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Investigating the Portrayal and Influence of Sustainability Claims in an Environmental Advertising Context

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An Exploration of Sustainability and Its Influence in
Environmental Advertising

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Abstract:	The ability of consumer judges to identify sustainable messages in environmental advertising and the effect of these messages is explored. A content analysis provides insight into these judges' perception of the depth of environmental advertising messages. An experiment investigates the influence of sustainable messages and includes collection of cognitive response data to evaluate the cognitive dimension of sustainability messages. Content analysis results suggest that sustainability messages may influence how environmental advertisements are perceived. These findings are supported by the cognitive response data, which shows cognitive differences across advertisements, and the experimental manipulation that suggests sustainable ads may be more involving to consumers.

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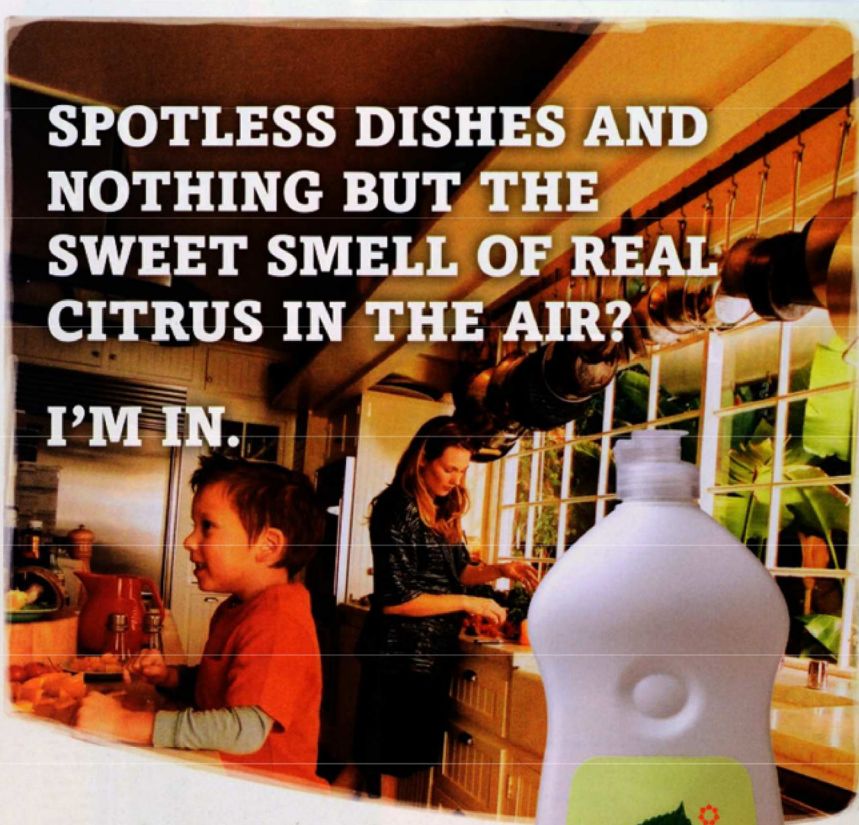
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SWEET SMELL OF REAL
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Protecting the environment and providing you the best tasting albacore tuna.

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Men's Health
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An Exploration of Sustainability and Its Influence in Environmental Advertising

The ability of consumer judges to identify sustainable messages in environmental advertising and the effect of these messages is explored. A content analysis provides insight into these judges' perception of the depth of environmental advertising messages. An experiment investigates the influence of sustainable messages and includes collection of cognitive response data to evaluate the cognitive dimension of sustainability messages. Content analysis results suggest that sustainability messages may influence how environmental advertisements are perceived. These findings are supported by the cognitive response data, which shows cognitive differences across advertisements, and the experimental manipulation that suggests sustainable ads may be more involving to consumers.

Green marketing has seen increasing interest in the business and marketing literatures (Chamorro et al. 2009) and this interest has often been at least partially attributed to social movements among consumers reflecting a growing concern with the environment (Polonsky 2011). This view is supported by numerous studies which show environmental issues as important contributors to consumer decision making (Grunert-Beckmann et al. 1997; Kilbourne and Beckmann 1998; Zimmer et al. 1994). Further research in green marketing has investigated the meaning of 'green' (Kilbourne 1995), issues associated with green advertising (Scammon and Mayer 1995) and profiles of green consumers (Roberts 1996). This academic focus has been born out in the popular press as well. A Google search of news articles that contain the words 'green' and 'marketing' from 1980 to 2010 reveals approximately 393,000 documents. The number of news articles published each year shows a fairly steady growth over time, as well as spikes in the early 90s, and again around 2007–2008. As noted, the functional aspects of green marketing have been investigated, yet recent work has suggested that a macro-marketing view of green marketing may be a more valuable perspective (Polonsky 2011).

One key aspect of this macro-marketing approach is the concept of sustainability in both marketing execution and business practices. Yet, even though sustainability has gained recognition in the business community as an important component of practice, this reality has not typically translated into coherent and coordinated business planning or tactical results (Sheth, Sethia and Srinivas 2011). Indeed, evidence from surveys of business executives suggests that many companies are still failing to develop a rationale for incorporating sustainability initiatives; and are instead viewing sustainability from a perspective of short term compliance rather than as a basis for long range planning and execution (Sheth, Sethia and Srinivas 2011).

Given these actualities coupled with the reality that when corporations do recognize the importance of sustainability it is usually within the realm of the environmental component of sustainability, rather than aspects pertaining to social and economic elements (see Sheth, Sethia and Srinivas 2011), it seems prudent to examine if sustainability is being portrayed and utilized in environmental marketing and, if so, how portrayals of sustainability are being manifested. Such an assessment would lend much needed insight regarding whether the previously mentioned lack of long range planning regarding sustainability at the corporate level is actually being demonstrated as unclear or even misguided tactical initiatives. Thus, an in-depth appraisal of sustainability portrayals in an environmental marketing context seems appropriate.

In addition, and as will be discussed later, there is also a gap in our understanding regarding how viewers perceive advertising messages that attempt to incorporate sustainability. Consequently, this paper seeks to add to the discussion of sustainability in environmental marketing by investigating the macro-marketing concept of sustainability in the micro-marketing domain of environmental advertising. Specifically, our research question is: What is the incidence and influence of sustainability claims in environmental advertising? We conduct three studies in an effort to fully understand the contribution of sustainability to environmental advertising. Study 1 is a content analysis of environmental advertisements that investigates the occurrence of sustainability claims in green advertisements, and then seeks to identify if these claims are clear to consumer judges. Study 1 includes an assessment of sustainability's influence on consumer judges' perceptions of environmental advertising claims using a previously established framework (Carlson et al. 1993). Study 2 seeks to isolate the influence of sustainability in green advertisements by conducting an exploratory experiment where the sustainability component of environmental advertising was manipulated. This allows for an

investigation into the contribution of sustainability to environmental advertisements through an analysis of commonly accepted dependent variables. Study 3 attempts to further isolate the influence of sustainability by analyzing the cognitive responses of consumers who are exposed to sustainable messages compared to consumers who are exposed to green messages without a sustainability component.

