition individuals, relative to low need for cognition individuals, were more affected by the quality of arguments supporting a product. Study 3 was

conducted to examine the idea that, in an advertising context, the attitudes of low need for cognition individuals would be more affected by factors peripheral to the actual merit of the product than would the attitudes of high need for cognition individuals.

## Method

One hundred introductory psychology students participated in a  $2 \times 2$  (High vs. Low Need for Cognition  $\times$  Positive vs. Negative Endorser) between-subjects design. As in Study 2, subjects participated in groups of two to six for extra credit in their classes.

The procedures of this study were similar to Study 2. The important differences pertain to the nature of the critical typewriter advertisements that were used. In Study 2, the quality of arguments for the typewriter varied, and the nature of the product endorsers remained constant. In Study 3, the arguments for the product remained constant, and the nature of the endorsers was varied. Specifically, in the negative cue version, the ad contained the pictures and product endorsements of two relatively unattractive women (assessed via pretesting) depicted as "vo tech" (vocational/technical) students, who were presumably dissimilar from the participating university students. In the positive cue version, the ad contained the pictures and endorsements of two relatively attractive women depicted as university students. The attributes listed for the typewriter in both versions of the advertisement were identical. They were: lightweight, portable (AC/DC), automatically checks spelling as you type, different type sizes (small, medium, and large), and 3-year warranty.

Similar to Study 2, subjects expected to view two sets of eight ads and to complete the rating forms after each set. In contrast to the earlier study, subjects expected to complete questionnaires on all of the advertisements rather than a subset. Subjects actually completed rating forms for four of the eight ads. Attitude toward the typewriter was assessed via the same three attitude questions as used in Study 2 ( $\alpha = .96$ ). In addition, however, instead of viewing a second set of eight ads, subjects rated the perceived attractiveness of the endorsers of the typewriter, were given 2 min to list their thoughts about the typewriter and 2 min to recall attributes from the ad, and then were asked to complete the Need for Cognition Scale.<sup>3</sup>

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<sup>3</sup>Subjects, however, did not list enough thoughts or recall enough information to justify analysis. The short exposure duration and large number of ads in such a short time period may have contributed to their inability to complete the measures. Our inability to obtain sufficient cognitive responses with this kind of exposure situation may also speak to another important difference between previous research and these more extreme tests—some typical measures of process may be more difficult to obtain under such conditions.

## Results

As in the preceding study, individuals were categorized as high or low need for cognition by a median split (median = 65;  $M$  low need for cognition = 56.6;  $M$  high need for cognition = 71.8). In assessing the hypothesis, it was important to assure that high and low need-for-cognition subjects perceived the attractiveness of the endorsers similarly. A main effect for the endorser manipulation on the measure of endorser attractiveness showed that the positive cue endorsers were rated as more attractive ( $M = 5.58$ ) than the negative cue endorsers ( $M = 2.27$ ),  $F(1, 96) = 99.07, p < .0001$ . No other effects were significant on this measure.

Despite equivalent perceptions of the endorsers, attractiveness affected the attitudes of low but not high need for cognition subjects. Analyses revealed a main effect for endorser,  $F(1, 96) = 14.24, p < .0001$ , qualified by the hypothesized Endorser  $\times$  Need for Cognition interaction,  $F(1, 96) = 5.56, p < .02$  (see Figure 3). The mean attitude of low need for cognition subjects exposed to the positive cue version of the ad was 6.80 versus a mean score of 5.11 for low need for cognition subjects exposed to the negative cue version of the ad. A simple main effects test revealed that this difference is reliable,  $F(1, 45) = 16.91, p < .01$ . The mean attitude of high need for cognition subjects, on the other hand, was 5.78 after exposure to the positive cue version versus 5.36 after exposure to the negative cue version. Simple main effects tests revealed no significant difference in these attitude scores,  $F(1, 51) = 1.21, p > .30$ .

