
Message Framing and the Interrelationships Among Ad-Based Feelings, Affect, and Cognition

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This study presents a structural equation test of the interrelationships among ad-induced emotional and cognitive responses, attitude toward the ad (A_{ad}), brand attitudes (A_b), and purchase intentions (PI). Consistent with past research, feelings affect A_b directly and indirectly via A_{ad} . Differences between positively and negatively framed print appeals are also examined. Findings indicate that feelings' effects on A_b offer a significant contribution regardless of the ad execution, but brand-related thoughts are more important in brand attitude formation when the message is negatively framed.

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Introduction

The distinction between affective and cognitive responses to advertising is well-established (e.g., Burke and Edell 1989; Mackenzie, Lutz and Belch 1986; Park and Young 1986). Recently, this stream of research has incorporated the impact of emotions/feelings (as is common in the literature, "emotions" and "feelings" are treated synonymously) on ad-based affect and cognition (Burke and Edell 1989; Edell and Burke 1987; Holbrook and Batra 1987). Evidence of the mediating role of emotional responses in advertising settings (e.g., Batra and Ray 1986; Edell and Burke 1987; Holbrook and Batra 1987) suggests "that the affective and cognitive aspects of persuasion are intertwined rather than separate" (Burke and Edell 1989, p. 69). For example, Burke and Edell (1989) provide evidence that ad-induced feelings influence ad attitudes (A_{ad}), brand attribute evaluations, and brand attitudes (A_b) directly and indirectly through judgments of ad characteristics.

Due to data limitations (e.g., small sample sizes and pooling across treatments), researchers have tended to rely on path analytic and other nonstructural equation approaches to test the interrelationships among affective- and cognitive-based responses (e.g., Holbrook and Batra 1987). Furthermore, most of the earlier studies have focused on messages that are positively framed (i.e., present benefits gained from product use) and are, therefore, designed to generate positive emotions, affect, and cognitions (e.g., Aaker, Stayman and Hagerty 1986; Batra and Ray 1986). Negatively framed promotional messages, which focus on the adverse consequences or benefits lost from not using a product, have become an accepted and important strategic approach for a variety of circumstances (e.g., deodorant and health-related appeals). Tests of the influence of message framing on persuasion are inconclusive, however. Although Maheswaran and Meyers-Levy (1990) do resolve some of the conflicting findings associated with the effects of framing on consumers' reactions to product- and issue-related messages, they only look at them from a cognitive perspective.

We use a structural equation approach that allows for the simultaneous examination of the interrelationships among the underlying concepts (i.e., emotional and cognitive responses to an ad, attitude toward the ad [A_{ad}], brand attitudes [A_b], and purchase intent [PI]) for positively versus negatively framed appeals. Therefore, the purpose of this study is two-fold. First, we are interested in the relationships among these affective and

cognitive concepts. Because these underlying relationships are based on previous research, this study attempts to qualify the generality of these earlier findings (e.g., Burke and Edell 1989). Second, as an extension, we investigate how these interrelationships are influenced by the framing of the message.

Theoretical Framework and Hypotheses

The Dual Mediation Hypothesis (DMH) has been shown to represent accurately the interrelationships among A_{ad} , brand and ad cognitions (C_b and C_{ad}), brand attitudes, and purchase intent (e.g., Droge 1989; Homer 1990; MacKenzie and Lutz 1989; MacKenzie et al. 1986). Specifically, the DMH proposes that attitudes towards the ad influence brand attitudes directly and indirectly via brand cognitions. These affective- and cognitive-based brand attitudes, in turn, have a direct effect on purchase intentions. This model, however, neglects the role of feelings in the persuasion process. The influence of feelings has both theoretical and empirical support. Holbrook and Batra (1987) demonstrated that A_{ad} and emotional responses mediate the effect of ad content on brand attitudes and that different emotional responses have varying effects on A_{ad} that, in turn, influence A_b . Similarly, feelings affected A_{ad} and A_b directly and indirectly via ad-related judgments and brand attribute evaluations, but differences in the nature of the linkages were identified for upbeat, warm, and negative feelings (Burke and Edell 1989). Earlier, Stephens and Russo (1987) also found evidence of a direct effect and indirect effect (via A_{ad}) of emotional responses on brand attitudes, with the indirect effect being larger in magnitude. Likewise, Stayman and Aaker (1988) found that, under some conditions, the power of feelings is not completely mediated by A_{ad} .

Perhaps the most comprehensive precedent framework that incorporates the concepts of interest is the model proposed by Burke and Edell (1989) (see Figure 1). In many respects, it builds off of the DMH by incorporating the effect of feelings. Aside from the differences in operationalization (e.g., measuring ad-related and brand-related judgments via objective scales versus written thought protocols), the major distinction between these models rests in some of the causal relationships among ad-related cognitions, A_{ad} , and brand-related cognitions. Specifically, Burke and Edell (1989) envision (1) that ad-related judgments influence brand attribute judgments and (2) that brand attribute judgments and A_{ad} form indepen-

