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## MATCHING PERSUASIVE MESSAGES TO EXPERIMENTALLY INDUCED NEEDS

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### ABSTRACT

*The functional perspective on attitudes suggests that individuals will be more persuaded by advertisements that match their individual needs or attitude functions. Although previous research provided correlational support for this functional approach, the current study aimed to provide a stronger, experimental test. A pilot study validated situational manipulations of the value-expressive and knowledge functions. Experiment 1 revealed that ads that matched situationally induced needs were more appealing than those that did not match. Results suggest the effectiveness of marketers, legislators, and educators situationally arousing or making salient diverse motives in individuals, and then meeting these motives with carefully designed advertisements, political or educational appeals.*

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### INTRODUCTION

Every theory of attitude change provides a single explicit or implicit answer to the question: Why do people yield to persuasion attempts? Several modern theories postulate that the primary motivation is to hold attitudes that are sufficiently accurate (Chaiken, Liberman, & Eagly, 1989; Petty & Cacioppo, 1986), while others emphasize the importance of maintaining self-worth (e.g., Steele, 1988; Thibodeau & Aronson, 1992). And where early cognitive consistency theories (Festinger, 1957; Heider, 1946; Rosenberg, 1956) focused on individuals' needs to maintain a harmonious, coherent understanding of the world, still others emphasized the pragmatic positive and negative incentives afforded by a persuasive message (Hovland, Janis, & Kelley, 1953). With rare exception (e.g., Chaiken, Giner-Sorolla, & Chen, 1996), few modern perspectives explicitly address the multiple motivations that persuasion processes can serve. And while no

current theory of attitudes delineates the processes engaged by different motivational forces, the classic perspective of attitude functions (Katz, 1960; Sarnoff & Katz, 1954; Smith, Bruner & White, 1956) provides a starting framework.

### **Functional Perspectives**

At the core of functional attitude theories is the notion that people hold attitudes for different reasons, and that knowledge of the motivational basis for an attitude is the key to understanding how to change it. Borrowing from earlier taxonomies (Katz, 1960; Sarnoff & Katz, 1954; Smith, Bruner, & White, 1956) most current researchers consider knowledge, ego-defensive, value-expressive, social-adjustive, and utilitarian to be the primary functions that attitudes serve (Shavitt, 1989; Snyder & DeBono, 1989).

The knowledge (or object appraisal) function is based on the assumption that individuals are motivated to seek information to gain insight and give meaning to an otherwise chaotic world. The ego-defensive function emphasizes psychodynamic principles; attitudes serving the ego-defensive function enable people to protect their egos from real or imagined threats. Value-expressive attitudes enable us to define and express our personal, central values and our self-concept, while attitudes serving a social-adjustive function help people maintain, facilitate, or terminate, social relationships. Finally, the utilitarian function is based on the associative learning principle that people are motivated to gain rewards and avoid punishments.

The primary tenet of attitude functions theory is that attitudes are formed and changed in order to meet an individual's needs. Thus, a persuasive message must match an individual's needs. Three current approaches to testing this "matching hypothesis" have focused on preexisting individual differences in attitude functions, preexisting differences in the functions that attitude objects normally serve, and a priming approach. The first two approaches, although correlational in nature, have generated the most extensive research.

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### **Individual Differences Approach**

The earliest tests of attitude functions theory focused on how the persuasion process was different for individuals high and low in ego-defensiveness (e.g., Katz, McClintock, & Sarnoff, 1957). Unfortunately, substantial confounds and methodological problems were present in nearly all of these early studies. More recent studies have avoided this confound by examining attitude formation rather than change of existing attitudes. For instance, research has found that high self-monitors tend to extensively process and prefer ads that appeal to image (DeBono & Harnish, 1988; Snyder & DeBono, 1985) whereas low self-monitors rate ads that emphasize product quality as more self-relevant and effective (DeBono & Packer, 1991; Snyder & DeBono, 1985). These effects of self-monitoring are moderated by whether the products can plausibly appeal to multiple functions (Shavitt, Lowrey, & Han, 1992). Most research has been narrowly focused on this one dispositional characteristic, self-monitoring although some evidence for matching effects has been provided by field and laboratory studies in which messages match or do not match an individual's self-schema (Brock, Brannon & Bridgwater, 1990). This research has also shown that the effectiveness of targeting persuasive messages at individuals who differ in

preexisting attitude functions requires the use of topics or products whose attitude functions can vary.

