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Is Your Product Really Green? A Content Analysis to Reassess Green Advertising

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This article investigates the changes in green advertising by conceptually replicating and extending Carlson, Grove, and Kangun's 1993 study. A content analysis of 433 unique ads from 18 magazine titles published in 2009 and 2010 demonstrates that advertisers attempted to address growing public concern for the environment and the demand for green products and services as emerge from the analyses of the ads' target, objective, and the executional elements. Contrary to Carlson, Grove, and Kangun's findings, the majority of environmental claims were deemed acceptable, implying a trend toward more trustworthy and reliable green advertising.

Advertising plays a major role in generating public awareness about environmental issues, communicating a green brand image, and driving consumer demand for green products (Grillo, Tokarczyk, and Hansen 2008). Nevertheless, green advertising faces challenges as consumers are becoming increasingly skeptical about its credibility and usefulness (PR Newswire 2010). While many companies use advertising to communicate their genuine attempts to minimize the environmental impact of their brands and products, others exaggerate or even fabricate the environmental impact of their offerings (Carlson, Grove, and Kangun 1993). Referred to as greenwashing, such environmental claims include vague, unsubstantiated, and potentially misleading statements communicated in

green advertising or marketing material (Fernando, Suganthi and Sivakumaran 2014). Greenwashing potentially erodes the consumer market for green products and services (Furlow 2010), distances potential investors interested in environmentally friendly firms (Delmas and Burbano 2011), and negatively impacts the credibility of the organization and its perceived performance (Newell, Goldsmith, and Banzhaf 1998). Therefore, the question of whether green advertising communicates a sincere environmental message is of primary importance.

A seminal study by Carlson, Grove, and Kangun (1993) was an early attempt to systematically investigate deception in green advertising. Their content analysis of U.S. magazines published in 1989 and 1990 showed that while organizations' environmental claims typically did not involve lies, most claims included misleading elements, such as vagueness or omissions. To date, this study has been cited in 364 publications and is repeatedly used to support references related to the prevalence of deceptive green advertising and its negative implications (e.g., Fernando, Suganthi, and Sivakumaran 2014; Finisterra do Paço and Reis 2012; Newell, Goldsmith, and Banzhaf 1998; Tucker et al. 2012). However, few attempts have been made to empirically investigate the prevalence of deceptive green advertising since that study was published.

Today, presenting inflated green claims in advertising has become more difficult. First, consumers are more knowledgeable about green issues, with the Internet providing them with easy access to information about the truthfulness of an advertised environmental claim (Urbach 2008). Second, the Federal Trade Commission (FTC) has issued several revisions of its *Green Guides* since they were first introduced in 1992. These guides are designed to help marketers avoid misleading environmental claims in their communications and ensure claims are truthful and not deceptive. They also specify ways in which marketers can qualify their claims to avoid deceiving consumers (FTC 2012). Third, the rise of consumer advocacy groups and environmental watchdog sites such as

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Greenwashing Index (http://www.greenwashingindex.com) and Environmentally Preferable Purchasing (EPP) (http://www.epa.gov/epp/) provide consumers and businesses with guidelines as to what is considered deceptive green advertising. Finally, companies today are aware greenwashing not only has ethical consequences but also affects consumers' perceptions of the brand and the advertiser, ultimately impacting businesses' bottom lines (Nyilasy, Gangadharbatla, and Paladino 2014). Therefore, the question is this: What has changed in the nature of green advertising in the past two decades, and to what extent?

We sought to conceptually replicate and extend Carlson, Grove, and Kangun's (1993) study to explore the changes in green advertising in U.S. print magazines in 2009 and 2010. This study uses Carlson, Grove, and Kangun's two classification schemes: claim type and the presence of misleading/deceptive content along with other ad characteristics. Given our speculation that deception in green advertising has become more difficult in recent years, a systematic examination of green advertising will provide an objective baseline for future considerations of green advertising literacy and consumer education as well as the development of public policy.

GREEN ADVERTISING

Green advertising is defined as "any ad that meets one or more of the following criteria: (1) explicitly or implicitly addresses the relationship between a product/service and the biophysical environment, (2) promotes a green lifestyle with or without highlighting a product/service, and (3) presents a corporate image of environmental responsibility" (Banerjee, Gulas, and Iyer 1995, p. 22). The aim of green advertising is to (a) inform consumers about the environmental aspects of a company's products and services (Pranee 2010), (b) create awareness of and positive attitudes toward environmentally friendly brands and businesses (D'souza and Taghian 2005), and (c) stimulate the demand for green products (Carlson et al. 1996). The growing importance of green advertising theoretically and practically is reflected in the mounting research that focuses on various topics including its conceptualization and nature (Banerjee, Gulas, and Iyer 1995; Kilbourne 1995; Zinkhan and Carlson 1995), assessments of the influence of consumer characteristics on its effectiveness (Finisterra do Paço and Reis 2012), as well as investigations of consumer response to specific ad components (Atkinson and Rosenthal 2014; Royne et al. 2012; Segev, Fernandes, and Wang 2015).

