The Effects of Source Credibility Perceptions and Ego-Involvement on Green Marketing Appeals: The Case of Multinational Petroleum Corporations with Unstable Environmental Legitimacy

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ABSTRACT

The present study examines the persuasive effects of green marketing appeals by corporations from industries with highly-publicized histories of environmental disregard, specifically multinational petroleum corporations (MPC’s). Prior research has been done regarding corporate environmental communication and perceived environmental legitimacy, or credibility regarding the firm’s relationship with the environment (Bansal & Clelland, 2004; Hunter & Bansal, 2006; Davis, 1994). Research specifically investigating the persuasive effectiveness of green marketing, however, by traditionally environmentally-unfriendly companies is extremely sparse (Goldsmith, Lafferty, & Newell, 2000). It is for this reason that this study attempted to measure audience perceptions of oil companies as credible sources of information. These perceptions were based off appeals by these companies focused on proper interactions with the environment. A secondary focus of the study was an examination of whether or not an audience member’s ego-involvement with the environment significantly influences their likelihood of being persuaded by an appeal. The study was conducted with undergraduate students from a small, Midwestern liberal arts university serving as participants and specifically examines whether a televised, environmentally-based advertisement from Chevron Corporation entitled Untapped Energy increased the company’s perceived environmental legitimacy among viewers as well as how viewer involvement factors into this process (“Untapped Energy, 2008).
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Introduction

Since the end of the 20th century, the term “green” has taken new meaning in today’s world of global trade. No longer simply a color, “green” has become synonymous with the environment and efforts taken to preserve it. Regardless of its recent inception, the green phenomenon has already had an enormous impact on the world, garnering significant support from global trends in recent decades. Fuel prices recently hit record-high levels leading some to be more conservative with their transportation (“Gas Prices,” 2008). Organic foods and high-efficiency consumer goods are becoming increasingly popular. Now more than ever, consumers are expected to do their part to make conscientious decisions both in the store and at home in order to keep the planet clean (Lewis, Allen, Cornish, & Goodwyn, 2008).

Green product development is not exactly new; first pushed as a matter of importance in the 1970’s, “green consumer behavior” has been recommended by governments and interest groups for the past few decades (Hartmann & Ibáñez, 2006; Ihlen, 2006). Since the 1990’s, however, there has been a sharp rise in environmental awareness in all industrialized countries (Yam-Tang & Chan, 1998). The green movement has grown to such a level, in fact, that as of 2004, more people regularly recycled trash than voted in the presidential election (Todd, 2004). As put simply by Davis (1994), “the environment is an important consumer concern, and as a consequence, environmental advertising is likely to be seen as an area with the potential to have a significant impact on the consumer's life” (p. 875).
It is not only consumers that are being pressured to change their ways, however, as alternative solutions to the traditional methods of fueling daily lives are now being sought from all corners of the world. Demands are being put on the world’s biggest multinational corporations (MNC’s) daily to create more ecologically-friendly products while making the manufacturing of such goods cleaner. This transition to a greener, more efficient planet is an interesting and arguably necessary phenomenon, but for companies from industries with murky environmental pasts, such as corporations in the petroleum industry, the transformation is not necessarily an easy one. Highly publicized crises, such as the *Exxon Valdez* disaster, have shown that an impressive company size often comes with a certain degree of inherent mistrust and scrutiny from the general public along with a need for considerable amounts of public relations work (Johnson & Sellnow, 1995). Specifically in this situation, the *Exxon Valdez* oil tanker spilled an estimated eleven million gallons of oil into the Prince William Sound off the Alaskan coast in March of 1989, resulting in one of the greatest ecological catastrophes in history (NOAA, 2009). Corporations associated with crises such as this have a need to change not only their products and policies, but their image as well.

Currently, eight of the top ten largest companies in the world are either petroleum refining companies or motor vehicle manufacturers: companies whose products and practices create demand for much of the world’s oil (“Global 500”, 2008). These large entities operate in many different countries and impact the lives of millions. For this reason, their success or failure to meet consumer expectations and maintain a sense of ethos with their customers can have substantial effects economically, politically, and environmentally (Stopford, 1999). Because of the nature of the business that oil companies conduct from day to day and the potential impact that mishandled petroleum and its byproducts can have on the environment, these corporations...
face unique challenges when undertaking green marketing. Because their reputation must be maintained internationally and they must meet the demands of domestic and foreign stakeholders alike, it has been argued that multinational corporations must adhere to higher standards of environmental and social responsibility than national counterparts (Zyglidopoulos, 2002). It is due to the high impact that MNC’s have on the world, the current environmental movement, and the need for companies to maintain positive reputations that the current study focuses specifically on whether or not corporate attempts to construct ecological credibility are working during a time when “greener” is better.

Literature Review

To fully understand why the topic of this study is important, one should understand what a multinational corporation is and how they have come to exist. Since the end of World War II, humankind has increasingly become less dependent on localized resources, investing instead in global communication and trade (“Globalisation,” 2007). People are no longer simply considered to be citizens of a state or country, but are progressively called upon to be responsible global citizens as well. The fall of the Soviet Union’s “Iron Curtain” and more recently the opening of formerly-isolationist states such as China has only led to increase the pace of global marketing to the point that there now exist MNC’s much larger than many people would ever have imagined a half-century ago (Pan & Chi, 1999; Talbott, 1997).

Having global impact can certainly have its advantages for having a platform to better the world, but with great size comes extraordinary challenges as well. Tragedies such as the 1984 Union Carbide pesticide disaster in Bhopal, India that killed or injured tens of thousands of people and livestock have served as grave reminders of just how difficult the management of these companies can be (Rosencranz, 1988). With millions of employees to manage, hazardous
materials to handle, hundreds of facilities, thousands of miles between managers, and ever-changing public perception, any lapse in supervision can have dire consequences for a company, the economy, and often times the environment as well (Rosencranz, 1988).

Multinational corporations, while seeming to possess huge resource advantages over smaller or local companies when it comes to marketing and sales, often encounter public relations obstacles unique to their globally-recognized status as well. As Hunter and Bansal (2006) explained, the first of these obstacles is maintaining trust with the company’s various publics, especially their stakeholders. Stakeholders are essentially the people and groups to whom a corporation is held directly accountable. Corporate stakeholders include governments which rule over the locations in which the MNC has facilities and mandate adherence to regulations, non-profit “watchdog” organizations and lobbyists who continually scrutinize the practices of large businesses, other corporate members of the MNC’s industry, and the MNC’s customers. These publics are incredibly important to an MNC, as they are capable of determining the success or failure of the company through the buying and selling of the company’s products and stocks as well as through industrial regulation.

External forces not only monitor MNC’s, but some environmentalist groups even run counter-operations against companies that they see as environmentally unfriendly, petitioning stakeholders to abandon the company and lobbying legislators for increased accountability within offending industries (Gueterbock, 2004). Because of the demands put upon them, MNC’s go to great lengths to enhance their reputation: evidence of how crucially important reputation is to manage. It is the perceptual representation of a company's past actions and future prospects in the eyes of their stakeholders that truly affect how it will ultimately perform, and there are many constituents in many places who have a vested interest in scrutinizing a corporation’s image and
practices (Fombrun, 1996). Given the ability of MNC’s to make an impact on the environment relative to their large size, the environmental conduct of corporations is often one of these key points of investigation. It is for this reason that companies are generally called to maintain consistent environmental communication.

Environmental Communication and Green Marketing

Environmental communication refers to any type of communication between a firm and its external stakeholders regarding environmental commitment or performance of the firm (Hunter & Bansal, 2006). Functioning as forms of persuasion, these messages help determine whether or not a firm is viewed as having either a pro-environment or pro-business interest. Through public relations efforts, an MNC will convey information having to do with changes in products or processes that might demonstrate its commitment to the natural environment in an attempt to ease concern among various publics. For example, the firm might attempt to display its compliance with government clean air regulations, reporting on concentrations of ozone in the vicinity of plants, and the number of days per year in which the ozone standard is maintained (Johnson & Chess, 2006). A company may also attempt to show its membership in industrial self-regulating groups or to publish environmental or sustainable development reports (Hunter & Bansal, 2006).

