Protecting Consumers from Harmful Advertising:
What Constitutes an Effective Counter Argument?

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Despite the wealth of the consumer research literature, surprisingly little is known about creating resistance to socially harmful advertising. This research compared the effectiveness of counter arguments that directly undermined ad claims versus counter arguments that provided equally strong negative information but did not refute the claims with which the product was promoted. Although previous research indicated either strategy may be more effective, results revealed that directly undermining the ad claims caused greater judgment revision. Importantly, this was the case only when the source of the counter message was perceived as highly credible, thus, suggesting that the trust of the consumers is an important asset in using this strategy to enhance consumer welfare.
Each year consumers spend more than $17 billion on a variety of health and dietary supplements, such as CortiStress, TrimSpa, and One-A-Day WeightSmart, many of which claim to either facilitate weight loss or decrease the risk of various diseases such as osteoporosis, Alzheimer's, or cancer (FDA 2002). Ads for the dietary supplement Xenadrine EFX, for example, stated that it is “clinically proven to cause rapid and substantial weight loss” (Consumer Affairs 2007). Concerns, however, have been raised about the effectiveness and safety of such supplements, and consumers have been warned that the ingredients of some of these remedies can lead to gastrointestinal side effects, headaches, and sleep disturbances (County of San Bernardino, Department of Public Health 2006; “Does Trimspa Really Work” 2004). As a result, in January of 2007, the Federal Trade Commission fined several companies, including the manufacturer of Xenadrine EFX, $25 million for deceptive advertising. Yet, an important question remains. Given the health, financial, and psychological risks that such advertising poses to consumer welfare, what are the most effective strategies to protect consumers and generate resistance toward such persuasive attempts?

Although the consumer behavior literature provides considerable insight for marketers in designing persuasive communications to increase consumers’ intentions to purchase a product, little knowledge exists on how to create resistance to persuasion and prevent consumption of products that may have harmful effects on consumers. This imbalance seems unfortunate, given the efforts of various organizations to combat the influence of different persuasive messages to which consumers are exposed. Such efforts are often motivated by the general goal of protecting consumers from massive advertising that is likely to increase risky behaviors such as smoking (Pechmann and Shih 1999, Pechmann and Knight 2002), alcohol abuse (Casswell and Zhang 1998; Grube and Wallack 1994; Wyllie, Zhang, and Caswell 1998), obesity (Murray 2001), gambling, and drug misuse and abuse (Volkow 2006). Unfortunately, research provides evidence that such efforts are often unsuccessful.
For example, antismoking advertising campaigns are often found to be ineffective (Chassin, Presson and Sherman 1990; Pechmann and Reibling 2000). Disclaimers, disclosures, and product warnings have not been proven effective (Andrews 1995; Argo and Main 2004; Hankin, Sloan, and Sokol 1998; Johar and Simmons 2000), and even corrective advertising may not reduce false beliefs (Dyer and Kuehl 1974; Jacoby, Nelson, and Hoyer 1982; Johar 1996).

Spurred by this imbalance in the consumer research literature and by the real challenges faced by many consumer advocacy organizations, the present investigation examines the effectiveness of different types of counter arguments in creating resistance and undermining consumption of products with possible harmful effects. More specifically, we focused on one particular dimension: whether the information in the counter message directly undermines the original claim made by the ad or presents equally strong negative information about the product without refuting the claims with which the product is promoted.

For example, tobacco products are commonly advertised using images of attractiveness and fun, creating a positive stereotype of smokers (Mazis, Ringold, Perry, and Denman 1992; Pechmann and Knight 2002; Pechmann and Shih 1999). At the same time, anti smoking campaigns provide important information about the negative health consequences of smoking without undermining the positive stereotype of smoking. As research examining the effectiveness of such communications reveals, providing consumers with information about the health consequences of smoking has been shown to increase perceptions of risk. However, it had little impact on the favorable image of smoking promoted in tobacco advertising (Romer and Jamieson 2001). Thus, it has been suggested that a more efficient way of reducing tobacco consumption might be to attack the positive images associated with smoking and associate smoking with negative stereotypes (Blum, 1994; Pechmann and Knight 2002).
In another domain, while the tanning industry reinforces the images of beauty and youth associated with tanned skin, public campaigns have focused on the long-term effects of tanning on individuals’ risk of skin cancer without necessarily dismissing the positive stereotype associated with tanned skin. Unfortunately, although these campaigns have been effective in increasing knowledge and awareness of skin cancer, research suggests that behavior and attitudes toward tanning have remained largely unchanged (Bennetts, Borland, and Swerrison 1991; Borland, Hill, and Kay 1990, Robinson et al. 1997). An alternative approach to create resistance and change behavior is to directly attack the specific claims of the messages promoting tanning. Thus, to change tanning behavior, public messages can inform teenagers that instead of making them more youthful and beautiful, tanning can lead to premature aging and wrinkling of the skin (Robinson et al. 1997; U.S. Environmental Protection Agency 2006a; 2006b).