The organization of the paper is as follows. First, we provide a brief literature review including work in the environmental advertising and sustainability domains. Second, we develop a definition of environmental sustainability with which to assess current advertisements. Next, we discuss the extension of existing advertising typologies and their applicability to the environmental advertising and sustainability context. Finally, the method and results of all three studies will be presented, followed by a discussion of the influence of sustainability in environmental advertising.

Literature Review

Environmental advertising

Environmental advertising began to find footing in the U.S. in the early 1970s. Over the next two decades scrutiny of this advertising and criticisms for its lack of understandability, uniformity, and credibility culminated in U.S. federal and state governments forming taskforces to monitor environmental claims and curtail inaccurate 'green washing' by businesses (Attorneys General National Commission 1990; FTC 1992). Compliance with these efforts, however, was largely voluntary and after marketing's short retreat from environmental advertising (Aho 1992; Dagnoli 1992; Schlossberg 1991), green marketing and consumer complaints about the practice have increased (Pfanner 2008).

In response to the growing usage of environmental advertising, scholars have studied many facets of the practice. In the consumer literature authors have investigated divergent topics including opinions about public policy options to reduce air pollution (Aaker and Bagozzi 1982), perceptions of environmental advertising claims (Carlson, Grove and Kangun 1993; Kangun, Carlson and Grove 1991), investigations of individual variables in an effort to predict environmentally responsible consumption (Balderjahn 1988) and antecedents of recycling behavior (McCarty and Shrum 1994). Marketing strategy topics include measurements of the effect of environmental marketing strategies on firm performance (Baker and Sinkula 2005), firm compliance with FTC/EPA packaging guidelines (Mayer, Scammon and Zick 1992; Scammon and Mayer 1991), concepts such as 'enviropreneurial' marketing strategy (Menon and Menon 1997) and 'eco-centric' management (Shrivastava 1995).

Firm-relevant consumer outcomes of environmental advertising have also been explored. Examples include green advertisements aiding in communication of a firm's pro-environmental image (Iyer and Banerjee 1992), increasing demand for environmentally friendly products (Wong, Turner, and Stoneman 1996), and enhancing the communication effectiveness of services advertisements (Chan, Leung and Wong 2006). Still, consumers' scepticism about the truthfulness of environmental advertising claims continues to mount (Pfanner 2008).

One explanation for this growing consumer doubt about the value in green advertisements is the lack of depth or meaning in environmental messages; yet, the majority of environmental advertising research does not include a measure of the depth of the environmental message. An exception is a content analysis of environmental advertising by Banerjee, Gulas and Iyer (1995). These authors differentiate advertisements based upon the 'ad greenness', referring to the extent of the environmental focus in the advertisement. This evaluation of the degree or

depth of environmental focus, is to our knowledge, the only one in the field. While most environmental advertising studies evaluate ads as either green or not green, environmentalists allow for a continuum of environmental orientation and action (Naess 1973).

Sustainability

The current conception of environmental sustainability has grown out of the modern environmental movement, whose start has often been attributed to Rachel Carson's 1962 book *Silent Spring*. Carson's book is thought to have affected perceptions of the environment in two ways: first, by pointing out the significant negative effect of human activities on the environment; and second, by assigning a large portion of the responsibility to economic factors (Kilbourne and Beckmann 1998).

Despite research focused on environmental aspects of marketing, relatively few articles have specifically investigated environmental sustainability in isolation. Existant work has focused on macro-marketing aspects of the sustainability dilemma (O'Hara 1995; Van Dam and Apeldoorn 1996) as well as the relationship between sustainability and quality of life (Kilbourne, McDonagh and Prothero 1997). Other articles include more micro-marketing perspectives including theories about communicating sustainability messages (McDonagh 1998; Signitzer and Prexl 2008) and the way consumers access information when buying sustainable products (Oates et al. 2008).

Notably absent from this literature is an investigation of how consumers perceive claims about environmental sustainability and their ability to identify sustainability claims in green advertisements. This paper fills that gap through a micro-marketing investigation into the usage of the macro-marketing concept of sustainability in environmental advertising. As previous work has revealed levels of depth in green advertising (Banerjee, Gulas and Iyer 1995), it is also

important to investigate how sustainability messages might contribute a person's perception of green ads. To facilitate the investigation of sustainability claims, a definition of environmental sustainability claims in advertising is now presented. This narrow definition of sustainability serves two purposes: first, it provides a lens with which to evaluate advertisements for sustainable content; and second, it allows for the operationalization of sustainability as an independent variable in Study 2.

Definition of Environmental Sustainability

In order to assess advertising messages about environmental sustainability we conceptualize environmental sustainability as environmentally relevant practices that ensure the continued ability of humans to inhabit the earth indefinitely. This definition is derived from the United Nations Brundtland Report (United Nations 1987), which proposed and popularized the term and the need for sustainable development. According to the report, sustainable development is development which 'meets the needs of the present without compromising the ability of future generations to meet their own needs'. This definition has two key parts: a focus on the 'essential needs' of the world's population, in particular the poor or underprivileged, and the 'limitations' placed on the environment by current technological and social structures which influence its ability to meet needs in the future.

Consistent with this definition, a sustainable advertising message should include the following aspects: (1) it should be future oriented (i.e. speak about how actions will impact the future), and either (2) make statements about how resources are being used or will be used at a level that allows for a continued use of that resource, or (3) may include a statement about a sustainable relationship or natural balance with the environment or planet. This simplified definition derives from the key components that sustainability must be forward looking (part 1)

and that it must focus on the ability to meet needs in the future (parts 2 and 3). In this case, the future needs are conceptualized from an environmental standpoint as the ability to use natural resources or to maintain a natural balance. It also fits with the general conception of the word 'sustain' by emphasizing the ability to maintain natural resources and interact with the environment in perpetuity.

Sustainability Extension of Environmental Advertising Typologies

As this paper seeks to expand existing work on environmental advertising claims by including sustainability, it is important to utilize previous work on environmental advertising claims. As such, we extend the environmental advertising typologies proposed by Carlson, Grove, and Kangun (1993) in their content analysis of environmental advertising claims. In their article, the authors utilize two claim typologies, one which analyzed the misleading or deceptive nature of the advertising claim, and the other which analyzed the focus of the claim. Study 1 adds an additional level of analysis by including a measure of the advertisements' sustainability to the existing typologies.