With the collective greening of the American consciousness in recent years, many companies have begun to shape their environmental communications to fit a standard known as green marketing to sell products and services. Green marketing is defined as “commercial messages and consumer behavior that reflect concern about the effects of manufacturing and consumption on the natural environment” (Todd, 2004, p. 88). While this marketing causes a subsequent increase in global environmental awareness, there are downsides to green marketing
as well. Goods can be touted as being “environmentally friendly” or “green” in order to appeal to consumers, though these terms are often very loosely defined. The description of “green” is often used as a comparison, saying that a product is more environmentally safe than a different product; however, that does not necessarily mean that the product will not have negative ecological effects. Also, a description of a product as “environmentally sound” could be referring to its production, use, or eventual disposal, though not necessarily all of the above (Hartmann & Ibáñez, 2006). For instance, a car marketed as a “green” alternative to other cars may travel more miles on less gasoline than its competitor, therefore causing reduced carbon dioxide emissions. There is no account, however, of the ten percent of a car’s lifetime CO₂ emissions that come from manufacturing – a level simply overlooked when a car’s “environmental friendliness” is considered (Williander, 2007).

Green marketing is especially difficult at times for MNC’s due to the fact that they must appeal to more than one community or even nation’s audience, often having to bridge cultural gaps and narrowly tailor messages so that they will appeal to publics in the MNC’s home country as well as the host countries in which an MNC may have subsidiary operations. Large corporations are often seen, due to their “global” nature, as having little interest in local communities, neutralizing their ability to viably market green solutions (Wiser, 1998). As a result, Wiser concludes, large companies are generally better off keeping their green marketing efforts decentralized. He states that, “though companies must trade off these benefits with the potential loss of corporate brand identity, a local, renewable-only subsidiary might be more successful” (Wiser, 1998, p.113). This demonstrates one reason among many that a large corporation must designate significant resources to creating proper environmental communication for specific publics.
Source Credibility

While considerable thought may go into message content and dissemination strategy, the content of a message is not the only aspect of communication efforts that determines whether or not an appeal will be deemed persuasive; in fact, the aspect of source credibility can have a greater impact on audience perceptions of a sender than the content of a message itself. First explored by Hovland, Janis, and Kelley (1953), the importance of source credibility is based on Aristotle’s statement that ethos (i.e., credibility) is the most important aspect of persuasion (Stiff & Mongeau, 2003). Hovland et. al. (1953) explained source credibility as being composed of two dimensions: expertise and trustworthiness.

Expertise

Expertise, sometimes referred to as “competence,” refers to the extent to which a communicator is perceived to be a source of valid assertions. For example, a professional golfer would generally be deemed as being a more valid source of information on proper swing technique than someone who merely played a few times per year.

Trustworthiness

Trustworthiness, alternatively, is based on the degree of confidence that an audience member places in a message source’s intent to communicate the assertions which he or she considers to be most valid. Deeming a source to be trustworthy basically means that the source is perceived to be honest (Hovland, Janis, & Kelly 1953).

In essence, a highly trustworthy and/or expert source produce a more positive attitude toward the position advocated than sources that are less trustworthy and/or expert. The more credible a source, the more persuasive they will be deemed (Craig & McCann, 1978; Hovland &

Goodwill

While expertise and trustworthiness are the first and foremost of the accepted factors that determine source credibility, there has long been unease manifest within the communication literature with the notion of settling for the idea that there are no other attributes that determine perceived credibility (Berlo, Lemert, & Mertz, 1969; McCroskey, 1966; Whitehead, 1968). There has been criticism within the literature as well of these factor-analytic studies for overgeneralizing attributes and for other discrepancies in the research, showing just how much dissent exists regarding what dimensions truly embody credibility (Chronkhite & Liska, 1976). Because of some of the existing problems with source credibility’s factors the current study will focus primarily on expertise and trustworthiness with the addition of one further factor which is specifically important in this case: goodwill.

Goodwill, called the “lost dimension of ethos / source credibility” by McCroskey and Teven (1999), is defined as intent toward a receiver or perceived caring. Goodwill has three sub-factors that contribute to fostering perceptions of its existence: understanding, empathy, and responsiveness. Understanding is defined as knowing another person’s feelings, ideas and needs. Empathy means identifying with these understood feelings. Finally, responsiveness means acknowledging another person and their attempts to communicate (McCroskey, 1992; McCroskey & Teven, 1999). In the context of the present study, the ability of a multinational corporation to convince its audience that it truly cares about the environment depends upon its ability to show understanding and empathy. They must portray themselves as working toward solving ecological issues, not creating them. It is because of the nature of environmental appeals
and the specific sources (multinational corporations, specifically petroleum corporations) that goodwill will also be assessed to determine the significance of its contribution to perceptions of source credibility engendered in an audience.

Manifesting Source Credibility

The problem faced by persuasive communicators around the world is that source credibility is perception-based, sometimes varying from one audience to the next and from receiver to receiver within each of these groups depending on a receiver’s pre-conceived beliefs and experiences. Source credibility is defined as a perceptual state as opposed to an actual characteristic of message sources, meaning that message sources cannot possess credibility; only audiences can engender perceptions of trustworthiness and expertise (Bettinghaus & Cody, 2004; Hovland, et al., 1953). Because of these characteristics, source credibility is difficult for a source to manipulate, making it an arduous task for public relations departments and stakeholders alike to foresee the success or failure of corporate communications. As put by Bettinghaus and Cody (1994), since source credibility is defined by perceptions it is only possible to be certain that receivers believe someone or something to be credible by asking them. In environmental communication specifically, the very purpose of appeals is to promote a company’s image and ethos, making perceived source credibility especially important to investigate. This is particularly true given all the obstacles working against MNCs because of commonly held negative attitudes and beliefs about corporate agendas influencing environmental messages (Ihlen, 2006).

Environmental Legitimacy

Based partially on the content of messages contained within a firm’s environmental communication and strongly on the perceived credibility of the source, the firm is assigned environmental legitimacy by its stakeholders. Environmental legitimacy is defined as the
“generalized perception or assumption that a firm’s corporate environmental performance is desirable, proper, or appropriate” (Bansal & Clelland, 2004, p. 94). Functioning much in the same way as source credibility, environmental legitimacy is perception-based, thus making it somewhat difficult for a firm to manipulate. While sometimes challenging to establish, the legitimacy assigned to a MNC can make a significant difference in whether the company succeeds or fails. Perceptions of high environmental legitimacy (e.g., a general understanding and approval of environmental messages by audience members) can secure endorsements from key stakeholders and cause a firm (in this case an MNC) to become an example of what appropriate environmental practice is within an industry. Low perceived environmental legitimacy, however, can lead to a rise in stock price risk and corporate profit risks as well (Hunter & Bansal, 2006).

A study by Davis (1994) concluded that audience members of an environment-focused appeal form ethical judgments and draw inferences about a company based on environmental claims. The higher the audience members rated the environmental ethics of the company, the more likely they were to view the company and its products favorably. Consumers are more likely to do business with companies that they perceive as ethical in their environmental practices, further showcasing just how important environmental legitimacy is for a company to maintain. It is also notable that dimensions of source credibility have also been found to be remarkably similar across cultures, making it especially attractive for multinational, globe-spanning companies (Yoon, Kim, & Kim, 1998).

Considering all of the factors discussed thus far, two things seem evident: (1) Multinational corporations, especially those with histories of alleged high levels of pollution or sustained involvement in industries that pose high risk to the environment have much to gain
regarding perceived source credibility and subsequent environmental legitimacy in the eyes of their stakeholders. (2) Perceptions of source credibility are more difficult to manipulate than message content as perceptions vary substantially from audience member to audience member depending on their unique attitudes and experience. Nonetheless, corporations consistently work on public relations attempts to modify their image. The question remains, however, whether these attempts to manipulate environmental legitimacy are successful in changing audience perceptions.