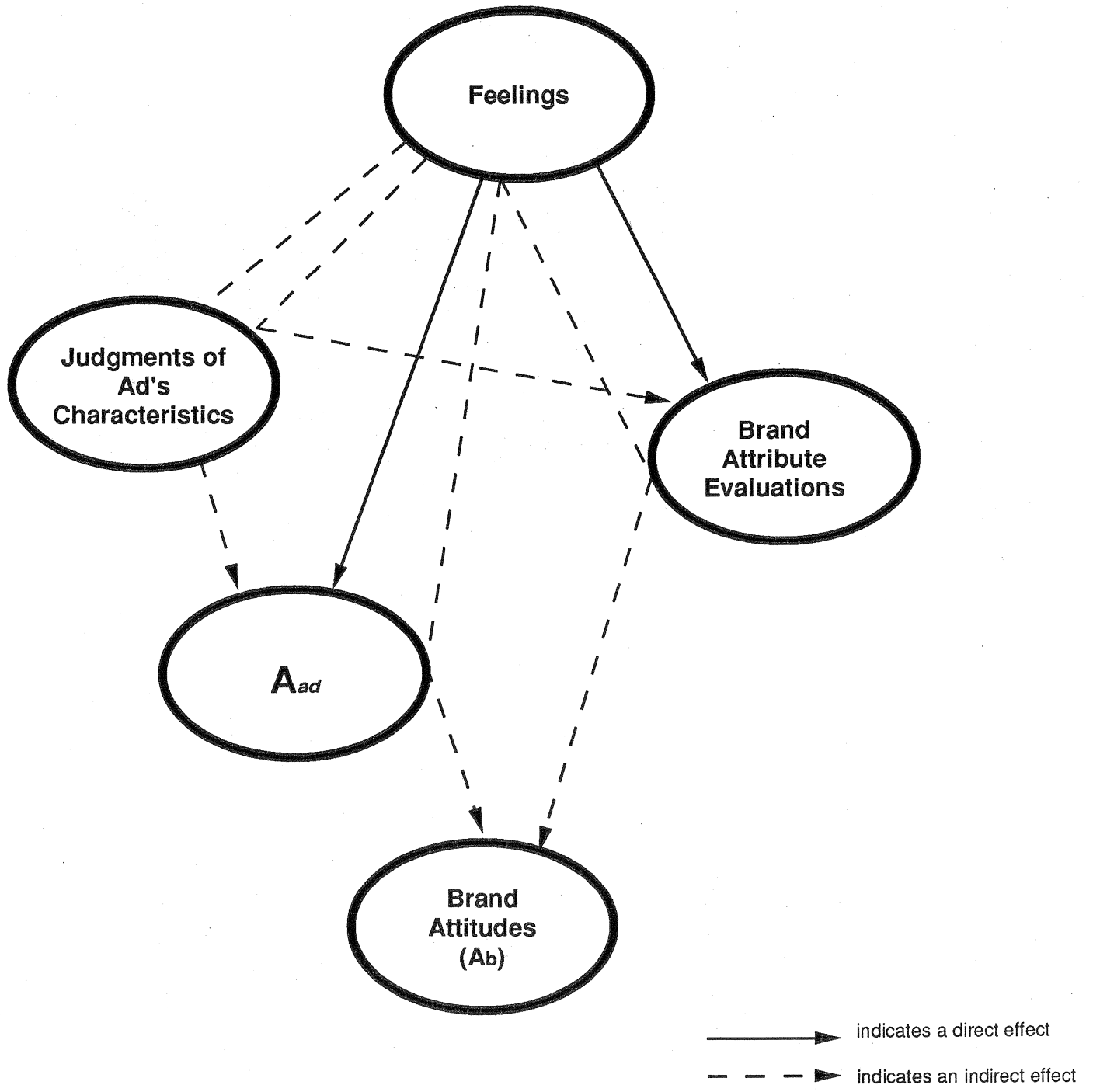
dently. The DMH, however, relates ad-related and brand-related judgments indirectly via A_{ad} . Because of the extent of theoretical and empirical support demonstrated for the causal linkages in Burke and Edell's framework, we focus on these underlying relationships. The direct effect of feelings on A_b that is both identified empirically by the authors and is compatible with past findings (e.g., Holbrook and Batra 1987) is also included. Because of the importance of purchase behavior to advertisers, we examine the robustness of this initial theoretical framework by extending the analyses to include a more behavioral-oriented outcome measure, purchase intentions. The proposed relationship (i.e., direct influence of A_b on PI) follows the DMH and attitude theory (e.g., Ajzen and Fishbein 1980).

In order to achieve the secondary objective of this study, the effects of information valence are considered by comparing messages that are framed in a positive versus negative manner. An ad may elicit a broad range of emotions, both positive and negative, either simultaneously or at different exposures (Burke and Edell 1989), and these may vary depending on how a message is framed. The role of negative emotions in ad-based persuasion finds theoretical and empirical support (e.g., Moore and Hoenig 1989; Zeitlin and Westwood 1986). Because of the exploratory nature of the influence of message framing on feelings, we had no *a priori* hypotheses about the effects of message framing on the feelings-based linkages.

Cognitive effects of message framing have been demonstrated by the existence of a "negativity effect" (i.e., when negative information receives greater weight than positive information) across a variety of information processing tasks (e.g., Kanouse 1984; Lau 1985; Weinberger, Allen and Dillon 1981). A negatively framed message may, by itself, enhance the extent to which it is perceived as consequential (Fiske 1980; Maheswaran and Meyers-Levy 1990). This will act to strengthen the (brand-related) direct cognitive-based linkages (e.g., $C_b \rightarrow A_b$) and will render both brand-related and ad-related cognitions important in the formation of ad and brand attitudes. In contrast, positively framed ads will result in relatively weakened direct linkages between brand cognitions and A_b , and ad-related cognitions will contribute relatively more to explaining A_{ad} and A_b . Feelings and cognitions may still have the indirect and direct effects on C_b proposed in the theoretical models, but the importance of brand-related cognitions will not carry through to A_b when an ad is framed positively.

Based on the preceding discussion supporting the linkages in Figure 1 and past research (e.g., Burke

Figure 1
Model Proposed by Burke and Edell



and Edell 1987, 1989), we propose the following hypotheses:

Hypothesis 1: Emotions contribute to explaining the variance in advertising effects regardless of how the message is framed, but brand-related cognitions contribute to explaining more of the variance in brand attitudes when the message is negatively framed rather than positively framed. In contrast, C_{ad} will make a greater contribution than C_b to explaining the variance in A_b when the message is positively framed.

Hypothesis 2: Emotional responses influence A_{ad} directly and indirectly via C_{ad} .

Hypothesis 3: Emotional responses influence C_b directly and indirectly via C_{ad} .

Hypothesis 4: Emotional responses have a direct effect on A_b and an indirect effect via the $C_{ad} \rightarrow A_{ad}$ path.

Method

Stimulus Materials

Two criteria were used to select a product for the experimental print ads. First, the product had to be one that undergraduate students (subjects) are familiar with and sufficiently knowledgeable about to effectively process the ad information. Second, it had to be capable of being advertised effectively via positively and negatively framed appeals. Based on these factors, experimental print ads were created for a hypothetical brand ("Mintgard") of mouthwash.

Five color advertisements equivalent to high quality magazine ads were professionally produced. One of these ads included the experimental manipulation, message framing. The remaining four served as "filler" ads designed to disguise the intent of the study. The layout of the test ads was of an illustration-headline-body copy format with pictorial inserts of the product and American Dental Association's Seal in the bottom right and left corners, respectively. These ads displayed either a negatively or positively (foul-smelling versus fresh-looking) valenced picture of a male's mouth. The pictures were purposefully chosen to be consistent with the copy so as not to provide additional brand-related information.