Utilizing the developed definition of sustainability, Study 1 asks consumer judges to identify sustainability messages in environmental advertising in order to determine if they are capable of recognizing sustainability messages in advertising copy. Second, consumer judges are asked to utilize the previously established typologies to classify the advertising copy. This advances knowledge about environmental advertising by expanding the continuum on which consumers have assessed environmental advertising. As sustainability moves to the forefront of the environmental discussion, it is imperative that advertisers know if consumers can differentiate between sustainable and non-sustainable environmental statements. It is also vital to understand the contribution, if any, of sustainability claims in environmental advertising and

on consumer thinking. The following three studies investigate consumer judges' ability to perceive sustainability claims (Study 1), the influence of sustainability on relevant advertising variables (Study 2), as well as the cognitive response of consumers to sustainability claims (Study 3).

Method and Results

This paper employs a content analysis, experiment, and the analysis of consumer cognitive response data to expand previous research into the nature and usefulness of sustainability in environmental advertising claims. This section will discuss each study in the order it was conducted as each study builds upon the findings of the previous.

Study 1: Content Analysis

Environmental advertising claims are common in print advertisements for a wide-range of consumer and industrial products. To better access the range of both environmental and sustainable messages in print advertisements, a content analysis was conducted on a random sample of consumer periodicals. Content analysis (CA) is useful as an exploratory tool to identify advertising content usage and trends (Torres et al. 2007) and in the creation of new theory or the testing of existing theory (Kolbe and Burnett 1991). Consistent with the CA literature, special attention was paid to the independence and training of judges (see Table 1 for judge information), selection of the sample, and the reliability of the ratings based on objective and systematic task design as outlined by Kassarian (1997) and Holsti (1969). The following sections describe each stage of the CA process followed by a review of the results.

PLACE TABLE 1 ABOUT HERE

Stage 1: Stimulus Materials

The CA sample of environmental advertisements was identified using the procedure put forth by Carlson, Grove, and Kangun (1993). First, 16 magazine titles from the popular press were selected from the various categories of magazines regularly delineated in *Advertising Age* at the time (1992) (e.g. 'Science/Electronic/Mechanical' and 'Weeklies/Biweeklies'). Title examples include *Scientific American*, *Popular Mechanics* and *Time*. In addition, two national newspapers (*The Wall Street Journal* and *USA Today*) were reviewed. A cross section of categories was used to systematically vary the sources of the advertisements. Within each magazine title, all issues for two years were obtained. A random selection of daily newspaper editions from this same time period were selected for review. Environmental advertisements within each issue were identified by an independent judge previously briefed on environmental advertising. Following this selection, ads selected as environmental were reviewed by three of the researchers. In total, 85 advertisements were included representing various periodical categories (as identified by *Advertising Age*) across the magazine and newspaper titles. Table 2 shows the advertisements from each source.

PLACE TABLE 2 ABOUT HERE

Stage 2: Identification of Environmental Claims

The second stage of the CA identified advertising claims, as well as environmental advertising claims. Three new, independent judges were asked to evaluate the entire copy from each of the 85 environmental advertisements and identify: 1) each claim made in the copy and 2) whether or not each claim was an environmentally oriented claim. The authors reconciled the results of the three judges by eliminating all advertisements where all three judges did not agree on at least one claim as environmental. This conservative approach insured that only advertisements with clearly agreed-upon environmental claims progressed to the next round and resulted in the

elimination of 28 ads (most of which were highly pictorial). The remaining 57 advertisements, for which all three judges agreed on the identification and classification of at least one environmental claim, progressed to the next group of judges to evaluate the sustainability of the message. In support of the environmental advertisement selection in stage 1, only two of the 85 advertisements were classified as having no specific environmental claims by all three stage 2 judges.

Stage 3: Evaluation of Sustainability

Stage three sought to ascertain if consumers could differentiate between environmental and sustainability claims in environmental advertising. To this end, three new, independent judges were enlisted to evaluate the entire copy from each of the 57 environmental advertisements identified in stage 2. The judges were versed on the definition of sustainability and were provided with an instruction sheet and examples (see Appendix 1) regarding how to evaluate environmental messages. Each judge was asked to evaluate each of the 57 advertisements as either sustainable or not sustainable. In order for an advertisement to proceed in the study, all three judges had to agree on its classification as either sustainable or not sustainable.

Importantly, the primary unit of analysis is the entire advertising message copy. As the definition of sustainability includes multiple parts, and any message attempting to communicate sustainable practices or products would most likely require multiple sentences and claims, utilizing the entire message copy was necessary. Judges therefore analyzed the entire advertising message copy in order to evaluate the sustainability of the advertisement. This differs from previous work that utilizes specific environmental claims within advertisements as the unit of analysis (c.f., Carlson, Grove and Kangun 1993). All three judges agreed on the classification of 43 of the 57 advertisements resulting in an inter-rater reliability of .88 based on the proportional

reduction in loss approach (Rust and Cooil 1994). In addition to providing dichotomous 'yes or no' responses to whether or not advertising messages were sustainable, we allowed judges to explain their decisions in writing.

Stage 4: Typology Evaluations

The final stage involved three independent judges¹ categorizing the 43 environmental advertisements identified in stage 3 based upon the two environmental advertising typologies developed by Carlson, Grove, and Kangun (1993) (see Appendix 1). The authors' environmental claim typology speaks to the nature of the claim, and specifically if the advertising claim is related to the product advertised, a production process undergone by the firm advertising, a claim oriented toward the overall image of the firm, or if the claim represents an environmental fact. The misleading and/or deceptive advertising claim typology addresses the level of perceived deception in the claim and can fall into the categories of outright lie, omission, vague/ambiguous, or deemed as acceptable. Each judge was given an instruction sheet that described the two typologies and provided examples of environmental advertising categorized using the typologies (see Appendix 1). Again, the judges were asked to classify the entire ad copy based upon the typologies. If a judge believed the advertisement included multiple categories (i.e. discussed both a product and a process), they were asked to code the message as per the dominant category. The environmental claim typology yielded an inter-rater reliability of .86. The misleading and/or deceptive typology yielded a reliability of .96 (Rust and Cooil 1994). Similarly to stage 3, stage 4 judges were encouraged to detail their categorization experience and any concerns or reasoning in writing.

¹ Four judges were enlisted for this process, but the fourth judge did not categorize a number of the messages and thus was excluded from analysis.

Study 1 Results

The results from stage 3, where the sustainability of print advertising messages was evaluated, show that the judges were generally capable of evaluating whether or not an ad contains a sustainability message based on this paper's definition. Of the 43 advertisements universally agreed upon as either sustainable or non-sustainable in message type, 14 were rated as sustainable in nature while 29 were identified as not related to sustainability; resulting in a ratio of approximately 1/3 of environmental ads being classified as sustainable and 2/3 of environmental ads identified as merely environmental. Of particular interest in this phase were the qualitative responses of our judges. Utilizing the sustainability definition provided, the judges noted individual guidelines for evaluating a long-term orientation in the messages. For example, the energy message below was judged sustainable by all judges.

Chevron Steps Taken: Investing over \$15 billion a year to bring energy to market; developing energy through partnerships in 26 countries, committing hundreds of millions annually to alternative and renewable energies to diversify supply; since 1992, we have made our own energy go further by increasing our efficiency by 24%.

