

DECEPTION IN ENVIRONMENTAL ADVERTISING: CONSUMERS' REACTIONS TO
GREENWASHING

By

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Abstract

The present research explored whether consumer reactions to a deceptive environmental ad differs from consumers' reactions towards a similar true green ad. The deceptive ad used in this study violates all FTC regulations for acceptable environmental claims. The practice of deceptive environmental advertising, known as greenwashing, is an increasing problem for consumers and advertisers as environmental products and services are offered at an increasing rate in the marketplace. Undergraduate college students participated in the experiment testing four hypotheses. As predicted, consumers were not able to identify a greenwashed ad as deceptive. Similarly, a measurement of consumers' perceived overall ethics associated with the ad revealed low ethical concerns towards both greenwashed and true green ads. Attitudes towards greenwashing were also measures, and, as hypothesized, consumers have equally positive attitudes towards greenwashed and true green ads and brands. Additionally, stronger levels of environmental concern decreased the consumers' ability to detect deception in greenwashed ads. Implications indicate that consumers cannot perceive differences in greenwashed ads and true green ads, and the prevalence of greenwashing has the potential to cause serious damage to the credibility of the advertising industry.

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Introduction

Environmental concern is on the rise, and is currently a major area of interest for consumers in America. This growing concern created environmentally conscious consumers who desire to do their part to improve the environment with their purchases. As will be shown in the next chapter, a majority of consumers consider themselves environmentally responsible and do consider the environmental aspects of products before purchase (Ottman, 1993).

Environmental claims increased in the marketplace with increasing consumer demand for environmental product information. However, due to the complex nature of environmental issues, ambiguous terms, and lack of environmental knowledge, consumers are often confused or misled by environmental claims. They are also more likely to be deceived by environmental ads because of their prevalence and general appeal to consumers' desire to improve the environment (Carlson, Grove, and Kangun, 1993).

Deceptive and misleading environmental claims are also referred to as greenwashed ads. Their current prevalence in advertising poses a threat to the entire advertising industry (Carlson, Grove, and Kangun, 1993). Few studies have reported consumer reactions to greenwashing, but research consistently reveals negative consumer attitudes and purchase intentions towards deceptive ads (Newell, Goldsmith, and Banzhaf, 1998). Coincidentally, research consistently shows that consumers are not able to identify deceptive advertising. Otherwise, equal attitudes and purchase intentions are formed towards a deceptive ad and a non-deceptive ad (Newell, Goldsmith, and Banzhaf, 1998). The present study aims at gaining further insight into greenwashed advertising claims. An experiment is conducted to establish whether consumer reactions to a deceptive environmental ad differ from reactions towards a similar true green ad. Additionally, the Federal Trade Commission's (FTC) environmental advertising regulations are

examined to see whether they effectively reduce consumers' perception of deception within environmental ads. Previous research has studied environmental ad claims' degree of compliance with FTC and Environmental Protection Agency regulations (Mayer, Scammon, and Zick, 1992). However, no research has evaluated the effect regulations have on lowering deceptions towards environmental claims made in ads.

Literature Review

Environmental Consumers

Public concern for environmental protection has increased tremendously in recent years as multiple research studies consistently reveal the public's desire to protect the environment (Carlson, Grove, and Kangun, 1993). Increasing portions of Americans refer to themselves as environmentalists (Donaton and Fitzgerald, 1992; Fisher, 1990; Gross, 1990; Hayes, 1990), who are not only concerned with environmental protection, but also with the environmental impact of their purchases from production to disposal (Carlson, Grove, and Kangun, 1993; Zinkhan and Carlson, 1995). Consumers possess a sincere desire to purchase products that are less harmful to the environment (Chase, 1991; Schwepker and Cornwall, 1991; Gillespie, 1992; Carlson, Grove, and Kangun, 1993). This idea is further supported by an early 1990's poll in which 90 percent of Americans state that they are concerned with the environmental impact of what they purchase (Cramer, 1991). These consumers are referred to as environmentally conscious consumers, which Jacquelyn Ottman defines "as those who actively seek out products perceived as having relatively minimal impact on the environment" (1993, p. 27).

The growth of environmentally conscious consumers has created a trend in the market called environmental consumerism (Carlson, Grove, and Kangun, 1993). Gussow (1989) explained environmental consumerism as an orientation in which consumers' purchases, product usage and disposal decisions are driven by a desire to preserve nature's ecological balance. Consumers believe they are protecting the environment and themselves by purchasing "green" products over "non-green" products (Newell, Goldsmith, and Banzhaf (1998). The strength of environmental consumerism is revealed in a Roper Organization study that found 54 percent of

Americans read product labels to see if they were environmentally safe or not (Ottman, 1993). While consumers may vary in their personal level of environmental involvement, experimental research shows all consumers respond similarly to green products, suggesting a universal appeal of green messages among consumers (Schuhwerk and Lefkoff-Hagius, 1995). Support for the environment is broad-based and consumers' sincere demands for environmentally friendly products cannot be denied (Carlson, Grove, and Kangun, 1993).

Environmental Change

The strong presence of environmental consumerism has lead companies to adjust their products and policies to appease consumers' environmental demands in hopes of making a profit (Carlson, Grove, and Kangun, 1993). Although research has shown green consumers often hold anti-corporate biases and distrust advertising (Zinkhan and Carlson, 1995), most consumers react favorably to companies they believe are responding to environmental concerns (Carlson, Grove, and Kangun, 1993; Chase, 1991; Bremmer 1989; Kirkpatrick 1990; Weber, 1990). To gain customer attention and approval, companies place green marketing at the center of their business strategies. These marketing strategies present green products and environmentally friendly corporate images through numerous mediums in hopes of targeting environmentally conscious consumers and making a profit (Manrai et al 1997; Banerjee, Gulas, and Iyer, 1995; Iyer and Banerjee, 1993). In the third annual Nationwide Environmental Survey, 79% of respondents considered the environmental reputation of a firm when making purchase decisions (Dagnoli, 1991). While some companies have truly lessened their negative environmental impact, others exaggerate their efforts or simply claim to be environmentally responsible when, in fact, they are not (Garfield, 1991).

The number of green goods in the marketplace has steadily increased in past years as manufacturers respond to environmental consumerism (Banerjee, Gulas, and Iyer, 1995). Ottman (1993) found an increase of 750 new green products on the market in 1991 from that which had existed in 1986, a 13.4% increase. Companies were also changing their existing products to appeal to environmental consumers. In the early 1990's, Procter & Gamble changed their household product packaging to refillable containers that contained less plastic than originally (Reitman, 1992; Carlson, Grove, and Kangun, 1993).

Green Advertising

Environmental advertising, or green advertising, grew out of the importance to reach environmental consumers with information on the pro-environmental aspects of a business' products and services (Banerjee, Gulas, and Iyer, 1995; Zinkhan and Carlson, 1995). For example, the volume of green print ads grew by 430 percent between 1989 and 1990 (Ottman, 1993), and a 1992 investigative study found approximately three quarters of participants recalled being exposed to at least one environmental ad (Carlson, Grove, and Kangun, 1993). Zinkhan and Carlson (pg. 1, 1995) defined green advertising as "promotional messages that may appeal to the needs and desires of environmentally concerned consumers." Consumers desire products with environmental benefits and advertising is becoming more prominent as organizations strive to communicate environmental information to them (Kangun, Carlson, and Grove, 1993).

