

THESIS

HEURISTIC-SYSTEMATIC PROCESSING OF ENVIRONMENTAL MESSAGES:  
PROMOTING GREEN INITIATIVES TO COLORADO SKI RESORT VISITORS

Submitted by

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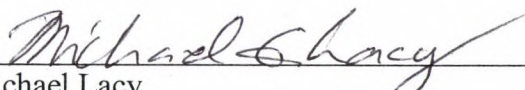
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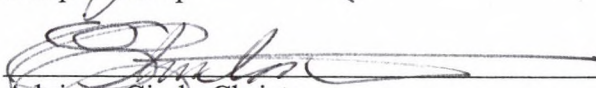
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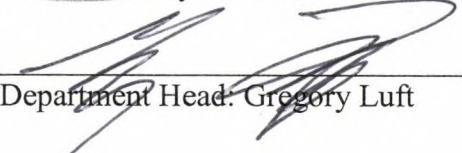
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## ABSTRACT OF THESIS

### HEURISTIC-SYSTEMATIC PROCESSING OF ENVIRONMENTAL MESSAGES: PROMOTING GREEN INITIATIVES TO COLORADO SKI RESORT VISITORS

This study examined the effects of environmental advertising by Colorado ski resorts on individuals' decisions to ski at those resorts. By applying Chaiken's (1987) Heuristic Systematic Model of Persuasion and Dunlap and Van Liere's (1978) New Environmental Paradigm, the researcher attempted to investigate an individual's cognitive processes, along with the effects of their preexisting levels of environmental concern, when processing ski resort advertisements emphasizing environmental initiatives.

A survey questionnaire was distributed to a convenience sample of 578 visitors at the Buttermilk resort (of Aspen Skiing Company), which is a company with many environmental initiatives; and Crested Butte Mountain Resort and Copper Mountain Ski Resort, which are companies with fewer environmental initiatives. After responding to questions regarding environmental concerns from the NEP scale, participants were exposed at random to one of three experimentally manipulated ski resort advertisements, which contained the same design, photographs and resort logos. However, messages were manipulated to emphasize environmental initiatives, affordability, or a mixture of

the two messages.

This study found that after exposure to an environmental advertisement, participants with high levels of environmental concern were found to be no more likely to list the environmental message before the heuristic cues. Consistent with the HSM, however, this study's results indicated that participants with low environmental concern were more likely to remember the heuristic cues than the environmental message.

Participants with higher levels of environmental concern were found to remember the environmental messages before the heuristic cues in the mixed advertisement, but no significant relationship was found between participants' levels of environmental concern and the order in which they recalled the items from the different advertisements. Finally, this study found that participants with higher levels of environmental concern indicated that they were more likely to return to a resort after exposure to an advertisement promoting the resort's environmental efforts.

These results together illustrate the importance of a person's motivation to scrutinize environmental advertisements. Furthermore, the location and complexity of these advertisements are key considerations for ski resorts wanting to promote their environmental efforts.

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## INTRODUCTION

Ski resorts continue to grow, in terms of popularity as well as expansion and development. The U.S. ski industry drew an estimated 60.5 million skiers and snowboarders to its slopes in the 2007-08 season alone (National Ski Areas Association, 2010). According to *Outside Magazine*, there are 481 operating ski resorts in the United States (Hightower, 2008). It is hard to ignore the fact that ski resorts create and continue to expand an ever-growing carbon footprint with energy use, forest cutting, water consumption, etc. However, the ski industry has caught the “green” fever that is taking over industries’ practices across the globe.

The green idea is a loose term corporations are currently using to describe whatever sustainable, conservational or other environmentally-conscious methods they practice (or attempt to practice). While this idea can take the forms in a variety of efforts, Makower (1993) recognizes that being “green” essentially means that a corporation is attempting to reduce waste and maximize resource efficiency (p. 5). According to *Green Biz* (2008), “green strategies” include, but are not limited to, use of alternative energy and transportation, certification of environmentally-friendly organizations, concern with climate change, biodiversity and land conservation, consumer messaging and labeling, energy efficiency, green building and product-design, recycling, water management, etc. (pp. 1-13). This way of thinking has impacted corporations, as well as consumers.



Consumers are beginning to consider sustainable and green efforts as important factors in their purchasing and corporate alliance decisions. Ski resorts have recently had to take these factors into consideration when marketing to potential visitors. Many resorts are incorporating green practices into their operations. Aspen Skiing Company, for example, installed a \$1.1 million dollar solar panel to help generate power to run its lifts, and Jiminy Peak resort in Massachusetts built a \$4-million, 1.5-megawatt wind turbine to provide almost half of the resort's power (Hightower, 2008). These resorts understand the importance of sustainable practices, and they are taking advantage of this prime opportunity to promote their accomplishments to the ever-growing, environmentally conscious consumer market.

Before they get to the mountains, interested consumers will find green advertisements across different travel and recreation magazines and websites. Once they get to the resort, advertisements promoting the resorts' green efforts are placed all over the resorts in highly visible and inventive places; for example, a visitor riding a ski lift will pull down the safety bar and find information about how that lift is run by wind energy. If a safety bar is not available, they will find posters on different ski towers or around the ski lodge that detail information about the resorts' green practices.

But even though these promotions may be numerous, the resorts in Colorado vary greatly in the amount of green efforts they actually implement. According to "Snow Job?" (Hightower, 2008), the Ski Area Citizens' Coalition released a statement in the fall of 2008 that rated 82 of the operating ski resorts (including 20 Colorado resorts) on their eco-performance, giving out grades from zero to 100. Further investigation revealed that three of the four Aspen/Snowmass resorts received "A's" in the 2009-10

season; Aspen Mountain received the top score in 2008 with a grade of 86.1%, Buttermilk received 85.7%, and Aspen Highlands received 80.3%. Snowmass mountain received a score of 72.4%, which the study ranked as a “B” grade. In the same study, Crested Butte Mountain Resort received a “C” grade of 62.7%, and Copper Mountain Resort received a “D” grade of 45%, which was the second lowest score among the Colorado ski resorts (Ski Area Citizens’ Coalition, 2009).

The purpose of this research was to study how different visitors identify and process various green efforts that these resorts perform and promote. Furthermore, this research attempted to characterize and quantify the level of environmental concern (if any) that plays a part in a visitor’s decision to purchase a lift ticket at the resort.

There is currently no known study that links environmental concerns with the Heuristic Systematic Model (Chaiken, 1987) and applies these theories to ski resorts. However, there have been many developments in research as applied to environmental concerns. Recent research indicates that consumers are beginning to appreciate socially and environmentally responsible organizations. Dunlap and Van Liere’s New Environmental Paradigm (NEP) Scale (1978) and the studies that employed this scale paved the way for ranking consumers’ environmental concerns. These previous studies provide the foundation on which this research is based in an effort to better understand the effects of environmental initiatives on purchasing decisions, while incorporating elements of persuasion in the process.

Chaiken’s (1987) Heuristic Systematic Model (HSM) provides an appropriate perspective for studying distinct features of message cognition and potential persuasion. After considering other persuasion and cognition models, the HSM provides the most



appropriate model for this study because of the opportunity for multiple cognitive processes to occur simultaneously. The HSM recognizes systematic processing (which involves more cognitive energy) and heuristic processing, which incorporates heuristic cues (short cuts) to aid in the cognitive process.

These heuristic and systematic features are similar to Petty and Cacioppo's (1985) Elaboration Likelihood Model (ELM) that distinguishes between central and peripheral processing. In the ELM, central processing involves more cognitive elaboration of a message, and peripheral processing relies on peripheral cues (i.e., source credibility) to activate or carry out the elaboration of a message. The HSM, however, suggests that both heuristic and systematic cognition efforts can occur simultaneously, which is more appropriate and applicable to this study. The researcher intended to recognize all three opportunities in which cognition can occur.

A brief survey questionnaire was conducted with 578 visitors at three resorts (Copper Mountain Resort, Crested Butte Mountain Resort, and Buttermilk Resort) to collect information about the visitor's decision process in choosing to purchase a ticket at a specific ski resort. The questions touched on reasons to visit the resort (ticket cost, distance, etc.), as well as the consumer's individual environmental attitudes, using Dunlap and Van Liere's NEP Scale (1978). The survey questionnaire included an experimentally-manipulated advertisement and questions relating to the advertisement, which attempted to uncover the different elements that the visitor noticed and remembered, and whether or not certain elements (such as an environmental message) influenced a person's purchasing decision.

This research recognized other factors that might also influence a visitor's purchasing decision, such as ticket prices, location (driving distance to resort), etc. In order to assess levels of environmental concern and message cognition as they apply to purchasing decisions, these other variables were controlled when performing the data analysis.

This survey was completed by a variety of visitors at each of the three resorts. By reaching different types of visitors, the survey was intended to cover questions that apply to audiences who might heuristically and/or systematically process advertised information about a resort's green efforts. Ultimately, this study attempted to uncover which cognitive processes a visitor will undergo and what (if any) environmental motivations fuel the cognition, as well as the different factors that influence purchasing decisions.



## LITERATURE REVIEW

In order to fully understand the “green” concept as it is applied to ski resorts, a further analysis of the resorts’ environmental practices and policies is needed. As explained earlier, several influential ski resorts are adopting sustainable practices. In fact, Colorado ski resorts are saving more than 241 million pounds of carbon dioxide from the Earth’s atmosphere each year (“Colorado Ski Country Forging a Greener Path,” 2006). Steamboat Ski Resort opened the first solar-wind powered lift in December 2006, which was the first of its kind in the world (“Colorado Ski Country Forging a Greener Path,” 2006). Over 62% of on-mountain waste at Vail Mountain is recycled, and Silverton Mountain ski area is literally built with recycled products: the base lodge came from the town of Silverton; the mountain’s lift was originally from Mammoth Mountain in California; and all mountain vehicles, lodge furnishings and carpet, and ski patrol toboggans and radios were donated (“Colorado Ski Country Forging a Greener Path,” 2006).

These efforts have not gone unnoticed, and many organizations are contributing to the resorts’ recognition. The Ski Area Citizens’ Coalition, based out of Durango, Colorado, is staffed with volunteers and personnel from Colorado Wild, the Crystal Conservation Coalition (Washington State), Friends of the Inyo (California) and The Sierra Nevada Alliance (California; Ski Area Citizens' Coalition, 2008). Most of the staff are skiers who recognize resorts’ environmental policies as they affect the

environment and “understand that skiing has significant, growing, and generally unacknowledged impacts” (Ski Area Citizens' Coalition, 2009).

The coalition provides an annual “scorecard” for 83 ski resorts across the United States in 11 states. The coalition’s grading method is based on different research materials, ranging from case studies to scientific literature (Ski Area Citizens' Coalition, 2009); the coalition also administers surveys to each of the ski areas in the Western U.S. with follow-up phone calls and email messages. Based on the research, the coalition rates the resorts based on a variety of weighted factors. The 2009-10 Scorecard rated the different resorts based on water and energy consumption, transportation, protection of water and environmentally sensitive areas, among other criteria (Ski Area Citizens’ Coalition, 2009). The scores with a letter grade are as follows: A = 77.9 – 100%, B = 67.9 – 79.9%, C = 57.9 – 67.9%, D = 39.9 – 57.9%, F = Less than 39.9%.

#### *Aspen Skiing Company*

As mentioned earlier, three of the four Aspen Skiing Company resorts received As on the Ski Area Citizens’ Coalition scorecard for their environmental practices, and Buttermilk Resort received an “A” with 85.7% (Ski Area Citizens’ Coalition, 2009). This company is known as a world leader for its environmental policies and practices, which began with a formalized recycling program in 1997 (*Green Biz*, 2008). From there, the company enforced the building of dirt half-pipes in the summer instead of using much-needed snow in the winter; they later converted the 40 mountain grooming machines to using renewable biodiesel fuel (*Green Biz*, 2008).

In 2004, the company became the first ski resort to receive an ISO 14001 certificate for meeting green guidelines set by the International Organization for



Standardization (Hightower, 2008). Each year, all four resorts are able to offset 100% of their energy use by generating nearly 300,000 mega-watt hours of wind power (Colorado Ski Resorts Forging, 2006). More recently, the company installed real-time energy-monitoring software and stopped buying Kleenex for the four resorts because of the brand's use of virgin paper from endangered forests (Hightower, 2008).

The efforts that have been implemented over the years can be credited to the company's environmental coordinator, Auden Schendler, who recently published his book, *Getting Green Done*, which tells of his struggles and successes with introducing "green" efforts to a multi-million dollar ski corporation. According to Schendler, "Business is designed to make money, and making money means creating more carbon emissions, often through growth" (p. 18). He notes, however, that "Sustainability means staying in business forever, whatever your business is. If you run a ski resort, that means you have to address climate change while also cultivating your business in many ways" (Schendler, 2009, p. 26).

