Beauty and the Beholder: Toward an Integrative Model of Communication Source Effects

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We present a framework applicable to market communications that prominently feature the message source, with little or no argumentation. Based on dual-process theories and the recent literatures on resource matching and bias correction, we argue that source effects occur through one or more of the following three processes: peripheral/heuristic processing of source as a cue, central/systematic processing of source as product arguments, and correction of source biases. This three-process model sets boundary conditions for the existing source models (i.e., main-effect models and source-by-product interaction models) and explains negative source effects.

When and how do the characteristics of a message source (endorser, spokesperson, model, or word-of-mouth communicator) influence consumer attitudes? Extant theories on source effects fail to converge. Some suggest constant attitudinal impacts (e.g., Hovland and Weiss 1951). Others argue that source effects depend on the product category (e.g., Lynch and Schuler 1994). Still other evidence finds that positive sources may even negatively influence attitudes (Bochner and Insko 1966). In the context of source-dominated communications, with predictions from the elaboration likelihood model (ELM), we integrate empirical source effect phenomena.

Early investigation of source effects focused on main effects (e.g., Hovland and Weiss 1951), with source characteristics exerting the same attitudinal impact regardless of communication topic or product category. Source characteristics with far-reaching attitudinal implications were identified (McCracken 1989), including source credibility (i.e., expertise and trustworthiness) and attractiveness (i.e., familiarity, likability, and/or similarity). However, the main-effect-model assumption of topic-invariant source effects appears too rigid, especially as applied to marketing or consumer contexts. In a review (Wilson and Sherrell 1993), only 58% of the cited main effects (223 of 383) were statistically significant.

Another class of models (mainly in the consumer/marketing research literature) proposes interactions between source characteristics and product category. Accordingly, a source feature is effective only if matched with relevant products (the match-up hypotheses; see Lynch and Schuler 1994). Physically attractive models are effective for beauty products—for example, perfume (Baker and Churchill 1977) or razors (Kahle and Homer 1985)—but not necessarily for books (Caballero and Pride 1984) or computers (Kamins 1990). McCracken’s (1989) cultural meaning transfer model of celebrity endorsement is consistent with this view. So long as consumers have different beliefs for different products, the same source may have different effects, depending on the product. Wilson and Sherrell (1993), though, report that only 41% (149 out of 362) of the interaction effects they cited are statistically significant. Hence, traditional source effect theories (predicting either main effects or interaction effects) appear too simplistic to account for the data.

Application of the ELM (Petty and Cacioppo 1986) and HSM (Chaiken 1980) suggests a third model of source effects. Depending on the level of involvement, persuasion may occur through either an effortful, systematic, elaboration-based central route or a less effortful, association- or heuristic-based peripheral route. The multiple-roles postulate of the ELM (Petty and Wegener 1998, 1999) suggests that source effects may occur via either the peripheral route,
if source serves as a peripheral cue, or the central route, if source serves as a product-advocacy argument. Hence, the multiple-roles postulate, with source effects a result of consumers processing source information (e.g., thoughts and feelings evoked by the source), upholds multiple source-effect hypotheses and may resolve the discrepancies between the source-effect models described. We offer a framework in figure 1 and generate hypotheses below.

The ability and motivation to process information determine elaboration likelihood or depth of processing (Petty and Cacioppo 1986), given opportunity to process the information. Ability is determined by both situational factors (e.g., distraction or repetition) and individual differences (e.g., knowledge), whereas motivation is influenced solely by individual differences, such as need for cognition (NFC; Cacioppo and Petty 1982) and personal relevance of the communication (Petty and Wegener 1999). Personal relevance of communication may be either situational (e.g., due to task relevance manipulation) or chronic in nature. Product category is a key determinant of enduring involvement and motivation for consumers (Celsi and Olson 1988).

When cognitive resources are constrained (due to low motivation and/or low ability), consumers spend fewer resources processing information, by definition (i.e., low-resource processing). Source perceptions may influence product attitudes in multiple ways, such as category-based responses (Fiske and Neuberg 1990), well-learned heuristics (Chaiken 1980), cognitive balance (Heider 1958), or associations (see Petty and Cacioppo 1986). Thus, if source features are affectively positive (e.g., attractive) or consistent with well-practiced, positive judgment heuristics (e.g., "experts are believable"), positive source effects will likely result. Since low-resource/low-involvement consumers are unlikely to process source information further, resulting source effects are unlikely to depend on the product category.

