

**Greener on the Other Side?  
A Comparative Content Analysis of Environmental Claims in  
Magazine Advertisements in China and the United States**

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**Abstract**

To help understand how media in China and the United States respond to the growing environmental concern, the authors conducted a comparative content analysis to study environmental advertising claims in two weekly Chinese news magazines—*Liao Wang* and *China News Weekly*—and two weekly U.S. news magazines—*Time* and *Newsweek*. The use of environmental claims, advertising strategy, and advertiser characteristics were examined. Results showed that ads in *Time* and *Newsweek* placed more emphasis on corporate images, green brand logos, green/nature visuals, eco-labels, adoption of renewable materials, recycling, and price benefit. By contrast, *Liao Wang* and *China News Weekly* placed more emphasis on green products, need satisfaction, and quality benefit.

**Keywords:** advertising, China, environmental claims, green advertising

**Introduction**

Facing the challenges posed by emerging problems such as air pollution, climate change, and increasing transportation costs, the public is more concerned about the environment than ever (Chitra, 2007). For many, this concern has become a way of life. A new segment of consumers—“green consumers”—began to influence, and will likely continue to influence, marketing and advertising in profound ways. To respond to this new demand, manufacturers started to inform their consumers about the eco-friendly aspects of their products and services (e.g., Ottman, 1996; Stafford, Stafford, & Chowdhury, 1996). As a result, environment-related terms such as “eco-friendly,” “sustainability,” and “recycling” have been used frequently in advertisements in recent years.

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Magazines are one of the most popular media in environmental advertising. Many green advertisers (energy, automobile, technology, and so forth) offer high-involvement products/services, and print media, including magazines, are generally considered high-involvement media because consumers must read them in order to gain information (Zaichkowsky, 1986). Magazines are also extremely important for image-oriented advertising strategies, such as the green color and nature scenes in environmental advertising, because of their high-quality printing and strong visual impact (Percy & Elliott, 2005). In addition, Chan (2004) reported that Chinese consumers rated print environmental advertisements more favorably than broadcast ads because of the pragmatic orientation of Chinese consumers, who consistently seek concrete and substantial product information from advertisements to guide their shopping.

Several studies have examined the use of environmental claims in magazine advertising (e.g., Banerjee, Gulas, & Iyer, 1995; Grillo, Tokarczyk, & Hansen, 2008; Peterson, 2005). However, most of these studies were conducted in English-speaking countries, primarily the United States. Very few studies have looked at environmental advertising in magazines in other cultures (Frame & Newton, 2007; Polonsky, Carlson, Grove, & Kangun, 1996). Environmental communication research in an international context is becoming more and more important because the new wave of environmental concern is much more global than the green movement two decades ago, with emerging economies such as China, India, and Indonesia competing with the West for vital energy resources (Montgomery & Stone, 2009). Ongkrutraksa (2002) conducted a content analysis to compare environmental ads in Japan, Thailand, China, and the U.S., but the study examined only four general categories—the number of ads, product categories, advertisement objectives, and advertising appeals. A more detailed examination of green marketing effort in developing countries is needed to better understand the depth and scope of contemporary environmental advertising.

As an attempt to study environmental advertising claims at an international level, the current study examined magazine advertisements in China and the U.S.—two of the largest advertising markets in the world. Although total advertising expenditures in the U.S. fell 12.3% in 2009 to \$125.3 billion, it went back up to \$144.0 billion in 2011 and remains the largest advertising market in the world (Business Wire, 2012). China, the world's largest developing country, has risen from nowhere to rank second in advertising expenditures in Asia and fourth in the world in a very short period of time (Zenith Optimedia, 2009). In 2010 China passed Japan to become the world's second largest economy behind the United States (Barboza, 2010). China and the U.S. are also the world's two biggest polluters (Center for Global Development, 2008), and both promised to address global climate change at the 2009 Summit on Climate Change at the UN General Assembly in New York (The New Ecologist, 2009). In the U.S., green advertising is on the rise, especially in the auto and energy industries. The U.S. House of Representatives approved the American Clean Energy and Security Act (ACES) in 2009, which was supposed to help address climate change and build a clean energy economy (Pew Center on Global Climate Change, 2010). In China officials have been trying to improve air and water quality (partly because of the promised "Green Olympics" in 2008), including building energy-saving facilities such as the National Stadium ("Bird's Nest") and the National Aquatics Center ("Water Cube"), banning plastic bags, shutting down factories, and reducing the number of cars on the road (Wen, 2008). The Chinese government set ambitious targets to make renewable energy account for 15% of its fuel by 2020 and spends about \$9 billion a