### **Object-Oriented Approach**

A second perspective on testing the matching hypothesis focuses on products that typically serve specific functions for all individuals (Shavitt, 1989; 1990; Shavitt & Fazio, 1991). For instance, air conditioners serve a utilitarian function, whereas a wedding ring might serve a "social-identity" (i.e., value-expressive and social-adjustive) function (Shavitt, 1990). For objects that engage specific functions, it follows that in order for an appeal to be influential it must engage this predominant function. For instance, advertisements for air conditioners were most persuasive if they focused on the object's utilitarian features and outcomes of using the product, rather than focusing on values or social concerns (Shavitt, 1990).

### **Experimental Approaches**

A weakness of both the object-oriented and individual differences approaches is that the support they provide for the matching hypothesis is essentially correlational. It is difficult to entirely rule out the possibility that preexisting differences between individuals or objects could be the true cause of differences. The most rigorous test of this theory requires experimentally inducing a given need in individuals such that they will form or change attitudes in order to serve that function. The possibility of experimentally creating motivational states within individuals that increase their susceptibility to specific kinds of appeals is intriguing. Certainly marketers, politicians, teachers, and any individuals trying to become more persuasive could benefit, regardless of their audience.

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No research has attempted to explore the motivational, need-based quality of attitude functions in experimental inductions of functions. Such an approach requires first inducing a need and then presenting appeals that meet that need. A necessary step before attempting such manipulation requires first demonstrating that people's expression of attitudes are malleable. Some recent research on cognitive priming approaches suggests that expression of attitudes and preferences may be malleable (e.g., Maio & Olson, 1995a, Shavitt & Fazio, 1991; Shavitt, Swan, Lowrey & Wanke, 1994). For example, Maio and Olson (1995b) found that participants' preexisting values predicted their attitudes and behavioral intentions when a prime consisted of value-oriented arguments, but not when a prime used utilitarian arguments. Similarly, attitudes expressed after participants were primed to focus on utilitarian concerns (i.e., self-interest) were correlated with individuals' reported benefits and costs of the topic (Young, Thomsen, Borgida, Sullivan, & Aldrich, 1991).

Thus, limited priming research suggests that situational demands can lead individuals to express certain functional dimensions of their attitudes, and that such expressed attitudes may be more predictive of behavior that matches the functional basis. This approach, however, is based on merely increasing the accessibility of some kinds of information; the motivational, need-based nature of attitude functions remains neglected. A more classical motivational perspective on manipulation of attitude functions involves creating a state of tension or need through deprivation. This tension should result in psychological or physical movement to reduce that

tension (Lewin, 1951; 1961), leading individuals to be more susceptible to influence attempts that may alleviate that tension (i.e., to messages that match the manipulated need). The current research is unique in that it attempts to first experimentally create a mild sense of deprivation, and then present messages that either match or do not match this manipulated need.

In the current investigation we attempt to create motivational states in which one is energized to either express one's values (arousal of a value-expressive function) or to make sense of incoming information (arousal of a knowledge function). Circumstances in daily life often engage such states. For example, being in a room where people are telling racist jokes may motivate us to speak up or to think about our values. In contrast, entering a lecture hall late and not understanding the speaker may lead to confusion and a motivated effort to make sense of information (especially if the information will be on an examination).

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Previous research (e.g., Julka & Marsh, 1994; Marsh & Julka, 2000; Snyder & Miene, 1994) has revealed the inherent difficulty of developing pure inductions of a need. For example, Julka and Marsh (1994) created feelings of uncertainty about participant's knowledge base by asking them a series of "cultural literacy" questions (see Hirsch, 1988). Yet, content analysis of participants' reactions to the scale revealed that they felt threatened and defensive about their performance. Similarly, other researchers have inadvertently encountered defensive reactions. Snyder and Miene (1994) developed persuasive interventions designed to alleviate the needs that stereotyping of the elderly met for participants. An ego-protective intervention was effective for women, presumably because it matched ego-defensive needs that this stereotyping normally served for them. For men, however, the intervention backfired, resulting in increased stereotyping. Since the intervention was not presumably appealing to an existing need, it may have instead aroused such a need in these participants, leading to defensive reactions. These studies reveal how easily defensive reactions can be inadvertently induced.