Research on green advertising has briefly covered a wide variety of different aspects, and most scholars in this area believe research on green advertising is at the introductory phase in its life cycle (Zinkhan and Carlson, 1995). Most green advertising information has been presented through the marketing and advertising trade press (Landler, 1991; Carlson, Grove, and Kangun,

1993), however, academic research is limited (Newell, Goldsmith, and Banzhaf, 1998). The majority of studies have relied on convenience samples and secondary data for content analyses and experimental studies (Zinkhan and Carlson, 1995). Existing research has presented information on deception in claims (Carlson, Grove, and Kangun, 1993; Kangun, Carlson, and Grove, 1991), believability of claims (Carlson, Grove and Kangun, 1993), and level of claims' compliance with established FTC and EPA guidelines (Scammon and Mayer, 1991; Mayer, Scammon, and Zick, 1992). Systematic analyses of green advertising had categorized green ads (Banerjee, Gulas, and Iyer, 1992; Iyer, Banerjee, and Gulas, 1993) and analyzed their content to identify the underlying structure (Banerjee, Gulas, and Iyer, 1995).

Several similar definitions of the term green advertising exist, as currently it is a new area of interest with limited existing research (Zinkhan and Carlson, 1995). Although multiple definitions of a term may exist, advertising scholars have agreed that this problem cannot be overcome and multiple definitions may be valid (Anderson, 1995). For this study, we will use the operational definition of green advertising presented by Banerjee, Gulas, and Iyer (1995) in their analysis of the content of green advertising. They define green advertising as any ad that contains at least one of the three following criteria (Banerjee, Gulas, and Iyer, 1995):

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.
3. Presents a corporate image of environmental responsibility.

The authors used this definition of green advertising during the ad selection process for their study to distinguish print and television ads from green and non-green (Banerjee, Gulas, and Iyer, 1995).

Green Advertising Claims

Marketers use specific types of claims in green advertising to successfully reach environmentally conscious consumers (Banerjee, Gulas, and Iyer, 1995), and there is a noticeable increase in the presence of environmental claims being made in product advertising. A 1996 audit of American grocery stores found 66 percent of all products made an explicit or implied environmental claim (Mayer, Gary-Lee, Scammon, and Crude, 1996). A series of studies examined different types of environmental claims and developed a system of classification for each type, while other studies conducted a detailed evaluation of deceptive and misleading claims (Kangun, Carlson, and Grove, 1991; Carlson, Grove and Kangun, 1993; Kangun, Carlson, and Grove, 1991).

Carlson, Grove and Kangun (1993) studied environmental television and print ads from magazines and the popular press during the years 1989 and 1990 to create a system for classifying environmental ad claims. The authors sought “to identify a set of mutually exclusive and exhaustive categories that reflect the nature of the claims found among the ads” (Carlson, Grove, and Kangun, 1993, p.30). Environmental claims were classified into five categories by a panel of five expert judges (Carlson, Grove, and Kangun, 1993). These categories are presented below:

1. **Product Orientation:** The claim focuses on the environmentally friendly attributes that a product possesses.
2. **Process Orientation:** The claim deals with an organization’s internal technology, production technique and/or disposal method that yields environmental benefits.

3. Image Orientation: The claim associates an organization with an environmental cause or activity for which there is broad-based public support.
4. Environmental Fact: The claim involves an independent statement that is ostensibly factual in nature from an organization about the environment at large, or its condition.
5. Combination: The claim appears to have multiple facets, (i.e., it reflects a product orientation, process orientation, image orientation and/or an environmental fact).

Banerjee, Gulas, and Iyer (1995) broadened this classification scheme with the addition of four items: examination of the structural characteristics of the ads, the type of advertiser, the product or service advertised, and the characters used in the ad (Banerjee, Gulas, and Iyer, 1995).

Through content analysis, the authors identified green advertising in three ways: advertiser type (for-profit or nonprofit), ad focus (advertiser or consumer), and ad depth (shallow, moderate or deep) (Banerjee, Gulas, and Grove, 1995). Results from both classification studies revealed important information about environmental claims.

In the Carlson, Grove, and Kangun (1993) study, 38 percent of environmental claims were categorized as “image orientation” claims. Consumers perceived these claims to be misleading or deceptive (n=31) twice as often as they perceived them to be acceptable (n=16) (Carlson, Grove, Kangun, 1993). In comparison, green ads classified as “environmental fact” were the least likely to be perceived as misleading or deceptive. Interestingly, results revealed that this type of ad claim was seldom used (Carlson, Grove, and Kangun, 1993). Infrequent use of factual claims in green advertising is credited to the fact that they are often unflattering to the organization (Carlson, Grove and Kangun, 1993).

Results from the Banerjee, Gulas, and Iyer (1995) study revealed that 46.8 percent of green print advertising is from manufacturers, who promoted an environmentally friendly corporate image rather than the environmental attributes and benefits of their products.

Misleading and Deceptive Claims

There is an extensive use of environmental claims in the advertising for products, services, and corporate policies, but a majority of consumers cannot make sense out of the environmental claims being made in the ads (Newell, Goldsmith, and Banzhaf, 1998). Findings from an Environmental Protection Agency (EPA) study found green ad claims have more potential than any other type of ad claims to mislead and deceive consumers (Carlson, Grove, and Kangun, 1993). Mr. Andrew Stoeckle, director of the afore mentioned EPA study concluded from their findings that consumers are likely to accept green advertising claims because of their strong desire to improve the environment (Carlson, Grove, and Kangun, 1993). A significant portion of the limited green advertising research has examined misleading and deceptive environmental claims because of their prevalence in environmental advertising and their potential consequence. (Kangun, Carlson, and Grove, 1993).

During a study of environmental marketing claims, Carlson, Grove, and Kangun (1993) examined misleading and deceptive green ads and found potential costs for marketers when using such claims. Negative reactions from consumers were consistently documented in response to misleading or deceptive ad claims during the study. Some consumers simply did not comprehend the environmental claims, while others lowered their opinions of the sponsoring organization (Carlson, Grove, and Kangun, 1993).

Newell, Goldsmith, and Banzhaf (1998) researched consumer attitudes towards misleading green ads and found similar results. Consumers consistently expressed negative attitudes towards the ad and towards the brand when they perceived the green ads to be misleading (Newell, Goldsmith, and Banzhaf, 1998). Based on their results, the authors also warn of potential ethical and legal consequences in using deceptive green ads (Newell, Goldsmith, and Banzhaf, 1998).