If one wishes to create maximal resistance to a message, is it enough to provide consumers with competing information that reveals another side of the issue, or should one design counter arguments that attack the specific claims in the original message? Although both strategies can be seen in existing campaigns, a systematic investigation comparing the two approaches has not been conducted. The present research was designed to test this question with the practical goal of helping inform policy makers and consumer advocacy organizations on how to best counter misleading advertising and prevent consumption of products with potential harmful consequences. From a theoretical viewpoint, a more general goal of this research is to reduce the gap in the consumer research literature in regard to studying resistance to persuasion and to provide insight into the effectiveness of different types of counter arguments.
THEORETICAL BACKGROUND

Research into the process of persuasion reveals that the impact of a persuasive communication depends to a large extent on the personal reactions of the audience to the message (Greenwald 1968). As a central assertion of the cognitive response model of persuasion (Greenwald 1968), this idea has spurred a number of studies demonstrating the negative effect of counter argumentation on message acceptance (Brock 1967; Eagly and Chaiken 1993; Osterhouse and Brock 1970; Petty and Wegner 1998). For example, asking individuals to list only their negative thoughts about the message (Killeya and Johnson 1998) or forewarning them of a persuasive attempt (McGuire and Papageorgis 1962; Petty and Cacioppo 1977; Romeo, Agnew, and Insko 1996) can increase counter argumentation and consequently decrease the persuasiveness of the message. The impact of a persuasive communication can also be undermined by directly providing individuals with ready counter arguments. As Romeo and colleagues (1996) have demonstrated, exposing individuals to ready counter arguments can create levels of resistance similar to those created by forewarning them of a future persuasive attempt.

These findings suggest that stimulating individuals to generate counter arguments or providing them with counter arguments against the persuasive message can undermine the initial attitudes created by the message. However, the existing research provides little insight into the question of what constitutes an effective counter argument. Surprisingly, although previous research has devoted considerable attention to the processes through which counter argumentation undermines persuasion, little attention has been devoted to the content of the counter arguments that are most likely to create resistance to a message. Research based on the cognitive response model has provided evidence regarding the role of counter argumentation by examining the cognitive responses to a persuasive communication. However, the thoughts that individuals generate in response to a message have been
typically categorized as positive, negative, or neutral (Petty and Wegner 1998), without regard to the specific content of the thoughts (Wright 1980). Thus, a systematic investigation of the effects of different types of such counter arguments has not been undertaken.

What Constitutes an Effective Counter Argument?

Based on a review of the existing literature on resistance to persuasion and judgment revision, we identified a specific dimension that has received attention in previous studies: the extent to which new information directly refutes the original claim. According to three different theoretical perspectives, providing information that reveals another side of the issue without undermining the specific claims of a message should generate greater resistance than counter information that directly refutes the message claims. First, previous research suggests that when presented with information that is inconsistent with previous claims individuals tend to engage in defensive processing (Bacon 1979). As Begg and Armour (1991) suggested, repeated statements have a ring of truth because they confirm what has been remembered, whereas contradictions have a ring of falsity because they conflict with memory. According to this logic, counter arguments that provide negative brand information without directly refuting the claims promoting the brand would be more effective in creating resistance. Because individuals would not have to overcome the tendency to defend their previous belief in order to correct their judgments, presenting competing information that does not dismiss the ad claims may be more likely to be accepted and incorporated into judgments.

Research on mere exposure further suggests that repeatedly seeing a statement creates a feeling of familiarity, which in turn is likely to influence judgments of truthfulness (Hasher, Goldstein, and Toppino 1977; Hawkins and Hoch 1992). Because refuting the specific claims in an ad increases the
familiarity of these claims, consumers may use this subjective feeling of familiarity to judge the claim as more truthful. Such a prediction is consistent with findings that even when a statement is explicitly identified as false at its initial presentation, the feeling of familiarity at subsequent presentations can lead individuals to believe the statement more (Begg, Anas, and Farinacci 1992; Gilbert, Krull, and Malone 1990). The tendency to judge the truthfulness of information based on its subjective familiarity also explains findings that a warning about a false claim can increase belief in the false claim (Skurnik, Yoon, Park, and Schwartz 2005). If directly refuting the claims of a message can make them seem more familiar, an alternative and perhaps more effective strategy may be to provide consumers with equally strong negative product information without directly attacking the specific claims in the ad.

Research on trait inference reveals another aspect of refutational counter arguments that should be considered. Social psychological research suggests that when communicators describe negative traits in others, the communicators themselves tend to become associated with the traits they describe (Skowronski, Carlson, Mae, and Crawford 1998). That is, revealing evidence for knowledge bias, reporting bias, or manipulative intent in an ad can influence the perceptions of the source of this information in the same direction. Counter messages that directly attack the claims of an ad and reveal their bias also could be perceived as biased. But communicators who reveal competing information without refuting the ad’s claims are likely to be perceived as holding an unbiased and trustworthy view of the issue while willing to accept the opponent’s claims (e.g. Smoking is fun. However, it can cause cancer). As research on two-sided appeals demonstrates, acknowledging the two sides of an issue can be an effective strategy for increasing the credibility and effectiveness of a message (Pechmann 1992). Instead of directly undermining the specific claims with which a product is advertised, one may be more successful in reducing purchase intentions by providing equally strong negative information about another set of product attributes.
Effectiveness of Refutational Counter Arguments

The possibility for a superior effect of counter arguments that do not directly refute a messages claims is consistent with many public health campaigns that inform consumers of the health risks associated with the product without undermining the claims with which such products are promoted. The use of indirect counter arguments is also common in comparative ads that focus on product attributes that are not mentioned by the competitor. Furthermore, in positioning a brand, marketers often focus on the unique features that are not aligned with the competing brands. However, evidence suggests in favor of the opposite approach as well.