Another complication can occur when the experimental induction of a need uses the same attitude topic as is used in the subsequent persuasive message. Induction of a value-expressive function, for instance, may lead participants to develop self-generated value-based arguments in support of the topic. As a result, a matching message (e.g., one containing value-based arguments) may be less effective than an unmatching message because the latter provides more nonredundant information (Marsh, 1986).<sup>1</sup> Therefore, the means of inducing an attitude function should ideally involve a different topic or task than used in the persuasive appeal.

In the current studies, we wished to design appropriate attitude function manipulations that aroused distinctive functions without causing ego-defensive reactions. We decided to manipulate value-expressive and knowledge functions because they were conceptually very different. The value-expressive manipulations were designed to create mild feelings that one is not living up to one's values. The knowledge manipulations were designed to create a mild sense of confusion and uncertainty. Determining the appropriate strength of a manipulation is challenging since too strong of a manipulation will induce ego-defensive concerns and too weak of a manipulation might be ineffective at inducing an attitude function. Thus, we created two versions of each manipulation, where the versions differed only in strength.

A pilot study validated these manipulations. Experiment 1 tested the hypothesis that manipulations will lead to increased appeal for ads that match the induced needs.

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## **PILOT STUDY**

Validation of the knowledge and value-expressive manipulations requires establishing that they engage disparate concerns. A valid manipulation of the knowledge function should engage negative feelings of mild confusion or uncertainty. A manipulation of the value-expressive function should result in an increased focus on values and feelings of mild disappointment in one's self. Moreover, since values are so closely tied to the self and one's emotions, such manipulations might also evoke more extensive affect. We developed two different versions of each manipulation — a strong and a mild version. The strong version was designed to arouse a sense of moderate deprivation (a sense of lack of understanding, or lack of living up to one's values) whereas the mild version was designed to be a weaker induction of a given functional category, minimizing any potential for ego-defensive reactions. To validate these manipulations, participants were exposed to one of four conditions and then completed an open-ended item which assessed their thoughts and feelings. To assess participants' attitude functions researchers have typically performed content analysis of expressed attitudes and cognitive responses to attitude objects, or for specific attitudes, used specific coding schemes (e.g., Herek, 1987; Shavitt, 1985, 1989; Gastil, 1992). In the current study we also used content analysis of open-ended responses to validate our manipulations.

## **PILOT STUDY METHOD**

### **Participants and Design**

One hundred seven undergraduates (46 women and 61 men) enrolled in introductory psychology courses participated for research credit. Participants were randomly assigned, in groups of one to four, to one of four conditions: value-expressive strong; value-expressive mild; knowledge strong; or knowledge mild.

### **Knowledge Manipulations**

Participants in the knowledge conditions were told:

You will listen to a short audio tape discussing three psychological experiments. We are interested in how interesting each study is to you personally, and in your feedback on the discussion in general. Please listen carefully, you will receive a questionnaire immediately following the tape.

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These participants then listened (via an intercom system) to a four-minute audio tape describing factual information about three classic studies of bystander intervention (from Schwartz, 1986).

For each of these classic experiments, a short description of the methods, results, and discussion was given.

For participants in the knowledge strong arousal condition, the facts from these studies were conveyed in a subtly confusing manner. The descriptions were somewhat harder to follow because some of the sentences were out of sequence. In the knowledge mild arousal condition, the same information was conveyed, but the sentences were in logical order.

### **Value-Expressive Manipulations**

In the value-expressive conditions participants were told that we were pretesting some scales for future use and that their comments on these materials would be particularly helpful to us in the final stage of developing these tasks. Specifically, instructions on the scale itself read:

Please complete the scale on the following pages. In order to be able to later evaluate the scale, it is very important that you answer the questions completely and honestly. Remember that we will not be interested in your responses---you will merely give us your impressions of the scale later in the experiment, you will not give us your answers.