Kangun, Carlson, and Grove (1991) developed a schema to specifically classify misleading and deceptive green claims. The classification schema was developed from prior concerns regarding green advertising made by the National Association of Attorneys-General (1990), combined with deceptive advertising concerns made by the Federal Trade Commission (Aaker and Myers, 1987). The resulting classification scheme was divided into three categories, but in a later study, Carlson, Grove, and Kangun, (1993) added a fourth category of classification for the designation of claims that may include more than one of the claim types. This category was included to ensure that the given options were mutually exclusive (Carlson, Grove, and Kangun, 1993). The resulting classification schema is presented below (Kangun, Carlson, and Grove (1991, p. 51):

1. The claim is overly vague or ambiguous; it contains a phrase or statement that is too broad to have clear meaning.
2. The claim omits important information necessary to evaluate its truthfulness or reasonableness.
3. The claim is false or an outright lie.
4. Combination: The claim contains more than one misleading/deceptive element.

Two sets of judges, expert and non-expert, were used in this study to classify the misleading or deceptive ad claim types (Kangun, Carlson, and Grove, 1991). Three doctoral candidates in environmental systems engineering were chosen as expert judges, while three faculty members in non-environmental areas were chosen as non-expert judges (Kangun, Carlson, and Grove, 1991). Expert judges classified 51 percent of the claims as “vague or ambiguous” (category 1) and 48 percent were classified as “omissions” (category 2). The non-expert judges evaluated the same ads but classified 70 percent as “vague or ambiguous” (category one), 18 percent as “omissions” (category two), and 12 percent as “false or outright lies” (category three). Expert judges placed only 1 percent of claims as “false or outright lies”, which suggests that they were able to identify misleading or deceptive environmental claims better than the non-expert judges. The authors conclude that superior environmental knowledge enables experts to make finer distinctions between accurate and misleading or deceptive environmental claims.

The expert and non-expert judges also identified the incidence of misleading or deceptive ad claims for the study (Kangun, Carlson, and Grove, 1991). Expert judges found 37 percent of the ads contained at least one misleading or deceptive claim, while non-expert judges found a misleading or deceptive claim in 49 percent of the ads (Kangun, Carlson, and Grove, 1991). The authors concluded that the rate of occurrence for deceptive or misleading claims in advertising is a serious problem.

In spite of their advanced experience and knowledge of the environment, the expert judges did not identify as many deceptive or misleading environmental claims as the non-expert judges (Kangun, Carlson, and Grove, 1991). The authors indicate from this difference in perception that an increased knowledge of the environment leads to a decrease in the number of

environmental claims a person evaluates as misleading or deceptive, suggesting a greater overall acceptance of all environmental claims (Kangun, Carlson, and Grove, 1991).

In response to Kangun, Carlson, and Grove's 1991 study on environmental consumer research, Newell, Goldsmith, and Banzhaf (1998) hypothesized that consumers with higher levels of environmental concern would be better able to detect misleading or deceptive environmental claims than consumers with lower levels of environmental concern. Additional studies had previously found that consumers with higher levels of environmental concern tended to be more involved in ecological causes as well as more likely to boycott products with poor environmental records (Weigel and Weigel, 1978). The researchers tested their hypothesis and found a consumer's level of environmental concern had no effect on their ability to detect misleading or deceptive claims, and further concluded that mere concern for the environment does not enable consumers to detect misleading or deceptive ad claims (Newell, Goldsmith, and Banzhaf, 1998).

Greenwashing claims can have legal and ethical ramifications in addition to the obvious damage they have on consumers' perceptions of the advertised product and brand (Newell, Goldsmith, and Banzhaf, 1998). Previous research has shown that consumers have negative perceptions of deceptive environmental ad claims, but only if they perceive a deception (Newell, Goldsmith, and Banzhaf, 1998). If no deception is detected, consumers are equally influenced to buy and form a positive attitude towards the brand and product of a deceptive ad as they are towards a non-deceptive ad (Newell, Goldsmith, and Banzhaf, 1998).

Greenwashing

Newell, Goldsmith, and Banzhaf (1998) specifically referred to misleading and/or deceptive advertisements as "greenwashed" claims in their study, which looked at their

perceived deception of advertisements. In a recent Time magazine article, greenwashing was defined as misleading marketing about the environmental benefits of a product (Walsh, 2008). Both researchers and the media use the term greenwashing when discussing misleading and deceptive green advertising. The term is used broadly in the mainstream media, however, researchers are more specific in their definition of greenwashing as they define it to be all environmental claims that are trivial, misleading, or deceptive to consumers (Manrai et al. 1997).

Kangun, Carlson, and Grove (1991) believe greenwashing to be a common phenomenon based on their research of misleading and deceptive green advertising. In another study, the same authors document widespread occurrences of greenwashing, which they believed poses a threat to the entire industry of advertising (Carlson, Grove and Kangun, 1993). Jennifer Boulden, senior Vice President of Ideal Bite, stated at Advertising Age's 2008 Green Conference "that 68% of consumers believe companies are greenwashing or overstating their green claims" (Zmuda and Parekh, 2008, pg. 14). A loss of trust in all green advertising and to the advertising industry as a whole results when consumers perceive green advertising to be largely greenwashing (Wheaton, 2008).

Environmental Advertising Regulations

Consumer confusion regarding the environmental claims of products is a growing issue that has emerged with the increase of green advertising (Newell, Goldsmith, and Banzhaf, 1998). The rapid increase of environmental claims for a wide range of products and services created confusion among consumers (Newell, Goldsmith, and Banzhaf, 1998; Kangun, Carlson, and Grove, 1991; National Association of Attorneys-General, 1990). Atwood (1993) too found consumer confusion and skepticism to be caused by the increase in variety of environmental

claims. Another source of confusion is the common use of environmental words and phrases with no clear or uniform meanings (Kangun, Carlson, and Grove, 1991). American and international companies advertise their products in the United States as pro environmental with unclear yet familiar environmental terms (Norman, Carlson, and Grove, 1991). Examples of these words include: environmentally friendly, compostability, recyclability, recycled content, degradable, and ozone friendly (Carlson, Grove, and Kangun, 1993; Kangun, Carlson, and Grove, 1991). Additional confusion is caused from the complex scientific knowledge required of consumers to fully understand environmental claims, and from incomplete environmental assessments of products in comparison claims (Kangun, Carlson, and Grove, 1991; Carlson, Grove, and Kangun, 1993).

In response to the growing confusion caused by green ads, attorneys-general from 10 states created a task force in November of 1989 to evaluate environmental advertising claims (Kangun, Carlson, and Grove, 1991). The task force investigated potentially deceptive environmental claims made by specific companies based on existing state statutes that prohibit deceptive advertising (Kangun, Carlson, and Grove, 1991). Within one year, the task force took legal action against several companies to require them to modify their environmental claims. Several cases reached settlements including a case against American Enviro Products, producers of Bunnies biodegradable disposable diapers, and against the Mobil Chemical Company, which misrepresented Hefty degradable trash bags as being environmentally safe, when in fact they were not (National Association of Attorneys-General, 1990). The Attorneys-General task force brought to light the lack of uniformity in green advertising claims, which led to a response from the FTC in 1992 (Carlson, Grove, and Kangun, 1993).