month on clean energy development (Schmit, 2009). However, both countries are still struggling with a variety of environment-related problems. Sharing the industrialization experience of many developed nations, China has been paying a high ecological price for its rapid economic growth in terms of worsening pollution and an accelerating depletion of critical resources (Chen, 1998; Ho, Ching, & Wang, 1994). In the U.S. the oil spill accident in the Gulf of Mexico in 2010 once again revealed the danger of a fossil fuel-based economy and the need for cleaner renewable materials.

An examination of the environmental claims in magazine advertisements in China and the U.S. would help us understand the current green effort in two of the largest advertising markets as well as the two most important countries that will affect the outcome of the movement to reduce pollution worldwide. Has the environmental issue been addressed by media and advertisers in both countries? What types of environment-related messages are included in magazine advertisements? Are there any differences between the two countries in terms of message strategies? To answer these questions, the authors conducted a content analysis, studied the usage of environmental claims in magazine advertisements in China and the U.S., and compared the environmental themes, advertising strategies, and advertiser characteristics.

## **Literature Review**

### *Green Consumers and Green Advertising*

The increased concern for the environment has led to what is now called the “Green Movement” in the U.S. and worldwide. As part of this movement, green advertising hit its prime in the 1990s and was firmly established as a fairly common practice by the 2000s (Peattie & Crane, 2005). Research by Zinkhan and Carlson (1995) explained the relationship between the green movement and green advertising. When people became concerned about the future of the Earth, they became green consumers. Companies then started to equate the green movement with profit and market themselves as caring and socially/environmentally responsible. Thus, the rise of green advertising further solidified the green movement by choosing to bring further attention to the matter and producing more green consumers. The American Environmental Values Survey conducted by SRIC-BI (now SBI) and ecoAmerica (2006) found that more than 80% of Americans worried about the environment in general. According to a Gallup survey (Jones, 2008), 83% of the respondents stated that they had made major or minor changes to their shopping and living habits over the last five years to help protect the environment. In a recent survey by Mintel (2010), more than one-third (35%) of the respondents said they would pay more for environmentally friendly products. In China, the rapid growth of economy also leads to serious resources scarcity, which is forcing the country to focus on clean technology (Muir, 2010). The 2011 ImagePower® Global Green Brands Study reported that 95% of Chinese consumers would be willing to spend more on a product because it is green (Wylie, 2011). In a recent survey of 1,300 Chinese consumers conducted by global advertising and marketing firm Ogilvy & Mather, 71% of the respondents said they would pay up to 10% more or higher for some green products (Reuters, 2011). It is obvious that green advertising has strong support from the consumers in both countries.

*Environmental Claims in Magazine Advertisements*

According to Zinkhan and Carlson (1995), green advertising refers to advertisements with “promotional messages that may appeal to the needs and desires of environmental concerned consumers” (p. 1). Scholars have examined the content of green advertising, especially magazine advertisements, to identify environmental message strategies. Banerjee, Gulas, and Iyer (1995) defined green advertising as any ad that meets one or more of the following criteria: addresses the relationship between a product/service and the biophysical environment, promotes a green lifestyle, or presents a corporate image of environmental responsibility. Based on an examination of 18 popular magazines, Carlson, Grover, and Kangun (1993) formed a classification system for the various types of environmental advertising claims based on five categories: product orientation, process orientation, image orientation, environmental fact, and combination. Product orientation advertisements focus on environmentally friendly attributes. Process orientation advertisements focus on environmentally friendly methods of production. Image orientation claims to support causes popular with the public. Environmental fact refers to an independent statement that is factual in nature by an organization about the environment at large or its condition. The Carlson et al. (1993) study reported that the most effective method of advertising green claims was stating environmental facts. However, visual content in advertisements could be as important (Coomber, 2008). According to Pajari, Peck, and Rametsteiner (1998), green logos, colors, and icons could convey the idea of environmentalism and draw attention to green products. These include scenes of nature, labels that reflect the notion of conservation, clear descriptions of a product’s environmental effects, renewal of raw materials, and the opportunity to recycle some form of the product.