Specifically, research on the content of green advertising is divided into two streams. One stream is related to the anatomy of green advertising and the extent of environmental information communicated in the ad (e.g., Banerjee, Gulas, and Iyer 1995; Grillo, Tokarczyk, and Hansen 2008; Wagner and Hansen 2002). Banerjee, Gulas, and Iyer (1995) classified environmental advertisements into three categories—shallow,

moderate, and deep—to capture variation in the environmental focus of the ads. Wagner and Hansen (2002) further expanded this classification into five categories of ad greenness based on a combination of textual and executional elements. These studies showed that most advertisements were shallow or moderate (Banerjee, Gulas, and Iyer 1995) and that the overall greenness of advertisements declined over time (Grillo, Tokarczyk, and Hansen 2008). Recently, researchers used a content analysis to classify green ads into three groups based on the agenda they promoted: macro level, meso level, and micro level (Fowler and Close 2012).

One of the criteria used to classify green advertising is related to its executional elements (Grillo, Tokarczyk, and Hansen 2008; Wagner and Hansen 2002). Referred to as the physical layout of the advertisement, which includes visuals, colors, backgrounds, and logos, executional elements help communicate the objective of the advertisement (Wagner and Hansen 2002) or imply that the advertised brand benefits the environment (Carlson, Grove, and Kangun 1993; Carlson et al. 1996). Wagner and Hansen (2002) argued that ads with environmental claims "look green" if they include one or more elements such as images of wildlife, vegetation, forests, natural landscapes, children, and green colors and tones. Research that explores the executional elements in green advertising is limited; however, a trend analysis of the green advertising of international firms reveals that the executional elements generally reflected the specific nature of the advertised environmental issues (Leonidou et al. 2011) with illustrations showing various natural (e.g., blue sky, blue sea, flowers, green forest), artificial (e.g., a lion hunting penguins in a dried-up tropical region), or industrial (e.g., cars, airplanes, machinery) scenes.

The other stream of research focuses on greenwashing, the act of misleading consumers about the environmental practices of a company or the environmental attributes and benefits of a product or service (Furlow 2010). Early studies examined the validity and extent of deceptiveness in green advertising claims (Carlson, Grove, and Kangun 1993; Kangun, Carlson, and Grove 1991) using two typologies. One typology analyzed the focus of the claim, meaning whether it contained the product's environmental attributes, its production process, its association with an environmentally oriented cause or activity, or stated a factual piece of information about the environment. The other typology assessed the deceptive nature of the advertising claims, classifying them into five categories: vague/ambiguous, omission, false/outright lie, a combination, and acceptable. These studies revealed that more claims were coded as misleading than acceptable and that the misleading/deceptive elements were more common in claims that focused on the environmental products' attributes (product orientation) and those that enhanced the environmental image of an organization (Carlson, Grove, and Kangun 1993). A recent content analysis that applied this typology on sustainable versus green messages (Cummins et al. 2014) revealed that about 43% of

the sustainable messages were identified as image oriented and 47% of the nonsustainable messages were classified as product claims. In terms of greenwashing, the dominant category across all environmental advertisements was the acceptable, followed by the vague/ambiguous category. Finally, no messages were identified as outright lies, and the omission category was also relatively small.

In this context, logos and third-party ecolabels are also considered certification marks, ensuring consumers about the truthfulness of these claims (Atkinson and Rosenthal 2014). Research on ecolabels and logos in green advertising is limited, with most studies focusing on the impact of ecolabels on persuasion rather than investigating their validity. Studies showed that specific arguments made by the ecolabel evoked greater trust and positive attitudes toward the advertised product (Atkinson and Rosenthal 2014). Others demonstrated that consumers very concerned about the environment perceived manufacturers' ecolabels more positively than consumers with fewer concerns about the environment who regarded the manufacturer as a biased certification source (Bickart and Ruth 2012). While these studies acknowledged the importance of ecolabels in enhancing trust in green ads, to the best of our knowledge no attempts have been made to investigate the validity of third-party ecolabels and logos.

Green Advertising Regulation

The FTC is the primary agency that oversees green advertising in the United States. In 1992, the FTC issued its policies on environmental communications known as the *Green Guides* (hereafter: *Guides*) to help companies determine the appropriate means for making claims about the environmental benefits of their products. Since then, the FTC has issued three more revisions of the *Guides*—in 1996, 1998, and 2012—in response to the ongoing developments in marketing strategies and communication. The *Guides* are based on consumers' likely understanding of the environmental claims made in marketing communication across all media types. They include general principles that apply to all environmental marketing claims, information about how consumers are likely to interpret particular claims, and how marketers can substantiate and qualify their claims to avoid deceiving consumers (FTC 2012).

The *Guides* use three criteria for determining what distinguishes a legitimate advertising claim from one that is misleading or deceptive. The first is substantiation, which requires advertisers to provide reliable evidence to support statements about a product. The second is specificity and clarity, which requires advertisers to avoid broad claims and terms unless the specific meaning is made clear. The third principle requires that claims should not be overstated (Sheehan 2014). Although the *Guides* are not binding law, they describe the types of environmental claims the FTC might find deceptive under Section 5 of the FTC Act, which empowers the agency to protect consumers from deceptive and unfair trade practices through legal actions such as cease-and-desist orders and fines against companies that make deceptive claims.

The recent revisions of the *Guides*, coupled with enforcement actions and FTC warnings to marketers, are encouraging signs that the FTC is becoming more effective in addressing greenwashing (Bradley 2011). The clear implication is that companies should pay close attention to this set of standards and exercise caution when creating green advertising to avoid a potential FTC investigation, sanctions, and negative publicity (Woods 2008). Therefore, one can assume that, since the beginning of the 1990s, green advertising has increasingly complied with the communication standards set by the *Guides*.

Following Carlson, Grove, and Kangun's (1993) research questions, we ask:

RQ1: What are the dominant characteristics of green advertising in terms of focus and executional context?