The Federal Trade Commission (FTC), in cooperation with the Environmental Protection Agency (EPA), established a set of guidelines for green advertising claims in 1992 as a response to the continuing demand from several states and organizations (Carlson, Grove, and Kangun, 1993, Federal Trade Commission, 1999). The guidelines consist of four general principles which provide that all environmental claims (FTC News, 1992; Federal Trade Commission 1992):

1. Be clear, prominent and understandable;
2. Clearly state whether any assumed environmental attribute or benefit applies to the product, the package, or both;
3. Avoid exaggeration of a environmental attribute or benefit; and
4. Ensure comparison statements in claim be clear and understandable, not deceptive, to the consumer.

Established in July 1992, the new FTC guidelines gave advertisers a clear standard of what an acceptable environmental claim ought to include (Carlson, Grove, and Kangun, 1993).

Though companies can face consequences for ad claims that do not follow the guides for Unfair and Deceptive Acts under section five of the Federal Trade Commission Act (Wheaton, 2008), marketers are only encouraged to comply with the criteria as they carry no force of law and are overruled by existing state environmental regulation (Carlson, Grove, and Kangun, 1993).

The FTC guidelines for the use of environmental marketing were established to serve three main purposes: to reduce consumers' confusion in understanding environmental claims, to increase consumer confidence in environmental claims, and to help consumers use the marketplace to gain environmental goals (Mohr, Eroglu, and Ellen, 1998).

Self-Regulation

The advertising industry is self-regulated. The National Advertising Division (NAD) of the Council of Better Business Bureaus has a priority in evaluating green marketing cases to ensure advertised green claims are truthful and adequately supported (Wheaton, 2008). The NAD reviews national advertising through its National Advertising Review Board for truthfulness and accuracy to foster public confidence in the credibility of advertising (National Advertising Division, 2009). This organization was created by the advertising industry, but is not regulated or staffed by it (Brainard, 2007). Additionally, they are the largest regulatory body over the advertising industry making 150 decisions annually, and 95 percent of companies comply with those decisions (Brainard, 2007). In recent years as environmental advertising has increased, the NAD has also seen an increase in the number of complains against green marketing. They claim this relationship is proof that the self-regulatory advertising system works and is a sufficient regulatory body (Brainard, 2007).

Hypotheses

A 1989 J. Walter Thomson Co. Greenwatch survey found 79 percent of consumers refer to themselves as strong environmentalist (Levin, 1990) with a high level of environmental concern (Dagnoli, 1990; Shrum, McCarty, and Lowrey. 1995). It was first assumed by researchers that consumers with a strong environmental concern would be more likely to perceive deceptive and misleading claims in environmental advertising, but recent research has proven the opposite (Newell, Goldsmith, and Banzhaf, 1998). Studies reveal that consumers are likely to accept deceptive environmental ad claims because of their sincere desire to protect the environment. Thus, it can be expected that the average consumer will not be able to identify a

greenwashed environmental claim as deceptive or misleading. This expected result and previous studies lead to the first hypothesis.

H1: Consumers will not be able to identify a greenwashed ad claim as deceptive.

Several researchers briefly mention the ethical concerns associated with greenwashing, yet currently no study has been done to examine consumers' ethical perceptions of greenwashed claims (Carlson, Grove, and Kangun, 1993; Newell, Goldsmith, and Banzhaf, 1998). Previous researchers assume negative reactions to greenwashing and this is logical based on the very definition of greenwashing, which is to mislead and deceive. Based on the previous hypothesis, which states that greenwashed ads will not be detected, it is assumed that the average consumer will find greenwashed ads to be equally ethical as non-greenwashed ads.

H2: Consumers will find greenwashed ads equally ethical to true green ads.

Consistent research shows consumers have negative perceptions of greenwashed advertising, but these conclusions are irrelevant if consumers cannot identify the claim to be greenwashed (Newell, Goldsmith, and Banzhaf, 1998). If no deception is detected in an ad, consumers are likely to form positive attitudes towards an environmental claim (Newell, Goldsmith, and Banzaf, 1998). From these findings, it can be assumed that consumers will have equally favorable attitudes towards greenwashed and non-greenwashed ads and the advertised brand.

H3a: Consumers will have an equally favorable attitude towards greenwashed and true green ads.

H3b: Consumers will have an equally favorable attitude towards greenwashed and true green brands.

Method

Sample

Two hundred fifty undergraduate students at a large midwestern public university in the United States participated in this study. Two hundred forty-four usable surveys were obtained, taken by 79 males and 165 females. The average age of the participants was 20 years, with a range of 18-32 years. Eighty-one participants were exposed to the greenwashed ad, 82 participants were exposed to the green ad and 81 participants were exposed to the neutral ad. Participants were chosen base on convenience and had responded to a request for participants made in their journalism and mass communications classes.

All participants were given an informed consent form created by the university's institutional research review board. The form indicated that (1) the study concerned attitudes towards a new brand of t-shirt's print ads, (2) participants could withdraw from the study at any time, and, (3) all answers would remain confidential. All participants signed the consent form and completed the survey in full.

Stimulus Materials

Three print ads for a hypothetical t-shirt company were created for this study. T-shirts were chosen as the featured product in our print ads for several reasons. First, we wanted to use a product that most college students are familiar with and purchase themselves. Most people, particularly college students, are t-shirt users and buyers and thus are very familiar with the

product. Second, t-shirts are frequently the medium of messages, especially for messages featuring social and political movements.

In addition to being a product that consumers would normally purchase, the creation of the ad stimuli was based on criteria that the deceptive or misleading claim could be manipulated and replaced from the original ad with a neutral claim (Russo, Metcalf, and Stephens, 1981). To study the effects of a misleading or deceptive claim on consumers, the false ad must be compared to the same ad - manipulated only to exclude the misleading or deceptive claim (Barbour and Gardner, 1982). One ad was created with a misleading or deceptive claim based on regulations set by the FTC. A second ad was then created with a revised acceptable environmental claim according to the same FTC regulations, and a final ad was then created as a control with an environmentally neutral claim. The brand, product, design, and text placement remained consistent between all three ads. Similarly, all three ads were high-quality color copies. The use of color was an important element to this specific study because of consumers' close association with the color green and the environment. The slight manipulations to each otherwise similar ad enabled a comparative analysis.

The greenwashed ad featured a false environmental claim. The copy in this ad violated all four criteria for acceptable environmental advertising claims set by the FTC. The copy read:

Environmentally friendly t-shirts. Ozone-friendly productions. A shirt and a message that gives back. Do your part. Share the message. Go Green. Deeko clothing uses more all-natural, non-toxic materials than any other t-shirt maker. The environment we love is in trouble, and we all must do our part. We help the environment and our shirts do the same. Saving the environment made simple...through a t-shirt. Going green is more than a t-shirt, more than a business, it's a lifestyle. Deeko. Environmentally friendly.

The true green ad featured an acceptable environmental claim based on FTC regulations. The first three criteria for an acceptable environmental claim were met in the ad copy. The fourth criteria did not apply to the ad copy as no product comparisons were made in the ad. The copy read:

Organic Cotton. Rain-fed from the clouds. 85% Sustainable. 85% Natural. In all we do, from start to finish, we make choices everyone can feel good about. Growing organic cotton uses no pesticides or costly irrigation systems. Deeko organic cotton is made from materials that were put into it the same way they came out of the ground. To compensate for carbon-dioxide emissions created during delivery of your shirt, we purchase carbon offsets from theCarbonFund. To learn more about organic cotton and Deeko's positive environmental impact, please visit www.deeko.org. Deeko. Environmentally responsible.