Based on the Means-Ends Conceptualization of the Components of Advertising Strategy (MECCAS) framework (Reynolds & Craddock, 1988), Kärnä, Juslin, Ahonen, Oy, & Hansen (2001) designed a model to measure the level of greenness in magazine advertisements. This model offered an outline of various aspects of advertising, which included advertisement objectives, executional framework, message elements, consumer benefits, and driving forces. The advertisement objective demonstrates the company’s motivation to be environmentally friendly through its green products or commitment to green lifestyles. The executional framework is a more aesthetic approach to promoting a greener company. This includes company logos, brand logos, verbal environmental claims, the color green, visuals of nature, and eco-labels (whether the ad corresponds with environmental guidelines or emission limits set by authorities). Message elements are the means by which a more environmentally friendly policy guides the materials used to formulate a given product. This includes the use of sustainable raw materials, more efficient use of natural resources, and the potential to recycle. Consumer benefits include need satisfaction, product quality, and price. Finally, the driving forces are the various appeals in advertising, including emotional appeal, rational appeal, and moral appeal. With this model, marketers can easily specify advertising strategies in terms of how the product/service will be related to the consumer (Peter & Olson, 1996).

*Cross-Cultural Comparison*

The comparison between China and the U.S. is essential not only because they are two of the biggest economies in the world but also because they represent two important yet hugely different

cultures. Examining environmental claims in magazine advertisements can help us understand the cultural differences in green advertising strategies between the two countries. One of the concepts that media scholars use to explain cultural differences in media content is the concept of contextuality (e.g., Cheng & Schweitzer, 1996; Cho, Kwon, Gentry, Jun, & Kropp, 1999; Lin, 2001). Generally, advertising in high-context cultures uses more of a soft-sell approach and indirect and harmony-seeking appeals, whereas advertising in low-context culture uses more of a hard-sell approach and more direct and confrontational appeals, such as price information and comparative advertising (Cutler & Javalgi, 1992; Miracle, Chang, & Taylor, 1992; Mueller, 1987).

Although research on environmental advertising in China (or Asia) is limited, it was expected that the same impact of high-context cultures would be found in environmental advertisements. For example, Ongkrutraksa (2002) examined environmental advertisements in newspapers in Japan, Thailand, China, and the U.S. and found that high-context cultures tend to use more emotional appeals in advertising. A few studies also suggested that the man-nature harmony appeal has been used frequently in advertising in eastern Asia (not necessarily environmental advertisements), although in general this appeal has not been studied extensively in advertising research (Cho et al., 1999; Kluckhohn & Strodtbeck, 1973). Kärnä et al.'s (2001) level of greenness measurement, even though not designed to study cultural contextuality, could provide an opportunity to look at the use of both soft-sell strategies (brand logos, green visuals, emotional appeals) and hard-sell strategies (eco-labels, benefits, rational appeals) in environment-related advertising.

As mentioned above, research in environmental advertising in a global setting is very limited. Many content analyses have been conducted to compare magazine advertisements in China and the U.S., but they were mostly interested in differences in gender portrayal and cultural values. Chinese advertisements were found more implicit in terms of communication styles in general (e.g., Emery & Tian, 2010; Hung & Li, 2006; Paek & Nelson, 2007). No content analysis research has been identified to study environmental claims in magazine advertisements in China, and no cultural-specific measurements have been developed to study such advertisements in China or other Asian countries. Kärnä et al.'s (2001) model provides a framework to systematically examine environmentally relevant information in the ads. Therefore, the current study adopted this model to measure environmental advertising claims in magazine advertisements in China and the U.S., as well as the relationships with advertiser characteristics and advertising strategies. The research questions were as follows:

**RQ1:** Are there any differences between China and the U.S. in terms of environmental claims (i.e., objectives, executions, messages) used in environment-related magazine advertisements?

