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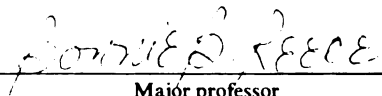
Relationships Among The Individual Factors Of
Ecologically Oriented Consumption
And Advertising Believability

presented by

Elizabeth Marie Tucker

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Mass Media


Major professor

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RELATIONSHIPS AMONG THE INDIVIDUAL FACTORS OF ECOLOGICALLY
ORIENTED CONSUMPTION AND ADVERTISING BELIEVABILITY.

By

Elizabeth Marie Tucker

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ABSTRACT

RELATIONSHIPS AMONG THE INDIVIDUAL FACTORS OF ECOLOGICALLY
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The purpose of this dissertation is to clarify the individual factors of ecologically oriented consumption and the effects of advertising on that behavior. Eco-consumption, the act of selecting a product because of its ecological advantages, is a unique and relatively new type of consumer activity. Eco-consumerism, the active search and product evaluation that underlie eco-consumption, represents a new and growing type of consumer behavior. The percentage of American adults who reported being at least somewhat ecologically conscientious in product selection grew from 45% in 1991 to 54% in 1994.

Environmental marketers want to understand how advertising affects the purchasing decisions of this segment. Conventional wisdom has been that ad campaigns which employ environmental claims as their major theme [eco-ads] are not considered to be very believable, and so consumers do not buy. This dissertation tests that assumption.

Chapter One presents an introduction of this topic by describing recent changes in the green marketplace. A set of

definitions is presented. A discussion of eco-advertising's relationship with the emerging Sustainable Development paradigm is also presented.

Chapter Two organizes the theory of eco-consumption around a cognitive, information processing model of consumer behavior. Specific eco-consumption related literature is integrated with factors not previously researched in this field. Two new constructs are introduced: ecological orientation and perceived ecological relevance. Consumer involvement with ecologically advantageous products and eco-ads is explored. Advertising believability, its relationship to consumer skepticism and cynicism are described. Two models, the basis of an empirical study, were derived from this review. One represents current understanding of eco-consumption and one represents a proposed model.

An experimental design incorporating two repeated measures and three comparison groups was conducted. The sample was drawn from employees of four Michigan businesses. Path analysis indicated that the proposed model described the data better than the current model. Additional results indicate that subjects did not find eco-ads less believable than the control ad.

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Dedication

To My Parents
Bill and Corrine Tucker

and

my sisters
Karen and Leigh

Dad - thanks for your inspiration, imagination and courage.
Mom - thanks for your empathy, fortitude and faith.
Karen - thanks for your kindness and patience.
Leigh - thanks for your humor and affection.

Thank You All

for
your

Loving Support
Unwaivering Confidence
and
Consistent Encouragement

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Special thanks must be extended to Dr. Linda Cowles - who produced the beautiful toilet paper ads used in my study, and Dr. Jack Hunter. I appreciate Dr. Hunter's guidance as both a teacher and a scholar, as well as his assistance in this study.

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CHAPTER I. PURPOSE AND SIGNIFICANCE OF THE STUDY

Introduction

The 1980's are remembered as The Decade Of Conspicuous Consumption. It was a period when consumer values centered on the fevered acquisition of material items. In the 1990's there has been a shift away from those values. Consumers report being more concerned with preserving the natural environment than in purchasing frivolous status symbols like electric pepper mills or his and her's cappuccino makers (Chase 1990; Schwartz and Miller 1991). An era where environmental consideration is a recognized consumer value appears to have dawned (Ottman 1992). Thus, the 1990's are likely to be christened 'The Decade Of Conscientious Consumption'.

Eco-consumption, the act of selecting a product because of its ecological advantages, is a relatively new type of consumer activity. Eco-consumerism, the active search and product evaluation that underlie eco-consumption, represents a new type of consumer behavior based on an emerging environmental protection ethos (Ottman 1992). Eco-consumption is based on the idea that consumers want products to fulfill both utilitarian and value-expressive needs rather than just providing practical benefits (Ottman 1992). Eco-consumers are thought to incorporate actively into product

selections information about the environmental impact caused by producers, production facilities and practices, raw materials used, product usage and disposal (Stisser 1994; Coddington 1993). These considerations are becoming product attributes on which all brands are evaluated in this 'age of environmental marketing' (Rigney 1992; Ottman 1992).

Not only are consumers using non-traditional criteria for evaluating products, they are basing decisions on a non-traditional set of product benefits. Baby diapers are one area where this shift in benefit analysis is clear (Michael and Smith 1993). Parents are assessing the benefits of cloth versus disposable diapers by weighing comfort and convenience factors against cost and environmental impact. However, consumers cannot directly experience many environmental benefits. They must take on faith that reduced landfills or diminished greenhouse effects are the outcomes of their decisions. Given the scientific complexity of this area, there may never be independent, reliable confirmation that eco-consumption has actually benefitted the environment.

The intangible nature of environmental benefits make environmental marketing ripe for exploitation by unscrupulous advertisers. Real environmentally benign [green] brands are developed, designed, produced, used and/or disposed of in a manner less burdensome to the environment than alternatives. Many marketers, anxious to jump aboard the 'green' band wagon, employed eco-ads informing consumers about the

environmental friendliness of their brand, even when the relationship was untrue, unknown or unrelated to the actual product (Coddington 1993). Evidently they assumed consumers would buy the brands merely because ads or labels linked the product with an environmental benefit or organization.

Green marketers soon found this assumption misguided. Green products were not very successful despite the 1989 Gallup Poll results that 79% of consumers call themselves "environmentalists", many of whom claimed they would pay 5 - 7 percent more for environmentally advantageous products (Rigney 1992; Davis 1993). In addition, environmental organizations and regulators actively contested the use of all types of green claims, including claims that were either vague or overly technical (NAAG 1990; 1991). As a consequence of the unfavorable publicity in several cases, including Bunnies bio-degradable diapers and Hefty bio-degradable trash bags, consumers became skeptical of green product performance and cynical toward advertised green claims (Moore 1993; Thorson, Page and Moore 1993). This gave the whole category of eco-ads [called "GreenSpeak"] a negative connotation (Rigney 1992; Page, Thorson, Obermiller, Atwood and Berger 1993). Consumers say they don't believe most of the green claims made by marketers (Moore 1993; Chase and Smith 1991). Consumers rejected many green products, which further cut marketer interest in the green craze (Davis 1993; Rigney 1992). This cycle of consumer interest,

skepticism and abandonment has been called the "green backlash" (Thorson et al. 1993; Lawrence 1993).

Green backlash is believed to account for much of why the green product market has failed to live up to industry expectations (Lawrence 1993). It is blamed on consumers' disbelief of green claims (Coddington 1993; Thorson et al. 1993). However, that may merely be a convenient excuse for marketers who have done a poor job of providing consumers environmentally advantageous, yet high quality, easily comparable goods. Recent reports indicate that consumers do not refuse to buy green products because they do not believe the advertisements, but because they perceived the products as inferior on the traditionally crucial criteria of price and quality (Moore 1993).

Part of the difficulty in determining why consumers apparently do not respond to green marketing efforts is because little is known about how consumers make ecologically oriented consumption decisions. Some research has investigated who selects green products (Stisser 1994), why some consumers are more likely than others to purchase green products (Schwepker and Cornwell 1991) and how those selections are evaluated in terms of price and quality attributes (Moore 1993). However, no systematic effort has been made to incorporate these findings into a comprehensive, clearly defined and logical consumer behavior framework. In addition, several researchers have called for clarifying the

role that environmental claims take in the purchase decision (Mayer Scammon and Grey-Lee 1993; Ellen, Wiener and Cobb-Walgren 1991).

Purpose of the Study

The purpose of this dissertation is to clarify the individual factors of ecologically oriented consumption process and to explore the effects of advertising believability on that process. To achieve that goal, several steps have been taken. The balance of this chapter is devoted to clarifying the terms and concepts that are unique to this area of study and supplying justifications to support this undertaking. In Chapter Two the relevant literature on green consumption and consumer purchasing decisions will be reviewed. At the end of Chapter Two the research questions and hypotheses will be presented. In Chapter Three the methods that will be used to investigate those questions will be discussed. In Chapter Four the results of this study will be presented. Chapter Five presents a discussion of the implications of those findings.

Definitions

Environment, Ecology and the Biosphere

Environment is defined as the total external and extrinsic physical conditions that affect and influence the growth and development of organisms (Plant and Plant 1991). In discussions pertaining to preserving the natural

environment, it is sometimes specified as the biophysical environment or the biosphere (Rifkin and Rifkin 1992).

Ecology refers to the relationships between organisms and their environments. A balanced ecology indicates that all components of the biosphere are working in harmony to maintain and promote life on Earth. An eco-system is a specific relation or a balance between organisms [i.e. paper consumers] and identified set of environmental elements [i.e. tree, earth and wildlife]. Recently, scientists have claimed that the balance of our ecology depends on how different aspects of the environment or biosphere are affected by humans (Rifkin and Rifkin 1992).

The terms environment and ecology are used interchangeably throughout much of the marketing and scientific literature. For this study, the term 'environment' will be reserved to indicate all of the extrinsic physical components of the world, such as: land, air, water and wildlife. The term 'ecology' indicates the general relationships between consumers, products and all components of the environment. Green marketing is predicated on consumers' relationship with the environment, and the desire to preserve the environment. For precision's sake, this study attempts to maintain the distinction between the phrases like environmental preservation or protection and ecological preservation.

Eco-Consumption and Eco-Consumers

Eco-consumption is the act of purchasing an environmentally or ecologically advantageous product or brand. Eco-consumerism is the active pursuit of these products. The terms specifically refer to 'ecologically oriented' consumption decisions which incorporate 'green' [indicating environmentally advantageous] criteria with other brand or product specific criteria. To be counted as an act of eco-consumption, the consumer must have based an action on an ecologically relevant product characteristic or usage consequence. Accurate application of the term 'eco-consumption' demands that consumption choices be made based on environmentally advantageous product attributes or product benefits such as environmental preservation, conservation or protection.

Eco-consumers are people who incorporate environmental effects into their purchase decisions. Eco-consumers are also called green consumers (Ottman 1992; Schwartz and Miller 1991). Eco-consumers are identified by their willingness to include environmental considerations in purchasing decisions and their actual product selections (Kinnear, Taylor and Ahmed 1974; Henion 1976).

What It Means To Be "Environmentally Friendly"

The meaning of the phrase "Environmentally Friendly" is vague. It can indicate products that are ecologically benign, ecologically advantageous or have ecologically meaningless

ramifications. The term 'environmentally friendly' is usually used to evoke a mood. For example, corporations that say they are environmentally friendly generally mean they take some sort of positive view toward the environment. These companies sometimes employ positive, yet basically meaningless messages such as "We Care about the Environment". Some even make efforts to protect the environment. However, the question of whom corporations are protecting the environment from and how they are doing it is often left out of the message.

Consumers, environmental groups and regulators have all expressed concern and confusion over this term. Recent regulation has made this term more precise. Corporations are required to identify specifically the manner in which they or their products are less burdensome to the environment than other products, brands or formulations (FTC 1992).

Despite the term's vagueness, its emotional connotations are reasonably clear. 'Environmental friendliness' evokes instant understanding of an idea that is fairly clumsy: an interest in the conservation and preservation of the natural environment and ecological relationships within the biosphere. Because it is widely understood and expressive, the term will be used throughout this study. Within this paper, anything that is referred to as environmentally friendly indicates that it has a positive disposition toward the environment and acts in a manner that is at least

environmentally benign, if not environmentally advantageous. A person or company that is environmentally friendly must make decisions that are environmentally advantageous or at least thoughtful.

Environmental Marketing

Marketing involves providing products that satisfy consumer wants at affordable prices and supporting those products with communications designed to project value to consumers (Ottman 1992). Environmental Marketing, synonymous with green marketing, is a more complex form of marketing because it means that consumers must be provided with environmentally benign products that satisfy their wants at affordable prices and are supported by communications that project all of those values to the consumer.

To accomplish this, environmental marketing is a marketing discipline that serves two objectives. The first is to develop products that balance consumers' desire for products that perform well, are affordable, convenient and have only a minimal impact on the environment (Ottman 1992; Coddington 1993). The second is to communicate an image of high quality and environmental sensitivity for both the product and the producer (Ottman 1992; Coddington 1993).

Environmental marketing is propelled by the emergence of a new purchasing ethic called "environmental consumerism" (Ottman 1992). Baby Boomers, apparently motivated by the desire to protect the quality of life and the quality of

their children's lives, have ushered in a seemingly permanent shift in consumer values. This change appears to be permanent because it extends across all generations (Ottman 1992). Baby Boomers wield enormous buying power; many are educated, upscale and have demonstrated the influence to alter the course of business. However, they have also demonstrated that they are unwilling to give up product attributes like performance, convenience and quality (Ottman 1992). This forces producers to create environmentally compatible products that perform at least as well as products already available (Coddington 1993).

The term environmental marketing is likely to have different meanings for different members of the audience (Coddington 1993). For producers, green marketing is the process of producing an environmentally benign product including: product development, manufacturing, distribution, sales and disposal. Ideally, "green" producers analyze the environmental impact of a product throughout its life and make production and design decisions to minimize environmental damage (Coddington 1993). For retailers, green marketing is the combination of purchasing environmentally compatible stock, informing consumers of its availability and supporting their purchases through after-purchase care, such as on-site recycling stations. For consumers, environmental marketing activities are often viewed as gimmicks or exploitations of serious social concerns. The term green

marketing has been almost completely abandoned in an effort to shake off the negative connotations of the early and exploitative efforts to cash in on consumers' environmental concerns (Lawrence 1993; Schlossberg 1993).

GreenSpeak and Eco-Ads

GreenSpeak and eco-ads are the terms used to describe marketing communications efforts which rely on visual and verbal claims that describe, discuss or link environmental preservation efforts with a brand or firm to increase sales. GreenSpeak refers to the entire category of ecologically oriented advertising (Page et al. 1993). Eco-ads and green ads refer to individual executions of ecologically based advertising strategies. The eco-ad terminology has recently come into use because "green" terminology has fallen out of favor since 1991 (Schlossberg 1993). The term 'eco-ads' will be used interchangeably with 'green ads' in this study.

Eco-ads combine and incorporate the environmentally sound decisions made by a producer into a strategy that communicates both the product's ecological compatibility and the marketer's commitment to care for the environment to prospective consumers (Davis 1993; Coddington 1993; Ottman 1992). Marketers use eco-ads to position products as 'green', indicating that their product is more environmentally prudent than the competition. Eco-ads rely on green claims and are dominated by themes emphasizing environmental benefits rather than quality, convenience or

other traditional types of product specific attributes or benefits.

The term 'green claims' generally refers to statements on labels or in ads that inform consumers about the ecological impact of some aspect of a product (NAAG 1991; FTC 1992). This information might concern any facet of the firm, the product, its usage, its packaging, the manufacturing processes it has undergone or alternatives for its disposal. Usually, green claims make some promise of how environmentally benign one or several of those aspects are (Coddington 1993; Henion, Gregory and Clee 1980).

Green Advertising Strategies and Tactics

The tacit assumption inherent in most green advertising campaigns is that consumers who value environmental preservation will purchase the marketer's green brand as soon as they are informed that the product has an environmentally relevant attribute (Davis 1993). At the most basic level, many eco-ads attempt to link positive attitudes toward environmental protection with a specific green attribute and the green attribute with a specific brand name (Ottman 1992; Chase 1991). This linkage is the foundation of green marketing (Ottman 1992). Green marketers apparently hope that the consumer's positive attitude toward environmental preservation will extend to the advertised brand (Coddington 1993; Thorson et al. 1993).

Environmental marketing communications is a niche strategy (Chase 1991; Hume 1991; Ottman 1992). Niche marketing is defined as a small but profitable market in terms of the number of identifiable consumers (Kotler 1988). Currently this market is identified by consumers' general level of ecological concern. Most environmental marketing communications strategies have presented messages aimed at informing consumers who are predisposed to purchase ecologically advantageous products of brand availability (Davis 1993).

Justification Of The Study

Growing Numbers of Eco-Consumers

The green niche is growing. A 1990 New York Times poll indicated that 84% of the American populace considers industrial pollution a serious problem. A 1990 survey sponsored by Good Housekeeping magazine reported that 33% of all surveyed women ranked the environment as one of the top three problems currently faced by the United States (Gillespie 1991). In 1994, a Roper Organization survey found that the trend continues to gain momentum with a 7% net increase since 1991 in the adult population reporting to be eco-consumers (Stisser 1994). From these figures it is apparent that environmentally concerned consumers comprise a significant and growing segment of the population.

However, given the diversity and scope of the niche, and the diversity of the products this strategy is being applied to [e.g. diapers, anti-freeze and shoes], relying on assumptions about how and why consumers select different brands is questionable. The growing popularity of the environmental movement offers an excellent opportunity for green marketers. But, if eco-advertising is going to be part of a successful ecological marketing strategy, it is necessary to understand how it affects consumer decisions.

Increased Use of Green Claims

GreenSpeak and the use of 'green ads' and 'green claims' is one of the fastest growing communication trends in marketing today (Thorson et al. 1993; Coddington 1993; Mayer et al. 1993). The incidence of new products being promoted as "green" has risen from less than one percent in 1986 to more than thirteen percent in 1991 (NAAG 1990; Davis 1991; Mayer et al. 1993). Other sources report as many as 40% of new products are somehow related to the environment (Ottman 1992).

Marketers are employing these measures without the guidance of a clear description of how their target audience makes ecologically oriented decisions. Without this information, management is likely to spend a great deal of time, effort and money exploring different tactics to find one that motivates consumers to buy their brand. This study aims to provide environmental marketers with the information

that can guide their decisions, help them to become more effective and efficient.

Consumer Response to Green Marketing and Advertising

Green marketing and advertising strategies have not been as effective as marketers and researchers predicted or hoped (Davis 1993). The "double-dip recession" and slow recovery of the late '80s and early '90s have increased consumers' value-consciousness (Chase and Smith 1991). Consumers often claimed that they would be willing to pay higher prices for environmentally benign products; however, their actions disprove those statements (Rigney 1992). Consumers report resisting green products because those goods are perceived to be more expensive, less convenient, and/or of lower quality than comparable brands (Moore 1993; Chase and Smith 1991).

The discrepancy between consumers' expressed value in environmental conservation and their response to green marketing appeals indicates that marketers may not be able to realize the returns necessary to justify engaging in the extensive environmental impact research and processes which are necessary to actually create and market more environmentally benign products. If this situation continues, marketers might become more unwilling to invest in the environmental analysis required to produce green products, and the environment will continue to be destroyed.

The proposed research has been designed to address this concern. By examining the factors of ecologically-oriented consumption, the basis for consumer choices should become clear. This should offer direction in the selection of appropriate green product development, setting price and quality parameters and projecting the likelihood of green brand success for different product categories.

Public Policy Concerns

Environmental Marketing is a discipline propelled by the emergence of a new purchasing ethic called "ecological consumerism" (Ottman 1992). However, this new ethos has not been limited to consumption issues. It has also manifested itself in the political and economic mainstreams. Public policy makers are faced with the challenge of routing the future of society. Part of that challenge is determining how to encourage and assure continued economic development.

The capitalist system has encouraged social development for hundreds of years (Uusitalo 1986). However, capitalism is in its later stages. It is now characterized by "increasing concentration of private and corporate ownership of production and distribution means, proportionate to the increasing accumulation and reinvestment of profits" (Morris 1982). Because capitalism is founded on the principle of economic actors pursuing self-interested goals, it mandates the use of public resources such as air and water for private gain. However, as these public resources diminish,

capitalism provides no collectively-interested mechanism for their replenishment. Thus, capitalism fails to provide for future economic stability or development. By remaining narrowly focused on achieving private gain, actors in the marketplace have ignored the means to that end, sustaining the raw materials upon which they draw. A call for change in this type of capitalist paradigm to a more sustainable development paradigm has been made.

The sustainable development paradigm proposes a way for worldwide development to continue by minimizing the constraining effects of over-population, resource depletion and ecological breakdown (Smith 1992). The sustainable development paradigm represents a shift from the capitalistic system of social structure to a system that recognizes the short-term and long-term benefits of collectively interested actions, such as conservation and environmental quality management (Rifkin and Rifkin 1992; Smith, 1992).

This paradigm is gaining acceptance in government and among both large and small businesses (Brown 1990; Brundtland 1987; Smith 1992). Consumer support for the new paradigm is evidenced by the increase in environmental activities such as voluntary recycling, supporting environmental organizations and political agitation (Rifkin 1990).

More than eight out of every ten consumers believe environmentally conscientious production, distribution and disposal is the manufacturer's responsibility (American

Demographics 1991; Yankelovich, Skelly and White/Clancy, Schulman 1992). They are demanding that production processes are cleaner and more efficient (Vandermerwe and Oliff 1990). The results of these demands are that most consumers (64%) say they will avoid purchasing from a firm with a poor environmental record (Levin 1990).

Environmental marketing efforts represent one way that business is trying to meet the demands of two widely divergent publics: shareholders and consumers (Smith 1992; Patagonia 1992). Shareholders want marketers to maintain profitability and consumers want to maintain their standard of living and preserve the environment.

Most businesses are reluctant to adopt this perspective due to the possibilities of reduced short-term profits. However, if advertising can be used to increase green brand selections, there will be less risk to short-term profits, and the possibility of greater returns in the long-term. This study could provide public policy makers with a persuasive incentive for business to adopt the new paradigm.

In sum, consumers and public policy makers are demanding that marketers undertake an environmentally responsible perspective in product development, manufacturing and marketing in order to safeguard future economic growth (NAAG 1990). The emerging support for a sustainable development economic and industrial paradigm is growing globally (Smith 1992). It represents an emerging consensus about the steps

that are necessary to ensure future worldwide economic growth. This paradigm calls for government to employ incentives and regulations encouraging business to be more environmentally responsible. It calls for business to be more environmentally responsible by managing and reducing negative environmental impact and conserving natural resources. However, business appears to need reassurance that short-term and long term profits will both benefit from adoption of the sustainable development paradigm. This study explores the question of whether eco-advertising supports such an undertaking.

CHAPTER II. LITERATURE REVIEW

Introduction

A significant amount of research has investigated who selects green products (Schwartz and Miller 1991; Henion 1976), why some consumers are more likely than others to purchase green products (Ellen et al. 1991; Schwepker and Cornwell 1991) and how those selections are evaluated in terms of price and quality attributes (Henion et al. 1980; Herberger and Buchanan 1971). Two empirical studies have considered consumers' perceptions of eco-ads (Carlson et al. 1993; Thorson, Page and Moore 1993).