The copy was designed to convey either the positive benefits of using the product or the negative consequences of not using the product (see Appendix). The headline of the positively framed ads read "They will love your fresh breath" and then stated how impor-

tant it is for people to take care of oral hygiene because of its positive effects on breath. The negatively framed ads contained the headline "They will hate your bad breath" and discussed how neglecting oral hygiene results in bad breath and harm to teeth and gums. Careful attention was devoted to construct ad copies that were as equivalent as possible in terms of brand attributes mentioned and amount of information, except for the obvious positive/negative distinction. The same dental association approval, tag line, and product logo appeared on all ads.

Pilot Studies

Pilot studies were conducted to develop and assess the performance of the proposed manipulations. The purpose of the first pilot study was to verify that the two pictures conveyed either positive or negative consequences. As expected, the pictures were evaluated as possessing different valenced contents ($t(52)=16.84, p<.001$). The picture designed as positive (mean=7.65) was perceived as being more positively valenced than the negative picture (mean=2.55). The individual indicators of picture valence (nine-point scales anchored by pleasant/unpleasant, positive information/negative information, and positive benefits of buying the brand/negative consequences of not buying the brand) each behaved as impressively as the summated index ($\alpha=.96$) in terms of t values and differences in means.

The two types of ad copy were created to convey brand information framed in either a positive or negative manner. The second pilot study revealed that the copies did vary in terms of valence ($t(48)=6.10, p<.001$, means=3.33 versus 5.88). Again, the three individual indicators of message framing performed similarly to the summated index ($\alpha=.82$).

In a final pilot study, 20 subjects evaluated each of the finished ads (total $n=40$) to verify that the manipulation had the desired effects (i.e., that the ads were framed in a positive versus negative manner while being equally informative). Compatible with our expectations, analyses indicated that respondents perceived the ads as (1) containing positive versus negative written information ($t(39)=4.88, p<.001$, means=6.55 and 3.87, α for 3-item scale=.96), (2) presenting a positive versus negative photograph of a male mouth ($t(38)=10.61, p<.001$, means=6.70 and 1.67, α for 3-item scale=.99), (3) having an overall positive versus negative tone ($t(39)=6.12, p<.001$, means=6.85 and 3.63, α for 3-item scale=.98), (4) being designed to present positive versus negative information ($t(39)=5.20, p<.001$, means=7.15 and

3.81), and (5) containing equivalent amounts of information ($t(39)=0.05$, means=4.25 and 4.29, ns).

Subjects

A total of 244 undergraduate students at a large Southwestern university participated in the main experiment. Subjects were randomly assigned to one of the levels of message framing (resulting in 125 subjects in the positive framing condition and 119 subjects in the negative framing condition).

Procedure

Subjects read one booklet, containing the independent variable, and completed a second booklet, containing the dependent variables. The first booklet claimed that the purpose of the experiment was to evaluate test concepts of magazine print advertisements. The ad booklet contained five professionally produced color advertisements, the last of which included the experimental manipulation. The first page of the ad booklet provided the statement of purpose and instructions. The order of ad exposures remained constant across treatments and each ad was preceded by a page with a brief written introduction of the forthcoming ad. Exposure was self-paced to simulate as realistic an exposure environment as possible.

After viewing the ad booklet, respondents completed the second booklet containing the dependent measures. Both experimental treatments were administered at each session to avoid confounding the session with the effects of the independent variables. Subjects were sufficiently isolated (with partitioned walls) to prevent awareness of others' behaviors and the administrator was blind to the individual treatment assignments and research hypotheses.

Dependent Measures

Immediately following exposure to the ad booklet, subjects were given two minutes to write down their thoughts in accord with the instructions:

In the space below, please write down the thoughts that went through your mind while looking at the ad for mouthwash. Please list the thoughts (not the mere content of the ad) that occurred to you about the product and your reaction to what was being said about the product by the advertiser. Also, feel free to mention any other thoughts that you had while viewing the ad. Remember, list the thoughts that occurred to you during the viewing of the mouthwash ad. Do not worry about spelling or punctuation.

These thought-listing measures were chosen over objective scales (cf. Burke and Edell 1989) based on their documented performance (e.g., Homer 1990; MacKenzie et al. 1986) and desirable characteristics (i.e., less time-consuming for subjects, lower likelihood of subject boredom, ability to capture a broader range of responses, and reduction in common method covariation with other objective scale measures). Perhaps more important, this variation in dependent measures approximates an operational replication which provides evidence of the generalizability of the relationships (Zinkhan, Jones and Smith 1991).

The cognitive responses were independently coded by two judges (90% agreement) into one of 9 categories: ad-related thoughts (positive [PAD], negative [NAD], or neutral), brand-related thoughts (positive [PB], negative [NB], or neutral), source derogations, source bolsters, and other thoughts. Any disagreements between the two coders were resolved by discussion. After completing this task, participants responded to the Standardized Emotional Profile (Holbrook and Batra 1988), composed of 27 seven-point items. Subjects were instructed to indicate how they "personally felt while viewing the ad." For example, they responded to the statement "I felt — sad" using a 7-point continuum anchored by "not at all" and "very."

The final section of the questionnaire intermixed the A_{ad} , A_b , PI, and "bogus" measures so as to disguise the intent of the experiment. Assessments of A_{ad} (good/bad, favorable/unfavorable), brand attitudes (good/bad, favorable/unfavorable, and like/dislike), purchase intentions (very likely/very unlikely, probable/improbable, and strongly agree/strongly disagree with a statement to buy), brand attribute beliefs (3 agree/disagree statements), manipulation checks, and evaluations of the pictorial and verbal elements were measured via 9-point scales. The bogus questions were essentially the same as those pertaining to the test ad with the exception that they referred to the "filler" ads.

At the conclusion, subjects were asked to write down their thoughts about the purpose of the experiment. No one was judged as being aware of the manipulations and/or guiding hypotheses.