One judge noted that the message qualified as sustainable due to the long-term nature of the renewable partnership: '1992 was a while ago (when the partnership began), so they are obviously investing in longer-term solutions'.

Similarly, specific actions such as reforestation and environmental education programs were noted by judges as demonstrating a long-term solution and qualifying the message as sustainable. Environmental messages judged as being insufficiently sustainable were noted as not holding 'concrete plans to keep it going', and judges stated they were unsure if the firms' sustainable actions 'will actually last'. In related comments, judges rebuked messages that had

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3 'no mention of the future beyond the next 5 years', and those that only gave 'lip service' to the
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6 future: 'despite saying "future" and "tomorrow", they don't really say anything about the future'.
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Clearly, the judges were capable of evaluating claims based upon the complex definition of sustainability. Yet, based on the qualitative responses emerging during the evaluation process, it also appears that they were willing to accept advertising messages that approach sustainability or admit the advertiser's shortcomings. One judge noted that a message describing a firm's actions as "only a start," qualified as sustainable because 'a start implies there will be a continuing effort'. While the authors feared that very few of the messages would be classified as sustainable based upon the stringent definition, the judges appeared willing to give firms credit for environmental actions if the messages were upfront and 'honest in what they are doing and what they're not'. While many of the firms' messages probably did not meet the definition's requirement of allowing future use of resources that would be in harmony with the earth, messages with this aim judged as meaningful were nonetheless rewarded with a sustainable rating.

The results of each advertising message according to the two utilized environmental typologies (Carlson et al. 1993) explored in Stage 4 can be found in Table 3 below. Notably, of the sustainable messages, approximately 43% were identified as image based claims. While for the non-sustainable messages, 47% were identified as product claims. These were respectively the largest percentage categories for the environmental claim typology.

PLACE TABLE 3 ABOUT HERE

The results of the misleading/deceptive typology showed that the dominant category across all environmental advertisements was the acceptable category, with 57% (24) of evaluations for sustainable messages and 49% (43) of non-sustainable messages rated as

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3 acceptable. The next highest category was vague/ambiguous. 31% (13) of messages from
4 sustainable ads and 43% (37) of messages non-sustainable ads were rated as vague or
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8 ambiguous. Interestingly, none of the judges deemed any of the messages to be outright lies, and
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11 the omission category was sparsely used with approximately 12% (5) of messages from
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13 sustainable ads resulting in this rating and 8% (7) of messages from non-sustainable ads
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15 classified as omissions. Table 4 below shows these results.

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18 PLACE TABLE 4 ABOUT HERE
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20 It is important to note that these methods differ from Carlson, Grove and Kangun (1993)
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22 as we instructed all judges to evaluate the entire message and did not ask them to evaluate
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24 specific claims in stages 3 and 4. As noted earlier, sustainability messages must be evaluated
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26 based upon the entirety of the ad copy as sustainability entails multiple aspects that are typically
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28 unable to be communicated in a single sentence or claim. Thus, judges identified the dominant
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30 aspect of the environmental message as applied to each typology. The reliability statistics
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32 suggest the judges were able to perform this task well.
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36 It is interesting to note that qualitative results from stage 4 focused on a self-perceived
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38 inability to classify messages according to the misleading/deceptive typology. Specifically,
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40 judges complained that they possessed 'insufficient knowledge to assess the message claim
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42 typology' or had 'insufficient knowledge to assess the believability' of the environmental
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44 message. These responses suggest that our consumer judges are aware of the often highly
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46 technical claims being made in environmental messages. It also suggests that the judges
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48 recognize that they neither 1) possess the knowledge needed to determine if a message includes a
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50 lie or omission, nor do they 2) have the ability or intent to access such knowledge from external
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52 sources. In essence, the judges may have felt many environmental advertisements included
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credence level claims, that because of their very nature, are unable to be assessed accurately by most receivers.

Study 2: Exploratory Manipulation

The experiment designed for the second study employed a two-message (environmental versus sustainable) between-subjects design to test the impact of sustainable claims. The stimuli were chosen by the authors after review of two months of current print advertisements in magazines available in a mid-sized Midwestern city. The magazines were sourced from the city's main branch of the public library, various locations of a large grocery chain, and two locations of a large national bookseller. After considering dozens of advertisements, three environmental advertisements appearing in *The Economist* and the *Utne Reader* were chosen. These ads were chosen based on their similarity to the most common findings of the content analysis and typology classification in Study 1. Additionally, the chosen ads promoted product categories that were of almost universal use by consumers (dish soap, canned food, and technology).

Utilizing study 1's definition, two of the advertisements included only environmentally oriented messages while one included a sustainability message. For the two environmentally oriented advertisements, the copy was changed slightly to include the word sustainable and a reference to the future. The sustainably worded advertisement was changed to omit the sustainability reference from the main copy. These changes resulted in both an environmental (but not sustainable) and a sustainable message version of each ad. No other visual stimuli in the ads were changed. See the Appendix for reproductions of the six advertisements.

The experimental sample size consisted of 420 respondents. Males (58.1%) outnumbered females (41.9%) and were primarily between the ages of 18 and 25 (97.4%). Roughly 80% of respondents are either juniors or seniors in college.

Procedure

Undergraduate business students from a large Midwestern university were solicited to be respondents during regularly scheduled classes. The students were asked to participate in an online survey in which they would be shown one advertisement and then asked a series of questions to gauge consumer reactions. Students were offered extra credit for participation. Respondents were provided a link to the website and were randomly assigned to view one of the six stimuli. After the online welcome page, respondents were asked to take their time viewing an advertisement. Following the advertisement, respondents were asked two types of questions. First, respondents were presented with open-ended questions designed to elicit their cognitive responses to the advertisement (Belch 1981; Wright 1973). Separate entry boxes were provided for each cognition and respondents were asked to type as many or as few thoughts as they wished. Second, respondents were presented with a series of Likert scale questions pertaining to the five studied constructs: respondents' environmental consciousness, product category involvement, trust in the advertising organization, attitude toward the brand, and attitude toward the ad.

Study 2 Results

A reliability analysis resulted in support for the scales used with all standardized Cronbach's α $>.70$. Please see Appendix 2 for a listing of each constructs' reliability and sources of the items measured. To determine if sustainable advertisements had a differential impact on any of the measured constructs compared to environmental advertisements, we divided the sample into two

groups based on the presence of sustainable messages. We then conducted a series of between-group ANOVAs. Across all constructs measured, only one construct was found to be differentially impacted by the presence of a sustainable message rather than a non-sustainable message. Consumers who viewed sustainable ads were found to have higher product category involvement ($F(1, 394) = 8.152, p = .005$) than those viewing only environmental ads. In order to determine the stability of this result, this finding was tested using a multiple regression analysis. As product category involvement may vary by age, gender, and education, we controlled for these variables. The analysis showed the presence of a sustainable message positively impacted the consumer's product category involvement ($\beta = .319, t(388) = 2.702, p = .007$).