Earlier we discussed the possibility that undermining the specific claims of the ad may create lower levels of resistance because such information would be less believable in comparison to messages unrelated to the ad claims. However, the problem that many organizations face in their efforts to protect consumers is not that consumers do not believe the information, but rather they do not incorporate it in their attitudes and behavior. On the other hand, trustworthy information that contradicts the specific claims with which a product is promoted can undermine not only consumers’ evaluations of the product, but also their evaluations of the company promoting the product. As a vast body of research suggests (Campbell 1995; Ellen, Mohr, and Webb 2000; Fein, McCloskey, and Tomlison 1997; Lutz 1985; MacKenzie and Lutz 1989), undermining the credibility of the source of a message can have dramatic effects on its persuasiveness. Because of this additional effect on the credibility of the message source, refutational counterarguments may have superior effect in creating resistance.
Indeed, research exists to suggest that consumer advocacy messages aligned with an ad’s claims may result in greater judgment revision than nonaligned information. For example, in a study by Pham and Muthukrishnan (2002) participants viewed an ad positioning the brand with abstract claims (e.g., “The best pen money can buy”) or specific claims (e.g., “Omega 3 provides sloped design and optimal balancing”). During a second session, participants viewed a *Consumer Reports* article that challenged the brand with abstract negative information (“There is nothing special about this pen”) or specific negative information (“The package was too difficult to open”). The results revealed that when the brand was positioned in an abstract way, a general challenge was more damaging. However, when the brand was positioned in a specific way, a challenge that provided negative information about specific attributes resulted in greater revision of brand evaluations. Although the aligned challenge did not attack the specific attributes with which the product was advertised, these studies suggest that aligning a challenge with the message can create stronger levels of resistance.

Further evidence in this direction comes from inoculation studies (McGuire 1964; McGuire and Papageorgis 1962) demonstrating that giving individuals or asking them to generate counter arguments that directly refute the claims of a forthcoming challenge resulted in a greater resistance to the challenge than arguments supporting the initial position. A typical inoculation experiment presents participants with different forms of defenses against a persuasive message challenging a widely accepted cultural truism (e.g., “mental illness is not contagious”). Participants in the refutational defense condition are presented with the truism and two arguments against it, and are asked to either generate or read statements refuting the arguments against the truism. In the supportive defense condition, participants are presented with two arguments defending the truism and are asked to generate or read statements supporting the arguments. In a second session, participants are presented with an essay arguing against the truism, and then their beliefs in the truism are assessed. The results of such
inoculation experiments have demonstrated that participants exposed to the refutational defense retained stronger beliefs in the truism than participants exposed to the supportive defense (McGuire 1964; McGuire and Papageorgis 1962). This effect occurred regardless of whether participants were externally provided with the counter arguments or were asked to generate counter arguments themselves. Furthermore, the refutational defense created resistance not only to a subsequent exposure to the same arguments (refutation-same condition), but also to a subsequent exposure to different arguments (refutation-different condition; McGuire 1961). The inoculation studies provide strong evidence for the effectiveness of refutational counterarguments. However, their implications for creating resistance to socially harmful advertising have not been examined. Furthermore, little insight exists about the processes mediating the effectiveness of refutational counter arguments and the conditions under which directly refuting an ad’s claims is likely to result in greater judgment revision than providing competing information. To address these questions, we conducted the present research.

**THE PRESENT RESEARCH**

Given the gap in the consumer research literature on resistance to socially harmful advertising and the conflicting findings of previous research on judgment revision, two studies were conducted to examine the type of counter arguments that would be most effective in creating resistance to persuasion and preventing consumption of harmful products. Extending previous findings on the role of aligned and nonaligned information on judgment revision to the domain of resistance to harmful advertising, the present research examined the possibility that public organizations will be more successful in reducing consumption of harmful products if they provide consumers with information that is directly
related to the specific attributes with which the product is advertised than equally strong negative information relevant to a different set of attributes.

**H1:** Negative information about specific ad claims will have a stronger effect on brand attitudes and purchase intentions than equally strong competing information that is not directly related to the original claims of the ad.

Because refuting the specific claims with which a product is advertised can undermine not only consumers’ judgments about the advertised product, but also their judgments about the company promoting the product, we further predicted that the superior effects of refutational counter arguments will be mediated by the effect of this information on the credibility of the sponsor of the ad.

**H2:** The differential effects of counter arguments that directly refute specific ad claims versus counter arguments providing competing negative information about the product will be mediated by individuals’ perceptions of the credibility of the sponsor of the ad.

If our hypotheses are confirmed, they will reveal a powerful strategy of counter advertising. However, we expected that refuting the claims of a target ad would lead to greater resistance only if the source of the counter arguments is perceived as highly credible. As research on trait inference suggests (Skowronski et al. 1998), in the absence of pre-existing trust in the source of a message, communicators that reveal negative traits in others can be perceived as possessing these traits themselves. Moreover, if consumers do not perceive the source of the counter information as highly trustworthy, they would be more likely to engage in defensive processing when presented with
information directly challenging previously seen claims. As a result, the stronger effect of directly undermining the message claims is likely to diminish.

**H3:** The greater the perceived credibility of the source of the counter message, the greater will be the difference on judgment revision for counter messages that directly refute the ad claim versus ones that provide equally strong negative information about the product without undermining the specific ad claim.

We examined these hypotheses in the context of health care product advertising, which is of growing importance for consumers, consumer researchers, and public policy makers. In recent years, advertising of health care products has rapidly increased. Prescription drug advertising has grown from $40 million in 1989 to approximately $2.5 billion in 2002 (Main, Argo and Huhmann 2004). In addition to drug advertising, consumers are increasingly exposed to advertisements promoting various dietary supplements (Wilke 1997). This explosion in health products advertising is accompanied by an increase in the technical difficulty of the information with which such products are distributed and promoted. Both drug and supplement advertisements rely on scientific jargon to persuade consumers (Haard, Slater, and Long 2004) and claim to promote health or prevent disease in ways that may confuse the consumer (Vladeck 2000). Furthermore, companies are eager to bring the results of medical studies to potential consumers, often before the results have been subject to replication or to the scrutiny of the larger scientific community. The aggressive marketing by the pharmaceutical industry has been cited as one of the leading causes for the recent increase of misuse and abuse of prescription drugs (Volkow 2006; United States General Accounting Office 2003). Yet, although the attention of public policy makers and public health organizations is focused on creating resistance to
advertising that promotes products such as tobacco and alcohol, little is known about the effectiveness of messages attempting to prevent the harmful effects of incorrect advertising used to promote various health products. Given this imbalance, we chose for the present studies the context of creating resistance to a misleading advertisement promoting a new brand of allergy medication.