**RQ2:** Are there any differences between China and the U.S. in terms of advertising strategies (i.e., benefits, appeals) used in environment-related magazine advertisements?

**RQ3:** Are there any differences between China and the U.S. in terms of advertiser characteristics (i.e., product categories, country of origin) in environment-related magazine advertisements?

## Method

The authors conducted a comparative content analysis to measure the environmental advertising claims in magazines in China and the U.S. Sample ads were selected from two weekly news magazines in China (*Liao Wang* [瞭望] and *China News Weekly* [中国新闻周刊]) and two weekly news magazines in the U.S. (*Time* and *Newsweek*). *Time* and *Newsweek* were chosen because they are two of the most prestigious news magazines in the U.S. They are among the magazines with the highest average sales in the news category, with a circulation number of 3,255,534 and 2,253,001, respectively, in 2009 (Magazine Publishers of America, 2010). Because magazine circulation data were difficult to acquire in China and because previous studies in China focused on fashion/lifestyle magazines and business magazines instead of news magazines, various sources were used to identify appropriate sample magazines in the current study. *Liao Wang* magazine is published by the Xinhua News Agency, the biggest news agency in China, with a circulation of about 500,000 copies weekly (Xinhua Net, 2011). *Liao Wang*, which means *Outlook* in English, is also the first news magazine published after the People's Republic of China was established in 1949. According to the Xinhua News Agency website, *Liao Wang* has the highest circulation of all Chinese news magazines (Xinhua Net, 2011). *China News Weekly* was first published in 1999 by China News Services, which is the second largest news agency in China (*China News Weekly* blog, 2011). It is the most widely circulated Chinese news magazine in the global market, with about 220,000 copies published weekly (*China News Weekly* blog, 2011). These two magazines are two of the most authoritative and prestigious Chinese news magazines. Therefore, the ads in these magazines should be comparable to their American counterpart. In addition, *Liao Wang* and *China News Weekly* have been studied in previous content analysis research (Burger, 2003; Hung & Li, 2006).

The operational definition for “environment-related advertisements” in this research was based on Banerjee et al.'s (1995) definition. Three types of ads were identified and coded: (1) ads that addressed the relationship between a product/service and the biophysical environment, (2) ads that presented a corporate image of environmental responsibility, or (3) ads that promoted a green lifestyle. All issues of the four magazines published between January 2008 and August 2009 were analyzed. During this period the environment was one of the top issues in both countries because of the 2008 Beijing Olympics and the 2008 U.S. presidential election. Only ads one page or larger that fit in any one of those three categories were coded. A total of 269 ads were identified as ads with environmental claims in *Liao Wang* and *China News Weekly*; 394 environmental ads were identified in *Time* and *Newsweek*. To make the content analysis more manageable and efficient, 250 ads from each country were chosen for comparison using simple random sampling.

### *Procedure*

A code book and a coding sheet were created based on the literature review. Two coders, one male and one female, both bilingual scholars in media and advertising research, were trained with those instruments. They tested the coding categories on random ads for fit, then met again to refine the survey instrument based on their observations. Several pretests were conducted until a high reliability was achieved between the two coders. The coders then coded 25 ads to test the final draft

of the coding sheet. Using Cohen's kappa analysis, the average intercoder reliability across all variables was between .87 and 1.00 (see Table 1).

*Table 1*  
*Intercoder Reliability*

<b>Variables</b>	<b>Cohen's Kappa</b>
Advertiser category	.97
Country of origin	1.00
Advertising objective	.93
Execution (logo)	1.00
Execution (visual)	.94
Execution (verbal)	1.00
Execution (eco-label)	.89
Message (renewable material)	1.00
Message (efficient use)	.88
Message (recycle)	1.00
Benefit (need satisfaction)	.87
Benefit (quality)	.89
Benefit (price)	1.00
Appeals (emotional)	.87
Appeals (rational)	1.00

### *Measures*

The coding categories were designed to measure environmental claims, advertising strategies, and advertiser characteristics in magazine advertisements. Previously developed measurements from other magazine advertising studies (e.g., Kärnä et al., 2001; Mastin, Coe, Hamilton, & Tarr, 2004) were adopted and revised, when necessary, to serve the purpose of this study.