In *Green Biz* (2008), Schendler is quoted saying:

"Our business is creating emissions – we fly people over here, we put them on lifts. The subtext is if you care about the planet, you should close down. But the solution is not to end capitalism. It's to make capitalism radically more efficient and less damaging to the environment. The corporate sector is part of the solution. In fact, by being leaders in ski area environmentalism and making a big deal out of it, Aspen Skiing Company has arguably forced the rest of the industry to change. If we stayed humble and quiet, other resorts wouldn't feel pressured to compete" (*Green Biz*, 2008, p. 3).

Whether or not they call it a competition, other resorts have started implementing their own environmental practices and have found various ways to promote their efforts. This study will also research the efforts of Crested Butte Mountain Resort and Copper

Mountain Ski Resort in an attempt to better understand the different audiences' responses to environmental messages.

### *Crested Butte Mountain Resort*

Crested Butte Mountain Resort received a "C" grade on their report card from the Ski Area Citizens' Coalition (2009). The resort received the lowest score for their habitat protection efforts but received an "A" for the ways that they have addressed climate change. The resort was rewarded for their efforts to replace over 700 incandescent light bulbs and numerous old boilers with more efficient models (Ski Area Citizens Coalition, 2009). The resort also is investing in biodegradable utensils, plates and bowls, and they recycle various products ranging from aluminum and tin to brown, clear and green glass (Ski Area Citizens Coalition, 2009).

John Sale, Director of Planning for the resort, recognized a change in the temperatures over the last five to 10 years and an impact in the resort's ability to make snow. In the 2009-10 season, the resort's snowmaking staff adapted to the warmer weather and waited for two weeks beyond their usual snowmaking start-date so that they could use the colder temperatures to their benefit and save 22% of their electric bills compared to the previous season (Horn, 2010). They continued to monitor and evaluate nightly conditions and the snowmaking operations, as well as reducing the air output of the snowguns by 1,000 cfm. In addition, the resort ran one fewer snowcat in the 2009-10 season and spent more than \$18,000 on an "experimental power surge protection device" on one of the resort's main lifts, which will reduce electrical energy use by more than 20% (Horn, 2010).



### *Copper Mountain Ski Resort*

In the same study performed by the Ski Area Citizens' Coalition, Copper Mountain Ski Resort received a "D" score, which is the second lowest score among Colorado ski resorts (Ski Area Citizens' Coalition, 2009). The resort received lower scores from the coalition's scorecard in the areas of development, protecting endangered species habitats, and water conservation by avoiding new snowmaking (Ski Area Citizens' Coalition, 2009).

Even though it received a lower score from this coalition's scorecard, Copper Mountain Ski Resort is taking steps toward becoming a more sustainable company. The resort's environmental coordinator, Jennifer Schenk, and the "Copper Green Team" wrote the resort's first environmental mission statement in 2009, with the main goals of conserving energy, reducing and recycling waste, actively participating in the community, and protecting the lands (2009 Environmental Report, 2009). The 2009 environmental report highlights this mission, as well as some of the main environmental initiatives the resort enforced during the year. These initiatives include: the resort's first solar project; the resort's first annual carpooling celebration; and the first vehicle that uses vegetable oil waste from restaurants as fuel (2009 Environmental Report, 2009).

### **Environmentally conscious audiences**

These companies may be implementing new initiatives at their resorts, but environmental concern is not a new concept for their visitors. A shift of public concern toward environmental issues has been traced to the early 1970s (Bhat, 1996; Cairncross, 1992). In "Public Opinion and Environmental Policy," Dunlap suggests the beginning of the attitudinal shift in the United States began around the first Earth Day in 1970

(Dunlap, 1995). Shortly thereafter, several legislative pieces were addressed and enforced, including the Clean Air Act of 1970, Resource Conservation and Recovery Act of 1976, and Clean Water Act of 1977 (Cairncross, 1992).

Dunlap conducted a trend study between 1970 and 1976, polling 800 residents in the state of Washington in regard to what they believed were the “Most Important Problems.” Dunlap suggests that these MIP questions and data serve as “good indicators of the salience of an issue to the public” (Dunlap, 1995). In 1970, 44 percent of respondents noted that reducing air and water pollution was “one of the two most serious problems facing their state and their communities from a list of 11 potential problems.” This number dropped to 18 percent in six years (Dunlap, 1995). This research influenced Dunlap to participate in another study that further illustrated different levels of environmental concern, from which this current study is modeled.

### *The New Environmental Paradigm*

Dunlap and Van Liere’s New Environmental Paradigm (NEP) scale (1978) provides an appropriate set of measures to use when studying levels of environmental concern among a variety of audiences. The researchers conducted a survey of two systematic-probability samples of Washington state residents in 1976. One sample consisted of the General Public Sample (GPS), whose names were drawn from telephone directories for every community in the state (Dunlap & Van Liere, 2008). The other, the Environmental Organization Sample (EOS), represented the membership of a state-wide environmental organization (Dunlap & Van Liere, 2008).

The first half of the survey related to the respondents’ perceived quality of life, perceived state and local problems, and other personal information. The second half



consisted of 35 Likert-type items, 12 of which focused on the respondents' environmental concerns to measure the NEP. Respondents were asked to indicate the extent to which they agreed or disagreed with statements like, "We are approaching the limit of the number of people the earth can support" and "Humans must live in harmony with nature in order to survive." Other items included, "Mankind was created to rule over the rest of nature," "Humans have the right to modify the natural environment to suit their needs," and "Plants and animals exist primarily to be used by humans." Respondents selected one of four responses for each statement: "Strongly Agree," "Mildly Agree," "Mildly Disagree" and "Strongly Disagree." The items that best represented the aspects of the NEP focused on "limits of growth, balance of nature, anti-anthropocentrism, etc." (Dunlap & Van Liere, 1978, p. 21).

Eight of the questions were worded so that agreement would indicate acceptance of the NEP, while agreement to four of the other questions would indicated disagreement with the NEP. (Scoring for these four statements was reverse coded in the data analysis.) Participants who scored a total of 12 showed "complete rejection of the NEP," and those who scored a total of 48 "reflected complete acceptance of the NEP" (Dunlap & Van Liere, 1978, p. 23).

As predicted, the researchers found that the sample who represented the environmental organizations (EOS) strongly endorsed the NEP. Additionally, and somewhat surprising to the researchers, the data suggested that the general public was accepting of the NEP ideas as well (Dunlap & Van Liere, 1978).

Based on the researcher's current knowledge, there is no study that applies the Dunlap and Van Liere's (1978) NEP scale to ski resort visitors, but this scale was

intended to provide an appropriate method of measuring participants' levels of environmental concern. This scale was applied to this study with minimal modifications.

### **Environmental concern and purchasing decisions**

There are existing studies that help illustrate the cognition process in relation to environmental levels and purchasing decisions for various products. While none of these studies applied the HSM or the NEP scale to the ski industry, they do provide information of purchasing decisions as they apply to levels of environmental concern.

Research shows that environmentally friendly labels on products are appealing to consumers (Shena & Saijo, 2008), and consumers are even more likely to pay more for items that are friendly to the environment (Bjorner, Hansen and Russell, 2002).

Other studies have applied the Dunlap and Van Liere's NEP scale (1978) to researching the development of environmental attitudes and the influences these attitudes have on a person's interest in certain events or attractions. Ewert, Place and Sibthorp (2004) used a modified NEP scale to study the effects of early-life experiences on a person's environmental beliefs. Their research indicated that media exposure, witnessing negative environmental events, consumptive outdoor activities, and appreciative outdoor activities helped explain an individual's environmental attitudes (p. 237). Furthermore, the researchers found that other factors, such as parents and peers, could also influence the development of environmental attitudes.

Kim, Borges, and Chon (2006) applied a modified NEP scale to study people's motivation to attend a festival in Goias, Brazil and found that participants were more likely to attend the festival because of its environmentally related attractions. Luo and



Deng applied the NEP to a study of tourists' environmental attitudes and the influences on Nature-based tourism (NBT; 2008). They found that environmental attitudes and the NBT motivations are "closely and positively related" (399).

### **Heuristic Systematic Model of Persuasion**

The Heuristic Systematic Model of Persuasion (HSM; Chaiken, 1987) will be applied to this study to gain a better understanding of a person's attention and cognition to environmental advertisements, and whether or not those advertisements have any effect on the person's future decision to purchase a ticket at that resort.

This theory was "explicitly developed to apply persuasion settings in which the individual's dominant motivational concern could be assumed to be the desire to form or to hold valid, accurate attitudes" (Chaiken, Liberman, & Eagly, 1989, p. 214). The HSM distinguishes two key processes: heuristic and systematic information processing. According to de Vries and Midden (2008), "Heuristic processing is the default mode; when people feel a need to be more certain about their evaluation, e.g., when the outcome of the evaluation is important, they may engage in additional systematic processing" (p. 2). Chaiken et al. echo this idea and propose that attitude change can occur even when people are not applying careful mental energy in processing information (1989).

Heuristic processing is most likely to occur when the receiver may not be highly motivated or might not be able to think thoroughly about the message for other reasons including distractions, time constraints, etc. The heuristic principles, according to O'Keefe (2002), are an important part of simple decision procedures, which require little

information processing, as mentioned above. As Zanna (1993) said, “Heuristics are rules or assumptions that we use to simplify the world” (p. 145).

Heuristic cues are “learned decision rules that people acquire over time” and can trigger the following principles: a receiver will draw from prior knowledge of the message, issue, and communicator to form a judgment on the new message (Pfau & Wan, 2006, p. 114). As Todorov, Chaiken, and Henderson (2002) note, “People induced to process persuasion information systematically differentiate between strong and weak arguments and are unaffected by variables irrelevant to substantive message content.” (p. 196). The HSM theory recognizes and sympathizes with the “information overload” to which people are exposed, and heuristics offer a shortcut to information processing and decision-making. According to Kardes (1993), consumers are bombarded with an overwhelming number of advertisements each day. “Rather than performing a systematic and exhaustive analysis on all available information, the consumer is often forced to use heuristics or short cuts to simplify judgment and decision making” (p. 179).

Systematic processing, on the other hand, is most likely to take place in situations when the receiver is highly motivated to scrutinize the message (Chaiken et al., 1989). Perceived importance of the message can presumably trigger systematic processing. People who process a message systematically will apply more mental energy in scrutinizing the validity of the communicator and message, while relating the new information to previous knowledge of the issue.

According to Todorov et al. (2002), “Persuasion in a systematic mode is mediated by a person’s understanding and cognitive elaboration of the persuasion



message.... Systematic processing consists of extensive processing of persuasion arguments and is therefore constrained by the person's cognitive resources and motivation" (p. 197). According to Chaiken et al. (1989), people are constantly generating and rehearsing their own idiosyncratic thoughts to new information, as well as attempting to relate message information to their existing knowledge of the issue. Therefore, "the polarity of one's issue-relevant thoughts ... is a good predictor of post message attitude change, especially when a person's motivation and ability to think are high."

The unique aspect of the HSM that sets it apart from other dual-process models is the hypothesis that a receiver can process a message using both heuristic and systematic information processing. This theory indicates that a person can employ heuristic cues to aid in the cognitive process when systematic processing, or heuristics alone, do not increase the level of a person's confidence in his or her decision (Roskos-Ewoldsen, 2007). As Biel and Dahlstrand (2005) suggest, "Although systematic processing is assumed to predominate at high levels of motivation, and heuristic at lower levels, heuristic processing is not eliminated at higher levels... Although people may be motivated to apply systematic processing, they could easily fall back on heuristics" (p. 35). In order to understand the possibilities of persuasion, the HSM theory takes a deeper exploration into the additivity, attenuation, and bias factors that hypothesize constraints or complements to the persuasive process.

According to Todorov et al. (2002), "When the judgmental implications of heuristic cues and arguments are consistent, heuristic and systematic processing can have independent and additive effects on persuasion" (p. 199). This supports the

additive hypothesis of the HSM. For example, a receiver asked to evaluate a consumer product undergoes both heuristic and systematic processing if they base their decision on a brand name (heuristic) that is consistent with the perceived implications of the product's attributes (systematic). This combination of processes adds to the persuasive effort (Todorov et al., 2002).

The attenuation hypothesis of the HSM suggests that “in a situation where the implications of heuristic and systematic processing are in opposition, the implications derived from systematic processing can overwrite or attenuate the impact of heuristics given that people are sufficiently motivated” (Todorov et al., 2002, p. 199). For instance, a person with high motivation and previous knowledge of a consumer product will base their judgments on their knowledge of the product's attributes, even if an advertisement presents credibility or consensus information inconsistent with the consumer's previous knowledge (Todorov et al., 2002).

