

CORNELIA PECHMANN\*

Two-sided ads often are more credible than one-sided ads because they admit that the advertised brands have shortcomings. Findings about the effectiveness of such ads have been inconclusive, however, perhaps because a critical moderator has been ignored. The author found that a two-sided ad was more effective than one-sided ads only when negatively correlated (vs. uncorrelated) attributes were featured. The brand's unfavorable positioning on the negatively correlated secondary attribute *per se* (i.e., "correlational inferences"), as well as the advertiser's honesty (i.e., "correspondent inferences"), jointly enhanced judgments of the brand on the primary attribute and thus overall brand evaluations.

## Predicting When Two-Sided Ads Will Be More Effective Than One-Sided Ads: The Role of Correlational and Correspondent Inferences

Advertisers generally try to portray their brands as superior to competing brands on determinant attributes (Aaker and Myers 1987; Ogilvy 1985; Reeves 1961). Sometimes explicit comparisons are made ("it surpasses all others"); at other times, a brand's superiority is simply implied ("it is exquisite"). Consumers tend to be skeptical of ad claims, however, and may not perceive the brands as favorably as was intended by the advertisers. Hence, it has been suggested that two-sided ads be used to enhance the credibility of the claims (Settle and Golden 1974; Smith and Hunt 1978; Swinyard 1981). Two-sided ads attempt to convince consumers of the advertised brands' favorable positionings on the more important (or "primary") featured attributes by depicting the brands unfavorably on less important (or "secondary") attributes. For instance, an ad for dBase IV software tried to persuade consumers of the product's su-

perior overall performance by disclosing that it was somewhat more costly and poorer at handling errors.<sup>1</sup>

Two-sided ads do tend to be viewed as more credible than their one-sided counterparts (Kamins and Assael 1987; Smith and Hunt 1978; Stayman, Hoyer, and Leon 1987; Swinyard 1981). As a result, they also tend to be somewhat more effective at enhancing perceptions of the advertised brand on the primary featured attribute (Etgar and Goodwin 1982; Settle and Golden 1974; Swinyard 1981), consistent with the theory of correspondent inferences (Jones and Davis 1965). Evidence for the superiority of two-sided ads at enhancing *overall brand evaluations*, however, is much less conclusive. None of the studies cited above found two-sided ads to be superior in this way, with the exception of an oft-cited study by Etgar and Goodwin (1982). Were their results an anomaly? Perhaps not.

Most researchers studied two-sided ads featuring attributes that subjects may have believed to be relatively *uncorrelated* (e.g., styling and accuracy). In contrast, Etgar and Goodwin used a two-sided ad featuring attributes that subjects probably believed to be *negatively correlated* (price and quality). Thus, in their study, the

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\*Cornelia (Connie) Pechmann is Assistant Professor of Marketing, Graduate School of Management, University of California, Irvine.

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<sup>1</sup>For ease of exposition, henceforth a two-sided ad is assumed to feature only two attributes, one important and the other less so.

advertised brand's undesirable positioning on the secondary attribute *per se* (its higher price) may have implied that it had a more desirable positioning on the primary attribute (higher quality), thereby markedly enhancing overall brand evaluations (Pechmann 1990). In other words, brand judgments may have been influenced by a type of same-brand (Ford and Smith 1987) probabilistic (Dick, Chakravarti, and Biehal 1990) inference referred to here as a "correlational inference" (Huber and McCann 1982; Lim, Olshavsky, and Kim 1988; Pechmann and Ratneshwar 1991). Hence, study 1 was conducted to determine whether the effectiveness of a two-sided ad might be contingent on whether it features negatively correlated or uncorrelated attributes<sup>2</sup> and also to examine the relative impact of correlational and correspondent inferences. Study 2 was conducted to examine the role of correspondent inferences in and of themselves.

### STUDY 1

Discussion is confined to situations in which consumers are uncertain of the advertised brand's relative positioning on the *primary featured attribute*. When the ad information is unequivocal about the brand's positioning (e.g., as perhaps with search attributes such as engine size), consumers should tend to rely just on that information. Alternatively, if consumers have prior brand knowledge that they perceive to be definitive, they should tend to rely on that knowledge (Pechmann and Ratneshwar 1991). Only when these potential inputs are not perceived to be sufficient are consumers likely to base their brand judgments, in part, on correlational and/or correspondent inferences.

Key characteristics of the ads are shown in Figure 1. To reiterate, a two-sided ad (see cell A or D) depicts the advertised brand favorably on the primary attribute but unfavorably on the secondary attribute. In many prior studies (Etgar and Goodwin 1982; Settle and Golden 1974; Smith and Hunt 1978), such an ad has been compared with a one-sided ad that features the *same two attributes* and depicts the brand *favorably on both* (cell C or F). An actual advertiser might be able to use either of these two types of ads to promote its brand (cell A or C and cell D or F), but only by referring to different competitor brands. For instance, a two-sided ad might claim that a not-from-concentrate juice is higher in quality but more expensive than juices from concentrate (cell A), whereas a one-sided ad might claim that the brand is higher in quality and less expensive than fresh-squeezed juices (cell C).

Cell C and F ads, however, cannot be used unless a competitor is present that has less favorable ratings than the advertised brand on both the primary and secondary attributes. Such dominated competitors (e.g., a lower

<sup>2</sup>A two-sided ad is unlikely to feature positively correlated attributes because a brand with a favorable rating on one such attribute is not apt to have an unfavorable rating on the other.

Figure 1  
TYPES OF ONE-SIDED AND TWO-SIDED ADS USED IN PRESENT RESEARCH<sup>a</sup>

Primary & secondary attributes believed to be:	Two-sided ads		One-sided ads as in Belch 1981		One-sided ads as in Settle & Golden 1974	
	Depiction of brand on: primary attribute secondary attribute		Depiction of brand on: primary attribute secondary attribute		Depiction of brand on: primary attribute secondary attribute	
Negatively correlated	(Cell A) Favorable	Unfavorable	(Cell B) Favorable	Omitted	(Cell C) Favorable	Favorable
Uncorrelated	(Cell D) Favorable	Unfavorable	(Cell E) Favorable	Omitted	(Cell F) Favorable	Favorable

<sup>a</sup>The primary attribute remained the same; only the secondary attribute was varied to manipulate the type of correlation.

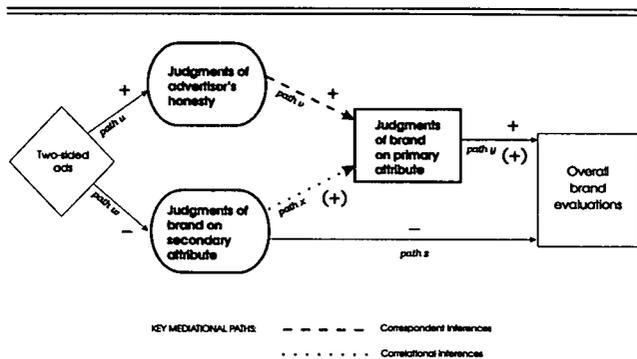
quality, higher cost brand) might not exist. Because using one-sided ads from cells C and F might not always be possible, some researchers (Belch 1981; Swinyard 1981) have instead used as their comparison or control ad a one-sided ad that simply *omits information* about the secondary attribute (see cells B and E). An ad of this type might claim, for example, that a brand is "higher in quality" without discussing price. Though the two types of one-sided ads were not necessarily expected to differ in their effects on overall brand evaluations, both were studied. The goal was to verify that prior null findings resulted from the use of two-sided ads that featured uncorrelated attributes (cell D) and not from the use of a particular type of one-sided comparison ad (E vs. F).