RQ2: What types of environmental claims do companies use to promote their green concern?

RQ3: How frequently does each type of claim appear in green advertisements?

RQ4: Is there still a high incidence of misleading or deceptive claims in green ads?

RQ5: Are some types of green claims more likely to be deemed misleading or deceptive?

METHOD

Sampling and Materials

We conducted a quantitative content analysis of green advertisements from 18 popular and environmental magazines from 2009 and 2010. Green ads were selected based on Banerjee, Gulas, and Iyer's (1995) definition. The selected time frame marks 20 years since the collection of the ads for Carlson, Grove, and Kangun's (1993) study. This time frame also provides an adequate perspective for tracking changes in the nature of green advertising given that the *Guides* were not available when the ads from the original study were created and published but became well-known in the 20 years that followed. We attempted to use the same magazines that Carlson, Grove, and Kangun (1993) used, except for magazines that ceased publication or were impossible to obtain. In those cases, we substituted alternative magazines based on category and circulation. Some magazines had missing issues; however, such omissions probably did not affect the final sample of ads due to the high repetition rate of each ad within and across magazine titles. For a complete list of magazine titles, see Online Appendix A.

After being briefed on and shown examples of environmental advertising, two graduate students from communication schools in different universities generated the sample of

full-page green ads for analysis. They identified 1,214 incidents of green ads in all available magazine issues. After excluding duplicates, 433 unique ads with at least one specific environmental claim remained for analysis. Following Carlson, Grove, and Kangun's (1993) method, two of the authors reviewed each ad to determine the number of green claims and their position on the layout. A green claim was operationalized as one or more sentences that communicate a complete idea, informing readers how the advertiser or the advertised product/service contributes to environmental improvement and/or helps reduce environmental degradation. Any discrepancies between the authors regarding which claims were considered green or not were resolved through discussions resulting in consensus about their inclusion or elimination. After this analysis, a total of 643 green claims were identified. This study included a two-level analysis: ad level and claim level. Therefore, the units of analysis were both the entire ad as well as the single environmental claim.

Coding Procedures

First, we constructed detailed coding categories and a codebook based on Carlson, Grove, and Kangun's (1993) typology and that of other studies. Second, we held a training session for two independent judges, a master's student and a doctoral student from communication schools of different universities. We chose these judges rather than judges with environmental or scientific backgrounds because their perceptions of environmental issues were likely to reflect those of the average consumer (Carlson, Grove, and Kangun 1993). Next, the judges independently co-coded 10% ($n = 44$) of the sample. This 10% co-coding was a pilot test to ascertain that the coding categories and definitions were clear to the judges. The reliability of the pilot test was calculated using the I_r coefficient developed by Perreault and Leigh (1989), which ranged from .90 to 1. Disagreements were settled through discussion. Two additional training sessions were conducted to refine the subcategories and their operational definitions, resulting in an updated codebook. The subcategories "other" and "combination" were added to the product, ad target, and ad objective categories to ensure that they were comprehensive and mutually exclusive. The subcategory "target not specified" was added to the ad target category to classify ads that did not mention explicitly who or what the advertised product or service attempts to help, preserve, or save.

Finally, the two judges coded all of the ads in the sample independently using an electronic coding sheet in Qualtrics, and reliability was recalculated using the entire sample (Carlson, Grove, and Kangun 1993; Perreault and Leigh 1989). The I_r coefficient yielded a range of 0.83 and 0.99 for all categories analyzed. Disagreements were settled through discussion until consensus was achieved. Individual reliability scores are specified in Online Appendix B.

Content Categories

Each ad was subjected to a two-level content analysis: ad level and claim level. Online Appendix B presents the coding categories, their definitions, and examples. At the ad level, coders first identified the advertiser and the product category using Carlson, Grove, and Kangun's (1993) 14 categories. We added the category "other" to the original list to ensure that the categories were comprehensive. Next, coders classified the ads according to their target. We adopted the first three subcategories—planet preservation, animal preservation, and personal health preservation—from Iyer and Banerjee's (1993) taxonomy. The last two subcategories—"combination" and "target not specified"—were added to this classification to ensure that the subcategories were comprehensive. Ads in which there was no explicit reference regarding who or what the advertised product, service, or organization attempts to help, preserve, or save were classified as "target not specified." Ads were then analyzed based on their main objective. Four subcategories were adopted from Iyer and Banerjee (1993): product/service green promotion, green image, influence consumer behavior, and enlisting consumer's support for a cause. We added a "combination" category to ensure that the subcategories were comprehensive. Finally, each ad was analyzed based on its executional elements and was coded according to three categories: environmentally oriented colors (i.e., blue, green, white, brown, and beige) (Eiseman 2006), the presence or absence of elements surrounding the advertised brand/product, and overall green look-and-feel. The first two were checklist categories developed for this study; the third category was adopted from Wagner and Hansen's (2002) measurement model for advertising greenness. Referred to as its executional framework, an ad is coded as having an overall green look-and-feel if it contains one or more of the following elements: (a) images of wildlife, vegetation, forests, natural landscapes, or children; (b) green colors and tones, and (c) symbols, logos, or graphics that signify an environmentally friendly orientation (e.g., organic, recycling, a green leaf).