Between the empirical studies conducted by academics and the opinions offered by environmental marketing consultants, highly contradictory information is presented about how advertising affects eco-consumption. Experts say that green advertising identifying the actual product features which reduce negative impact on the environment will be most effective in generating sales (Coddington 1993; Ottman 1992). One set of academics says that to be successful, corporations must evoke an affective response by describing the environmental protection efforts they have undertaken (Thorson et al. 1993). Another says that consumers will be likely to find only third-party presentations of environmental facts acceptable (Carlson et al. 1993). These

inconsistencies indicate that no one knows for sure how eco-consumers will respond to different eco-ad executions.

The only common theme has been that even these consumers have not responded positively to eco-ads. Part of the difficulty in determining why consumers do not respond to green marketing efforts is probably because little is known about how consumers make ecologically oriented consumption decisions. Reducing the confusion in this area calls for the application of a clear, well-defined, logical and appropriate consumer choice paradigm.

While several models describe how consumers choose products, previous studies in this area have tacitly assumed that eco-consumption is a unique consumption situation where consumers actively process green claims. Much of the research assumes consumers include these claims as part of a multi-attribute evaluation of the functional benefits which can be gained from purchasing a green brand (Thorson et al. 1993; Carlson et al. 1993; Coddington 1993). Marketers seem to share this view, as many position the environment as another product attribute to be included in a bundle of functional characteristics. Both academics and marketers apparently assume that thinking about environmental protection issues in relation to a product engenders a positive feeling toward that product which ultimately leads to its selection.

Since no systematic effort has been made to incorporate empirical findings and expert opinions into a comprehensive consumer behavior framework, this chapter will delineate the important factors of eco-consumption according to traditional consumer behavior modelling (Engel et al. 1986; Howard and Sheth 1969). For clarity and consistency this review will integrate all of the ecological consumption literature into a cognitive consumer choice paradigm.

This chapter is organized as five major subsections. The first will present a conceptual overview of consumer decision-making from the cognitive perspective. The second section will present segmentation research which has focused on the values, motives and psychosocial factors underlying eco-consumption. The third section presents a review of the research which has explored consumer responses to GreenSpeak. This section includes an overview of the theory of Elaboration Likelihood which is presented to clarify how advertising believability might affect eco-consumption. A summary of the findings, including the assumptions which have been made, will follow. Finally, two models derived from this review, as well as the hypotheses which will be used to explore them, will be presented.

Overview of Consumer Decision Making

One widely adopted model of consumer decision making is based on cognitive theories about information processing

(Peter and Olson 1993; 1988; Bettman 1979b; Engel, Kollet and Blackwell 1986). According to this model, the consumer takes in information including information from eco-ads and processes that information in light of the current situation in order to achieve satisfaction (Hawkins, Best and Coney 1992). This perspective has been selected for this study because it is consistent with earlier works in the eco-consumerism area and because it has often been used to organize the ideas and theories about how consumers use information to make product selections. It presents components of buyer behavior as if they operated sequentially; however, this is not really the case. Cognitive processes are recognized to affect and be affected by each other.

Researchers generally assume that decision making is a goal oriented problem solving process (Peter and Olson 1993). Consumers are thought to perceive products as bundles of features and benefits. Both of these qualities are considered product attributes in the multi-attribute consumption model used in this study (Peter and Olson 1993).

The decision-making process is initiated when consumers recognize a problem. When consumers realize that a difference exists between their ideal state [goal] and their actual state, they are motivated to seek a solution (Peter and Olson 1993). This problem can be cognitively represented as a decision framework in terms of goals, relevant product

knowledge and a set of formal hueristics which are used to direct information search, interpretation and integration (Peter and Olson 1993).

Products are consciously selected from among a range of options after consumers have gathered relevant information, processed it and evaluated each alternative on a number of the most important attributes [called evaluative criteria] (Bettman 1979b). The information processing approach to consumer decision making has been selected to frame this study because it provides reference points which aid understanding about how advertising is likely to affect ecologically oriented consumption.

Essentially, this approach depicts consumer decision-making as a two stage process: interpretation and integration (Peter and Olson 1993). Consumers actively interpret relevant information received from external sources and integrate it into attitudes and beliefs about different products and brands (Bettman 1979b; Peter and Olson 1993). Information, including information from eco-ads, is interpreted according to the consumer's ability, and currently held knowledge. These perceptions are linked with other relevant information, beliefs and evaluations (Peter and Olson 1993; Bettman 1979a). All of this activity results in the accretion, tuning or restructuring of the individual's knowledge network (Peter and Olson 1993). Relevant Perceptions are called upon in the integration stage to help

the consumer form attitudes which direct brand selection (Peter and Olson 1993; Fishbein and Ajzen 1980; Bettman 1979b). Before integration is discussed, the concepts of relevance and attitudes must be clarified.

Relevance

The concept of relevance is central to consumer behavior (Engel et al. 1986). It affects consumer decision making in at least two ways. Consumers' perception of relevance between themselves and a product, called intrinsic involvement, in many circumstances determines the amount of effort consumers will put into product selection (Celci and Olson 1988; Houston and Rothschild 1978). The less self-relevant a product is, the less effort will be put into seeking and interpreting or integrating information (Zaichkowsky 1985; 1986).

Relevance between the product and the attribute is also important. Only relevant product attributes are generally thought to be included in the decision process (Mackenzie 1986; Wright 1975). If a consumer does not see an attribute as relevant, it will not be linked to the activated knowledge network when the consumer is faced with integrating information to make a product selection (Peter and Olson 1993; Engel et al. 1973).

If consumers do not consider environmental preservation relevant to their lives, they are unlikely to consider a Green attribute important. And, if consumers do not see how

a product is related to preserving the environment, their attitudes toward a product with those attributes may not be as favorable as it might have been without them. Either way, when consumers do not find eco-attributes relevant, it is unlikely that they will include ecological considerations as part of their selection process.

Attitudes

Attitudes represent the result of the consumer's integration of relevant information. They are defined as complex evaluations which represent an enduring predisposition to behave consistently toward an object or a concept (Peter and Olson 1993; Fishbein and Ajzen 1980; Katz 1977). Attitudes are often used to predict behavior (Berger and Mitchell 1989). The intensity of a positive attitude toward a brand or an important attribute increases the likelihood that a consumer will select it over less favorably evaluated alternatives (Fishbein and Ajzen 1980).

Consumers form attitudes about every facet of a purchase situation, including the product category, classes of product characteristics, such as size, color or brand names, as well as the functional, social and value-expressive consequences associated with each of these facets. All relevant attitudes can affect the decision processes (Bettman 1981; Peter and Olson 1993). Consumers draw upon these attitudes when gauging a product according to their evaluative criteria (Mowen 1988).

Evaluative criteria are generally thought to represent the most important desired outcomes consumers wish to receive from a product (Wright 1975). Evaluative criteria are standards against which the characteristics of each brand in a set of alternatives are measured. Consumers are thought to form overall brand attitudes based on their perceptions of the extent to which each brand satisfies the requirements of the evaluative criteria (Engel et al. 1973). But overall attitudes are not necessary to selection (Mowen 1988; Bettman 1981; 1979b). Often consumers lack the motivation and knowledge to form overall attitudes toward an alternative (Bettman 1981). In this case product selection is likely to be based on evaluations of a single attribute (Bettman 1981).

Attribute Importance

'Attribute importance' is generally conceptualized as a consumer's assessment of the relative worth of one attribute compared to others for a product category (Mackenzie 1986). Consumers are believed to assign weights to each salient attribute in a kind of mental arithmetic, and are generally thought to select the product which is perceived to perform the best on the most important attribute(s) (Wright 1975; Fishbein and Ajzen 1980). However, consumers don't undertake such complicated analysis for every product every time a purchase is made. Consumers develop decision making rules which guide their integration processes.

A decision rule is a heuristic that makes product selection more manageable (Peter and Olson 1993; Mowen 1988; Hoyer 1984; Wright 1975). Decision rules are useful schemes for integrating attitudes and information. They describe levels of acceptability for attributes like brand, quality and price. Consumers may use formal integration processes, cognitively analyzing and applying their beliefs and evaluations to all the alternatives or attributes. This is often considered extensive problem solving. Or, they might use simple heuristics, such as: If I see a Snickers bar I will buy it. This purchase decision is a product selection routine which the consumer follows.

Advertising has been demonstrated to increase attribute salience by manipulating the predominance of an attribute in an ad, the number of times the consumer is exposed to an ad, and the strength of the visual and verbal cues included in the ad (Mackenzie 1986; Gardner 1983; Ray 1982). Advertising has also been used to persuade consumers to formulate [change or reinforce] positive attitudes toward brands, attributes and the consequences of purchase (Murphy and Cunningham 1993; Rossiter and Percy 1987).

The roles of attribute importance and attitude are especially relevant in looking at ecologically based consumer choice. Some researchers have tried to manipulate perceived attribute importance by including eco-attribute information in advertisements (Henion et al. 1980; Herberger and Buchanan

1972). Others have studied the more general effect of different eco-ad strategies on attitude toward the brand name (Thorson et al. 1993; Coddington 1993). Both have been used to assess advertising effectiveness.

In sum, consumers who find ecological information relevant to themselves or the product are assumed to be more likely to activate their cognitive processes when presented with a green ad than consumer for whom ecological information is irrelevant (Peter and Olson 1993; Coddington 1993). The eco-ad is attended to, interpreted and encoded into memory according to related knowledge. This results in the accretion, tuning or restructuring of the knowledge net and permits the consumer to include the ecological information or the green attribute in his or her evaluation processes (Peter and Olson 1993). Consumers integrate information about those attributes, including information gathered from eco-ads, and form attitudes. If consumers believe that eco-attributes are relevant to themselves and the product, that the product actually has that attribute and that it will actually perform well, it is likely to be an important factor in product choices. They should have a more positive attitude toward that brand than for brands that do not perform well on green criteria. However, if eco-consumers do not believe that green attributes are important evaluative criteria for a particular product, they might form a negative evaluation of

the sponsor and brand that advertise irrelevant green claims (Thorson et al. 1993).

This overview describes a conceptual information processing framework that consumers are thought to employ when making choices among products with several attributes and applies it to the case of ecologically oriented decision making. Eco-ads are sources of information which may affect this process. However, this framework does not describe how individual factors influence green product selection, nor how those factors interact with eco-ads.

Efforts to persuade are usually more effective when messages are targeted as closely as possible to a known audience (Kotler 1988; Reardon 1993). That information is provided in the form of a target market profile. Target market profiles usually identify both sociodemographic and lifestyle characteristics. Consumers' individual psychological characteristics, their goals, beliefs and attitudes which motivate ecologically oriented consumption, are also factors which influence their reception to persuasion. The following section presents the findings of several studies which have explored these characteristics of ecological segmentation.

Ecological Segmentation

Individual Factors of Eco-Consumption

The philosophical perspective of the eco-consumerism model stems from the historical development of ecological

marketing. When the environment started becoming a popular cause, in the late 1960s and early '70s, it was considered to be of interest to a very small segment of the population. Several assumptions were made that ascribed almost fanatical characteristics to eco-consumers (Kassarjian 1971; Kelly 1971; Herberger and Buchanan 1972). Among the more lasting, yet tacit, assumptions are that eco-consumers consider the preservation of the environment to be the most important consideration in any product selection and that they are willing to spend more money and accept lower quality for these brands. These assumptions indicate that eco-consumerism is another type of environmental activism that is undertaken in general consumption situations. This is still the dominant view of ecologically oriented consumption.

The ecological segmentation literature has focused mainly on two individual characteristics: Perceived Consumer Effectiveness and Ecological Orientation.

Perceived Consumer Effectiveness

Identified by Kinnear, Taylor and Ahmed (1974) Perceived Consumer Effectiveness [PCE] is the consumer's belief that individual conservation efforts can have a real and positive impact on the quality of the environment. This construct was originally defined as: "the extent to which a respondent believes that an individual consumer can be effective in pollution abatement" (Kinnear et al. 1974). PCE has

developed more empirically than conceptually, but several studies have offered insights into its abstract meaning.

Kinnear et al. (1974) apparently took the idea of PCE from an earlier study by Anderson and Cunningham (1972). Those authors, investigating the psychosocial components of ecologically oriented consumption, noted that consumers' perception of personal competence [a feeling of mastery of one's personal life and environment] was likely to be a significant factor in ecologically oriented consumption. The nucleus of PCE is apparent from this definition, and since Kinnear (et al. 1974) stated that they were attempting to improve on Anderson and Cunningham's study, this relationship can be surmised.

Kinnear et al. (1974) first measured PCE using a single agree-disagree statement: "It is futile for the individual consumer to try and do anything about pollution." Findings indicate that Perceived Consumer Effectiveness has a marked effect on consumers' level of ecological concern and hence behavior. The less effective consumers believe their actions will be, the less they will be concerned with environmental protection and the less likely they will be to engage in ecologically oriented purchasing. Eco-attributes are probably irrelevant motivators to individuals who feel ineffectual in environmental protection.

Several studies incorporated this concept. All have found that PCE is significantly related to eco-consumption

(Kinnear et al. 1974; Webster 1975; Henion 1976; Schwepker and Cornwell 1991; Ellen et al. 1991). Perceived Consumer Effectiveness is domain specific (Ellen et al. 1991). This means that only specific feelings of futility toward environmental preservation efforts, not toward any other issue, problem or concept are included in the conceptualization of Perceived Consumer Effectiveness. Thus, the relationship between PCE and eco-consumption is direct and specific. PCE has not been manipulated in any studies to date.

Ellen et al. (1991) reviewed and updated the PCE literature, indicating how PCE has been studied since 1974. Perceived Consumer Effectiveness is considered to be a psychological characteristic related to locus-of-control. Locus-of-control is the consumer's perception that rewards are contingent on an individual's own behavior (Rotter 1966). Because PCE is specific to consumers' perception of their ability to control or contribute to environmental preservation, it is considered to be the domain or situation specific manifestation of locus-of-control.

This understanding was implemented to investigate the relative influences of PCE and general ecological concerns to affect decision making (Ellen et al. 1991). PCE is demonstrated to vary across demographic and political affiliation variables (Stisser 1994; Schwartz and Miller 1992; Ellen et al. 1991). Ellen et al. (1991) found that

perceived consumer effectiveness has been closely related to purchase intentions.

The Schwepker and Cornwell (1991) study confirms this work. PCE, measured using an internal locus-of-control scale, was demonstrated to discriminate among consumers who reported high purchase intentions toward ecologically packaged products and consumers with low purchase intention toward those packages (canonical discriminant function = $-.270$). The authors concluded that the findings indicated, "advertising which recognizes that the ecologically concerned person can by his or her own effort, improve ecological quality might appeal to this group".

An inductive approach supporting these deductive, empirical studies has been offered by Moore (1993). Discussing only consumer type products that are used in the home, a small sample was used to qualitatively investigate common themes underlying ecologically oriented purchases. Eleven consumers were asked about their views on the environment and green marketing. Throughout a trip to the grocery store and a tour of their homes, respondents discussed their perceptions of and relationships with green products, green marketing and green advertising.

Moore analyzed these themes and created a diagram of factors in eco-consumerism. Two important themes were identified as "Attitude Toward The Environment" and "Perceived Self-Efficacy". The factor described as self-

efficacy is really PCE. Moore cites Kinnear's (1974) definition of PCE, but improperly identifies the construct as self-efficacy [pg 116-117]. Perceived Consumer Effectiveness is not perceived self-efficacy. Self-efficacy, as defined by Bandura (1977), refers to a person's assessment of how able he or she is to model a behavior. Perceived Consumer Effectiveness indicates how effective people feel they can be in some specific area, in this case it is protecting the environment.

However, Moore's (1993) analysis of the interviews supports previous PCE studies. Consumers who report that they feel effective are more likely to engage in pro-environmental activities, including purchasing.

Padmanabhan and Hunter (1992) also support the role of consumer effectiveness in determining purchase decisions. According to their path analysis, the consumer's belief that he or she can contribute to ecological conservation through a specific action is an important factor in recycling decisions.

In sum, Perceived Consumer Effectiveness is described as an antecedent of Ecological Orientation because it is related to an abstract and generalizable personality trait called "locus of control" (Rotter 1966; Schwepker and Cornwell 1991). Consumers bring it to every purchase decision but PCE has not been manipulated in any study to date. Building and reinforcing consumers' perception of effectiveness has

recently been recommended as a green advertising strategy. Marketers have been instructed to emphasize "how the product empowers consumers to help improve the environment"

(Coddington 1993, original emphasis). Ellen et al. (1991) concluded that "motivating consumers to express their concern through actual behavior is to some extent a function of increasing their perception that individual actions do make a difference."

Ecological Orientation

Recent writings concerning ecological segmentation have commented on the common values shared by eco-consumers. As noted earlier, consumer decision making is goal oriented (Peter and Olson 1993). A goal is the basic consequence, need or value that consumers want to satisfy (Peter and Olson 1993). Described in terms of a hierarchy, there is an end-goal which provides focus for the decision, and attendant sub-goals which provide guidelines for achieving the end-goal. Goals can be abstract, like "happiness," or functional and concrete, like a coffee pot that doesn't dribble (Peter and Olson 1993).

The most abstract type of goals exists in the form of personal values (Pitts and Woodside 1984). Personal values are general life goals that influence everything people do. Personal values represent desired and important end goals (Rokeach 1973). They define what an individual believes is good and bad, beneficial or harmful (Kamakura and Mazzon

1991; Katz 1977). Several value taxonomies have been created. One of the most influential is Rokeach's dichotomy (1973).

Rokeach divides values into two types: terminal and instrumental. Terminal values represent "preferred end-states of being," while instrumental values represent "preferred modes of conduct" (Rokeach 1976). Among the terminal values are such abstract goals as "Living a Comfortable Life". Instrumental values include independence and courage (Peter and Olson 1993).

A new value trend has emerged since the 1980's, value in preserving the environment (Kirkpatrick 1990; Ottman 1992). However, this is a fairly instrumental value that offers direction for preferred modes of conduct. It is likely to be associated with several terminal values. By applying Ottman's (1992) thinking to Rokeach's (1973) terminal and instrumental values typology, it becomes apparent that consumers might be expressing terminal values such as 'Quality of Life' and 'Family Security' by employing the instrumental value: protect the environment. However, these values have never been empirically explored in relation with ecological consumption. The cornerstone of eco-consumerism [ecological segmentation] research has been ecological concern.

Ecological Concern

The idea first investigated as a motive of eco-consumption was called "Ecological Concern" (Kassarjian 1971; Herberger and Buchanan 1971; Anderson and Cunningham 1972; Kinnear and Taylor 1973; Kinnear et al. 1974). Ecological concern, identified as a general attitude of concern toward the ecology by Kassarjian (1971), was reasoned to be the best predictor of ecologically oriented consumption. This concept has dominated the environmental consumerism literature but it has developed empirically, without clear definition (Henion et al. 1980; Schwepker and Cornwell 1992). Ecological concern has been studied as a motive of eco-consumption, but most attention has been given to its value as a segmentation variable (Moore 1993; Yankelovich 1992; Schwepker and Cornwell 1992; Ellen et al 1991; Henion et al. 1980; Webster 1975; Kinnear and Taylor 1973; Kinnear et al. 1974; Anderson and Cunningham 1972; Herberger and Buchanan 1971).

While the theoretical development of ecological concern has been limited, several researchers have attempted to clarify its meaning by examining related constructs. Apparently unwilling to rely on Kassarjian's (1971) finding that attitudes were the best predictor of ecologically oriented consumption, the early researchers in the field sought another segmentation basis. They assumed that consumers were motivated to purchase green products because they were socially responsible and wanted to preserve the

environment, and that this was an appropriate segmentation platform (Kelly 1971; Anderson and Cunningham 1972; Kinnear et al. 1974; Webster 1975; Antil 1984). Ecological concern was considered a reflection of consumers' social responsibility and as a demonstration of their social consciousness (Anderson and Cunningham 1972; Webster 1975).

Kelly (1971) made the link between environmentally oriented consumption and social responsibility, noting that market segments for environmentally advantageous products should be identified according to the degree to which consumers accepted their roles as consumer-citizens. But Kassarijian's study (1971) found that the demographic and psychosocial characteristics usually associated with socially responsible consumers did not effectively discriminate eco-consumers. Anderson and Cunningham (1972) carried the concept forward.

Anderson and Cunningham (1972) used an eight-item Socially Responsible Scale [SRS] as a proxy measure of Ecological Concern. Their objective was to determine how the extent to which consumers differ on social consciousness might provide a basis for segmentation. They developed the SRS by identifying a number of demographic and psychographic factors thought to capture social responsibility, including alienation, dogmatism and personal competence. The authors found that a number of these characteristics discriminated between socially responsible consumers and those who were

not. However, they never linked social responsibility to ecologically oriented consumption.

The attempt to link social responsibility with ecologically oriented consumption was undertaken by Webster, (1975). Webster defined socially conscious consumption as "those behaviors and purchase decisions made by consumers that are related to environmental-resource problems and are motivated not only by a desire to satisfy personal needs, but also by concern for the possible adverse consequences." Webster (1974) found the SRS to be an effective method of discriminating consumers according to recycling behaviors. However, there is some controversy over whether social responsibility goals lead to behaviors that are good for society, or behaviors that reflect social norms (Webster 1974).

This strain of ecological concern research basically came to an end after Antil (1984) found that traditional concepts of social responsibility and social consciousness did not accurately capture the motivations of ecologically concerned consumers. Antil (1984b) reviewed the previous findings and came to the conclusion that social responsibility may be a covariate of ecological concern, but it is not the predominant goal or value in eco-consumerism.

In essence this research has determined that consumers are not expressing their ecological concern as a function of social responsibility or consciousness. Recent ecological

concern research indicates that the growing trend of eco-consumption is linked with the personal, rather than social, benefits (Ottman 1992; Moore 1993). An individual's motivation to purchase green products does not necessarily stem from a desire to make the world a better place, but to improve the quality of one's own life (Ottman 1992).

However, one of the lasting assumptions about eco-consumerism, which was noted earlier, apparently originated from this research and continues to affect the current thinking about eco-consumers. It is the idea that ecologically concerned consumers should be willing to pay more for environmentally friendly products because they feel it is their duty to promote environmental protection.

The attitudinal basis for identifying eco-consumers provided greater understanding about how ecological concern manifests itself into ecologically oriented behavior.

Kinnear and Taylor (1973) created the first specific Ecological Concern measure. They used an eight-item index made up of attitudinal and behavioral items to assess ecological concern as reflected by consumers' perceptions of laundry detergents. Although it was based on the SRS used by Anderson and Cunningham (1972), it was modified significantly and focused on consumers' attitudes. Five items assessed consumers' general attitude toward pollution and one asked about the trade-offs in laundry detergent quality they might be willing to make. Kinnear and Taylor (1973) asked two

behavior questions, including "What brand of laundry product do you usually buy for washing clothes?" and "Have you ever done anything that differed from your usual shopping pattern to purchase a product that was low in pollutants?" They designed this scale to measure ecological concern at the ordinal level, so its application to multivariate statistical techniques is limited (Kinnear and Taylor 1972).