Results

Manipulation Checks

Examination of the two-item framing index ($r=.71$) indicated that the positively framed ad (mean=6.48) presented positive information and positive claims (why one should buy the product), whereas the nega-

tively framed ad (mean=3.69) presented negative information and negative claims (what would happen if one did not buy the product) ($F(1,242)=121.47, p<.001$). An additional item indicated that the visual in the positively framed ad (mean=7.25) conveyed benefits gained from brand use and that the visual in the negatively framed ad (mean=1.80) conveyed negative consequences of not using the brand ($F(1,242)=724.85, p<.001$). The positively and negatively framed ads did not produce differences in A_{ad} ($F(1,242)=1.33, ns$), appropriateness of the pictorial elements ($F(1,238)=0.87, ns$), evaluation of the ad copy ($F(1,238)=1.49, ns$), beliefs about the brand's lasting power ($F(1,242)=0.78, ns$), beliefs that the brand ensures good oral hygiene ($F(1,242)=0.36, ns$), or beliefs about the brand's effectiveness and reliability ($F(1,242)=0.19, ns$), thereby providing additional support for the effectiveness of the framing manipulation.

Preliminary Analyses of Emotional and Cognitive Response Effects

The 27-item emotional response scale was first factor analyzed. After eliminating items with multiple and/or relatively low loadings, four emotional response factors provided reliable indices (62.6% variance explained). The specific item loadings were compatible with the results reported by Burke and Edell (1989) and were labeled as attention (attentive, interested, and curious; $\alpha=.87$), pleasure (playful, loving, friendly, affectionate, and lighthearted; $\alpha=.87$), skepticism (skeptical, suspicious, and distrustful; $\alpha=.85$), and downbeat (sad, fearful, distressed, afraid, sorrowful, and anxious; $\alpha=.89$). The attention and pleasure indicators represent the "upbeat" dimension identified by Burke and Edell (1989), whereas the skepticism and downbeat items are reflected in their "negative" dimension. These factors also resemble Holbrook and Batra's (1987) arousal, pleasure, and domination dimensions (domination includes our skepticism and downbeat factors), after adjusting for the differences in the specific items. Following MacKenzie et al. (1986), indices were developed for brand-related and ad-related cognitions ($C_b=PB-NB$ and $C_{ad}=PAD-NAD$, respectively), A_{ad} ($r=.73$), A_b ($\alpha=.91$), and PI ($\alpha=.90$).

Initial regression analyses were performed to investigate the direct and indirect effects of emotional and cognitive responses on A_{ad} and A_b . Models were estimated for the total sample and each framing group individually. The initial solutions verified that only

the attention (AF) and skepticism (SF) emotional indices have an effect on A_{ad} and A_b (see Table 1). The pleasure (PF) and downbeat (DF) factors did not play a valuable role in the solutions. As hypothesized in H1, feelings and C_{ad} provide important contributions, but C_b does not for the positively framed ad. In contrast, feelings, C_{ad} , and C_b all contribute to the equation for A_b based on exposure to the negatively framed ad.

The relative contribution to variance made by emotional responses was tested by comparing the "full" regression model (containing the feeling constructs and ad- and brand-related cognitive responses) with the "reduced" model (containing only the cognitive response variables). According to the incremental F tests, the full model explains significantly more of the variance in A_{ad} and A_b than the reduced model for the total sample ($F_{ADD}=15.20$ and $18.55, p<.005$; respectively) and each framing subsample ($F_{ADD}=9.00$ and $6.00, p<.005$, and 8.35 and $12.91, p<.005$, respectively for the positive and negative framing groups). This confirms that emotional responses based on exposure to print advertisements contribute to A_{ad} and A_b , beyond any variance attributable to the effects of cognitive-based responses.

Direct and Indirect Effects of Emotional and Cognitive Responses (H2-H4)

The proposed model was assessed for the total sample and the positive and negative framing treatments separately with the aid of LISREL VI (Joreskog and Sorbom 1986). The theoretical constructs and interrelationships that were estimated in the three solutions and their input variance/covariance matrices are presented in Figure 2 and Table 2, respectively. Because of item nonresponse, the total sample matrix is based on $n=239$ ($n=120$ for the positive framing model and $n=119$ for the negative framing model). Based on the preliminary analyses, only the attention and negative feeling constructs were included. (When all feeling constructs were included, the general underlying structural relationships and conclusions did not change. Therefore, we report the more parsimonious models.)

Following tradition, the scale of measurement for the constructs was established by fixing one of the factor loadings to 1.0. The measurement errors were constrained to be independent because covarying error terms produce interpretational difficulties (Gerbing and Anderson 1984). Assuming that the

Table 1
Impact of Feelings and Cognitive Responses on A_{ad} and A_b

Dependent variable	AF	SF	PF	DF	Standardized coefficients		R ²	R ² _{adj}
					C _{ad}	C _b		
Total sample								
A _{ad}	.37*	-.20*	.09	-.04	.25*	.04	.43	.42
A _{ad}	.40*	-.21*	--	—	.28*	.04	.43	.42
A _{ad}	—	—	—	--	.48*	.13*	.27	.27
A _b	.41*	-.23*	-.04	.04	.27*	.15*	.48	.46
A _b	.40*	-.22*	--	—	.25*	.14*	.47	.46
A _b	—	—	—	—	.47*	.23*	.31	.30
Positively framed ad								
A _{ad}	.42*	-.21*	.04	-.08	.18*	.08	.44	.41
A _{ad}	.44*	-.25*	--	—	.18*	.09	.43	.41
A _{ad}	—	—	—	—	.43*	.19*	.26	.25
A _b	.38*	-.21*	-.03	-.05	.28*	.10	.44	.41
A _b	.36*	-.22*	—	—	.27*	.10	.44	.42
A _b	—	—	—	—	.49*	.19*	.32	.31
Negatively framed ad								
A _{ad}	.32*	-.19*	.13	.02	.30*	-.01	.45	.42
A _{ad}	.39*	-.18*	--	—	.32*	-.01	.44	.42
A _{ad}	—	—	—	--	.53*	.05	.28	.27
A _b	.43*	-.24*	-.03	.11	.23*	.19*	.54	.51
A _b	.45*	-.22*	—	—	.22*	.19*	.53	.51
A _b	—	—	—	—	.47*	.26*	.32	.30

Key: AF represents attention feelings PF represents pleasure feelings C_{ad} represents ad-related cognitions
 SF represents skepticism feelings DF represents downbeat feelings C_b represents brand-related cognitions

* Indicates that the coefficient is significant (p<.05).

single indicator constructs include some unreliability (i.e., attention feelings, skepticism feelings, and ad and brand cognitions), these measurement errors were fixed at (1-alpha) times the variance of the indicator rather than zero (as is customary). A reliability of .85 was assumed for both the ad-related and brand-related cognition indices (cf. MacKenzie and Lutz 1989). Utilization of these single item constructs parallels several past efforts (e.g., Burke and Edell 1989; Edell and Burke 1987), yields an acceptable variable/sample size ratio, and reduces the model's complexity.