**H1:** When the level of cognitive resources available for information processing is relatively low, positive source characteristics, either affectively or heuristically, will positively influence product attitudes, irrespective of product category.

Consistent with traditional main-effect models, this effect is expected only when cognitive resources are limited, setting a boundary condition for the main-effect model.

Only when available cognitive resources are relatively unconstrained (due to high ability and high motivation) will consumers process source information effortfully (i.e., high-resource processing). Product attitudes in this case depend on elaboration. When elaborating message-source information, consumers are most likely to utilize their product-category knowledge to determine the relevance of the new information (see Fiske and Neuberg 1990). Hence, source effects should depend on the product category (per source-by-product interaction models)—but only if allocated resources (and thus elaboration likelihood) are fairly high. Our model presents a boundary for when message source and product category interact.

The literature indicates that source features that are ei-
SOURCE EFFECTS

ther relevant to (Kahle and Homer 1985), compatible with (McCraeken 1989), or communicating the true merit of the product (Petty and Cacioppo 1986) can serve as persuasion-relevant arguments. Hence, source features relevant to the product in any of these ways may positively influence attitudes under effortful scrutiny. Shavitt et al. (1994) report that source attractiveness favorably influences attitudes toward an attractiveness-relevant product under high involvement (see also Chaiken and Maheswaran 1994; Petty, Cacioppo, and Schumann 1983). Hence,

H2: When the level of cognitive resources available for information processing is relatively high, positive source characteristics are likely to positively affect product attitudes, but only if the product-advocacy arguments implied in the source characteristics are relevant to the focal product category.

We note that the peripheral/heuristic process may coexist with the central/systematic process, since the former, requiring minimal cognitive resources, can be a precursor to the latter.

Neither hypothesis nor existing source models explain negative source effects. Nonetheless, message source may result in negative attitudes, contrary to theory-based expectations (e.g., Bochner and Insko 1966). Considerable evidence suggests that given plentiful cognitive resources, consumers may attempt to correct for factors that may have unduly influenced their attitudinal judgments (Martin, Seta, and Crelia 1990). The flexible correction model (Wegener and Petty 1995, 1997) suggests that, in order for correction to occur, "people should (1) be motivated and able to identify potentially biasing factors, (2) possess or generate a naïve theory about the magnitude and direction of the bias, and (3) be motivated and able to make the theory-based correction" (Petty and Wegener 1999, 59).

The literature suggests two antecedents to bias correction: (1) availability of extra cognitive resources needed for the additional detection/correction process to occur and (2) sensitivity to/awareness of specific source biases, which may differ chronically (e.g., NFC) or temporarily (e.g., due to priming of bias knowledge). Since message source in market communications is meant to positively influence attitudes, bias correction generally results in less positive attitudes.

The extent of correction is not always precise. When overcorrected, a positive source “can actually reduce persuasion” (Petty and Wegener 1999, 52). Negative source effects are most likely if the correction is inappropriate from the outset. Inappropriate corrections are likely when the source’s biasing potential is obvious, while the precorrection source effect is neutral. For example, on seeing an attractive model advocating a computer, a motivated and able consumer may judge the model’s attractiveness irrelevant to the product, neutralizing the source effect (per hypothesis 2). Given excess cognitive resources and/or heightened sensitivity to biases, the consumer may also suspect that the model’s attractiveness had unduly influenced the initial attitude (per hypothesis 1) and hence lower the (already neutral) judgment, creating a negative source effect.

H3: When the level of cognitive resources available for information processing is excessively high and/or when consumer sensitivity to source biases is relatively high (due to either chronic or situational factors), source effects will be less positive than when cognitive resource or bias awareness levels are relatively low.