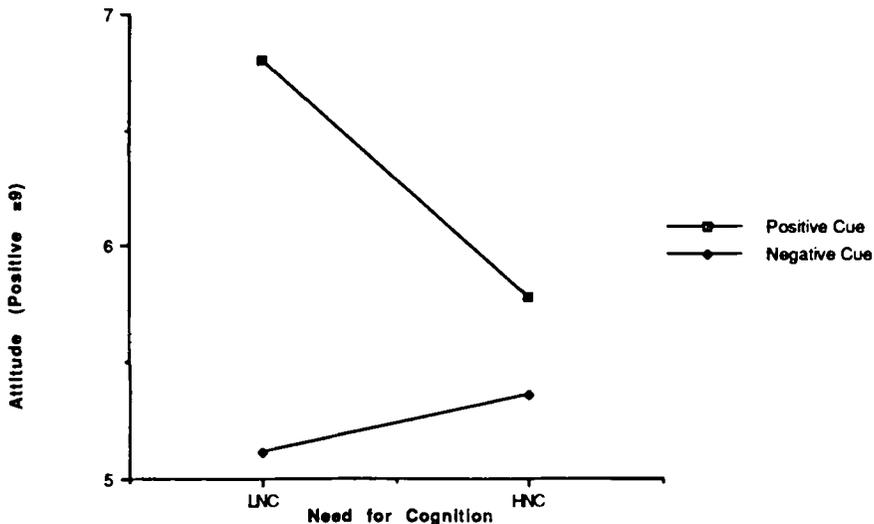


FIGURE 3 Need for Cognition  $\times$  Endorser Attractiveness on Attitudes Toward the Product interaction for Study 3.

## Discussion

Consistent with predictions, the attitude results in Study 3 revealed that low need for cognition individuals were more influenced by the attractiveness of the product endorsers than were high need for cognition individuals. The greater reliance on cues by low need for cognition individuals is consistent with previous research by Haugtvedt, Petty, and Cacioppo (1986) and Axsom et al. (1987). Results of the Haugtvedt et al. (1986) study showed that low need for cognition individuals tended to be more influenced by a conformity cue manipulation (i.e., the percentage of others endorsing or opposing a position) than were high need for cognition individuals when no arguments for a position on a relatively low knowledge/low relevance issue (i.e., nuclear power plants) were presented. The Haugtvedt et al. (1986) study also showed that the simple conformity cue had no effect on high or low need for cognition individuals when the issue was one of relatively high knowledge and relevance (i.e., drunk driving). In a similar manner, Axsom et al. (1987) showed that audience reactions (loud bursts of applause) had an effect on the attitudes of low need for cognition individuals only under conditions of low personal relevance. Under conditions of high personal relevance, neither high nor low need for cognition individuals' attitudes were affected by the applause manipulation.

## General Discussion

Although the results of our study show that the attitudes of low need for cognition individuals were more affected by the attractiveness of the endorsers than were the attitudes of high need for cognition individuals, note that both theory and research on the need for cognition construct (Cacioppo & Petty, 1982; Cacioppo et al., 1986; Petty & Cacioppo, 1986a) suggest that low need for cognition individuals can be motivated to increase their efforts in message processing. Indeed, as already noted, results of the Haugtvedt et al. (1986) and Axsom et al. (1987) studies provide examples of cases in which low need for cognition individuals may be motivated to process. Keep in mind, however, that the threshold at which low need for cognition individuals choose to increase their efforts will likely be higher than the threshold for high need for cognition individuals. Along these lines, although no research to date has demonstrated such an effect, high need for cognition individuals may also be relatively more reliant on cues under extreme low relevance or reduced ability situations than they are under moderate relevance conditions. The important point here is that the personality variable of need for cognition should have the largest influence under conditions of moderate product relevance—the type of situation in which much consumer stimuli is likely to be processed.

The purpose of this article was to explore the usefulness and generality of

the individual difference construct of need for cognition for research aimed at understanding the development of consumer preferences. We view this kind of research as a necessary and important step in the development of a program of research aimed at delineating the utility of this personality construct in consumer behavior research. In this research, psychological processes associated with the need for cognition personality construct were linked to a model of attitude change processes (the ELM) in order to predict how certain aspects of an advertisement would influence attitudes formed by individuals. Recognition of important differences between advertisements and stimuli used in other research with the personality variable led us to examine its influence in our research. The results from our studies provide support for the hypothesis that high need for cognition individuals tend to process arguments contained in advertisements more extensively than low need for cognition individuals even when (a) a product evaluation goal is not made salient while viewing the advertisement, (b) messages are short and/or externally paced, and (c) they are not necessarily counterattitudinal. That is, the results of our research suggest that high need for cognition individuals are more likely to evaluate the product claims contained in advertisements spontaneously than are low need for cognition persons. This observation is consistent with Stayman and Kardes's (1992) findings that high need for cognition individuals are more likely than low need for cognition individuals to generate inferences about the information in ads spontaneously (Kardes, 1988). On the other hand, results of our studies also suggest that low need for cognition individuals may be more susceptible to the influence of peripheral contextual factors in the formation of preferences.