**STUDY 1**

Method

To obtain initial evidence for the hypothesized superior effect of refutational counter information we created an ad for a fictitious allergy medication called Levatin and tested the effectiveness of two counter messages that either contained, or not, information directly undermining the claims of the ad. Forty-five undergraduate students participated in the study in exchange for a course credit. The study was conducted in two sessions separated by two days. Participants viewed the experimental stimuli along with filler messages on a website designed for the purposes of the study.

During the first session of the study, participants were exposed to a set of three ads and one short article from a consumer protection group about choosing a cell phone plan. The Levatin ad appeared second in the session and was presented for 30 seconds. After examining each ad or article, participants responded to a series of questions. Two days later, during the second session of the study, participants reviewed a set of two filler ads and the message from *Consumer Reports Healthwatch* about Levatin. The *Consumer Reports* message appeared second in the session and was presented for 75 seconds. Again, after examining each message, participants responded to a series of questions. To increase motivation to follow the experimental procedures, participants were asked to answer a set of
questions at the end of the study about the content of the materials presented in the study. Participants who answered these questions correctly were eligible to enter a drawing for $50.

**Stimuli.** The ad promoting Levatin contained the headline: “Levatin for allergy symptoms. Clinically proven effectiveness.” Below the headline was a picture of two smiling faces and the following message: “To ensure the effectiveness of our product, we put Levatin to a stringent clinical trial. The results were incredible. 93% of the participants taking Levatin experienced significantly reduced allergy symptoms.” Along with this text was a chart indicating the percentage of cases with improved symptoms.

To manipulate type of counter information, we created two versions of a short article from *Consumer Reports Healthwatch*. One of the versions of the counter message contained information about the safety of Levatin, an attribute that was not mentioned in the ad. The article was titled, “Are there side effects to Levatin?” and provided the following information: “The manufacturer of this product, sold to reduce allergy symptoms, claims that Levatin has been clinically proven to work for 93% of the patients. Other larger and better-controlled studies raise concern for another aspect of Levatin. It may not be very safe. According to these larger studies, 30% of the participants taking Levatin experienced increased instances of lightheadedness, nausea, and headaches. The percentage of people who are likely to be free of side effects is only 70%. Consumers should know that there is a fairly good chance that Levatin may cause some of the above side effects.” (appendix A)

The second version of the *Consumer Reports* message provided evidence undermining the ad’s claims for product effectiveness. The article had the title “Is Levatin effective?” and stated “The manufacturer of this product, sold to reduce allergy symptoms, claims that Levatin has been clinically proven to work for 93% of the patients. Other larger and better-controlled studies suggest that Levatin
may not always work. According to these larger studies, 40% of the participants continued to experience the symptoms they had prior to taking Levatin. The percentage of people who are likely to improve their symptoms is not 93% as the ad claims, but only 60%. Consumers should know that there is a fairly good chance that Levatin may not work for them."

To examine the relative importance of the attributes discussed in the counter messages, 263 undergraduate students from the same population as the participants of study 1 were asked: (1) ”When choosing a medication (e.g. allergy medication), how important is it for you that it is proven effective?” and (2) ”When choosing a medication (e.g. allergy medication), how important is it for you that it is proven safe?” Both attributes were rated as highly important and no significant differences between the two attributes were observed, $F(1,263) = 1.158, p = .28$. $M_{\text{safety}} = 6.93$ (scale: 0 to 8, $SD = 1.62$), $M_{\text{effectiveness}} = 6.83$ ($SD = 1.56$).

**Dependent Variables.** To assess brand attitudes after exposure to the ad and the counter message, we asked participants to (1) rate their overall impression of Levatin (from negative to positive), (2) indicate how they would evaluate Levatin (from unfavorable to favorable), and (3) indicate how much they like Levatin (from not at all to very much). The Cronbach’s alpha coefficient of the scale was .96 for session 1 and .97 for session 2.

Perceived credibility of the manufacturer of Levatin was measured by asking participants to indicate (1) how they felt about the manufacturer of Levatin, (2) their overall impression of the manufacturer of Levatin, (3) to what extent the manufacturer of Levatin was honest in the way it presented its product, (4) to what extent the manufacturer of Levatin was truthful in the depiction of its product, and (5) how trustworthy they found the manufacturer of Levatin (Cronbach’s Reliability: $\alpha_{\text{session 1}} = .96$, $\alpha_{\text{session 2}} = .96$). All of the responses were provided on a scale from 0 to 8.
Finally, we measured participants’ cognitive responses after viewing the *Consumer Reports Healthwatch* article. Participants were instructed to list what they were thinking while they viewed the message. Responses were coded by two independent raters (inter rater agreement rate 93.2%) on their relevancy, valence, and the extent to which participants’ responses included thoughts about the deceptiveness of Levatin.

Results

*Brand Attitudes.* Analyses of covariance, with brand attitudes at session 2 as a dependent variable and brand attitudes at session 1 as a covariate, revealed significant difference between the two groups in their attitudes toward Levatin, $F(1, 42) = 4.75, p = .04$. After seeing an ad promoting the product as highly effective, information undermining the effectiveness of the product resulted in greater revision of brand attitudes ($M_{adj.} = 1.61$) than information presenting evidence about the possibility of significant side effects ($M_{adj.} = 2.71$).