Participants in the value-expressive strong arousal condition completed the Ethnocentrism Scale which was designed to arouse a feeling that they were not quite living up to their values opposing racism. The first page of the questionnaire following the instructions asked students to provide some personal information (e.g., "describe your personal ethnic identity", and "I have dated an... Hispanic, African-American, Asian, Caucasian (check all that apply)"). The next six questions dealt with the individual's specific behaviors toward members of other ethnic groups. Participants were asked to circle one answer that best described their behavior on such topics as laughing at racial jokes, imitating the accent of individuals of another ethnicity or race, or attending lectures concerning equal rights. For example, one question asked, "Have you ever laughed at a joke of racial, gender, or ethnic nature?" Students' response choices were "Very frequently; Often with the intention of offending others; Sometimes, but I don't mean to offend anyone; or Never"). Participants were then asked to rate, on a scale of 1 "strongly agree" to 5 "strongly disagree", how much they agreed or disagreed with several belief statements derived from early prejudice scales such as "The places where minorities live always seem to be smelly, dirty, shabby, and unattractive" or "The minority problem is so general and deep that democratic methods can never solve it". The final set of questions were social distance items. Participants rated, on a scale of 1 "totally comfortable" to 5 "very uncomfortable", how comfortable they felt with various situations such as "If a brother/sister/member of my family were dating a person of another race, I would feel...".

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The next page of the questionnaire told the participants:

In order for you to give us a thorough evaluation of the scales, it is important that you get a feeling for the scoring procedures. The best way for you to understand the scoring procedures is

to score the answers yourself. Take special note that we will not ask to see your score. We are not interested in how you responded; we will just want your general impressions of the scales.

(To further stress the confidentiality of their responses, upon completing the questionnaire participants were told to put it in one of the recycling bins before giving us their evaluations). Participants then proceeded to score themselves on the questionnaire, and circle the category in which they fell. The four categories were "Superiorly living up to your values", "Adequately living up to your values", "Falling short of values", and "Falling terribly short of values". The questionnaire had been pretested and the scoring categories specifically devised so that all participants would fall into a category of "Adequately living up to your values" which states:

Equality is clearly an important issue to you. You stand up for your beliefs for the most part, though you find it difficult to openly profess your opinions when others are in opposition to you. You have a secure sense of justice, quietly upholding your values, yet you recognize the difficulty of expressing such values in a complex world.

In the mild arousal condition participants were also told that we were pretesting some scales for future studies and wanted their evaluations of the scales in order to improve them. These participants did not actually complete the scale, but instead were asked to "Read the following questions carefully. Think about how you would answer each question, but do not actually write on the questionnaire." For example, participants were asked to circle "Which of the first two items, in your opinion, is a better item for assessing ethnocentrism, racism, and related values." Participants did these comparisons for all of the questions, and then rated, on a scale of 1 ("not very well") to 9 ("very well"), how well each of the items would tap into racism. This procedure was designed to have participants think about their values, without actually arousing a feeling that they were failing to live up to their values. These participants did not actually fill out or score themselves on the scale, nor did they see the scoring categories.

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## **Procedure**

Participants were seated in separate rooms and told that we were pretesting some materials for use in future experiments, and were interested in their comments. After completing the materials for one of the value-expressive or knowledge manipulations, all participants were given an open-ended questionnaire and asked to describe their thoughts, feelings and emotions. In addition participants were asked to indicate any comments, thoughts or evaluations about the scale, and to complete a three-page questionnaire used for other purposes. Content analyses of open-ended responses were used to assess the effectiveness of our manipulations.

## **PILOT STUDY RESULTS**

Participants' open-ended responses were coded for the presence or absence of six kinds of spontaneously expressed sentiments. Two categories dealt with the arousal of the knowledge function. The first category included any mention of confusion, uncertainty, or lack of understanding (e.g., "The studies were difficult to follow and concentrate on, I couldn't