There are a number of theoretical and practical implications of the knowledge that high and low need for cognition individuals tend to base their attitudes on different aspects of an advertisement. For example, for some individuals or in some settings (e.g., low need for cognition individuals and/or low relevance settings), sufficiently strong positive cues can lead to attitudes that are equally or more positive than attitudes changed via argument elaboration. Theoretical notions derived from the ELM, however, suggest that there are different consequences of the manner of attitude change. For example, attitudes changed via peripheral route processes may typically be less durable than attitudes changed via central route processes (Petty & Cacioppo, 1986b). With knowledge gained from the present studies, we have recently shown that although the newly changed attitudes of high and low need for cognition individuals may appear identical, the attitudes of high need for cognition individuals tend to decay more slowly (Haugtvedt & Petty, in press, Experiment 1) and tend to be more resistant to change in the face of counterpersuasive appeals (Haugtvedt & Petty, in press, Experiment 2) than the newly changed attitudes of low need for cognition individuals. Of course, this analysis assumes that all else is equal. If multiple different cues are associated with a

product, or if the cues are repeated frequently, as in the case of advertising repetition, attitudes based on peripheral route factors may persist to the same degree as attitudes based on argument elaboration. Cue-based persistent attitudes, however, are likely to be less resistant to change in the face of counter-persuasive attacks (Haugtvedt, Leavitt, & Schneier, in press; Haugtvedt, Schumann, & Schneier, 1991).

*Linking personality variables with conceptual frameworks.* One of the major suggestions to emerge from reviews of the role of personality variables in consumer behavior is that the use of a personality variable should be carefully guided by theoretical considerations. In the studies reported here, individual differences in need for cognition were linked to a theory of persuasion (the ELM) and shown to influence attitude change processes in a manner similar to situational manipulations of motivation. In our view, this approach, in which the kinds of processes specified by theory can be operationalized both by way of situational and dispositional factors, is a promising direction for future consumer research.

Much of the existing research employing personality variables has attempted to find some direct link between a personality variable and some behavior or has searched for person-situation interactions without much consideration of the mediating processes. Although our research also examines interactions between person and situational variables in determining persuasion outcomes, the primary focus is on the processes leading to persuasion outcomes. Outcome-focused research is potentially problematic because, as was suggested, individuals who differ in the level of some personality factor may often exhibit similar or identical preferences or behaviors on the basis of different underlying processes. A fruitful approach to understanding how levels of a personality variable influence preferences or behaviors, therefore, is to determine the kinds of mediating processes that may underlie the preferences or behaviors.

Clear understanding of the kinds of processes associated with a personality variable and programmatic verification that the processes are active in consumer settings are important first steps in demonstrating the utility of a personality approach to understanding consumer behavior. With such knowledge in hand, there are a number of opportunities for the careful integration of personality variables in the development and empirical examination of theory in consumer psychology.

There are also a number of potential practical benefits of understanding the role of personality factors in the formation of consumer preferences. For example, knowledge of—or ability to infer—an individual's level of need for cognition may influence decisions about the type, amount, and exposure frequency of promotional material necessary to change or maintain attitudes. The

growing trend of micro-segmentation is likely to increase interest in theoretically guided development of individual persuasive appeals. Such research does not require that the entire population complete the Need for Cognition Scale. Rather, one only needs to determine profiles of differences in personal habits and preferences of individuals who differ in need for cognition.

In some cases, it may be useful to combine situational and dispositional measures to obtain maximal differences in message processing and maximum predictability of attitudes or beliefs over time. For example, the attitudes and beliefs of high need for cognition individuals indicating a high level of personal relevance with a topic may be compared over time to the attitudes and beliefs of low need for cognition individuals indicating a low level of personal interest in a topic (e.g., Verplanken, 1991). By combining such factors, what may be subtle situational or personality influences in their own right can be observed for their combined influence on a common underlying process specified by theory. Making use of the combined influence of situational and personality variables may have considerable practical utility.

*Summary.* In this article, we examined the effects of need for cognition in an advertising context because of our overall interest in gaining a better understanding of how individuals process consumer stimuli and in learning more about the personality construct. Although existing social psychological research was used as a basis for our predictions, we believe this kind of research is necessary because attitudes toward products, advertising stimuli, and exposure times are often quite different from the kinds of attitudes, stimuli, and exposure times used in the initial testing of a construct. In addition, we argued that personality variables are likely to be most useful to consumer researchers when they are carefully linked to processes specified by theoretical frameworks. We believe this kind of approach gives researchers yet another way to develop tools with which they can attempt to better understand the mechanisms by which individuals develop and maintain attitudes and beliefs about persons, objects, or issues.

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