*Company Credibility.* Analyses of covariance with company credibility at session 2 as a dependent variable and company credibility at session 1 as a covariate revealed similar results. The message contradicting the ad claim about the effectiveness of Levatin resulted in more negative evaluations of the credibility of the manufacturer of Levatin ($M_{adj.} = 2.13$) than the message undermining another, unrelated attribute – its safety ($M_{adj.} = 3.28$), $F(1, 42) = 5.52, p = .02$.

Further analysis revealed that once credibility ratings at session 1 and session 2 were included in the model along with brand attitudes at session 1 and session 2, the difference in the effect of the two messages was no longer significant, $F < 1$, while the effect of company credibility remained significant,
According to these results, the differential effects of the two messages were mediated by participants’ perceptions of the credibility of the company.

**Cognitive Responses.** Analysis of participants’ cognitive responses indicated no significant differences in the overall number of thoughts or the number of thoughts about Levatin, $F$s < 1. No significant differences were observed either in the overall valence of participants’ cognitive responses, $F$ < 1, or the valence of the thoughts related to Levatin, $F(1, 39) = 1.44$, $p = .34$. However, we observed significant differences in the number of thoughts indicating deceptiveness of the Levatin ad, $F(1, 39) = 4.03$, $p = .05$. Participants who saw the counter message about the effectiveness of the product reported a greater number of thoughts about the deceptiveness of Levatin ($M = .43$) than participants who saw the counter message undermining the safety of the product ($M = .15$). These results are consistent with the conclusion that the stronger effect of the refutational information in undermining brand evaluations was driven by a decrease in the perceived credibility of the company.

**Discussion**

The results of study 1 revealed initial evidence that counter arguments directly attacking the specific claims with which a product is advertised (e.g., high effectiveness) are likely to cause greater revision in brand attitudes than counter arguments that bring information on another unrelated dimension (e.g., product safety).

Study 1 also revealed that the superior effect of refuting the specific ad claims was fully mediated by the change in the participants’ perceptions of the credibility of the sponsor of the ad. This finding is noteworthy given that neither of the counter messages explicitly attacked the credibility of
the company. Although the counter messages provided results of better and larger studies, it was possible for participants to assume that the company was not aware of these data when publishing the ad. At the same time, both withholding information about possible side effects and misreporting of information about the effectiveness of the product can be considered deceptive practices. Yet, participants were more likely to perceive the ad as deceptive when they saw counter arguments directly refuting the ad claims than counter arguments revealing that the ad had omitted important information about possible side effects. This difference in the perceived credibility of the sponsor of the ad mediated the relative effectiveness of the two counter messages.

It is also important to note that the superior effect of the refutational information was observed despite the fact that the two attributes discussed in the refutational and nonrefutational messages were rated in a pretest as equally important. However, it was still possible that the specific information about the low effectiveness of Levatin was more negative than the specific information about possible side effects. To account for this possibility and further examine the effectiveness of the two types of counter arguments we conducted study 2.

**STUDY 2**

Along with providing further insight about the effects of aligned and nonaligned counter messages, study 2 aimed to demonstrate that their differential effects could not be explained merely by the differential strength of the specific information employed in the two counter arguments. For this purpose, we designed an experiment in which we used the same information once as a refutational counter argument and once as a nonrefutational counter argument. We were able to achieve this by testing the effects of these two types of counter arguments for two separate ads. One of the ads
positioned the product as highly safe, whereas the other ad positioned the product as highly effective. Consequently, for each of the two ads, two versions of a counter message were created using the same information (low effectiveness or low safety), in one case to directly undermine the claims of the ad and in the other case to provide information about another, unrelated product attribute.

Another goal of study 2 was to examine the role of the perceived credibility of the counter message. According to our hypotheses, attacking the specific claims with which a product is advertised will be more effective than providing competing information, only when the source of the counter message is perceived as highly credible. We tested this hypothesis in study 2.

Finally, study 2 incorporated additional measures to provide better insight into the processes underlying the predicted effects and examine the effects of the negative information, not only on the overall evaluations of the brand, but also on the likelihood of purchasing the product.

Method

Forty-five male and 77 female undergraduate students participated in the study in exchange for a course credit. The study was conducted in two sessions, one week apart. During the first week, participants were exposed to a set of three advertisements and one short article about cell phones. The second ad in the session was the Levatin ad, which was presented for 30 seconds. After examining each ad or article, participants responded to a series of questions.

One week later, during the second session of the study, participants again reviewed a set of two ads and a counter message from the Consumer Reports Healthwatch, which appeared second in the list and was presented for 75 seconds. Again, after examining each ad or article, participants responded to a series of questions. As in study 1, participants viewed and responded to the experimental stimuli on a
web site and were eligible for a drawing to win $50 if at the end of the study they responded correctly to some questions related to the information in the ads.

**Stimuli.** In order to control for differences in the information provided by the refutational and nonrefutational information, study 2 tested two versions of the Levatin ad. The first version of the ad was identical to the ad used in study 1 which promoted Levatin as highly effective and reported results of studies revealing that Levatin was effective for 93% of the patients. In the second version, the product was promoted as a safe way to relieve allergy symptoms; it reported results of studies demonstrating that 99% of the participants taking the drug did not experience any side effects. The headline of the ad was “Levatin for allergy symptoms. Clinically proven safety.” The ad further claimed “To ensure the safety of our product, we put Levatin to a stringent clinical trial. The results were incredible. 99% of the participants taking Levatin experienced no significant side effects.”

For each of the two Levatin ads, two versions of the *Consumer Reports* message were tested. For participants who saw the ad positioning the product as highly safe, the refutational counter message reported studies demonstrating that 30% of the participants taking Levatin experienced significant side effects. The nonrefutational counter message reported studies showing that 35% of the participants continued to experience the symptoms they had had prior to taking Levatin.