*Environmental claims.* Environmental advertising claims were identified and measured with Kärnä et al.'s (2001) Level of Greenness scale. The goal was to identify a set of mutually exclusive and exhaustive categories that reflect the nature of the environmental claims found among the ads. These categories provide a systematic examination of the environmental objectives of the ad (promoting environmental actions commitment, promoting green products, or promoting green corporate image); executive framework or verbal and visual elements in the ad (brand logos, green color, visuals of nature, eco-labels); and message elements or information on eco-friendly features of the product/service (sustainable raw materials, more efficient production process, recycling). Categories were coded as present/absent (yes/no).

*Advertising strategies.* Advertising strategies in environmental ads were examined to demonstrate how advertisers focus on certain needs (of consumers) and benefits (of products), either rational or emotional, to attract audiences. Kärnä et al.'s (2001) environment-related advertising strategies scale was adopted to measure benefit claims in the ads, including need satisfaction

(satisfying consumer needs for renewable materials or new product), quality (improving the quality of the product), and price (reducing costs). Advertising appeals (emotional only, rational only, and both) in the sample ads were also measured. Categories were coded as present/absent (yes/no).

*Advertiser characteristics.* Product categories and country of origin were also examined to determine the relationship between advertiser characteristics and green advertising strategies. These are especially important because there are many differences in terms of lifestyle and standard of living between China and the U.S., which could affect the content of the ads. A nine-item scale was adopted and revised from Mastin, Coe, Hamilton, and Tarr's (2004) study to measure advertiser categories, including automotives, energy companies, home appliances, technology, cleaning products, food and drinks, retail stores, and non-profits. The advertisers were also identified as domestic, foreign, or unknown based on the country where the brand originated.

## Results

The authors analyzed a total sample of 500 ads that contained environmental claims in *Time* (N=130), *Newsweek* (N=120), *Liao Wang* (N=109), and *China News Weekly* (N=141). Those ads were then combined so there were 250 from each country. Chi-square analyses were run, and significant differences between the two countries were reported.

### *Environmental Advertising Claims*

The first research question asked about the differences in environmental advertising claims between news magazine ads in China and the U.S. Significant differences were found in terms of the advertising objective, advertising execution, and environment-related messages.

*Advertising objective.* The majority of the ads in *Time* and *Newsweek* (58.8%) focused on green corporate images, while most of the ads in *Liao Wang* and *China News Weekly* (78.4%) focused on green products. A lot more ads in American magazines emphasized green ideas and green lifestyles (16%) than did those in Chinese magazines (1%),  $\chi^2(2, 500) = 148.03, p < .01$ .

*Advertising execution.* More companies used green logos in *Time* and *Newsweek* (31.6%) than in *Liao Wang* and *China News Weekly* (14.4%),  $\chi^2(1, 500) = 20.8, p < .01$ . More green visuals were used in *Time* and *Newsweek* (68.9%) than in *Liao Wang* and *China News Weekly* (43.2%),  $\chi^2(1, 500) = 33.25, p < .01$ . More eco-labels appeared in *Time* and *Newsweek* (22.8%) than in *Liao Wang* and *China News Weekly* (6%),  $\chi^2(1, 500) = 28.62, p < .01$ . All sample ads contained environment-related verbal information.

*Environmental messages.* More ads in *Time* and *Newsweek* (47.6%) promoted renewable materials than in *Liao Wang* and *China News Weekly* (18%),  $\chi^2(1, 250) = 49.69, p < .01$ . More ads promoted recycling in *Time* and *Newsweek* (10.4%) than in *Liao Wang* and *China News Weekly* (3.6%),  $\chi^2(1, 500) = 8.89, p < .01$ . However, there was no difference between the American magazines (57.6%) and the Chinese magazines (64.8%) in efficiency-related messages,  $\chi^2(1, 500) = 2.73, p > .10$ . The majority of the sample brands claimed to have improved efficiency with more environmentally friendly materials or production processes (see Table 2).