Attitudinal impacts of the hypothesized processes may differ in priority. The outcome of a peripheral/heuristic process is likely to be overshadowed by judgments reached through a central/systematic process, which in turn may be subject to further adjustments through a bias correction process. Collectively, up to three distinct processes may be jointly responsible for the observed source effects. The model suggests that the attitudinal outcome of exposures to source-salient market communications, requiring relatively few cognitive resources, is determined by the following four sets of variables: (1) cognitive resource allocation (determined by ability and motivation), (2) source characteristics (i.e., affective/heuristic valence and implied product-advocacy arguments), (3) product category (determining both motivation and the relevance of source-implied arguments), and (4) sensitivity to source biases (either situational or chronic).

EXPERIMENT 1

Experiment 1 extends and replicates Petty et al. (1983). Those participants were shown print ads for disposable razors, endorsed either by celebrities or average citizens. The celebrity source (attractive and likable) positively influenced attitudes only in low-involvement conditions. In a close replication, Kahle and Homer (1985) obtained significant main effects of attractiveness on attitudes, regardless of involvement levels.

Per our model, an attractive source may enhance attitudes toward razors under both low (attractiveness is an affectively positive feature; hypothesis 1) and high resource availability (the product has something to do with attractiveness; hypothesis 2). An extension here is the inclusion of additional ads for computer processors, for which an attractive source is expected to have positive effects only when resource level is relatively low. Given the irrelevance of physical attractiveness to computers (Kamins 1990; McCraeken 1989), we expect neutral source effects when resources are high enough for central/systematic processing. However, a computer processor is a more involving product category than razors (per FCB involvement subscale; see Bearden, Netemeyer, and Mobley 1993: M = 6.1 vs. 2.8, r(83) = 19, p < .0001). If bias overcorrection is triggered (via excess resource commitment), source effects may also be negative (hypothesis 3).

Participants in both resource conditions viewed the ads for the same amount of time, but lower-resource-condition

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(LR) participants were required to engage in an interfering task while viewing the ads. This manipulation, taxing attention and cognitive capacity, was expected to reduce the likelihood of information elaboration. By contrast, the conventional task-relevance manipulation may allow information elaboration, especially if product involvement is high.

Procedure

One hundred thirty-six college students participated in exchange for a chance to win $10. The study employed a 2 (resource; higher vs. lower) by 2 (product; disposable razors vs. computer processors) by 2 (message source; attractive vs. average) mixed design. Half of the participants from each resource condition were exposed to an ad booklet that included a razor ad showing attractive models and a computer processor ad featuring average-looking models. The remaining half viewed a booklet with identical ads, with the models switched.

The procedure followed Petty et al. (1983) and Kahle and Homer (1985), save the described resource-allocation (ability) manipulation. Participants received the ad booklet and viewed 12 ads in the booklet, including two target ads (on either the fourth or eighth page, counterbalanced). Time allowed for the ads varied but was set to 12 sec. each for the test ads, per pretests. Participants then completed a questionnaire, and prize monies were disbursed.

A pretest group of 26 college students rated photographs of six couples, using a three-item, nine-point scale (unattractive/attractive, dislikeable/likeable, and unfavorable/favorable). Attractive and average-looking couples were then selected ($M = 6.71$ vs. 4.64; $t(25) = 6.53, p < .0001$).

Two razor ads were created. Per Kahle and Homer (1985), the weak arguments in Petty et al. (1983) were used. For the processor ads, an ad by an unfamiliar semiconductor company was modified with an additional headline, “Our Customers Agree.” To make argument quality comparable to the razor ad, part of the copy in the processor ad was removed. A picture of either the attractive or average couple was prominently placed in the center of the ad.

The LR participants were told the study concerned time perception while viewing ads and were told to estimate as precisely as possible the total time they spent viewing the ads, without using a wristwatch. Higher-resource (HR) participants were simply told that they would be asked to fill out a questionnaire regarding the ads.

The second booklet measured test ad recall and recognition of the brand name from five options. Product attitude was measured on scales anchored by bad, unsatisfactory, and unfavorable (−4) and good, satisfactory, and favorable (+4). Participants retrospectively listed ad-evoked thoughts and feelings, and any ad details that they could recall. They then rated the attractiveness of models in the ads, using the pretest scale. Perceptions of source expertise (not experts/experts), credibility (not credible/credible), and verbal argument quality (weak/strong reasons; not persuasive/persuasive) were measured on nine-point scales.