The environmentally neutral ad featured the same brand and product as the greenwashed and true green ads, but did not contain any pro-environmental information. The copy stated:

High quality T's that love you back. Only the softest cotton makes it into a deeko T. Leaving you wearing the best. We make shirts that you can feel good about. Deeko clothing is made to feel good on your skin. We use 100% high quality cotton, giving you familiar comfort. Our unique rock-washing technique adds an unmatched softness. You'll fall in love with this quality. When less is more, there's deeko. Deeko. Feel love. Feel alive."

Procedure

Participants were told that this research was investigating consumers' perceptions and attitudes towards a test ad for a new brand of t-shirt. Each participant was given a survey packet containing only one of the three stimuli. The packets contained, in order, a consent form, an instruction page, a color copy of one ad, and a two-page questionnaire. Prior to the experiment, all survey packets were shuffled and stacked together at random. The packets were distributed to participants at random by an administrator ensuring that each participant had an equal chance at viewing each ad. Participants were instructed to view the ad "as if they were seeing it in a magazine" (Yi, 1990), and honestly answer all questions on the questionnaire according to their opinions towards the ad. Directions were orally presented to participants as well as clearly written on the instruction page at the front of each survey packet. The questionnaire took participants approximately 8 minutes to complete.

Survey

The survey used to gather data on consumers' perceptions of greenwashed ads was divided into three sections, containing thirty-four total questions. Section one contained questions assessing consumers' ethical judgments of the ad, consumers' attitudes towards the ad and the brand, and a manipulation check. The second section consisted of questions used to measure a consumers' perceived deception in the ad. The final section contained brief demographic questions and asked for participants' attitudes towards the environment and environmental advertising.

Measures

The four main variables measured in this study were: (1) perceived deception, (2) ethical judgment, (3) attitude towards the ad, and (4) attitude towards the brand.

Perceived deception is found when an advertisement is input into the perceptual processes of some audience and the output of that process (a) differs from the reality of the situation and (b) affects buying behavior to the detriment of the consumer (Newell, Goldsmith, and Banzaf, 1998; Aaker, 1974, p.138). For use in this research, perceived deception is based on a consumers' identification of an environmental claim in an ad as misleading, deceptive, or distorted (Maddox, 1982). A three-item, seven-point, bi-polar adjective scale was used to measure perceived deception (Maddox, 1982). The three items for this scale were accurate/misleading, truthful/deceptive, and factual/distorted. Responses were summed to create a single measure of perceived deception; higher scores indicating greater levels of perceived deception in the ad (Maddox, 1982). Newel, Goldsmith, and Banzhaf (1998) used the same scale to measure perceived deception of environmental claims in print ads with a reliability coefficient of $\alpha = .92$.

Ethical judgment is a complex measure of a consumers' perceived overall ethics associated with an environmental ad. This construct was measured using the Reidenbach-Robin multidimensional ethics scale developed by Reidenbach and Robin (1990). The authors developed and tested this scale to measure the complex construct of ethical judgment in hopes of better understanding the consumer's complex ethical decision-making process, as no previous scale has successfully measured it (Reidenbach and Robin, 1990). Participants responded to eight seven-point items relating to three broad ethical theories. Combined responses from the three ethical theories were summed to create a single measure of perceived overall ethics.

The multidimensional ethics scale is based upon two classifications of normative ethical theories of moral philosophy: teleological and deontological philosophies (Gould 1994; Murphy & Laczniak, 1981). Teleological philosophies explain the moral worth of an individual behavior while deontological philosophies explain behavior without regard for the consequences (Fraedrich & Ferrell, 1992). Teleological philosophies focus on the goodness or badness of consequences for a particular action and then evaluate possible alternative options (Ferrell and Gresham, 1985). Conversely, deontological philosophies only look at the rightness or wrongness of a behavior and have no regard for the consequence (Fraedrich and Ferrell, 1992). Reidenbach and Robin (1990) claim that “some hybrid of the two philosophies [are used] in making an ethical evaluation.” This research was based off previous findings from Hunt and Vitell (1986) who state that “people...do in fact engage in both deontological and teleological evaluations in determining their ethical judgments and, ultimately, their behaviors.”

These philosophies are further broken down into five major normative ethical theories: justice, relativism, egoism, utilitarianism, and deontology (Loo, 2004). McMahon and Harvey (2007) described these five philosophies and defended their relevance in ethical decision-making:

justice is based on the idea that equals should be treated equally;

relativism is the idea that no universal ethical rules exist;

egoism is promoting one’s long term self interests;

utilitarianism is acting in accordance with creating the greatest good for the greatest number of people; and,

deontology is one’s duty to follow ethical rules.

Reidenbach and Robin (1988) claim that an individual uses a combination of these five philosophies when making ethical evaluations, yet people may or may not be aware that they are using these philosophical assumptions when making ethical decisions (Ferrell and Gresham, 1985). The multidimensional nature of this scale can examine the connection between ethical evaluations with social and cultural influences on an individual.

Reidenbach and Robin (1988) initially developed a 38-item pool to evaluate the five philosophies. Later in 1990, the pair developed a short form analysis with only eight items. These eight items were based on an explanatory factor analysis of the original model (McMahon & Harvey, 2007). This new eight-item analysis is based on only three remaining philosophies, which are grouped into 3 dimensions: moral equity, relativism, and contractualism (McMahon & Harvey, 2007). Appendix 5 shows an example of the 38-item multidimensional scale and Appendix 6 shows the eight-item scale as presented by McMahon and Harvey (2007). The eight-item multidimensional ethics scale has been proven to be equally valid in evaluating ethical judgments in regards to the 38-item scale (Loo, 2004). Loo (2004) found the short scale to be a “psychometrically sound, multidimensional ethics scale that can be considered when administration time is quite limited.” Loo (2004) also found that “the short scale can be used as a general measure of ethics.”

The combination of philosophies in a multidimensional scale yields a higher validity when measuring complex constructs such as ethical judgments (Reidenbach & Robin, 1990).

Consumers’ attitude towards the ad and brand were also examined in this study. The constructs were each measured using a four-question seven-point item scale. Responses were summed to form a single unit of measure for both attitude toward the ad and attitude toward the brand. This scale was chosen for use in this study based on its prominent use in related

advertising research (LaTour and Henthorne, 1994; Henthorne, LaTour, and Nataraajan, 1993; LaTour, Pitts, and Snook-Luther, 1990).