In the claim-level analysis, we deviated from Carlson, Grove, and Kangun's (1993) approach and coded the headlines and the rest of the ad copy separately. This distinction was necessary because advertising headlines tend to be inherently vague, ambiguous, and general in nature (Wells, Burnett, and Moriarty 1992). A quantitative examination of the headlines in the sample confirmed that most (70.3%) were vague or ambiguous. We classified the claims in accordance with Carlson, Grove, and Kangun's (1993) two typologies: claim type and claim deceptiveness. The claim type schema uses five classifications: product orientation, process orientation, image orientation, environmental fact, and a combination. This set of mutually exclusive and comprehensive subcategories reflects the nature of the environmental claims. The operational definitions and examples for each claim type subcategory replicated

those of Carlson, Grove, and Kangun (1993). The claim deceptiveness schema was designed to capture potentially misleading and/or deceptive aspects of environmental claims and originally included five subcategories: vague/ambiguous, omission, false/outright lie, combination, and acceptable. In this study, however, we excluded the outright lie subcategory for three reasons. First, our training sessions revealed that it was too difficult for coders to identify claims that were outright lies, which required expertise in the product or service category promoted in the ad. Second, investigating each claim fully to detect potential lies was too difficult due to limited resources and time constraints. Third, scholars have found that the environmental claims they analyzed typically did not involve lies (Carlson, Grove, and Kangun 1993; Cummins et al. 2014), justifying the exclusion of this subcategory.

Finally, the analysis of logos and third-party ecolabels distinguishes between valid logos of third-party certification organizations and mere graphic symbols with no valid organization behind them. Our analysis is limited to this distinction because specific substantiation criteria for logos and third-party ecolabels were set only in the 2012 *Guides*. Thus, each ad was coded for the presence or absence of a third-party logo that communicates an environmentally friendly quality. Then, we looked up each logo in the Ecolabel Index (2014) to establish its validity and legitimacy. Logos or ecolabels that were not included in this index were considered illegitimate.

RESULTS

Ad-Level Analysis

To answer research question 1, we analyzed the ads' product category, target, objective, and visual elements. Our study, 20 years after the original, yielded four times more green advertisements ($N = 433$) than in 1989 and 1990 ($N = 100$). Of the 14 categories analyzed, nine of them had fewer ads, an equal number, or slightly more ads in this study than the original study (forest: $n = 14$, $n = 0$; wildlife: $n = 5$, $n = 0$; clothing apparel: $n = 3$, $n = 1$; infant care: $n = 2$, $n = 0$; gardening: $n = 3$, $n = 3$; chemical/plastics: $n = 9$, $n = 9$; financial: $n = 3$, $n = 5$; personal care: $n = 5$; $n = 6$; appliances: $n = 2$, $n = 15$, respectively). Of the five remaining categories, automobiles ($n = 51$, 11.8%; $z = -1.922$, $p < .05$), services ($n = 93$, 21.5%; $z = -2.859$, $p < .01$), and household/office ($n = 27$, 6.2%; $z = 2.931$, $p < .01$) had significantly more ads in this study than in the original one. Even though energy ($n = 21$, $n = 58$) and food ($n = 4$, $n = 31$) had a greater absolute number of ads, proportionally they were not statistically significant. To ensure the categories were comprehensive, we included the subcategory "other," which contained approximately 31% of the sample. A qualitative analysis of this category revealed that nonprofit organizations (37.3%, $n = 50$), consumer electronic products (17.2%, $n = 23$), and travel/tourism (9%, $n = 12$) were often seen in the sample. The remaining categories

combined accounted for 36.3% of the "other" category sample and included media, retail stores, furniture, cigarettes, government agency, agriculture, athletic products, business jets, computer server/technology, and miscellaneous. The analysis of the ads' targets showed that the majority of them (70.9%, $n = 307$) had planet preservation as their main target, followed by the combination category (13.6%, $n = 59$). A qualitative analysis of this category revealed that planet preservation + saving money (40.7%, $n = 24$) was the most frequently combined target in the sample, followed by planet preservation + saving energy (22%, $n = 13$), planet preservation + animals (15.3%, $n = 9$), and planet preservation + saving energy and money (15.3%, $n = 9$). Interestingly, 11.3% ($n = 49$) of the ads did not specify who or what the advertiser wanted to help, preserve, or save. The other two categories, animal and personal health preservation, contained less than 5% of the ads combined.

The analysis of the ads' objectives revealed that 46.2% ($n = 200$) of them promoted a product/service as being green, followed by promotion of a green image (41.1%, $n = 178$). Very few ads focused on enlisting consumer support for a cause (6.7%, $n = 29$), influencing consumer behavior (3%, $n = 13$), or a combination of objectives (2.5%, $n = 11$).

Finally, we examined the executional elements of the ad. White (85.9%), green (69.1%), and blue (55.7%) were the dominant colors, which also translated into an overall look-and-feel of the ads as green (68.6%, $n = 297$). As for elements, vegetation (37.6%), other (33.3%), sky (28.4%), and adults (26.3%) appeared in the ads most often. The remaining categories (buildings/urban, abstract, water, animation, animals, children, highways/roads/streets, and trash) accounted for 15.9% to 0.5% of the ads. Because the "other" category was the second most common element in the sample, we conducted a qualitative analysis of this category. Wind turbines and solar panels were the most common features in the "other" category (16%, $n = 23$), followed by elements related to landscape, nature, and animals (13.9%, $n = 20$), furniture and home (12.5%, $n = 18$), and automobiles (11.1%, $n = 16$).

A Comparative Analysis of Ad Claims

To compare our findings with Carlson, Grove, and Kangun's (1993), we cross-tabulated the two taxonomies from the original article (see Table 1) and assigned 617 environmental claims to one of 12 cells (3 misleading/deceptive categories × 4 claim type categories) according to the method described in their paper (p. 35).