And finally, in dealing with bias, Chaiken et al. (1989) recognize that messages may consist of a mixture of weak and strong arguments. Therefore, the same message might be interpreted differently by receivers who have varying perceptions of the message and its communicator's reliability. Every person will have a different mental database of heuristic cues and principles from which they draw to process information. These cues (i.e., logos, slogans, iconic images, celebrity spokespeople, etc.) are stored in a person's memory and later accessed for cognition. According to Todorov et al. (2002), “The bias hypothesis states that an ambiguous persuasion message can be interpreted in line with a preceding cue even if people are highly accuracy motivated” (p. 200).



## *Motivation*

As previously mentioned, motivation plays a large part in the cognition and persuasive processes. In the simple breakdown of heuristic or systematic processing, motivation is a defining element in how much effort a message receiver will spend in scrutinizing the message. Hallahan's (2000) research describes motivation as represented in "topic involvement" and "moderates the linkage between exposure, cognitive processing and attitude formation" (p. 466). The HSM theory goes further to provide different types of motivation to describe this process. Accuracy, defense, sufficiency, impression motivation as well as a hybrid of motives are important factors to consider for this theory (Chaiken, 1987; Todorov et al., 2002)

The HSM was initially based on the assumption that people are motivated to reach accuracy and to achieve valid attitudes that are consistent with their version of reality (Chaiken 1987; Todorov et al., 2002). The HSM theory includes two key factors about accuracy motivation: accuracy motivation does not exclude biased processing; and accuracy can be achieved either by systematic or heuristic processing, or both (Todorov et al., 2002). The motivation to reach accuracy will vary based on a receiver's actual and desired confidence on a particular issue. For example, a person will be more motivated to apply systematic processing of information in which their actual confidence is lower than his or her desired confidence (Todorov et al., 2002).

Contrary to accuracy motivation, defense motivation can be described as the "closed-minded form of processing" (Todorov et al., 2002, p. 202). This type of motivation can also be reached through systematic or heuristic processing, or both; the HSM suggests that a receiver will scrutinize the same heuristic principles as in accuracy

motivation, though they will be more selective with the principles they apply to the persuasive process. This hypothesis is based on the assumption that people will defend attitudes and beliefs that are consistent with the person's prior beliefs, knowledge and interest. "The defense-motivated person tries to preserve one's self-concept and associated worldviews" (Todorov et al., 2002, p. 202).

The sufficiency principle, according to Chen and Chaiken (1999), recognizes the "economy-minded" information processors whose decisions are guided in part by a "principle of least effort" (p. 74). The principle suggests that a person will attempt to find a balance between minimizing cognitive effort while satisfying their motivational concerns (Chen & Chaiken, 1999). Furthermore, the principle proposes a combination of accuracy and defense motivation; a receiver will process information that reinforces their self-definitional attitudes, but go no further to reach an accurate judgment (Todorov et al., 2002).

This principle is based on the idea of the sufficiency threshold, which holds that once a person reaches the level of desired confidence about an issue, he or she will not expend any more cognitive effort to process additional information (Taylor & Fiske, 1978; Chaiken, Liberman, & Eagly, 1989; Eagly & Chaiken, 1993). This threshold also is based on the idea that if a person's actual level of confidence is lower than the sufficiency threshold, he or she will be more motivated to systematically process the information to increase his or her confidence in the issue (Levin, Nichols, & Johnson, 2000). As Chaiken et al. (1989) describe:

Its motivating effect on systematic processing can be understood by assuming that increased personal relevance enhances recipients' desires to attain valid attitudes. Because they should therefore aspire to attain greater confidence in their assessment of message validity, their sufficiency thresholds should be



higher on the judgmental confidence continuum. Because the likelihood that recipients will attain their sufficiency thresholds via heuristic processing decreases as these thresholds increase, recipients who encounter personally relevant messages should generally exhibit heightened levels of systematic processing. (p. 223)

Impression motivation is based on a person's desire to fit into society while expressing socially acceptable attitudes. This type of motivation is most closely related to defense motivation, in that the receiver will be selective as to which heuristic principles they use to process the information. Key heuristic principles come into play here; if a person is interacting with another person who has unknown views, they might draw from the principle that "moderate opinions minimize disagreements" to avoid confrontation. On the other hand, if a person is less confident in discussing a topic with a partner who is well-informed and highly confident in their knowledge of the issue, he or she might use the heuristic, "go along to get along" (Todorov et al., 2002). Impression motivation also strives to satisfy a person's social goals; it follows the sufficiency principle to fulfill a person's immediate concerns and social goals. "If the sufficiency threshold is high and heuristic processing does not close the gap between actual and desired confidence, people may engage in systematic processing that is biased toward achieving their social goals" (Todorov et al., 2002, p. 203).

It is important to note the HSM theory's potential for an influence of multiple motives in the persuasive process. "Perceivers may at times engage in hybrid forms of motivated processing in their efforts to satisfy multiple goals" (Chen & Chaiken, 1999, p. 79). However, researchers have recognized that multiple motivations can undermine a person's ability to systematically process information without bias.



### *Availability and Accessibility of Information*

Once a receiver's motivation has been identified, other factors need to be considered with how much time and energy the receiver will put toward processing and scrutinizing the message. The amount of availability, accessibility, and applicability to information in a receiver's memory will have a direct effect on the motivation element described previously (Stiff & Mongeau, 2003). Message availability, as Stiff and Mongeau (2003) describe, is simply the existence of information that is stored and available in the receiver's memory that can be triggered to assist heuristic or systematic processing, or both.

Accessibility, on the other hand, is measured by the length of time required for a person to process information and evaluate an attitude to its presentation. In persuasion theories like the HSM, researchers focus on attitude accessibility of a receiver when processing information. According to Roskos-Ewoldsen, Arpan-Ralstin, and Pierre (2002), "The human memory is a highly integrated network of concepts, attributes, and beliefs." It acts as a living database, and each acquired piece of information is called a "node" (Anderson, 1990). Nodes are connected by associated pathways and remain inactive until activated by new information; a node that is connected to several nodes will have a greater likelihood of repeated activation. Accessibility to an attitude is based on the frequency of the activation of a particular concept and its underlying nodes. The more frequently a node is activated, the more accessible the information will be to the message processor; therefore, concepts that have been recently and frequently activated will temporarily be more accessible from memory (Anderson, 1990).

Research suggests that systematic processing of a message will result in more accessible attitudes from memory. Furthermore, attitudes that the person finds to be important will be more accessible from memory because of the cognitive work and energy expended in the processing and storing of the information into memory (Chaiken et al. 1989). As Fazio, Herr, and Olney (1984) found, when a person repeatedly expresses an attitude or behavior toward an object or situation, it becomes more accessible for future activation. According to Bargh and Pratto (1986), the “frequency of use of a cognitive process results in its becoming more efficient, and eventually in its automation” (p. 296). Conversely, research has indicated that easily accessible attitudes toward a message or issue will most likely result in systematic processing of the message (Fabrigar, Priester, Petty, & Wegener, 1998).

Attitude accessibility can play a part the persuasive process, including its effects on the orienting of attention and attitude to the message, how extensively a message is processed, and whether or not the information will be processed in a biased way (Roskos-Ewoldsen et al., 2002). As mentioned earlier, attitudes and attitudinal nodes that are frequently activated are easier to process; therefore, in situations of low motivation and high actual confidence, a person might take the heuristic approach and spend less energy processing new information and rely on existing, activated nodes.

Research by Roskos-Ewoldsen, Bichsel, and Hoffman (2001) suggests that the attitude toward the source would not lead to biased processing; rather, the attitude toward the source indicates to the receiver whether or not the message contains important information. The experiment’s results also indicated that participants did not dispute a message’s content when the likeability of the message’s source was more



accessible from memory, even when the message was counterattitudinal with weak arguments and motivation to process the information was low. Furthermore, if a receiver can easily access a disliked attitude toward a source, the activation of that negative attitude will most likely result in the receiver disagreeing with, or even avoiding entirely, the message (Roskos-Ewoldsen et al., 2001).

While this prior research provides a foundation for this current study, there is a lack of research linking the HSM with levels of environmental concern. This study replicated previous studies using a sample of ski resort visitors in an attempt to gain better insight to their cognition of environmental messages, their existing levels of environmental concern and, ultimately, their purchase decision.

With these purposes in mind, the following hypotheses were proposed:

H1: Environmental Advertisement Condition

H1A: Environmental Message

H1Ai: After exposure to an environmental advertisement, visitors with higher levels of environmental concern will be more likely to recall the environmental message than visitors with lower levels of environmental concern.

H1Aii: After exposure to an environmental advertisement, visitors with higher levels of environmental concern will recall the environmental message earlier than visitors with lower levels of environmental concern.

H1B: Heuristic Cues

H1Bi: After exposure to an environmental advertisement, visitors with lower levels of environmental concern will be more likely to recall the heuristic cues than visitors with higher levels of environmental concern.



H1Bii: After exposure to an environmental advertisement, visitors with lower levels of environmental concern will recall the heuristic cues earlier than visitors with higher levels of environmental concern.

H2: Mixed Advertisement Condition

H2A: Environmental Message

H2Ai: After exposure to a mixed advertisement, visitors with higher levels of environmental concern will be more likely to recall the environmental message than visitors with lower levels of environmental concern.

H2Aii: After exposure to a mixed advertisement, visitors with higher levels of environmental concern will recall the environmental message earlier than visitors with lower levels of environmental concern.

H2B: Heuristic Cues

H2Bi: After exposure to a mixed advertisement, visitors with lower levels of environmental concern will be more likely to recall the heuristic cues than visitors with higher levels of environmental concern.

H2Bii: After exposure to a mixed advertisement, visitors with lower levels of environmental concern will recall the heuristic cues earlier than visitors with higher levels of environmental concern.

H3: Budget Advertisement Condition

H3A: After exposure to a budget advertisement, there will be no difference in likelihood of recalling the budget message and heuristic cues between visitors with higher or lower levels of environmental concern.

H3B: After exposure to a budget advertisement, there will be no difference in the likelihood of recalling the budget message and heuristic cues earlier between visitors with higher and lower levels of environmental concern.

H4: Likelihood of Returning to Resort

H4A: After exposure to an environmental or mixed advertisement, visitors with higher levels of environmental concern will be more likely to return to that resort than visitors with lower levels of environmental concern.

H4B: After exposure to a budget advertisement, there will be no difference in likelihood to return to that resort between visitors with higher or lower levels of environmental concern.

## METHODOLOGY

In order to understand the cognitive processes used when interpreting different elements in a ski resort advertisement, a quasi-experimental survey was conducted. This study employed a 3 x 3 design; the independent variables were a ski area advertisement message (high environmental aim, low environmental aim, or a mixture of both). This study was conducted at three different ski resorts: Buttermilk Resort of Aspen Skiing Company (high environmental initiatives), Crested Butte Mountain Resort (medium environmental initiatives) and Copper Mountain Ski Resort (low environmental initiatives). The dependent variable were a person's likelihood of recalling the message and heuristic cues, the order in which message and heuristic cues were recalled, and a person's motivation to purchase a ski ticket for the resort in the future.

An experimental/quasi-experimental design was chosen to permit one-time exposure to an advertisement in a familiar and comfortable setting to the participants while attempting to control for outside influences and distractions that might have interrupted the cognition of these experimentally manipulated advertisements. Researchers studying the effects of one-time exposure of a stimulus advertisement found significant differences in emotional responses between their participants (Moore, Harris, & Chen, 1995). Researchers who used the HSM in studying the effects of exposure to advertisements in an experimental setting also found significant differences in the



amounts of cognitive processing that participants experienced (Jain, & Maheswaran, 2000).

### **Participants**

A convenience sample was used to sample ski resort visitors. The researcher first conducted the study at Copper Mountain Ski Resort, then Crested Butte Mountain Resort, and then Buttermilk Resort. A total of 578 visitors participated in this study; 186 were completed at Copper Mountain Ski Resort, 195 were completed at Crested Butte Mountain Resort, and 197 surveys were completed at Buttermilk Resort. Three-hundred and seven male visitors and 263 female visitors completed the survey questionnaire (eight individuals did not indicate their gender). Each participant was randomly assigned one of the three versions of the advertisement; the pile of survey questionnaires was randomized prior to distribution using a random numbers table.

All participants were 18 years of age or older and were asked to confirm this during the researcher's invitation to participate. This age group was selected because of their role as decision-makers in deciding to ski at a particular resort as well as their more fully formed environmental attitudes.

### **Locations**

This research was conducted over three weekends at the three resorts. Prior to survey administration, the researcher obtained letters of cooperation from the participating resorts, which includes a list of arrangements for the study. By signing this letter, Jeff Hanle, the public relations director for Aspen Skiing Company, John Sale, Director of Planning for Crested Butte Mountain Resort, and Lauren Pelletreau for

Copper Mountain Ski Resort granted permission to the researcher to administer the survey on-site at each of the resorts (see Appendices A, B, C).