*Table 2*  
*Descriptives of Variables by Country*

Variables	<i>China</i> (N=250)	<i>U.S.</i> (N=250)	
<b>Advertiser category**</b>	Automotives	78	71
	Energy companies	47	81
	Home appliances	55	6
	Technology	58	32
	Cleaning products	0	7
	Food and drinks	0	3
	Retail stores	1	1
	Non-profits	3	37
	Other	8	12
<b>Country of Origin**</b>	Domestic	67	174
	Foreign	183	76
<b>Advertising Objective**</b>	Corporate image	52	147
	Green product	196	63
	Green idea	2	40
<b>Executions</b>	Logo**	36	79
	Visuals**	108	172
	Verbal	250	250
	Eco-labels**	15	57
<b>Messages</b>	Renewable materials**	45	119
	Efficient use	162	144
	Recycling*	9	26
<b>Consumer Benefits</b>	Need satisfaction*	197	135
	Quality**	142	74
	Price**	11	56
<b>Advertising Appeals</b>	Emotional only**	1	24
	Rational only	116	123
	Both*	130	101

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

### *Advertising Appeals*

The second research question examined the differences in advertising appeals between the sample ads from China and the U.S. The authors found that more emphasis was placed on price benefit in *Time* and *Newsweek* (22.4%) than in *Liao Wang* and *China News Weekly* (4.4%),  $\chi^2(1, 500) = 34.90, p < .01$ . However, there was more emphasis on need-satisfaction benefit in *Liao Wang* and *China News Weekly* (78.8%) than in *Time* and *Newsweek* (54%),  $\chi^2(1, 500) = 34.46, p < .01$ . There was also more emphasis on quality benefit in *Liao Wang* and *China News Weekly* (56.8%) than in *Time* and *Newsweek* (29.6%),  $\chi^2(1, 500) = 37.69, p < .01$ .

Just one ad in *Liao Wang* (none in *China News Weekly*) used emotional appeal only, while about 5% of the sample ads in *Time* and *Newsweek* used emotional appeal only,  $\chi^2(1, 500) = 22.27, p < .01$ . More than 52% of the ads in *Liao Wang* and *China News Weekly* used both rational and emotional appeals, while only 40% of the ads in *Time* and *Newsweek* used both appeals,  $\chi^2(1, 500) = 6.77, p < .05$ . News magazines in both countries used rational appeal in about half the ads, so there was no significant difference,  $\chi^2(1, 500) = .40, p > .05$  (see Table 2).

### *Advertiser Characteristics*

The third research question explored the differences in advertiser characteristics between the news magazine ads in China and the U.S. The majority of the brands in *Time* and *Newsweek* were domestic (69.6%), while most brands in *Liao Wang* and *China News Weekly* were foreign (73.2%),  $\chi^2(1, 500) = 95.92, p < .01$ . The top three product categories in *Time* and *Newsweek* were energy (32.4%), automotives (28.4%), and non-profit organizations (14.8%), while the top product categories in *Liao Wang* and *China News Weekly* were automotives (31.2%), technology (23.2%), and home appliances (22.0%),  $\chi^2(8, 500) = 96.56, p < .01$  (see Table 2).

Several international brands advertised in both the Chinese and American sample magazines, but the numbers were relatively small and the ads were significantly different. These brands were BP (China 13, U.S. 21), Chevy (China 2, U.S. 25), GE (China 25, U.S. 5), Honda (China 5, U.S. 6), Shell (China 12, U.S. 10), and Toyota (China 11, U.S. 30).

## **Discussions and Implications**

The current study examined the use of environmental claims in magazine advertisements in China and the U.S. to see if there were any difference between the two countries in terms of environment-related messages, advertising strategies, and advertiser characteristics. A content analysis of two Chinese news magazines and two American news magazines revealed significant results.