In a subsequent study, Kinnear et al. (1974) clarified the reasoning behind the inclusion of previous behaviors in the ecological concern index. They provided a lasting definition of ecologically concerned consumers: "The concept of an ecologically concerned consumer is composed of two dimensions: first a buyer's attitude must express concern for ecology; and second, he must indicate purchasing behavior that is consistent with the maintenance of the ecology system" [p. 21]. A consumer who expresses concern over the environment, but has never engaged in environmental conservation activities or purchased anything "green," is not an ecologically concerned consumer. Similarly, if a consumer does not express a concerned attitude toward the environment, but has purchased green products in the past for some other reason, that person is not considered an ecologically concerned consumer.

The psychological characteristics Kinnear et al. (1974) identified indicated that eco-consumers were open to new ideas, had a sense of intellectual curiosity, had a great

desire to understand how things work and wanted to avoid harm. Kinnear found that none of the sociodemographic measures, including education, family size or occupation, were significantly related to ecological concern.

Ecologically concerned consumers did report being somewhat more [rather than less] affluent. But, without demographic clusters, it was considered difficult to determine how to reach the small but real segment of eco-consumers the authors believed existed. The psychological characteristics described eco-consumers better than the demographic information gathered. But most were discarded by later researchers, apparently because they were not very descriptive, or very useful for segmenting the market.

Henion's (1976) Ecological Marketing textbook endorsed the identification of ecologically concerned consumers by both attitudes and behaviors. His definition of the ecologically concerned consumer was basically the same as Kinnear et al. (1974). Henion included four criteria that were necessary for identifying ecologically concerned consumers. Consumers had to express a concerned attitude, as well as behavioral intentions, and they had to have reported purchasing ecologically advantageous products in the past. Henion added that direct observation was also necessary for truly assessing the consumers' ecological concern.

Henion et al. (1980) incorporated this criterion into a study of ecological consumption by observing consumers making

laundry detergent selections at a supermarket. Consumers who read the labels and selected the low phosphate brands were considered more ecologically concerned than consumers who did not. Consumers who scored high on Kinnear's ecological concern index and who selected a green brand were considered ecologically concerned. Henion et al. (1980) noted that adding the observational component to categorizing consumers as ecologically concerned is more robust and valid than previously discussed methods.

The one notable departure from the attitudinal-behavioral model was contributed by Maloney, Ward and Braucht (1975). The authors proposed that knowledge about the environment might affect consumption. They developed a 128-item ecological attitude and knowledge scale which was later pared down to a 45 item, four-factor scale. The factors are verbal commitment; actual commitment, including consumption and non-consumption behavioral measures; affective responses, including worry and anger; prior knowledge, including multiple choice items testing scientific facts. The authors found these scales to be reliable [average alpha = .846], but they found little relation between prior environmental knowledge and the attitudinal-behavior factors (Maloney et al. 1975).

Schweper and Cornwell (1991) provide a fairly exhaustive review of previous academic works which profile eco-consumers. Their study synthesizes the ecological concern

research and extends it by testing previously identified factors of ecological concern. The purpose of the study was "to determine the [attitudinal] variables which might be used to discriminate between groups [of consumers] who are and those who are not willing to purchase ecologically packaged products." They tested a number of attitudes and found attitude toward ecologically conscious living [$\alpha = .456$], attitude toward litter [$\alpha = .756$], locus of control [$\alpha = .57$] and the perception of pollution as a problem [$\alpha = .612$] to be the most discriminating characteristics (Wilkes Lambda = .617, Chi. sq. = 68.00, $p = .000$) of purchase intention [$\alpha = .673$]. The significance of this finding, given the poor measurement reliabilities reported, indicates that these factors are robust and important to understanding ecological consumption.

The analysis provided indicates that the most ecologically concerned consumers are white, better educated and have higher income, occupational and socioeconomic status. Also it appears that younger, more politically liberal consumers are more ecologically concerned than others.

The behavioral component of ecological concern has usually been identified as whether or not a consumer has purchased products based on environmental reasons rather than because of other product characteristics (Kinnear et al. 1974). However, other non-consumption, ecological behaviors,

such as recycling, activity in environmental organizations and political agitation, have also been considered to measure the behavioral component of ecological concern (Henion et al. 1980; Crosby, Gill and Taylor 1986).

Several idiosyncratic studies followed Kinnear and Taylor's (1973) attitudinal and behavioral approach. Ecological concern was identified, defined and measured in more than twenty studies. The only replications have been conducted by each scale's original authors. The results in this area are mixed and inconclusive. It wasn't until 1991 that widely accepted demographic segmentation schemes, apparently based on general attitudes of ecological concern and behavioral patterns, began to emerge.

Eco-Consumer Profile

The Roper Organization's green scheme is an example of how academic and practitioner investigations have been integrated. It is predicated on the assumption that eco-consumers are identifiable by their concerned attitudes for the environment (Kinnear et al. 1974; Kassarian 1971). This general demographic profile of eco-consumers has been presented in the trade press.

The Roper Organization has classified American consumers into 5 demographic segments, based on their "greenness" (Schwartz and Miller 1991; Stisser 1994). The greenest consumers are the True-Blue Greens. This group comprises 14% of the adult population. More than half of this group say

they will not purchase a product from a firm with a poor environmental protection record. These people are well educated, earn high incomes and represent the environmental movement's leaders in the general population. Their behavior reflects strong environmental concerns.

The Green-Back Greens, 6% of the population, are less committed to the environment in terms of the time they are willing to devote to ecological activities. But these consumers are more willing to spend money for environmentally advantageous solutions to their problems. Green-Back Greens are willing to spend up to 20% more for environmentally safer products, compared to 7% more for the general population. Like the True-Blue Greens, Green-Back Greens are well educated and affluent.

The third segment, called Sprouts, includes 35% of the adult population. Sprouts are generally unsure of where they stand on issues of environmental concern. They are less committed to purchasing green products. However, they are more likely to alter their behavior in favor of the environment. They are steady but moderate recyclers. This group does not believe that individuals can make a big difference in preserving the environment. Sprouts represent the environmental swing market.

Next are the Grouzers. This group equals 13% of the adult population, which is down from 24% noted in the 1991 Roper Report. Grouzers report being indifferent to

environmental concerns, and they reportedly believe that this indifference is a mainstream attitude. But, Grouzers are actually less likely than the average citizen to engage in any recycling or ecologically oriented behaviors. Grouzers have a low median income and a high school or less education. Most Grouzers reported believing that companies - not consumers - should solve environmental problems.

The least green category is called Basic Browns. This segment is the largest, 32% of the adult population, which is up from 28% in 1991. The Basic Brown category includes the lowest income and least educated members of society. Almost all Basic Browns feel that there is nothing individuals can do about the environment.

Since 1991 consumers have gotten greener. In 1991 Roper reported that 52% of the adult population was uninterested in ecologically advantageous product features. In the latest report that figure is down to 45%. Twenty-five percent of all adults are potentially heavy users of such a good and 26% are likely to be at least occasional buyers. Schwartz and Miller's (1991) predictions that the gradual attitudinal shifts in the 1980's would lead to behavioral changes in the 1990's, and that the greener segments would grow and the browner segments would wither, seems to have been verified (Stisser 1994).

In sum, analysis of the ecological concern literature has been difficult due the lack of a clear conceptualization

of the construct and methodological conflicts among the studies. Several general and specific attitudes have been studied, without clarifying what ecological concern actually is. A variety of behaviors appear to reflect an individual's ecological concern. Recycling and purchasing "environmentally friendly" products are only two of the many behaviors that ecologically minded consumers engage in. However, no one measure has been developed to indicate the propensity toward such behaviors.

Ecological concern is apparently not an independent psychological construct. It appears to be a general orientation toward the environment stemming from the consumer's terminal and instrumental values which relate to the environment and environmental preservation. This orientation is reflected in all the attitudes, beliefs and behaviors studied. This assessment indicates that consumers have an overall orientation toward the environment which is predictive of eco-consumption, and can be measured using a combination of attitudes, belief and behaviors.

However, given the chaotic development of the ecological concern construct, this conceptual analysis of the literature might cause confusion. To avoid conflict, a new designation, Ecological Orientation, will be used henceforth in this paper to represent the sum total of all the consumer attitudes, beliefs and behaviors discussed in the literature as ecological concern (Kinnear et al. 1974; Ellen et al.

1993; Schwepker and Cornwell 1991). The attitudes that have been found to be highly predictive of eco-consumerism, including a general attitude of environmental concern, specific attitudes toward relevant environmental issues, and the perception of pollution as a problem, are incorporated into the Ecological Orientation construct, which will be operationalized in chapter three. The behaviors that have been found highly correlated with ecological concern - recycling, environmental organization activism, previous ecologically oriented purchase decisions - will also be integrated into the Ecological Orientation construct. A consumer's ecological orientation should identify those who are likely to engage in future ecologically oriented consumption.

Summary of Ecological Segmentation Research

Two factors, Perceived Consumer Effectiveness and the newly named Ecological Orientation, have been identified as important individual characteristics in eco-consumption. However, this review also indicates that a number of weaknesses in the eco-consumerism literature exist.

One weakness has been the continued reliance on the circular reasoning about ecological concern and eco-consumers in the early 1970's. The assumption made by Kassarian (1971) that ecological concern motivates eco-consumerism and the tacit assumption that, apparently by definition, eco-consumers will make all of their product selections based on

a brand's greenness is carried forward and hardly challenged. While that may have been true of the green marketplace in the early 70's, societal changes indicate that it is not true any longer (Ottman 1993).

The assumption that eco-consumers have a definitive motivation to purchase products based on their environmental friendliness is very simplistic. A recent study indicates that consumers have competing motivations in most choice situations (Sheth, Newman and Gross 1991). The value expressive nature of a brand may compete with its functional qualities. These competing goals will have differential effects on brand selections (Sheth et al. 1991). Ecologically oriented decisions are based on balancing very different, almost competing goals (Moore 1993; Ottman 1992). Even eco-consumers are likely to try and balance a brand's functional performance features with its environmental performance features. And, as noted, consumers are not willing to give up product performance. Consumers' ultimate goal is likely to be a product that helps them achieve both goals (Moore 1993; Ottman 1992). Given the number of competing goals inherent in ecologically oriented decisions, decisions where environmentally advantageous alternatives are available are more complicated than other consumption decisions. Eco-consumers' actions cannot be predicted merely by their level of ecological concern. However, these considerations do not

seem to have entered into mainstream marketers' vision of eco-consumers.

Moore (1993) offered an explanation for why the green goals might often lose out to the functional ones. Since 'greenness' cannot be experienced per se, other, more experiential, features are likely to take precedence in most purchase decisions. Moore (1993) theorized that this is especially probable if the consumer has purchased green brands previously. A consumer who has been disappointed with the performance of a green product on the functional attributes may be more skeptical about its performance on the environmental features.

No research has been conducted to assess what terminal values are actually associated with these types of purchases. No research has been conducted to determine if eco-consumerism is predominately value-expressive or if consumers consider the environment as just another attribute to be incorporated as part of the attribute bundle. Both approaches have been offered in the literature (Kinnear et al. 1974; Moore 1993). Nor has any research identified the product classes and categories for which environmental protection might be an important goal.

Another weakness is that, to date, no studies linking ecological concern to ecological consumption have included actual purchase activities. Two studies have measured ecological concern as a function of environmentally

advantageous [simulated] product choice (Murphy, Kangun and Locander 1978; Murphy 1978). Only one study that measured ecological concern as an attitude and behavioral concept has also measured purchase intentions or product selection, but they used the selection of a green brand to segment the consumer which makes the study somewhat tautological (Henion et al. 1980).

It appears researchers in this area have assumed that purchase intention is related to actual product selection. However, that may be an unjustified assumption. Several researchers have noted the unreliability of self-reported attitudes for predicting actual behaviors (Fazio and Zanna 1978a; Fazio and Zanna 1978b). Thus, self-reported intentions toward green products may not indicate what eco-consumers are actually buying.

The reliance on self-report data is another weakness in eco-consumerism research (Henion 1976; Henion et al. 1980). Given the popularity of the environment, and how fashionable it is to be a part of conservation efforts, this type of study is likely to suffer from a social desirability bias. Consumers say they are likely to purchase environmentally advantageous products, but their actions may not reflect that sentiment. This bias has been recognized by polling organizations and trade press reporters (Chase 1991).

Padmanabhan and Hunter (1992) also indicate that social desirability bias is likely to make studies which investigate

general attitudes toward the environment and ecologically oriented purchase intentions artificially robust.

Padmanabhan and Hunter (1992) conducted an exploratory path analysis to understand what attitudes could be identified as a direct cause of recycling beer containers. The authors found that general attitudes about the environment, such as those measured by Kinnear et al. (1974) and Schwepker and Cornwell (1991), are not closely correlated with ecological consumption behaviors. Several intervening attitudes, such as how favorably consumers view returning beer containers, are more closely related to the specific behavior. This indicates the necessity of including items that specifically assess the consumers' attitude toward environmental problems directly related to a specific product.

Applying this thinking to environmental marketing efforts indicates that specific product beliefs should be targeted for change. Consumers who believe that a green brand actually performs well on environmental criteria, as well as on price, quality and other product specific criteria are more likely to purchase that brand. These beliefs should provide consumers with links between products and the terminal or instrumental values which are part of the goal-hierarchy for every purchase. The more specifically a product's performance can be linked with benefitting the environment, the more likely consumers will be to consider

the product acceptable. However, this may depend on how important the environmental goal is in a specific situation.

A compounding problem may be the result of what Michael and Smith (1993) called a "Green Gap". That term identifies a marketplace void between what products consumers want and what products are available. "Consumers are not necessarily satisfied by [the ecological attributes of] products that measure well on the traditional attributes of price - performance - convenience, and societal implications must be considered" (p. 93). Consumers who want environmentally advantageous products may not select green brands because they don't believe the brand is green enough.

Finally, if future study in this area was to rely on consumers' attitudes of general ecological concern as the best predictor of eco-consumption, confusing and inconclusive findings would probably result. As noted by Stisser in 1994, the acute ecological concern that characterized the identification stage of the environmental preservation movement is no longer present in the vast majority of the population who consider themselves to be environmentalists. Anxiety might be less acute because consumers have learned, internalized and routinized many of the actions which are necessary to protect the environment (Stisser 1994). This indicates that eco-consumers' level of concern might not reflect their commitment to preserving the environment.

GreenSpeak

The only other factor that has received attention in the eco-consumerism literature is advertising. Several environmental marketing consultants, trade publications and academics have proposed that consumers do not buy green products because they don't believe the advertisements (Davis 1993; Coddington 1993; Rigney 1992; Moore 1993; Ottman 1992). This idea, while never critically studied, is apparently based on marketers' experience, the intangible nature of green claims, and the general assumption that consumers must believe an ad before it can positively influence brand selection.

But all forms of GreenSpeak do not share this blame equally. Marketers, industry experts and researchers alike agree that ad believability differs according to an eco-ad's executional strategy. To date, three typologies categorizing eco-ads have emerged (Thorson et al. 1993; Carlson et al. 1993; Coddington 1993). All are based on the premise that ad believability affects consumer decision making, but they do not agree on how.

Eco-Ad Typologies

An environmental marketing consultant, Walter Coddington (1993) predicates his typology and advice on experience. Two additional categorization procedures, presented by academics (Thorson, Page and Moore 1993; Carlson, Grove and Kangun

1993), are based on qualitative content analysis of eco-ads found in the print and broadcast media.

Coddington (1993) presumes that ad believability has a direct effect on consumption. In an effort to help marketers make their ads more believable, credible and acceptable, he separated green advertisements into five types: Public Service Announcements; Indirect Image; Direct Image; Product Related and Sales Promotion. Public Service Announcements [PSA] are non-product and non-firm related messages about issues of social concern. But, since PSA's do not associate a brand with an environmental advantage or impact, they do not fit with the definition used for eco-ads in this study. PSA's will not be discussed further.

Coddington recognized two types of image strategies. Indirect corporate image advertisements are non-product related messages about issues of social concern that are sponsored by a corporation in an identifiable but subtle manner. These ads do not mention brand names or product attributes. Coddington predicted that these types of ads would be perceived as the most credible, but once again the definition of eco-ad does not include non-product type ads. Indirect image ads will not be discussed further.

Coddington's (1993) second image type strategy, called Direct Corporate Image, includes advertisements which describe a corporation's green attitude in a general and self-promoting manner, such as: Exxon - We Care (Coddington

1993). The author predicted that these ads would be considered least credible, because they are the least informative and the most self-serving.

Product Related Ads (Coddington 1993) describe specific environmental product characteristics and provide some factual basis for the ecological advantage. The author predicted that these ads could be considered very credible, as long as specific guidelines are followed.

First, the ad must recognize the environmental impact of the product and how the product or the package addresses it. Examples of this recommendation are seen in the new laundry detergent packages that are refillable and the proliferation of concentrated detergents. Next, these ads must be as specific as possible and use plain English (NAAG, 1991 and 1992; Gray-Lee 1993). Finally, the advertisement should focus on the product or the package, not on the corporation.

The final type of eco-ad recognized by Coddington (1993) is Sales Promotions. Coddington calls the efforts that the firm makes to incorporate non-product related environmental efforts into their advertising strategy Sales Promotion type ads. "Because consumers are deeply distrustful of corporate communications, it is advisable to deliver corporate messages through more credible sources, such as environmental groups and the print and broadcast media" (Coddington 1993). The author predicts that Sales Promotion ads that link a product with an environmental organization or cause will be the most

believable and the most effective strategy for green marketers.

The second taxonomy to emerge was developed by Carlson and his colleagues (1993). This team apparently conceptualized the lack of eco-ad believability as consumers' perception of how deceptive an ad is. The eco-ads perceived to be deceptive would not be accepted by eco-consumers.

Carlson et al. (1993) examined a broad sample [n = 100] of environmental ads from magazines which resulted in the analysis of 122 individual green claims. Their intention was to "identify a set of mutually exclusive and exhaustive categories that reflect the nature of the claims found among the ads". They used this categorization strategy to determine what type of green claims consumers were likely to find acceptable and what type would be considered somehow deceptive. Three judges cross-categorized sample ads by claim type and deceptiveness. This resulted in a 4X4 matrix. The four degrees of deceptiveness are vague/ambiguous, omission, false/outright lie and acceptable. The four mutually exclusive types of claims are Image [the most likely to be deceptive], Product [somewhat less deceptive], Process [relatively more acceptable], and Environmental Fact [the least deceptive type].

Image orientation was defined as: "The claim associates an organization with an environmental cause or activity for which there is broad based support." The example provided

was: "We are committed to preserving our forests." Image ads were judged to be vague and usually unacceptable.

The Product oriented category was defined as: "The claim focuses on the environmentally friendly attributes that a product possess." An example, "This product is Biodegradable" was provided. This type of ad was judged more likely to be ambiguous than outright deceptive and only somewhat acceptable.

The Process oriented category was defined as: "The claim deals with an organization's internal technology, production technique and/or disposal method that yielded environmental benefits." An example of this type was also included: "Twenty percent of the raw materials used in producing this good are recycled." Process ads were also judged to be only somewhat acceptable.

The fourth category, Environmental Fact, was added after initial review of the sample. To be considered an Environmental Fact: "The claim involves an independent statement that is ostensibly factual in nature from an organization about the environment at large, or its condition." An example was provided "The world's rain forests are being destroyed at the rate of two acres per second." Environmental Facts were judged to be the most acceptable type of eco-ads.

A final category, Combination, was not included in judging. It was defined as eco-ads that incorporated multiple

product, process, image or environmental fact type ad characteristics. Overall, the authors found that green claims were more often considered to be vague/ambiguous than outright deceptive [$n=22$; Chi sq. = 11.52, df 1, $p < .05$]. The result is likely to be that consumers will perceive eco-ads as unbelievable or that green marketers are lying to them.

The final typology presented in the literature was by Thorson and her colleagues (1993). To identify effective eco-ad executional strategies, they examined the popular press for reactions to different eco-ad campaigns. The purpose of this study was to see if some eco-ad categories were perceived more positively than others, and if that positive attitude translated into a more positive attitude toward the ad's sponsor (Thorson et al. 1993). Positive attitude toward the sponsor is likely to result in a more generally positive evaluation of the brand as an acceptable alternative. The authors based this study on current thinking about the importance of attitude toward the ad and the sponsor in consumer decision-making (Lutz 1985; Mackenzie and Lutz 1989).

The authors grouped a number of advertisements into different types by the amount and polarity of the press reports about the main theme of the ad. Negative press indicated environmentalists found an ad objectionable. No negative press indicated that the campaign was acceptable.

Thorson et al. (1993) identified four types of eco-ads prevalent on broadcast media: packaging, product, instructional and 'Look, see what we're doing'. Actual coding definitions were not provided, but examples were. Press reports indicated that Product and Packaging ads were more criticized by environmentalists than the Instructional or 'Look, see what we're doing' types.

Packaging ads clearly focused on the environmental impact of a product's packaging. The negative press and controversy over McDonald's use of styrofoam containers was cited. Thorson et al. (1993) described the product category as being identical to Carlson's et al. (1993). The conflict between green claims and the real environmental impact of brands like Hefty biodegradable trash bags and Bunnies diapers were mentioned.

Instructional ads suggested some behavior that should be engaged in by environmentally conscious citizens (Thorson et al. 1993). Anheuser-Busch's "let's recycle those aluminum cans" campaign was noted. However, since these ads are not linking a brand with the environment to promote purchase, they are not included in the definition of eco-advertising presented earlier in this study. The instructional type seems outside the scope of this study and will not be discussed further.

The "Look, see what we're doing" ads focused on the environmental efforts the company was making. McDonald's

tree give-away and Dow's plastic recycling campaigns were mentioned to describe this category. The lack of negative press indicates that consumers might have a more positive attitude toward these types of eco-ad strategies.

The overall findings indicate that consumers with a positive attitude toward an eco-ad are likely to profess a positive attitude toward the sponsoring firm (Thorson et al. 1993). However, while credibility is related to attitude toward the ad, there is no significant relationship between consumers' perception of advertiser credibility and attitude toward the sponsor. Thorson et al. (1993) did not study purchase intention or purchasing.

An analysis of these three taxonomies reveals only one substantive difference. Thorson et al. (1993) and Coddington's (1993) classification schemes depend on the entire eco-ad message, rather than on individual message components identified by Carlson et al. (1993).