Research questions 2 and 3 asked about types of environmental claims and the frequency that companies use them in their ads. Similar to the original study, overall, most claims were image oriented (46.5%, $n = 287$), followed by product oriented (37.6%, $n = 232$). However, while in the original study process-oriented claims were less dominant, we found that environmental fact claims were the least common (7%, n

TABLE 1
Claim Type and Misleading/Deceptive Cell Frequencies and Percentages: A Comparison Between Carlson, Grove, and
Kangun's (1993) Study and the Current Study

Misleading/Deceptive	Claim Type				
	Product	Process	Image	Environmental Fact	Total
Vague/ambiguous	46.5 (31)	10.3 (6)	38.1 (47)	5.2 (16)	
	72 (16)	**16 (3)**	**59 (24)**	**8 (8)**	**155 (51)**
	31 (50)	29.1 (27)	20.6 (52)	18.6 (24)	25.1 (42)
Omission	52.8 (33)	11.1 (8)	27.8 (42)	8.3 (17)	
	38 (4)	**8 (1)**	**20 (5)**	**6 (2)**	**72 (12)**
	16.4 (13)	14.5 (9)	7 (11)	14 (6)	11.7 (10)
Acceptable	31.3 (8)	7.9 (14)	53.3 (33)	7.4 (45)	
	122 (4)	**31 (7)**	**208 (16)**	**29 (22)**	**390 (49)**
	52.6 (13)	56.4 (64)	72.5 (35)	67.4 (67)	63.2 (40)
Total	37.6 (26)	8.9 (9)	46.5 (38)	7.0 (27)	100
	232 (32)	**55 (11)**	**287 (46)**	**43 (33)**	**617 (122)**

Note. Numbers from Carlson et al. (1993) are presented in parentheses.

[a] Claim type cell percentages are at the top by rows.

[b] Misleading/deceptive cell percentages are at the bottom by columns.

[c] Bolded numbers are the sample size for each cell.

[d] The original number of claims was 643. However, 26 claims were excluded from the analysis for the following reasons: (a) 3% of the claims were coded as a combination within the claim type typology, indicating that the claim had more than one environmental claim type; (b) 1% were coded as a combination within the misleading/deceptive typology, indicating that they had more than one type of misleading or deceptive information; and (c) the sample size for these two combination categories was too small to undergo any insightful examination.

= 43) followed by process-oriented claims (8.9%, $n = 55$) (χ^2 (3, 617) = 297.53, $p < .001$). Research question 4 examined the incidence of misleading or deceptive claims in the ads. Contrary to the original study, more claims were classified as acceptable (63.2%, $n = 390$) than misleading or deceptive (vague/ambiguous = 25.1%, $n = 155$; omission = 11.7%, $n = 72$) (χ^2 (1, 617) = 43.06, $p < .001$).

To address research question 5, which asked which type of claim tends to be more misleading or deceptive, we analyzed only the claims coded as vague/ambiguous or omissions and found the same pattern of results as in the original study. Product- (48.5%, $n = 110$) and image-oriented (34.8%, $n = 79$) claims were classified as misleading/deceptive more often than process-oriented (10.6%, $n = 24$) claims and those containing environmental facts (6.2%, $n = 14$) (χ^2 (1, 227) = 100.44, $p < .001$). Claims focusing on the environmentally friendly attributes of the product had the highest percentage of vague/ambiguous (46.5%, $n = 72$) text and that omitted information (52.8%, $n = 38$), which differs from the image-oriented findings in the original study. In line with Carlson, Grove, and Kangun's (1993) study, overall, more claims were classified as being vague/ambiguous (68.3%, $n = 155$) than as omitting information (31.7%, $n = 72$) (χ^2 (1, 227) = 30.34, $p < .001$).

Unlike the original study, acceptable claims were more often classified as being image oriented (53.3%, $n = 208$) and product oriented (31.3%, $n = 122$) than process oriented

(7.9%, $n = 31$) and containing environmental facts (7.4%, $n = 29$) (χ^2 (1, 390) = 186.92, $p > .001$). Carlson, Grove, and Kangun (1993) noted that in their study, the majority of acceptable claims contained environmental facts and were image oriented. Furthermore, they noted, "This finding appears to be somewhat inconsistent with results noted earlier for claims with which judges found fault (i.e., more 'vague/ ambiguous' claims were 'image' based)" (p. 36). In contrast, in our study the most deceptive information appeared in product-oriented claims. However, image-oriented claims were a close second for deceptive information. This finding also seems to be inconsistent with the analysis of misleading/ deceptive claims, so we conducted an additional analysis. Following the procedure described in Carlson, Grove, and Kangun (1993), we collapsed the misleading/deceptive categories to compare them with the acceptable category. Given that we found the product- and image-oriented claims to have more faults, we analyzed only the claims that were classified as such. The results revealed that product-oriented claims were slightly more likely to be coded as acceptable (52.6%, $n = 122$) than deceptive (47.4%, $n = 110$), but there was no significant difference (χ^2 (1, 232) = 0.62, $p = .43$). When we analyzed only those claims classified as image oriented, the majority of claims were considered acceptable (72.5%, $n = 208$) rather than deceptive (27.5%, $n = 79$) (χ^2 (1, 287) = 57.98, $p < .001$).