### Hypotheses

*Judgments of the advertiser's honesty.* Advertisers that use two-sided ads should tend to be viewed as unusually honest (Kamins and Assael 1987; Smith and Hunt 1978; Stayman, Hoyer, and Leon 1987; Swinyard 1981). The reason is that it is not normative for an advertiser to disclose unfavorable information about its own brand. Consumers therefore probably do not attribute the advertiser's candor to salient situational factors. In addition, if the disclosure is nontrivial (Settle and Golden 1974; Stayman, Hoyer, and Leon 1987), consumers should realize that the advertiser's forthrightness may result in undesirable consequences such as lost sales. Hence, according to the theory of correspondent inferences (Jones and Davis 1965; Jones and McGillis 1976), consumers should attribute the advertiser's frankness to a dispositional trait of exceptional honesty (see Figure 2, path u). Formally,

- H<sub>1</sub>: Consumers who are exposed to a two-sided ad (in comparison with those who are exposed to one-sided ads) will tend to judge the advertiser to be more honest. This effect for type of ad (two-sided vs. one-sided) is likely to be obtained regardless of whether the two-sided ad features (a) negatively correlated attributes or (b) uncorrelated attributes.

Figure 2  
HYPOTHESIZED EFFECTS OF TWO-SIDED ADS<sup>a</sup>



<sup>a</sup>(+) indicates that the effect is contingent on the primary and secondary attributes being negatively correlated.

*Judgments of the brand on the primary attribute.* Having made the attribution that the advertiser is unusually honest, consumers should tend to interpret its claims differently. Again on the basis of the theory of correspondent inferences, consumers should tend to infer that the claims about the advertised brand's favorable positioning on the primary attribute closely *correspond* to the advertiser's true opinion, rather than being exaggerated or overblown. For ease of exposition, inferences of this type are referred to here as "correspondent inferences." Consumers who make such inferences should judge the brand more favorably on the primary attribute (Figure 2, path v).

What happens when the attributes featured in a two-sided ad are believed to be negatively correlated (vs. uncorrelated)? Even if consumers simply rely on the ad information that the brand has an undesirable level of the secondary attribute (Figure 2, path w), they may tend to infer that it has a *more* desirable level of the *negatively correlated* primary attribute (path x). For instance, simply on the basis of ad information that a brand is expensive, consumers may tend to infer that it is higher in quality. In other words, consumers may tend to rely on "correlational inferences" (Burke et al. 1988; Dick, Chakravarti, and Biehal 1990; Huber and McCann 1982; Johnson and Levin 1985; Lim, Olshavsky, and Kim 1988; Pechmann and Ratneshwar 1991; Yamagishi and Hill 1981), as well as on correspondent inferences, to judge the brand on the primary attribute.

Though inference-making is effortful (Feldman and Lynch 1988), it is possible that a given consumer may be motivated to generate at least one of these two types of inferences and that a group of consumers will generate both types. Consumers may want to rely, in part, on such inferences in the hope of improving the accuracy of their judgments of the brand on the primary attribute, being that these judgments will be a major determinant of their overall brand evaluations (Chaiken 1987). Note that the two types of inferences have the same evaluative

implication: both imply that the brand should be judged more favorably. Hence, a two-sided ad that elicits both types of inferences by featuring negatively correlated attributes (Figure 2, paths v and x) should produce substantially more favorable judgments of the brand on the primary attribute than its one-sided counterparts. A two-sided ad that features uncorrelated attributes and that solely elicits correspondent inferences (path v) should produce only somewhat more favorable primary attribute judgments than its one-sided counterparts.

H<sub>2</sub>: Consumers who are exposed to a two-sided ad (in comparison with those who are exposed to one-sided ads) will tend to judge the advertised brand more favorably on the primary attribute. However, this effect for type of ad (two-sided vs. one-sided) is likely to be even stronger when the two-sided ad features (a) negatively correlated attributes rather than (b) uncorrelated attributes.

*Overall brand evaluations.* If consumers who are exposed to a two-sided ad judge the advertised brand more favorably on the primary attribute, one might also expect them to evaluate the brand more positively overall (see Figure 2, path y). However, an additional factor must be considered—the revelation that the brand has an undesirable level of the secondary attribute may adversely affect overall evaluations (path z). In fact, typically these two effects seem to offset each other so that a two-sided ad is no more effective overall than its one-sided counterparts (Belch 1981; Settle and Golden 1974; Stayman, Hoyer, and Leon 1987). When a two-sided ad features negatively correlated attributes, however, perhaps the improvement in primary attribute judgments (due to the joint effects of correspondent and correlational inferences) will *more* than offset the negative effect of the disclosure about the secondary attribute. (This hypothesis is shown in Figure 2 by the two plus signs on path y and the one minus sign on path z.) Overall brand evaluations might increase even if the two-sided ad has a lesser absolute effect on judgments of the primary versus secondary attribute, as long as the former attribute is sufficiently more important.

H<sub>3</sub>: Consumers who are exposed to a two-sided ad (in comparison with those who are exposed to one-sided ads) will tend to evaluate the advertised brand more positively overall, but generally only when the two-sided ad features (a) negatively correlated attributes rather than (b) uncorrelated attributes.

### Method

*Design and subjects.* A 3 (type of ad) by 2 (type of correlation) between-subjects design was employed. Subjects were 240 undergraduate and graduate business students at a public university in the Southwest. Forty subjects were assigned randomly to each of the six conditions (A–F) depicted in Figure 1.

*Stimulus ads.* The ads promoted a brand of ice cream because pretesting ( $n = 17$ ) indicated that the subject

population consumed ice cream at least once a month and hence ice cream ads would be relevant to them. The promoted brand was fictitious to ensure that subjects had no definitive knowledge of it; it was called J. P. Barnaby's because subjects judged this name to be appropriate. Richness of taste was the primary featured attribute because it was the most important factor the subjects considered when they evaluated ice creams; it was also an experience attribute rather than a search attribute (see preceding discussion and also Ford, Smith, and Swasy 1990).

Number of calories and number of container sizes were the negatively correlated and uncorrelated secondary attributes, respectively. These attributes were about equally important to the subjects when they evaluated ice creams ( $p > .50$ ), and nontrivial, but much less important than richness ( $p$ 's  $< .01$ ). Further, subjects believed that the worse an ice cream was on calories or the more calories it had, the richer it was ( $p > .01$ ), whereas sizes and richness were believed to be unassociated ( $p > .30$ ). (Note that Simplese had not yet been introduced.) Finally, reactive effects from the disclosures were unlikely because it would be understandable for a new, rich-tasting brand to be more caloric and also to come in fewer container sizes.