The reverse was the case for participants who saw the effectiveness ad. The refutational counter message reported studies showing that 35% of the participants continued to experience the symptoms they had had prior to taking Levatin, and the nonrefutational version reported studies demonstrating that 30% of the participants taking Levatin experienced significant side effects. This 2 (ad claim) by 2 (type of counter argument) between-subjects design allowed us to control for the specific information provided by the refutational and nonrefutational counter messages.
To ensure equal strength of the claims in the two refutational messages we conducted a pretest. After viewing one of the two versions of the refutational message, 54 participants indicated their attitudes toward Levatin ($\alpha = .84$), purchase intentions ($\alpha = .85$), credibility of the *Consumer Reports* article ($\alpha = .91$), and perceptions of the extent to which the counter message disproved the original claims of the ad. These variables were measured with the items used in study 2. The pretest did not reveal any significant differences in the effects of the two aligned messages on brand attitudes ($M_{\text{effectiveness}} = 2.74$, $M_{\text{safety}} = 2.39$, $F < 1$), purchase intentions ($M_{\text{effectiveness}} = 1.98$, $M_{\text{safety}} = 2.32$, $F < 1$), credibility of the *Consumer Reports* message ($M_{\text{effectiveness}} = 1.91$, $M_{\text{safety}} = 2.42$, $F < 1$), and the extent to which the message disproved the original claims of the ad ($M_{\text{effectiveness}} = 5.20$, $M_{\text{safety}} = 5.15$, $F < 1$).

**Dependent Variables.** We used the same questions as in study 1 to assess brand attitudes (Cronbach’s Reliability: $\alpha_{\text{session 1}} = .90$, $\alpha_{\text{session 2}} = .87$) and company credibility ($\alpha_{\text{session 1}} = .96$, $\alpha_{\text{session 2}} = .94$). In study 2, we also included several additional variables, which were also measured on a scale from 0 to 8.

First, along with brand attitudes, we assessed purchase intentions by asking participants, (1) “If at some point you experience allergy symptoms, how likely would you be to consider taking Levatin?” (2) “If you found yourself shopping for an allergy medication, how likely would you be to buy Levatin?” and (3) “Suppose you have a friend who is deciding on which allergy product to take. How likely would you be to recommend that he/she consider taking Levatin?” ($\alpha_{\text{session 1}} = .93$, $\alpha_{\text{session 2}} = .94$).

Second, after participants saw the *Consumer Reports Healthwatch* message during the second session, we assessed their perceptions of the credibility of the article with the following items: (1) “How honest is the *Consumer Reports* message?” (2) “To what extent do you feel you can trust the information presented in the *Consumer Reports* message?” (3) “To what extent do you feel that you
can believe the information presented in the *Consumer Reports* message?” and (4) “To what extent do you feel that the *Consumer Reports* message accurately portrays Levatin?” (α = .95).

Third, as a manipulation check, we asked participants to answer the following: (1) “To what extent do you think Levatin can effectively reduce allergy symptoms?” (2) “To what extent do you think Levatin has significant side effects?” and (3) “To what extent do you think the *Consumer Reports* message disproved the original claim of the ad?”

Results

*Manipulation Checks.* To test the effectiveness of our manipulations, we first examined participants’ evaluations of the two Levatin ads during the first experimental session. An analysis of variance revealed that participants who saw the effectiveness ad were more likely to perceive Levatin as effective in relieving allergy symptoms than participants who saw the safety ad, \(F(1, 120) = 8.75, p = .01, M_{\text{effectiveness}} = 5.57, M_{\text{safety}} = 4.58\). On the other hand, participants who saw the safety ad were less likely to believe that Levatin has significant side effects than participants who saw the effectiveness ad, \(F(1, 120) = 18.30, p < .01, M_{\text{effectiveness}} = 4.14, M_{\text{safety}} = 2.68\). Furthermore, there were no significant differences in the extent to which participants believed the claims of the two ads, as measured by ratings of Levatin’s safety (in the case of participants who viewed the safety ad) or effectiveness (in the case of participants who viewed the effectiveness ad), \(F < 1\).

We also examined participants’ evaluations of the four versions of the *Consumer Reports* message during the second session. An analysis of variance revealed no significant differences between the perceived credibility of the refutational and nonrefutational counter messages, \(F(1, 120) = 1.33, p = .25\). Nor were the main effect of type of ad and the interaction between the two factors
significant ($F$’s < 1). Across conditions, participants were equally likely to find the claims of the counter message highly trustworthy ($M = 6.20$, $SD = 1.35$).

Significant differences, however, were observed in participants’ ratings of the extent to which the counter message disproved the claims of the ad. The two refutational messages were perceived as disproving the claims of the ad to a greater extend than the two nonrefutational messages ($F(1, 118) = 38.70, p < .01; M_{aligned} = 6.25; M_{nonaligned} = 3.56$). Furthermore, as indicated by the nonsignificant effect of the ad’s claims, $F < 1$, and the nonsignificant interaction between claim of the ad and counter message alignment, $F(1, 118) = 1.436, p = .22$, the two refutational counter messages corresponding to the two Levatin ads were perceived as equally disproving the claims of the ad.