understand them"). The second category addressed any description of specific details of the materials (e.g., "It's appalling when you hear about a murder that witnesses could've done something about but didn't", or "I think this questionnaire is good at getting at racist feelings, especially with the questions relating to friends of different ethnicity"). Presumably, participants in the knowledge strong arousal condition may be less able to comment on such details since this implicitly requires comprehension. Two categories dealt with arousal of explicit concerns about values. One category dealt with feeling bad about their values, or disappointed in themselves (e.g., "Sadly, this scale brought up some of the racist views I still hold"). The other category was a general focus on values, or thinking about values in life (e.g., "What can our society do to encourage people to help more", or "What really causes one to be racist?"). Two other categories dealt with the expression of general positive or negative affect (e.g., "I felt sad after the scale") or evaluations (e.g., "The studies were very interesting and thought-provoking"). Data were independently coded by two raters who agreed on 613 out of 642 coding decisions (i.e., six decisions per participant), resulting in 95.5% agreement. Discrepancies were resolved by the first researcher.

Differences between knowledge and value-expressive participants in the content of their thoughts were investigated, and, where appropriate, these findings were followed by an examination of differences in motivational state. Feelings of confusion or lack of understanding were spontaneously expressed by one-third of participants in the knowledge conditions, compared to only a negligibly small fraction of those in the value-expressive conditions. On the other hand, as expected, participants in the value-expressive conditions were more likely to indicate feeling bad disappointed in themselves, and were more likely to focus on their values, and to mention both positive and negative feelings (40-60% versus only 10% of knowledge participants (see Table 1).

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**Table 1. Feelings After a Value-Expressive or Knowledge Situational Manipulation, Pilot Study**

| Type of Comment                | Manipulation Function |                         | $X^2$ | $p$   |
|--------------------------------|-----------------------|-------------------------|-------|-------|
|                                | Knowledge (N=43)      | Value Expressive (N=64) |       |       |
| Confusion                      | 35                    | 3                       | 19.40 | 0.001 |
| Describes Details of Materials | 73                    | 70                      | 0.04  | 0.84  |
| Feeling Bad about Self         | 0                     | 11                      | 3.40  | 0.06  |
| Focus on Values                | 12                    | 41                      | 9.15  | 0.001 |
| Negative Feelings              | 9                     | 59                      | 24.90 | 0.001 |
| Positive Feelings              | 9                     | 36                      | 8.31  | 0.001 |

**Note:** Percentages reflect those participants who made one or more comments in a given category.

The second set of analyses examined the effects of motivational state for relevant categories of comments. Value-expressive participants in both motivational states revealed an equivalent focus on values, but those in the strong arousal condition expressed more affective intensity as indicated by responses of feeling bad about the self and expressing general negative or positive affect (see Table 2).

**Table 2. Percentage of Participants in Pilot Study Indicating the Following Feelings, by Motivational State**

| Type of Thought                                | Motivational State |        | $\chi^2$ | $p$  |
|--|--------------------|--------|----------|------|
|  | Mild               | Strong |          |      |
| <b>Value-expressive conditions<sup>a</sup></b> |                    |        |          |      |
| Feeling Bad about Self                         | 0                  | 17     | 2.58     | 0.10 |
| Focus on Values                                | 50                 | 38     | 1.22     | 0.26 |
| Negative Feelings                              | 41                 | 69     | 4.78     | 0.03 |
| Positive Feelings                              | 18                 | 45     | 3.49     | 0.06 |
| <b>Knowledge conditions<sup>b</sup></b>        |                    |        |          |      |
| Confusion                                      | 22                 | 50     | 3.76     | 0.05 |
| Describes Details of Materials                 | 78                 | 65     | 0.39     | 0.53 |

**Note:** Percentages reflect those participants who made one or more comments in the given category.  
<sup>a</sup> $n$  = 22 mild and 42 strong; <sup>b</sup> $n$  = 23 mild and 20 strong

Negative feelings were overall more prevalent in the value-expressive strong arousal condition. Seventy-four percent of these participants made one or more comments indicating general negative feelings and/or feeling bad (62% had comments in one of the categories, 12% had comments in both categories). Only 41% of participants in the mild condition generated comments in either of these categories (and none of them had comments in both categories),  $\chi^2(2) = 7.95$ ,  $p < .05$ . In addition, 93% of value-expressive strong participants spontaneously mentioned any affect in comparison to 50% of the mild participants,  $\chi^2(2) = 15.6$ ,  $p < .001$ .