The researcher communicated with each of these individuals to negotiate the times of arrival and the locations in which to set up the materials. The researcher provided all of the equipment needed to conduct the study; however, the resorts provided tables in appropriate locations for the study to take place.

### **Procedure**

The research was conducted over the course of three weekends throughout the end of January and into the beginning of February 2010. In each of these occasions, the researcher was accompanied by at least one assistant to monitor the table on which the surveys were displayed; however, the survey questionnaires were administered only by the researcher. This table was decorated with signs that advertised the study and displayed the stickers and candy that were available to participants. The researcher and assistant(s) arrived at each resort to prepare for survey administration prior to the running of the first chairlifts. After the team had set up, the researcher walked around to promote and administer the survey; the research assistants directed all questions regarding the study to the researcher.

The researcher greeted each visitor with a brief introduction by shaking his or her hand, and saying, "My name is Taylor Stonehouse. I am a graduate student at Colorado State University, and I am writing my thesis on advertising at ski resorts. Will you please take this survey? It will take about ten minutes. By helping me, you will receive a sticker of your choice and you can enter to win a \$50 certificate. You do not need to be present to win. This survey is anonymous, so please do not write your name



or any personal information on the questionnaire. If you wish to participate in the drawing, please write your name and the best telephone number to reach you on this separate sheet of paper which will go in this container for the drawing.”

Each participant was invited to provide his or her name and phone number on a separate piece of paper for the drawing. This piece of paper was placed in a container separate from the survey questionnaires, and all contact information was destroyed once the winner’s name was drawn and contact was established with the winner. The researcher sent the \$50 gift certificate to the recipients the day following the survey administration.

Each participant was provided with a pen, and the researcher provided directions to filling out the survey questionnaires. The researcher was available to answer any questions the participants had. Participants were instructed to answer honestly and to fill out as much as they could remember for the open-ended questions. Each section in the survey questionnaire provided brief instructions as well. Directions on the page preceding the advertisement instructed the participants to consider the advertisement and then turn the page. Participants were then asked to answer the questions following the advertisement by memory and without looking at the advertisement. Finally, participants were instructed to read the debriefing statement on the back of the survey questionnaire.

At Copper Mountain Ski Resort, the researcher and her team of two assistants set up the table in Jack’s Lodge, a popular restaurant/bar at the base of the mountain. Stickers from the resort and candy were provided to participants, as well as an anonymous entry to win a \$50 Copper Card, which could be used anywhere at the resort.

The researcher recruited participants by explaining these details. In approximately six hours in one day at the resort, 186 surveys were completed.

At Crested Butte Mountain Resort, the researcher and one assistant set up the table at the base of the Treasury Center. Stickers from the resort and candy were provided to participants, as well as an anonymous entry to win a \$50 gift card to Thin Air Sports, a clothing/gear store at the resort. However, very few people passed by the table to complete the surveys; in two hours, there were less than 20 surveys completed. The researcher received permission to relocate to Butte 66, a restaurant/bar on the top level of the Treasury Center. Using the same recruitment strategy, the researcher was able to receive 195 completed surveys in approximately seven hours on one day at the resort.

Finally, at Buttermilk Resort, the researcher and one assistant set up a table on the second floor of the main lodge. Stickers from the resort and candy were provided to participants, as well as an anonymous entry to win a \$50 gift card to Target. Throughout the course of a six-hour day, 197 surveys were completed.

## **Measurement**

The survey questionnaire consisted of five parts, which were clearly indicated on the questionnaire (see Appendix E). The questionnaire was printed on 11 by 17 inch paper.

### *Part 1: Association with resort*

Questions regarding the participant's association with the resort and reasons for visiting the resort appeared at the beginning of the survey questionnaire (see Appendix



D). These questions were aimed at understanding the person's main reasons for visiting the resort. While environmentally based responses were provided, they were embedded within five other responses to minimize biased responses. Several participants selected "Other" when asked their reason to visit the resort; the researcher coded these responses and created six additional categories to accommodate other responses.

Other questions in this section pertained to the visitor's travel distance to the resort, how frequently they visited the resort, and what type of pass they purchased. These questions served as control variables during data analysis.

#### *Part 2: Environmental attitudes*

The next set of 11 questions was based on Dunlap and Van Liere's (1978) New Environmental Paradigm (NEP) Scale. These questions assessed both pro- and anti-environmental attitudes. Scoring for anti-environmental attitudes items were reverse coded prior to data analysis. Because Dunlap and Van Liere (1978) found high predictive, construct and content validity in the NEP scale (p. 25), this study applied the exact wording of items used in the 1976 survey, with the exception of one statement regarding economy ("To maintain a healthy economy we will have to develop a 'steady-state' economy where industrial growth is controlled"). This question did not apply to the study at hand and was therefore eliminated. The responses provided also followed the original survey; there was a set of four answers in relation to each statement ("Strongly Agree," "Mildly Agree," "Mildly Disagree," and "Strongly Disagree").

### *Internal Consistency and Factor Analysis of NEP Scale*

In order to test the reliability of these 11 questions, the researcher first computed mean responses for each item and entered these means to take the place of missing values. The researcher then ran a reliability test using the 11 questions. These variables proved to be reliable, with Cronbach's  $\alpha$  of .86.

The researcher then conducted a factor analysis using Varimax rotation and an eigenvalue of 1. Two potential factors were recognized; however, the 11 items were reliable as a set at Cronbach's  $\alpha = .86$ ; therefore, the decision was made to construct a single scale composed of all 11 items. While Dunlap's and Van Liere's NEP Scale (1978) applied an additive index, the decision was made to add each participants' scores and divide by the number of items (11) to restore the 4-point scale, to facilitate interpretation of results. In order to determine the variation between participants' levels of environmental concern, participants were divided by their mean scores into categories of low ( $M < 2$ ), medium ( $2 \leq M < 3$ ) and high ( $M \geq 3$ ) categories. However, only 26 participants received a low NEP score, so it was decided to combine the participants who fell into the categories of low and medium scores to enhance the ability to detect significant results.

### *Part 3: Advertisement manipulation*

As shown in Appendix E, each questionnaire contained one of three manipulated print ski resort advertisements that the researcher created. Each advertisement contained one of three different messages, but the same heuristic cues (readable font, small logo of the resort, images of a snowboarder, two attractive girls and a skier going off a cliff). Substantial effort was made to ensure that each advertisement looked professional and



comparable to actual advertisements. No indication was made (until the debriefing statement) that the advertisement was created and manipulated by the researcher.

Advertisement 1 (high environmental focus) contained the message:

“Friendly to the environment. Our resort is dedicated to providing you with fun in the sun and snow, while protecting our planet.”

This advertisement promoted the sustainable efforts that the companies were practicing, and the messages were similar to those used in Aspen Skiing Company’s Save Snow campaign.

Advertisement 2 (mix of focuses: environmental and affordability) contained one message with two components: “Friendly to the environment. And your wallet. Our resort is dedicated to providing you with fun in the sun and snow, while working hard to protect the planet and your budget.” The first component was the same as in Advertisement 1, and the second component was based on the resort’s affordability.

Finally, Advertisement 3 was the same as the second message component in Advertisement 2, with the focus on affordability: “Friendly to Your Wallet. Our resort is dedicated to providing you with fun in the sun and snow, while working hard to protect your budget.”

After exposure to the advertisement in the survey questionnaire, participants were asked to respond to two open-ended questions. First, participants were asked to list what they remembered in the advertisement. The participants were then asked to review their opinion as to what they thought was the focus of the advertisement. These qualitative measures were chosen in addition to the the closed-ended questions to permit them to share their own thoughts about the advertisement. As researchers have found,

open-ended surveys have generated significant findings to aid in the understanding of environmental concerns (Tanner, 1980; Chawla, 1998, Votaw, 1983). Finally, based on the advertisements, the participants were asked how willing they were to return to the ski resort using a five-point scale (very likely, somewhat likely, neutral, somewhat unlikely, very unlikely).

#### *Part 4: Demographics and environmental behaviors*

The next nine questions were the final questions asked on the survey questionnaire. The first five questions asked about the participant's demographic characteristics, such as gender, income level, and race. The next four questions focused on participants' time spent outdoors, recycling habits and membership of various organizations. Lasonde (1994) found that a person's level of involvement with environmental issues (which includes involvement in environmental organizations) has an effect on the decisions he or she makes to engage in certain types of environmental behavior, such as recycling habits and purchase of environmentally friendly products (p. 76). The final question asked the participant to select from a checklist those non-profit organizations for which he or she was an active member. The checklist items varied from religious organizations to community leadership groups, and an environmental response was embedded within the other choices.

#### *Part 5: Debriefing Statement*

A short debriefing statement was printed on the back of the survey questionnaire. The statement informed the participants of the researcher's goals for the study and that the participants received one of three advertisements in his or her survey. This



statement also explained that each of the advertisements contained one of three different messages (environmental, mixed, or budget) and that the advertisement was created for the purpose of the study. At the end of the statement, the researcher provided the contact information for both the principal investigator and the co-principal investigator in case participants had questions.

### **Pretest**

The researcher obtained approval from the Colorado State University Institutional Review Board before any survey questionnaires were administered. After receiving approval from the Institutional Review Board, the researcher conducted a pretest with a convenience sample of 20 students at Colorado State University. This pretest was confidential and voluntary to all participants. A short discussion followed the completion of the survey questionnaires, which provided helpful criticisms and suggestions for the researcher to revise the survey questions for clarity and conciseness. The researcher changed the wording for the answers in the likelihood to return question from “likely” to “neutral” and edited the questions and answers in Part 4 for conciseness and a more parallel structure.

### **Data Analysis**

After all data were collected from the three resorts, the researcher entered the quantitative data into PASW. The researcher then typed each qualitative response found in Part 3 of the survey questionnaire into a Microsoft Excel document and color-coded each response. Once a color and code were determined for every answer, the researcher entered the qualitative codes into PASW to be used for data analysis.

### *Coding of Open-Ended Questions*

Open-ended responses were divided into 10 mutually exclusive and exhaustive categories, four of which involved message elements, four involved heuristic cues, and two categories in which unusual responses were placed: environment (message), budget (message), other (message), girls (cue), extreme skiing/snowboarding (cue), snow/mountain/powder/etc. (cue), pictures/images (cue), logo (cue), other, and ambiguous. The researcher determined the presence (1) or absence (0) of each variable; if a variable was present, the researcher then noted the order in which the variable was listed. Only responses 1-4 were considered in the analysis; responses 5-7 were recoded as a fourth response. The responses that were entered into the “mixed” message category were broken up into environment and budget message categories and assigned a different order for each.

All tests run in analysis included the variables Ad Cue Message: Environment, Ad Cue Message: Budget, Ad Cue: Girls, Ad Cue Extreme Skiing/Snowboarding, Ad Cue: Snow/Mountain/Powder, Ad Cue: Pictures/Images, and Ad Cue: Logo. Analysis conduction excluded the variables Ad Cue Message: Other, Ad Cue: Other, and Ad Cue: Ambiguous. The researcher did not consider these variables during the analysis because of the vague, unclear or outlying responses that were present in these categories.

### *Inner-Coder Reliability Test*

Using a random numbers table, the researcher randomly selected 116 (20%) surveys with which the inter-coder reliability test was conducted. After short instruction from the researcher, another graduate student from Colorado State University’s



Journalism and Technical Communication Department assigned colors and codes to the open-ended survey answers. The researcher found 87% agreement by comparing the two sets of color-coded answers.

## RESULTS

### *Manipulation Check*

To test the advertisement manipulation, a chi-square test was conducted on the open-ended “Focus of the Advertisement” question. Participants’ first response was coded as either present or absent into the same categories used for the open-ended questions (Ad Cue Message: Environment, Ad Cue Message: Budget, Ad Cue: Girls, Ad Cue Extreme Skiing/Snowboarding, Ad Cue: Snow/Mountain/Powder, Ad Cue: Pictures/Images, and Ad Cue: Logo). As expected, participants indicated that they thought that the environmental advertisement had an environmental focus, and those who were exposed to a budget advertisement indicated that they thought the focus was based on affordability. Responses that indicated that the focus of the advertisement was based on the heuristic cues were evenly distributed across all three advertisement condition. The test revealed a significant relationship between the advertisement conditions and perceived focus of the advertisement ( $\chi^2 = 201.26, p < .001$ ).

### *Hypotheses Testing*

Means and standard deviations for recall of messages and heuristic cues are presented in Table 1. Hypothesis 1Ai predicted that after exposure to an environmental advertisement, visitors with higher levels of environmental concern would be more likely to recall the environmental message than visitors with lower levels of environmental concern. An independent samples *t*-test was used to determine if there



was a relationship between participants with higher or lower NEP scores who remembered and indicated the presence of the environmental message, such as using the terms environmental, green, or greenwashing. While the mean scores for participants with higher NEP scores who remembered the environmental message ( $M = .53$ ,  $SD = .503$ ) were higher than those with lower NEP scores ( $M = .43$ ,  $SD = .498$ ), this difference was not statistically significant (see Table 1). Therefore, Hypothesis 1Ai was not supported.