Overall, environmental facts (7%, $n = 43$) were classified as having the smallest percentage of misleading/deceptive claims (vague/ambiguous = 5.2%, $n = 8$; omission = 8.3%, $n = 6$) but also the smallest percentage of acceptable claims (7.4%, $n = 29$) when compared to the other three types of environmental claims. When we analyzed only environmental fact claims, the majority of claims were considered acceptable (67.4%, $n = 29$) rather than misleading/deceptive (32.6%, $n = 14$) (χ^2 (1, 43) = 5.23, $p < .05$), a result similar to what Carlson, Grove, and Kangun (1993) found in their original study. A comparative qualitative summary of the findings by Carlson, Grove, and Kangun (1993) and this study is provided in Online Appendix C.

Finally, the analysis of the use of logos in these ads showed that only 15% ($n = 65$) of the ads had an environmental/green logo. When the logos were analyzed for legitimacy, a qualitative analysis revealed the following pattern: (a) 67.7% ($n = 44$) were classified as illegitimate, (b) 16.9% ($n = 11$) had the logo of an environmental organization, but this organization was not authorized to validate environmental claims, (c) 10.8% ($n = 7$) were legitimate logos, and (d) 4.6% ($n = 3$) were coded as a combination of any of the previous three categories.

DISCUSSION

This study presents an extensive analysis of green advertising and adds to the limited research about greenwashing, as well as an updated inventory of the extant green advertising in terms of themes, executional characteristics, and greenwashing. By investigating the extent of deception, this study can help determine whether consumers' skepticism about green advertising is justified, and by comparing ads from two different eras we provide insights into the changes in green advertising and the role of the *Green Guides* in facilitating this change.

Our analysis demonstrates an increase in green advertisements in 2009 and 2010 compared to 1989 and 1990, reflecting the growing consumer demand for green products in the past 20 years despite the recent economic recession (Small Business Sustainability Report 2013). This consumer demand is reflected in the breadth of the product categories that use green advertising and the ads' objectives that emphasized the green attributes of the product/service compared to previous studies (i.e., Carlson, Grove, and Kangun 1993; Iyer and Banerjee 1993).

Our analysis shows that advertisers attempted to address the general public concern for the environment and reach a wide range of environmentally conscious consumers. The ads' targets mainly focused on the preservation of the planet, and their executional elements generally featured images and colors associated with the environment. The majority of the ads contained images of nature, green landscapes, and vegetation, which are associated with environmentally friendly messaging and positioning (Pajari, Peck, and Rametsteiner 1998); the use

of white, green, and blue also signify cleanliness, simplicity, the environment, and nature.

The claim-level analyses and the comparisons with Carlson, Grove, and Kangun's (1993) study reveal a pattern of change and retention in green advertising practices. In both studies, most claims were classified as image oriented, focusing on conveying an overall green image for the company/organization. This might reflect that companies still see the merits of a trendy green presentation and want to ride the wave of the green movement. Most important, greenwashing has changed in 20 years, as more claims were deemed acceptable than misleading/deceptive, unlike Carlson, Grove, and Kangun's (1993) findings. This is an encouraging finding, for the FTC that has been active in promoting truthful and accurate claims in green advertising.

Similar to Carlson, Grove, and Kangun's (1993), the misleading/deceptive claims were generally product and image oriented, with vagueness/ambiguity being the dominant type of deception. However, this finding should be interpreted cautiously, because more claims were deemed acceptable in this study. Specifically, image- and product-oriented claims were still classified as acceptable even after further analysis. When only image-oriented claims were analyzed, the majority of claims were deemed acceptable rather than misleading or deceptive. Therefore, this finding implies than environmental claims are trending toward being more acceptable than misleading compared to 20 years ago.

The analysis of green logos indicates that while a small number of ads included such logos, most of them were illegitimate. Logos were usually from environmental organizations (not standardization agencies) or graphic symbols that conveyed an environmental attribute, which endorsed the message in the ad. The use of these symbols is yet another dimension of potential deception in green advertising, because average consumers may interpret them as formal seals of approval and evaluate the advertised product/service based on this perception. This practice creates another area that the regulatory bodies combating greenwashing must address; indeed, in 2012 the FTC issued standards regarding the inclusion of third-party logos.

Limitations, Future Research, and Implications

This study has some limitations. First, content analysis is useful to identify patterns, frequencies, and categories of advertising (Carlson 2008) but is limited in providing insights about the effects of ad exposure. Second, coders who were trained to identify misleading claims are likely to be different from average consumers who encounter the same ads. Untrained audiences might perceive ads as being problematic more often than trained coders. Third, this analysis did not attempt to identify claims that feature outright lies, which somewhat limits the understanding of the full scope of green advertising deceptiveness. Although absolute lies are less

frequent than making generalizations or omitting important details (Carlson, Grove, and Kangun 1993; Cummins et al. 2014), identifying claims that contain lies is essential to the understanding of the greenwashing phenomenon. Although extensive efforts were made to obtain the same magazine titles used by Carlson, Grove, and Kangun (1993), some were impossible to acquire due to cessation of publication, lack of availability in publishers' archives, or absence of vendors who sold these back issues. While these magazine titles were replaced by different ones, making generalizations about the results that emerge from the two samples should be done cautiously.

Future research in advertising greenwashing should extend this analysis in several ways. First, determining the ratio of green claims to nongreen claims in each ad and classifying green claims by their level of importance will provide insights into the extent to which the focus of the ad is green or general and the commitment of the advertiser to green positioning versus attempts to appeal to a broader audience. Second, expanding this study to different media outlets such as TV and online can improve our understanding of the bigger picture of green advertising practices. Third, integrating a content analysis with an experimental design to explore the effect of deceptive/ nondeceptive green advertising on consumers' perceptions and responses should be the next step in greenwashing research.