Comparisons were made on goodness-of-fit indices (GFI) and strengths of the path coefficients for the hypothesized causal linkages (see Table 3). One measure of overall model fit is the goodness-of-fit (GFI) index calculated by LISREL. GFI is a measure of the relative amount of variances and covariances jointly accounted for by the model, and unlike chi-square, is independent of the sample size and relatively robust against departures from normality (Joreskog and Sorbom 1986). LISREL also computes an index that is adjusted for degrees of freedom (AGFI). To conserve space and for parsimony, the measurement statistics are omitted from Table 3. As indicated by the accept-

able reliability coefficients provided earlier, all measurement model factor loadings are relatively high and statistically significant.

Each of the models does provide an acceptable "fit" of the data based on the chi-square statistics and p values. The chi-square and GFI assess the overall fit of the model to the data and do not assess whether each relationship is accurately determined, however. The modification indices provide a more detailed means to assess the accuracy of specific fixed and constrained paths in a model. The modification index associated with a parameter indicates the expected reduction in chi-square that would result if that single parameter alone would be freed. Therefore, the modification indices can be examined in relation to a chi-square distribution with one degree of freedom (Joreskog and Sorbom 1986). Examination of the modification indices indicated that the structural relationships in the model were accurately determined (i.e., no indices approached significance). The only endogenous estimate that did not attain significance in any of the models was the parameter associated with the C_{ad} -> C_b linkage, indicating only partial support for H3. Although this result was not ex-