_Perceived Bias and Expectancy Violation_

It is important to factor into this investigation the motivations a viewer has to agree with a persuasive appeal, especially one coming from a source deemed to possess low credibility on the topic of environmentalism. What is important to consider when analyzing persuasive appeals is how well the position taken by a source on a given subject corresponds with an audience member’s pre-held expectations. Pre-held notions of what position a source will advocate are based upon a receiver’s existing knowledge of the source (Stiff & Mongeau, 2003). For instance, a pre-held notion might be that an oil company will take a pro-business stance over a pro-environment stance when debate arises.

Generally referred to as _expectancies_ (Burgoon, 1993), these pre-message expectations are often confirmed, leading receivers to attribute the views advocated by a source to personal preferences of the source, the source’s background, or to pressures of the situation. This situation leads the viewer to perceive a message source as biased (Eagly, Wood, & Chaiken, 1978; Eagly, Chaiken, & Wood, 1981). Alternatively, sources believed to be unaware of audience members presence and therefore not intending to persuade anyone have been deemed to be more influential than sources who seek to persuade (Walster & Festinger, 1962). Perceived source bias
generally falls into one of two categories: a *knowledge bias* or a *reporting bias*.

As defined by Eagly et. al., (1978), a knowledge bias refers to an audience member's belief that a communicator's knowledge about reality is somehow incomplete. Reporting bias, alternatively, refers to the belief that a communicator may be unwilling to convey an accurate account of reality, omitting or twisting details. In essence, a perceived knowledge bias means that a receiver does not believe that a message source possesses accurate information about the message topic. For this reason, a knowledge bias is a result of a lack of perceived expertise on the part of a message sender. A reporting bias, however, revolves around perceived trustworthiness of the source, as in this case a message recipient believes a source to be unwilling to report accurate, full information on a message topic (Eagly et. al., 1978; Stiff & Mongeau, 2003).

Clearly the view that a source is in some fashion biased would lead to a decrease in the sources credibility and the subsequent persuasiveness of a delivered message (Eagly et. al., 1978; Eagly et. al., 1981). What happens if a receiver’s expectations of a source’s position on a topic are disconfirmed, however, is an entirely different story. When receiver expectations regarding a source’s position are disconfirmed, the speaker must rationalize a new theory as to why a source took an “unusual” position. Generally, this results in the assumption that extraordinarily compelling evidence led the source to overcome the bias that would generally be expected to influence message content, as they see the source to be giving *reluctant testimony* (Benoit & Kennedy, 1999). An assumption of this sort leads to the perception that a source is indeed unbiased, thus leading to an increase in the persuasive effectiveness of the message ((Burgoon, 1993; Walster, Aronson, & Abrahams, 1966).

Eagly et. al. (1978) exposed participants to a pro-environment message which was
attributed to either a pro-business or pro-environment source in the hopes of better understanding how expectancy violation affects persuasion. Based on attribution of the source of the message, a perception of knowledge bias was created regarding whether the message would be influenced by pro-environment or pro-business attitudes. The group who had been informed that the source was pro-environment had their expectations confirmed upon viewing the environmental message while the group expecting a pro-business message had their expectations effectively disconfirmed. Groups were also informed before viewing the message that the intended audience of the appeal was either pro-business or pro-environment, creating an expectancy of a reporting-bias based on the values of the intended audience. Again, the group expecting a message biased toward a pro-environment agenda had their expectations confirmed while the group expecting a message exhibiting a pro-business reporting bias had their expectations disconfirmed (Eagly, Wood, & Chaiken, 1978). According to the results of this study, when a message source's position disconfirmed subjects' expectancies based on the source's background or target audience, the source was deemed significantly more persuasive than when expectancies were confirmed (Eagly et. al., 1978).

It has in fact been found that a low-credibility source is sometimes more persuasive than a high credibility source in situations where expectations are violated. If the advocacy of a message source is seemingly incongruent with the source’s self-interests, it will be perceived as more persuasive than a high-credibility source would be in this situation (Benoit & Kennedy, 1999, Pornpitakpan, 2004). This is an important consideration to keep in mind when analyzing appeals by corporations with unstable environmental legitimacy – companies that may have low credibility in the eyes of some audience members.

Based upon the existing literature regarding source credibility, the following hypothesis
has been generated regarding audience perceptions of environmental legitimacy of an international petroleum company:

H1: Exposure to an environmentally-based appeal by an oil company will be associated with an increased perception of source credibility regarding the firm’s environmental legitimacy, as measured by levels of expertise, trustworthiness, and goodwill as compared to those not exposed to an environmentally-based appeal.

_Social Judgment Theory and Ego-Involvement_

Another important point to consider when studying the persuasive effects of a message revolves around the attitudes of the individual audience member. Social judgment theory deals with the concept of *ego-involvement* (Sherif & Hovland, 1961; Sherif, Sherif, & Nebergall, 1965; Sherif & Sherif, 1967). Ego-involvement is a term defined as “the motivational state induced by an association between an activated attitude and some aspect of the self-concept” (Johnson & Eagly, 1989, p. 293). This concept refers to how invested an audience member is in the topic of a persuasive appeal, and the resulting effects on attitude change of this investment. According to Sherif and Sherif (1967), a person’s position represents a reference point which the person uses when analyzing all messages he or she receives on the topic. Based on this, social judgment theory upholds that when message receivers are highly ego-involved in a message topic, there is an increased likelihood that the receiver will find an attitudinal position regarding the topic to be unacceptable (Stiff & Mongeau, 2003). In essence, the existing literature on involvement points to the fact that the ego-involved person is extremely difficult to persuade.

One of the main variables that can influence ego-involvement regarding a topic is whether the issue is to be perceived as important as well as having important consequences (Bettinghaus & Cody, 1994). This deeming of a topic as important is known as _value-relevant_
involvement, as it reflects a concern about values that define a person’s self concept (Johnson & Eagly, 1989). Perceiving a topic as having important consequences, alternatively, refers to what is known as outcome-oriented involvement, or a concern that a given issue will ultimately be resolved in a certain way (Johnson & Eagly, 1989). Value-relevant involvement will notably decrease the likeliness of attitude change given the narrow number of positions acceptable to the audience member, while outcome-relevant involvement will motivate receivers to carefully scrutinize a message before reaching a conclusion, putting the burden of attitude change on the content of the message (Sherif & Hovland, 1961; Sherif, Sherif, & Nebergall, 1965; Sherif & Sherif, 1967). These two involvement types are not exclusive, and it is quite possible for one receiver to demonstrate both forms of involvement at once. This analysis, the literature shows, calls for considerable care in the development and presentation of persuasive messages.

Looking at the present topic of environmental appeals, a person who has a very strong opinion about the value of environmental conservation and an oil company’s role in promoting or disrupting this goal is likely to deem the subject matter as having very important consequences for the future of the world. Given this fact, social judgment theory proposes that a person with high levels of involvement will prove to be significantly more difficult to persuade than someone who is less ego-involved in the subject matter (Bettinghaus & Cody, 1994). Specifically in the present study, the fact that oil companies have not been traditionally associated with a pro-environmental standpoint is likely to make an environmentally ego-involved participant skeptical both of source credibility and message content. As a result, a second hypothesis has been generated for the present study:

H2: As environmental involvement increases, perceptions of Chevron’s credibility (as measured by expertise, trustworthiness, and goodwill) will decrease.
With the aforementioned hypotheses and past applicable research in mind, the present study will look at exactly how effectively an environmental appeal from a multinational oil corporation can persuade an audience.

Methods

Design

To address the proposed research questions, an experiment with a post-test only control group design was carried out. This particular design was chosen due to the nature of the generated hypotheses and because this is the standard form of measurement in a persuasion study (Chung, Fink, & Kaplowitz, 2008). To find whether consumers’ perceptions regarding a MNCs environmental legitimacy are affected by environmental appeals by the company, manipulation of variables are called for. In this case, the first independent variable was a message condition (e.g., seeing a message or not seeing a message) featuring an environmental appeal appearing in an audio-visual format. The second independent variable consisted of audience members’ involvement with the topics discussed within the environmental appeal. Audience perceptions of the promoted company’s environmental legitimacy compose the dependent variable. An experiment is the only form of research approach that allows for this sort of manipulation and control and permits causal conclusions.