In general these categorization schemes may be somewhat arbitrary, and all rely heavily on the judgment of the authors. For instance, Thorson's team (1993) identified as part of their "Look" type an ad that fits easily into Coddington's Sales Promotion category. An example of the "Look" type offered by Thorson et al. (1993) is "McDonald's Evergreen Give-A-Way". This effort promoted McDonald's as environmentally friendly by tying a trip to the restaurant into support for the environment. McDonald's gave evergreen

trees to children [and some adults]. McDonald' strategy was clearly to incorporate non-product related environmental efforts into advertising. Thorson et al. (1993) noted that there was no negative press about this campaign, indicating that environmentalists found nothing misleading or unbelievable about the campaign. However, this data collection technique interprets the lack of evidence as a meaningful component of the study. Just because no negative press was found does not mean that the eco-ads were not thought to be deceptive by experts. Recent experience indicates that the promotion must be product relevant and timely [unlike the evergreen tree giveaway that McDonald's sponsored while the ground was still frozen in January, 1990] (Davis 1993).

These categories do, however, provide a tidy way to examine the effect of eco-ad believability on consumption. Based on common assumptions, with similar goals, each study reported the various degrees of acceptability consumers are likely to ascribe to each type of eco-ad. According to the thinking presented by the three taxonomies, an eco-advertisement's characteristics will, presumably, determine how believable it is perceived to be. It is apparent, from the interchangeable usage of the terms believable, credible and acceptable in all the works, that these researchers operate from the assumption that an ad must be believable to be accepted.

It appears that all of the types presented can be condensed into three main categories: Image, Product and Environmental Tie-ins. These categories offer a wide latitude of executional formats, but clearly identify the main theme of the ad. These taxonomies can be integrated according to a continuum of believability. The continuum ranges from very believable to very unbelievable types of eco-ads. Different ad types' placement or position along the believability continuum can be predicted, apparently, according to their executional characteristics.

The Image type of eco-ad includes the Direct Image type discussed by Coddington (1993), the Image Oriented type presented by Carlson et al. (1993), and the "Look" type identified by Thorson et al. (1993). The image type ads are defined as eco-ads that position the brand and/or producer as environmentally friendly. These ads contain no product attributes but use verbal and visual characterizations intended to evoke positive affective and attitudinal responses. This type of ad relies on Carlson's et al. (1993) Image Oriented type claims. The evidence and opinions offered in the studies indicate that Image type eco-ads fall at the lowest end of the believability continuum. Carlson et al. (1993) indicate that consumers are most likely to disbelieve claims that "extol the environmental benefits of products and those that are designed to enhance the environmental image of an organization".

The Product type includes the product type categories discussed by all the studies. This category is considered fairly acceptable (Carlson et al. 1993); however it is also likely that this strategy may backfire (Coddington 1993). Thorson's findings indicate that product ads are criticized by environmentalists and that consumers have a less favorable attitude toward them than other types (Thorson et al. 1993). Product ads should fall near the middle of the believability continuum.

Environmental Tie-In type ads include the instructional and perhaps some of the "Look" type ads discussed by Thorson et al. (1993). This category also includes the Environmental Fact and Sales Promotion types discussed by Carlson et al. (1993) and Coddington (1993). Environmental Tie-Ins are predicted to be the most believable types of eco-advertising strategy. This type should therefore elicit the greatest response and be the most effective.

In sum, while there are semantic differences, essentially these researchers all investigated the extent to which consumers were likely to believe different executional strategies. To date all the studies investigating advertising's effect on eco-consumption assume that there is a relationship between advertising believability and ecologically oriented brand selections. These studies agree with the premise that consumers are likely to perceive some types of eco-ads to be more believable than other types.

They also show that advertising believability may indirectly influence eco-consumption through a consumer's perception of an ad's deceptiveness or by its effect on consumer's evaluation of the sponsor (Thorson et al. 1993; Carlson 1993). However, none of these studies tested their assertions with real consumers or in relation to real product selection.

It should also be noted that there has been some debate on whether any level of believability is necessary to elicit consumer's intention to purchase (Maloney 1962). Maloney (1962) found that disbelief which engenders curiosity or that sparks the desire to prove the ad wrong can be credited with increasing purchase intentions. Ads which contain at least one memorable characteristic, whether it is literally unbelievable like a cat asking for Meow Mix by name or very believable like John Swayze holding up a ticking Timex after its been strapped to the bottom of a racing speed boat, have been equally effective. Accordingly, the effect that advertising believability may have on eco-consumption (Maloney 1962) remains unclear.

From this review it is apparent that researchers and marketers have different views about how eco-ad believability affects ecologically oriented consumption. Marketers and industry experts see consumers' perceptions of eco-ad believability to be a direct indication of their willingness to select a green brand (Coddington 1993). Empirical

researchers have demonstrated that eco-ad believability may indirectly affect consumers' choice by influencing their attitudes toward the sponsor or their perception of the ad's deceptiveness. But all agree that some types of eco-ads are likely to be considered more believable than others.

Advertising Believability, the term generally used to represent consumers' perception of an eco-ad's believability, acceptability or deceptiveness, has often been proposed as a primary determinant of eco-consumption (Coddington 1993; Carlson 1993; Thorson et al. 1993; Ottman 1992). However, no researchers have investigated the link between eco-ad believability and green product purchase. Nor has any consensus been reached about what advertising believability really is or how it affects consumer decision-making. Recent studies offer some insight into how advertising believability may affect eco-consumption.

Sources of Consumer Mistrust in GreenSpeak

There appear to be two causes of consumer mistrust of green advertisements. Each should have its own effect on eco-consumption. Consumers report being uncertain about green marketing messages because of the confusing, often conflicting, reports from experts in the media (Moore 1993; Ottman 1992). These contradictions make consumers unsure of what is actually good for the environment (Moore 1993). Consumers also report that they sometimes do not perceive a strong relationship between a green product attribute and

real benefits to the environment. When these seemingly irrelevant green claims are made, consumers are likely to believe that the marketer is trying to take advantage of them. Moore (1993) arbitrarily merged these reasons together and concluded that consumers do not trust eco-ads because they are cynical.

However, further analysis indicated that Moore's (1993) findings actually reflect two components, cynicism and skepticism. A recent study by Boush, Kim, Kahle and Batra (1993) noted that "it may be crucial to differentiate between cynicism, which is the mistrust of others' motives, and skepticism, which is the tendency to question." Boush's team (1993) found that cynicism and skepticism are independent constructs. Skeptics are motivated to process messages and scrutinize products, while cynics are likely to dismiss all messages (Boush et al. 1993). Skeptics are not necessarily cynical, they are merely uncertain about the information or the source's ability to be accurate. Consumers who do not respond positively to eco-ads because they are unsure of what is actually good for the environment are exhibiting skepticism, not cynicism.

Consumer Skepticism

Studied as an affective response that mediates advertising, skepticism has received little attention in consumer research literature. Batra and Ray (1986) reviewed several categorization schemes describing consumers'

affective responses to advertisements. They found that skepticism had been identified by two researchers (Nowlis 1965; Friijda 1970). They also noted that Osgood (1966) indirectly included skepticism as part of a distrust category, which also included suspicious and incredulous doubt. Wells (1971) viewed skepticism as part of irritation toward the ad, and Schlinger (1979) viewed it as part of an alienation category. Analysis of these schemes apparently resulted in Batra and Ray's (1986) definition: "It is clear that skepticism is a feeling of distrust and doubt evoked by a stimulus that appears unrealistic or phony." It interacts with cognitive evaluations and is likely to affect consumer behavior by mediating acceptance of advertising messages.

Skeptics are likely to search the ad for reassurance that the information is truthful and relevant. The more believable the message, the more reassured skeptics will be. In this sense, eco-ad characteristics trigger consumer skepticism. Perceived believability is an outcome of the interaction between an eco-ad and consumers' skepticism [feeling of confusion about the relevant ecological issues]. Perceived believability is a situationally specific response to an ad. This indicates that skepticism will be manifested in terms of how believable or acceptable consumers find eco-ads. In essence, this conceptualization indicates that perceived ad believability is a response which specifically refers to ad acceptance.

Consumers' positive impressions about how believable an eco-ad is should act as persuasion boosters. When investigated from this perspective, advertising believability has greater meaning than the nebulous, indistinct properties ascribed to it in the eco-consumerism literature. Only one researcher, Beltramini (1982; 1985; 1988) is known to have studied ad believability in a manner similar to this understanding.

Perceived Ad Believability

Advertising Believability has been conceptualized as a message based persuasion cue (Beltramini 1994). The advertising believability construct has developed empirically. It is defined as: "the extent to which an ad is capable of evoking sufficient confidence in its truthfulness to render it acceptable to consumers" (Beltramini 1982). It has been demonstrated to affect the extent to which consumers integrate information from an ad into decision making (Beltramini 1982; 1988; 1993; 1994). These findings confirm the conceptualization noted earlier, that perceived advertising believability is likely to be a response that specifically refers to the acceptance of an ad.

The definition proved by Beltramini also indicates that Advertising Believability is likely to be closely related to a persuasion cue called advertising credibility. "Ad credibility is defined as the extent to which the audience perceived claims made about the brand in the ad to be

truthful and believable" (Lutz 1985). Ad credibility consists of a credibility sub-system including: ad claim discrepancy, advertiser credibility and advertising credibility (Mackenzie and Lutz 1989). Both ad credibility and believability refer to how likely the consumer is to trust an ad, and the terms credibility and believability are used interchangeably throughout the literature.

However, Advertising Believability is conceptually distinct from ad credibility because it refers to consumers' perception of an entire ad, rather than just their perceptions of the ad's sponsor or presenter (Beltramini 1994). This construct is likely to be especially useful in situations where an eco-ad does not have an identifiable presenter other than the brand name. Advertising Believability seems to capture the essence of consumer skepticism by concentrating on perceptions of the entire eco-ad, rather than the individual components. The main drawback of Advertising Believability is the lack of theoretical development of this construct (Beltramini 1994). Given the definitional and semantic similarities it is reasonable to apply findings about how advertising credibility affects consumption to understand how advertising believability might effect eco-consumption. The Elaboration Likelihood Model offers a theoretical framework which predicts how advertising credibility affects consumers' processing of advertisements. This theory offers a useful paradigm for exploring the

possible effects of advertising believability on eco-consumption.

The Elaboration Likelihood Model of Persuasion

The Elaboration Likelihood Model [ELM] is a widely-used theory which can be used to describe how advertising credibility affects advertising persuasiveness (Petty and Cacioppo 1986). One component of ad credibility, advertiser credibility, has been directly studied in this context, indicating it is reasonable to extend these findings to the whole construct. In general, this model has been used to illustrate how persuasion cues, like ad credibility, interact with situationally and individually specific characteristics to affect responses to persuasion. Two routes have been identified through which a persuasive message might affect consumers' attitudes: peripheral and central. The most important determinants of which route will be utilized are consumers' ability and motivation to process the message.

Processing refers to the responses of consumers as they are actively thinking about a message in terms of held knowledge and attitudes. When they are engaged in active processing, consumers are believed to elaborate on a message, making connections between themselves and ideas it contains. They are also thought to draw conclusions, formulate countering arguments and generally interpret the message as fully as possible. The extent to which consumers engage in

these activities is considered to identify their level of processing.

Ability is defined as the skill or proficiency necessary to process brand information from an ad (MacInnis and Jaworski 1989). A consumer's ability to process an ad might be constrained by lack of education or limited intelligence, limited product knowledge, message difficulty, or message characteristics, such as visuals without explanatory copy (MacInnis and Jaworski 1989). Most average adult consumers are presumed able to process targeted advertising messages.

Motivation to process is indicated by the consumer's involvement with some aspect of the product, the message or an ad characteristic. When a consumer is very motivated [highly involved] to process an ad, the ELM indicates that persuasion is taking a central route to attitude change. This means that consumers are likely to elaborate on the ad by actively making links between the message and held knowledge (Petty and Cacioppo 1986). When motivation is low, persuasion takes a peripheral route. In this case, consumers are unlikely to elaborate on a message or make active associations between the message and held knowledge (Petty and Cacioppo 1986). A further review of involvement provides greater understanding of this pivotal construct.

Involvement

Involvement is a construct that indicates how relevant something is to consumers (Petty and Cacioppo 1981; Richins

and Bloch 1986; Zaichkowsky 1985). Although the subject of ongoing debate, involvement has been conceptualized as being determined by how instrumental an action, object or idea is perceived to be in achieving personal goals and values (Celci and Olson 1988). Involvement is a motivational state that propels consumers into action (Zaichkowsky 1985; Celci and Olson 1988; Bloch and Richins 1983).

Three types of involvement have been identified (Houston and Rothschild 1978; Celci and Olson 1988). Intrinsic or enduring involvement generally refers to the degree of ego-centrality a consumer perceives between themselves [their values and goals] and a product (Ohanian 1989). Product relevance is the perceived linkage between a product, which represents known attributes and benefits, and an individual's goals or values. "To the extent that product characteristics are associated with personal goals, the consumer will experience strong feelings of personal relevance or involvement with the product" (Celci and Olson 1988).

Situational involvement is the perceived relevance activated by stimuli in the consumer's immediate environment (Celci and Olson 1988). Situational involvement for grocery items increases when consumers plan or engage in a shopping trip. Stimuli in the grocery store, such as product labels, which associate consumer values and goals with a product also provoke situational involvement. The final category, felt involvement [also called response involvement], refers to a

consumer's overall subjective feeling of personal relevance at a given moment with regard to a specific stimulus (Celci and Olson 1988; Peter and Olson 1993).

Felt involvement is believed to be determined by intrinsic sources of perceived relevance [ISPR] and situational sources of perceived relevance [SSPR] (Celci and Olson 1988). This conceptualization integrates the three separate types of involvement into a unified theory (Celci and Olson 1988; Peter and Olson 1993). "Felt involvement is the motivational state that energizes and directs cognitive processing and overt behaviors" (Peter and Olson 1993).

Previous research supports this finding (Mittal 1989; Celci and Olson 1988; Laczniak, Muehling and Grossbart 1989; Petty and Cacioppo 1986).

This theory helps advertisers understand the factors that contribute to consumers' felt involvement. Consumer involvement with an ad and the ad's subsequent effectiveness [in terms of persuading consumers to act in accordance with the position taken in the ad] have been demonstrated to be significantly related (Antil 1984a; Costely 1988; Muehling, Laczniak and Andrews 1993; Laczniak et al. 1989). Thus, advertisers often attempt to increase consumers' involvement with ads by including intrinsically and situationally more involving stimuli (Rossiter and Percy 1987). Sports stars are included in ads for sodas and snacks. Cents-off coupons, sweepstakes and other promotions have been used to increase

consumer involvement with ads (Rossiter and Percy 1987). Green marketers use environmental issues, images and causes to stimulate involvement.

Celci and Olson (1988) measured Felt Involvement with advertisements in a study that also assessed intrinsic involvement and manipulated situational relevance. Findings support their conceptualization of felt involvement. Other findings from the study indicate that Felt Involvement increases as both intrinsic and situational relevance increase. In addition, as situational relevance increases, ads for intrinsically involving products are processed more actively in terms of comprehension effort, focus of attention and elaboration of the messages. Felt Involvement was significantly affected by both SSPR and ISPR [$p = .01$]. However, the magnitude of ISPR's effect was significantly larger than SSPR (Celci and Olson 1988). This means that intrinsic sources of perceived self relevance exert a more powerful influence on Felt Involvement than situational sources.

This finding is generally supported by Leippe and Elkin (1987). These authors investigated what would happen under conditions where intrinsic [called issue involvement] and situational [called response involvement] motivations clashed. Leippe and Elkin (1987) assessed how issue involvement and response involvement interacted to affect students' attitude change toward a controversial issue. The

authors manipulated response involvement by telling students they would have to either publicly disclose their opinions or that their responses would remain private. The team found that issue involvement [ISPR] was the strongest determinant of attitude change, under both high and low response involvement [SSPR] conditions. These findings seem to confirm the importance of ISPR in directing Felt Involvement.

When this theory is applied to the study of eco-ads, the factors of Felt Involvement are likely to be more complicated than those discussed by Celci and Olson (1988). Instead of a single source of intrinsic self-relevance, consumers are confronted with two intrinsically relevant items: the issue of environmental protection and the actual product being advertised. When consumers are exposed to an eco-ad, their perceived self-relevance with the issue of environmental protection is likely to be combined with their feelings of relevance between the product and themselves. That combination, along with the situational sources, will result in the consumer's felt involvement with an eco-ad. This special case will be called Eco-Ad Involvement. Eco-Ad Involvement is the consumer's felt involvement with an advertisement for a green product.

According to the ELM, consumers' felt involvement with an eco-ad determines the role that advertising credibility, and perhaps believability, plays in affecting consumers' response (Petty and Cacioppo 1980). High involvement

increases thought production and the activity associated with making links between held knowledge and relevant stimuli. Positive thoughts will dominate responses in high involvement situations when the message is consistent with previously held attitudes (Buchholtz and Smith 1991). Highly believable ads should produce few reasons to argue with the message (Gotlieb, Schlacter and St. Louis 1992). This should decrease negative thought production, which would make eco-ads more acceptable and therefore more likely to be integrated into relevant attitudes. The ELM indicates that persuasion is taking a central route; this is likely to result in enduring attitude changes.

When highly involved consumers are confronted with eco-ads that are inconsistent with held beliefs, the ELM predicts that they will be highly motivated to scrutinize the message. These consumers are likely to respond in a skeptical manner toward the ad. If the ad is perceived to be unbelievable, these skeptical consumers are more likely to argue with the claims and less likely to be persuaded by the message (Petty and Cacioppo 1986). If the ad is believable, they are less likely to argue, but they are also less likely to be persuaded, given their high level of involvement (Petty and Cacioppo 1986).

When consumers are not highly involved with eco-ad processing, negative thought production is inhibited by distraction (Petty and Cacioppo 1986). Consumers are

distracted from detailed processing by ad characteristics which increase believability, and this results in temporary positive attitude reinforcement (Dholakia and Sternthal 1977; Olson and Zanna 1993). The ELM indicates that persuasion is taking a more peripheral route through the consumer's psyche to change attitudes (Petty and Cacioppo 1986). When a consumer is not motivated, message cues [like source expertise or the number of arguments] become important because consumers are not likely to elaborate on the message.

Applying this analysis to eco-consumption, eco-consumers can be presumed to be highly involved with environmental preservation issues. They can also be assumed to find at least some green products relevant to their daily lives [toilet paper, paper towels, anti-freeze]. A reasonable prediction might be that eco-ads would be actively processed, employing a central route to persuasion, and exposure to eco-ads should result in an enduring positive attitude change. Accordingly, perceived believability shouldn't have as big an impact on highly motivated consumers as on less motivated consumers.

This might be an accurate description of how eco-ad believability affects consumption. However, the literature has only concentrated on consumers' mistrust of eco-advertising. The eco-consumerism literature has not applied any systematic, theoretical approach, such as the ELM, to

understanding how eco-ad believability might affect eco-consumption.

However, it does offer guidance and inferences about how advertising believability [represented by consumer skepticism] might influence eco-ad processing and attitude change (Petty and Cacioppo 1986; Gotlieb and Sarel 1991; Buchholtz and Smith 1991). In general, believability, like credibility, should increase message acceptance by decreasing negative cognitions or unfavorable cognitive responses in consumers who are highly involved with the eco-ad (Petty and Cacioppo 1986). A highly involved but less skeptical consumer's responses are likely to be characterized by a small number of negative thoughts in relation to the number of total thoughts he or she thinks about the ad. Highly involved and highly skeptical consumers should respond to the ad with far more arguments against the ad's position and more thoughts in general. This should be extremely noticeable in relation to less involved and highly skeptical consumers. These consumers probably would not list a single response that wasn't negative. This analysis describes the likely effect of consumer skepticism on eco-ad response.

This overview indicates that green marketers apparently operate under several 'involvement' related assumptions. Primarily they seem to believe that eco-consumers are very involved with the environment and therefore involved with green products and green advertising. Green marketers also

seem to operate under the impression that an eco-consumer will pay more attention to an eco-ad, even for low-involvement type product categories like paper towels, detergent and toilet paper, because of their issue involvement. Leippe and Elkin's (1987) study provides additional evidence that eco-consumers' intrinsic involvement is likely to positively interact with pro-environmental persuasive efforts and result in increased attitude changes toward the object of the message. This means that consumers' involvement with the environment may predict how persuasive eco-ads are likely to be.

In sum, consumer skepticism represents one of the reasons consumers are likely to mistrust GreenSpeak. Perceived Ad Believability of eco ads is a result of the interaction between consumer skepticism and ad executions. The ELM provides an understanding of how Perceived Ad Believability and Eco-Ad Involvement may mediate consumers' response to green claims. The theoretical understanding developed here should allow marketers and researchers to predict how consumers are likely to respond to eco-ads based on their involvement and skepticism. However, consumer skepticism is only part of the reason why consumers mistrust GreenSpeak. The other component, noted by Moore (1993), is consumer cynicism. Consumers are likely to be cynical about an eco-ad when they perceive green attributes to be irrelevant to the product.

Consumer Cynicism

Cynicism is characterized by a general perception that everyone is selfish. It is considered to be a personality trait (Boush et al. 1993). But, because consumers do not react with the same amount of cynicism to every ad, it appears to have situationally specific components (Boush et al. 1993). According to Moore's (1993) findings, cynical responses to eco-ads are triggered by perceived incongruity between the goals of the producer and the goals of environmental conservation. Consumers often view green claims as merely gimmicks used to enhance product sales (Moore 1993; Kirkpatrick 1990; Olney and Bryce 1991). Many consumers, believing that the only goal of business is profit, often see producers' efforts to protect the environment and manufacture environmentally advantageous products, as suspicious (Moore 1993). One respondent stated "I think it's a larger marketing bonanza than an environmental one." Another claimed, "some [marketers] are just putting it [green claims] on their products just to sell the product." Moore stated that "Probably the most pervasive theme brought home by the informants was that they do not trust marketing hype." (Moore 1993, p.113). Accordingly, cynical consumers are unlikely to trust, believe in or act upon ecological claims provided by the marketer, especially when there is no supporting information about why the brand is ecologically superior (Moore 1993). This suspicion and

cynicism has been credited with causing the failure of several green marketing efforts to-date (Levin 1992).

Moore (1993) noted that a key conclusion suggested by his subjects was that "many green products are perceived as irrelevant to environmental protection." When consumers do not see a logical connection between a product and the environment, they are more likely to be cynical toward the ads trying to establish that link. Consumers must perceive the product as somehow related to the environment - either as harmful or beneficial - before they will begin to accept green claims about green attributes. The following section discusses how this idea, called Perceived Ecological Relevance, is likely to affect eco-consumption.

Perceived Ecological Relevance

Not discussed in the literature, Perceived Ecological Relevance is the term that will be used to describe a consumer's evaluation of how relevant green attributes are to different product categories. Consumers' perception of ecological relevance is meant to capture the relationship between a product and the environment. Consumer behaviorists recognize that consumers must find attributes relevant to a product category before they can be included as part of the consumers' evaluative criteria, and this logic extends to include the relationship between a green attribute and the environment (Mackenzie 1986).