While the finding related to product category involvement is promising, the lack of significance across the advertisements for the remaining constructs also provides insight into sustainability's influence in environmental advertisements. This topic will be investigated further in the discussion section. See Appendix 2 for the full reporting of the between group ANOVA analyses.

Study 3: Cognitive Response Analysis

The cognitive response (CR) data resulted in 1,656 unique cognitions. In order to analyze the data, three judges coded responses into three categories based on the subject of the cognition. The first category consisted of cognitions that pertained to the environment or the environmental nature of the advertisement. The second category consisted of CR statements pertaining to the execution of the advertisement. These cognitions often dealt with design choices such as color, font, and spacing. The third category was reserved for non-ad related cognitions and included

suggestions regarding who the ad's target audience was, who the ad might appeal to, and general thoughts about the product category.

Judges were given each of the six advertisements used in the experiment and the corresponding cognitions for each ad. The pairing of the ad and the cognitions elicited by that particular ad ensured judges had a context for evaluating the cognitions' target. We used the 'majority rule' to resolve disagreements between judges (Carley and Palmquist 1992). On average, each advertisement resulted in categorization of 103 environmental ad cognitions, 139 ad execution cognitions, and 32 non ad related cognitions.

Next, we utilized 3 new, independent judges to classify the cognitive responses in the most utilized categories (environmental) and (execution). Judges classified the environmentally related cognitions into four categories derived from Belch (1981) and Wright (1973) that pertain to the credibility of the advertisement's source and the persuasive message of the advertisement. These categories are counterargument, support argument, source derogation, and source bolstering. Judges were also asked to categorize the ad execution cognitions according to their valence toward the advertisement as positive, negative, or neutral. Please see Appendix 1 for definitions of each category and instructions given to the judges.

Proportional reduction in loss inter-rater reliability was calculated for each advertisement in both classifications (Rust and Cooil 1994). Reliability for each ad across the four-part classification (counterargument, support argument, source derogation, and source bolstering) ranged from .92 to .98 with an overall inter-rater reliability of .95 across all six advertisements. Reliability for each ad across the three-part valence classification (positive, negative, neutral) ranged from .97 to .99 with an overall inter-rater reliability of .98 across all six ads. Before exploring any potential CR differences between and across ads, we eliminated any cognitions for

which there was no categorical consensus among the judges. A consensus meant that at least two of the judges agreed on the CR categorization. This resulted in 2 eliminated cognitions as judged on execution valence and 13 eliminated cognitions as judged on the environmental ad's source credibility or persuasive message. Overall, judges unanimously agreed on three-quarters of the cognitions evaluated.

Cognitive Response Results

In order to explore if there were any differential impacts of sustainability messaging on cognitions post advertising exposure, we compared the amount, type, and valence of cognitions across the advertisements. We found no statistically significant results regarding the total number of cognitions between ad types (environmental versus sustainable). We did, however, find that environmental advertisements without a sustainability message elicited a greater proportion of environmentally related cognitions than did advertisements with a sustainability message ($z = 156.44, p < .001$). Further investigation shows that while the proportion of environmental cognitions is higher for the ads without a sustainability component, consumer's environmentally related cognitions were more likely to be positive (support arguments) if they had viewed a sustainable advertising message. Sustainable advertisements generated a greater proportion of support arguments from consumers ($z = 1.97, p < .05$) than non-sustainable ads.

In addition to the four-part analysis based on the work of Belch (1981) and Wright (1973), we conducted a two-part analysis based on the positive or negative nature of the cognition categorizations. The positive cognition categories of source bolster and support argument were combined and the negative categories of source derogation and counterargument were combined. The proportion of positive to negative cognitions was compared. We found sustainable advertisements had a greater proportion of positive (source bolster and support

arguments) cognitions than non-sustainable advertisements ($z = 1.58, p < .057$). We found no statistically significant results regarding the distribution of ad execution cognitions. The proportions for the various cognition types are displayed in Table 5.

PLACE TABLE 5 ABOUT HERE

Discussion

As noted earlier, despite sustainability having achieved recognition from business as an important consideration component, this acceptance has not necessarily always been manifested in business planning or in business tactics (Sheth, Sethia and Srinivas 2011). Consequently, the purpose of this research was to investigate further environmental sustainability as manifested at a tactical level, i.e., in our research we investigated sustainability portrayals in print advertising. To that end, we defined environmental sustainability and ascertained both consumer judges' ability to identify sustainability oriented environmental advertising claims as well as whether and how such claims might affect consumers.

We learned that consumer judges are able to discern what constitutes a sustainable oriented advertising claim provided they are given appropriate background to enable their judgments and classifications (i.e., in our case, a definition of sustainability that was derived from existing standards and literature – the Brundtland Report). We also determined, contingent upon our definition of sustainability, that sustainability oriented messages do not represent a majority of the environmental messages to which consumers might be exposed. Thus, even though claims of sustainability might signify a potential differential advantage for advertisers, they may not be utilized to the degree that such an advantage might suggest and/or warrant.

While we acknowledge that our definition of sustainability is stringent (it was meant to be so), one of our more interesting findings is that our judges seemed to be willing to give credit to advertisers who appeared (at least to them) to be trying to incorporate elements of sustainability into their messages even though the message per se might not have appeared to be completely sustainable according to our definition. Perhaps advertiser efforts to even appear to be sustainable are still candidates for being met with positive evaluations by receivers at least at the present time. Whether such trends would remain into the future as consumers learn more about corporate efforts to be sustainable is yet to be determined. An interesting caveat to these results is the role that prior environmental knowledge might play in determining whether consumers are willing to give advertisers the benefit of the doubt regarding sustainability claims.

Another of the purposes of this research was to extend existing typologies for classifying environmental advertising claims into the sustainability realm. Specifically, in study 2 of our research, we sought to examine the degree to which sustainability claims could be classified according to the matrix proposed by Carlson, Grove, and Kangun (1993). The results from this part of our study may have implications for the previously described findings regarding what may be a tendency for consumer judges to exhibit flexibility regarding how advertiser sustainability efforts are judged. For example, in our research, none of the claims were judged to be lies. Indeed, over half of the sustainability claims (again, we used the entire ad copy as the unit of analysis because of the extensive nature of our sustainability definition) were deemed to be acceptable (see Table 3). Note these same trends were not manifested in the non-sustainable messages (see Table 4) as non-sustainable messages, on the whole, were considered to be roughly equivalent in terms of being acceptable or not.