Results suggested that there were differences in environmental advertising claims between China and the U.S. In general, ads in *Time* and *Newsweek* placed more emphasis on corporate images, green brand logos, green/nature visuals, eco-labels, adoption of renewable materials, recycling, and price benefit, while *Liao Wang* and *China News Weekly* placed more emphasis on green products, need satisfaction, and quality benefit. This might be explained by the makeup of the advertisers in the sample magazines. The top three product categories in *Time* and *Newsweek* were

energy, automotives, and non-profit organizations, while the top product categories in *Liao Wang* and *China News Weekly* were automotives, technology, and home appliances. A lot of the sample ads in *Time* and *Newsweek*, especially those sponsored by energy companies and non-profit organizations, treated the environmental issue as a social issue and focused on solutions in a societal context, which led to the more prevalent use of green logos (mainly because those organizations were generated for environmental purpose, while many Chinese advertisers were traditional companies with traditional logos), corporate images, renewable materials, and emotional appeal. Most of the advertisers in *Liao Wang* and *China News Weekly*, however, seemed to be closer to average consumers, and they focused on everyday life rather than calling for governmental or societal solutions (especially when non-profit organizations are still at a nascent stage in China, with only three non-profit ads out of 250 Chinese samples). Because of the large number of ads selling technology (e.g., computers and printers) and home appliances (e.g., air conditioners and televisions), there were more green products and quality benefit claims in the Chinese magazine ads.

Although previous research suggested, in general, that Chinese advertisements reflected the high-context culture (e.g., Lin, 2001; Tai & Pae, 2002; Zhou, Zhou, & Xue, 2005), it was not evident in the current study. Soft-sell strategies, such as green visuals and emotional appeals, were not used more frequently in Chinese advertisements than in American advertisements. A possible explanation is that most of the products/services in the sample ads were high-involvement products/services, such as automobiles, energy, technology, and home appliances. According to the Elaboration Likelihood Model (ELM), if a message is relevant to an individual, then that individual is typically motivated to devote a great deal of attention or consideration to the message (Petty, Cacioppo, & Schumann, 1983). Therefore, more product-based information is typically provided in high-involvement advertising (Petty, Cacioppo, & Schumann, 1983). Soft-sell strategies that are frequently used in high-context cultures would probably not be appropriate for these types of advertisements. In addition, according to Chan (2004), contemporary Chinese consumers also have a very pragmatic approach to advertising and consistently seek concrete product information from advertisements to guide their shopping. Therefore, magazine researchers should expect to see a lot of product-related information in environmental advertisements in China instead of emotional appeals or other soft-sell strategies. It is possible that when environmental advertising expands to both high and low involvement products, different strategies might be used in these two countries.

One fact that needs to be mentioned is that the majority of the brands in both Chinese magazines were foreign (73.2%). By contrast, most of the brands in American magazines were domestic (69.6%). This means that international advertisers are currently leading the way in China's green movement. Domestic brands in China are underrepresented either because of the lack of awareness or because of a smaller advertising budget compared with international companies. The dominant product categories of foreign brands are automotives (32.8%), technology (30.1%), and energy (25.4%), and the most advertised Chinese product categories are home appliances (61.5%) and automobiles (24.6%). However, foreign brands and domestic brands in China used similar approaches in environmental advertisements, despite their difference in product category. A post-hoc comparison indicated significant differences between foreign and domestic brands in advertising objectives,  $\chi^2(2, 250) = 10.96, p < .05$ ; use of green logo,  $\chi^2(1, 250) = 7.34, p < .05$ ; and mention of renewable materials,  $\chi^2(1, 250) = 16.90, p < .01$  (see Table 3). Foreign brands placed more

emphasis on corporate image, green logos, and renewable materials (since all energy companies were foreign brands in the sample ads), but no significant differences were found in other areas. Although there are more foreign brands than domestic brands in Chinese magazines, they basically follow the same rules in terms of advertising strategies since they are all targeting the same consumers.