Six full-page black and white print ads were constructed, all with the same headline ("Introducing J. P. Barnaby's Ice Cream"), illustration (of a stylized ice cream cone), and general layout. The ad copy stated:

Introducing the rich and creamy taste of J. P. Barnaby's Ice Cream. Made from only the freshest ingredients, you'll find J. P. Barnaby's luscious taste extraordinary. So smooth and delicious, you'll savor every spoonful . . . [information about secondary attribute, if provided]. Next time you want to treat yourself, go for the rich creamy goodness of J. P. Barnaby's Ice Cream. J. P. Barnaby's will soon be available in your favorite supermarket!

The two-sided ads provided the following information about the secondary attribute: "Who cares that Barnaby's [has more calories OR comes in fewer sizes] than the other leading brands?" One type of one-sided ad stated: "Barnaby's [has fewer calories OR comes in more sizes] than the other leading brands." The other type of one-sided ad omitted the secondary attribute. Only indirect brand comparisons were made to ensure that consumers would not be unduly skeptical of the ad claims (Belch 1981; Swinyard 1981).

*Procedure and measures.* Subjects volunteered to participate in a "consumer product research study" for which they were asked to read an ad "as you would normally read an ad that you saw in a magazine or newspaper." Then they were instructed to complete a questionnaire but to "feel free to look back over the ad." Thus, if so inclined, subjects could have relied on the ad claims and were not compelled to rely on inferences when judging the advertised brand.

In the questionnaire, subjects were first asked to eval-

uate the brand overall (0 = worst ice cream imaginable; 10 = best ice cream imaginable). Next, they were asked to judge the brand on richness of taste (0 = worst on richness of taste; 10 = best on richness of taste) and on either number of calories (0 = worst in that it has the highest number of calories; 10 = best in that it has the lowest number of calories) or on number of sizes (0 = worst in that it comes in the fewest sizes; 10 = best in that it comes in the most sizes). After making each judgment, subjects were asked to explain how they made it. Next, subjects were asked how likely it was that the ad claims reflected the advertiser's true opinion about the brand (0 = extremely unlikely; 10 = extremely likely). They were also asked to rate the importance of richness of taste and either number of calories or number of container sizes in their evaluations of ice creams (0 = least important; 10 = most important). Finally, they were asked for their beliefs about the correlation between the featured attributes (-1 = perfectly negatively correlated; +1 = perfectly positively correlated). Note that to minimize demand effects, variables were measured in reverse order to their hypothesized relationships.

Two judges later independently coded subjects' explanations for their judgments. A verbatim comment was coded as a correlational inference if a subject indicated that his or her judgment of the brand on the primary attribute was affected by the brand's positioning on the secondary attribute (e.g., "higher calories means a richer flavor"). A verbatim comment was coded as a correspondent inference if a subject indicated that he or she took into account the advertiser's honesty. The few disagreements in the coding ( $n = 5$ ) were resolved by discussion. No subject reported relying on more than one type of inference.

### Main Results

*Manipulation checks.* As expected, subjects judged the primary attribute, richness, to be more important than the secondary attribute, which was either calories (scale: 0 to 10,  $M = 8.28$  vs.  $4.17$ ,  $t = 20.54$ ,  $p < .01$ ) or sizes ( $M = 8.28$  vs.  $4.10$ ,  $t = 25.14$ ,  $p < .01$ ). The latter two attributes were judged to be about equally important ( $t = -.33$ ,  $p > .50$ ). Also as anticipated, subjects judged the correlation between sizes and richness to be close to zero, much weaker than the correlation between calories and richness (scale: -1.0 to +1.0,  $M = .04$  vs.  $-.46$ ,  $t = 14.09$ ,  $p < .01$ ). Finally, the type of ad manipulation was verified. Subjects who were exposed to the two-sided ad (vs. to the one-sided ads) judged the advertised brand less favorably on the secondary attribute ( $p < .01$ ); mean judgments are reported in Table 1.

*ANOVA results.* For each dependent variable, a 3 (type of ad) by 2 (type of correlation) analysis of variance was conducted. For judgments of the advertiser's honesty, a main effect for type of ad (one- vs. two-sided) was anticipated (see  $H_1$ ). For judgments of the brand on the primary attribute, a main effect for type of ad was ex-

Table 1  
STUDY 1 TREATMENT MEANS<sup>a</sup>  
( $n = 40/\text{group}$ )

Dependent variables	Primary and secondary attributes believed to be negatively correlated			Primary and secondary attributes believed to be uncorrelated		
	Depiction of brand on secondary attribute:			Depiction of brand on secondary attribute:		
	Unfavorable (two-sided ad: cell A)	Omitted (one-sided ad: cell B)	Favorable (one-sided ad: cell C)	Unfavorable (two-sided ad: cell D)	Omitted (one-sided ad: cell E)	Favorable (one-sided ad: cell F)
Judgments of brand on secondary attribute	.90**	3.05**	6.60**	2.47**	4.60**	7.68**
Judgments of adver- tiser's honesty	6.07*	4.65	4.95	4.57	4.38	4.60
Judgments of brand on primary attribute	7.78**	6.40	5.68*	5.97	5.97	6.13
Overall brand evaluations	6.95**	6.00	5.63	5.50	5.70	5.88

<sup>a</sup>The cell labels refer to Figure 1.

\*This mean differs significantly ( $p < .05$ ) from the means of the other two types of ads for this dependent variable.

\*\*This mean differs significantly ( $p < .01$ ) from the means of the other two types of ads for this dependent variable.

pected (see  $H_2$ ) and also a type of ad by type of correlation interaction (see  $H_{2a}$  vs.  $H_{2b}$ ). For overall brand evaluations, no main effect for type of ad was expected, only a type of ad by type of correlation interaction (see  $H_{3a}$  vs.  $H_{3b}$ ).

The ANOVA results were consistent with these predictions. Type of ad tended to affect judgments of the advertiser's honesty ( $F = 2.78$ ,  $p = .06$ ) and significantly affected judgments of the brand on the primary attribute ( $F = 8.28$ ,  $p < .01$ ), but it did not significantly influence overall brand evaluations ( $F = 2.30$ ,  $p > .10$ ). The type of ad by type of correlation interaction was significant for judgments of the brand on the primary attribute ( $F = 10.61$ ,  $p < .01$ ) and for overall brand evaluations ( $F = 6.91$ ,  $p < .01$ ), but not for judgments of the advertiser's honesty ( $F = 1.91$ ,  $p > .15$ ). Finally, though unrelated to the hypotheses, there were main effects for type of correlation on all three dependent variables ( $p$ 's  $< .01$ ). The results of the nonorthogonal planned comparisons, conducted by the Dunn-Sidak procedure (Kirk 1982), follow. Table 1 summarizes the treatment means.

*Judgments of the advertiser's honesty.* The results were consistent with  $H_{1a}$ . Subjects who were exposed to the two-sided ad that featured negatively correlated attributes judged the advertiser to be more honest ( $M = 6.07$ ) than did subjects who were exposed to either type of one-sided ad, whether it was the ad that omitted information about the negatively correlated secondary attribute ( $M = 4.65$ ,  $t = 2.85$ ,  $p < .01$ ) or the ad that depicted the brand favorably on that attribute ( $M = 4.95$ ,  $t = 2.25$ ,  $p < .05$ ). Subjects who were exposed to the two types of one-sided ads judged the advertiser about equally on honesty ( $p > .25$ ). The results were not consistent with  $H_{1b}$ . Subjects who were exposed to the two-sided ad that featured uncorrelated attributes did not judge

the advertiser to be any more honest than did subjects who were exposed to the corresponding one-sided ads ( $M = 4.57$  vs.  $4.38$  vs.  $4.60$ ,  $p > .25$ ).