Means and standard deviations for the order in which messages and heuristic cues were recalled by individuals with higher and lower levels of environmental concern are presented in Table 2. Hypothesis 1Aii predicted that after exposure to an environmental advertisement, visitors with higher levels of environmental concern would recall the environmental message earlier than visitors with lower levels of environmental concern. To test this, the researcher conducted an independent samples *t*-test to examine the relationship between visitors with higher or lower NEP scores and the order in which they recalled the items of an environmental advertisement. Individuals with higher NEP scores were more likely to list the environmental message earlier than those with lower NEP scores, but the relationship was not statistically significant (see Table 2). Therefore, Hypothesis 1Aii was not supported.

Hypothesis 1Bi predicted that after exposure to an environmental advertisement, visitors with lower levels of environmental concern would be more likely to remember the heuristic cues of the advertisement than visitors with higher levels of environmental concern. To test this, independent samples *t*-tests were used to determine if there was a relationship between participants with higher or lower NEP scores who remembered and

indicated the presence of heuristic cues of the environmental advertisement, such as the girls, the snow or the ski resort logo. The mean scores for several of the heuristic cues were higher for the participants with lower NEP scores than those with higher NEP scores (see Table 1). The mean difference for the snow heuristic cue proved to be significant, indicating that visitors with lower NEP scores ( $M = .12$ ,  $SD = .325$ ) were significantly more likely to recall the heuristic cue than those with higher NEP scores ( $M = .26$ ,  $SD = .441$ ,  $t = 2.43$ ,  $p < .05$ ). Therefore, Hypothesis 1Bi was partially supported.

Hypothesis 1Bii predicted that after exposure to an environmental advertisement, visitors with lower levels of environmental concern would recall the heuristic cues earlier than visitors with higher levels of environmental concern. To test this, the researcher conducted an independent samples *t*-test to study the relationship between visitors with higher or lower NEP scores and the order in which they recalled the items of an environmental advertisement. Mean scores indicated that individuals with lower NEP scores listed the girls and extreme skiing/snowboarding heuristic cues earlier than those with higher NEP scores (see Table 2), but the relationship was not statistically significant. Therefore, Hypothesis 1Bii was not supported.

Hypothesis 2Ai predicted that after exposure to a mixed advertisement, visitors with higher levels of environmental concern would be more likely to remember the environmental message than visitors with lower levels of environmental concern. To test this, an independent samples *t*-test was used to determine whether there was a relationship between participants with higher or lower NEP scores and their likelihood of recalling the environmental message. Interestingly, participants with lower NEP scores ( $M = .57$ ,  $SD = .498$ ) were more likely to remember the environmental message



than those with higher NEP scores ( $M = .50$ ,  $SD = .503$ ), and participants with higher NEP scores were more likely to remember the budget message and the heuristic cues than those with low NEP scores (see Table 1). There were no significant findings in this test, however. Therefore, Hypothesis 2Ai was not supported.

Hypothesis 2Aii predicted that after exposure to a mixed advertisement, visitors with higher levels of environmental concern would recall the environmental message earlier than visitors with lower levels of environmental concern. To test this, the researcher conducted an independent samples *t*-test to study the relationships between visitors with higher or lower NEP scores and the order in which they recalled the items of a mixed advertisement. Individuals with higher NEP scores were slightly more likely to remember the environmental message earlier than those with lower NEP scores, but this relationship was not significant (see Table 2). Therefore, Hypothesis 2Aii was not supported.

Hypothesis 2Bi predicted that after exposure to a mixed advertisement, visitors with lower levels of environmental concern would be more likely to remember the budget message and heuristic cues of the advertisement than visitors with higher levels of environmental concern. To test this, independent samples *t*-tests were conducted to determine whether there was a relationship between participants with higher or lower NEP scores and their likelihood of recalling the heuristic cues of the mixed message, such as the girls, the snow or the ski resort logo, as well as the budget message elements. Participants with lower NEP scores actually were more likely to remember the environmental message ( $M = .57$ ,  $SD = .498$ ) than those with higher NEP scores ( $M = .50$ ,  $SD = .503$ ), and participants with higher NEP scores were more likely to remember

the heuristic cues than participants with lower NEP scores (see Table 1), but no significant differences were found. Therefore, Hypothesis 2Bi was not supported.

Hypothesis 2Bii predicted that after exposure to a mixed advertisement, visitors with lower levels of environmental concern would recall the heuristic cues earlier than visitors with higher levels of environmental concern. To test this, the researcher conducted an independent samples *t*-test to study the relationships between visitors with higher or lower NEP scores and the order in which they recalled the items of a mixed advertisement. Mean scores varied in the expected direction, with most of the heuristic cues listed earlier for individuals with lower NEP scores (see Table 2). The snow heuristic cue was significantly more likely to be remembered earlier ( $M = 2.0$ ,  $SD = .943$ ,  $t = -2.092$ ,  $p < .05$ ) by individuals with lower NEP scores. Therefore, Hypothesis 2Bii was partially supported.

Hypothesis 3A predicted that after exposure to a budget advertisement, level of environmental concern would not be related to whether the budget message and heuristic cues were recalled. Independent samples *t*-tests were conducted to determine if there was a relationship between participants with higher or lower NEP scores who remembered and indicated the presence of elements from the budget message, such as using the terms budget, wallet, thrifty, inexpensive, etc. Interestingly, participants with higher NEP scores tended to have higher mean scores for all of the heuristic cues than those with low NEP scores (see Table 1). Participants with higher NEP scores were significantly more likely to list the budget message ( $M = .53$ ,  $SD = .502$ ) than those with lower NEP scores ( $M = .34$ ,  $SD = .457$ ,  $t = -2.73$ ,  $p < .01$ ). Therefore, this prediction was only partially supported.



Hypothesis 3B predicted that after exposure to a budget advertisement, level of environmental concern would not be related to the order in which the budget message and heuristic cues were recalled. To test this, the researcher conducted an independent samples *t*-test to study the relationships between visitors with higher or lower NEP scores and the order in which they recalled the items of a budget advertisement. No significant relationship was found between participants' NEP scores and the order in which they listed the budget message and heuristic cues. Therefore, Hypothesis 3B was supported.

Hypothesis 4A predicted that participants with high levels of environmental concern who were exposed to an environmental or mixed message would be more likely to return to the resort than those with lower levels of environmental concern. To test this, independent samples *t*-tests were conducted to see if there was a difference in willingness to return to the resort between visitors with higher and lower NEP scores. The means of the participants with high NEP scores were significantly higher ( $M = 3.90$ ,  $SD = .97$ ) than those with lower NEP scores ( $M = 3.58$ ,  $SD = 1.09$ ,  $t = -2.79$ ,  $p < .01$ ). Therefore, Hypothesis 4A was supported.

Hypothesis 4B predicted that there would be no difference between participants with higher or lower levels of environmental concern and their likeliness to return to a resort after exposure to a budget advertisement. An independent samples *t*-test was conducted to test this, and no significant difference resulted. Therefore, Hypothesis 4B was supported.

### *Post-Hoc Analysis*

After the initial hypotheses tests were run, several post-hoc tests were conducted to explore alternative explanations for the hypotheses that were not supported.

To test the possible connection between a visitor's level of environmental concern and the number of times he or she had visited the resort, a bivariate correlation test was conducted. There was a highly significant relationship between a person's NEP score and the number of times they had visited the resort ( $r = .13, p < .001$ ). This indicates that participants who skied more frequently tended to have stronger levels of environmental concern, which the Ski Area Citizens' Coalition also confirmed (2010). Similarly, an independent samples  $t$  test revealed that participants with higher NEP scores had visited the resort more than individuals with lower NEP scores ( $t = -3.08, p < .01$ ). A chi-square test also indicated that there was a significant relationship between a person's NEP score and the type of pass he or she purchased (chi-square = 15.69,  $p < .01$ ). Proportionally, participants with high NEP scores purchased more season passes than those with low NEP scores.

One-sample  $t$ -tests were conducted to see if there was a relationship among participants with higher levels of environmental concern and the order in which they recalled the environmental message and heuristic cues from the advertisement. Test results indicated that after exposure to a mixed advertisement, participants with higher NEP scores listed the budget message and all of the heuristic cues after the environmental message. Participants with higher NEP scores listed the budget message ( $t = 2.09, p < .05$ ) and the snow ( $t = 3.23, p < .01$ ) heuristic cues after the environmental message. A marginally significant relationship between the participants with higher NEP scores and their recall of the logo cue ( $t = 1.88, p = .097$ ) was also discovered.



Another set of one-sample *t*-tests was conducted to test the relationship among individuals with lower levels of environmental concern between the order in which they recalled the environmental message and heuristic cues. Test results indicated that after exposure to an environmental advertisement, participants with lower NEP scores listed the heuristic cues before the environmental message; the order of recalling the extreme skiing heuristic cue before the environmental message was found to be significant ( $t = -4.57, p < .001$ ). Another one-sample *t*-test revealed that after exposure to a mixed advertisement, visitors with lower levels of environmental concern listed the girls, extreme skiing/snowboarding, and snow heuristic cues before the environmental message. The order in which the extreme skiing/snowboarding heuristic cue was recalled was found to be significant ( $t = -2.59, p < .05$ ).

## DISCUSSION

This study examined how levels of environmental concern affected the items remembered after exposure to three different advertisements with varying messages and the order in which these items were drawn from memory. The purpose of this research was to see if the environmental advertising at ski resorts influenced visitors' decisions to visit or return to the resort. The findings of this study provide insights into the application of Dunlap and Van Liere's (1978) New Environmental Paradigm to study a person's motivation and cognitive processes in accordance with Chaiken's (1987) Heuristic Systematic Model of Persuasion. This study's findings also provide potential guidance to ski resorts and the advertisements they use to promote their environmental endeavors.

Hypotheses testing found that the level of environmental concern had no significant effects on the likelihood of remembering the environmental messages in an environmental or mixed advertisement. Significant findings were discovered, however, that indicated that participants with lower levels of environmental concern were more likely to recall the heuristic cues than those with higher levels of environmental concern. Furthermore, individuals with lower levels of environmental concern listed the heuristic cues earlier than individuals with higher levels of environmental concern. This study's results also indicated participants with high levels of environmental concern were more



willing to return to a resort after they had seen an advertisement containing an environmental message.

No significant findings were discovered in studying the relationship between a person's level of environmental concern and the order in which they remembered the environmental message or heuristic cues of the environmental advertisement. However, post-hoc analysis revealed that participants with higher levels of environmental concern were more likely to remember the environmental elements of the message before the heuristic cues of a mixed advertisement. The theoretical and practical implications of these results are discussed in the following sections.

### *Theoretical Implications*

It was the researcher's aim to understand the activated nodes that were triggered in different participants during the exposure to the environmental, mixed and budget advertisements. Chaiken's (1987) Heuristic Systematic Model of Persuasion suggested that people who had systematically processed messages over time to strengthen their desired confidence in an attitude would have more mental access to these memories; therefore, exposure to a message that either challenged or validated this attitude would trigger more activated nodes (Chaiken et al., 1989; Todorov et al., 2002; Anderson, 1990; Fabrigar, Priester, Petty, & Wegener, 1998). On the other hand, people with weaker attitudes toward these messages would have less motivation to mentally process the elements of the message in the advertisement. They would have to expend more mental energy in drawing these elements from memory (if they retained them at all), and would therefore be less likely to remember these elements (de Vries & Midden, 2008; O'Keefe, 2002; Chaiken et al., 1989).

In relating this theory to environmental concern, Hypothesis 1Ai proposed that after exposure to an environmental advertisement, participants with high levels of environmental concern would be more likely to remember the environmental elements of the message than those with low levels of environmental concern. Contrary to the HSM, this hypothesis was not supported.

While hypothesis testing did not yield any significant differences between the environmental elements and the other heuristic cues of the advertisement, this hypothesis was based on the participants' assumed repeated exposure to environmental messages and development of environmental attitudes over their lifetimes. As research of the HSM would suggest, systematic processing of a message/or idea over time creates stronger and more accessible attitudes toward that message (Anderson, 1990; Chaiken et al., 1989; Bargh & Pratto, 1986; Fabrigar et al., 1998). Study participants with high levels of environmental concern were assumed to have undergone systematic processing to develop their projected high level of environmental concern. Thus it was unexpected to find that these participants were more likely to remember the heuristic cues than the environmental message of an environmental advertisement.

However, this assumption would only be plausible if individuals with higher levels of environmental concern had repeated exposure to environmental advertisements. The HSM suggests that systematic processing will occur over a lifetime of scrutinizing similar messages. Therefore, a person who had a higher level of environmental concern would have easy access to these repeatedly activated nodes in their memory. Just because the participants may have had repeated exposure to environmental



advertisements in the past does not mean that they had systematically processed the environmental aspects of the advertisements in the present study, however.