According to involvement theory, consumers who perceive green claims to be irrelevant to themselves [or the product] will be uninvolved with the eco-ad and will engage in limited processing (Zaichkowsky 1985; 1986; Greenwald and Leavitt 1984; Meuhling et al. 1993). Consumers confronted by seemingly irrelevant green claims in an eco-ad are likely to dismiss green ads without considering their messages. As noted earlier, if consumers do not attend to an eco-ad, they cannot be persuaded by it (Petty and Cacioppo 1986; Greenwald 1968). According to this analysis, Perceived Ecological Relevance may an important factor in eco-consumption.

Consumers are likely to associate some products, like tires, batteries or laundry detergents, more closely with environmental preservation than others, like personal computers and shoes (Rifkin and Rifkin 1990; Plant and Plant 1991). Tires are perceived as having a very negative effect on the environment. Personal computers are not usually related to the environment in any way. From manufacturing to disposal, tires are definitely more brown [environmentally unfriendly] than green [environmentally friendly] (Smith 1992).

However, a tire, either made from recycled rubber or of rubber that is recyclable, is likely to be perceived as relevant to environmental preservation efforts. The perceived relevance between green marketing efforts and tires is likely to be higher. So, when consumers are confronted

with an eco-ad for tires they are likely to allocate attention to the message, even if they are not involved with tires.

From a marketing perspective, assessing a product's ecological relevance would seem to be an important first step in determining whether or not to market a green brand in a given product category. The Perceived Ecological Relevance construct represents a meta-attribute. Meta-attributes, like price and quality, are characteristics that all products have. Every product has some level of environmental impact.

This indicates that a continuum of environmental relevance exists, where all products could be arranged according to how green [environmentally advantageous] they are or how brown [environmentally harmful] they are. Some products will be seen as very brown [automobiles], others will be seen as very green [clothing made from recycled plastic].

The products closest to either extreme will likely have the most successful green brands, because green attributes should be perceived as more relevant to these products. Consumers are likely to be less resistant to green marketing efforts for these products, even to green claims made about very brown products. For example, gasoline usage is an environmental concern and automobile mileage claims are routinely offered in ads.

Those products that are judged neither green nor brown are probably perceived as irrelevant to environmental protection (Moore 1993). These products are likely to be the least successful types of green brands. However, no research has been undertaken to explore any of these types of relationships. There is no information about how a consumer's perception of relevance between a product and environmental protection affects their processing of eco-ads or purchasing decisions. No research has been conducted to assess whether consumers can be persuaded to include green attributes in a set of evaluative criteria regardless of how relevant the product category is to environmental preservation.

In sum, Perceived Ecological Relevance is likely to be a highly descriptive factor in ecologically oriented purchasing. Consumers themselves have identified it (Moore 1993), and it makes intuitive sense. Additionally, the concept of Perceived Ecological Relevance indicates that it might be possible to predict the success of a green product based on how relevant it is to environmental preservation efforts in the minds of consumers. It might be used to identify products previously ignored by green marketers that might be amenable to their efforts. And, it might indicate new directions for green advertising strategies and executions.

Perceived Ecological Relevance is also likely to predict how important green attributes are likely to be. If a product is perceived to be irrelevant to environmental preservation, green attributes cannot be considered important nor can they be included as part of the evaluative criteria all product selections are based on (Bettman 1979b). In essence, attributes perceived as irrelevant are not integrated into alternative evaluation processes (Peter and Olson 1993).

Other Factors of Ecologically Oriented Consumption

A few additional findings in the eco-consumption literature provide some insight into the product related factors that also affect purchase decisions. Green attribute importance has been assessed by examining how consumers make trade-offs among product attributes. Ottman (1992) stated that consumers are unwilling to trade off price, quality or convenience for green attributes. A few studies have been conducted in this area. Generally, findings indicate that the type of product is an important consideration in determining whether or not consumers will alter buying behavior as a result of ecological compatibility (Herberger 1971). Several studies found that consumers are not willing to alter buying behavior and pay premium prices for ecologically compatible products (Herberger 1971; Moore 1993; Stisser 1994).

For a while things looked a little different. Henion et al. (1980) found that ecologically concerned consumers were willing to rank ecological concerns as more important than price. However, these findings have not been supported in the marketplace (Ottman 1992; Chase and Smith 1992; Davis 1993). Nor have they been supported by further empirical study (Moore 1993). Recent polls indicate that the percentage of those who report they are willing to pay more has dropped as well (Stisser 1994). In 1991, Roper reported that 11% of the population reported that they would pay between five and ten percent more for environmentally advantageous products (Schwartz and Miller 1991). In the 1993 report, Roper found that less than five percent of the population would pay more for environmentally advantageous products (Stisser 1994).

These results show that even eco-consumers believe that price and quality are the most important brand selection criteria. The environment is likely to be a secondary criterion, even when it is completely relevant to the product category (Davis 1993).

Green marketers apparently assumed that eco-consumers would select products using a Lexicographic decision rule (Chase 1991; Coddington 1993). In such a case, eco-consumers would rank 'greenness' as the most important attribute for every product. Several advertising campaigns reflect this assumption by concentrating on informing

consumers about the "greenness" of products from diapers to carpeting, and ignoring the more specific product features that would usually be considered important to selection (Lawrence 1993).

However, that assumption has proven ill-founded. Confirming earlier studies, Moore (1993) found that price is the most important product attribute, even for eco-consumers (Ottman 1992; Antil 1984; Henion et al. 1980; Herberger 1971). Product performance evaluations were also noted as highly important when discussing future purchasing behavior (Moore 1993).

Summary Of The Literature

This literature review has presented detailed explanations about the complex relationships at play in eco-consumption. Two distinct models have emerged. The first model, based on specific findings from eco-consumption studies, represents the current understanding of the eco-consumerism process. The second incorporates these findings with theory based components which have not been previously studied in eco-consumption settings. The following sections describe both. The Current Eco-Consumerism Model will be presented first, followed by the Proposed Eco-Consumption Paradigm. These models are the basis of a critical comparison to clarify the important characteristics of eco-consumers and how advertising affects eco-consumption. These models portray how individual factors and marketing

communications interact when a consumer is confronted with an eco-ad for a typical household item.

The Eco-Consumerism Model

The eco-consumerism literature focused on the three main factors believed to contribute to eco-consumerism: Ecological Orientation, Perceived Consumer Effectiveness and Advertising Believability. The Eco-Consumerism Model [Figure 1] diagrams the relationships among these factors according to the views which currently dominate the field.

Perceived Consumer Effectiveness is described in the model as an antecedent of Ecological Orientation. Although the causal nature of this relationship has remained unexplored in the literature, several researchers have discussed it in this manner. It also make intuitive sense if, in fact, PCE is the domain specific manifestation of Locus-of-Control, an abstract and enduring personality trait.

The diagrammed relationship between PCE and Ecological Orientation [EO] has not been previously studied. However, it is supported by many studies which have shown PCE to be related to the attitudes, beliefs and activities which have been combined to form Ecological Orientation (Ellen et al. 1992; Kinnear et al. 1974).

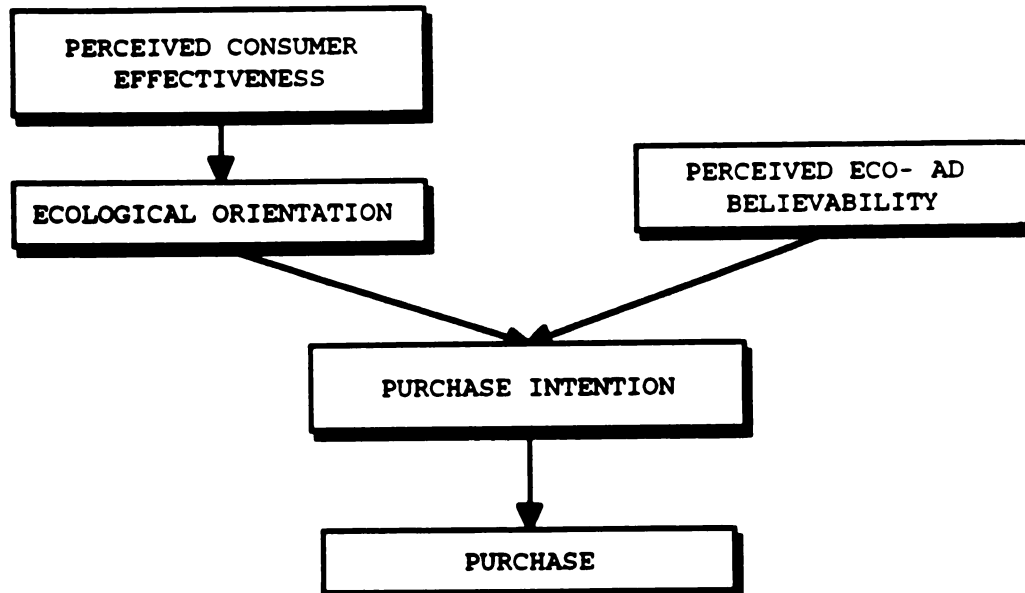


Figure 1
The Eco-Consumerism Model

Evidence from those studies suggests that Perceived Consumer Effectiveness is likely to influence Ecological Orientation directly (Ellen et al 1991; Kinnear et al. 1974). Consumers who perceive themselves to be highly effective in environmental protection should have strong positive attitudes toward environmental protection and should be willing to act in an environmentally conscientious manner. Therefore, the more effective consumers believe they are in preserving the environment, the more ecologically oriented they should be. And, logically, the more oriented toward the environment a consumer is, the more likely s/he will be to express a positive intention to purchase green brands

(Kinnear et al. 1974; Henion and Clee 1980; Schwepker and Cornwell 1991; Ellen et al. 1991).

This model illustrates the prevailing view that advertising believability has a direct effect on green product purchase intention. According to the current literature, one source of interference between consumers who are very ecologically oriented and their purchase intentions is described in this model as advertising believability. It represents the skepticism toward green ads referred to in several studies (Moore 1993; Coddington 1993; Ottman 1992). Marketers and consumers alike have blamed 'distrust in green advertising' as a major causal factor in poor green product sales (Moore 1992 Ottman 1992). If this is the case, consumers' perception of a green advertisement's believability should be positively related to green product purchase intentions.

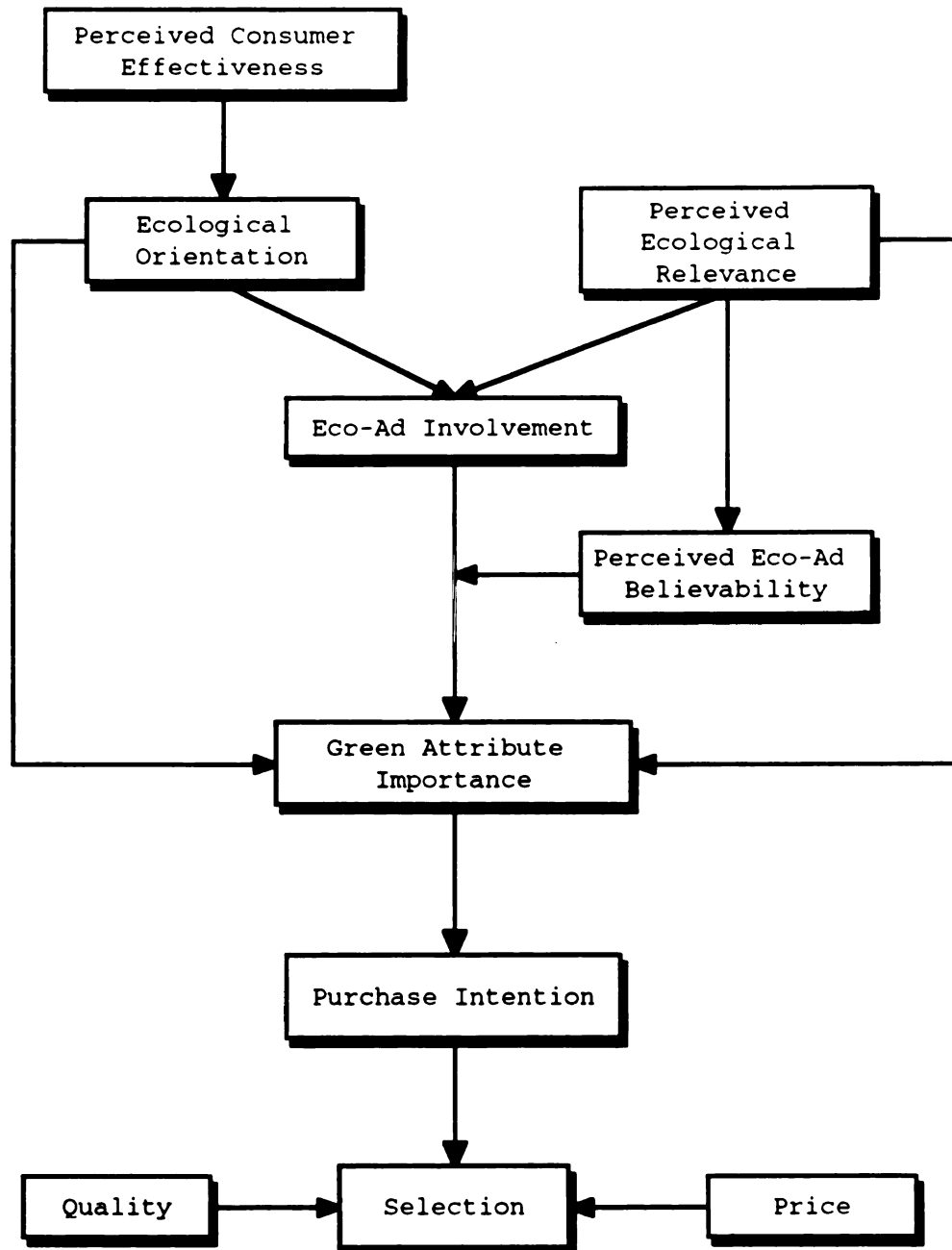
When this model is compared to the multi-attribute framework discussed in the overview at the beginning of this chapter it is clear the current eco-consumerism literature leaves out many factors consumer behavior theorists have identified as predictors of advertising effects and product selection. This suggests that a more thorough examination of how advertising believability affects eco-consumption is necessary. Combining the eco-consumer literature with consumer behavior theories about how advertising affects consumption in general, the following model represents a more

comprehensive and descriptive understanding of the eco-consumption process.

The Proposed Eco-Consumption Paradigm

The main focus of the Proposed Eco-Consumption Paradigm [Figure 2.] is on clarifying the effect that advertising believability has on eco-consumption. This paradigm retains Perceived Consumer Effectiveness and Ecological Orientation as antecedents of eco-consumption. Perceived Ad Believability is identified as a mediating factor, affecting green attribute importance, rather than as a direct causal factor of purchase intention. The main contribution this model makes is the addition of a number of factors which should offer detailed information about how GreenSpeak affects eco-consumption.

Perceived Ecological Relevance [PER] is the consumer's perception of relevance between a product and environmental preservation efforts. PER, shown as an exogenous variable, has an independent effect on eco-consumption.

**Figure 2****Proposed Eco-Consumption Paradigm**

Eco-Ad Involvement, the next modification, represents the motivation consumers feel to process an eco-ad. Eco-Ad Involvement is a combination of intrinsic and situational factors that result in felt involvement.

The relationship between Perceived Ecological Relevance and Eco-Ad Involvement should be positive. As consumers perceive products to be more relevant to environmental preservation efforts, the more involved they will be with the Eco-Ads. The more involved they are, the more attention they will allocate to an Eco-Ad and the more they will scrutinize the message. The Elaboration Likelihood Model of attitude change predicts how Eco-Ad Involvement affects message processing and attitude change. Consumers who perceive green claims to be irrelevant to themselves [or the product] will be uninvolved with the eco-ad and they should engage in limited processing. The ELM also predicts how ad believability will affect persuasion. When a consumer is uninvolved with the message, a very believable ad may act as a peripheral cue which persuades consumers to alter their attitudes in favor of the ad, at least for a short time.

Consumers who find green claims very relevant to themselves and the product should actively process the eco-ad, interpreting and elaborating on it according to held knowledge. Highly involved consumers are likely to use their perception of the ad's believability as a less important persuasion cue. While a very believable ad will minimize

counter-arguing and negative thought generation, highly involved consumers will be scrutinizing the message carefully. So, advertising believability will demonstrate less effect on attitude change in consumers who are very involved with Eco-Ads.

The model depicts Perceived Ad Believability's [AdB] effect on eco-consumption as a mediating factor of Green Attribute Importance. This indicates that ad believability mediates how effective an Eco-Ad will be in persuading consumers to hold a favorable attitude toward green attributes and green brands.

As indicated in Chapter One, most green marketers use advertisements to convince consumers to buy their brand because it is environmentally advantageous (Coddington 1993; Ottman 1992). To do that, they must persuade consumers to change their attitude about what attributes are important for product selection (Ray 1983). Green marketers want consumers to rank green attributes among the most important. Consumer behavior theory indicates that consumers will then use green attributes as evaluative criteria for making product selection (MacKenzie 1986).

Perceived Ecological Relevance and Ecological Orientation should also be directly related to Attribute Importance. A consumer who is not ecologically oriented and who finds a product irrelevant to environmental protection efforts should, logically, find green attributes to be fairly

unimportant in product selection. But consumers who are highly ecologically oriented and who do find a product relevant to environmental protection issues should deem that attribute as an important evaluative criterion.

The importance consumers assign to an attribute should determine the criteriological basis for product selection from among a set of alternatives. Once consumers go through this process they are thought to store the evaluative criteria as a decision rule to be used as a guide the next time a purchase is considered. The eco-consumption literature and green marketers have assumed eco-consumers would select products that performed the best on a single criterion - greenness. That assumption indicates the use of a lexicographic decision rule. This model permits that assumption to be examined.

The final stages in the Eco-Consumption Paradigm are purchase intention and selection. All of the preceding studies have assumed the relationship between purchase intention and actual purchase; this model shows the necessity of testing that relationship. The illustration indicates that price and quality evaluations are likely to affect selection. Coddington (1993) noted that consumers perceived green products to be unnecessarily expensive and usually of low quality. Ottman (1992) reiterated this sentiment and Moore (1993) reported that price and quality were still the most important considerations in product selection. These

product characteristics should account for most of the difference between what consumers say they will buy and what they actually select (Ottman 1992; Moore 1993; Henion et al. 1980). By acknowledging both of these mediating meta-attributes, as well as the effects of advertising believability, involvement and product relevance, this paradigm presents a clear picture of how green advertising interacts with the factors of eco-consumption affecting product selection.

Hypotheses

The eco-consumption literature indicates that ecologically oriented purchasing can be predicted according to consumers' level of perceived effectiveness and several attitude, behavioral and psychographic descriptors [Figures 1 and 2]. The main research question is to determine whether either of these models accurately describes the process consumers go through in selecting an ecologically advantageous product and the relative significance of that description. In addition, several of the constructs in these models have not been explored in previous research. Hypotheses have been included to provide a greater understanding of these concepts. Hypotheses evaluating some of the claims and assumptions made by academics and green marketers will also be examined.

Eco-Ad Strategies

H1a Image eco-ads will be perceived as less believable than Product eco-ads, which will be perceived as less believable than Promotional Tie-In eco-ads.

H1b Eco-Ads are less believable than ads that do not use green claims.

Ecological Orientation

H2a PCE is positively correlated with Ecological Orientation.

H2b Ecological Orientation is positively related to Purchase Intention.

Perceived Ecological Relevance

H3a Ecological Orientation and Perceived Ecological Relevance are positively related with Eco-Ad Involvement.

H3b Perceived Ecological Relevance is positively related to Perceived Ad Believability.

H3c Perceived Ecological Relevance will contribute more to the variance in Green Attribute Importance than Ecological Orientation.

H3d Perceived Ecological Relevance is positively related to Green Product Selection.

Advertising Believability

- H4a** Eco-Ad Believability mediates the relationships between Eco-Ad Involvement, Green Attribute Importance, Purchase Intention and green brand selection.
- H4b** Eco-ad Believability is negatively related to the number of cognitive responses a consumer generates from an eco-ad.

General Hypothesis

- H5** The model represented by Figure 2. describes how advertising affects ecologically oriented consumption more accurately than the model represented by Figure 1.

CHAPTER III. METHODS

Research Design

The purpose of this study is to determine the important factors of eco-consumerism and assess how advertising believability affects eco-consumption. A modified experimental design with three treatment conditions was used to investigate the hypotheses presented in Chapter Two [see Figure 3.].

The experimental design incorporated a repeated measure of one dependent variable, Ad Believability [AdB], and a pre-test/posttest comparison of one variable, Eco-Attribute Importance [ATI], into the design. Subjects were randomly assigned to groups and exposed to one treatment ad and one control ad. The treatments consisted of three types of eco-ads: Environmental Tie-In Type, Image Type, Product Type. The order of presentation of treatment ads and the control ad was randomized to avoid order bias.

In repeated measures design, subjects are their own controls. That control feature is incorporated into this study and increases its internal validity. Experimental control is further enhanced by the use of comparison groups (Adams and Schvaneveldt 1991; Kerlinger 1991). The three comparison groups were partitioned during analysis based on which ad type the subject was randomly shown.

	O_1	$Xa1$	$O_{[rm1]2}$	Xb	$O_{[rm2]3}$	O_4
R	O_5	$Xa2$	$O_{[rm1]6}$	Xb	$O_{[rm2]7}$	O_8
	O_9	$Xa3$	$O_{[rm1]10}$	Xb	$O_{[rm2]11}$	O_{12}

Figure 3. Study Design

Where:

- O_1 = Pretest Items: TPI, PER, ISPR, SSPR, ATI1B, ATI2B
 O_2 = Repeated measure #1: TCR, TB, ATAD, TFI, TP, TQ
 O_3 = Repeated measure #2: CCR, CB, ACAD, CFI, CP, CQ
 O_4 = Posttest Items: S, ATI1A, ATI2A, EO, AGB, PI, DEMOS
 O_5 = Pretest Items: TPI, PER, ISPR, SSPR, ATI1B, ATI2B
 O_6 = Repeated measure #1: TCR, TB, ATAD, TFI, TP, TQ
 O_7 = Repeated measure #2: CCR, CB, ACAD, CFI, CP, CQ
 O_8 = Posttest: S, ATI1A, ATI2A, EO, AGB, PI, DEMOS
 O_9 = Pretest Items: TPI, PER, ISPR, SSPR, ATI1B, ATI2B
 O_{10} = Repeated measure #1: TCR, TB, ATAD, TFI, TP, TQ
 O_{11} = Repeated measure #2: CCR, CB, ACAD, CFI, CP, CQ
 O_{12} = Posttest: S, ATI1A, ATI2A, EO, AGB, PI, DEMOS
 $Xa1$ = Image Ad Type
 $Xa2$ = Product Ad Type
 $Xa3$ = Environmental Tie-in Ad Type
 Xb = Universal Control Ad.