**Brand Attitudes.** Analysis of covariance with brand attitudes at session 2 as a dependent variable and brand attitudes at session 1 as a covariate revealed a significant main effect of counter argument alignment, $F(1, 117) = 8.16, p < .01$. Also, a marginally significant main effect of ad claim was observed, $F(1, 117) = 3.66, p = .06$. Regardless of the content of the negative information, there was overall a stronger decrease in the evaluations of the safety ad ($M_{adj.} = 1.20$) in comparison to the effectiveness ad ($M_{adj.} = 2.50$). More importantly, ad claim did not moderate the superiority of the aligned counter information in undermining brand attitudes, $F(1, 117) = 2.380, p = .23$. The same counter argument (either possible side effects or low effectiveness) had differential effects on participants’ attitudes toward the brand, according to whether the counter argument directly undermined the ad’s claims or presented competing information (figure 1).
**Purchase Intentions.** Analysis of covariance, with participants’ ratings of their purchase intentions during the second session as a dependent variable and purchase intentions measured at session 1 as a covariate, revealed a significant main effect of counter argument alignment, $F(1, 117) = 3.87, p = .05$. The main effect of claim of the ad (safety vs. effectiveness) and the interaction between ad claim and counter argument alignment were not significant ($F$’s < 1), demonstrating that the refutational counter arguments resulted in a greater decrease in purchase intentions regardless of their specific content (figure 1). When the product was advertised as highly effective, a counter message providing information for its possible ineffectiveness lowered purchase intentions to a greater extent than information about the possible side effects of the product. On the other hand, when the product was advertised as a safe way to relieve allergy symptoms, the same information about low effectiveness was less detrimental than information about possible side effects.

**Levatin Credibility.** Analyses of covariance with the ratings of Levatin’s credibility at session 2 as a dependent variable, and the corresponding ratings at session 1 as a covariate revealed a significant main effect of type of counter argument, $F(1, 117) = 18.79, p < .01$. The main effect of claim of the ad, $F(1, 117) = 1.74, p = .19$, and the interaction between ad claim and type of counter argument, $F(1, 117) = 1.23, p = .27$, were not significant, demonstrating that for both ads the refutational counter argument resulted in stronger decrease in the perceived credibility of the company ($M_{\text{effectiveness ad adj.}} = 1.94; M_{\text{safety ad adj.}} = 1.88$) than the nonrefutational counter argument ($M_{\text{effectiveness ad adj.}} = 3.31; M_{\text{safety ad adj.}} = 2.70$).

Further analysis revealed that once credibility ratings at session 1 and session 2 were included in the model, along with purchase intentions at session 1 and session 2, the effect of counter claim alignment was no longer significant, $F < 1$, while the effect of company credibility on purchase intentions remained significant, $F(1, 115) = 95.89, p < .01$. Similarly, once credibility ratings were
included in the model along with brand attitudes, the effect of counter claim alignment was no longer significant, $F < 1$, while the effect of company credibility remained significant, $F(1, 115) = 215.47, p < .01$. According to these results, the stronger effect of the refutational counter arguments on brand attitudes and intentions was mediated by participants’ perceptions of the credibility of Levatin.

*The Role of Counter Message Credibility.* We proposed that our strategy for creating resistance would be particularly suitable for public organizations that can use the trust of the public as an asset in building counter persuasive communications. To test that hypothesis, along with counter argument alignment, type of ad, and the covariate ratings from session 1, we included as a continuous variable participants’ perceptions of the credibility of the counter message.

The results regarding purchase intentions revealed a significant interaction between type of counter argument and perceived credibility of the *Consumer Reports* message, $F(1, 115) = 8.523, p = .03$. This interaction was not moderated by the specific claim of the ad (safety vs. effectiveness) and counter message, $F < 1$. The more participants trusted the *Consumer Reports* message, the greater the difference was in the effects of the aligned and the nonaligned counter claims on purchase intentions (figure 2). Although the interaction between type of ad, type of counter argument, and perceived credibility did not reach significance for brand attitudes, $F(1, 115) = 12.50, p = .12$, the pattern of the means followed that of purchase intentions (figure 2).

The perceived credibility of the source of the counter message moderated the effects of the counter messages on participants’ perception of Levatin credibility as well. Again, the more the participants perceived *Consumer Reports* to be a trustworthy source, the stronger the advantage of the
aligned counter arguments in undermining the credibility of the manufacturer of Levatin, \( F(1, 114) = 5.80, p = .02 \) (figure 3). The interaction between type of ad, type of counter message, and perceived credibility of the source of the counter message was not significant again, \( F < 1 \).

Discussion

The results of study 2 revealed that for an ad that positioned the product as effective, counter information about low effectiveness resulted in greater resistance than counter information about low safety. However, the opposite was the case for an ad that positioned the product as safe. Because the specific information about safety and effectiveness was the same across conditions, these results provided confidence that the differences in the effects of refutational and nonrefutational counter arguments were not driven by the differential strength of their specific content.

Study 2 also demonstrated that refutational information had a stronger effect than nonrefutational information in diminishing not only the overall evaluations of the brand, but purchase intentions as well. Regardless of the specific claim of the ad, negative information about the attribute promoted in the ad resulted in a greater decline in purchase intentions than equally strong counter information about another important attribute. As in study 1, these effects were driven by the perceptions of the credibility of the sponsor of the ad. That is, regardless of the specific ad claims, negative information that directly refuted these claims caused a greater decline in the credibility of the company. This decline further resulted in more negative attitudes toward the product, as well as lower purchase intentions.
An additional contribution of study 2 concerned the role of the credibility of the source of the negative information. Although the refutational counter arguments had an overall stronger negative effect on brand attitudes and intentions than the nonrefutational counter arguments, this difference was greater when the source of the counter message was perceived as highly credible. Furthermore, while the moderating effect of message credibility was significant for purchase intentions, it was not significant for brand attitudes, although it was in the expected direction. These findings suggest that messages of lower credibility may be able to lower brand attitudes by providing direct refutations of the ad claims. However, to successfully use this strategy in undermining purchase intentions, the source of the negative information has to be highly credible. This finding is particularly important for the goals of the present research, as it suggests that the use of refutational information is particularly suitable for organizations concerned with consumer welfare. Having the trust of the consumer as an important asset, such organizations can effectively employ refutational counter arguments and be successful in reducing consumption of harmful products.