Results

Manipulation Check

A manipulation check was conducted by comparing the mean responses of the treatment groups. All participants were asked to respond to the statement “A deeko t-shirt is rock washed for unmatched softness” on a 7-point scale coded from 1, “strongly disagree” to 7, “strongly agree.” Deeko’s rock washing technique was discussed only in body copy of the environmentally neutral ad. Results revealed, as expected, that the mean scores of participants who evaluated the neutral ad ($m = 5.86$) were higher than the scores from participants who evaluated the greenwashed ($m = 3.45$) and true green ad ($m = 3.18$). A one-way ANOVA analysis reveals that these differences are statistically significant ($F(2,239) = 72.07, p < .05$). Additionally, means were compared between the greenwashed ad and the true green ad to ensure the presence of the manipulation effect. Only body copy in the true green ad contained information on purchasing carbon offsets, therefore the mean scores should be higher for participants who saw this ad. One-way ANOVA results revealed a significant difference between the mean scores from the question, “The deeko clothing company purchases carbon offsets.” Results revealed the mean score for the true green ad ($m = 5.71$) is significantly higher ($F(2,241) = 36.68, p < .05$) than the mean for the greenwashed ad ($m = 4.02$).

Internal Consistency

Chronbach alpha tests were conducted to determine the internal consistency of the scale items for each of the constructs used in this research (see Table 1). The alphas are presented for each construct as follows: ethical judgment, alpha = .923; perceived deception, alpha = .932;

TABLE 1
Dependent Measures

Variable	Scales	Range	Reference	Reliability
Perceived Deception	Completely Accurate / Completely Misleading Completely Truthful / Completely Deceptive Completely Factual / Completely Distorted	Strongly Agree/ Strongly Disagree (1-7)	Maddox (1982)	a = 0.932
Ethical Judgment	This ad is just. This ad is acceptable to my family. This ad is fair. This ad is morally right. This ad is culturally acceptable. This ad is traditionally acceptable. This ad does not violate an unspoken promise. This ad does not violate an unwritten contract.	Strongly Agree/ Strongly Disagree (1-7)	Reidenbach and Robin (1990) McMahon and Harvey (2007)	a = 0.923
Attitude to Ad	This ad is irritating. This ad is good This ad is informative This ad is offensive	Strongly Agree/ Strongly Disagree (1-7)	LaTour et al. (1990) Henthorne et al. (1993) LaTour and Henthorne (1994)	a = 0.766
Attitude to Brand	This brand is high quality. This brand is unsatisfactory. This brand is appealing. This brand is inferior.	Strongly Agree/ Strongly Disagree (1-7)	LaTour et al. (1990) Henthorne et al. (1993) LaTour and Henthorne (1994)	a = 0.789

attitude towards ad, $\alpha = .766$; attitude towards brand, $\alpha = .789$. The range of scores for these constructs indicates an adequate level of internal consistency for research (Nunnally, 1967).

Correlations of Dependent Variables

Correlations coefficients were determined for the dependent variables (see Table 2). Regardless of viewed ad, direction of correlation between all dependent variables is similar, however, size of the correlations do differ. Correlations between dependent variables are all statistically significant ($p < .05$) when participants viewed the greenwashed ad. Correlations between dependent variables are also statistically significant ($p < .01$) when viewing the true green ad. However, dependent variables are not all significantly correlated ($p < .05$) when subjects viewed the environmentally neutral ad.

Sample Profile

Of the respondents, 44.2 percent have previously purchased environmentally friendly clothing. Additionally, 63.2 percent of respondents report they like environmentally friendly ads, and only 22.5 percent claim they are annoyed by environmental ads.

Participants responded to general questions assessing their level of involvement with the environment and their attitudes towards environmental consumerism. All questions were measured on a 7-point item scale coded from 1, “strongly disagree” to 7, “strongly agree.” Consistent with previous environmental research, results show a majority of participants consider themselves environmentally friendly ($m = 4.68$), and prefer to use environmentally friendly products ($m = 4.54$). Additionally, two-tailed t-tests were preformed to determine if any significant differences existed between males and females. The results showed no significant

Table 2
Descriptive Statistics and Correlation of Variables (Overall)

Variables	Mean	SD	Min.	Max.	A	B	C	D
Perceived Deception (A)	3.15	1.28	1.00	7.00	1.00			
Ethical Judgment (B)	5.65	1.09	1.00	7.00	-.326**	1		
Attitude to Ad (C)	5.47	1.14	1.25	7.00	-.398**	.671**	1	
Attitude to Brand (D)	4.77	1.05	1.00	7.00	-.38**	.504**	.694**	1

** $p < .01$

$N = 244$

Descriptive Statistics and Correlation of Variables (Greenwashed Ad)

Variables	Mean	SD	Min.	Max.	A	B	C	D
Perceived Deception (A)	3.16	1.37	1.00	7.00	1.00			
Ethical Judgment (B)	5.71	0.93	1.00	7.00	-.638**	1		
Attitude to Ad (C)	5.39	1.26	1.25	7.00	-.69**	.596**	1	
Attitude to Brand (D)	4.61	1.1	1.00	7.00	-.57**	.625**	.731**	1

** $p < .01$

$N = 244$

Descriptive Statistics and Correlation of Variables (True Green Ad)

Variables	Mean	SD	Min.	Max.	A	B	C	D
Perceived Deception (A)	3.04	1.4	1.00	7.00	1.00			
Ethical Judgment (B)	5.54	1.34	1.00	7.00	-.265**	1		
Attitude to Ad (C)	5.46	1.26	1.25	7.00	-.267**	.820**	1	
Attitude to Brand (D)	4.79	1.08	1.00	7.00	-.249**	.564**	.728**	1

** $p < .01$

$N = 244$

Descriptive Statistics and Correlation of Variables (Neutral Ad)

Variables	Mean	SD	Min.	Max.	A	B	C	D
Perceived Deception (A)	3.04	1.4	1.00	7.00	1.00			
Ethical Judgment (B)	5.54	1.34	1.00	7.00	-.265*	1		
Attitude to Ad (C)	5.46	1.26	1.25	7.00	-.267*	.820**	1	
Attitude to Brand (D)	4.79	1.08	1.00	7.00	-.249*	.564**	.728**	1

** $p < .01$, * $p < .05$

$N = 244$

difference in level of environmental involvement ($t(242) = -.284, p < .05$) or in use of environmental products ($t(242) = -.629, p < .05$) between males and females.

Environmentally friendliness was correlated against all other major dependent variables and significant correlations were found ($p < .01$). Regardless of ad viewed, as a consumers' level of environmentally friendliness increases, so does their attitudes towards the ad ($r(242) = .356, p < .01$), the brand ($r(242) = .317, p < .01$), and perceived deception ($r(242) = -.243, p < .01$). Ethical concern, however, decreases with an increase in environmentally friendliness ($r(242) = .200, p < .01$).

Results revealed that a majority of consumers like environmentally friendly advertising ($m = 4.62$), though a smaller portion believe the environmental claims made in the ads by businesses ($m = 3.99$) and products ($m = 4.08$). Regardless of ad viewed, a strong correlation was found between participants who consider themselves to be environmentally friendly and believability of environmental ad claims ($r(242) = .387, p < .05$). This relationship indicates that participants who are environmentally friendly also believe environmental ad claims.

Similarly, significant correlations exist between the major variables in this study and a consumer's overall approval of environmental advertising. Results reveal that consumers who like environmental ads have few ethical concerns ($r(242) = .355, p < .01$), and positive ad ($r(242) = .537, p < .01$) and brand ($r(242) = .535, p < .01$) attitudes.