Notation adapted from Campbell and Stanley (1963).

Pretest measures, the ad treatments and controls and posttest measures were presented in an experimental booklet [Appendix I]. The pretest measures include attribute importance [ATI1B and ATI2B], intrinsic involvement with environmental preservation [ISPR] and toilet paper [TPI], situational sources of involvement with toilet paper ads [SSPR] and an assessment of product relevance with environmental protection efforts [PER]. The repeated measures are assessed after exposure to each ad. They include: cognitive responses to the treatment ad [TCR], cognitive responses to the control ad [CCR], perceived treatment ad believability [TB] and perceived control ad believability [CB], attitude toward the treatment ad [ATAD], attitude toward the control ad [ACAD], felt involvement with the treatment ad [TFI], felt involvement with the control ad [CFI], and price and quality perceptions of both brands [TP, TQ and CP, CQ]. The posttest includes measures of brand selection [S], attribute importance [ATI1A and ATI2A], attitude toward the green brand [AGB], ecological orientation [EO], purchase intentions [PI] and sample demographics [DEMOS].

The threats to internal validity common in using pretest-posttest and repeated measures designs include: practice effects, sensitization and fatigue. These threats are minimized by limiting the number of times the dependent measure is assessed. Sensitization is also limited by

questioning consumers about their ecological orientation after they have looked at the treatment advertisements. To determine whether differences between comparison groups are significant, the within group variance is analyzed to evaluate if the F ratio assumptions have been violated (Pedhazur 1992; Kerlinger 1986).

Randomized assignment permits valid comparison among treatment groups as long as no systematic variance is found during initial analysis (Kerlinger 1986; Cook and Campbell 1979). All subjects are measured on the same individual differences, so between group variance can be assessed for systematic bias (Kerlinger 1986).

This mix of methods enables a critical comparison to be conducted. The eco-consumer literature suggests one model of consumer behavior [Figure 1], while the consumer behavior literature suggests another [Figure 2]. These two models, described in Chapter Two, are compared using Path Analysis to see which best fits the data.

Treatments

Toilet paper was selected as the product for review because of its similarity with other products, such as laundry detergent and paper towels, which are often studied in eco-consumption research (Mayer et al. 1993). Toilet paper was also chosen because it represents specific characteristics mentioned in the literature review as important to cognitive choice. Toilet paper is seen as a

highly functional product with which consumers have almost certainly had experience. Toilet paper has well known and comparable product attributes. Toilet paper also represents the type of low-involvement products often positioned as green (Mayer et al. 1993). The use of a low involvement product increases internal validity by utilizing the predictive power of theoretical links presented in the literature. It also increases external validity by examining a common application of green marketing.

According to the taxonomies that have been created (Coddington 1993; Carlson et al. 1993; Thorson, Page and Moore 1993) three distinct types of claims and advertisements should have predictable differences on perceived believability and therefore ad effectiveness. These three types, Image, Product and Environmental Tie-ins were introduced in Chapter Two. The treatment ads were designed according to the definition and parameters outlined there. Appendix II contains the copy platform used to guide treatment advertisement creation and Appendix III contains the actual ads.

The first treatment is the Image type of eco-ad. The Image type ads are defined as eco-ads that position the brand and/or producer as environmentally friendly. These ads contain few product attributes and use verbal and visual characterizations intended to evoke positive affective and attitudinal responses. This type of ad relies on Carlson's

Image oriented type claims. The evidence and opinions offered indicate that Image type eco-ads are at the lowest end of the believability continuum (Coddington 1993).

The second type of eco-ad is the Product type. Product type ads are defined as eco-ads that focus on the eco-attributes of a brand. Eco-attributes indicate a brand's environmental advantage which stems from its material composition, packaging or packaging composition, use or disposal. The opinions and evidence suggest that Product eco-ads will be considered somewhat believable and will occupy the mid range of the believability continuum (Coddington 1993; Carlson et al. 1993; Thorson et al. 1993).

The third general type of eco-ads is the Environmental Tie-In type. The Environmental Tie-In type of eco-ads are defined by the presence of an association between a popular environmental cause or organization and a brand. These ads specifically identify what the brand is doing for the organization or the cause. This type is supposed to have the highest level of believability.

Sample

A purposive sample [N = 90] was drawn from the general population of principal grocery shoppers in a major midwestern metropolis. Simmons Market Research Bureau [SMRB] 1992 report identifies Employed Females, ages 18 and over, as the principal toilet paper purchasers (Index = 165).

Subjects, randomly selected from the available pool, were randomly assigned into treatment groups.

To assure a representative cross-section of the population, four diverse and predominantly female work-sites were identified. Employees of the Retail Sales department of the Detroit Newspaper Agency, the Private Industry Corporation of Wayne County, Josten's Learning, Inc. and Industrial Relations Incorporated have participated in the study. Selection bias was minimized as much as possible through randomized assignment to each treatment. The field setting and this sampling technique should improve external validity and generalizability.

Data Collection Procedures

Research assistants were recruited from each survey location to distribute and monitor the data collection. They were trained by going over the questionnaire item by item. An hour was devoted to explaining research procedures. They were told not to help anyone answer the questions. If asked for assistance they were instructed only to read the question aloud and refer the subject to the appropriate instructions on the survey form. Subjects were presented with experimental booklets at their workplace in the morning. They were asked to read along with the research assistants to ensure understanding of the instructions contained on the first page. Subjects were asked to complete the survey

immediately. All four work-sites were surveyed within a week to reduce historical threats to the study's validity.

Variables

The variables under study have been suggested by previous eco-consumption research and by the consumer behavior literature [Figures 1 and 2]. Where possible, previously published measures were used. Two pretests were conducted on student populations to assess the reliability of the scales and the suitability of individual items. The first pretest used a five point scaling system. Low variance indicated a seven point scale was more informative. Several Perceived Consumer Effectiveness items were tested and rejected due to poor reliability. The items used in this study were shown to be the most consistent. Minor modifications were made to the questionnaire as a result of those pretests. The experimental instrument is contained in Appendix I. Variable names and corresponding questionnaire item numbers appear in brackets after each item. Table 1 presents a summary of the scales.

Exogenous Variables

Perceived Consumer Effectiveness [PCE]

Perceived Consumer Effectiveness is the consumer's belief that individual conservation efforts can make a real impact on the quality of the environment (Schwepker and Cornwell 1991; Ellen et al. 1991; Kinnear et al. 1974). Although PCE is an antecedent of both models, it was measured

Table 1. Measurement Scales

VARIABLE NAME	SCALE DESCRIPTION	QUESTION #
EO Ecological Orientation	Composite Index 17 item, 7 point Likert	30-34, 36-38, 40-41, 43-50
PCE Perceived Consumer Effectiveness	2 item, 7 point Likert	35 and 42
PER Perceived Ecological Relevance	3 item, 7 point Likert	3, 4 & 5
ATI2B Attribute Importance	Before exposure 3 item 7 point Likert	7
ISPR Intrinsic Sources of Relevance	Ohanian's 5 item, 7 point Likert	8
SSPR Situational Sources of Relevance	3 item, 7 point Likert	10, 11 & 12
TPI Toilet Paper Involvement	Ohanian's 5 item, 7 point Likert	1
Believability	Beltramini's 10 item, 7 point semantic differential	14 and 22
ATI2A Attribute Importance	After exposure 3 item, 7 point Likert	29
TFI Felt Involvement	Celci and Olson's 2 item, 7 point, Likert	16 and 17 or 23 and 24
Aad Attitude Toward the Ad	Mackenzie and Lutz's 3 item 7 point semantic differential	15 or 22
PI Purchase Intention	3 item, 7 point Likert	51

in the posttest to mask the purpose of the experiment and to minimize sensitization and bias.

PCE has been measured directly and indirectly. Kinnear et al. (1974) directly measured the construct using a single item measure: "It is futile for the individual to try and do anything about pollution." Ellen et al. (1991) used that

item and added another: "The conservation efforts of one person are useless as long as others refuse to conserve." Schepker and Cornwell (1991) measured the construct indirectly using Rotter's (1966) twenty item locus of control scale. The measurement of this construct has been inconsistent. The essential concept seems to be addressed by asking consumers directly how effective they view individual environmental conservation activities to be.

Two seven step Likert scales, anchored by strongly agree/strongly disagree endpoints, were summed to measure PCE. One item, created based on the literature, reads 'There is not much that any one person can do about the environment' [PCE1; #35]. The second item, "An individual can protect the environment by buying products that are kind to the environment," was previously used in Ellen's (et al. 1991) study [PCE2; #42].

Ecological Orientation [EO]

The Ecological Orientation construct is based on an analysis of the previous research into ecological concern as a predictor of eco-consumption. EO is a composite index that should be useful for predicting how consumers are likely to behave with regard to environmentally related objects, including eco-ads and green brands. It was measured by administering a multiple-item, multiple factor scale. Several scales used in the past have been agglomerated and combined with original items.

Five factors have been previously identified which might be considered part of Ecological Orientation. Ecological Concern [EOEC, 2 items] was adapted from Kinnear and Taylor (1973); 'I am concerned with the state of the environment today' [EOEC1; #38], 'I think it is important to protect the environment' [EOEC2; #50].

Padmanabhan and Hunter's (1992) findings noted that specific attitudes toward relevant environmental issues are important for predicting behaviors accurately. Attitude toward the appropriate environmental issues to the product under study was included [EOAT, 2 items]. The statements include; 'It is important to purchase recycled paper products to help preserve our forests' [EOAT1; #31] and 'Environmentally friendly toilet paper does not really help protect the environment' [EOAT2; #34].

Four items were included from Schwepker and Cornwell (1991) and Ellen et al. (1991) to address consumers' perception of pollution as a problem [EOPP]. These four items include; 'The United States is facing a serious solid waste disposal problem' [EOPP; #32] (Schwepker and Cornwell 1991), 'I believe that industry could reduce the amount of packaging it presently uses for some consumer products' [EOPP2; #33] (Schwepker and Cornwell 1991), 'Environmental problems do not affect my life' [EOPP3; #30] (Ellen et al 1991) A fourth item requested that consumers rank order a list of social problems identified in previous research:

crime, education, economy, health care and the environment [EOPP4; #40] (Schwartz and Miller 1991; Stisser 1994).

Ecological Orientation also incorporates associated beliefs about ecological behavior [EOB, 3 items]. These domain specific beliefs have been found to be predictive of ecological consumption activities (Ellen et. al. 1991: Schwepker and Cornwell 1991; Henion et al. 1980; Crosby et al. 1986). Items include; 'When I buy products I try to consider how my use of them will effect the environment and other consumers' [EOB1; #36], 'Whenever possible I buy products I consider environmentally safe' [EOB2; #37], and 'I recycle whenever possible' [EOB3; #41].

The behavioral component of Ecological Orientation included six items assessing consumers' experience with eco-consumption and environmental activities [EOEE, 6 items]. Measured on a 7 point Likert scale from often to never, consumers were asked if they have 'attended a meeting for an environmental organization' [EOEE1; #44], 'recycled anything other than cans or bottles' [EOEE2; #45], 'donated money to an environmental protection group' [EOEE3; #46], 'called or written a political figure to express an opinion about an environmental issue' [EOEE4; #47], 'signed a petition in favor of protecting some part of the environment' [EOEE5; #48], and if they have 'worked for an environmental group or cause as either a paid employee or as an unpaid volunteer' [EOEE6; #49].

Perceived Ecological Relevance [PER]

Perceived Ecological Relevance [PER] is an individual difference variable. Consumers were asked to assess how relevant environmental protection type attributes are to toilet paper. Three Likert type items on a scale ranging from strongly agree to strongly disagree were used. The items are; 'Toilet paper is very relevant to environmental protection' [PER1; #3]; 'Environmentally friendly toilet paper benefits the environment' [PER2; #4] and 'Environmentally friendly toilet paper attributes are important to protecting the environment' [PER3; #5].

Price and Quality

Model two shows that consumer perceptions about price and quality are likely to affect product selection. Price perceptions will be assessed using a single scale item. Consumers were asked to rate the price of the GreenLeaf [TP] and Soft n' Gentle [CP] brands of toilet paper using a seven point scale from expensive to inexpensive [TP, #18 and CP, #25].

Perceived quality was assessed using a single item. Consumers rated the quality of Soft n' Gentle [CQ] and GreenLeaf [TQ] on a seven point scale from very good quality to very poor quality [TQ; #19 and CQ; #26].

Endogenous Variables

Eco-Ad Involvement

Eco-Ad Involvement indicates the motivation consumers feel to process an eco-ad, based on their perception of self-relevance between the ad and themselves. ISPR was assessed by Celci and Olson (1988) using Zaichkowsky's 20 item Personal Involvement Inventory. SSPR was successfully manipulated by telling some subjects that they would be required to discuss the stimuli. Felt Involvement was measured using a two item scale.

For this study Eco-Ad Involvement is also predicted to be influenced by two sources of intrinsic self-relevance including, self-relevance with the issue of environmental preservation [ISPR; #8] and perceived self-relevance with the specific product, toilet paper [TPI; #1].

Both intrinsic sources of perceived self-relevance have been measured by Ohanian's (1989) five item, seven point, semantic differential scale: Boring to me/Interesting to me; Totally unconcerned about/Highly concerned about; Important to me/Unimportant to me; I care a lot about/I couldn't care less about; Relevant to me/Irrelevant to me. This scale has been found to be reliable and is likely to minimize subject fatigue (Ohanian 1989; Rifon, Mavis, Tucker and Stoffelmayr 1990).

Situational sources of perceived self relevance [SSPR] were measured using a three item Likert scale. The items in

this scale were designed based on Celci and Olson's (1988) definition of SSPR and similar scales in the literature (Slama and Tashchian 1987). Subjects rated the following statements on a seven point Likert scale with strongly agree /strongly disagree endpoints: When I am planning a shopping trip, and I notice an ad for toilet paper, I always stop to see what it says [SSPR1; #10]; When I know supplies are running low, I always check out toilet paper ads [SSPR2; #11]; I never notice ads for toilet paper, even when it is on my shopping list [SSPR3; #12].

Felt involvement was assessed using Celci and Olson's (1988) two items on a seven point scale with strongly agree to strongly disagree endpoints for both the treatment ads [TFI] and the control ad [CFI]. The items are: "The message in the ad was important to me" [TFI1; #16 and CFI1; #23] and "The ad didn't have anything to do with me or my needs" [TFI2; #17 and CFI2; #24].

Perceived Ad Believability

The construct Ad Believability is defined as: "the extent to which an ad is capable of evoking sufficient confidence in its truthfulness to render it acceptable to consumers (Beltramini 1982). Acceptance indicates that a message is capable of influencing held attitudes or formulating new ones. According to the Elaboration Likelihood Model, Ad Believability is believed to affect eco-ad effectiveness by mediating attitude change.

Believability was measured after exposure to treatment ads [TB; #14] and control ads [TB; #21] using Beltramini's ten item semantic differential scale (1993). Previous study indicates that the scale is reliable. Cronbach alpha estimates across three products were .94 (tires), .95 (cars) and .95 (cigarettes) (Beltramini 1982). Later studies support this finding (Beltramini 1988 and 1993). Convergent validity was evidenced by a high inter-item correlation between product categories, and discriminant validity was also established (Beltramini 1982).

The effects of Ad Believability on information processing were investigated using cognitive response methodology. Cognitive response research is based on the assumption that when consumers receive a message they will respond by cognitively attempting to link it to held attitudes and knowledge (Greenwald 1968). The extent to which consumers are motivated to process an eco-ad is reflected by the number and complexity [activity] of their cognitive responses (Cacioppo, Harkins and Petty 1981). The ELM predicts that consumers who are highly involved with the eco-ad will process more actively than less involved consumers.

Consumers were asked to list every thought they had while looking at the treatment ad [TCR; #13] and then control ad [CCR; #20]. Subjects were limited to three minutes of thought listing (Wright 1973; Buckholtz and Smith 1992).

Previous research has noted that it is more accurate to have subjects indicate the positive or negative nature of their own thoughts (Buckholtz and Smith 1992; Mackenzie 1986). Accordingly, subjects were asked to rate these thoughts as positive, negative or neutral. The responses were coded according to the statement's polarity.

Attitude Toward the Ad

Attitude toward the ad has been shown to effect purchase decisions. To make sure that perceived believability [not attitude] is affecting consumer responses to the experimental ads, Attitude toward the Ad was measured after exposure to the treatment [ATAD; #15] and the control [ACAD; #22]. A previously tested 3 item semantic differential was used: Good/Bad; Pleasant/Unpleasant; Favorable/Unfavorable (Mackenzie and Lutz 1989).

Attribute Importance [ATI]

Attribute Importance is conceptualized as a consumer's general assessment of the significance of an attribute for products in a category (Mackenzie 1986). Attribute Importance is an enduring, stable attitude. The product category under study is toilet paper, so ATI is operationalized as: a consumer's assessment of the significance of an attribute for toilet paper.

Attribute Importance was measured in two ways, both before and after exposure [variable designations are ATIB and ATIA]. Subjects were asked to rank order a selection of

toilet paper attributes [ATI1; #2 before and #43 after] and to rate Attribute Importance on a three item Likert scale [ATI2; #7 before and #29 after]. Subjects were also asked to respond to the statement: Please rate toilet paper on the feature: "environmental friendliness". The three scales are; Not at all Important/Very Important [ATI2a]; A feature I would not consider/A feature I would definitely consider [ATI2b]; Irrelevant to my choice/Very Relevant to my choice [ATI2c]. Sujan and Bettman (1989) originally used these items to study two attributes for cameras [$\alpha = .925$]. These two items were combined to assess eco-attribute importance.

Purchase Intention [PI]

Purchase Intention is the consumer's attitude toward the likelihood of purchasing a product at some time in the relatively near future [PI; #51]. This variable was measured using three Likert scales with very likely/very unlikely endpoints. It was created for this study according to others found in the literature. The scale items are: 1) 'During my next shopping trip I will purchase a brand of environmentally friendly toilet paper' [PI1]. 2) 'I intend to try environmentally friendly toilet paper soon' [PI2]. 3) 'The next time I need toilet paper, I will buy an environmentally friendly brand' [PI3].

Selection [S]

This variable represents an actual product purchase. Consumers were be asked to select one of the products offered in the treatment ads. The statement reads: 'Please circle which one of the toilet paper brands presented earlier you would take home with you right now.' Greenleaf or Soft n' Gentle will be the choices offered [S; #27].

CHAPTER IV. RESULTS

Sample Characteristics

Data were collected at four work-site locations [Table 2]. A total of 42 questionnaire booklets were completed by employees of the Private Industry Corporation, the federal government Job Training Partnership Act contractor for Wayne County, Michigan. A total of 33 questionnaire booklets were completed by the sales and clerical staff of the Detroit Newspaper Agency. Four questionnaire booklets were completed by the managerial and clerical staff of Industrial Relations Inc, a Detroit based national labor relations consulting firm, and five questionnaire booklets were completed by computer software development engineers at Josten's Learning, a national educational software developer.

Table 2. Survey Locations

Company Name	Booklets Distributed	Booklets Completed	Response Rate
Private Industry Corporation	45	42	93%
Detroit Newspaper Agency	36	33	94%
Industrial Relations, Inc.	9	4	45%
Josten's Learning	9	5	55%
TOTALS	99	84	85%

A total of 84 subjects completed the study. This sample consists mainly of full-time employed, married women, between the ages of 26 and 42, who are the primary grocery shoppers in their households [Table 3].

Twenty-nine subjects were exposed to the Image Type eco-ad, 28 subjects were exposed to the Product Type eco-ad and 27 subjects were exposed to the Promotional Tie-In Type eco-ad. Sample bias was assessed by treatment group and survey location using difference of means testing [ANOVA and T-tests]. No significant differences were found for the measured demographic indicators: gender, education, income, occupation, marital status or number of children. According to these results, this sample provides equivalent comparison groups (Kerlinger 1988).

Data Inspection and Scale Reliabilities

Prior to data analysis related to the research questions, several univariate and comparative analyses were conducted to check the data for errors and abnormalities which might affect the study. Data were plotted, and the errors examined for homoscedasticity.

Table 3. Characteristics of the Sample

Description	Percent of Sample
Gender	
Males	30
Females	70
Age	
18 - 24	6
25 - 36	39
37 - 50	36
50 +	6
Missing	13
Marital Status	
Married	60
Single	36
Missing	4
Primary Shopper	
Yes	70
No	28
Missing	2
Income	
\$0 - \$15,000	2.4
\$15,001 - \$24,000	19.0
\$24,001 - \$35,000	38.1
\$35,001 - \$50,000	14.3
\$50,001 - \$70,000	15.5
\$70,000 +	7.1
Education	
High School	2.4
Some College	1.2
A.A.S.	27.4
B.A.	11.9
B.S.	20.2
Masters	21.4
J.D.	8.3
Ph.D.	7.1

No significant [3 sd.+] outliers were found and error variance appeared within normal limits (Boster 1992). A few data entry errors were discovered through visual inspection of the data matrix. These were corrected by referring to the original questionnaire. Coding ranged from 1 - 7, where 7 indicated high levels of the variable and 1 represented little or none of the variable. Normally distributed populations are assumed to permit the use of difference of means [ANOVA and T-tests] and correlational [Regression and Path Analysis] statistical techniques (Churchill 1991).

Scale reliabilities were assessed by computing Cronbach's alpha to assure the internal consistency of each measure. Almost all the alphas are greater than .80 and many were greater than .90, indicating that the individual scale items measured substantially the same construct (Hunter 1992; Boster 1992; Kerlinger 1988). One scale, SSPR, achieved an alpha of .76. This is considered minimally acceptable (Nunnally 1978).

Description of the Data

The research assistants recruited co-workers by asking if they would like to participate in a survey about toilet paper and the environment. Most subjects seemed to be amused and intrigued at the idea and agreed to participate willingly. Once the questionnaires were distributed the subjects settled down and gave serious attention to the task.

Research assistants at two of the four work-sites [DNA and PIC] reported that for several days after the survey people would stop them and want to discuss personal toilet paper preferences. Some heated debates over relative attribute importance [softness or value] were also reported at the Detroit Newspaper Agency. The assistants concluded that the subjects were much more interested in the questions concerning toilet paper than the environment.

Involvement with Toilet Paper and Toilet Paper Ads

Despite this anecdotal evidence, the findings indicate that these subjects were not particularly involved with toilet paper. Intrinsic involvement with toilet paper [TPI] was measured using a summated five item, 7 point, semantic differential scale which ranged from 5 to 35 [$\alpha = .87$, mean = 20, s.d. = 7, 67% were within 1 s.d. of the mean]. Twenty-eight percent of the subjects scored between 5 and 12, indicating they found toilet paper boring and uninvolved [more than 1 standard deviation below the mean], while only 2.5% reported above normal involvement. Individual items are described in Table 4.