Again, perhaps this represents consumer/judge willingness to give a sustainable oriented message the benefit of the doubt in terms of how it is perceived while environmental messages without a sustainability component are not granted the same status. Our study 3 results may support this speculation in that sustainable advertisements generated a greater proportion of support arguments compared to very similar ads that did not contain a sustainability component. The possibility exists that the newness of sustainability messages results in a tendency to evaluate the message more positively while environmental messages (without sustainability as part of what is being conveyed) are deemed to be less trustworthy because consumers are more familiar with them. In addition, and as implied by our qualitative results for this part of our investigation, judges expressed frustration about classifying messages according to the misleading/deceptive typology. This reality suggests the interesting possibility that when consumers (i.e., in our study our judges) are faced with a sustainability oriented environmental message at what might be the credence level of interpretability (i.e., inability to evaluate the merits of a claim even if the possibility of consuming the product exists), they still appear to be more likely to evaluate the claim as acceptable. Does unfamiliarity (in this case with sustainable messages because they are somewhat new), lead to tendencies to refrain from negative evaluations at least at this point in their use?

These speculations are drawn from and based upon what we learned from assessments made by our consumer judges. Thus, and in order to ascertain another perspective on how consumers might react to (non)sustainable claims, we also conducted additional investigations to gauge how larger groups of individuals might react to these two claim formats. We felt that this type of research was necessary given that tendencies we had uncovered were derived from the perceptions and evaluations of our consumer judges.

Our follow-up analysis results derived from over 400 undergraduate business students were surprising and somewhat enlightening about how young consumers process sustainable advertising messages. In this analysis, only one difference between non-sustainable and sustainable messages on consumer outcomes was detected, i.e., product category involvement. Sustainable messages resulted in higher product category involvement than did non-sustainable messages. While we were disappointed that none of our other outcome measures manifested a difference across message type, the fact that our subjects were only exposed once, to one type of message or the other, undoubtedly contributed to not finding differences on our other measures such as environmental consciousness, trust in the advertising organization, attitude toward the brand, and future purchase intention.

What is noteworthy is that this single exposure to a sustainable message that differed only slightly from its non-sustainable message counterpart (addition or subtraction of very few words of copy) did result in an increase in how involved consumers were with the product category. This result may have implications for the cognitive response data findings that we collected from our respondents as part of Study 3. That is, it appears that sustainable oriented messages affect the generation of positive cognitive responses about the advertisements (support arguments) and that positive cognitive responses (support arguments and source bolsters) outweigh negative cognitive responses (counter arguments and source derogations). Again, this result may be notable because these findings are the result of one ad exposure. In other words, though a single ad exposure to a sustainable message may not result in a differential effect on outcomes such as attitude toward the brand and purchase intention, it does seem to motivate consumers to think about the advertisement in a positive manner. Consumers in our research appear to become more

involved in the product category depicted in the sustainable message, which may then be manifested in how they are thinking about and responding to the message.

Moreover, even though judges noted difficulty in classifying sustainable claims according to previously used typologies (perhaps, as noted, because sustainable claims may be presented at the credence level), this reality does not appear to be manifested as evaluative negative thoughts about the claim. It remains to be determined how additional exposures to a sustainable message might influence outcomes other than product category involvement and/or whether types of cognitive responses would be produced in different proportions than were found here.

Conclusion

We have attempted in this investigation to provide a glimpse into how consumers respond to sustainable advertising claims. Our findings suggest that these claims may have at least some positive outcomes for advertisers. Future research should continue to study the incorporation of sustainability in environmental marketing claims because at this early stage of their utilization, the long term usefulness of these claims has yet to be determined. Only sustained research on sustainability claims in advertising will provide answers to these questions.

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TABLE 1
Content Analysis Judge Demographics

Stage 1	1 Professional previously briefed on environmental advertising
Stage 2	2 PhD students and 1 undergraduate student previously briefed on environmental advertising claims
Stage 3	2 Professionals and 1 PhD student previously briefed on the authors' definition of sustainability
Stage 4	2 Professionals and 1 PhD student previously briefed on the two typologies utilized

For Peer Review

TABLE 2
Sources of Environmental Advertising

Category	Total environmental advertisements	Category	Total environmental advertisements
Business/ National*	15	Weeklies/Biweeklies	10
<i>Business Week</i>		<i>New Yorker</i>	
<i>Fortune</i>		<i>Newsweek Time</i>	
		<i>U.S. News and World Report</i>	
Newspapers	18	Science/Electronic/ Mechanical*	13
<i>USA Today</i>		<i>Discover</i>	
<i>Wall Street</i>		<i>Omni</i>	
<i>Journal</i>		<i>Popular Science</i>	
		<i>Scientific American</i>	
General*	3	Music/Entertainment*	5
<i>Atlantic</i>		<i>Rolling Stone</i>	
<i>Time Reader</i>			
Men's*	18	Home*	4
<i>Esquire</i>		<i>Better Homes and Gardens</i>	
<i>Popular</i>			
<i>Mechanics</i>			
			86 Ads
* Categories as used by Advertising Age			

TABLE 3
Message type and misleading/deceptive cell frequencies

Sustainable messages (14 advertisements x 3 judges)					
Claim type	Product	Process	Image	Environmental fact	Total
Vague/ambiguous	(23)	(15)	(32)	(0)	13
	3	2	8	0	
Omission	(27)	(20)	(44)	(0)	5
	(20)	(0)	(40)	(40)	
False/outright lie	1	0	2	2	0
	(9)	(0)	(11)	(67)	
Acceptable	(0)	(0)	(0)	(0)	24
	0	0	0	0	
Total Claims	(0)	(0)	(0)	(0)	42
	(29)	(33)	(33)	(4)	
	7	8	8	1	
	(64)	(80)	(44)	(33)	
	11	10	18	3	
	(26)	(24)	(43)	(7)	

Bold – Total number of claims identified per category
(Italics) – Percentage of claims the category represents for the Misleading/Deceptive typology
(Standard) – Percentage of claims the category represents for the Environmental Claim typology

TABLE 4
Message type and misleading/deceptive cell frequencies
Non-sustainable messages (29 advertisements x 3 raters)

Claim type	Product	Process	Image	Environmental fact	Total
Vague/ambiguous	(46) 17	22) 8	(27) 10	(5) 2	37
	(41)	(44)	(45)	(33)	
Omission	(29) 2	(43) 3	(14) 1	(14) 1	7
	(5)	(17)	(5)	(17)	
False/outright lie	(0) 0	(0) 0	(0) 0	(0) 0	0
	(0)	(0)	(0)	(0)	
Acceptable	(51) 22	(16) 7	(26) 11	(7) 3	43
	(54)	(39)	(50)	(50)	
Total Claims	41 (47)	18 (21)	22 (25)	6 (7)	87

Bold – Total number of claims identified per category
(Italics) – Percentage of claims the category represents for the Misleading/Deceptive typology
(Standard) – Percentage of claims the category represents for the Environmental Claim typology

Table 5
Cognition Proportions by Ad Type

	<u>Sustainable Ads</u>	<u>Environmental Ads</u>
Cognition types:		
Environmental	.3790*	.4642*
Ad Execution	.5061	.4982
Non-Ad Related	.1149	.1206
Environmental cognitions:		
Source Derogations	.0498	.0466
Source Bolsters	.0860	.0114
Support Arguments	.6742*	.6010*
Counterarguments	.1900	.2383
Negative Cognitions (counterarguments and source derogations)	.2665	.3247
Positive Cognitions (support arguments and source bolsters)	.7336	.6753

* Denotes a significant difference

APPENDIX 1 Study Judge Instructions

Content analysis stage 3 advertising message evaluation instruction sheet

We are interested in what people consider to be sustainability messages in environmental advertisements. In order to assess this we would like you to evaluate the following advertisements. Sustainability is defined as practices which ensure the continued ability of humans to inhabit the earth indefinitely.