Results and Discussion

Mean attractiveness scores were compared ($\alpha = .94$). The attractive source was rated more attractive than the average source ($6.42$ vs. $4.61$; $t(106) = 8.41, p < .0001$). This manipulation did not influence source credibility ($p > .1$) or verbal argument quality ($r = .80$; $p > .2$), although the average source was seen as having less expertise than the attractive source ($M = 4.24$ vs. $4.57$; $t(107) = 2.11, p < .04$). Argument quality was marginally higher for the computer processor ad than the razor ad ($5.22$ vs. $4.84$; $t(107) = 1.81, p < .08$).

The number of source-related thoughts did not differ between conditions ($p > .1$). HR (vs. LR) participants’ recall was more “issue relevant,” focusing on either the product or both the product and source (razor ads, $M = 1.00$ vs. $0.68$; $t(134) = 2.13, p < .05$; processor ads, $0.40$ vs. $0.11$; $t(134) = 3.39, p < .001$). Attitude scores correlated positively with the total number of positive thoughts across categories ($r' s = .36$ for razor; .22 for processor) and negatively with the number of negative thoughts ($r' s = -.32$ and -.17; see table 1 and fig. 2).

Product Attitudes. Excluding cases in which participants did not recall the focal ad left 244 usable observations (131 for the razor ad and 113 for the processor ad). Before analysis, the mean of the three-item brand attitude scores ($\alpha = .94$) was converted to a 1–9 scale by adding a constant of five. Per hypothesis 1, when cognitive resources were constrained, positive source characteristics had positive attitudinal impact irrespective of product relevance. Consistent with hypothesis 1, in the LR condition, the attractive source produced higher attitude scores for both razors ($6.27$ vs. $4.49$; $t(66) = 4.41, p < .0001$) and processors ($6.05$ vs. $5.20$; $t(54) = 2.20, p < .04$) than did the average-looking source. Per hypothesis 2, the attractive-model ad yielded higher attitude scores than the average-model ads for razors ($6.26$ vs. $5.00$; $t(61) = 3.49, p < .001$). In contrast, given high resources and a product-irrelevant source (computer processor), positive attitudes were not produced. Rather, the mean attitude for the attractive source was marginally lower than for the average source ($5.15$ vs. $5.93$; $t(55) = 1.98; p < .06$), supporting hypothesis 3. A source × product × resource ANOVA conducted on the aggregate attitude data found a source main effect ($F(1, 236) = 15.94, p < .0001$), a source × product interaction ($F(1, 236) = 14.55, p < .0001$), and a source × resource interaction ($F(1, 236) = 7.68, p < .006$).

These results support the proposed model. Constrained cognitive resources made an attractive (positive) message source more effective than the average source regardless of product category. Relatively unconstrained resources made the same source effective only when the source feature was product-relevant. Finally, when cognitive resources were even higher (due to the particularly high level of product involvement associated with computer processors), the otherwise positive, product-irrelevant source negatively influenced product attitudes. A confluence of high-ability, high
product-category involvement and an affectively positive but product-irrelevant source feature may yield negative attitudes.

### EXPERIMENT 2

Both ability and source-product match determine the attitudinal impact of a message source. Still unclear is any effect of consumer sensitivity to or awareness of source biases through the hypothesized correction process. In experiment 2 we see if and when enhancing source biases negatively influences product attitudes.

#### Procedure

One hundred thirty-seven business majors participated for credit. A 2 (message source; attractive vs. average) by 2 (product; notebook computer vs. shampoo) by 2 (priming; bias priming vs. no priming) between-subjects design was used.

Participants first completed a questionnaire and were randomly assigned to either a filler task (no priming condition) or a task intended to prime source biases (priming condition). After returning the questionnaire, participants completed “another questionnaire for another faculty member.” This packet included the target ad and dependent measures. The two studies appeared as unrelated as possible, appearing in different packages, styles, fonts, and so on. During debriefing, participants were asked to guess the studies’ purpose. No participant expressed suspicion about a connection between the two studies.