The findings for this hypothesis indicated that there might have been other factors involved in the participants' motivation to scrutinize these advertisements. As explained previously, all of the advertisements contained the same photographs of skiers, snowboarders and girls that could easily be attributed to a ski resort. The participants in this study were obviously motivated to travel to the ski resort; while the HSM does account for a hybrid of motivations to occur (Chen & Chaiken, 1999), a participant's intentions to ski or snowboard would increase their involvement in that issue and may have overridden any involvement in environmental issues when it came to processing the ski resort advertisement. A person with a higher level of environmental concern might have recalled the heuristic cues that reminded him or her of their primary purpose that day. This motivation to ski or snowboard may have taken priority in the participants' memories and reduced the likelihood that even those with higher levels of environmental concern would systematically process the environmental messages in the advertisement.

Another possible explanation for this unexpected result is that participants may not have had the high levels of environmental concern that they portrayed. As mentioned previously, Dunlap and Van Liere's 1976 study yielded surprisingly high numbers of general public participants who portrayed themselves as having high levels of environmental concern. As corporations and consumers are taking more "green" behaviors into consideration (*Green Biz*, 2008), this attitude may seem socially desirable to people.

The HSM provides a solid foundation to this possible explanation; the theory is based on the idea that people are constantly trying to bridge the gap between their actual and desired levels of confidence (Chaiken, Liberman, & Eagly, 1989; Eagly & Chaiken, 1993). This possibility is also consistent with the impression motivation element of the HSM; a person will strive to satisfy their social goals. “If the sufficiency threshold is high and heuristic processing does not close the gap between actual and desired confidence, people may engage in systematic processing that is biased toward achieving their social goals” (Todorov et al., 2002, p. 203). The participants in this study may have answered the NEP questions in a way that might seem more socially desirable; however, they may not have had the easy mental access to the environmental attitudes and memories that would have resulted from a lifetime of systematic processing of environmental messages. Therefore, these participants would be more likely to draw the heuristic cues from memory when asked to remember items from an environmental advertisement.

The sufficiency motivation principle may also explain the unpredicted results for Hypothesis 1Ai: people with low actual levels of environmental concern may have undergone just enough systematic processing of the advertisement to satisfy their desired level of portrayed confidence. This person will rely more on the heuristic cues, however, to remember the advertisement. This was indicated in Hypothesis 1Bi, which suggested that after exposure to an environmental advertisement, participants with lower levels of environmental concern would be more likely to draw the heuristic cues from memory than those with higher environmental concern. Based on research on the HSM, participants who had lower levels of environmental concern would have less motivation



to scrutinize the environmental elements of the advertisement (Kardes, 1993; Biel & Dahlstrand, 2005).

Hallahan's (2000) research on motivation further indicates that people with low levels of involvement are more likely to ignore messages they perceive as irrelevant to them. Chen and Chaiken's research on the sufficiency motivation principle of the HSM suggests that a person who is "economy-minded" will seek a balance between expending minimal cognitive effort to reinforce their preexisting attitudes and reaching their motivational goals (1999; Todorov et al., 2002). This effect may have been heightened by the fact that the participants involved in this study had multiple motivations. A low level of environmental concern mixed with a motivation to ski or snowboard could have influenced the heuristic cues that were drawn from these participants' memories of the advertisement.

In addition to studying the likelihood of remembering the various items, this study attempted to illustrate the relationship between a person's level of environmental concern and the order in which they recalled the different items. As Chaiken et al. (1989) indicate, people who have developed strong attitudes over time have more motivation to scrutinize a message that they perceive to be important and are less likely to rely on heuristic cues to remember the advertisement. The HSM also suggests that systematic processing of similar messages over time would provide a person with easy mental access to this attitude and items reflective of this attitude (Anderson, 1990; Chaiken et al., 1989; Fazio et al., 1984). Hypothesis 2Bii predicted that after exposure to a mixed advertisement, visitors with lower levels of environmental concern would recall the heuristic cues earlier than visitors with higher levels of environmental concern.

This hypothesis was partially supported, indicating that participants with lower levels of environmental concern were more likely to recall some heuristic cues than participants with higher levels of environmental concern. This finding is consistent with the “economy-minded” idea of the HSM: if participants do not have the motivation to scrutinize a message in an advertisement, they will undergo an easier route of mental processing and draw from the heuristic cues to remember the advertisement.

This finding further suggests that the participants’ motivation to ski or snowboard may have dominated their cognitive processing of the advertisement. Based on the HSM, these participants may have undergone systematic processing of similar environmental messages in the past, but their motivation to ski or snowboard may have triggered the more efficient, economy-minded cognition explained by the HSM’s sufficiency motivation principle. It is also possible that processing of these cues may have heightened the participants’ desire to ski or snowboard, making them less likely to spend mental energy processing and remembering the environmental elements of the message. In any case, this finding suggests that the motivation to expend this energy in processing the environmental message was overridden by the participants’ motivation to ski or snowboard during the day of the survey administration.

Interestingly, however, significant results were found during post-hoc analysis, which found that participants with high levels of environmental concern would remember the environmental elements of a message before the budget message and several of the heuristic cues in a mixed advertisement. This advertisement introduced two budget message elements in addition to the environmental message and heuristic cues, making the advertisement more complex. It is noteworthy, then, that participants



with higher levels of environmental concern were more likely to remember the environmental elements of the message in the busier, mixed advertisement than in the simpler, environmental advertisement. These results support the HSM theory, demonstrating that those who are motivated to interpret an advertisement will systematic process and remember the elements that are reflective of their current attitudes. This result confirmed that participants with higher levels of environmental concern were more motivated to mentally sort through the various message elements and cues in the advertisement, and were more likely to remember the environmental elements of the message before the other items in a mixed advertisement.

Another possibility that can explain this finding is that in the mixed advertisement, the environmental message may have stood out as a contrasting element compared to the budget message. The two elements, as opposed to the single message in the environmental advertisement, may have triggered the necessary systematic processing for people with high levels of environmental concern to remember the environmental message of the mixed advertisement. The single message in the environmental advertisement may have blended in with the other elements of the advertisement without the other message to provide contrast and draw attention.

The contradictory results of these tests call for more exploration of the application of the HSM theory and the NEP scale in this study. The HSM, as a dual-processing theory, recognizes the opportunity for systematic processing to occur for those with low confidence in their attitudes toward an issue. Similarly, the theory suggests that people who are assumed to have strong attitudes toward an issue can still rely on heuristic cues to aid their systematic processing. Therefore, these participants

who were considered to have higher levels of environmental concern apparently relied on heuristic cues to remember the environmental messages in either the environmental or mixed advertisements.

Finally, Hypothesis 4A predicted that after exposure to an environmental or mixed advertisement, visitors with higher levels of environmental concern would be more likely to return to that resort than those visitors with lower levels of environmental concern. This hypothesis was supported, consistent with the previous studies' findings that consumers recognize items that have been labeled as more environmentally friendly and are more willing to purchase these products because of their labels (Bjorner et al., 2002; Shena & Saijo (2008). This finding suggests that even though visitors with higher levels of environmental concern may not have indicated that they remembered the environmental elements of the message in the environmental message (see Hypothesis 1Ai), they may have actually undergone systematic processing of this message, which further confirmed their environmental attitudes. This process, in turn, may have made these participants more likely to respond positively to this advertisement and increase their willingness to return to the resort.

#### *Methodological Implications*

This study is believed to be the first to use Dunlap and Van Liere's New Environmental Paradigm (1978) as an indicator of motivation in the context of Chaiken's Heuristic Systematic Model of Persuasion (1987). The combination attempted to assess participants' levels of environmental concern and determine if this level influenced the cognition of different advertisements. This uni-dimensional scale had been proven reliable and applied in many previous studies that researched the effects



of environmental concern and consumerism (Luo and Deng, 2008). While the scale may have provided a reliable way of assessing a person's level of environmental concern as "high" or "low" in this study, however, the scale may not have measured the actual strength of this level of concern. For example, as indicated in the findings for Hypothesis 1Ai, individuals who portrayed higher levels of environmental concern should have been more likely to remember the environmental message of an advertisement. However, this high level of environmental concern may have been outweighed by the participants' other motivation to ski or snowboard or other factors that reduced the salience of their levels of environmental concern. While the HSM suggests that strong attitudes are developed after repeated exposure and processing of similar messages, the NEP scale may not provide enough insight as to the strength of a person's environmental concern when challenged by other influences or motivations.

In 1990, Dunlap, Van Liere, Mertig and Jones added three new items and slightly modified six items of the original scale, making it a four-dimensional scale called the New Ecological Paradigm. The new scale includes terms that express the likelihood of "ecocrises" impacting humans, instead of the original terminology that expressed the idea that humans were exempt from the limits to nature (Dunlap et al., 2000). In addition, the new scale includes an "unsure" option for the responses to each item. The modifications and additions to the original scale add more balance to the pro- and anti-NEP items, as well as more modern terminology and scenarios to consider. Similar to the original NEP scale, however, this new scale does not appear to measure the strength of a person's environmental attitude.

The original NEP scale, as applied to this current study, provided a valid method for categorizing participants as having high or low levels of environmental concern, and the revised NEP scale has proven to be valid in previous studies (Edgell & Nowell, 1989; Widegren, 1998). Therefore, while both scales illustrate the high or low levels of environmental concern, neither scale tests for the strength of these attitudes in real-life situations. This current study tested participants' levels of environmental concern and found that when multiple motivations were present, it could not be assumed that these environmental attitudes would outweigh the other motivations to scrutinize an advertisement.

### *Practical Implications*

The findings of this study indicated that visitors with high levels of environmental concern were more likely to return to the resort after exposure to advertisements that promoted these efforts. However, most of the findings in this study indicated that the location and complexity of advertisements that promote ski resorts' environmental efforts are important considerations in appealing to audiences of both higher and lower levels of environmental concern.

As mentioned previously, visitors' motivation to ski or snowboard may influence their likelihood of scrutinizing environmental advertisements while at the resort, so it is suggested that the resorts that have more environmental achievements to promote should focus on advertising these efforts in nearby cities. Visitors may be more likely to scrutinize the message in a location away from a resort, such as billboard advertisements around cities near the resort or advertisements in popular ski magazines. It is



recommended that resorts continue to promote their environmental efforts, but focus their advertising investments on media away from the resort.

Findings from post-hoc analysis also illustrated that participants with high levels of environmental concern were more likely to remember the environmental message after exposure to the more complicated, mixed advertisement. Therefore, it is recommended to resorts that they incorporate complex messages that contrast the environmental message of the advertisement; this contrast may provide a trigger to various audiences to scrutinize the environmental message.

As stated previously, the HSM posits that the information that people perceive to be relevant has a strong influence on the amount of cognitive effort people will undergo to process the information. Hallahan (2000) recognizes that this motivation (or topic involvement) is the reason that inactive publics (or people who are the least attentive) are more likely to ignore messages they perceive to be irrelevant to them. He introduced the motivation, ability and opportunity (M-A-O) Model, which applied a combination of frequently used examples of public relations techniques that attempted to enhance message processing. Using likeable and moderately complex messages, as well as photographs and involving celebrities, are some of the suggestions in the model that can enhance motivation. In addition, the model includes suggestions such as the inclusion of logos and label graphics to enhance the ability, as well as longer and repeated messages to enhance the opportunity, to process a message (see M-A-O Model, Hallahan, 2000).

This model provides further support that the mixed advertisement contained the elements necessary to trigger systematic processing for participants with high levels of environmental concern. Furthermore, the suggestions in this model will give resorts a

clear checklist of the elements they need to incorporate in their advertisements to appeal to audiences of varying motivation levels. It is recommended that resorts consider the application of complex environmental messages and colors, typography, formats, and photographs that provide enough contrast for the message to stand out. This will allow the advertisement to maintain its visual appeal, while clearly illustrating the environmental message.

As this research indicates, advertising environmental initiatives at the resort will not receive the desired level of scrutiny, even from audiences with high levels of environmental concern. Visitors with lower projected levels environmental concern should still be considered when resorts advertise their environmental efforts; mean scores for recall of the environmental message were, nonetheless, relatively high compared to individuals who had higher levels of environmental concern. In either case, and as detailed previously, the advertisements the resorts use to promote their environmental efforts need to include complex messages and the heuristic cues needed to trigger cognitive processing.

#### *Study Limitations and Future Research*

The main limitation of this study was that the sample of ski resort visitors proved to be a largely homogenous sample with a generally high level of environmental concern. Based on numerous surveys and reports from the ski industry, skiers tend to have higher levels of environmental concern (Ski Area Citizen's Coalition, 2009). This study attempted to include a range of environmental attitudes by recruiting participants from three resorts that have practiced and promoted different amounts of environmental efforts. However, as the results indicated, it was not enough to only sample visitors at



the ski resorts. This homogeneous sample's high level of environmental concern influenced the study results by limiting the variation of environmental concerns needed to produce significant differences in advertisement processing. To counter this, future research should use a randomly selected, representative sample, and should consider people who have little motivation to ski or snowboard.