This study provides insights for advertisers, consumers, and public policy makers. For advertisers, this study may be helpful in identifying the problematic areas related to specific types of green claims and suggesting ways to address them. As product-oriented and image-oriented claims seem to be the most misleading, advertisers should pay more attention when crafting such messages. Given that environmental facts are less prone to deception, advertisers should increase the use of such claims. In addition, as most deceptive claims fall under the vagueness and ambiguity subcategory, advertisers must substantiate such claims by adding details that can turn them into acceptable ads. With only small adjustments in the copy, advertisers can turn vague and ambiguous ads into acceptable ones, which seems to be the trend, as evidenced by the results of this study.

Policymakers may use these findings as the basis for decisions about green advertising standards and regulations and for developing consumer literacy programs. First, because the *Green Guides* are not binding law, they have limited power (Feinstein 2013; Pellus 2014). Therefore, agencies such as the FTC and the Environmental Protection Agency must join forces to review, reformulate, and turn the *Green Guides* into binding law, which will be more effective in deterring companies from engaging in misleading claims. Second, given the lack of binding guidance, environmental claims are reviewed on a case-by-case basis using Section 5 standards, which are too broad to effectively address specific deceptive cases in green advertising (Pellus 2014). Thus, the level of specificity

in the *Guides* can be used as the basis for more detailed regulation. Third, future revisions of the *Guides* should address the use of visual elements (i.e., logos of environmental organizations and graphic symbols) in green advertising besides the standards related to third-party certification logos. These graphic symbols can mistakenly be interpreted by average consumers as validating a given environmental claim. In this context, the *Guides* do not address other ad cues that carry green connotations such as imagery, colors, or commonly used phrases (e.g., "go green"). As these elements are highly compelling and are associated with the green movement, they have a great potential to deceive consumers and therefore should be regulated (Sheehan 2014). Finally, helping average consumers identify deceptive claims should be a consumer policy priority. The development of special programs that focus on green advertising literacy early on in high schools either as part of existing environmental education programs or of the programs dedicated to media and advertising literacy will help accomplish this goal. Online tutorials in simple language accompanied by graphic examples, illustrations, and real ads can provide consumers with information about what makes green advertising deceptive versus acceptable. The combination of a new regulatory framework and consumer education is likely to minimize both consumers' susceptibility to greenwashing and companies' motivations to engage in deceptive advertising.

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SUPPLEMENTAL DATA

Supplemental data for this article can be accessed at www. tandfonline.com/ujoa.

REFERENCES

Atkinson, Lucy, and Sonny Rosenthal (2014), "Signaling the Green Sell: The Influence of Eco-Label Source, Argument Specificity, and Product Involvement on Consumer Trust," *Journal of Advertising*, 43 (1), 33–45.

Banerjee, Subhabrata B., Charles S. Gulas, and Easwar Iyer (1995), "Shades of Green: A Multidimensional Analysis of Environmental Advertising," *Journal of Advertising*, 24 (2), 21–31.

Bickart, Barbara A., and Julie A. Ruth (2012), "Green Eco-Seals and Advertising Persuasion," *Journal of Advertising*, 41 (4), 51–67.

Bradley, Timothy C. (2011), "Likelihood of Eco-Friendly Confusion: Greenwashing and the FTC Green Guides," *Landslide*, 4 (1), 1–5.

Carlson, Les (2008), "Use, Misuse, and Abuse of Content Analysis for Research in the Consumer Interest," *Journal of Consumer Affairs*, 42 (1), 100–105.

Carlson, Les, Stephen J. Grove, and Norman Kangun (1993), "A Content Analysis of Environmental Advertising Claims: A Matrix Method Approach," *Journal of Advertising*, 22 (3), 27–39.

Carlson, Les, Stephen J. Grove, Norman Kangun, and Michael J. Polonsky (1996), "An International Comparison of Environmental Advertising: Substantive versus Associative Claims," *Journal of Macromarketing*, 16 (2), 57–68.

Cummins, Shannon, Timothy M. Reilly, Les Carlson, Stephen J. Grove, and Michael J. Dorsch (2014), "Investigating the Portrayal and Influence of Sustainability Claims in an Environmental Advertising Context," *Journal of Macromarketing*, 34 (3), 332–48.

Delmas, Magali A., and Vanessa C. Burbano (2011), "The Drivers of Greenwashing," *California Management Review*, 54 (1), 64–87.

D'souza, Clare, and Mehdi Taghian (2005), "Green Advertising Effects on Attitude and Choice of Advertising Themes," *Asia Pacific Journal of Marketing and Logistics*, 17 (3), 51–66.

Ecolabel Index (2014), http://www.ecolabelindex.com.

Eiseman, Leatrice (2006), *Color: Messages and Meanings*, Gloucester, MA: Hand Books Press.

Federal Trade Commission (2012), "FTC Issues Revised Green Guides," http://www.ftc.gov/news-events/press-releases/2012/10/ftc-issues-revised-green-guides.

Feinstein, Nick (2013), "Learning from Past Mistakes: Future Regulation to Prevent Greenwashing," *Boston College Environmental Affairs Law Review*, 40 (1), 229–59.

Fernando, Angeline G., L. Suganthi, and Bharadhwaj Sivakumaran (2014), "If You Blog, Will They Follow? Using Online Media to Set the Agenda for Consumer Concerns on 'Greenwashed' Environmental Claims," *Journal of Advertising*, 43 (2), 167–80.