The participants in this study were assigned to one of two groups. The first group consisted of participants who were exposed to a battery of television advertisements, one of which was the independent variable stimulus: an environmental appeal by Chevron Corporation (“Untapped Energy”, 2008). The second group acted as a control group and was also exposed to multiple television advertisements, however the Chevron advertisement was replaced with another non-environmental message. Including this control group helps to ensure that any effects
of the treatment conditions are isolated from contextual or other influencing factors. Finally the
design called for random assignment of participants to the two groups, helping to eliminate bias
and to establish that any relationships between variables are nonspurious.

Participants

The participants for this study were gathered by means of a convenience sample of
college students from various areas of study at a small, Midwestern liberal arts university (N = 96). The sample consisted of 27 men and 69 women, ranging in age from 18 to 33 (M = 20.09,
SD = 17.72). Of these 96 participants, 60 were eventually assigned to the treatment group and 36
to the control group in the current study. The primary researcher personally recruited
undergraduate students at the university to participate in the experiment through appeals to
classes in various departments, fliers, emails, and research recruitment boards. Faculty members
also helped to promote the study within their classrooms, a number of whom offered research
participation, extra credit, or other incentives for students to participate in the study.

College students were chosen as the population sample due to their availability to the
researcher. It is often the case that a downside of the participant pool consisting of a convenience
sample is that it is unlikely to be reflective of the general population. This, however, may be a
positive aspect of the sample in this study, as the purpose of this research is specifically to target
the “green generation” and therefore American college students are in fact reflective of the target
population. It is important to note, however, that universally high environmental involvement
could be a restricting factor in this case.

Measurement

Independent Variables
Exposure to stimulus. In this study, an environmental persuasive appeal by Chevron Corporation was utilized as one of the independent variables (“Untapped Energy”, 2008). Chevron was chosen because it is one of the top five largest corporations in the world and conducts business in the petrochemicals industry, making it a well-established name in petroleum handling (“Global 500”, 2008). It was also cited in Condé Nast Portfolio’s March 2008 issue as one of the “Toxic Ten” companies that should be doing better with regard to pollution, showing that it is a company that would benefit from positive environmental public relations work (Hurt, 2008).

Specifically, the independent variable acting as stimuli in this study consisted of an advertisement from Chevron’s ongoing “Human Energy” campaign entitled, “Untapped Energy.” The treatment group was exposed to a television commercial-version of the “Untapped Energy” appeal, an audiovisual piece which utilizes both sound and vivid imagery to portray its message, placed among other non-environmental control messages. This specific appeal was chosen partly because Chevron is not explicitly implicated as the purveyor of the message until the very end of the appeal. This is a quite important fact, as it has been found that in experiments where the timing of a low credibility source was of concern, the message has been deemed more persuasive when source identification was postponed until the end of the appeal as opposed to being presented at the start of the appeal. By delaying the identification of a low-credibility source, viewers are more likely to focus on message content and not presuppose biases than if they were aware of the message’s source (Homer & Kahle, 1990).

The “Untapped Energy” appeal deals with the energy issues facing mankind. This commercial is two and a half minutes in length and features vivid imagery of cities, the environment, and most of all, people. A calm voice narrates throughout the entire commercial,
explaining Chevron’s alternative energy endeavors. This advertisement points out that humans are full of potential and have overcome huge obstacles during their time on this planet, and that there are effective ways to deal with the energy issues facing the world. It also illustrates that Chevron is made up of regular people who are trying every day to produce the most efficient, environmentally-friendly, intelligent solutions for the energy needs of the world of today and tomorrow (“Untapped Energy”, 2008).

_Ego-involvement._ The second independent variable in this study is the ego-involvement of participants related to the environment. To measure this, a 20 item involvement measure (see Appendix A) developed by Zaichkowsky (1985), the Personal Involvement Inventory (α = .92 - .97), was administered after the participants have viewed a short group of television commercials. Depending on their group assignment, these commercials may or may not have included the Chevron environmental appeal. By measuring ego-involvement in both a treatment group and a control group, the researcher was able to later analyze the measure to determine whether there is ample support for hypothesis two.

_Dependent Variable_

The dependent variable in this study was participants’ perceptions of Chevron’s environmental legitimacy as measured by expertise, trustworthiness, and goodwill upon exposure to various treatment conditions. To measure this, participants were given a questionnaire attached to the involvement measure after the participants had viewed the aforementioned group of television commercials, which may or may not include the Chevron environmental appeal depending on their group assignment. The questionnaire (see Appendix B) elicited basic demographic information about the participants and included an 18 item source credibility measure by McCroskey and Tevin (1989) focusing on competence (expertise) (α = .85),
trustworthiness (α = .92), and goodwill (α = .92). The factors of competence, trustworthiness, and goodwill, if found to change depending on exposure to the environmental stimulus in the study, could support hypothesis one and were therefore measured. The questionnaire also asked participants to answer control questions about two arbitrarily chosen corporations, U.S. Bancorp (U.S. Bank) and Microsoft, to prevent participants from perceiving too much about Chevron’s connection to the research. This questionnaire was used to reflect any deviations in ranking of Chevron’s credibility between members of the treatment and control groups.

Procedure

To conduct this study, the researcher first spent time gathering participants for the experiment. The participants were informed that, if interested, they could participate in data collection for a Communication honors thesis, were given a list of fourteen data collection times over the course of one week, and were informed of the location and that the primary researcher would be happy to address any concerns that they might have. Interested students were given the option to either sign up for a time on one of three sign-up sheets or simply to show up during one of the data collection sessions to participate.

Upon their arrival at the administration site of the experiment, participants were given an informed consent form (see Appendix C). If they decided that they wished to participate in the study, they were asked to sign the consent form, listing any courses and professors from whom they believed they may be receiving credit for participating, and to hand it in to the researcher. Fourteen sessions were held during the week, always in the same room in one of the academic buildings on campus. Because only one room was available, the control and treatment groups were dependent on which session they attended. The researcher intended to administer either the control or treatment stimuli for each session in a manner that would keep the number of
participants in each group roughly equivalent as the week of testing progressed. Because of an early error in data collection, however, the group sizes ended up being fairly different in size, with 60 participants in the treatment group and 36 participants in the control group.

Once it had been determined by the researcher whether a data collection session’s participants would be in the control or treatment group, and once all consent forms had been collected, groups were exposed to a brief battery of five commercial advertisements. The commercials were all 30 to 60 seconds in length (with the exception of the 150 second Chevron appeal used in the treatment group). Four of these commercials were constant across both groups and were chosen to reflect standard commercials that a participant might see on any given day on television. The appeals were by Audi (an automobile manufacturer), U.S. Bank, Monster.Com (a job recruitment website), and Pedigree (a dog food producer). In the treatment group, the fifth commercial was a persuasive environmental appeal entitled “Untapped Energy” from Chevron Corporation. In the control group, the fifth commercial was by Microsoft Corporation (promoting the Windows operating system).

Upon completion of viewing the battery of commercials, the primary researcher informed each group that they were being given a questionnaire to fill out, and that if they require any clarification on any items, they should feel free to ask the researcher. Attached to this document as Appendixes A and B, the questionnaire (consisting of an involvement inventory and source credibility scales) were the same across both the treatment group and the control group. Certain control questions were included as well to keep participants from discerning what exactly the researcher is studying (inclusion of Microsoft and U.S. Bank credibility scales, for instance). Once the provided questionnaires had been completed and turned in, all members of both groups were thanked for their time, and informed that they may contact the primary
researcher if they have any questions or concerns regarding the focus or administration of the experiment. Once concerns had been addressed, all participants were dismissed and the experimental session came to an end.