GENERAL DISCUSSION

Consumers are increasingly exposed to messages promoting products with possible harmful effects. Thus, organizations concerned with consumer welfare are increasingly more concerned with providing consumers with counter persuasive communications designed to prevent consumption of such products among vulnerable populations. Yet, little scientific knowledge is available to advise such organizations on what type of counter information would be most likely to make these efforts successful. Spurred by this gap in the consumer research literature, the present investigation examined the relative effects of (1) counter information that undermined the specific claims of the ad promoting
the product and (2) equally negative information about product attributes not mentioned in the ad. The results revealed that because directly undermining the ad claims allowed consumers to make inferences not only about the advertised product, but also about the credibility of the company that promotes it, counter messages that directly refute the appeals used to promote the product will be more effective in creating resistance than equally negative information that does not specifically address the ad claims. Such a conclusion is consistent with research demonstrating that anti-smoking advertisements reinforcing negative smoking stereotypes (e.g., “smoking stinks”, “how to spot a nerd”) can offset the effects of common tobacco ads depicting images of young, attractive, glamorous, and sexy people who are having fun (Pechmann and Knight 2002). Our findings are also consistent with examinations of various antismoking campaigns suggesting that whereas messages depicting the negative health effects of smoking have been generally ineffective, one of the most successful ways to decrease tobacco consumption was to provide evidence for the deceptiveness of tobacco advertising (Goldman and Glantz 1998). The results of this investigation, however, have a broader set of implications for preventing consumption of a variety of harmful products. For example, our findings suggest that campaigns promoting nutritious eating should undermine the specific appeals with which fast food is advertised. Campaigns promoting safe driving should undermine the commercial depictions of joy and excitement of high speed. In response to the appeals of youth and beauty used by the tanning industry, messages designed to prevent skin cancer should inform consumers that tanning can prematurely age and wrinkle skin. Finally, anti-debt campaigns should attack the specific appeals of freedom and independence used by credit card companies.

In addition to providing evidence for the effectiveness of directly undermining the specific claims with which a product is promoted, the present research also revealed that such strategy has a particular advantage when provided by a trustworthy source, such as a consumer advocacy
organization. The more credible the source of the negative information, the greater was the difference in the effects of the two types of counter messages. This conclusion is particularly important, as it suggests that the trust of the public can be a key asset enabling public organizations to implement the present findings for building effective counter persuasive strategies and protect consumers from socially harmful advertising.

Along with these practical implications, the present research advances the consumer behavior literature regarding (1) the study of resistance to persuasion and (2) the role of information alignment on judgment revision. Previous research has examined different forms of information alignment. For example, studies demonstrate that alignment of affect-based or cognition-based information plays an important role in judgment revision (Edwards 1990; Fabrigar and Petty 1999). Pham and Muthukrishnan (2002) have examined the effects of alignment of general versus specific brand positioning and the type of negative information. The present investigation further advances these findings by examining the effects of alignment between the specific content of the original claim and the new information.

One important feature of the present research is that although the aligned counter arguments refuted the specific claims of the ad, they did not contain direct claims or evidence that the original ad was deceptive. Yet, the refutational information resulted in a greater decline in the participants’ ratings of the company credibility. This difference in the perceived credibility of Levatin mediated the differential effect of refutational and nonrefutational counter arguments on brand attitudes and purchase intentions. Future research should examine the effects of counter argument alignment in the presence or absence of direct claims for the deceptiveness of the ad, as such additional information may amplify the effect of directly undermining message claims. At the same time, directly claiming that an ad is dishonest may have a backfiring effect. As the present studies do not address these possibilities, further
research is needed to examine the role of implied and directly claimed deceptiveness on brand evaluations revision.

As a final note, although this research was motivated by the goal of helping public organizations in protecting consumers from products with harmful effects, it provides an insight regarding the design of successful marketing communications. In today’s environment, negative information is easy to distribute, whether by news reports, internet chat rooms, blogs, brand communities, consumer protection organizations, or competitors. It is becoming increasingly important for companies to ensure that their marketing communications can sustain negative brand information from such sources. It is also becoming increasingly important for managers to be aware of the ways in which consumers revise their evaluations when information undermining the brand position becomes available. The findings of this research provide insight in this direction by revealing that counter information that is directly aligned with the claims of an ad is especially likely to undermine the brand’s position. By promoting their products with information that is truthful, credible, and not likely to be refuted in future challenges, marketers can ensure the long-term success of their products.
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FIGURE 1

EFFECTS OF REFUTATIONAL AND NONREFUTATIONAL COUNTER ARGUMENTS

Note: The graphs displays covariate adjusted means.
FIGURE 2

EFFECTS OF TYPE OF COUNTER ARGUMENT AND SOURCE CRIBILITY

Note: The graphs display covariate adjusted means. Median split was used for the purpose of drawing the graphs.
FIGURE 3

EFFECTS OF TYPE OF COUNTER ARGUMENT AND SOURCE CREDIBILITY

Note: The graph displays covariate adjusted means. Median split was used for the purpose of drawing the graph.
APPENDIX A

HealthWatch

Are there side effects to Levatin?

Clinical studies show 30% of participants experienced significant side effects.

The manufacturer of this product, sold to reduce allergy symptoms, claims that Levatin has been clinically proven to work for 93% of the patients.

Other larger and better-controlled studies raise concern for another aspect of Levatin. It may not be very safe. According to these larger studies, 30% of the participants taking Levatin experienced increased instances of lightheadedness, nausea, and headaches.

The percentage of people who are likely to be free of side effects is 70%. Consumers should know that there is a fairly good chance that Levatin may cause some of the above side effects.