Hypothesis Tests

No significant univariate effects were revealed following initial overall MANOVA results ($Lambda(8,476) = .968, p > .05$), which provide support for each hypothesis. A summary of the univariate ANOVAs are provided in Table 3. After initial Lambda scores revealed no significance between the three independent variables, post-hoc Turkey tests confirmed no correlation exists between the independent variables. Results of each specific hypothesis are discussed below.

Hypothesis 1 predicted that consumers would not be able to identify a greenwashed ad claim as deceptive. The mean level of perceived deception in the greenwashed ad was 3.16 on a 7-point scale, with lower numbers representing a weak perceived deception and higher numbers representing a strong perception of deception. Likewise, the mean scores for level of perceived deception determined by participants who saw the greenwashed ad or the true green ad ($m = 3.04$) were compared using a one-way ANOVA. Post Hoc Turkey tests Results found no significant difference ($F(2,241) = .485, p > .05$) between the two treatment ads. Additionally, no significant difference was found in the mean scores for level of perceived deception between the greenwashed ad, the true green ad and the neutral ad ($m = 2.96$). This relationship reveals that participants found an equal level of deception between all three ads, regardless of the presence of deception or environmental content. Thus, H1 was supported.

Hypothesis 2 predicted that consumers would find greenwashed ads equally ethical to non-greenwashed ads. The mean scores for ethical judgment determined by participants towards the greenwashed ($m = 5.71$) and true green ads ($m = 5.54$) were evaluated using a one-way ANOVA and revealed no significant difference ($F(2,241) = .493, p > .05$). Thus, H2 was also

supported. Additionally, there is no significant difference in mean scores between greenwashed and true green ads and the environmentally neutral ad ($m = 5.70$).

The third hypothesis predicted that consumers would have an equally favorable attitude towards greenwashed and non-greenwashed ads. The mean scores for participants' attitude towards the greenwashed ad ($m = 5.39$) and true green ad ($m = 5.46$) were compared using a one-way ANOVA. The results revealed no significant difference ($F(2,241) = .461, p > .05$). Thus, H3 was supported. Similarly no significant difference ($F(2,241) = 1.638, p > .05$) was found between mean scores in attitude towards the brand between the greenwashed ad ($m = 4.61$) and the true green ad ($m = 4.79$). Thus H4 was also supported.

TABLE 3**Univariate ANOVA Analysis Summary**

Variable	Mean: Greenwashed Ad	Mean: True Green Ad	Mean: Environmentally Neutral Ad	Ratio of Explained Variance to Unexplained Variance (F)
Perceived Deception	3.16	3.04	2.96	0.485
Ethical Judgment	5.71	5.54	5.70	0.708
Attitude to Ad	5.39	5.46	.46	0.46
Attitude to Brand	4.61	4.79	4.91	1.638

Discussion

This study reveals important indications about deceptive environmental advertising. Based on the results, it is clear that consumers are not able to identify deceptive environmental claims in advertising. Current FTC environmental advertising regulations do nothing to increase consumer awareness of deceptive environmental claims, as they are not able to detect any significant difference in deception between ads that violate all FTC regulations from those that are in complete compliance. Current FTC regulations may not be sufficient in preventing deception in green advertising. Interestingly, because consumers were equally accepting of a deceptive green ad and a truly green ad, any ad containing environmental claims will appeal to the average consumer. Without stronger FTC or industry green advertising regulations, little motivation exists to stop greenwashing.

Additionally, results from this study reveal consumers' overall lack of understanding of deceptive advertising claims. Consumers' perception of deception did not differ between the treatment ads and the control ad indicating that they are unaware of what a deceptive advertising claim is. The low mean scores of perceived deception for all three ads imply that consumers are overall trusting of advertising, a characteristic that is exploited by greenwashed claims, and deceptive advertising in general.

This study also reveals interesting findings about consumers' ethical concerns towards greenwashed ads. Consumers displayed equally low ethical concerns towards both greenwashed advertising and true green advertising. Due to the combinations of philosophies in the measure of ethical judgment, results revealed consumers' high placement of moral worth and additional perception of rightness in both environmental ads, regardless of the presence of deception or not. Equal means between the greenwashed ad and true green ad show that consumers believe both

ads have high moral worth, and any further interaction or consequences that may occur from viewing the ad or using the featured product are inherently good. Consistent with previous research, this data reveals that consumers who have ethical concerns towards environmental ads also detect deception in the ad. The relationship between ethical judgments and deception indicates that consumers perceive deception as unethical. No significant difference in participants' ethical concerns for greenwashed and true green ads further support the hypothesis that consumers are not aware of the deception present in greenwashed advertising.

Interestingly, when consumers consider themselves to be environmentally friendly, they have fewer ethical concerns towards the ad. Results also indicate that these consumers form positive attitudes towards green advertising in the absence of ethical concerns within them. Environmentally friendly consumers associate a high level of ethics with products and brands featured with environmental claims, deceptive or not. High levels of environmentally friendliness inhibit consumers from evaluating environmental claims and identifying deception, leaving them open to the highest amount of deception. This motivates advertisers to include environmental claims, regardless of their sincerity, to appeal to environmentally friendly consumers, which previous research shows is the overwhelming majority of the population.

Finally, positive attitudes towards the ad and the brand were found to be equally favorable in the study results regardless of ad viewed. Positive attitudes towards greenwashed advertising indicate that true and deceptive environmental claims are both evaluated in a positive light. However, consumers have negative attitudes towards green advertising when they detect deception in the ad, regardless of its true presence or not. Results show that deception has an effect on consumers' attitudes, however this incidence is rare as deception is hardly detected.

Limitations

There are several limitations to this experimental study. The convenience sample of undergraduate college students as participants limits the generalizability of the results as their responses may differ from those of the entire adult population. Additionally, the survey was administered in a single environment and forced exposure to an ad. Requesting an immediate response to the stimuli also reduces the generalizability of the results. The evaluation of an ad in print and in no other medium hinders the ability to generalize these results to all types of green advertising. Further research may evaluate environmental ad claims made in a variety of mediums, such as television.

Original ad stimuli were created to prevent preexisting brand biases. The greenwashed ad was manipulated to violate all specifications of FTC environmental advertising regulations. Similarly, the true green ad was manipulated to be in exact compliance with same regulations. Previous studies have found few environmental ads that are in direct violation of all FTC regulation, and thus the greenwashed ad may not have accurately reflected the typical greenwashed ad.

Additionally, the ads used in this study presented a t-shirt. Depending on the product category, the participants' reaction to the ad may vary. Environmental claims are made for all types of products and further research may include different product and at different prices. Similarly, the color green is highly associated with the environment. The presence of the color green in both treatment ads may have been strong enough to persuade consumers' reactions. Controlling for this variable may be useful in an extension of this study.