Evidence of the distinction in degrees of motivational arousal was also evident in the knowledge conditions. Those in the strong arousal condition were indeed more confused than their mild

counterparts. However, those in the mild arousal condition did not comment any more frequently on specific details than those in the strong arousal condition.

## **PILOT STUDY DISCUSSION**

The results indicate a clear distinction between manipulations of value-expressive and knowledge functions. Participants in the value-expressive condition indicated a focus on values and general concentration on feelings whereas those in the knowledge conditions experienced more confusion or uncertainty. There was evidence that the strong arousal conditions elicited somewhat stronger feelings than the mild arousal conditions, however, near significant differences were found for only half of the measures. It is important to note that the results were based on completely spontaneous comments written in reply to a general open-ended question asking participants to express their general feelings and thoughts about the scale or tapes they received. This procedure was intended to be subtle so as to minimize demand characteristics. But by masking the true intent of our study (i.e. telling participants that we were interested in their evaluations of the scales), we may have limited our ability to detect subtler differences in confusion or values expression, because any mention of these feelings had to have occurred spontaneously.

## **EXPERIMENT 1**

Experiment 1 was conducted to provide an experimental test of a basic principle of attitude functions theory: messages that appeal to an individual's need will be more appealing than ones that do not. This "matching hypothesis" predicts that individuals exposed to a value-expressive manipulation will find value-based messages most appealing. Similarly, individuals exposed to a knowledge manipulation should find matching factually-based messages most appealing.

Consistent with most of the research on attitude functions (e.g., DeBono & Packer, 1991; Shavitt, 1990; Snyder & DeBono, 1985), we tested our hypotheses by examining participants' preferences for advertisements. In experimental conditions, students were exposed to a value-expressive or knowledge manipulation before rating pairs of value-based and factually-based ads. The matching hypothesis predicts an interaction between the manipulated function and functional appeal of the ad. Moreover, if stronger manipulations strengthen these matching effects, then a three-way interaction with manipulated factor, appeal of ad and motivational state (strong or mild) will also occur.

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A control group of participants who rated the ads without exposure to a manipulation was included to determine the general effects of any negative feelings induced by our manipulations. Such side-effects of the manipulations could dampen ratings of ads if students use their affective state as a source of information (Schwarz, 1990) for judging how they feel about the ads. In such a case, control means may be higher than the means of students exposed to any of the manipulations.

## EXPERIMENT 1 METHOD

### Participants and Design

Participants were 112 introductory psychology students (53 males and 59 females). They received research credit for participation. Participants were randomly assigned, in groups of one to four, to one of five conditions: knowledge strong, knowledge mild, value-expressive strong, value-expressive mild, or control.

### Testing of Advertisements

The final six ad pairs were selected from a pool of 17 pretested ads. In pretesting the ads, 90 introductory psychology students (independent of those used in the pilot study or Experiment 1) rated ads on two dimensions: how appealing the ad was, and how much it was based in a particular function. Participants were instructed how to assess whether the ads appealed to factual information, social acceptance and belonging, and personal values.

On the basis of these participants' ratings, ads were chosen for the current study on the basis of two criteria: strength of ad, as rated on a scale of 1 (very personally appealing) to 9 (not appealing at all); and degree to which it filled its intended function, also rated on a scale of 1 (very strongly based in this area) to 9 (just barely based in this area). (For ease of presentation, all means were reverse-scored; higher numbers indicate greater strength or functionality.) We selected those products that were equally appealing in their value-expressive and knowledge forms; all ads selected for this study received ratings of between 5.7 and 6.7 for appeal. Also, only those ads that were found to be based in its intended function (i.e.,  $\bar{M}$  over 5 points on the 9-point scale) were used. The mean rating for knowledge ads on the knowledge dimension was 7.24 versus  $\bar{M}$  = 4.64 on the value-expressive dimension. For value-expressive ads, the mean was 6.46 on the value-expressive dimension and  $\bar{M}$  = 4.18 on the knowledge dimension.

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### Procedure

Participants underwent the same procedures detailed in the pilot study. That is, participants in the knowledge strong arousal condition heard a confusing audiotape, whereas those in the knowledge mild arousal condition heard a coherent version. Participants in the value-expressive strong arousal condition completed the Ethnocentrism Scale, whereas value-expressive mild arousal participants merely read the items and decided which were best for measuring ethnocentrism and racist values.