Most subjects reported being similarly uninvolved with toilet paper ads. Responses to the two-item summated scale which measured felt involvement with the traditional toilet paper ad [CFI] ranged between 2 and 14. The seven point scales were anchored at each end with strongly agree and strongly disagree. Individual items are described in Table 5.

Table 4. Toilet Paper Involvement Scale and Items

Scale Name	Alpha	#Items	Type
Toilet Paper Involvement	.87	5	Sem/Diff.

Var ID	Item	Mean(s.d.)	Item/Tot Corr
TPI1	Boring/Interesting to me	2.9(1.6)	.72
TPI2	Unconcerned About/Concerned	3.2(1.7)	.77
TPI3	Important/Unimportant (r)	3.7(1.9)	.80
TPI4	Care A Lot/Care Less (r)	3.6(1.7)	.86
TPI5	Relevant/Irrelevant (r)	3.6(1.8)	.88

Table 5. Involvement with Toilet Paper Ads

Var ID	Item	Mean(s.d.)	Item Corr
CFI1	Message was important agree/ disagree	3.9(1.6)	.53
CFI2	Had nothing to do with me agree/ disagree (r)	4.1(1.7)	.53

Most subjects, 78%, were within one standard deviation of the mean [mean = 8, mode = 8, sd = 3] indicating they did not have a strong opinion of the ad. Ten percent of the sample scored above the normal range and 12% below. Subjects did not think much about the toilet paper ad either [CCR mode = 0 (28%), mean = 2, sd = 1.6, range from 0 to a single subject's listing of 8 thoughts]. Most of those thoughts

were positive [72%], but 22% of the sample listed at least one negative response [CCRN: mean = .265, sd = .52, mode = 0]. Subjects were also found to be largely uninvolved when they responded to questions concerning situationally relevant perceptions of toilet paper ads [SSPR alpha = .76]. The range of the scale was 3 to 21, but no one actually scored 21 and only three respondents scored 20 [range of responses = 3 to 20, mean = 11, mode = 3 (12% of responses), sd = 5]. Sixty percent were within one standard deviation of the mean, 15% were above and 17% below. Table 6 describes the individual items.

Table 6. Situational Involvement with Eco-Ads

Scale Name	Alpha	#Items	Type
Situational Sources of Perceived Relevance	.76	3	Likert

Var ID	Item	Mean(s.d.)	Item/Tot Corr
SSPR1	Always stop when I notice	3.1(1.8)	.77
SSPR2	When supplies are short	3.6(2.1)	.87
SSPR3	I never pay attention (r)	4.3(2.1)	.82

Felt involvement with eco-ads [TFI] was measured on the same scale as for the traditional ad. The average score, 8.6, the mode, 8, and the standard deviation [2.9] show that 67% of the subjects didn't feel strongly involved with the ads. The individual items are described in Table 7.

Table 7. Involvement with Eco-ads for Toilet Paper

Var ID	Item	Mean (s.d.)	Item Corr
TFI1	Message was important agree/ disagree	3.8(1.6)	.32
TFI2	Had nothing to do with me agree/ disagree (r)	4.1(1.7)	.32

Approximately 20% scored more than 1 standard deviation above the mean, indicating they agreed more strongly that the message in the ad was personally important and relevant [13% were more than 1 standard deviation below the mean]. Even so, when confronted by toilet paper advertising which contained ecological claims, they were not very likely to think much about them [TCR: mode = 0 (25%), mean = 2.1, sd = 1.6, with a range from 0 to 5]. What thoughts they did list were largely positive. Only 10% of the total cognitive responses listed were negative [TCRN: mean = .2, sd = .56, mode = 0] Only 13% of the sample listed any negative thoughts. Overall, subjects demonstrated a bit more intensity and interest in regards to green toilet paper ads than the traditional ad or the product itself.

Involvement with Environmental Preservation

The root of that increased intensity is reflected by the subjects' intrinsic involvement with environmental protection [ISPR alpha = .94]. Measured on the same five item scale as

toilet paper involvement, subjects reported to be somewhat more involved with the environment than with toilet paper. Individual items are described in Table 8. The mean score, 25 is relatively higher and the mode, 35 [15% of the sample], indicates that the environment evokes a more intense reaction and is generally more involving. The standard deviation, 7, puts 64% of the sample within the normal range [from 19 to 31]. Nineteen percent scored more than one standard deviation above the mean and 17% were more than one standard deviation below.

Table 8. Involvement with Environment Scale and Items

Scale Name	Alpha	#Items	Type
Intrinsic Sources of Perceived Relevance	.94	5	Sem/Diff.

Var ID	Item	Mean(s.d.)	Item/Tot Corr
ISPR1	Boring /Interesting to me	5.1(1.6)	.86
ISPR2	Unconcerned About/Concerned	5.0(1.5)	.89
ISPR3	Important/Unimportant (r)	4.8(1.7)	.93
ISPR4	Care A Lot/Care Less (r)	4.8(1.6)	.94
ISPR5	Relevant/Irrelevant (r)	4.7(1.5)	.83

Ecological Orientation

This intensity might also stem from the subjects' level of ecological orientation. Subjects reported being somewhat more rather than less ecologically oriented as well [53% scored above the mean]. The ecological orientation scale

used 17 behavioral and attitudinal items as a composite measure of subjects' overall perspective toward the environment [$\alpha = .87$, mean = 69.4, sd = 15.8, mode = 79]. Most items were assessed using 7 point scales. Individual items are described in Table 9.

All of the attitude items except one [EOPP4] were anchored with strongly agree and strongly disagree endpoints. A five item forced choice question was also included which required subjects to rank the relative importance of the environment in relation to other social issues, including: the economy, health care, crime and education. Six behavioral items assessing previous ecological activities, relied on 7 point scales using often and never as the endpoints.

The ecological orientation scale ranged from 17 to 124, but the reported scores only ranged from 33 to 108. The mean, 69.5, and the relatively large standard deviation [16] indicates that 60% of the sample responded within a normal range. An equal number of subjects had mildly extreme opinions in each direction. Eighteen percent reported to be

Table 9. Ecological Orientation Scale and Items

Scale Name	Alpha	#Items	Type
Ecological Orientation	.87	17	Likert

Var ID	Item	Mean(s.d.)	Item/Tot Corr
	Attitude Items		
EC1	Concerned with environment (r)	5.3(1.4)	.62
EC2	Important to protect (r)	5.6(1.4)	.51
EOAT1	Preserve our forests (r)	5.4(1.6)	.58
EOAT2	Does not really protect	4.8(1.7)	.48
EOPP1	Env. problems do not affect	5.2(1.9)	.58
EOPP2	Serious waste disposal prob (r)	5.7(1.6)	.44
EOPP3	Reduce amount of packaging (r)	5.9(1.3)	.52
EOPP4	Rank order problems (r)	1.9(1.1)	.49
	BEHAVIORS		
EOB1	How my use affects others (r)	4.1(1.4)	.70
EOB2	Buy products consider safe (r)	4.3(1.5)	.78
EOB3	Recycle whenever possible (r)	4.8(1.7)	.67
EE1	Attend a meeting (r)	1.8(1.4)	.59
EE2	Recycle other than cans (r)	4.5(2.2)	.67
EE3	Donated money (r)	2.7(1.9)	.70
EE4	Called or written (r)	1.7(1.4)	.36
EE5	Signed a petition (r)	3.2(2)	.73
EE6	Work for an organization (r)	2(1.6)	.46

more ecologically oriented than the mean [+1 sd] and 19% were less ecologically oriented than the mean [-1 sd].

That finding does not tell the whole story of subjects' ecological orientation. Most subjects reported being fairly concerned about the environment [EC1: mean = 5.3; EC2: mean = 5.6]. Approximately 80% of the respondents agreed or strongly agreed with both measures [scores of 5, 6 and 7 on a 7 point scale]. This indicates strong ecological concern is the norm for this sample.

In general, their attitudes are consistent with that concern. Subjects agreed that it is important to preserve forests [54%] and that environmentally friendly toilet paper could help [44%]. The means for these items were 5.4 and 4.8 respectively. Only 10% of the responses were more than 1 standard deviation below the mean.

The perception of pollution as a problem items [EOPP1-EOPP3], which are measured on the same scales [range 1-7], reflect similar intensity. The response mode for these items is strongly agree [7]. As all the agree to strongly agree responses are within one standard deviation, the perception of pollution as an important problem appears normal for this sample [grand mean = 5.8, average sd = 1.5]. However, when compared to other important social issues, the environment is considered least important [EOPP4: range 1 - 5, mode = 1, mean = 1.9].

The attitude toward ecological behaviors [EOB1 - EOB3] indicates that consumers think about acting positively toward the environment, at least in terms of purchasing and

recycling. But their reported actions [EE1 - EE6] do not support those attitudes. While most consumers [86%] did not give any strong consideration to ecological factors when making purchases [EOB1: mean= 4.1, mode = 4], about one-fourth reported that they agreed with trying to purchase environmentally safe products whenever possible [EOB2: mean = 4.3, mode = 5]. EOB3, the self reported recycling efforts, indicates that subjects lean more toward always recycling than toward never [mean = 4.75, mode = 6]. However, given the fact that Michigan has a recycling law for beverage cans and bottles, responses to this item may not reflect completely voluntary efforts.

The activities investigated [attending meetings, giving donations and various degrees of political activism] indicate that these subjects are, for the most part, not very active in terms of the environment. Most, 64%, had never attended a meeting, 75% had never called a political figure and 63% had never worked for an environmental organization. Some subjects, 66% had at least occasionally signed an environmentally oriented petition [EE5: mean = 3.2, mode = 1]. At least half of the subjects [56%] reported having donated money to an environmental organization at least once [EE3: mean = 3.7, mode=1], and just about everyone [80%] had recycled something other than cans and bottles [EE2: mean 4.5, mode = 5].

Purchase Intention and Selection

Purchase intention was measured using a three item, 7 point, Likert type scale anchored with strongly agree and strongly disagree statements. More than half [64%] of the sample fell within one standard deviation of the mean [PI: $\alpha = .97$, mean = 12.5, sd = 5.6, mode = 12]. Fourteen percent reported strong intentions and 13 percent reported little or no intention to purchase a green brand of toilet paper during a future shopping trip.

Table 10. Purchase Intention Scale and Items

Scale Name	Alpha	#Items	Type
Purchase Intention Scale	.97	3	Likert

Var ID	Item	Mean(s.d.)	Item/Tot Corr
PI1	Purchase next visit agree/disagree (r)	4.1(2)	.97
PI2	Will try soon agree/disagree (r)	4.3(2)	.98
PI3	Will buy eco-TP agree/disagree (r)	4.1(2)	.97

Subjects were asked to select one of the two brands presented in the ad treatments, GreenLeaf or Soft n ' Gentle [S]. Of the 84 subjects, 79 completed the question. Half of those who selected a brand chose GreenLeaf [50.6%], which represented 47.6% of the total sample.

One role of the ecological orientation scale is to help marketers predict who is likely to select a green brand and who is not. Therefore, the individual components of the scale were examined for the two groups: subjects who selected GreenLeaf and those who did not [Table 11].

Table 11. Ecological Orientation Items by Selection

EO SCALE ITEM		GREENLEAF	SOFT n' GENTLE
		mean (sd)	mean (sd)
Attitudes			
EC1	*	5.7 (1.3)	4.9 (1.3)
EC2	*	6.3 (.76)	5.3 (1.3)
EOAT1	*	5.9 (1.3)	4.9 (1.7)
EOAT2	*	5.4 (1.6)	4.2 (1.6)
EOPP1		5.6 (1.8)	4.8 (1.9)
EOPP2	*	6.3 (1.1)	5.2 (1.7)
EOPP3		6.2 (1.1)	5.8 (1.4)
Behaviors			
EOB1	*	4.7 (1.2)	3.4 (1.3)
EOB2	*	5.1 (1.2)	3.6 (1.4)
EOB3	*	5.2 (1.5)	4.3 (1.9)
EE1	*	2.1 (1.6)	1.4 (.74)
EE2		4.9 (2.1)	4.0 (2.3)
EE3		3.1 (2.0)	2.3 (1.7)
EE4		1.5 (1.2)	1.5 (1.2)
EE5	*	3.8 (2.0)	2.4 (1.6)
EE6	*	2.3 (1.8)	1.4 (1.0)

* t-test on difference of means, $p < .05$.

Subjects who did not select the green brand of toilet paper reported being concerned about the environment [EC1 and EC2: means = 4.9 and 5.3] but their concern was not as great as it was for those who did select the green brand [EC1 and EC2: means = 5.7 and 6.3]. One difference was that, among consumers who did select, not one disagreed even slightly about the importance of protecting the environment [EC2: range 5-7 out of a possible 1 to 7, mode = 7 (50%)]. Subjects who did not select green brand were almost as likely to perceive pollution as an extremely important problem [EOPP1 - EOPP3: average mean = 5.3, mode = 7 (approximately 34%)] as those who did select [average mean = 6, mode 7].

T-tests indicate that the scores on several of these items reported by subjects who selected GreenLeaf are significantly different from those who did not. Scores on items EC1, EC2, EE1, EE5, EE6, EOAT1, EOAT2, EOB1, EOB2, EOB3, EOPP2 and EOPP4 are significantly higher for subjects who selected the green brand [$p < .05$]. Scores on items EE2, EE3, EE4, EOPP1, EOPP3 are not significantly different.

The scale clearly differentiates eco-consumers from non eco-consumers [t -value = -5.02, $df = 74$, $p < .01$]. The level of ecological orientation for subjects who selected the green brand [mean = 77, mode = 79, $sd = 14$] was significantly different from level of ecological orientation among those who didn't select [mean = 61, $sd = 13$, mode = 47]. The range

of answers from subjects who selected [64 to 108] also appears much different from those that didn't [33 to 90].

Those who did not select GreenLeaf also reported significantly lower purchase intentions [mean = 9.5, sd = 5.2, mode = 3] than those who did [mean = 15.6, sd 5.1, mode = 21]. This indicates that purchase intention is likely to be a strong indication of actual green brand selection.

Perceived Consumer Effectiveness

Perceived Consumer Effectiveness [PCE] was measured using two, 7 point, Likert type items anchored by strongly agree and strongly disagree [Table 12]. More than 64% of the subjects reported disagreeing that one person cannot do anything about the environment [PCE1: mean = 5.3, sd = 1.6, mode = 6. Sixty percent of the subjects agreed that an individual could protect the environment by purchasing products that are kind to the environment [PCE2: mean = 5.4, sd = 1.4, mode = 6].

Table 12. Perceived Consumer Effectiveness Items

Var ID	Item	Mean(s.d.)	Item Corr
PCE1	Not much any one can do agree/disagree (r)	5.3 (1.6)	.41
PCE2	Individual can protect agree/disagree	5.4 (1.4)	.41

The correlation between PCE1 and PCE2 was low but significant [$r = .41$ $p < .01$], indicating that combining these

items in a scale may not be desirable. A regression analysis indicated that PCE2 was a significant predictor of Ecological Orientation [$\beta = .58$, $p < .01$], but PCE1 was not [$\beta = .12$, $p < .22$]. The multiple R, a statistic that summarizes the total variance in ecological orientation accounted for by both PCE1 and PCE2, was .63, exactly equal to the correlation between PCE2 and ecological orientation. This indicates that no unique variance in ecological orientation is accounted for by the addition of PCE1. To reduce measurement error, all subsequent analyses involving PCE were conducted using the single item PCE2.

PCE2 scores do predict who will select a green brand. The mean [5.7] and mode [6] scores were higher among subjects who chose GreenLeaf than the mean [5.1] and mode [5] reported by subjects who chose Soft n' Gentle [t -value = -2.1, df 76, $p < .03$]. This indicates that subjects who are more sure of their personal ability to help protect the environment were the most willing to do something about it. Of the subjects who selected GreenLeaf, not one strongly disagreed with the statement [range = 2-7].

Perceived Ecological Relevance

Subjects also agreed that green attributes were relevant to toilet paper [PER: alpha .87, range from 3 to 21, mean = 15, $sd = 4$, mode = 18]. Although most subjects did not have a strong opinion either way about toilet paper being very relevant to the environment [PER1], an average of 50%

strongly agreed that environmentally friendly TP protects the environment and is important to environmental protection [PER2 and PER3: average mean = 5, average sd = 1.6, and both modes = 7]. Scale items are described in Table 13.

Table 13. Perceived Ecological Relevance Scale and Items

Scale Name	Alpha	#Items	Type
Perceived Ecological Relevance	.87	3	Likert

Var ID	Item	Mean(s.d.)	Item/Tot Corr
PER1	TP is very relevant agree/disagree (r)	4.4(1.5)	.82
PER2	TP benefits environment agree/disagree (r)	5.1(1.6)	.94
PER3	TP important to envir. agree/disagree (r)	4.9(1.6)	.91

Eco-Attribute Importance

This perception is also reflected in the perceived importance of ecological attributes [ATIB and ATIA]. Subjects assessed the importance in two ways. They were asked to rank order the importance of environmental friendliness compared to 5 other attributes, including: softness, absorbency, value, price and brand before and after exposure [ATI1B and ATI1A]. This measure was reverse coded.

Sixty percent of the sample ranked the eco-attribute to be about the least important [mean = 2.6, sd 1.5, mode = 2].

Only four subjects ranked it to be the most important [5.4% of the sample]. The modal response changed after exposure to the treatment and control ads, making eco-attributes more clearly the least important product feature on the list [mean = 2.6, sd 1.5, mode = 1]. Table 14 describes these items.

Table 14. Rank Order Attribute Importance Items

Var ID	Item	Mean(s.d.)	Corr
AI1B	Eco-attribute before	2.6 (1.5)	.71
AI1A	Eco-attribute after	2.6 (1.5)	.71

The second measurement of attribute importance [ATI2B and ATI2A] used a summated 3 item, 7 point, semantic-differential scaling technique. This scale ranged from 3 to 21. The mode for this scale was 12 [20%], which suggests that subjects really had no strong opinions as to how important eco-attributes were to their toilet paper choices [range = 3 to 18, mean = 13.5, sd 4.7]. However, subjects who selected GreenLeaf thought eco-attributes were significantly more important both before [mean = 13.6, sd = 3.1, mode = 18] and after exposure [mean = 15.7, sd = 4.2, mode = 21] than those who selected Soft n' Gentle [ATI2B mean = 11.5, sd = 4.4, mode = 12 and ATI2A mean = 11.3, sd = 4.46, mode 12]. Tables 15 and 16 describes these items.

Table 15. Attribute Importance Before Scale

Scale Name	Alpha	#Items	Type
Attribute Importance Before	.90	3	Sem/Diff.

Var ID	Item	Mean(s.d.)	Item/Tot Corr
AI2B1	Not Important/Import	4.2(1.7)	.80
AI2B2	Not Consider/Consider	4.3(1.8)	.86
AI2B3	Irrelevant/Relevant	4.0(1.8)	.89

Table 16. Attribute Importance After Scale

Scale Name	Alpha	#Items	Type
Attribute Importance After	.90	3	Sem/Diff.

Var ID	Item	Mean(s.d.)	Item/Tot Corr
AI2A1	Not Important/Import	4.6(1.9)	.77
AI2A2	Not Consider/Consider	4.7(1.6)	.84
AI2A3	Irrelevant/Relevant	4.3(1.7)	.86

Subjects who selected the green brand experienced more positive change in perceived attribute importance [ATIA mean = 19.08, ATICHG mean = 2.12] after exposure to the manipulation ads than subjects who did not [ATIA mean = 13.07, ATICHG mean = .11; $p < .01$]. Selection and attitude change are correlated $r=.27$ [$p < .01$]. Attribute importance change was not significantly affected by the treatment ad

type [$F = .142$, $p < .87$]. Neither was it significantly related to eco-ad believability [$r = .10$].

Perceived Believability

Another of the areas investigated by this study was the believability of toilet paper ads. Believability was assessed for both ads using a summed 10 item, 7 point semantic differential scale that ranged from 10 to 70 [$\alpha = .96$]. Tables 17 and 18 describe the items for both of these scales. Sixty-eight percent of the subjects fell in the middle with respect to how believable the treatment ads were [mean = 44.7, sd = 12.7, mode = 40]. This was also true for the believability of the traditional ad [mean = 43.5, sd = 13.5, mode = 40].

Their attitudes toward both of the ads were generally more positive than negative. Attitude toward the ad was measured using a summated three item, 7 point, semantic differential scales that ranged from 3 to 21 [$\alpha .90$]. Regarding the eco-ads [ATAD], 53% of the subjects scored over the mean [15.5] and the typical response was 18, with a standard deviation of 4. The traditional ad [ACAD], was slightly less positive, the mode was only 12 [mean = 14.6, sd = 4]. Responses are summarized in Tables 19 and 20.

Table 17. Eco-Ad Believability Scale and Items

Scale Name	Alpha	#Items	Type
Eco-Ad Believability Scale*	.97	10	Sem/Diff.

Var ID	Item	Mean(s.d.)	Item/Tot Corr
TB1	Believable/Unbelievable	4.8(1.6)	.85
TB2	Trustworthy/Untrustworthy	4.7(1.4)	.92
TB3	Convincing/Not Convincing	4.5(1.6)	.88
TB4	Credible/Not Credible	4.6(1.4)	.88
TB5	Reasonable/Unreasonable	4.8(1.3)	.82
TB6	Honest/Dishonest	4.5(1.4)	.87
TB7	Unquestionable/Questionable	4.0(1.5)	.80
TB8	Conclusive/Inconclusive	4.0(1.5)	.86
TB9	Authentic/Not Authentic	4.2(1.5)	.86
TB10	Likely/Unlikely	4.4(1.5)	.87

* All items reverse coded

Table 18. Control Ad Believability Scale and Items

Scale Name	Alpha	#Items	Type
Control Ad Believability Scale *	.97	10	Sem/Diff.

Var ID	Item	Mean(s.d.)	Item/Tot Corr
CB1	Believable/Unbelievable	4.6(1.6)	.88
CB2	Trustworthy/Untrustworthy	4.5(1.5)	.92
CB3	Convincing/Not Convincing	4.5(1.7)	.91
CB4	Credible/Not Credible	4.4(1.6)	.92
CB5	Reasonable/Unreasonable	4.8(1.5)	.82
CB6	Honest/Dishonest	4.4(1.4)	.93
CB7	Unquestionable/Questionable	4.1(1.4)	.86
CB8	Conclusive/Inconclusive	4.2(1.5)	.84
CB9	Authentic/Not Authentic	4.1(1.6)	.90
CB10	Likely/Unlikely	4.3(1.6)	.92

* All items reverse coded

Table 19. Attitude Toward Control Ad Scale and Items

Scale Name	Alpha	#Items	Type
Attitude Toward Control Ad	.98	3	Sem/Diff.