Sustainability messages should include the following aspects:

1. it should be future oriented (i.e. it must speak about how actions will impact the future)

And either

2. have some statement about how resources are being used or will be used at a level which allows for a continued use of that resource or to live in harmony with the earth.

OR

3. may include a statement about a sustainable relationship or natural balance with the environment.

Examples of Sustainable and non-sustainable messages:

Sustainable Message

'We've cut our dependence on fossil fuels to the point where we can run our factories with renewable energy for generations to come. It's our way of helping humanity maintain a balance with the world.'

Not a Sustainable Message (as there is no reference to being able to sustain the consumption or the production practices)

'We're cutting emissions by 3% per year with our new hybrid technologies. If every American drove a hybrid vehicle we would cut 30 million pounds of ozone destroying emissions each year. Together we can make a difference.'

Please classify each message as being sustainable or not sustainable. If you have a difficult time making a decision, please provide a brief explanation for your final decision for that advertisement at the end of the document.

For example: Message number (5) Because this had the word sustainable, I rated it as yes, but it wasn't very long.

Content analysis stage 4 advertising message evaluation instruction sheet

We are investigating how consumers perceive environmental advertising messages. Below, are two typologies we would like you to evaluate the following message based on. The first typology regards the focus of the environmental message while the second typology discusses the believability or deceptiveness of the message. Please read each message and then mark the category which you feel the overall message fits within for each of the two typologies. Please see below for an example. If, for any message, you feel none of the categories "fits," do not mark any of the boxes for that typology, but instead, briefly note your reasoning in the space.

Misleading/Deceptive Message Claim Typology (Vague or Ambiguous, Omission, Lie, or Okay)

Vague or Ambiguous – The message contains a phrase or a statement that is too broad to have a clear meaning. For example,

We are an environmentally friendly company. (What is an environmentally friendly company?)

Omission – The message omits important information to evaluate its truthfulness. For example,

We are spending 100 million on clean energy research. (When? Over how many years? What is clean energy?) OR This product contains no CFCs. (When in fact it contains other harmful chemicals.)

Lie – The message is inaccurate or a fabrication. For example,

This product is made from recycled materials. (When in fact it is not.)

Okay – The message is accurate and not misleading or deceptive.

Type of Message Claim Typology (Process, Product, Image, or Environmental Fact)

Product Orientation – The message focuses on the environmentally friendly attributes that a product possesses. For example,

This product is biodegradable.

Process Orientation – The message deals with an organization's internal technology, production technique, and or disposal method that yields environmental benefits. For example,

Twenty percent of the raw materials used in producing this good are recycled.

Image Orientation – The message associates an organization with an environmental cause or activity for which there is broad-based public support. For example,

We are committed to preserving our forests.

We urge that you support the movement to preserve our wetlands.

Environmental Fact – The message involves an independent statement that is ostensibly factual in nature from an organization about the environment at large, or its condition. For example,

The world's rain forests are being destroyed at a rate of 2 acres per second.

Cognitive response evaluation instruction sheet

Coding File 1

Please code these thoughts into the following four categories. You'll notice that the first two categories have to do with the credibility of the source of the advertisement, while the second two have to do with the persuasive message of the advertisement. Please choose the category which you feel best represents the gist of each thought.

Type 1 – These thoughts derogate (are negative towards) the credibility of the source of the advertisement

Type 2 – These thoughts bolster (are positive towards) the credibility of the source of the advertisement

Type 3 – These thoughts are in support of the message of the advertisement

Type 4 – These thoughts are counter, or against, the message of the advertisement

Coding File 2

Please categorize these thoughts according to their valence towards the advertisement. In other words, are the thoughts positive, negative, or neutral in your opinion.

Type 1 – Positive

Type 2 – Negative

Type 3 – Neutral

APPENDIX 2

Study 2 Construct Information and ANOVA details

Construct	Source	Number of Items	Cronbach's Alpha	Sustainable Mean	Enviro Mean	F	p
Environmental consciousness	Vlosky, Richard P., Lucie K. Ozanne, Renee J. Fontenot (1999)	6	.77	2.5085	2.5112	.002	.968
Product category involvement	De Wulf, Kristof, Gaby Oderkerken- Schroder, and Dawn Iacobucci (2001)	3	.93	2.7531	2.4187	8.152	.005
Trust in organization	Crosby, Lawrence A., Kenneth R. Evans, and Deborah Cowles (1990)	4	.80	2.8044	2.7706	.255	.614
Attitude toward brand	Cho, Chang- Hoan, Jung- Gyo Lee, and Marye Tharp (2001)	4	.87	2.8987	2.9432	.367	.545
Attitude toward ad	Burton and Lichtenstein (1998)	5	.93	3.1581	3.2284	.389	.533