*Judgments of the brand on the primary attribute.*  $H_{2a}$  was supported. Subjects who were exposed to the two-sided ad that featured negatively correlated attributes judged the brand more favorably on the primary featured attribute ( $M = 7.78$ ) than did subjects who were exposed to either type of one-sided ad, whether it was the ad that omitted information about the negatively correlated secondary attribute ( $M = 6.40$ ,  $t = 3.96$ ,  $p < .01$ ) or the ad that depicted the brand favorably on that attribute ( $M = 5.68$ ,  $t = 6.03$ ,  $p < .01$ ). Judgments of the brand on the primary attribute were also more favorable when information about the secondary attribute was omitted rather than favorable ( $t = 2.07$ ,  $p < .05$ ).  $H_{2b}$  was not supported. Subjects who were exposed to the two-sided ad that featured uncorrelated attributes did not judge the brand any more favorably on the primary attribute than did subjects who were exposed to the corresponding one-sided ads ( $M = 5.97$  vs.  $5.97$  vs.  $6.13$ ,  $p > .25$ ).

*Overall brand evaluations.* The findings were congruent with  $H_{3a}$ . Subjects who were exposed to the two-sided ad that featured negatively correlated attributes evaluated the brand more positively overall ( $M = 6.95$ ) than did subjects who were exposed to either type of one-sided ad, whether it was the ad that omitted information about the negatively correlated secondary attribute ( $M = 6.00$ ,  $t = 2.88$ ,  $p < .01$ ) or the ad that depicted the brand favorably on that attribute ( $M = 5.63$ ,  $t = 4.00$ ,  $p < .01$ ). Subjects who were exposed to the two types of one-sided ads did not significantly differ in their overall brand evaluations ( $p > .25$ ). The findings also were congruent with  $H_{3b}$ . Subjects who were exposed to the two-sided ad that featured uncorrelated attributes did not evaluate the brand any more positively

Table 2  
STUDY 1 UNSTANDARDIZED COEFFICIENT ESTIMATES FOR MODEL<sup>a</sup>

Predictor variables	Primary and secondary attributes believed to be negatively correlated		Primary and secondary attributes believed to be uncorrelated	
	Dependent variables:		Dependent variables:	
	Judgments of brand on primary attribute	Overall brand evaluations	Judgments of brand on primary attribute	Overall brand evaluations
Intercept	6.78**	2.02*	5.46**	1.87**
Type of ad <sup>b</sup>	-.58	-.64	-.80	-.19
Judgments of advertiser's honesty	.75**	.01	.56*	.04
Judgments of brand on secondary attribute	-1.01*	.14	-.24	.09
Judgments of advertiser's honesty × type of ad	-.42**	—	-.29*	—
Judgments of brand on secondary attribute × type of ad	.54*	—	.27	—
Judgments of brand on primary attribute	n.a.	.69**	n.a.	.57**
	$R^2 = .52$ $F_{5,74} = 15.91^{**}$	$R^2 = .58$ $F_{4,75} = 26.17^{**}$	$R^2 = .13$ $F_{5,74} = 2.31^*$	$R^2 = .48$ $F_{4,75} = 17.48^{**}$

<sup>a</sup>Dash indicates the coefficient was dropped because it was statistically insignificant and not meaningful theoretically.

<sup>b</sup>Dummy-coded (two-sided ad = 1; one-sided ad = 2).

\* $p < .05$ .

\*\* $p < .01$ .

overall than did subjects who were exposed to the corresponding one-sided ads ( $M = 5.50$  vs.  $5.70$  vs.  $5.88$ ,  $p > .25$ ).

#### Analyses of Potential Mediators

**Overview.** In the analyses to determine the mediators of type of ad, the ads that discussed both the primary and secondary attributes (Figure 1, cells C and F) were used as the one-sided comparison or control ads, rather than the less typical ads that omitted information about the secondary attribute (B and E). Using only one type of comparison ad facilitated interpretation of the regression coefficients and allowed for contrasts with study 2 (which did not include both types of one-sided ads because they had not produced significantly different overall brand evaluations). The findings were not affected.<sup>3</sup>

**Mediators of judgments of the brand on the primary attribute.** The positive impact of a two-sided (vs. one-sided) ad on judgments of the brand on the primary at-

tribute was expected to be mediated by judgments of the advertiser's honesty (Figure 2, path v) and by judgments of the brand on the secondary attribute when the attributes were negatively correlated (path x). Hence, the following equation was estimated.

$$(1) \quad \text{PRIMARY ATTRIBUTE} = b_0 + b_1 (\text{AD}) \\ + b_2 (\text{HONESTY}) + b_3 (\text{SECONDARY ATTRIBUTE}) \\ + b_4 (\text{HONESTY}) (\text{AD}) \\ + b_5 (\text{SECONDARY ATTRIBUTE}) (\text{AD}) + \text{ERROR}$$

where PRIMARY ATTRIBUTE = judgments of the brand on the primary attribute, AD = type of ad, dummy coded (1 = two-sided ad, 2 = one-sided ad), HONESTY = judgments of the advertiser's honesty, and SECONDARY ATTRIBUTE = judgments of the brand on the secondary attribute. The coefficient  $b_0$  was included to ensure accuracy in estimation (Cohen and Cohen 1983), whereas  $b_1$  was included to demonstrate that there was no independent effect for type of ad.

When equation 1 was estimated for the ads that featured *negatively correlated* attributes, the result was significant:  $R^2 = .52$ ,  $F_{5,74} = 15.91$ ,  $p < .01$  (see Table 2). There was no independent impact for type of ad, as expected ( $b_1 = -.58$ ,  $p > .60$ ). The predicted mediators produced significant effects, namely judgments of the advertiser's honesty ( $b_2 = .75$ ,  $p < .01$ ) and judgments of the brand on the secondary attribute ( $b_3 = -1.01$ ,  $p < .05$ ). Finally, the relationship between each of these mediators and the dependent variable was contingent on type of ad ( $b_4 = -.42$ ,  $p < .01$ ;  $b_5 = .54$ ,  $p < .05$ ).

<sup>3</sup>The main difference between the two types of one-sided ads was as follows. Subjects judged the brand less favorably on the secondary attribute when information about that attribute was omitted versus favorable. At best, when the secondary attribute was omitted, subjects inferred that the brand's rating on it was slightly below average ( $M = 4.60$  on a 0-10 scale). They inferred that the brand's rating was even lower when it was also described favorably on the negatively correlated primary attribute, apparently because of correlational inferences ( $M = 3.05$  and  $6.40$ , respectively;  $b = -.24$ ,  $p < .05$ ). The secondary attribute was not a determinant of overall brand evaluations, however (see Table 2). Thus subjects were unlikely to have been motivated enough to infer the brand's rating on it spontaneously when it was omitted; they probably did so only when prompted (Lim, Olshavsky, and Kim 1988).