Figure 2
Theoretical Constructs and Their Interrelationships

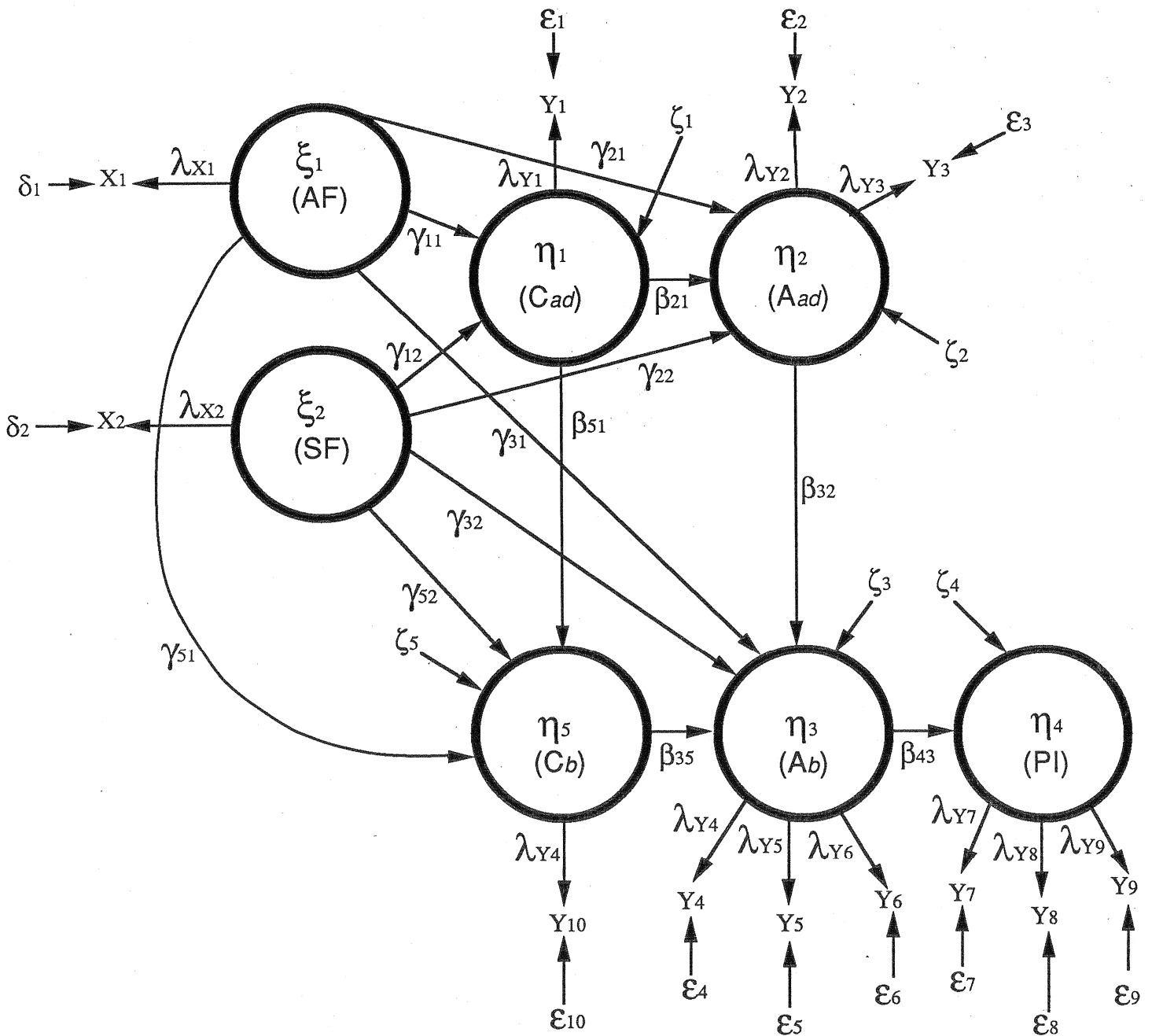


Table 2
Item Variances, Covariances, and Means

<i>Total sample</i>												
	C _{ad}	A _{ad}	A _{ad}	A _b	A _b	A _b	PI	PI	PI	C _b	AF	SF
C _{ad}	3.45											
A _{ad} (good)	2.03	5.28										
A _{ad} (favorable)	2.10	3.98	5.51									
A _b (good)	1.84	2.77	3.40	4.78								
A _b (favorable)	2.03	3.09	3.64	3.79	5.03							
A _b (like)	1.69	2.61	2.98	3.17	3.59	3.93						
PI (likely)	1.38	2.31	2.97	2.79	3.25	2.66	4.70					
PI (will buy)	1.87	2.61	3.35	3.19	3.63	2.93	3.59	5.41				
PI (probable)	1.79	2.55	3.38	3.62	4.03	3.27	3.78	4.24	5.38			
C _b	0.21	0.23	0.37	0.36	0.47	0.36	0.41	0.40	0.39	0.45		
AF	1.29	1.95	1.91	1.58	2.15	1.77	1.61	1.66	1.69	0.24	2.74	
SF	-0.92	-1.14	-1.30	-1.27	-1.32	-0.97	-1.13	-1.26	-1.44	-0.18	-0.32	2.98
means	-1.88	3.48	3.43	4.38	4.00	3.88	2.79	3.14	3.48	-0.09	3.80	3.89
<i>Positive framed subsample</i>												
	C _{ad}	A _{ad}	A _{ad}	A _b	A _b	A _b	PI	PI	PI	C _b	AF	SF
C _{ad}	2.92											
A _{ad} (good)	1.78	5.41										
A _{ad} (favorable)	1.86	4.04	5.76									
A _b (good)	1.56	2.79	3.51	4.72								
A _b (favorable)	2.06	3.38	3.98	3.67	4.98							
A _b (like)	1.78	2.82	3.18	3.01	3.60	3.76						
PI (likely)	1.39	2.33	3.19	2.48	3.17	2.48	4.60					
PI (will buy)	1.72	2.90	3.80	3.12	3.94	3.02	3.84	5.44				
PI (probable)	1.84	2.63	3.69	3.40	4.07	3.24	3.54	4.52	5.51			
C _b	0.30	0.45	0.49	0.41	0.56	0.31	0.50	0.46	0.47	0.55		
AF	1.34	2.07	2.03	1.45	2.18	1.65	1.51	1.66	1.73	0.34	2.79	
SF	-0.91	-0.98	-1.66	-1.06	-1.43	-1.12	-1.26	-1.63	-1.73	-0.24	-0.15	3.29
means	-1.53	3.58	3.67	4.55	4.12	3.99	2.68	3.23	3.52	-0.08	3.74	4.05
<i>Negative framed subsample</i>												
	C _{ad}	A _{ad}	A _{ad}	A _b	A _b	A _b	PI	PI	PI	C _b	AF	SF
C _{ad}	3.67											
A _{ad} (good)	2.22	5.17										
A _{ad} (favorable)	2.16	3.92	5.19									
A _b (good)	2.03	2.76	3.25	4.85								
A _b (favorable)	1.95	2.80	3.28	3.92	5.10							
A _b (like)	1.56	2.40	2.78	3.35	3.59	4.13						
PI (likely)	1.46	2.32	2.82	3.15	3.38	2.87	4.82					
PI (will buy)	1.95	2.32	2.88	3.27	3.34	2.86	3.40	5.41				
PI (probable)	1.71	2.47	3.07	3.85	4.02	3.31	4.07	3.98	5.28			
C _b	0.11	0.02	0.24	0.31	0.38	0.41	0.32	0.34	0.31	0.36		
AF	1.29	1.85	1.83	1.73	2.14	1.91	1.72	1.69	1.67	0.15	2.71	
SF	-1.06	-1.33	-1.03	-1.54	-1.24	-0.84	-0.98	-0.91	-1.18	-0.12	-0.47	2.65
means	-2.29	3.40	3.19	4.25	3.91	3.82	2.87	3.05	3.42	-0.10	3.85	3.75

Table 3
Summary of Structural Estimates and Goodness-of-Fit Indices*

Model linkage	Total sample	Standardized path coefficients	
		Positive framed ad	Negative framed ad
AF -> C _{ad}	.47 (.12)	.54 (.15)	.43 (.17)
SF -> C _{ad}	-.29 (.12)	-.32 (.15)	-.36 (.17)
AF -> C _b	.22 (.05)	.28 (.09)	.16 (.07) ^{ns}
SF -> C _b	-.14 (.05)**	-.18 (.08) ^{ns}	-.12 (.07) ^{ns}
C _{ad} -> A _{ad}	.32 (.08)	.20 (.13)**	.38 (.12)
C _{ad} -> C _b	.04 (.03) ^{ns}	.07 (.06) ^{ns}	-.01 (.04) ^{ns}
AF -> A _{ad}	.44 (.14)	.52 (.21)	.40 (.19)
SF -> A _{ad}	-.23 (.12)	-.33 (.17)	-.17 (.18)**
AF -> A _b	.22 (.12)	.15 (.17) ^{ns}	.28 (.18)
SF -> A _b	-.13 (.10)	-.10 (.14) ^{ns}	-.14 (.14)**
A _{ad} -> A _b	.62 (.08)	.73 (.12)	.53 (.10)
C _b -> A _b	.12 (.14)	.06 (.16) ^{ns}	.21 (.24)
A _b -> PI	.88 (.07)	.88 (.10)	.88 (.09)
chi-square	54.22	49.13	52.82
d.f	45	45	45
GFI	.96	.94	.94
AGFI	.94	.89	.89
p =	.16	.31	.20

* All paths are significant ($p < .05$) unless indicated otherwise. Standard errors are in parentheses.

** $p < .10$

pected, Burke and Edell (1989) only found evidence of this relationship for their "evaluation judgment." This conflict may be due to the fact that the ad-related cognitions construct incorporated in the current study allowed for a broad range of thoughts; which may or may not have included evaluative judgments. Furthermore, evidence supporting the relationships in the DMH suggests that these two constructs may only be indirectly related via A_{ad}.

For the total sample, the hypothesized (H2) direct and indirect relationships between emotional responses and A_{ad} were supported. Consistent with H4, feelings also impacted A_b directly and indirectly via the C_{ad} -> A_{ad} path. All nonsignificant estimates other than the C_{ad} -> C_b linkage are associated with the exogenous feeling constructs in the framing subsample models (elaborated on further below).