Immediately after each situational manipulation participants were told that they would be asked to "give their comments about the task as soon as everyone else was finished". They were further asked if they could, "in the meantime, complete some other materials we were pretesting". At this time participants were presented with six pairs of advertisements for an array of products. Participants rated how personally appealing they found each, using 7 point scales (where 7 = "very appealing to me"). One message for each product was knowledge-based, and one was value-based (order of presentation was counterbalanced). The design of this study was a 2 X 2 X 2 X 6 (manipulated function, motivational state, ad type, product) mixed model design. Another

group of participants simply rated the ads before receiving a situational manipulation. This group served as a nonfactorial control.

## EXPERIMENT 1 RESULTS

### Experimental Groups

A mixed model analysis of variance with two between-participants factors (manipulated function and motivational state) and two within-participants factors (ad type and product) was conducted on participants' ratings of each ad. The control condition was not included in these analyses. As the matching hypotheses predict, a Manipulated Function (value-expressive, knowledge) X Ad Type (value-expressive ads, knowledge ads) interaction was found,  $F(1,89) = 36.89, p < .001$ . Analysis of the simple effects of manipulated function indicated that, as predicted, participants in the value-expressive conditions rated the value-expressive ads significantly higher ( $M = 30.07$ ) than participants in the knowledge conditions ( $M = 26.06$ ),  $F(1, 89) = 19.28, p < .001$ , and that participants in the knowledge conditions rated the knowledge ads higher ( $M = 30.34$ ) than participants in the value-expressive conditions ( $M = 27.57$ ),  $F(1, 89) = 7.29, p = .01$  (see Table 3).<sup>2</sup>

The Manipulated Function X Motivational State X Ad Type interaction was not significant  $F(1,89) = 1.31, p > .05$ , indicating that matching effects were no stronger for strong than for mild manipulations. A significant main effect for product type was found indicating that, in general, some products were preferred more than others, multivariate  $F(5, 85) = 15.21, p < .001$ .

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**Table 3. Participants' Ratings of Value-Expressive and Knowledge Ads by Manipulated Function and Motivational State, Experiment 1**

|                             | Manipulation Function |     |    |                  |     |    |
|-----------------------------|-----------------------|-----|----|------------------|-----|----|
|                             | Knowledge             |     |    | Value-Expressive |     |    |
| Motivational State          | M                     | SD  | N  | M                | SD  | N  |
| <b>Value-Expressive Ads</b> |                       |     |    |                  |     |    |
| Strong                      | 28.6                  | 4.7 | 26 | 30.4             | 3.8 | 21 |
| Mild                        | 25.3                  | 3.7 | 21 | 29.7             | 4.7 | 25 |
| <b>Knowledge Ads</b>        |                       |     |    |                  |     |    |
| Strong                      | 30.5                  | 5.6 | 26 | 28.6             | 4.2 | 21 |
| Mild                        | 30.1                  | 4.2 | 21 | 26.5             | 5.2 | 25 |

**Note:** The means reflect the average summed ratings of all value-expressive or knowledge ads. The average of the 19 control condition participants' ratings was 29.4 ( $SD = 4.6$ ) for the value-expressive ads and 31.4 ( $SD = 5.7$ ) for the knowledge ads.