For the two-sided ad, judgments of the brand on the primary attribute were enhanced by more favorable judgments of the advertiser's honesty ( $b = .33, p < .01$ ) as well as by less favorable judgments of the brand on the negatively correlated secondary attribute ( $b = -.46, p < .05$ ). In contrast, for the one-sided ad, judgments of the brand on the primary attribute were not influenced by judgments of the advertiser's honesty ( $b = .09, p > .40$ ) or by judgments of the brand on the secondary attribute ( $b = .08, p > .50$ ). Apparently, when subjects were viewing the one-sided ad, they did not make spontaneous attributions about the advertiser's honesty that affected their interpretation of the ad claims, presumably because the advertiser did not deviate from normative standards (Jones and Davis 1965). Many of these subjects also did not seem to take into account that the brand was lower in calories when rating it on richness (though some did, as shown by the treatment means), perhaps because it is increasingly feasible to produce low calorie foods that taste rich.<sup>4</sup>

When equation 1 was reestimated for the ads that featured *uncorrelated* attributes, the result was again significant, though less variance was explained:  $R^2 = .13, F_{5,74} = 2.31, p < .05$  (again, see Table 2). There was no direct effect for type of ad ( $b_1 = -.80, p > .50$ ) or for judgments of the brand on the secondary attribute ( $b_3 = -.24, p > .40$ ), only for judgments of the advertiser's honesty ( $b_2 = .56, p < .05$ ), and this relationship was dependent on type of ad ( $b_4 = -.29, p < .05$ ). For the two-sided ad, higher judgments of the advertiser's honesty were predictive of more favorable judgments of the brand on the primary attribute ( $b = .27, p < .05$ ), perhaps indicating some reliance on correspondent inferences, though this was not reflected in the treatment means. For the one-sided ad, as before, judgments of the advertiser's honesty did not affect judgments of the brand on the primary attribute ( $b = -.01, p > .90$ ).

*Mediators of overall brand evaluations.* The relative impact of a two-sided (vs. one-sided) ad on overall brand evaluations was expected to be mediated by judgments of the brand on the primary attribute (Figure 2, path y) and by judgments of the brand on the secondary attribute (path z). Hence, the following equation was estimated.

$$(2) \quad \text{OVERALL EVALUATION} = b_0 + b_1 (\text{AD}) \\ + b_2 (\text{HONESTY}) + b_3 (\text{SECONDARY ATTRIBUTE}) \\ + b_4 (\text{PRIMARY ATTRIBUTE}) + \text{ERROR}$$

The coefficient  $b_0$  was included, as before, to ensure accuracy in estimation;  $b_1$  and  $b_2$  were included to dem-

onstrate, respectively, that there was no independent effect for type of ad or for judgments of the advertiser's honesty.

When equation 2 was estimated for the ads that featured *negatively correlated* attributes, the result was significant:  $R^2 = .58, F_{4,75} = 26.17, p < .01$  (refer to Table 2). As anticipated, there was no independent effect for type of ad ( $b_1 = -.64, p > .25$ ) or for judgments of the advertiser's honesty ( $b_2 = .01, p > .80$ ). Overall brand evaluations were enhanced solely by more favorable judgments of the brand on the primary attribute ( $b_4 = .69, p < .01$ ). The same pattern was obtained for ads that featured *uncorrelated* attributes:  $R^2 = .48, F_{4,75} = 17.48, p < .01$ . There was no direct effect for type of ad ( $b_1 = -.19, p > .60$ ) or for judgments of the advertiser's honesty ( $b_2 = .04, p > .50$ ), only for judgments of the brand on the primary attribute ( $b_4 = .57, p < .01$ ). It is interesting that overall brand evaluations were not significantly affected by judgments of the brand on the secondary attribute ( $p > .10$ ).

*Verbatim comments about judgments of the brand on the primary attribute.* Subjects' verbatim comments also suggest that correlational inferences played an important role in mediating the effects of the two-sided ad that featured negatively correlated attributes. Forty percent (16/40) of the subjects who were exposed to this two-sided ad indicated that they judged the brand more favorably on the primary attribute because it had an undesirable level of the secondary attribute. Note that only 13% (5/40) of subjects who were exposed to the corresponding one-sided ad indicated that they judged the brand less favorably on the primary attribute because it had a desirable level of the secondary attribute (see footnote 4). In all cases, subjects' judgments were consistent with their verbatim comments: subjects claiming to have judged the brand more (less) favorably actually rated it above (below) the mean.

None of the subjects indicated that they took into account the advertiser's honesty when judging the brand on the primary attribute (or overall). Perhaps they were unaware of relying on correspondent inferences; alternatively, perhaps they were unable or unwilling to articulate (Chaiken 1987) having relied on this particular type of inference.

*Further substantiating evidence.* Additional analyses were conducted to determine whether further evidence of the theorized relationships among the variables could be obtained and to examine other possible relationships. First, in contrast to Ha and Hoch's (1989) finding, the experimental manipulations were found not to have a significant effect on attribute importance weights ( $p > .10$ ). Also, the two-sided ad featuring negatively correlated attributes was found to be even more persuasive to subjects with stronger covariation beliefs. Those whose beliefs about the correlation between the featured attributes were more extreme than average ( $< -.46$  on the  $-1$  to  $+1$  scale) judged the brand even more favorably on the primary attribute than did subjects at large ( $M =$

<sup>4</sup>In a followup study ( $n = 35$ ), subjects indicated that they had much stronger beliefs ( $p < .01$ ) about the relationship between high (vs. low) calories and richness of taste in ice cream. They tended to believe that high calories meant a richer taste, because otherwise the product would not even be marketed. However, they did not necessarily believe that low calories meant a less rich (bland) taste.

8.52 vs. 7.78), and they evaluated the brand more positively overall ( $M = 7.65$  vs.  $6.95$ ). These results further substantiate that correlational inferences played an important mediating role.

As well, subjects' verbatim comments were reexamined. The goal was to ascertain whether subjects who were exposed to the two-sided ad featuring negatively correlated attributes had relied on *correlational* inferences to judge the brand even on the *secondary* attribute. In effect, at issue was whether the arrow labeled "path x" in Figure 2 should point in the opposite direction as well. Apparently not. Only 5% (2/40) of the subjects indicated having relied on the primary attribute information to judge the brand on the negatively correlated secondary attribute; 83% (33/40) stated that they judged the brand on the basis of the secondary attribute information in the ad itself. In any case, because both the one- and two-sided ads depicted the brand favorably on the primary attribute, correlational inferences based on this information would not have caused differential effects due to type of ad.

Also investigated was whether subjects had relied on *correspondent* inferences to judge the brand on the *secondary* attribute. Here, the goal was to ascertain whether there should be an additional arrow in Figure 2 pointing from judgments of the advertiser's honesty to judgments of the brand on the secondary attribute. For the ads that featured negatively correlated attributes, consistent with subjects' comments reported above, it was determined that judgments of the brand on the secondary attribute were affected largely by type of ad ( $b = 4.43, p < .01$ ) and only marginally by judgments of the advertiser's honesty ( $b = -.36, p = .08$ ) and the ad by honesty interaction ( $b = .22, p = .12$ ). Likewise, for the ads that featured uncorrelated attributes, judgments of the brand on the secondary attribute were influenced mainly by type of ad ( $b = 3.71, p < .01$ ) rather than by judgments of the advertiser's honesty ( $b = -.45, p = .15$ ) or the ad by honesty interaction ( $b = .33, p = .10$ ). Even to the extent that correspondent inferences of this type may have been elicited, they cannot explain why a two-sided ad would have produced more positive overall brand evaluations—higher judgments of the advertiser's honesty actually tended to lead to *less favorable* judgments of the brand on the secondary attribute.