Finisterra do Paço, Arminda M., and Rosa Reis (2012), "Factors Affecting Skepticism toward Green Advertising," *Journal of Advertising*, 41 (4), 147–55.

Fowler, Aubrey, R., and Angeline G. Close (2012), "It Ain't Easy Being Green," *Journal of Advertising*, 41 (4), 119–32.

Furlow, Nancy E. (2010), "Greenwashing in the New Millennium," *Journal of Applied Business and Economics*, 10 (6), 22–25.

Grillo, Nick, John Tokarczyk, and Eric Hansen (2008), "Green Advertising Developments in the U.S. Forest Sector: A Follow-Up," *Forest Products Journal*, 58 (5), 40–46.

Iyer, Easwar, and Bobby Banerjee (1993), "Anatomy of Green Advertising," in *Advances in Consumer Research*, vol. 20, Leigh McAlister and Michael Rothschild, eds., Provo, UT: Association for Consumer Research, 494–501.

Kangun, Norman, Les Carlson, and Stephen J. Grove (1991),"Environmental Advertising Claims: A Preliminary Investigation," *Journal of Public Policy and Marketing*, 10 (2), 47–58.

Kilbourne, William E. (1995), "Green Advertising: Salvation or Oxymoron?," *Journal of Advertising*, 24 (2), 7–20.

Leonidou, Leonidas C., Constantinos N. Leonidou, Dayananda Palihawadana, and Magnus Hultman (2011), "Evaluating the Green Advertising Practices of International Firms: A Trend Analysis," *International Marketing Review*, 28 (1), 6–33.

Newell, Stephen J., Ronald E. Goldsmith, and Edgar J. Banzhaf (1998), "The Effect of Misleading Environmental Claims on Consumer Perceptions of Advertisements," *Journal of Marketing Theory and Practice*, 6 (2), 48–60.

Nyilasy, Gergely, Harsha Gangadharbatla, and Angela Paladino (2014), "Perceived Greenwashing: The Interactive Effects of Green Advertising and Corporate Environmental Performance on Consumer Reactions," *Journal of Business Ethics*, 125, 693–707.

Pajari, Brita, Tim Peck, and Ewald Rametsteiner (1998), *Potential Markets for Certified Forest Products in Europe*, Brussels, Belgium: European Forest Institute.

Pellus, Chiara (2014), "Regulations, Watchdogs, Eco-Labels, Oh My! The Highly Fragmented and Uncoordinated State of Anti-Greenwashing Efforts," *Law School Student Scholarship*, paper 619, 2–45.

Perreault, William D., and Laurence E. Leigh (1989), "Reliability of Nominal Data Based on Qualitative Judgments," *Journal of Marketing Research*, 26 (2), 135–48.

Pranee, Chitakornkijsil (2010), "Marketing Ethical Implication and Social Responsibility," *International Journal of Organizational Innovation*, 2 (3), 6–21.

PR Newswire (2010), "New Report: American Consumers Lead the World in Environmental Skepticism," http://www.prnewswire.com/news-releases/new-report-american-consumers-lead-the-world-in-environmental-skepticism-103520764.html.

Royne, Marla B., Jennifer Martinez, Jared Oakley, and Alexa K. Fox (2012), "The Effectiveness of Benefit Type and Price Endings in Green Advertising," *Journal of Advertising*, 41 (4), 85–102.

Segev, Sigal, Juliana Fernandes, and Weirui Wang (2015), "The Effects of Gain vs. Loss Message Framing and Point of Reference on Consumer Responses to Green Advertising," *Journal of Current Issues and Research in Advertising*, 36 (1), 35–51.

Sheehan, Kim B. (2014), "The Many Shades of Greenwashing. Using Consumer Input for Policy Decisions regarding Green Advertisements," in *Communicating Sustainability for the Green Economy*, L. Kahle and E. Gurel Atay, eds., Armonk, NY: M.E. Sharpe, 43–55.

Small Business Sustainability Report (2013), "The Big Green Opportunity for Small Businesses in the U.S," http://biggreenopportunity.org/wp-content/uploads/2013/05/Big-Green-Opportunity-Report-FINAL-WEB.pdf.

Tucker, Elizabeth M., Nora J. Rifon, Eun Mi Lee, and Bonnie B. Reece (2012), "Consumer Receptivity to Green Ads: A Test of Green Claim Types and the Role of Individual Consumer Characteristics for Green Ad Response," *Journal of Advertising*, 41 (4), 9–23.

Urbach, Ronald (2008), "The World of Green Advertising," *Ad Week*, July 23, http://www.adweek.com/news/advertising-branding/world-green-advertising-96463.

Wagner, Ernesto R., and Eric Hansen (2002), "Methodology for Evaluating Green Advertising of Forest Products in the United States: A Content Analysis," *Forest Products Journal*, 52 (4), 17–23.

Wells, William, John Burnett, and Sandra Moriarty (1992), *Advertising: Principles and Practice*, 2nd ed., Englewood Cliffs, NJ: Prentice-Hall.

Woods, Jennifer (2008), "Of Selling the Environment—Buyer Beware? An Evaluation of the Proposed FTC *Green Guides* Revisions," *Loyola Consumer Law Review*, 21 (1), 75–95.

Zinkhan, George M., and Les Carlson (1995), "Green Advertising and the Reluctant Consumer," *Journal of Advertising*, 24 (2), 1–6.