References

- Aaker, David A., and Richard P. Bagozzi (1982), "Attitudes Toward Public Policy Alternatives to Reduce Air Pollution." *Journal of Marketing and Public Policy*, 1, 85-94.
- Adams, William M. (2006), "The Future of Sustainability: Re-thinking Environment and Development in the Twenty-first Century," Report of the IUCN Renowned Thinkers Meeting. Geneva, Switzerland.
- Aho, Debra (1992), "Be Precise; Don't Overstate Claims," *Advertising Age*, 62, 8-10.
- Attorneys General, National Association (1990), "The Green Report: Findings and Preliminary Recommendations For Responsible Environmental Advertising." November.
- Baker, William E., and James M. Sinkula (2005), "Environmental Marketing Strategy and Firm Performance: Effects on New Product Performance and Market Share," *Journal of the Academy of Marketing Science*, 33 (4), 461-475.
- Balderjahn, Ingo (1988), "Personality Variables and Environmental Attitudes as Predictors of Ecologically Responsible Consumption Patterns," *Journal of Business Research*, 17 (1), 51-56.
- Banerjee, Subhabrata, Charles S. Gulas, and Easwar Iyer (1995), "Shades of Green: A Multidimensional Analysis of Environmental Advertising," *Journal of Advertising*, 24 (2), 21-31.
- Belch, George E. (1981), "An Examination of Comparative and Noncomparative Television Commercials: The Effects of Claim Variation and Repetition on Cognitive Response and Message Acceptance," *Journal of Marketing Research*, 18 (3), 333-49.
- Carley, Kathleen and Michael Palmquist (1992), "Extracting, Representing, and Analyzing Mental Models," *Social Forces*, 70 (3), 601-36.
- 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.
- Carson, Rachel (1962), *Silent Spring: The Sea Around Us*. New York: Houghton Mifflin.
- Chamorro, Antonio, Sergio Rubio, and Francisco J. Miranda (2009), "Characteristics of research on green marketing," *Business Strategy and the Environment*, 18 (4), 223-39.
- Chan, Ricky Y.K., T.K.P. Leung, and Y.H. Wong (2006), "The Effectiveness of Environmental Claims for Services Advertising," *Journal of Services Marketing*, 20 (4), 233-250.
- Dagnoli, Judann (1992), "Green Ads Wilt: NAD Chief," *Advertising Age*, 63 (4).
- Federal Trade Commission (1992), "Guides for the Use of Environmental Marketing Claims." Washington, D.C.
- Grunert-Beckmann, Suzanne C., Alice Grønhøj, Rik Pieters, and Ynte van Dam (1997), "The Environmental Commitment of Consumer Organizations in Denmark, the United Kingdom, The Netherlands, and Belgium," *Journal of Consumer Policy*, 20 (1), 45-67.
- Holsti, Ole R. (1969), *Content Analysis for the Social Sciences and Humanities*. Reading, MA: Addison-Wesley.
- Iyer, Easwar, and Bobby Banerjee (1992), "Anatomy of Green Advertising," *Advances in Consumer Research*, Provo, UT.
- 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.
- Kassarjian, Harold H. (1977), "Content Analysis in Consumer Research," *Journal of Consumer Research*, 4 (1), 8.
- Kilbourne, William E. (1995), "Green Advertising: Salvation or Oxymoron?" *Journal of*

Advertising 24 (2), 7-19.

_____ and Suzanne C. Beckmann (1998), "Review and Critical Assessment of Research on Marketing and the Environment," *Journal of Marketing Management*, 14 (6), 513-532.

_____, Pierre McDonagh, and Andrea Prothero (1997), "Sustainable Consumption and the Quality of Life: A Macromarketing Challenge to the Dominant Social Paradigm," *Journal of Macromarketing*, 17, 4-24.

Kolbe, Richard H., and Melissa S. Burnett (1991), "Content-Analysis Research: An Examination of Applications with Directives for Improving Research Reliability and Objectivity," *The Journal of Consumer Research*, 18 (2), 243-250.

Mayer, Robert N., Debra L. Scammon, and Cathleen D. Zick (1992), "Turning the Competition Green," *Marketing and Public Policy Conference*, Chicago, IL.

McCarty, John A., and L. J. Shrum (1994), "The Recycling of Solid Wastes: Personal Values, Value Orientations, and Attitudes About Recycling as Antecedents of Recycling Behavior," *Journal of Business Research*, 30 (1), 53-62.

McDonagh, Pierre (1998) "Towards a Theory of Sustainable Communication in Risk Society: Relating Issues of Sustainability to Marketing Communications," *Journal of Marketing Management*, 14 (6), 591-622.

Menon, Ajay, and Anil Menon (1997), "Enviropreneurial Marketing Strategy: The Emergence of Corporate Environmentalism as Market Strategy," *Journal of Marketing*, 61 (1), 51-67.

Naess, Arne (1973), "The Shallow and the Deep, Long-Range Ecology Movement," *Inquiry: An Interdisciplinary Journal of Philosophy*, 16 (May), 95-100.

O'Hara, Sabine U. (1995), "Sustainability: Social and Ecological Dimensions," *Review of Social*

- Economy*, 54 (4).
- Oates, Caroline, Seonaidh McDonald, Panayiota Alevizou, Kumju Hwang, William Young, and Leigh-Ann McMorland (2008), "Marketing Sustainability: Use of Information Sources and Degrees of Voluntary Simplicity," *Journal of Marketing Communications*, 14 (5), 351-365.
- Pfanner, Eric (2008), "Cooling Off on Dubious Eco-Friendly Claims," *The New York Times*.
- Polonsky, Michael Jay (2011), "Transformative Green Marketing: Impediments and Opportunities," *Journal of Business Research*, 64 (12), 1311-1319.
- Roberts, James A. (1996), "Green Consumers in the 1990s: Profile and Implications for Advertising," *Journal of Business Research*, 36 (3), 217-231.
- Rust, Roland T., and Bruce Cooil (1994), "Reliability Measures for Qualitative Data: Theory and Implications," *Journal of Marketing Research* 31 (1), 1-14.
- Scammon, Debra L., and Robert N. Mayer (1991), "Environmental Labeling and Advertising Claims: International Action and Policy Issues," *Association for Consumer Research*. Amsterdam.
- _____ and Robert N. Mayer (1995), "Agency Review of Environmental Marketing Claims: Case-by-Case Decomposition of the Issues," *Journal of Advertising*, 24 (2), 33-43.
- Schlossberg, Howard (1991), "Marketers Say State Laws Hurt Their Green Efforts," *Marketing News*, 8.
- Sheth, Jagdish, Nirmal K. Sethia and Shanthi Srinivas (2011), "Mindful Consumption: A Customer-Centric Approach to Sustainability," *Journal of the Academy of Marketing Science*, 39, 21-39.

- Shrivastava, Paul (1995), "Ecocentric Management for a Risk Society," *The Academy of Management Review*, 20 (1), 118-137.
- Signitzer, Benno, and Anja Prexl (2008), "Corporate Sustainability Communications: Aspects of Theory and Professionalization," *Journal of Public Relations Research*, 20 (1), 1-19.
- Torres, Ivonne M., Jeremy J. Sierra, and Robert S. Heiser (2007), "The Effects of Warning-Label Placement in Print Ads," *Journal of Advertising*, 36 (2), 49-62.
- United Nations. (1987), "Our Common Future," *The Brundtland Report*. Oxford: Oxford University Press.
- Van Dam, Ynte K., and Paul A. C. Apeldoorn (1996), "Sustainable Marketing," *Journal of Macromarketing*, 16, 45-56.
- Willer, David (1967), *Scientific Sociology*, Englewood Cliffs, NJ: Prentice-Hall.
- Wong, Veronica, William Turner, and Paul Stoneman (1996), "Marketing Strategies and Market Prospects for Environmentally-friendly Consumer Products," *British Journal of Management*, 7 (3), 263- 81.
- Wright, Peter L. (1973), "The Cognitive Processes Mediating Acceptance of Advertising," *Journal of Marketing Research*, 10 (1), 53-62.
- Zimmer, Mary R., Thomas F. Stafford, and Marla Royne Stafford (1994), "Green Issues: Dimensions of Environmental Concern," *Journal of Business Research*, 30 (1), 63-74.