### Summary and Discussion

The two-sided ad that featured negatively correlated attributes was more effective than its one-sided counterparts at enhancing judgments of the advertised brand on the primary featured attribute and, thereby, overall brand evaluations. Subjects inferred that the brand had a more desirable level of the primary attribute (that it was richer) in part simply because it had an undesirable level of the secondary attribute (it was higher in calories, a correlational inference) and also because they viewed the advertiser as unusually honest (a correspondent inference). Different subjects may have relied on each type of in-

ference or perhaps some subjects relied on both types; it is difficult to ascertain because only correlational inferences were reported by subjects. It is interesting that the advertiser was judged to be more honest even though the disclosure in the ad was quite flippant ("Who cares that Barnaby's has more calories . . .?"). This wording was used, in part, to enhance realism but also to increase the likelihood that subjects would be cognizant of the advertiser's ulterior motives. That the effectiveness of the two-sided ad was not adversely affected suggests that consumer suspicion is not likely to be a problem, at least not at the present time (cf. Pechmann 1990).

The two-sided ad that featured uncorrelated attributes was no more effective than its one-sided counterparts. In this case, the brand's shortcoming (that it came in fewer sizes) did not directly enhance its positioning on the primary attribute (again, richness), because these attributes were believed to be uncorrelated. To disclose such a shortcoming did not even enhance perceptions of the advertiser's honesty. Though one could argue that to admit that a brand comes in fewer sizes is trivial in relation to admitting that it is higher in calories, subjects in the pretest and main study indicated that the two attributes were equally important to them. Further, both number of calories and number of sizes are search attributes in that they often can be determined by inspection without the necessity of brand trial (Ford, Smith, and Swasy 1990; Nelson 1970). However, consumers may have reacted differently to these disclosures because calorie content is not necessarily listed on the packaging, whereas the number of container sizes in stock should be readily apparent. An advertiser may not seem very candid when it reveals an obvious shortcoming such as fewer options in terms of container sizes because negative outcomes, such as reduced sales, would have resulted in any case (Jones and Davis 1965; Jones and McGillis 1976). Several studies seem to have found that disclosures of this nature—for example, "comes in fewer colors" (see Kamins and Assael 1987; Settle and Golden 1974; Smith and Hunt 1978)—can enhance the perceived honesty of the advertiser, but such an effect was not observed in study 1 (i.e.,  $H_{1b}$  was not supported).

Consequently, a second study was conducted to address two unresolved issues. First, when a two-sided ad features uncorrelated attributes, will correspondent inferences about the advertiser's unusual honesty in and of themselves enhance judgments of the brand on the primary attribute (as predicted by  $H_{2b}$ )? Second, if so, will this effect be too weak to offset the negative impact of the disclosure on overall brand evaluations (as predicted by  $H_{3b}$ )? Prior studies have not adequately addressed these issues because they did not explicitly investigate two-sided ads that featured uncorrelated attributes.

### STUDY 2

#### Method

Eighty new subjects (40 per condition) were assigned randomly to view either a two-sided ad or a one-sided

ad that featured uncorrelated attributes (Figure 1, cells D and F, respectively). The two-sided ad revealed that the advertised brand was higher in sodium; the one-sided ad stated that it was lower. Otherwise, studies 1 and 2 were identical. Sodium was chosen as the secondary attribute because in many ways it is comparable to the calories attribute used in study 1. Sodium content, like calorie content, is technically a search attribute but is not necessarily listed on the packaging. In addition, pretest subjects ( $n = 15$ ) indicated that sodium was just as important as calories ( $p > .50$ ), but much less important than richness ( $p < .01$ ), in their evaluations of ice creams. These subjects also judged the association between sodium and richness to be nonsignificant ( $p > .30$ ). Finally, reactive effects from the sodium claims were not expected because an increasing number of ads discuss sodium and because many ice creams are somewhat high in sodium.

*Main Results*

*Manipulation checks.* As in the pretest, subjects judged richness to be more important than sodium ( $M = 8.07$  vs.  $4.21$ ,  $t = 16.47$ ,  $p < .01$ ). Further, they judged sodium to be just about as important as study 1 subjects had judged calories to be ( $M = 4.17$ ). These subjects also judged the association between sodium and richness to be very weak—in fact, close to zero ( $M = -0.11$ ,  $SD = .36$ )—and much weaker than study 1 subjects had judged the correlation between calories and richness to be ( $M = -.46$ ). Finally, as before, subjects who were exposed to the two-sided (vs. one-sided) ad judged the advertised brand less favorably on the secondary attribute ( $p < .01$ ); mean judgments are reported in Table 3.

*Tests of hypotheses.* As anticipated, subjects who were

**Table 3**  
STUDY 2 TREATMENT MEANS<sup>a</sup>  
( $n = 40$ /group)

Dependent variables	Primary and secondary attributes believed to be uncorrelated	
	Depiction of brand on secondary attribute:	
	Unfavorable (two-sided ad: cell D)	Favorable (one-sided ad: cell F)
Judgments of brand on secondary attribute	1.83**	6.40
Judgments of advertiser's honesty	5.32*	3.97
Judgments of brand on primary attribute	6.93**	5.72
Overall brand evaluations	4.85**	5.97

<sup>a</sup>The cell labels refer to Figure 1.

\*This mean differs significantly ( $p < .05$ ) from the mean of the other type of ad for this dependent variable.

\*\*This mean differs significantly ( $p < .01$ ) from the mean of the other type of ad for this dependent variable.

**Table 4**  
STUDY 2 UNSTANDARDIZED COEFFICIENT ESTIMATES FOR MODEL<sup>a</sup>

Predictor variables	Primary and secondary attributes believed to be uncorrelated	
	Judgments of brand on primary attribute	Overall brand evaluations
Intercept	5.75**	.54
Type of ad <sup>b</sup>	-.38	.96*
Judgments of advertiser's honesty	.44**	-.06
Judgments of brand on secondary attribute	-.46	.15*
Judgments of advertiser's honesty × type of ad	-.05	—
Judgments of brand on secondary attribute × type of ad	.18	—
Judgments of brand on primary attribute	n.a.	.49**
	$R^2 = .30$ $F_{5,74} = 8.11**$	$R^2 = .43$ $F_{4,75} = 13.91**$

<sup>a</sup>Dash indicates the coefficient was dropped because it was statistically insignificant and not meaningful theoretically.

<sup>b</sup>Dummy-coded (two-sided ad = 1; one-sided ad = 2).

\* $p < .05$ .

\*\* $p < .01$ .

exposed to the two-sided (vs. one-sided) ad judged the advertiser to be more honest ( $M = 5.32$  vs.  $3.97$ ,  $t = 2.44$ ,  $p < .05$ ). They also judged the brand more favorably on the primary attribute ( $M = 6.93$  vs.  $5.72$ ,  $t = 2.72$ ,  $p < .01$ ). Nevertheless, they actually evaluated the brand less positively overall ( $M = 4.85$  vs.  $5.97$ ,  $t = -3.19$ ,  $p < .01$ ) (again, see Table 3).