An important point to note here is that there was an error made in the distribution of the first 60 questionnaires. Instead of handing out the environmental Personal Involvement Inventory, or PII (Zaichkowsky, 1985) and the source credibility scales as one questionnaire, for the first two days of data collection (and subsequently the first 60 participants in the study), the source credibility scales were passed out first and the PII was only provided once the source credibility scales had been returned to the experimenter at the front of the room. The problem with this method of collection is that, in retrospect, there is no way to match the PII with the source credibility scales for these participants as no names were placed on any sheets other than the informed consent form for confidentiality reasons. The idea was that handing out the two parts of the greater questionnaire separately would help to ensure that participants did not uncover the true purpose of the study prematurely. It seems that this added caution turned out to be very much a confounding factor as the first 60 environmental PIIs ended up being unusable because they could not be matched to any participant. The result of this was that there were a total of 96 completed source credibility scales from all participants, however only 36 PIIs could eventually be entered as data for analysis, severely limiting sample size. While this error did not directly affect the investigation of the main focus of the study (hypothesis one) besides indirectly upsetting the balance between control and treatment group sizes, it is certainly a limiting factor in the generalizability of findings regarding Hypothesis Two.

Results

Once data collection and entry was completed, mean scores and standard deviations of all
three factors of source credibility (competence/expertise, trustworthiness, and goodwill) as well as a macro, cumulative factor of “credibility” which encompassed all three sub-factors were compiled for Chevron, U.S. Bank, and Microsoft respectively (Appendix D). These factors were run against both the treatment group (who saw the Chevron advertisement) and the control group (which did not see the Chevron appeal) by way of a two independent samples t-tests.

Overall, the control ($M = 3.75, SD = .87$) differed significantly from the treatment ($M = 4.47, SD = 1.19$) on perceptions of goodwill regarding Chevron, $t(90.43) = -3.37, p = .001$, suggesting that those who saw the appeal were reporting higher perceptions of goodwill by Chevron than those who did not view the Chevron appeal. The control group ($M = 4.14, SD = .84$) also differed significantly from the treatment group ($M = 4.61, SD = 1.06$) on perceptions of trustworthiness $t(94) = -2.252, p < .05$, suggesting that those who saw the appeal were reporting higher trustworthiness perceptions of Chevron than those who did not view the appeal. Finally, the control group ($M = 4.34, SD = .71$) also differed significantly from the treatment group ($M = 4.82, SD = .89$) on the macro-factor of overall credibility (a combination of competence, trustworthiness, and goodwill) $t(94) = -2.764, p < .01$, suggesting that those who saw the appeal were reporting higher overall credibility perceptions of Chevron than those who did not view the appeal. The only factor on which the control group ($M = 5.12, SD = .87$) did not differ significantly from the treatment group ($M = 5.38, SD = .96$) was on perceptions of competence (expertise) $t(94) = -1.366, n.s$. Given these results, it appears that hypothesis one was indeed supported.

The control appeal featuring U.S. Bank was also measured on the same credibility factors as Chevron for both the control and treatment groups. Across the macro-factor of credibility and the three sub-factors, two independent samples t-tests showed no significance for any factor.
Judging by the results attained, it seems that the U.S. Bank appeal was an appropriate control variable to utilize.

Regarding the final appeal measured, that of Microsoft Corporation, it is questionable whether this advertisement was an appropriate control. While the U.S. Bank appeal was shown to both the treatment and control groups, Microsoft’s appeal, however, was only shown to the control group, essentially replacing the Chevron appeal in the commercial battery lineup. When a two independent samples t-test was run, for the measure of perceived goodwill of Microsoft, the control group ($M = 4.84, SD = .98$) also differed significantly from the treatment group ($M = 4.20, SD = .80$) on perceptions of trustworthiness $t(93) = 3.481, p = .001$, suggesting that those who saw the appeal (the control group) were reporting higher goodwill perceptions of Microsoft than those who did not view the appeal (the treatment group). The control group ($M = 5.25, SD = .93$) also differed significantly from the treatment group ($M = 4.67, SD = .86$) on perceptions of trustworthiness $t(93) = 3.039, p < .01$, suggesting that those who saw the appeal (the control group) were also reporting higher trustworthiness perceptions of Microsoft than those who did not view the appeal (the treatment group). Like the Chevron appeal, the macro-factor of overall credibility differed significantly between the control group ($M = 5.35, SD = .75$) and the treatment group ($M = 4.89, SD = .67$), $t(93) = 3.071, p < .01$. This result suggests that those who saw the Microsoft appeal (the control group) were reporting higher credibility perceptions of Microsoft than those who did not view the appeal (the treatment group). Also similar to Chevron, the only factor on which the control group ($M = 5.96, SD = .79$) did not differ significantly from the treatment group ($M = 5.79, SD = .94$) was on perceptions of competence (expertise) $t(93) = - .894, n.s$. The implications of the significant results attained here will be further discussed below.

Hypothesis two argued that high levels of environmental involvement ($M = 5.83, SD =$
The Effects of 27.79 would be negatively correlated with perceptions of Chevron’s source credibility. In order to determine if associations between these factors exist, correlations were run between different source credibility factors and environmental involvement levels. It was found that the overall credibility factor for Chevron was positively correlated with environmental involvement, \( r(34) = .287, p < .05, \) one-tailed. This finding suggests that the more highly ego-involved a person is with the environment, the more likely they were to deem Chevron as credible overall. This result was not expected, as it actually contradicts the assertions of hypothesis two. Speculation as to reasons for this will be discussed further in the next section. Environmental involvement was positively correlated with perceptions of competence in Chevron, \( r(34) = .242, p = .078, \) one-tailed, a level somewhat close to significance, yet not quite attaining the \( p < .05 \) level. Even closer to attaining a level of significance and also positively correlated with environmental involvement was trustworthiness of Chevron, \( r(34) = .267, p = .058, \) one-tailed. The factor of goodwill did not appear to be positively correlated with environmental involvement \( r(34) = .213, p = .106, \) one-tailed.

There was no significant correlation between environmental involvement and any of the factors of perceived source credibility for either U.S. Bank or Microsoft Corporation, as was expected. This suggests that these non-environmental appeals acted as appropriate controls for hypothesis two.

With regard to familiarity with the three companies analyzed in this study, a significant correlation was found as well. It was found that familiarity with Chevron was negatively correlated with environmental involvement, \( r(34) = -.357, p < .05, \) one-tailed. The fact that this negative correlation was significant suggests that the more familiar people were with Chevron, the more likely they were to demonstrate low ego-involvement with the environment – a results
that the researcher did not foresee, but is useful to note.

Discussion

Today’s world is filled with advertising appeals and endless media infiltration (Larson, 2007). Specifically looking at green advertising, there has been a noted increase in the use of this type of appeal of late, a trend that merits further investigation into the new terrain of corporate image reshaping (Sood, 2008). This area of influence by multinational corporations is of particular importance. The ability of these companies to affect millions positively or negatively, to determine what happens to billions of dollars, and, most importantly in this study, to defile or protect the environment is without parallel on this planet. It is for all of these reasons that it is important that we understand how environmental persuasion affects us on a daily basis.