### Control Group Comparisons

Past research (Julka & Marsh, 1994; Marsh & Julka, 2000) indicates that engaging manipulations can create a negative state and lead to overall lower ad preferences (presumably because they engage negative affective states). To explore where experimental participants' ratings lie relative to control participants planned contrasts comparing the four experimental conditions (weights: -1, -1, -1, -1) to the control condition (weight: +4) tested whether the manipulations induced a general lowering of ad ratings due to mood effects. Overall the control group mean for value-expressive ads was no different than the mean of the experimental groups,  $F(1,107) = 1.48$ ,  $p > .20$  (see Table 3), and for the knowledge ads the control group mean was only marginally higher than the experimental participants' mean,  $F(1, 107) = 3.73$ ,  $p = .06$ . A second set of contrasts looked separately at whether matched and unmatched conditions differed from the control condition. Results indicate that for value-expressive ads, the mean rating for participants in the value-expressive conditions (weights for the two value-expressive conditions: -1, -1) was no different from the mean of the control group (weight: +2),  $F(1, 107) < 1$ . For the unmatched knowledge function conditions, however, ratings of value-expressive ads were lower than for control participants,  $F(1, 107) = 7.81$ ,  $p < .01$ . Similarly, for the knowledge ads, the unmatched conditions (i.e., value-expressive conditions) were significantly lower than the control condition,  $F(1, 107) = 7.75$ ,  $p < .01$ , whereas the matching knowledge conditions were not,  $F < 1$ . These comparisons demonstrate the inherent difficulty in using affectively engaging manipulations, and in particular, manipulations that engage negative affect. These negative manipulations result in less liking overall unless the ads matched the intended function. The means of participants in matched conditions were not higher than control means, but given the negative affect involved this is not surprising.

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### DISCUSSION

Overall these results indicate that by experimentally manipulating a situation, and thereby engaging certain needs, one can successfully vary individuals' preferences for advertisements that appeal to certain needs. Although previous research investigating individual and object differences have provided a test of the matching hypothesis, both methods provided only correlational support, making it difficult to rule out preexisting differences between objects or individuals as the real cause of changes in the dependent variable. The current study went beyond this correlational evidence to find experimental support for the hypothesis, by first exposing individuals to a situation that raised one of two distinctly different needs, and then presenting messages that match or did not match that need. Moreover, the present study extends recent attempts to prime functional categories of thought (Maio & Olson, 1995a; Shavitt & Fazio, 1991; Young et al., 1991) by using a need-based approach to inducing attitude functions. In the current study, ads relevant to the aroused functions elicited higher preference ratings than irrelevant ads. Consistent with research in this area, buying behavior was not measured; future research should examine such extensions. Moreover, this experimental approach to studying the effect of attitude functions on forming ad preferences should be extended to other attitude functions, and other types of persuasive messages.

Although the idea of motivational forces impinging upon the cognitive system and resulting in attitude change has been central to many classic and contemporary theories, these theories have typically focused on a single motivation guiding attitudinal processes. The functional perspective provides a general framework within which to view multiple motivations simultaneously. For example, models postulating that people are motivated to hold correct attitudes or attain a sufficient level of certainty (e.g., Chaiken, et al., 1989; Petty & Cacioppo, 1986) could be interpreted in terms of the functionality of attitudes. In this case, individual's attitudes would be serving the knowledge function. Steele's (1988) self-affirmation perspective that suggests that we are motivated to maintain positive images of ourselves, and if our integrity is threatened our "self-system" will engage in processes to reaffirm our self-integrity, could be viewed as serving a value-expressive function. Moreover, too intensive deprivation of any specific need may lead to engagement of a general ego-defensive function. In such a case, persuasion will be reduced unless the message reduces the specific feeling induced (e.g., as in the case of successful fear appeals).

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The implications of the current research are intriguing. For example, officials trying to change societal attitudes about some important behavior such as contraceptive use should be sensitive to the context in which their public appeals occur. In the context of television programs that engage concerns about one's values (e.g., a segment on racism, or a show about environmental disaster), value-based appeals may be effective. For instance, an appeal to people's feelings and values regarding personal responsibility and having respect for others may be more effective. In the context of a televised debate presenting conflicting factual information, however, a knowledge-based appeal may be more effective. Thus, officials might use a public service message that presents factual information about the utility and effectiveness of a contraceptive method. Another alternative is to both arouse and satisfy the same need in a single persuasive encounter. This would be comparable to effective fear appeals (Rogers, 1983), where fear is both aroused and the means for reducing the fear suggested within the same message. But such an approach does not have to be limited to the ego-defensive function. A public appeal might simultaneously arouse value-expressive concerns and also offer a means of meeting that need, or induce confusion and uncertainty and then present information which removes that confusion. Regardless of the mechanisms one uses to apply the current findings, the current research suggests that understanding the multiplicity of internal forces which push and pull at us may provide a guide for successfully influencing individuals.

## FOOTNOTES

1. Tom Ostrom suggested this interpretation of these results.
2. The means presented are the average summed ratings of all value-expressive or knowledge ads.

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