*Analyses of Potential Mediators*

*Mediators of judgments of the brand on the primary attribute.* Equation 1 (see study 1) was reestimated to determine the inputs used to judge the brand on the primary attribute. The result was significant:  $R^2 = .30$ ,  $F_{5,74} = 8.11$ ,  $p < .01$  (see Table 4). Consistent with expectations, there was no independent effect for type of ad ( $b_1 = -.38$ ,  $p > .50$ ) and only a marginal effect for judgments of the brand on the secondary attribute ( $b_3 = -.46$ ,  $p = .07$ ).<sup>5</sup> Primary attribute judgments were influenced mainly by judgments of the advertiser's honesty ( $b_2 = .44$ ,  $p < .01$ ) and in this case the relationship was not contingent on type of ad ( $b_4 = -.05$ ,  $p > .60$ ). In effect, even some of the subjects who were exposed to the one-sided ad apparently made spontaneous attri-

<sup>5</sup>Because less favorable secondary attribute judgments led to more favorable primary attribute judgments, this effect cannot explain why the two-sided (vs. one-sided) ad produced less positive overall brand evaluations.

butions about the advertiser's honesty. These subjects may have been suspicious of the advertiser's claim that its brand was lower than others in sodium because they may have thought that all ice creams were about the same on sodium. Only one subject actually indicated relying on correspondent inferences to judge the brand on the primary attribute, however.

*Mediators of overall brand evaluations.* Equation 2 (see study 1) was then reestimated to determine the variables that had affected overall brand evaluations, and again the result was significant:  $R^2 = .43$ ,  $F_{4,75} = 13.91$ ,  $p < .01$  (again see Table 4). As before, there was no independent effect for judgments of the advertiser's honesty ( $b_2 = -.06$ ,  $p > .35$ ), though there was an independent effect for type of ad ( $b_1 = .96$ ,  $p < .05$ ), which indicates that in this case the predicted mediators do not fully account for the observed ad effects. Further, overall brand evaluations were found to be enhanced by higher judgments of the brand not only on the primary attribute ( $b_4 = .49$ ,  $p < .01$ ), but also on the secondary attribute ( $b_3 = .15$ ,  $p < .05$ ). In fact, 36% (29/80) of study 2 subjects reported that their overall brand evaluations were affected by the brand's positioning on the secondary attribute versus only 8% (6/80) of study 1 subjects who were exposed to comparable ads. Additional followup analyses were conducted as in study 1, but no significant results were obtained. In particular, judgments of the advertiser's honesty were not predictive of judgments of the brand on the secondary attribute ( $p > .25$ ).

#### *Summary and Discussion*

The two-sided (vs. one-sided) ad enhanced judgments of the advertised brand on the primary featured attribute, apparently because of the advertiser's perceived honesty (i.e., correspondent inferences). Notwithstanding, subjects who were exposed to the two-sided ad evaluated the brand less positively overall. Why? The featured attributes were uncorrelated, so, naturally, correlational inferences tended not to be elicited. That is, most subjects did not tend to judge the brand any more favorably on richness simply because it was higher in sodium. In addition, revealing that the brand was higher in sodium had a direct negative impact on subjects' overall brand evaluations.

That this disclosure adversely affected brand evaluations demonstrates more than just the simple point that care must be taken to select a relatively unimportant secondary attribute on which to depict the brand unfavorably (Stayman, Hoyer, and Leon 1987). In fact, this result illustrates that it is *not sufficient* merely to consider the importance the secondary attribute. Remember that subjects had indicated that sodium was relatively unimportant in their evaluations of ice creams, as unimportant as calories had been to study 1 subjects. It seems that study 2 subjects were intolerant of the brand's high sodium content because they felt this shortcoming was inexcusable; granted the brand was richer, but richness and sodium were believed to be uncorrelated. Hence,

another factor that may moderate the effectiveness of a two-sided ad is the possibility that consumers will view the brand's shortcoming as preventable and thus unacceptable. Apparently this factor is most likely to detract from the effectiveness of two-sided ads that feature uncorrelated attributes. When consumers believe the featured attributes to be highly negatively correlated, they should realize that the brand's shortcoming is almost inevitable (e.g., that higher quality costs more).

### GENERAL DISCUSSION

#### *Important Moderating Variables*

Even early studies (e.g., Settle and Golden 1974) recognized that the effectiveness of a two-sided ad is likely to be contingent on the importance of the secondary attribute on which the advertised brand is to be depicted unfavorably. An advertiser that reveals a trivial brand shortcoming is not apt to be viewed as very honest, thereby possibly precluding any positive effects from using a two-sided appeal (Stayman, Hoyer, and Leon 1987). However, to disclose a more serious brand shortcoming may negatively affect consumers' overall brand evaluations. For instance, a two-sided ad claiming that a grocery store offers lower prices but less service will not be effective unless consumers in the target market are willing to make such a tradeoff (see Swinyard 1981).

The research reported here was conducted to determine whether the relative effectiveness of two-sided ads might also be contingent on whether the primary and secondary featured attributes are believed to be negatively correlated or uncorrelated. This moderating variable was found to be important (see also Pechmann and Ratneshwar 1991), as well as two additional variables—the possibility that consumers will determine the brand's shortcoming prior to purchase and/or perceive the brand's shortcoming as inexcusable. Specific findings are summarized next.

In study 1, the two-sided ad that featured negatively correlated attributes disclosed that a rich-tasting brand was higher in calories. Otherwise, subjects might not have known about this shortcoming, because nutritional labeling is not yet required (and because brands that purport to be rich are not necessarily more caloric; most brands claim to be rich). Subjects tended to judge the advertiser to be more honest, which thereby enhanced their judgments of the advertised brand on the primary attribute (richness) as predicted by the theory of correspondent inferences. Subjects also tended to judge the brand more favorably on the primary attribute simply because it had an undesirable level of the secondary attribute (it was more caloric), on account of correlational inferences. Presumably because of the additive effects of these two types of inferences on primary attribute judgments, the two-sided ad was more effective than its one-sided counterparts at enhancing overall brand evaluations. The brand's shortcoming did not adversely affect overall evaluations because calorie content, though

not trivial, was much less important than richness. Further, it was understandable, and thus acceptable, that such a rich brand was more caloric.

For the two-sided ads that featured uncorrelated attributes, *correlational* inferences naturally did not play a key role. However, in study 2, when adverse information was disclosed that otherwise might not have been known (about sodium), subjects judged the advertiser to be more honest. They also judged the brand more favorably on the primary attribute, apparently because of correspondent inferences. Nevertheless, subjects evaluated the brand less positively overall on account of its shortcoming. Though sodium was much less important than richness, the fact that the brand was rich tasting was no excuse for its being higher in sodium. Conceivably, a two-sided ad that features uncorrelated attributes could have a positive impact on overall brand evaluations, but designing such an ad appears to be difficult. A major problem is that excusable shortcomings tend to involve negatively correlated (vs. uncorrelated) attributes.