This motivation to ski or snowboard may have also influenced the heuristic cues they were likely to remember in the advertisements. This is evident in the results for Hypotheses 1Ai, which indicated that even participants with higher levels of environmental concern were more likely to remember the extreme skiing/snowboarding, snow, and resort logo cues than the environmental message. As mentioned previously, the HSM recognizes the possibility of multiple motivations to occur. However, Leippe (1991) argues that competing motives easily undermine the unbiased processing that is motivated by outcome-relevant involvement, which as Johnson and Eagly (1989) define, is relevant when a person is interested in the goals or outcomes of an issue. This type of involvement can apply to the participants' goals to ski or snowboard and the lack of systematic processing of the environmental message that may have resulted because of the competing motives. A future study conducted away from the resort would reduce the motivation to scrutinize these heuristic cues, so that participants have more opportunity to systematically process the environmental message.

The time constraints associated with the survey questionnaire may have heightened this effect. As discussed previously, although ski resort visitors are in general more environmentally concerned, one can expect these visitors to be highly motivated to ski or snowboard. Based on pretest results, this survey questionnaire

should have taken approximately 10 minutes to complete. However, some participants finished the questionnaire in less than five minutes, suggesting that the participants may have been in a hurry to finish the questionnaire and continue skiing or snowboarding. This, in turn, may have reduced the opportunity for the participants to systematically process the advertisement.

The experiment/quasi-experimental design was used in an attempt to control for a one-time exposure to a seemingly real advertisement in a familiar setting. This design, however, may have limited the effects observed in the study because of the one-time exposure to the advertisement and the location in which the survey was administered. Cox and Cox discovered that repeated exposure for visually complex product designs generated positive preferences of the product (2002). Furthermore, even though the survey was conducted at the resort that was promoted in the advertisement, the advertisement displayed would be more likely printed in a magazine or displayed on a billboard. Therefore, cognition of such an advertisement would more likely occur away from the resort. Additionally, researchers have applied multiple media to their experimental approaches and found that print advertisements were more effective when used with other media (Dijkstra, Buijtsels, & van Raaij, 2005; Wakolbinger, Denk, & Oberecker, 2009). Future research should consider repeated exposure to environmental advertisements, and they should test different advertisements with various media.

The layout of the survey questionnaire may have also limited this study. Participants were asked to respond to the NEP items prior to their exposure to the advertisement in the survey questionnaire. Although pre-test results did not indicate any priming occurred with the participants, it is possible that the NEP items established an



environmental tone for certain participants in the actual study. This could be illustrated by the high levels of environmental concern that were revealed by these results and the possibility that participants might have provided socially desirable answers. Dunlap and Van Liere's 1976 study found an unusually high number of participants with high levels of environmental concern (Dunlap & Van Liere, 1978).

The present study is consistent with their findings, with 42% of the sample portraying a high level of environmental concern (mean NEP scores  $> 3$  on a four-point scale) and only 4% who were considered to have low levels of environmental concern (mean NEP scores  $< 2$  on a four-point scale). Future studies should control for the possibility of any social desirability influences on the participants' answers before considering the effects of levels of environmental concern. Randomly selecting half of the participants and provide them with all of the NEP questions before exposure to the advertisement, and provide the other half of the participants with the NEP questions after exposure to the advertisement could determine if the NEP questions did, in fact, prime the participants before exposure to the advertisement.

This study did not provide an opportunity to validate participants' portrayed levels of environmental concern. As Kempton, Boster and Hartley (1995) recognized, qualitative and quantitative data used together can provide a more in-depth exploration of "the beliefs, logic, and values embedded in mainstream American environmental thinking" (p. 2). Dunlap and his colleagues also suggested after the 1990 scale was completed that longitudinal research would provide more information as to a person's personal experiences and attitudes toward the environment and how the strength of these

attitudes (or lack thereof) influenced that person's behavior and cognition of environmental information (2000).

To study levels of environmental concern and strength of environmental attitudes, researchers need to conduct follow-up, longitudinal studies. This study's one-time exposure to this message was based on the assumption that the participants with higher levels of environmental concern had scrutinized similar messages over their lifetime and would have easy mental access to these attitudes and memories. It is evident that future research needs to trace a participant's past encounters with these messages or expose them repeatedly to similar advertisements in order to understand the participants' attitude strength and actual confidence in environmental issues. This would help understand the amount of times a person is exposed to environmental advertisements and if systematic processing occurred during repeated exposure to these messages. A selected sample for a longitudinal focus group or interview study may provide more accurate information as to a person's actual level of environmental concern and the strength of his or her attitude. This would help illustrate their motivation to scrutinize the environmental message in advertisements for the resorts.

The addition of more follow-up, longitudinal studies would resolve another possible flaw in the current study. By using Dunlap and Van Liere's NEP scale (1978) with Chaiken's HSM theory, this study neglected the cognitive processes of the participants who might have built strong anti-environmental attitudes over their lifetimes. People who had strong negative thoughts toward the environment or environmental practices may, nonetheless, have systematically processed the environmental elements of the message in an environmental or mixed advertisement.



However, because of having lower NEP scores, these participants would be assumed to draw from heuristic cues from the advertisement. These participants may have had the motivation to interpret these environmental elements, and their responses should be considered separately from those participants who simply were not motivated to scrutinize the environmental elements. Follow-up questions should accompany the NEP scale to determine the strength of pro- or anti-environmental attitudes, to help determine if a person did or did not have the motivation to process an environmental message.

Finally, while the open-ended questions in this study were intended to provide complementary data to the quantitative information, there is the possibility of subjectivity in the researcher's coding of such qualitative responses. The inter-coder reliability test indicated that the coding scheme was reliable; however, more closed-ended questions in future research would eliminate the chance of subjective coding. Instead of listing the items they recalled, participants could circle from a randomly ordered list of possible items. Including other methods of testing participants' open-ended responses would provide more triangulation to test, and possibly confirm, the reliability and validity of qualitative findings.

## CONCLUSIONS

The results of this study indicate that resorts that promote their environmental efforts need to carefully consider the locations of distribution and the elements in their advertisements, as well as the different audiences they are trying to reach. This study found that although the skiing population as a whole has a higher level of environmental concern, environmental advertisements located at the resort are likely outweighed by this population's motivation to ski or snowboard. Although those with high levels of environmental concern are more likely to return to a resort that promotes its environmental efforts, these advertisements will have a better chance of being scrutinized and remembered if they are located away from the resorts. Furthermore, a person with a higher level of environmental concern is more likely to remember the environmental message of the advertisement when there are other contrasting messages and cues present.

This study revealed that motivation, as a key component of Chaiken's (1987) Heuristic Systematic Model of Persuasion, is also an important influence on the level of processing that occurs after exposure to an environmental advertisement at a ski resort. Without the motivation to ski or snowboard, participants with higher levels of environmental concern may have had more opportunity and motivation to systematically process the environmental messages of the advertisements. This study also revealed the importance of environmental attitude strength and the need for further research to



investigate the strength of pro- and anti-environmental attitudes and how they can influence the cognition process of an environmental advertisement.

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## Appendix A: Permission Letter (Aspen Skiing Company)



November 18, 2009

Aspen Skiing Company  
C/O Jeff Hanle  
Director of Public Relations  
P.O. Box 1248  
Aspen, CO 81612

Dear Mr. Hanle,

This letter will confirm our recent conversations regarding my survey administration at your resorts. I am completing a master's thesis at Colorado State University on environmental advertisements at ski resorts. I would like your permission to conduct the survey at the four resorts affiliated with Aspen Skiing Company (Aspen Mountain, Aspen Highlands, Buttermilk, and Snowmass).

The requested permission covers survey administration in December 2009 or January 2010. Specific dates of administration will be determined prior to the researcher's arrival. A minimum of four days (one at each resort) will be necessary to administer the surveys to a convenience sample of Aspen visitors.

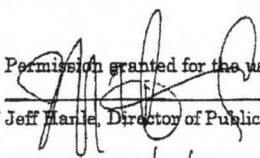
In addition, permission is requested for the use of a table located at the base lodges at the resorts. A minimum of five chairs will be needed for the researcher and participants. The researcher's table will need to be in a visible location, while imposing no disturbance to regular business at the resorts.

After data is collected and analyzed, your resort will have access to the data set. In addition, I will also include a summary of the results. A copy of my master's thesis and a presentation of my findings will also be available upon request.

If these arrangements meet your approval, please print this letter on your company's letterhead, sign where indicated below, and fax the letter to (970) 491-2908. I would appreciate it if you could please fax this to me by November 17. If you have any questions, please contact me at (307) 250-2781 or tay\_stonehouse@hotmail.com. Thank you very much.

Sincerely,  
Taylor Stonehouse

Permission granted for the use and location requested above:

  
Jeff Hanle, Director of Public Relations for Aspen Skiing Company

Date: 11/16/09



## Appendix B: Permission Letter (Crested Butte Mountain Resort)

November 30, 2009

Crested Butte Mountain Resort  
C/O John Sale  
PO Box 5700  
600 Gothic Road  
Mt. Crested Butte, CO 81225

Dear Mr. Sale,

This letter will confirm our recent conversations regarding my survey administration at your resort. I am completing a master's thesis at Colorado State University on environmental advertisements at ski resorts. I would like your permission to conduct the survey at Crested Butte Mountain Resort.

The requested permission covers survey administration in December 2009 or January 2010. Specific dates of administration will be determined prior to the researcher's arrival. A minimum of two days will be necessary to administer the surveys to a convenience sample of Crested Butte visitors.

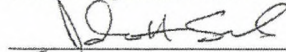
In addition, permission is requested for the use of a table located at the base lodge at the resort. A minimum of five chairs will be needed for the researcher and participants. The researcher's table will need to be in a visible location, while imposing no disturbance to regular business at the resort.

After data is collected and analyzed, your resort will have access to the data set. In addition, I will also include a summary of the results. A copy of my master's thesis and a presentation of my findings will also be available upon request.

If these arrangements meet your approval, please print this letter on your company's letterhead, sign where indicated below, and fax the letter to (970) 491-2908. I would appreciate it if you could please fax this to me by December 4. If you have any questions, please contact me at (307) 250-2781 or [tay\\_stonehouse@hotmail.com](mailto:tay_stonehouse@hotmail.com). Thank you very much.

Sincerely,  
Taylor Stonehouse

Permission granted for the use and location requested above:



John Sale, Environmental Coordinator for Crested Butte Mountain Resort

Date: 12/24/09

## Appendix C: Permission Letter (Copper Mountain Ski Resort)

November 30, 2009

Copper Mountain Ski Resort  
C/O Lauren Pelletreau  
Copper Mountain Ski Resort Public Relations  
PO Box 3001  
Copper Mountain, CO 80443

Dear Ms. Pelletreau,

This letter will confirm our recent conversations regarding my survey administration at your resort. I am completing a master's thesis at Colorado State University on environmental advertisements at ski resorts. I would like your permission to conduct the survey at Copper Mountain Ski Resort.

The requested permission covers survey administration in December 2009 or January 2010. Specific dates of administration will be determined prior to the researcher's arrival. A minimum of two days will be necessary to administer the surveys to a convenience sample of Copper visitors.

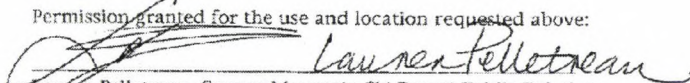
In addition, permission is requested for the use of a table located at the base lodge at the resort. A minimum of five chairs will be needed for the researcher and participants. The researcher's table will need to be in a visible location, while imposing no disturbance to regular business at the resort.

After data is collected and analyzed, your resort will have access to the data set. In addition, I will also include a summary of the results. A copy of my master's thesis and a presentation of my findings will also be available upon request.

If these arrangements meet your approval, please print this letter on your company's letterhead, sign where indicated below, and fax the letter to (970) 491-2908. I would appreciate it if you could please fax this to me by December 4. If you have any questions, please contact me at (307) 250-2781 or tay\_stonehouse@hotmail.com. Thank you very much.