The differences in the relative magnitudes of the path coefficients that link feelings, A_{ad}, A_b, and PI as compared to paths linking these constructs with C_{ad} and C_b are likely dependent on the nature of the measurement techniques. Because feelings, A_{ad}, A_b, and PI were assessments on objective 9-point scales and C_{ad} and C_b were collected via a thought-listing task, the paths among the similarly measured con-

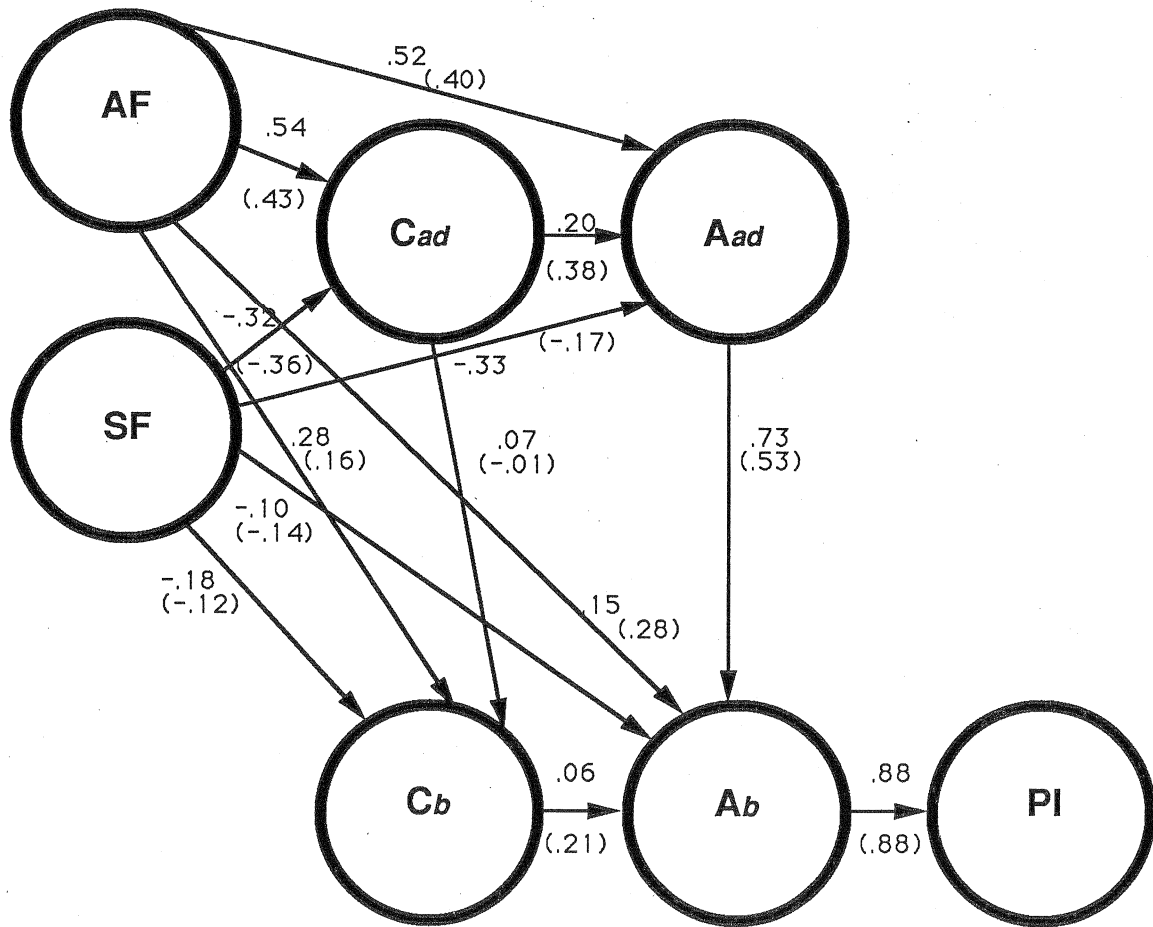
structs may have been inflated as a result of common methods covariation. In comparison, paths linking noncommon measures are low. This may also explain any differences between our findings and those of Burke and Edell (1989), who measured all constructs using objective scales.

Positive Versus Negative Appeal Effects. The hypothesized underlying relationships do provide an acceptable "fit" for both the positively and negatively framed groups, but the magnitudes of some structural paths do not attain statistically significant levels. As a result, portions of H2-H4 lack support based on the framing subsample models. Figure 3 presents a visual comparison of the structural relationships for the two message framing solutions.

The direct and indirect effects of feelings on A_{ad} hypothesized in H2 are supported by the data. The relatively unimportant direct effects of feelings and C_{ad} on brand-related cognitions indicate that brand-related cognitions may be influential and develop independent of ad-induced feelings or ad-related cognitions under certain conditions.

The hypothesized enhanced role of C_b on A_b formation in negatively framed appeals is supported in terms of a simple comparison of the magnitudes of

Figure 3
Structural Estimates for Positive and Negative Framing Groups*



*Estimates for the negative framing group are in parentheses.

the path coefficients. This path was nonsignificant for the positively framed subsample, but for the negative framing subsample, a significant relationship emerged. Formal tests comparing the measurement and structural estimates for the framing subsample models were made via LISREL's multiple group option. The measurement parameters in the two framing groups were compared by first estimating the model simultaneously for the two framing subsamples. The chi-square for this simultaneous model ($=101.99$, $d.f.=90$) then was compared with the chi-square of the model obtained by constraining the measurement factor structures to be equal in the two groups (chi-square= 109.59 , $d.f.=97$). The change in chi-square ($=8.60$, $d.f.=7$) is not significant, indicating that the measurement structures are essentially equivalent.

Examination of the structural estimates and their t values suggested that the path between C_b and A_b may differ between the two groups. To test for this difference, the model constraining this parameter to be equal in the two groups was compared with the solution in which the parameters are estimated separately. Although the previous simple comparisons of path coefficient magnitudes determined that this path was significantly different from zero only for the negative framing sample, the stricter multiple group test demonstrated that the two paths vary between the positive and negative framing subgroups (change in chi-square= 3.76 , $p<.06$). All other structural paths involving the model constructs did not differ between the two types of executions (all changes in chi-square <3.0 , $d.f.=1$). The differences between the simple path magnitude comparisons and the multiple group tests demonstrate the importance of performing simultaneous analyses when comparing interrelationships based on varying ad executions (or for other types of multiple group comparisons).