In the future, it might be particularly interesting to study two-sided ads that feature negatively correlated attributes and that also reveal shortcomings that would have been apparent prior to purchase. The two-sided ad used by Etgar and Goodwin (1982) is a good example. The ad disclosed that the higher quality advertised brand was more expensive, but its relative price would have been determinable at the point of purchase anyway. Subjects who were exposed to this ad (vs. to a one-sided ad) did *not* judge the advertiser to be any more honest, but they judged the brand to be higher in quality and also evaluated the brand more positively overall. Hence, it appears that correspondent inferences were not elicited and that brand judgments were enhanced *solely by correlational inferences*. An attempt to replicate this finding would be useful.

Other researchers have also recommended that two-sided direct comparative ads be studied further because they might be particularly persuasive, though the data have not been very supportive (Belch 1981; Swinyard 1981). Research on this issue that also takes into account the moderating variables identified here should help to clarify matters. In addition, the use of two-sided messages in personal selling should be investigated. In certain situations, it might be beneficial for a seller to acknowledge that one of its products has a shortcoming to establish rapport with the buyer and facilitate future sales. Finally, both types of one-sided comparison ads depicted in Figure 1 warrant further consideration for the reasons delineated at the onset, though in study 1 they did not differ significantly in their effects on overall brand evaluations.

To summarize, on the basis of the findings reported here, it appears to be most beneficial (and least risky) to use a two-sided ad that depicts the advertised brand unfavorably on a relatively unimportant, but nontrivial, attribute that is negatively correlated with the primary featured attribute. In addition, though perhaps somewhat

counterintuitive, it seems to be advantageous to disclose a shortcoming that otherwise might not be apparent prior to purchase so as to ensure that correspondent inferences are elicited. The two-sided ads that Kamins recently found to be so effective (Kamins 1989; Kamins et al. 1989) appear to have these desirable characteristics, as do many of the two-sided ads that actual advertisers use. For example, Carl's Jr. (a West Coast fast food chain) has advertised that, though its customers have to wait longer, the wait is worthwhile because of the quality of its food. Carl's apparently hopes that disclosing the longer wait time will cause consumers to judge the quality of its food to be higher. Consumers may well do so, both because Carl's is so honest and because wait time and food quality tend to be viewed as negatively correlated.

#### *Inference-Making in Real-World Contexts*

Other studies (e.g., Dick, Chakravarti, and Biehal 1990; Simmons and Lynch 1991; Lim, Olshavsky, and Kim 1988) have not found much evidence that subjects spontaneously rely on correlational inferences when evaluating brands. Several factors may have increased inference-making in the current investigations. These factors also are likely to be operative in many real-world situations. First, the calorie information may have been viewed as diagnostic (Feldman and Lynch 1988) because subjects believed the correlation between calories and richness to be relatively strong. In some prior studies, subjects' covariation beliefs may have been weaker (Lim, Olshavsky, and Kim 1988). Second, the inferential rule that was pertinent to the current judgment task ("higher calorie foods taste richer") may be relatively accessible in memory (Feldman and Lynch 1988) because it may be used quite frequently. Third, it is likely that subjects were motivated to rely partially on inferences to judge the brand on the primary attribute because this attribute was a major determinant of their overall brand evaluations (Chaiken 1987). However, information on the primary attribute was available in the ad (rather than absent), which arguably should have reduced the likelihood of subjects' reliance on inferences when making their primary attribute judgments. The fact that subjects seemed to rely on inferences anyway suggests that inference-making is not limited to when subjects are faced with incomplete attribute arrays, though most prior studies have focused on this scenario (e.g., Ford and Smith 1987; Johnson 1987; Johnson and Levin 1985; Lim, Olshavsky, and Kim 1988; Meyer 1981; Simmons and Lynch 1991).

Subjects in the current investigations also may have tended to rely partially on inferences because they had to judge the brand on an inherently ambiguous experience attribute, richness of taste (Ha and Hoch 1989), and because the attribute information was embedded in an ad with an obvious persuasive intent. Generally, the more ambiguous the product information (Pechmann and Ratneshwar 1992; Ratneshwar, Shocker, and Stewart 1987) and the less reliable its source (Wansink 1989), the more

likely consumers will be to rely on additional cognitive inputs or inferences to interpret that information. On this basis, though, subjects who were exposed to the more credible two-sided ads presumably should have relied *less* on inferences than those who were exposed to the one-sided ads. In fact, the reverse occurred. The implication is that even when relatively credible information is provided, consumers may partially rely on inferences to interpret that information.

Finally, correlational inferences seem to have been elicited spontaneously by the juxtaposition of information about negatively correlated attributes. That is, the meaning of the ad information about the brand's primary attribute positioning apparently was altered by the brand's positioning on the negatively correlated secondary attribute. Note that such an effect is akin to a "context effect" (Huber and Puto 1983) in some respects. Further, it occurred not only when the brand's purported attribute ratings were perhaps somewhat implausible ("rich but lower in calories"), but also when its ratings were very plausible ("rich and higher in calories"). This pattern of findings is interesting because one might expect a greater reliance on inferences when a brand's purported attribute ratings are less realistic.

#### *Managerial Implications*

Managers often cannot manufacture brands that have optimal levels of all important attributes; because of technological barriers, a desirable level of one attribute may preclude a desirable level of another (e.g., rich-tasting ice cream, perhaps until very recently, could not be low in calories). When a brand has a favorable positioning on one attribute but an unfavorable positioning on a negatively correlated attribute, typically it will be marketed to consumers who are willing to make the required tradeoff (e.g., a rich-tasting, high calorie ice cream is marketed to consumers who want to indulge themselves). Nevertheless, it is not immediately apparent whether ads promoting such a brand should disclose its shortcoming. For instance, should a rich-tasting ice cream's high calorie content be revealed or should the ad simply discuss the brand's rich taste? Though perhaps somewhat counterintuitive, the findings reported here suggest that the former approach might be more effective. Assuming that the target consumers are willing to make a tradeoff on the secondary attribute (calories) to get more of the primary attribute (rich taste), the advertiser's main goal probably should be to enhance perceptions of the brand on the primary attribute. The advantage of using a two-sided ad that depicts the brand unfavorably on the negatively correlated secondary attribute is that consumers are likely to rely on this information (i.e., on correlational inferences) as well as on the advertiser's unusual honesty (i.e., on correspondent inferences) to judge the brand on the primary attribute. Both types of inferences imply that the brand should be judged more favorably on the primary attribute.

What if technological barriers are overcome and the

two attributes are no longer negatively correlated? For instance, after this research was conducted, a fat substitute (Simplese) was introduced that purportedly makes it possible for ice cream to be rich tasting and yet low in calories. Nevertheless, at least in the short run, consumers may continue to believe that these attributes are negatively correlated (i.e., that a low calorie ice cream will be bland tasting). Considering this possibility, should an advertiser attempt to persuade consumers that its brand has desirable levels of both attributes? In the present research, describing a brand favorably on a negatively correlated secondary attribute (as low in calories) detracted slightly from its rating on the primary attribute (richness)—once again, apparently because of correlational inferences. However, this undesirable side effect was not strong enough to detract markedly from overall brand evaluations. In the long run, describing the brand favorably on both attributes might even prove advantageous, because doing so presumably will facilitate the updating of consumers' outmoded covariation beliefs. This process of marketer-induced belief updating may explain why consumers seem to believe that certain attribute correlations are asymmetrical—for instance, that lower calorie ice cream is not necessarily less rich tasting though higher calorie ice cream generally is richer tasting.

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