*Table 3*  
*Descriptives of Variables by Country of Origin (Chinese Samples)*

Variables		<i>Domestic</i> (N=65)	<i>Foreign</i> (N=183)
<b>Advertiser category**</b>	Automotives	16	60
	Energy companies	0	47
	Home appliances	40	15
	Technology	3	55
	Cleaning products	0	0
	Food and drinks	0	0
	Retail stores	0	0
	Non-profits	0	3
	Other	6	3
<b>Advertising Objective**</b>	Corporate image	5	47
	Green product	60	134
	Green idea	0	2
<b>Executions</b>	Logo*	3	33
	Visuals	27	81
	Verbal	65	183
	Eco-labels	7	8
<b>Messages</b>	Renewable materials*	1	44
	Efficient use	51	109
	Recycling	1	8
<b>Consumer Benefits</b>	Need satisfaction	47	148
	Quality	43	97
	Price	5	6
<b>Advertising Appeals</b>	Emotional only	0	1
	Rational only	31	83
	Both	31	99

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

Another issue that deserves attention from magazine researchers is greenwashing, more specifically defined as “environmental advertising without environmental substance in other operations of the company” (Kärnä et al., 2001). While many companies are genuinely creating a less detrimental effect on the environment in their business practices, others make claims that are either inflated or even irrelevant in order to mislead consumers into thinking the company and its products are more environmentally conscious than they truly are. Although the current study was not designed to examine greenwashing in advertising, some of the numbers in the results could be alarming. For example, only three ads in the Chinese magazines were sponsored by non-profit organizations, and only two ads were used to promote green ideas and green lifestyles. That means most of the environmental ads were used to promote companies and products. In addition, only 15 Chinese magazine ads included eco-labels to support environmental claims. There were more ads (N = 57) in American magazines that contained eco-labels. However, not every claim in those ads was supported. The majority of the eco-labels came from EPA automobile emission regulations and Energy Star or similar labels. Greenwashing has been a problem in the U.S. One study (Goldenberg, 2009) reported that more than 98% of supposedly natural and environmentally friendly products in the U.S. are making potentially false or misleading claims. Similar stories can also be found in Chinese media. *Southern Weekend* recently released a list of top greenwashers in 2010 (He, Meng, Lv, Feng, Yuan, & Peng, 2011). According to the Sustainable Futures '09 study (Kanter, 2009), 64% of respondents in the U.S. viewed sustainability campaigns as a little more than a marketing tool. In its 2010 global tracking research, GlobeScan (2010) found that only 40% of Chinese consumers believe that companies are being truthful about their environmental performance. Media scholars need to closely monitor the use of environment-related messages in advertising to keep the public informed and the companies accountable.

The current study is the first step in examining the differences in environmental advertising claims between China and the U.S. Therefore, several limitations should be noted when evaluating the findings of this research, such as sample advertisements and coding variables.

First, only four news magazines were analyzed. Although they were popular magazines in terms of reputation and circulation, they only represented a particular group of the mass media. This sample selection could have influenced coding variables such as product category and message strategy. Therefore, the results of this study cannot be applied to all magazines. In future studies a more diverse group of magazines, such as business or lifestyle, could be included in content analysis research to achieve a more comprehensive understanding of green advertising in China and the U.S.

Recently, social media have been used to promote green marketing campaigns, such as P&G's “Green Stamps” campaign (Neff, 2010), and to monitor corporate environmental sustainability. For example, in March 2010, Greenpeace launched a viral campaign criticizing Nestlé's use of palm oil from companies that are destroying Indonesian rain forests. Thousands of social media users responded on Facebook and Twitter. Finally, Nestlé agreed to use only “Certified Sustainable Palm Oil” by 2015 (Owyang, 2010). How to use the power of social media in green advertising will be an important topic in this line of research. In addition, the

current study only examined ads in 2008 and 2009. A longitudinal content analysis would be helpful in examining the development of green advertising in magazines over time.

Although the current study focused on advertising strategies rather than cultural influences, some of the variables could be further explored in an intercultural context, such as the use of natural scenes, eco-labels, and emotional appeals. A more systematic model, such as Hofstede's (2001) cultural dimensions, could be used to analyze the differences in content.

In the meantime, the current research can also help to lay the foundation for future media effects research that examines the impact of environmental claims on magazine readers. Researchers could conduct experiments to examine what types of environmental claims can help improve ad likeability and how they can affect readers' perception of the environment issue. Another area for future research is personal differences among readers. What types of readers are more likely to be persuaded by environmental magazine advertising? What are the potential greenwashing effects? Would the effects be different between Chinese readers and American readers because of cultural differences? Answering these questions will provide a more comprehensive understanding of green advertising in magazines and its implications for a global readership.

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