The stated goal of the priming-condition questionnaire was to know “why consumers react differently to different types of sales people.” Participants read a “retail management case” describing two sales trainees differing in physical attractiveness. Although equally courteous and professional, and selling the same products at the same prices, Mary outperformed Jane in sales revenues. Participants were asked to explain this outcome. Following this task, which should prime potential influences of physical attractiveness, were filler questions to fit the cover story. The no-priming-condition questionnaire was on a topic unlikely to activate knowledge related to source biases or interpersonal relationships.

Participants then saw a full-page color ad for either a shampoo or a notebook computer. Both ads were modified from actual ads with fictitious brand names. A pretest indicated product involvement associated with the notebook computer ($M = 6.0$) was comparable to that of a computer processor ($M = 6.0$) but much higher than that of shampoo ($M = 3.1$; $t(83) = 15.4$, $p < .0001$), which was not significantly different from that of the razor ($M = 2$). The literature suggests attractiveness is relevant to shampoo but not computers.

Test ads featured either an attractive or average-looking couple (pretest attractiveness $M = 7.4$ vs. $5.5$; $t(29) = 7.7$, $p < .0001$). After viewing the ad, participants completed measures of product attitudes, source, and argument quality perceptions on nine-point scales.

#### Results and Discussion

All priming participants offered reasons why salesperson attractiveness may influence buyer behavior. In the main

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<th>Source</th>
<th>N</th>
<th>Low ability</th>
<th>High ability</th>
<th>Source</th>
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<th>Low ability</th>
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<th>ANOVA results</th>
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<tbody>
<tr>
<td>Disposable razor</td>
<td>131</td>
<td>4.49 (1.70)</td>
<td>5.00 (1.43)</td>
<td>Disposable razor</td>
<td>131</td>
<td>6.27 (1.63)</td>
<td>6.25 (1.41)</td>
<td>S (1, 236) 15.94 ****</td>
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<td>Computer processor</td>
<td>113</td>
<td>5.20 (1.48)</td>
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<td>Computer processor</td>
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<td>6.04 (1.41)</td>
<td>5.15 (1.33)</td>
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<td>Shampoo</td>
<td>68</td>
<td>5.51 (1.03)</td>
<td>5.59 (1.16)</td>
<td>Shampoo</td>
<td>68</td>
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<td>6.37 (1.17)</td>
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<td>Notebook computer</td>
<td>69</td>
<td>5.98 (1.18)</td>
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<td>Notebook computer</td>
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<td>S × P × Pr 4.85 **</td>
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Note.—Numbers given are the means, with standard deviations given in parentheses. ANOVA results show significant effects (df), F-statistics, and significance; S = source, P = product, A = ability, Pr = priming.

*p < .1.

**p < .05.

***p < .005.

****p < .0005.
experiment, the attractive source was judged more attractive ($\alpha = .90$) than the average source ($M = 7.0$ vs. $5.6$; $t(135) = 6.07$, $p < .0001$). Perceived credibility (i.e., credible and trustworthy; $r = .6$) did not differ (5.0 and 4.8; $p > .3$). Perceived argument quality (three-item $\alpha = .89$) did not vary between the two products or copies (5.7 and 5.6; $p > .7$) but was higher when the source was attractive (5.9 vs. 5.4; $t(134) = 1.97$, $p < .06$).

Product attitude scores ($\alpha = .90$) were analyzed via a product $\times$ source $\times$ priming, factorial-design ANOVA, revealing a significant source main effect ($F(1, 129) = 4.43, p < .04$) and a significant product $\times$ source $\times$ priming three-way interaction ($F(1, 129) = 4.85, p < .03$). Priming source biases negatively influenced product attitudes, especially when the attractive source was matched with the computer, for which attractiveness is irrelevant. Post hoc tests confirmed that the attitude toward the computer paired with the attractive models was less favorable than the average source ($M = 6.93$ vs. 5.49; $t(33) = 2.73$, $p < .01$), consistent with hypothesis 3. Without bias priming, the attractive source was more effective than the average source for the computer ($M = 6.93$ vs. 5.98; $t(33) = 2.53$, $p < .02$), per hypothesis 1. Consistent with hypotheses 1 and 2, attitude toward the shampoo tended to be more favorable when the models were attractive, relative to average looking, regardless of whether source biases were primed ($M = 6.37$ vs. 5.59; $t(32) = 1.96$, $p < .06$) or not ($M = 6.12$ vs. 5.51; $t(32) = 1.70$, $p < .1$).