Sincerely,  
Taylor Stonehouse

Permission granted for the use and location requested above:

  
Lauren Pelletreau, Copper Mountain Ski Resort Public Relations

Date: 12/3/2009



## Appendix D: Survey Questionnaire

*Thank you for taking the time to complete this survey. My name is Taylor Stonehouse, and I am a graduate student from Colorado State University. I am an avid skier, and I am conducting this study of ski resort advertising for my master's thesis.*

*Participation in this survey is voluntary. This survey is entirely confidential and anonymous, and all findings will be provided in aggregate form only. Please answer the following questions instinctively and honestly. You can skip any question you do not feel comfortable answering. However, the answers you provide will be extremely helpful for my research as well as for ski resorts.*

*Filing out this questionnaire signifies your informed consent to participate in the survey.*

### **Part 1: Please tell us about your reasons for visiting Aspen/Snowmass resorts.**

#### **1) Why did you choose to visit Aspen today? (Circle best answer)**

- A. This resort is close to home – it's easy and convenient to travel here.
- B. It's my and my family's favorite mountain. I've traveled here for years, even though I live far away.
- C. I agree with their environmental policies, so it was an easy choice to visit.
- D. The tickets are affordable – this resort gives me the biggest "bang for my buck."
- E. This resort is very family-oriented.
- F. Other (please indicate): \_\_\_\_\_

#### **2) Where are you from? (City, State)**

\_\_\_\_\_

#### **3) How far did you travel to get to this resort? (Circle best answer)**

- A. 0-50 miles
- B. 51-100 mile
- C. 101-500 miles
- D. 501-1000 miles
- E. 1001+ miles

#### **4) How many times have you been to this resort in your life? (Circle best answer)**

- A. Never – this is my first time
- B. Hardly ever – maybe 1-5 times
- C. Often – 6-10 times
- D. Frequently – 11-20 times
- E. Regularly – More than 20 times

**5) What type of pass did you purchase today? (Circle best answer)**

- A. Half-day pass
- B. Day pass
- C. Season pass
- D. Other (Weekend pass, student pass, etc.)
- E. None - I came here to visit but would rather not ski or snowboard.

**Part 2: Circle which response best represents how much you agree or disagree with the following statements:**

**1) We are approaching the limit of the number of people the earth can support.**

Strongly Disagree      Disagree      Agree      Strongly Agree

**2) The balance of nature is very delicate and easily upset.**

Strongly Disagree      Disagree      Agree      Strongly Agree

**3) Humans have the right to modify the natural environment to suit their needs.**

Strongly Disagree      Disagree      Agree      Strongly Agree

**4) Mankind was created to rule over the rest of nature.**

Strongly Disagree      Disagree      Agree      Strongly Agree

**5) When humans interfere with nature, it often produces disastrous consequences.**

Strongly Disagree      Disagree      Agree      Strongly Agree

**6) Plants and animals exist primarily to be used by humans.**

Strongly Disagree      Disagree      Agree      Strongly Agree

**7) Humans must live in harmony with nature in order to survive.**

Strongly Disagree      Disagree      Agree      Strongly Agree

**8) The earth is like a spaceship with only limited room and resources.**

Strongly Disagree      Disagree      Agree      Strongly Agree

**9) Humans need not adapt to the natural environment because they can remake it to suit their needs.**

Strongly Disagree      Disagree      Agree      Strongly Agree

**10) There are limits to growth beyond which our industrialized society cannot expand.**

Strongly Disagree      Disagree      Agree      Strongly Agree

**11) Mankind is severely abusing the environment.**

Strongly Disagree      Disagree      Agree      Strongly Agree

**Part 3: Please take a moment to read the following advertisement and then turn the page.**

**Please answer the following questions based on your memory of the advertisement you just saw. (Please do not turn back the page to see the advertisement again.)**



1) Please list the things you remember most about the advertisement that stood out to you.

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3) What do you think the focus of this advertisement is?

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4) Based on this advertisement, how willing are you to return to this resort? *(Circle best answer)*

Very Likely      Somewhat Likely      Neutral      Somewhat Unlikely      Very Unlikely

**Part 4: Please tell us a little more about you.**

1) What year were you born? \_\_\_\_\_

2) What is your gender?

- A. Male
- B. Female

3) What is your race / ethnicity? *(Circle all that apply)*

- A. White / Caucasian
- B. Black / African American
- C. Asian / Pacific Islander
- D. Native American
- E. Latino / Hispanic
- F. Other: \_\_\_\_\_

4) What is your average annual household income?

- A. \$10,000 or less
- B. \$10,001 - \$25,000
- C. \$25,001 - \$50,000
- D. \$50,001 - \$100,000
- E. More than \$100,000

5) How many people are in your immediate family (including yourself)?

---

**6) How often do you spend time outdoors?** *(Circle best answer)*

- A. Never
- B. Hardly ever
- C. Sometimes
- D. Frequently
- E. All the time

**7) How often do you recycle?** *(Circle best answer)*

- A. Never *(Skip to question 9)*
- B. Hardly ever
- C. Sometimes
- D. Frequently
- E. Regularly

**8) If you recycle, what items do you recycle regularly?** *(Check all that apply)*

- ☐ Paper
- ☐ Aluminum, Steel Cans
- ☐ Glass
- ☐ Plastics
- ☐ Other (tires, ink cartridges, etc.)

**9) Are you an active member in any non-profit organizations?** *(If yes, check all that apply)*

- ☐ Outdoor recreation / sports
- ☐ Community leadership
- ☐ Environmental
- ☐ School functions
- ☐ Religious organizations
- ☐ Other: (please indicate) \_\_\_\_\_

## **Part 5: Conclusion**

*Thank you again for taking the time to complete this survey. Now let me tell you more about the nature of the study.*

*I am interested in how ski resorts are marketing their “green” sustainable efforts. You were randomly given one of three advertisements in your survey. Each of the advertisements is based on an existing advertisement, but was manipulated to contain a different message varying in levels of environmental concern. Your responses will be analyzed to determine the effects of environmental messages on intent to ski at Aspen/Snowmass resorts in the future.*

*Thank you again for your participation.*



## Appendix E: Survey Questionnaire Design

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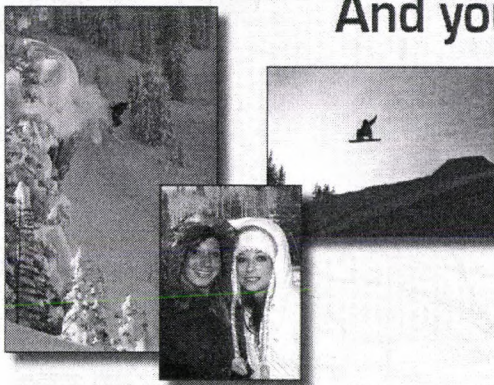


## Friendly to the environment.

Our resort is dedicated to providing you fun in the sun and snow, while working hard to protect the planet.

ASPEN SNOWMASS.

Part 3



## Friendly to the environment. And your wallet.

Our resort is dedicated to providing you fun in the sun and snow, while working hard to protect the planet and your budget.

ASPEN SNOWMASS.

Part 3



## Friendly to your wallet.

Our resort is dedicated to providing you fun in the sun and snow, while working hard to protect your budget.

ASPEN SNOWMASS.

Part 3



Table 1: Means and Standard Deviations for Remembered Items of an Advertisement  
A) Environmental Advertisement

	Environmental Advertisement			
	High NEP (N = 104)	Low NEP (N = 68)	<i>t</i>	<i>p</i>
Environmental Message	.53 (.503)	.43 (.498)	-1.24	.216
Budget Message				
Cue: Girls	.47 (.503)	.59 (.495)	1.49	.137
Cue: Extreme skiing/snowboarding	.38 (.490)	.49 (.502)	1.40	.164
Cue: Snow/ Mountain/Powder	.12 (.325)	.26 (.441)	2.42	.016*
Cue: Photos/Images	.10 (.306)	.09 (.283)	-0.36	.719
Cue: Resort Logo	.15 (.357)	.07 (.252)	-1.60	.112

Table 1: Means and Standard Deviations for Remembered Items of an Advertisement  
B) Mixed Advertisement

	Mixed Advertisement			
	High NEP (N = 109)	Low NEP (N = 78)	<i>t</i>	<i>p</i>
Environmental Message	.50 (.503)	.57 (.498)	0.93	.355
Budget Message	.29 (.459)	.27 (.444)	-0.43	.667
Cue: Girls	.55 (.501)	.49 (.502)	-0.86	.383
Cue: Extreme skiing/snowboarding	.54 (.502)	.47 (.501)	-0.95	.344
Cue: Snow/ Mountain/Powder	.22 (.416)	.17 (.381)	-0.74	.458
Cue: Photos/Images	.10 (.305)	.09 (.290)	-0.25	.806
Cue: Resort Logo	.12 (.322)	.07 (.262)	-0.98	.327



Table 1: Means and Standard Deviations for Remembered Items of an Advertisement  
C) Budget Advertisement

	Budget Advertisement			
	High NEP (N = 95)	Low NEP (N = 88)	<i>t</i>	<i>p</i>
Environmental Message				
Budget Message	.53 (.502)	.34 (.457)	-2.73	.007**
Cue: Girls	.64 (.484)	.56 (.499)	-1.08	.282
Cue: Extreme skiing/snowboarding	.60 (.492)	.53 (.502)	-1.03	.303
Cue: Snow/ Mountain/Powder	.22 (.414)	.20 (.402)	-0.26	.792
Cue: Photos/Images	.13 (.333)	.12 (.322)	-0.19	.849
Cue: Resort Logo	.05 (.209)	.08 (.279)	1.07	.287

Table 2: Means and Standard Deviations for the Order in Which Advertisement Items Were Recalled Between Visitors with High and Low Levels of Environmental Concern  
A) Environmental Advertisement

	High NEP	Low NEP	<i>t</i>	<i>p</i>
Environmental Message	(N = 36) 1.81 (.951)	(N = 45) 2.13 (1.27)	1.33	.189
Budget Message				
Cue: Girls	(N = 32) 2.09 (.995)	(N = 61) 1.95 (1.01)	-0.65	.516
Cue: Extreme skiing/snowboarding	(N = 26) 1.69 (.736)	(N = 51) 1.59 (.853)	-0.53	.598
Cue: Snow/ Mountain/Powder	(N = 8) 1.75 (.886)	(N = 27) 2.22 (1.01)	1.19	.243
Cue: Photos/Images	(N = 7) 1.71 (.756)	(N = 9) 2.11 (1.17)	0.82	.425
Cue: Resort Logo	(N = 10) 2.40 (1.35)	(N = 7) 3.00 (1.29)	0.92	.373



Table 2: Means and Standard Deviations for the Order in Which Advertisement Items Were Recalled Between Visitors with High and Low Levels of Environmental Concern  
B) Mixed Advertisement

	High NEP	Low NEP	<i>t</i>	<i>p</i>
Environmental Message	(N = 39) 2.03 (1.14)	(N = 62) 2.03 (1.07)	0.03	.976
Budget Message	(N = 23) 2.48 (1.04)	(N = 29) 2.55 (1.02)	0.26	.799
Cue: Girls	(N = 43) 2.14 (1.12)	(N = 53) 1.91 (.883)	-1.11	.269
Cue: Extreme skiing/snowboarding	(N = 42) 1.67 (.846)	(N = 51) 1.71 (.901)	0.22	.830
Cue: Snow/Mountain/Powder	(N = 17) 2.59 (.712)	(N = 19) 2.00 (.943)	-2.09	.044*
Cue: Photos/Images	(N = 8) 2.63 (1.51)	(N = 10) 2.20 (1.23)	-0.66	.519
Cue: Resort Logo	(N = 9) 2.78 (1.20)	(N = 8) 3.25 (1.16)	0.82	.425

Table 2: Means and Standard Deviations for the Order in Which Advertisement Items Were Recalled Between Visitors with High and Low Levels of Environmental Concern  
C) Budget Advertisement

	High NEP	Low NEP	<i>t</i>	<i>p</i>
Environmental Message				
Budget Message	(N = 47) 2.30 (1.20)	(N = 32) 2.16 (1.11)	-.532	.597
Cue: Girls	(N = 56) 1.95 (.903)	(N = 53) 1.91 (.925)	-.233	.816
Cue: Extreme skiing/snowboarding	(N = 53) 1.81 (.856)	(N = 51) 1.69 (.905)	-.724	.471
Cue: Snow/Mountain/Powder	(N = 19) 2.42 (1.02)	(N = 18) 2.22 (1.00)	-.598	.554
Cue: Photos/Images	(N = 1) 1.73 (1.19)	(N = 11) 2.00 (1.27)	.521	.608
Cue: Resort Logo	(N = 4) 2.50 (1.73)	(N = 8) 2.88 (1.36)	.414	.688



Table 3: Means and Standard Deviations for Participants' Willingness to Return after Exposure to Advertisements

	Environmental, Mixed Advertisement			
	High NEP (N = 144)	Low NEP (N = 212)	<i>t</i>	<i>p</i>
Willingness to return	3.90 (0.97)	3.58 (1.09)	-2.79	.006**

	Budget Advertisement			
	High NEP (N = 85)	Low NEP (N = 94)	<i>t</i>	<i>p</i>
Willingness to return	3.28 (1.11)	2.44 (0.98)	1.03	.307