Credibility of Chevron

The main purpose of the current study was to determine whether or not companies, specifically petroleum corporations with unstable environmental legitimacy due to associations with environmental misconduct could successfully persuade audience members to perceive the company as a credible source of information regarding the topic of the environment. Upon analyzing the results of the various measures employed to test the hypothesis that this sort of persuasion indeed can occur, it appears that the hypothesis was well supported. There was not a significant relationship ($t(94) = -1.366, \text{n.s.}$) between viewing Chevron’s environmental “Untapped Energy” appeal and perceptions that the company exhibits competence (expertise). It is noteworthy, however, that perceptions of Chevron’s competence ($M = 5.28, SD = .79$) are not remarkably different than those of U.S. Bank ($M = 4.90, SD = 1.10$) or Microsoft ($M = 5.86, SD = .88$), so perhaps there exists some other reason why expertise did not seem to be a significant factor in this analysis.
To fully understand why participants regarded Chevron as high in goodwill and trustworthiness but not expertise, it is necessary to consider the appeal itself. In “Untapped Energy,” Chevron asserts their devotion to finding and producing clean, efficient energy. They support these claims by employing the idea of *logos*, or logical appeals through the utilization of data and reasoning. The appeal shows the vast number of citizens working in different countries to make clean energy a reality and the various alternative energy options that the company provides; i.e., hydrogen, natural gas, solar, and geothermal. The data is supported with images: video of men and women all over the globe building and operating machinery, surveying new sites, planning new enterprises in boardrooms, and working, assumedly, to find solutions to the world’s energy problems. They draw attention to their expertise with regard to oil, but show that their efforts in other “greener” areas can help to solve humanities issues while not destroying the Earth. The reasoning in this advertisement is inductive; we see a problem at the beginning, but are led to believe through various pieces of evidence supplied by Chevron that we can solve the problem, presumably through the ecologically-responsible works of the Chevron Corporation (Larson, 2007; “Untapped Energy”, 2008).

Looking at this description, it is clear that Chevron intends to portray itself positively with regard to the factors of goodwill. They appeal to what Aristotle defined as *pathos*, or emotional appeals, by cultivating the image that they are problem-solving for the world through environmentally-responsible actions, serving humanity as a whole, and are essentially a group of average people working to make the world a better place. Ideas of goodwill by Chevron and the company’s devotion benefiting all mankind are clearly manifest in these themes.

Regarding trustworthiness, a look at expectancy violation theory can explain why this factor was nearly found to be significantly influenced by the appeal (and likely would have been
given a slightly larger sample size). Being a multinational oil company, Chevron is a source expected to advocate a pro-business standpoint. Instead in the “Untapped Energy” appeal, Chevron surprises its audience by advocating a pro-environment standpoint, causing audience members to rationalize why the company would advocate this unexpected position (“Untapped Energy”, 2008). The result, research has shown, is an increase in perceived trustworthiness of the company because audience members assume that some compelling evidence caused the company to overcome the generally expected bias toward pro-business interests (Eagly et. al., 1978; Walster, Aronson, & Abrahams, 1966).

Chevron’s expertise in petroleum handling is referenced but specifically downplayed in importance with statements such as “an oil company can practice and espouse conservation. Yes we are an oil company, but right now we’re also providing natural gas, solar, hydrogen, geothermal” (“Untapped Energy, 2008). Chevron makes clear that alternative energy has not been their main focus in the past, but that they are now willing to work outside the domain of oil. The fact that the company itself indirectly pointed out that they are operating outside their expertise would account for the insignificant results attained regarding Chevron’s competence, yet still explain how the macro-factor of overall credibility was still found significant due to the importance of the goodwill and trustworthiness factors in this instance.

Taking a different perspective, there is evidence in the literature that trustworthiness can be a more influential variable than expertise when contributing to perceived source credibility, which may help to account for the significance of perceived credibility despite the non-significant competence factor (McGinnies & Ward, 1980). It could also be speculated that, given the fact that relationship to the environment is the subject matter, expertise may not be of elevated importance due to the fact that many environmentally-friendly behaviors are considered
common knowledge and do not require extensive training to understand and put into action.

_The Role of Environmental Involvement_

Before focusing on the effects of the findings on hypothesis two, it is also important to note the rather high average environmental involvement score \(M = 5.83, SD = .79\) among this study’s sample (measured on a seven point scale). This heightened sense of involvement could be due in part to participants giving socially desirable responses. Though their responses were confidential, college students live in an environment where ecological activism is strongly supported and therefore they may feel pressured to respond to the PII by indicating high ego-involvement in the topic of the environment. Alternatively, college students may simply be more active in conservation activities and therefore show more environmental involvement - the green movement has been steadily gaining support across America’s college campuses in recent years, and the campus on which the data for this study was collected is has been no exception to this trend (Green, 2007). Whatever the reason, the high levels of overall involvement reported by participants in this study’s sample was useful in providing data to test hypothesis two, though they may also pose a restriction of range confound.

An interesting and somewhat surprising result of this analysis was the significant positive correlation between environmental involvement and perceived credibility of Chevron \(r(34) = .287, p < .05\), one-tailed: a result that effectively contradicted hypothesis two. Given the fact that Chevron is acting in this study as an example of a company associated with past environmental misconduct and unstable environmental legitimacy, it would seem given the existing involvement research that more environmentally involved participants would be less likely to find the company credible. This clearly was not the case, so it is necessary to look at the message itself and the processing involved when forming perceptions of credibility in order to understand
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the underpinnings of this finding.

To best understand cognitive processing of the “Untapped Energy” appeal, it is necessary to consider the elaboration likelihood model or ELM (Petty & Cacioppo, 1981). The ELM posits that there are two routes to persuasion, the central route and the peripheral route (Petty and Cacioppo 1981, 1983). The central route to persuasion relies on diligent consideration of information that the participant feels is of importance to the true merits of a particular attitudinal position to affect attitudes about the message sender. Appeals that attempt to persuade along the central route operate under a content premise, or an appeal to logos. These premises deal with argument formation, and look specifically at the reasoning and evidence within an appeal (Larson, 2007). The peripheral route to persuasion relies more on subconscious processing of messages and simple cues which influence feelings and attitudes (Petty and Cacioppo 1981, 1983). Appeals that work along the peripheral route are generally appeals to inherent needs, emotions, attitudes, opinions, or psychological processes. This sort of premise is strongly tied to pathos, seeking to target psychological and emotional processes that operate in most people as opposed to relying on logical appeals (Larson, 2007). The Chevron appeal strongly utilized both of these persuasion routes. By providing direct argumentation along the central route as well as appeals to viewer’s inherent emotional needs through both verbal messages and strong supporting imagery within the appeal, many criteria of a well-developed persuasive message were met (Larson, 2007; Messaris, 1997).

According to Petty, Cacioppo, and Schumann (1983), the ELM contends that as an issue increases in personal relevance or consequences, it becomes more important to forming a reasoned opinion. For this reason, people are more motivated to devote cognitive effort to evaluating the merits of an issue when involvement is high rather than low. Keeping this in mind,
the previously mystifying significantly positive correlation between perceived credibility of Chevron and environmental involvement makes a bit more sense. Participants who were highly involved with the environment have heightened motivation to process the “Untapped Energy” appeal, and thus the appeal has a greater persuade impact on the highly involved participant who is devoting energy to centrally processing the message that they receive. Given the multidimensional routes to persuasion used within the “Untapped Energy” appeal, heightened processing of the message led to heightened perceptions of Chevron’s goodwill, trustworthiness, and overall credibility.

*Lack of Familiarity*

Another result of the study that is important to further analyze is the lack of familiarity with Chevron by participants. One of the reasons that Chevron was chosen for this study is that it is the second largest petroleum company in the world, and the sixth largest of all corporations in existence. For this reason, it seemed rational to conclude that participants would be familiar with the company and would have pre-existing beliefs about the company.

The existence of these beliefs are important to the study because Chevron was chiefly chosen as a low-credibility company with regard to the environment; if participants were familiar with Chevron, they may well know that Chevron has not had the rosiest of pasts when it comes to environmental respect (Hurt, 2008). Even a quick perusal of the company’s website gives evidence of the fact that they are still feeling repercussions from past environmental mishaps (Chevron Policy, 2008). The existence of these beliefs of Chevron as a low-credibility source on environmentalism would allow for greater attitude change upon viewing the “Untapped Energy” appeal. The average score for familiarity with Chevron was quite a bit lower ($M = 2.84, SD = 1.53$) than scores of familiarity with U.S. Bank ($M = 3.06, SD = 1.697$) or with Microsoft ($M = \ldots$)
5.09, \( SD = 1.695 \), showing that in fact participants were widely unfamiliar with the company.