Discussion

The objective of this study was to examine the simultaneous interrelationships among emotional and cognitive responses, A_{ad} , A_b , and PI that are induced by print advertisements. Based on current advertising campaigns and strategies and in the interest of generalizability, this objective was expanded to include an investigation of these relationships for positive and negative framed appeals. First, we demonstrated that (1) emotional responses' contribution to explaining A_{ad} and A_b is above that attributable to cognitively-based responses even in a print media environment and (2) that brand-related cognitions

are more influential when induced by a negatively framed versus a positively framed appeal.

The primary focus of the analyses was directed at a structural equation test based on an established framework that incorporated the effects of different types of feelings in a single model. The results confirm past findings that emotional and cognitive responses have an influential role in the persuasion process and that positive and negative feelings can co-occur (e.g., Burke and Edell 1989; Edell and Burke 1987; Holbrook and Batra 1987). It is possible that individuals may elicit seemingly contrasting emotions to different elements in an ad. As suggested elsewhere (Burke and Edell 1989), advertisers can benefit from the arousal of negative emotions. In some instances, negative feelings can have a positive effect on attitudes and behavior (Shelton and Rogers 1981; Zeitlin and Westwood 1986).

The structural model was derived from the underlying interrelationships presented and tested by Burke and Edell (1989). For the total sample, the model provided an acceptable fit of the data, and all but one of the direct and indirect effects between feelings and A_b attained significance, implying that all the effects of feelings were not completely absorbed by ad-related and brand-related cognitions or A_{ad} . Stayman and Aaker (1988) and Burke and Edell (1989) similarly concluded that A_{ad} does not totally mediate the effects of feeling responses, at least under some conditions. These findings reinforce Burke and Edell's (1989) warning that "relying on measures of A_{ad} and brand attribute evaluations to capture the effect of feelings ignores important effects" (p. 79). Except for the $C_b \rightarrow A_b$ path, the two framing appeals produced relatively similar patterns of interrelationships. This influence of C_b on A_b was stronger for the negatively framed versus positively framed appeals.

It may be argued that this difference in the effects of brand-related thought induced by the two appeals may be attributable to variations in the salience of brand-related processing goals. For example, Hastak and Olson (1989) concluded that the "relative strength of mediations for cognitive responses varies as a function of the processing goals that are salient when consumers process advertising messages" (p. 454). Based on the facts that the two appeals generated differences for only the C_{ad} construct ($p>.25$ for C_b , AF , SF , A_{ad} , A_b , and PI) and that there were no differences in the number of positive ($p=.64$), negative ($p=.31$), or neutral ($p=.13$) brand-related cognitions, the data do not support this interpretation. While subjects expressed similar levels of brand-related

thought, the nature of this processing varied such that it had a greater impact on the formation of brand attitudes when based on exposure to a negatively framed appeal. Perhaps the negatively framed appeal enhanced the perceived consequential importance of the ad information (Fiske 1980; Maheswaran and Meyers-Levy 1990) which may have contributed to the relatively greater role of C_b in the formation of A_b .

Although relatively small, the presence of dissimilarities among the solutions for the ad execution subsamples and pooled data demonstrates the importance of including ad execution effects in tests of emotional response advertising effects. Many past studies have pooled data based on exposures to large groups of television commercials without presenting subsample findings and/or accounting for this potential confound. Different executions tend to induce varying brand and ad cognitions (e.g., Homer 1990; MacKenzie et al. 1986) which may be obscured by pooling. Burke and Edell (1989) do justify their pooling procedure empirically, but the use of predetermined judgment scales as opposed to measures based on more individually-unique thought-listings limits the breadth of cognitions measured. Similarly, the failure to detect substantial influences of a broader range of emotions in the current study is probably an artifact of the constrained measurement technique (i.e., only certain feelings were measured) and/or the use of a relatively cognitively-oriented medium. By comparison, the broadcast media has access to production dynamics and multiple individual senses which are more conducive to evoking rich feelings among audiences. We do acknowledge that our findings are based on a single experimental exposure to only one of two print ad executions which may have also limited the breadth of emotions elicited and may have influenced the impact specific feelings had on the positively versus negatively framed ads. Additional research comparing alternative measurement techniques and a wider range of appeals and media is necessary before making unqualified generalizations.

In summary, we have demonstrated the importance of incorporating emotional and cognitive responses simultaneously when examining advertising effects such as A_{ad} and A_b . Feelings of differing valence affected brand-related attitudes, above and beyond the cognitive-based responses. Compared to research based on television-induced emotions (e.g., Burke and Edell 1989), our findings suggest that print ads may generate a more restricted range of emotions, but their role in consumer processing of advertising communications appears to be well-established.

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Appendix
Print Ad Copy

Positive Framed Appeal

THEY'LL LOVE YOUR FRESH BREATH.

Mintgard — A refreshing way to freshen your breath and to ensure good oral hygiene.

You can enjoy fresh breath if you practice good oral hygiene. Healthy gums, cavity protection, and a germ-free mouth are assurances of clean breath. So brush, floss, and visit your dentist regularly. Since many people don't clean their teeth regularly, the extra care of rinsing with mouthwash can be important for fresh breath and good oral hygiene.

Mintgard is the only mouthwash with the American Dental Association's Council on Dental Therapeutics Seal of Acceptance for helping to ensure good oral hygiene.

Using Mintgard mouthwash after brushing promises you fresh breath 47% more than using fluoride toothpaste alone.* And its strong formula keeps breath fresh for up to 6 hours.

* Based on clinical tests.

A refreshing way to have fresh breath **MINTGARD**

Negative Framed Appeal

THEY'LL HATE YOUR BAD BREATH.

Mintgard kills germs that cause bad breath, gingivitis and plaque.

Your mouth may be full of oral germs that cause foul-smelling breath, plaque and gingivitis. And you don't want gingivitis. Gingivitis is a gum disease characterized by red, swollen gums. If left untreated, it can progress to periodontitis, which can result in tooth loss. It also causes bad breath. Three out of 4 adults have gingivitis. Mintgard is the only mouthwash with the American Dental Association's Council on Dental Therapeutics Seal of Acceptance for helping to ensure good oral hygiene.

Using Mintgard mouthwash after brushing reduces oral germs up to 47% more than using fluoride toothpaste alone.* And its strong formula keeps breath germ-free for up to 6 hours.

* Based on clinical tests.

A refreshing way to have fresh breath **MINTGARD**