Conclusions

The presence of greenwashed advertising is a growing problem for the advertising industry and consumers alike. As environmental consumerism continues to thrive, consumers will be exposed to and purchase more environmental products and services. While their levels of environmental concern strengthen, their ability to detect greenwashing becomes weak from their strong desires to “be green”. While greenwashed ads are infrequently identified as such, misleading consumers yields negative consequences; when they suspect deception in an environmental ad, they also have lower attitudes and greater ethical concerns towards the ad and the brand. Although greenwashed ads appear to be equally effective in promoting a product and brand, greenwashing is becoming a prominent issue that will work towards the eventual detriment of the ad and brand.

Additionally, current FTC regulations do nothing to protect consumers from deception, which is their very purpose. The integrity of environmental product and service claims must be established for advertising to remain effective in this area. Updated regulations from the FTC and the advertising industry are necessary to prevent further greenwashing. Although it is not logical to assume all greenwashing will cease, its current rampant state voids the credibility in all environmental advertising. Greenwashing is not yet negatively affecting the attitudes of consumers, but the façade cannot last long. Greater passion from consumers for environmental protection will eventually make its way to advertising. When greenwashed ads are fully exposed, the negative consequences for products, brands, and companies are unavoidable.

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Appendix A – Survey

Please indicate your level of agreement with the following questions base on your perceptions of the ad.

	Strongly Disagree		Neither Agree nor Disagree			Strongly Agree	
1. This ad is just.	●	●	●	●	●	●	●
2. This ad is acceptable to my family.	●	●	●	●	●	●	●
3. This ad is fair.	●	●	●	●	●	●	●
4. This ad is morally right.	●	●	●	●	●	●	●
5. This ad is culturally acceptable.	●	●	●	●	●	●	●
6. This ad is traditionally acceptable.	●	●	●	●	●	●	●
7. This ad does not violate an unspoken promise.	●	●	●	●	●	●	●
8. This ad does not violate an unwritten contract.	●	●	●	●	●	●	●
9. This ad is irritating.	●	●	●	●	●	●	●
10. This ad is good.	●	●	●	●	●	●	●
11. This ad is informative.	●	●	●	●	●	●	●
12. This ad is offensive.	●	●	●	●	●	●	●
13. This brand is high quality.	●	●	●	●	●	●	●
14. This brand is unsatisfactory.	●	●	●	●	●	●	●
15. This brand is appealing.	●	●	●	●	●	●	●
16. This brand is inferior.	●	●	●	●	●	●	●
17. The product featured in this ad is a t-shirt.	●	●	●	●	●	●	●
18. The brand featured in this ad is deeko.	●	●	●	●	●	●	●
19. The deeko clothing company purchases carbon offsets.	●	●	●	●	●	●	●
20. The deeko clothing company advertises ozone friendly productions.	●	●	●	●	●	●	●
21. A deeko t-shirt is rock washed for unmatched softness.	●	●	●	●	●	●	●

Using the following scale, please rate your perception of the ad you just viewed.
Circle one answer for each question.

22. Completely Accurate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Completely Misleading
23. Completely Truthful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Completely Deceptive
24. Completely Factual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Completely Distorted

Please respond to the following final questions about your attitudes towards environmental products and environmental advertising.

	Strongly Disagree		Neither Agree nor Disagree		Strongly Agree
25. I consider myself environmentally friendly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. I purchase environmental products on a regular basis.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. I prefer to use environmentally friendly products.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. I believe environmental claims from most businesses' advertising.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. I believe environmental claims in most products' advertising.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. I like environmentally friendly advertising.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. I am annoyed by environmental advertising.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. I have purchased environmentally friendly clothing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

33. Age.

_____ years

34. Sex. (please circle one)

Female Male

Thank you again for participating in this survey. If you have further questions, please talk with the survey administrator.

Appendix 2 – Greenwashed Ad



Environmentally friendly t-shirts.
Ozone friendly productions.
A shirt and a message that gives back.
Do your part. Share the message. Go Green.

deeko clothing uses more all-natural, non-toxic materials than any other t-shirt maker.
The environment we love is in trouble, and we must do our part.
We help the environment and our t-shirts do the same.
Saving the environment made simple...through a t-shirt.
Going green is more than a shirt, more than a business, it's a lifestyle.

deeko.
environmentally friendly.

Appendix 3 – True Green Ad



Organic Cotton. Rain-fed from the clouds.
All products are 85% sustainable, 85% natural.
In all we do, from start to finish,
We make choices that everyone can feel good about.

Growing organic cotton uses no pesticides or costly irrigation systems.
deeko clothing is made from materials that were put into it the same way they came out of the ground.
To compensate for carbon-dioxide emissions we create during delivery of your shirt,
we purchase carbon offsets from the CarbonFund.
To learn more about organic cotton and Deeko's positive environmental impact,
please visit www.deeko.org.

deeko.
environmentally responsible.

Appendix 4 – Environmentally Neutral Ad



High quality T's that love you back.
Only the softest cotton makes it into a deeko T
Leaving you wearing the best.
We make shirts that you can feel good about.

deeko clothing is made to feel good on your skin.
We use 100% high quality cotton, giving you familiar comfort.
Our unique rock-washing technique adds an unmatched softness.
You'll fall in love with this quality.
When less is more, there's deeko.

deeko.
feel love. feel alive.

Appendix 5 – 38-item Multidimensional Ethics Scale

Reidenbach and Robin's components for *full* 38-item multidimensional ethics scale

Justice	Just/Unjust (Moral Equity) Fair/Unfair (Moral Equity) Results/Does not result in an equal distribution of good and bad
Relativism	Culturally acceptable/Unacceptable (Relativism) Individually acceptable/Unacceptable Acceptable/Unacceptable to people I most admire Traditionally acceptable/Unacceptable (Relativism) Acceptable/Unacceptable to my family (Moral Equity)
Egoism	Self promoting/Not self promoting Selfish/Not selfish Self sacrificing/Not self sacrificing Prudent/Not prudent Under no moral obligation/Morally obligated to act otherwise Personally satisfying/Not personally satisfying In the best interest of the company/Not in the best interest of the company
Utilitarianism	Efficient/Inefficient OK/Not OK if actions can be justified by their consequences Compromises/Does not compromise an important rule by which I live On balance, tends to be good/Bad Produces the greatest/Least utility Maximizes/Minimizes benefits while minimizes/Maximizes harm Leads to the greatest/Least good for the greatest number Results in a positive/Negative cost-benefit ratio Maximizes/Minimizes pleasure
Deontology	Violates/Does not violate an unwritten contract (Contractualism) Violates/Does not violate my ideas of fairness Morally right/Not morally right (Moral Equity) Obligated/Not obligated to act this way Violates/Does not violate an unspoken promise (Contractualism) Duty bound to act this way/Not duty bound to act this way

Appendix 6 – 8-item Multidimensional Ethics Scale

Reidenbach and Robin's components for *8-item* multidimensional ethics scale

Justice	Just/Unjust (Moral Equity) Fair/Unfair (Moral Equity)
Relativism	Culturally acceptable/Unacceptable (Relativism) Traditionally acceptable/Unacceptable (Relativism) Acceptable/Unacceptable to my family (Moral Equity)
Deontology	Violates/Does not violate an unwritten contract (Contractualism) Morally right/Not morally right (Moral Equity) Violates/Does not violate an unspoken promise (Contractualism)