Absent bias-knowledge priming, source attractiveness favorably influenced attitudes toward both shampoo and computer. When participants were unknowingly sensitized to the biasing potential of source attractiveness, two different patterns emerged. The attractive source remained more effective than the average source if the product was a shampoo, depending on the assumed resource allocation. In contrast, the attractive source negatively influenced the evaluation of the computer in the bias priming condition. Hence, negative source effects emerged as a result of combining high product-category involvement (which should have increased the overall amount of cognitive resource allocation), heightened awareness of source biases, and product-irrelevant, source-implied arguments.
GENERAL DISCUSSION

McCracken (1989, 311) sees “mysteries everywhere” in the source-effect literature. A reason may rest in theories that predict different effects (main effects and interaction effects), incapable of explaining occasional negative source effects. A second explanation is the multidimensional nature of source cues. Sources vary in expertise, trustworthiness, and attractiveness, among myriad other dimensions. We focused on source characteristics that may vary, loosely, in terms of their affective or heuristic positivity. Is the source attractive, and does a judgment of the source’s positivity with respect to the product demand effortful processing? We thus focused on building an integrative framework, mapping two traditional source models onto the two processing modes of dual-process theories. The bias correction literature yields a model in which up to three processes may yield source effects: (1) low-resource, heuristic or peripheral process (source as cue; hypothesis 1), (2) high-resource, systematic or central process (source as argument; hypothesis 2), and (3) extra-resource, bias-correction process (source as a biasing factor; hypothesis 3).

Cognitive resource availability is determined not only by ability and situational motivation but also by product category-induced motivation (enduring involvement). Moreover, the theory points to the possibility that processing a source-salient message may result in excess resources, due to relatively meager resource requirements, as suggested by the person perception literature. Such extra resources may yield bias detection/correction and less favorable source effects. Both experiments demonstrate that limiting resources rendered positive effects from a positive source regardless of product category, per hypothesis 1. Supportive evidence for hypothesis 2 was also found in both experiments; an attractive source had positive effects when resource level was relatively high and attractiveness-relevant products (razor and shampoo) were advertised but not when an attractiveness-irrelevant product (computer) was advertised.

The results contribute to the bias correction literature. With resource availability unconstrained, a high-involvement product (computer processor) matched with an affectively positive yet product-irrelevant source produced negative source effects. This underlines the critical role of resource allocation in bias correction, as well as the role of bias knowledge (accessibility) in correction processes. Petty, Wegener, and White (1998) also report that, among high-elaboration participants, attitude toward the advocated position was more favorable when the source was disliked than when likable. However, their participants were instructed explicitly and repeatedly to correct for biases before expressing attitudes. In contrast, we demonstrate that negative source effects can occur without prompting in a fairly realistic setting. Negative source effects are possible when the following conditions for overcorrection exist: (1) high product-category involvement, (2) high or unconstrained ability and situational motivation, and (3) product-irrelevant yet affectively positive source. Heightened sensitivity to the biasing potential of the message source may also mitigate its influence.

Peripheral/heuristic processing occurred when resource allocation variables (ability, situational motivation, and enduring product involvement) were low. Due to this low threshold, an affectively positive source may influence attitudes favorably when cognitive resources are limited. Depending on the product category, though, a positive source may produce neutral or even negative effects as processing resources increase.

Our treatment is not without limitations. The framework focuses on source-dominated market communications in which the role of verbal arguments is limited. Clearly, many communications do not feature source so prominently. Source effects in those contexts involve additional variables and processes. For example, source may affect attitudes by influencing the amount of cognitive resources given to processing verbal arguments (Sternthal, Dholakia, and Leavitt 1978). Further, an attractive source “could bias processing . . . by making positive interpretations of ambiguous information more likely than if the source were not attractive” (Pettigrewegner 1999, 343). Hence, “heuristic processing can bias systematic processing” (Chaiken and Maheswaran 1994, 462). These possibilities were not considered here.

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