There are a few reasons that this potentially confounding factor may have occurred. First, the way that many interact with oil companies is through the indirect purchase of gasoline refined from the by these large corporations. Chevron, like a number of other large petroleum companies, is not always identified directly “at the pump,” though they may provide the raw materials for the gasoline. For instance, Chevron has many fuel stations in the United States. These stations, however, may be labeled as Chevron, Standard Oil, Texaco, Caltex, Gulf, or Unocal, making it difficult to associate the name Chevron with its products. Also it may be useful to note that the nearest Chevron station to the university at which data collection took place is roughly 80 miles away and located in a neighboring state, showing the scarcity of Chevron’s visible presence in the Midwest and perhaps furthering an explanation for the low familiarity rating among participants in the current study.

Of all of the potential confounds in this study, the lack of familiarity with Chevron is one of the most troubling as it has the most potential to influence whether or not Chevron is ultimately deemed to be a credible source. A lack of familiarity with Chevron likely means a lack of familiarity with its potential to harm the environment (as knowledge of its size and past misdeeds would augment). Because of the lack of familiarity with the company, it is quite plausible that participants in this study would have rated Chevron as more credible than older participants or participants in another part of the country may if this study is ever replicated. This conundrum with the sample affects the generalizability of the findings in this study to some degree, an issue that other researchers must take into account in the future.

*Data Collection Issues*

The major error in collection of questionnaires which resulted in the inability of the
The Effects of experimenter to enter the first 60 environmental Personal Involvement Inventories to be calculated has already been mentioned when discussing procedure in this study. While this was certainly the most egregious experimenter error made, it was not the only one. Other less severe confounding factors which may have “tipped-off” a savvy participant to the focus of the study may be a concern as well. For example, the advertisements shown in the commercial batteries were all 30 – 60 seconds in length with the exception of the Chevron appeal, which had a length of 150 seconds. The Chevron appeal was also loaded and played directly from the Chevron website while the others were played from Youtube.com, a general video site. Also, the Chevron advertisement was placed 4th in a line-up of 5 appeals (an arbitrary assignment), though it is possible that positioning may have implications for retention as a recency effect could cause participants to focus more on the latter studies than the first three. Realistically, given the small size of the battery of commercials it seems unlikely that positioning had any substantial effect.

Another potentially minor issue was the sample itself (27 men and 69 women, heavily weighted toward one gender) and the way in which participants were assigned to groups (according to administration time, not random assignment). Sixty participants in this study were assigned to the treatment group versus the 36 that were assigned to the control group, making a less-than optimal distribution due to space and time constraints and causing unequal variances. While none of these administration oversights can be concretely said to have affected the results of this study, it is important for future researchers, especially those with little data collection and research design experience, to keep influencing factors such as these in mind.

A further research design issue was the decision to replace the Chevron appeal in the control group with a Microsoft appeal that did not appear in the treatment group. In hindsight, it would have been more prudent to include the Microsoft appeal in both the treatment and control
groups and merely omit the Chevron advertisement from the control group instead of attempting to keep the number of commercials shown equivalent across both groups. The result of this decision was essentially the creation of two treatment groups instead of a treatment group and a control group. A control group, by its nature, should reflect the treatment group with the exception of the independent variable being excluded: nothing else should change. The fact that significant differences were found regarding perceptions of Microsoft’s credibility between the two groups further illustrates that showing this appeal to one group and not another did affect perceptions of Microsoft among participants; luckily the Microsoft appeal had no bearing on either hypothesis being tested and can be disregarded for the most part. As with the other research design flaws, it is important to note, influencing of the hypotheses or not, so that future researchers can be aware of potential issues and avoid making the same mistakes.

Suggestions for Future Research

Research investigating the persuasive effectiveness of green marketing by traditionally environmentally-unfriendly companies is very sparse (Goldsmith, Lafferty, & Newell, 2000). Green marketing has been appearing more frequently and is expected to continue to grow in the coming years (Davis, 1994). This study has shown that appeals by companies with unstable environmental legitimacy can and do influence even the most environmentally involved audience members into deeming corporations like Chevron as credible on the topic of the environment. For all of these reasons, future researchers may wish to replicate this study or pursue other studies in the field of environmental appeals by companies like Chevron. Clearly there are significant finding to be made in this field and plentiful room for further research, and therefore more investigations ought to be made in the coming years.

This study focused on a fairly young age group ($M = 20.09$, $SD = 1.77$) with United
States college students being the greater public to which results were intended to be generalized, not citizens of the United States as a whole. Future researchers who pursue any study similar to this one may wish to generalize their results to a greater population, in which case it would be prudent to garner a more diverse age group for a sample and not to necessarily expect such a high mean for environmental involvement as was produced by a collegiate population.

Further researchers may also want to look at a more longitudinal examination of influence on attitudes over time, as it has been suggested that belief change occurs over measureable amounts of time, not instantaneously (Chung, Fink, & Kaplowitz, 2008). The current study investigates attitudes and perceptions directly after being exposed to the stimulus though it may be useful to measure attitudes over time as well.

For better or worse, it seems that both the growth of the green movement and the growth of green marketing will continue to be relevant for the foreseeable future. Knowing that even the most unlikely of sources can be deemed credible in the area of environmental appeals while under scrutiny by highly ego-involved audience members and stakeholders is certainly promising for corporations. Whether this will lead to an age of partnership between corporate titans and common citizens for the purpose of ensuring environmental stability or simply lead to more “green-washing” effects has yet to be seen. What the present study has shown is that the catalyst is present in appeals like “Untapped Energy;” only time will tell what these findings mean for the world in the coming decades.
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Appendix A
Involvement Measure

Personal Involvement Inventory

*Instructions:* The following questions will ask about your feelings toward / involvement with the environment.

If you feel that the environment is *very closely related* to one end of the scale, you should place a mark as follows:

Unimportant : __:__:__:__:__:__:__: Important

Or

Unimportant : __:__:__:__:__:__:__: X: Important

If you feel that the environment is *quite closely related* to one end of the scale (but not extremely), please place a mark as follows:

Unimportant : __:__:__:__:__:__:__: Important

Or

Unimportant : __:__:__:__:__:__:__: X: Important

If you feel that the environment seems *only slightly related* to one end of the scale (but not really neutral), please place a mark as follows:

Unimportant : __:__:__:__:__:__:__: Important

Or

Unimportant : __:__:__:__:__:__:__: X: __: Important

*Important:*

1. Be sure that you check every scale regarding your feelings toward the environment; do not omit any.
2. Never put more than one mark on a single scale.

Make each item a separate and independent judgment. Work at a fairly high speed through the questionnaire. Do not worry or puzzle over individual items. It is your first impressions, the immediate feelings about the items, that are of interest in this study. On the other hand, please do not be careless, as a true reflection of your feelings is desirable.

If you have any questions, please feel free to ask the experimenter.
Maintaining the Environment

Important: ___________ : Unimportant *
Of no concern to me: ___________ : Of concern to me
Irrelevant: ___________ : Relevant
Means a lot to me: ___________ : Means nothing to me *
Useless: ___________ : Useful
Valuable: ___________ : Worthless *
Trivial: ___________ : Fundamental
Beneficial: ___________ : Not Beneficial *
Matters to me: ___________ : Doesn’t matter *
Uninterested: ___________ : Interested
Significant: ___________ : Insignificant *
Vital: ___________ : Superfluous *
Boring: ___________ : Interesting
Unexciting: ___________ : Exciting
Appealing: ___________ : Unappealing
Mundane: ___________ : Fascinating
Essential: ___________ : Nonessential *
Undesirable: ___________ : Desirable
Wanted: ___________ : Unwanted *
Not needed: ___________ : Needed

Note: Items on the left are scored (1) for low involvement and on the right (7) for high involvement. An asterisk indicates that the item is reverse-scored.

Usual Alpha Reliability: .92 - .97
Appendix B

Questionnaire – Source Credibility Measure

Participant Number: ________

Gender (please circle): Male        Female

Age: ______

How familiar do you feel that you are with Chevron Corporation?

Familiar 1 2 3 4 5 6 7 Unfamiliar

How familiar do you feel that you are with U.S. Bancorp? (U.S. Bank)

Familiar 1 2 3 4 5 6 7 Unfamiliar

How familiar do you feel that you are with Microsoft?

Familiar 1 2 3 4 5 6 7 Unfamiliar

On the scales below, please indicate your feelings about Chevron. Circle the number between the adjectives which best represents your feelings about Chevron. Numbers “1” and “7” indicate a very strong feeling. Numbers “2” and “6” indicate strong feelings. Numbers “3” and “5” indicate a fairly weak feeling. Number “4” indicates you are undecided or do not understand the adjectives themselves. Please work quickly. There are no right or wrong answers.

1)     Intelligent 1 2 3 4 5 6 7 Unintelligent

2)     Untrained 1 2 3 4 5 6 7 Trained

3)     Cares about me 1 2 3 4 5 6 7 Doesn't care about me

4)     Honest 1 2 3 4 5 6 7 Dishonest

5)     Has my interests at heart 1 2 3 4 5 6 7 Doesn't have my interests at heart

6)     Untrustworthy 1 2 3 4 5 6 7 Trustworthy

7)     Inexpert 1 2 3 4 5 6 7 Expert

8)     Self-centered 1 2 3 4 5 6 7 Not self-centered

9)     Concerned with me 1 2 3 4 5 6 7 Not concerned with me
10) Honorable 1 2 3 4 5 6 7 Dishonorable
11) Informed 1 2 3 4 5 6 7 Uninformed
12) Moral 1 2 3 4 5 6 7 Immoral
13) Incompetent 1 2 3 4 5 6 7 Competent
14) Unethical 1 2 3 4 5 6 7 Ethical
15) Insensitive 1 2 3 4 5 6 7 Sensitive
16) Bright 1 2 3 4 5 6 7 Stupid
17) Phony 1 2 3 4 5 6 7 Genuine
18) Not understanding 1 2 3 4 5 6 7 Understanding

SCORING: To compute your scores, add your scores for each item as indicated below:

Recode BOLDED questions with the following format:

1=7
2=6
3=5
4=4
5=3
6=2
7=1

Competence Factor (1, 2, 7, 11, 13, and 16)__________
Caring/Goodwill Factor (3, 5, 8, 9, 15, and 18)__________
Trustworthiness Factor (4, 6, 10, 12, 14, and 17)__________

On the scales below, please indicate your feelings about U.S. Bancorp. Circle the number between the adjectives which best represents your feelings about U.S. Bancorp. Numbers “1”
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and “7” indicate a very strong feeling. Numbers “2” and “6” indicate strong feelings. Numbers “3” and “5” indicate a fairly weak feeling. Number “4” indicates you are undecided or do not understand the adjectives themselves. Please work quickly. There are no right or wrong answers.

1) Intelligent 1 2 3 4 5 6 7 Unintelligent

2) Untrained 1 2 3 4 5 6 7 Trained

3) Cares about me 1 2 3 4 5 6 7 Doesn't care about me

4) Honest 1 2 3 4 5 6 7 Dishonest

5) Has my interests at heart 1 2 3 4 5 6 7 Doesn't have my interests at heart

6) Untrustworthy 1 2 3 4 5 6 7 Trustworthy

7) Inexpert 1 2 3 4 5 6 7 Expert

8) Self-centered 1 2 3 4 5 6 7 Not self-centered

9) Concerned with me 1 2 3 4 5 6 7 Not concerned with me

10) Honorable 1 2 3 4 5 6 7 Dishonorable

11) Informed 1 2 3 4 5 6 7 Uninformed

12) Moral 1 2 3 4 5 6 7 Immoral

13) Incompetent 1 2 3 4 5 6 7 Competent

14) Unethical 1 2 3 4 5 6 7 Ethical

15) Insensitive 1 2 3 4 5 6 7 Sensitive

16) Bright 1 2 3 4 5 6 7 Stupid

17) Phony 1 2 3 4 5 6 7 Genuine
18) Not understanding 1 2 3 4 5 6 7 Understanding

**SCORING:** To compute your scores, add your scores for each item as indicated below:

Recode BOLDED questions with the following format:

1 = 7
2 = 6
3 = 5
4 = 4
5 = 3
6 = 2
7 = 1

*Competence Factor (1, 2, 7, 11, 13, and 16)__________*

*Caring/Goodwill Factor (3, 5, 8, 9, 15, and 18)__________*

*Trustworthiness Factor (4, 6, 10, 12, 14, and 17)__________*

On the scales below, please indicate your feelings about Microsoft. Circle the number between the adjectives which best represents your feelings about Microsoft. Numbers “1” and “7” indicate a very strong feeling. Numbers “2” and “6” indicate strong feelings. Numbers “3” and “5” indicate a fairly weak feeling. Number “4” indicates you are undecided or do not understand the adjectives themselves. Please work quickly. There are no right or wrong answers.

1)  **Intelligent 1 2 3 4 5 6 7 Unintelligent**

2)  Untrained 1 2 3 4 5 6 7 Trained

3)  **Cares about me 1 2 3 4 5 6 7 Doesn't care about me**

4)  **Honest 1 2 3 4 5 6 7 Dishonest**
5) Has my interests at heart 1 2 3 4 5 6 7 Doesn't have my interests at heart

6) Untrustworthy 1 2 3 4 5 6 7 Trustworthy

7) Inexpert 1 2 3 4 5 6 7 Expert

8) Self-centered 1 2 3 4 5 6 7 Not self-centered

9) Concerned with me 1 2 3 4 5 6 7 Not concerned with me

10) Honorable 1 2 3 4 5 6 7 Dishonorable

11) Informed 1 2 3 4 5 6 7 Uninformed

12) Moral 1 2 3 4 5 6 7 Immoral

13) Incompetent 1 2 3 4 5 6 7 Competent

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17) Phony 1 2 3 4 5 6 7 Genuine

18) Not understanding 1 2 3 4 5 6 7 Understanding

**SCORING:** To compute your scores, add your scores for each item as indicated below:

Recode BOLDED questions with the following format:

1=7
2=6
3=5
4=4
5=3
6=2
7=1
The Effects of 52

Competence Factor (1, 2, 7, 11, 13, and 16)

Caring/Goodwill Factor (3, 5, 8, 9, 15, and 18)

Trustworthiness Factor (4, 6, 10, 12, 14, and 17)

*Usual Alpha Reliability: .80 - .94*
Appendix C

Informed Consent Form

You have been asked to participate in a survey supervised by Dr. Kathleen Warber of the Department of Communication at Wittenberg University, and administered by her student, Lukas Treu. In this study, you will be requested to complete two questionnaires and to view a brief advertisement. It should take approximately 15 to 20 minutes for you to complete the exercise.

It is not expected that you will be exposed to any risks or harmful situations during the course of this study. The results of the study will be analyzed and may be published in a national professional journal, but your results will be combined with those of other participants and will not be identifiable to you or to anyone. Your responses will be coded in such a way that we (Dr. Warber and her student) will not be able to identify you and or any other participant by your responses. This informed consent form will be kept in a separate file from the scores, and your responses will be untraceable to you.

If you agree now to participate in this study, please sign this consent form. You will be given a copy of this form to take home. If you have any questions about this study in particular, please contact Dr. Warber at (937) 327-7834 or kwarber@wittenberg.edu. If you have any questions about any harm that you think might result from this study, please contact Dr. Jeff Ankrom at (937) 327-7930. Your refusal to participate in this study will not result in any penalties to you by Wittenberg University, by Dr. Warber, or by the primary researcher, Lukas Treu.

I, _______________________________, (Please Print Your Name)
agreement [ ] (Please Check One Box)
do not agree [ ]
to participate in this study. (Please Affix Your Signature)

_____________________________________.

If you wish to be contacted regarding the nature and results of this study at its conclusion, please provide your email address below.

__________________________________________
## Appendix D

### Descriptive Statistics

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