Var ID	Item	Mean(s.d.)	Item/Tot Corr
ACAD1	Good/Bad (r)	4.7(1.4)	.95
ACAD2	Pleasant/Unpleasant (r)	5.0(1.3)	.96
ACAD3	Favorable/Unfavorable (r)	4.9(1.4)	.98

Table 20. Attitude Toward Eco-Ad Scale and Items

Scale Name		Alpha	#Items	Type
Attitude Toward Eco-Ad		.95	3	Sem/Diff.

Var ID	Item	Mean(s.d.)	Item/Tot Corr
ATAD1	Good/Bad (r)	5.1(1.6)	.92
ATAD2	Pleasant/Unpleasant (r)	5.3(1.4)	.88
ATAD3	Favorable/Unfavorable (r)	5.1(1.5)	.93

Ad Treatments

In post hoc analysis, four judges examined the manipulation ads created for the study. Three of the four concurred that each of the ads fit into its designated type. The fourth judge noted that because the traditional and image type ads contained product information like price and the number of sheets per roll, they did not fit into their categories very well. This judge did concur that the promotional tie-in and product ads fit their categories well.

The effect of the three ad types on perceived believability was assessed by computing summated believability scores for subjects in each group. The group mean scores were tested by computing an analysis of the variance between treatments. No differences were found in eco-ad believability scores by ad type [Table 21]. Hypothesis 1a regarding the hierarchial levels of believability for different eco-ad executions cannot be supported.

believability for different eco-ad executions cannot be supported.

Table 21. The Effect of Ad Type on Believability

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	209.146	2	104.573	.638	.531
ADT on TB	209.146	2	104.573	.638	.531
Explained	209.146	2	104.573	.638	.531
Residual	12940.952	79	163.810		
Total	13150.098	81	162.347		

84 cases were processed - 2 cases (2.4 pct) were missing.

The study was designed to avoid sensitizing subjects to the focus of the study, which might have enhanced the treatments' effects on believability. Thus, all ecological orientation and perceived consumer effectiveness items were assessed after treatment. However, no significant differences were found in these variables according to which treatment subjects were exposed to [Tables 22 and 23], indicating that EO and PCE were not affected differently by each ad type.

Table 22. Ecological Orientation by Ad Type

Cell Means	Image	Product	Promo
	71.73	69.00	67.77
	(n=22)	(n=26)	(n=22)
POPULATION MEAN = 69.47 (N=70)			

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	181.216	2	90.608	.382	.684
Ad Type	181.216	2	90.608	.382	.684
Explained	181.216	2	90.608	.382	.684
Residual	15890.227	67	237.168		
Total	16071.443	69	232.919		

84 cases were processed - 14 cases (16.7 pct) were missing.

Table 23. Perceived Consumer Effectiveness by Ad Type

Cell Means	Image	Product	Promo		
	5.50	5.54	5.41		
	(n=22)	(n=26)	(n=22)		
POPULATION MEAN 5.49 (N =70)					
Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Main Effects	.206	2	.103	.060	.942
Ad Type	.206	2	.103	.060	.942
Explained	.206	2	.103	.060	.942
Residual	115.280	67	1.721		
Total	115.486	69	1.674		

84 cases were processed - 14 cases (16.7 pct) were missing.

Treatment effects on subsequently measured variables were also assessed. Applying difference of means testing, no significant differences were found associated with eco-ad type for attribute importance [$F = .588$, $p < .55$], purchase intention [$F = .22$, $p < .84$] or selection. [$F = .18$, $p < .84$].

An ANOVA was also computed to determine if the pretest measurement of attribute importance [ATIB] interacted with treatment type to effect the post-test measure of the same variable or any of the dependent measures [Eco-Ad Believability or Purchase Intention]. No significant differences were found [$F = .097$, $p < .91$]. Consequently, all treatments were combined into a single group.

A general claim in the literature is that eco-ads are perceived less believable than traditional advertising strategies [Hypothesis 1b]. The data was inspected and

difference of means testing was applied. The midpoint of the believability scale, which ranges from 10-70, is 40. Given that the observed mean level of believability for eco-ads is 44.73, and the mean level of believability for control ads is 43.5, both types appear to be more believable than less believable. Analysis of the variance showed no effect for ad type on the mean level of eco-ad believability [Table 21] or the mean level of believability for control ads [Table 24].

Table 24. Control Ad Believability by Ad Type

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig of</u>
Main Effects	46.908	2	23.454	1.463	.238
Ad Type	46.908	2	23.454	1.463	.238
Explained	46.908	2	23.454	1.463	.238
Residual	1250.746	78	16.035		
Total	1297.654	80	16.221		

84 cases were processed.

3 cases (3.6 pct) were missing.

A t-test was run to compare the mean differences between treatment and control believability findings [Table 25]. The null hypothesis cannot be rejected, as the computed t value failed to surpass the critical t at .05 alpha level.

Relationships Among Individual Characteristics

The eco-consumerism literature suggested several relationships between individual characteristics which should predict green brand selection. These constructs and

Table 25. Comparison of Treatment and Control Ads

Variable	Number of Cases	Mean	Standard Deviation	Standard Error
Eco-Ad Believability	81	44.4198	12.502	1.389
Control Ad Believability	81	43.5062	13.582	1.509

Statistics

(Difference)	Std	Std		2-tail	t	Deg. of	2-tail
Mean	Dev	Error	Corr.	Prob.	Value	Freedom	Prob.
.9136	14.384	1.598	.394	.000	.57	80	.569

relationships were schematically represented in Figures 1 and 2. Variation among the constructs is the heart of this analysis. Correlational statistics are well suited to exploring how the variance of one construct is related to the variance in another (Kerlinger 1988; Pedhazur 1982). Normally distributed populations and homoscedasticity of error variance is assumed in order to use this statistical technique (Pedhazur 1982).

Ecological Orientation and Eco-Consumerism

The relationships proposed in the literature [Figure 1] among perceived consumer effectiveness [PCE2], ecological orientation [EO], purchase intention [PI], eco-ad believability [TB] and green brand selection [S] have been studied using correlations. The correlations are shown in Table 26.

Table 26. Relationships in Eco-Consumerism

	PCE2	EO	PI	TB
EO	.6260**			
PI	.3814**	.6594**		
TB	.3790**	.3893**	.5035**	
S	.2436*	.5039**	.5104**	.2949**
* - Signif. LE .05 ** - Signif. LE .01 (2-tailed)				

As predicted by Hypothesis 2a, perceived consumer effectiveness is positively correlated with ecological orientation [$r = .63$]. The relationship between ecological orientation and purchase intention, Hypothesis 2b, is also positive and significant [$r=.38$, $p < .01$]. This indicates that as ecological orientation rose so did subjects' intention to purchase a green brand of toilet paper.

Eco-ad believability also has a positive relationship with purchase intention [$r=.38$, $p < .01$]. However, given the size and strength of the correlation between ecological orientation and eco-ad believability, the ineffectual manipulation of believability and the subsequent loss of comparison groups, it is prudent to verify that this relationship does not merely reflect the indirect influence of ecological orientation through believability. A partial correlation between eco-ad believability and purchase intention holding ecological orientation constant was computed and found to be significant [$r=.28$, $p < .01$].

The literature does not contain a study which evaluates directly the relationship between any of these constructs and actual product selection. It merely suggests that all of these variables will be positively related to selection. The matrix supports that supposition [Table 26]. However, further analysis indicated that the observed relationship between eco-ad believability and green brand selection is not direct and independent. A partial correlation was computed holding ecological orientation constant. It revealed that the direct relationship between believability and selection is insignificant [$r = -.07$, $p < .22$].

Eco-Consumption and Perceived Ecological Relevance

A second model was proposed [Figure 2] one that draws upon general consumer behavior theories of how eco-ad believability is likely to affect ecologically oriented consumption. Table 27 contains the correlation matrix which describes these relationships.

As predicted by Hypothesis 3a, both ecological orientation and perceived ecological relevance are positively related with eco-ad involvement. A regression analysis indicates that these two variables account for more than half of the variance in this construct [$R^2 = .55$]. Ecological orientation [$\beta = .38$, $p < .01$] contributes more to explaining variation in eco-ad involvement than perceived ecological relevance [$\beta = .28$, $p < .001$].

Table 27. Proposed Relationships in Eco-Consumption

	PCE2	EO	PER	TB	TFI	ATIB	ATIA	PI	TP	TQ
EO	.6260**									
PER	.2658*	.3639**								
TB	.3790**	.3893**	.4184**							
TFI	.2698*	.4838**	.4349**	.5381**						
ATIB	.3988**	.6011**	.5216**	.3776**	.6730**					
ATIA	.5134**	.7069**	.4729**	.3754**	.5197**	.7268**				
PI	.3814**	.6594**	.4041**	.5035**	.5256**	.5848**	.6744**			
TP	.0785	.1601	.1014	.1091	.0111	.2039	.2296	.1599		
TQ	.0553	.2387*	.3498**	.3982**	.4039**	.2905*	.2787*	.2661*	-.1510	
S	.2436*	.5039**	.3035**	.2949**	.3007**	.3340**	.4769**	.5104**	.308	.3224**

* - Signif. LE .05 ** - Signif. LE .01 (2-tailed)

Perceived ecological relevance is also related as hypothesized with perceived eco-ad believability [3b]. A partial correlation between eco-ad believability and perceived ecological relevance was computed by holding ecological orientation constant. The resulting correlation [$r = .31, p < .001$] indicates that the relationship is not dependent on the indirect influence of ecological orientation.

Perceived ecological relevance was hypothesized to contribute more variance in green attribute importance than ecological orientation [3c]. Since green attribute importance was measured both before [ATIB] and after [ATIA] exposure to the experimental manipulations, both were used in this analysis.

The correlations between ecological orientation and green attribute importance, before [$r = .60, p < .001$] and after [$r = .71, p < .001$], indicate a significant relationship. The correlations between perceived ecological relevance and attribute importance before [$r = .52, p < .001$] and after [$r = .47, p < .001$] are also significant.

Partial correlations were calculated to ascertain that the observed relationships were not merely due to the indirect effects of either perceived ecological relevance or ecological orientation. This analysis confirmed that the relationships between perceived ecological relevance and

attribute importance [ATIB: $r = .47$, $p < .001$; ATIA: $r = .41$, $p < .001$], as well as ecological orientation and attribute importance [ATIB: $r = .63$, $p < .001$; ATIA: $r = .57$, $p < .001$], are independent from the influence of each other.

Multiple regression was applied to determine the relative importance of each of these independent factors on attribute importance [Table 28]. However, since perceived ecological relevance and ecological orientation are significantly correlated, the R^2 statistic cannot be partitioned meaningfully (Pedhazur 1982). Given that caveat, the beta weights [β] are interpreted to indicate relative contributions to the variance in attribute importance, not effect sizes (Pedhazur 1982). Hypothesis 3c predicted that perceived ecological relevance would contribute more than ecological orientation to the variance in attribute importance. This statement is not supported [ATIB: EO $\beta = .48$ and PER $\beta = .38$; ATIA: EO $\beta = .62$ and PER $\beta = .25$].

Perceived ecological relevance was also hypothesized to be directly related to green brand selection [3d]. The correlation matrix [Table 27] supports this conclusion. However, given the intercorrelation among ecological orientation, selection and perceived ecological relevance, a partial correlation was computed to determine if the observed relationship was dependent on ecological orientation.

Table 28. Regression of Ecological Orientation and Perceived Ecological Relevance on Attribute Importance

Dependent Variable: ATIB

Multiple R	.70277
R Square	.49388
Adjusted R Square	.47831
Standard Error	3.77558

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	2	904.17372	452.08686
Residual	65	926.57628	14.25502

F = 31.71422

Signif F = .0000

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
PER	.488503	.118368	.383108	4.127	.0001
EO	.163209	.031428	.482079	5.193	.0000
(Constant)	-3.624558	2.419537		-1.498	.1390

Dependent Variable ATIA

Multiple R	.74461
R Square	.55444
Adjusted R Square	.54171
Standard Error	3.87141

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	2	1305.53928	652.76964
Residual	70	1049.14565	14.98779

F = 43.55341

Signif F = .0000

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
PER	.332818	.113473	.250319	2.933	.0045
EO	.229584	.031706	.617987	7.241	.0000
(Constant)	-4.859923	2.309508		-2.104	.0389

Controlling for ecological orientation, the correlation between perceived ecological relevance and selection drops to $r = .1$ [$p < .21$]. The partial correlation indicates that the relationship between perceived ecological relevance and green brand selection is not independent of the effects of ecological orientation. The null fails to be rejected; Hypothesis 3d cannot be supported.

Consumers' perception of quality [TQ: mean = 3.7, sd = 1.3, mode = 4] and green brand selection [S] is observed to be positively related. Consumers' perception of price [TP] and green brand selection are not related. Price was coded so that consumers who perceived the fictional green brand named GreenLeaf to be expensive would score low and those who perceived it to be inexpensive would score more highly [mean = 4.9, sd = 1.6, mode = 4]. Selection was coded as a dichotomous variable, where selection of GreenLeaf = 1 and selection of the traditional brand [Soft n' Gentle] was 0. Dichotomous variables act as dummy variables in correlation (Pedhazur 1982; Kerlinger 1988). Given the code of the selection group, 1, and the expensive to inexpensive coding, a positive correlation would be anticipated if, as theory indicates, lower price perceptions accentuate the likelihood of selection. However, the relationship observed in these variables is neither positive nor significant.

Eco-Consumption, Involvement and Ad Believability

To examine the hypothesis that eco-ad believability mediates the relationships between eco-ad involvement and several after-exposure variables [4a], a partial correlation holding eco-ad believability constant was computed [$R_{TFI/PI \cdot TE} = .42, p < .000$; $R_{TFI/S \cdot TE} = .32, p < .004$; $R_{TFI/IS \cdot TE} = .24, p < .024$]. This illustrated that eco-ad believability does not significantly mediate the relationships between eco-ad involvement and attribute importance, purchase intention or selection. This indicated that involvement rather than believability is the critical factor determining an eco-ads' impact on attribute importance, purchase intention or selection. Hypothesis 4a cannot be supported. From this analysis it is clear that the consumer behavior literature is more consistent with these findings than the eco-consumerism literature which prompted the hypothesis. Further examination provided additional understanding of these relationships.

The sample was partitioned into two groups based on their eco-ad involvement scores. Subjects who scored below the mean [8.61] were placed into the low involvement group and subjects who scored above the mean were placed into the high involvement group. As suggested by the consumer behavior literature, high and low levels of felt involvement affect the relationship between eco-ad believability, attribute importance, purchase intention and selection.

ANOVA tables confirm the main effect for eco-ad involvement [Table 29] on all of these variables.

Table 29. Main Effects of Eco-Ad Involvement

Eco-Ad Believability by Eco-Ad Involvement

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig of F</u>
Main Effects	1968.992	1	1968.992	17.760	.000
Eco-Ad Involvement	1968.992	1	1968.992	17.760	.000
Explained	1968.992	1	1968.992	17.760	.000
Residual	7649.600	69	110.864		
Total	9618.592	70	137.408		

13 cases (15.5 pct) were missing.

Attribute Importance [after] by Eco-ad Involvement

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig of F</u>
Main Effects	377.072	1	377.072	12.558	.001
Eco-ad Involvement	377.072	1	377.072	12.558	.001
Explained	377.072	1	377.072	12.558	.001
Residual	2071.886	69	30.027		
Total	2448.958	70	34.985		

13 cases (15.5 pct) were missing.

Purchase Intention by Eco-ad Involvement

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig of F</u>
Main Effects	425.817	1	425.817	14.313	.000
Eco-ad Involvement	425.817	1	425.817	14.313	.000
Explained	425.817	1	425.817	14.313	.000
Residual	2052.775	69	29.750		
Total	2478.592	70	35.408		

13 cases (15.5 pct) were missing.

Selection by Eco-ad Involvement

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig of F</u>
Main Effects	2.194	1	2.194	9.750	.003
Eco-ad Involvement	2.194	1	2.194	9.750	.003
Explained	2.194	1	2.194	9.750	.003
Residual	15.525	69	.225		
Total	17.718	70	.253		

13 cases (15.5 pct) were missing.

An analysis of the relationships within the partitioned correlation matrices provides further information about these relationships [Table 30 and Table 31]. Under low involvement conditions, believability is significantly related to attribute importance and purchase intention but not selection. A cross-tabulation showed that subjects in this group are not very likely to select a green brand [Table 32]. The insignificant correlation between eco-ad believability and green brand selection indicates that there is no relationship between these two variables when the consumer is not highly involved with the eco-ad.

Table 30. Low Involvement Correlations

	TB	ATIA	PI
ATIA	.4123*		
PI	.4961**	.4881**	
S	.2232	.3796*	.3977**
* - Signif. LE .05 ** - Signif. LE .01 (2-tailed)			

Table 31. High Involvement Correlations

	TB	ATIA	PI
ATIA	.1202		
PI	.2133	.7195**	
S	.1187	.4060*	.4571**
* - Signif. LE .05 ** - Signif. LE .01 (2-tailed)			

Under conditions of high involvement, the relationships between believability and attribute importance, purchase intention and selection are small and insignificant.

However, highly involved subjects perceived the ads to be significantly more believable [mean = 51.1; grand mean = 44.6] than less involved subjects [mean = 39.4]. Green brand selection was more likely when subjects were highly involved. These analyses do not permit the null form of Hypothesis 4a to be rejected.

Table 32. Involvement and Selection of a Green Brand

	Soft n'Gentle	GreenLeaf	row totals
Low Involvement	28	15	43 (54.4%)
High Involvement	11	25	36 (45.6%)
totals	39	40	79
	49.4%	50.6%	100%

The literature suggested that highly involved consumers would think more about the eco-ads. Perceived believability was predicted to suppress the number of negative cognitions. The correlations describing these relationships are presented in Table 33.

The correlation between ecological orientation and the number of cognitive responses [TCR] noted for eco-ads is not significant. The correlation between ecological orientation and the number of negative thoughts [TCRN] is likewise insignificant, although it is in the specified direction.

Table 33. Information Processing and Advertising Believability

	EO	TCR	TCRN
EO	1.0000		
TCR	.1948	1.0000	
TCRN	-.1453	.2420*	1.0000
TB	.3893**	.3278**	-.0872
* - Signif. LE .05 ** - Signif. LE .01 (2-tailed)			

Even when these correlations were run under high and low involvement conditions, the relationships between ecological orientation and cognitive responses were not significant. The relationship between the number of cognitive responses and eco-ad believability, posited to be negative [4b] is shown to be positive and significant. When analyzed under high and low involvement conditions, this relationship disappears. The data do not support Hypothesis 4b.

General Hypothesis

Several hypotheses in this study have been supported in confirmation of the eco-consumption and information processing literature. However, correlational studies do not provide any information as to the causal direction of these relationships. It is impossible to tell if a consumer's purchase intention is affecting his or her ecological orientation or vice versa. A higher order statistical technique, path analysis, is based on correlations and can

provide causal inferences from non-experimental data (Cook and Campbell 1979; Pedhazur 1982). Path analysis will be used to examine Hypothesis 5.

Path Analyses

The path analytic technique assumes that the variables are linear, additive and causal. Other assumptions are that all error terms are uncorrelated, the variables are measured without error and that the model flows in one direction. In path analysis, the variables are related according to theory. The predicted paths are supposed to reflect the researcher's best thinking about what the theory predicts is occurring in a given process (Pedhazur 1982).

The substantive hypothesis in model analysis states that the data do not depart substantially from the model. The null hypothesis is that the data do depart significantly from the model. In this case the null hypothesis is substantive, unlike most other analysis. Path coefficients are computed by regressing the exogenous, independent variables onto specified dependent variables. Since path analysis assumes that the error and the residual values of each variable are not correlated with each other or any preceding variable in the model, the path coefficients are beta weights (Boster 1992; Pedhazur 1982).

The model is tested when a Chi square analysis is applied to the beta representing each path which is unpredicted by theory. Chi square tests the beta weight to

see if the observed relationship is significantly different from what would be expected if the relationship was random. If the Chi square is insignificant, the null fails to be rejected. This indicates that the data is consistent with the model. This technique is different from classical hypothesis testing, where the null hypothesis states that the relationship between variables is random.

In path analysis small sample size can cause the null not to be rejected when it should be, but the low power of a small sample is likely to cause the alpha level to be small and insignificant (Pedhazur 1983; Boster 1992). In path analysis, the larger the alpha the better the model fits the data. An alpha of 1.00 indicates a perfect match between theory and data. The alpha levels for each path analysis are reported as a protection from accepting an inaccurate model. The net effect of a meaningful null hypothesis is to force theoretical precision (Boster 1992; Pedhazur 1982).

Current Model of Important Factors in Ecologically Oriented Consumption.

Ten total paths are identified by the factors noted in the eco-consumerism literature. Four paths are predicted by theory [Figure 4]. This means that the total model is overidentified by six correlations. This overidentification permits the model to be tested for overall fit using a Chi square analysis (Pedhazur 1982). The path program used to

calculate this matrix automatically corrects each correlation using the measurement scale reliability alphas.

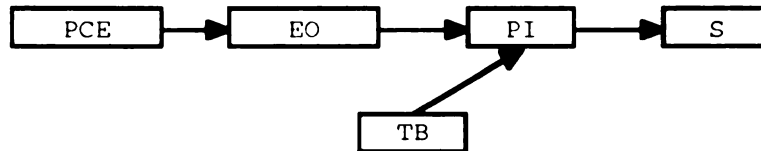


Figure 4. Eco-Consumerism Path Model

The path coefficient for the link between Perceived Consumer Effectiveness and Ecological Orientation is .63. The path coefficients between Purchase Intention and its two antecedents are .29 [Perceived Consumer Effectiveness] and .55 [Ecological Orientation]. The path coefficient between Eco-Ad Believability and Purchase Intention is .50. The path coefficient for the link between Purchase Intention and Selection .51.

The overall Chi Square for the Eco-Consumerism Model is 3.11 (df = 5) [critical Chi sq. = 11.07]. This indicates that the unpredicted paths are not significantly different than what would be expected if they were random. The alpha is .683. This means that the model is consistent with the data, but does not describe the process of ecologically oriented consumption very well.

Proposed Ecologically Oriented Consumption Paradigm

The review of the literature included several constructs that have not been previously associated with eco-

consumerism. The theorized relationships among these constructs are arranged in Figure 5. Given that the purpose of path analysis is to test the researchers' best thinking, some adjustments have been made to the model presented in Figure 2. These changes are based on the findings reported previously in this chapter. Since one of the assumptions in path analysis is linearity, the analysis of eco-ad believability and quality as part of this model is precluded. In addition, the low correlations between price, quality and selection indicated that the original model presented in Chapter Two incorrectly included these variables. The paths indicated from Ecological Orientation to Purchase Intention and Selection were also drawn from the correlation matrix.

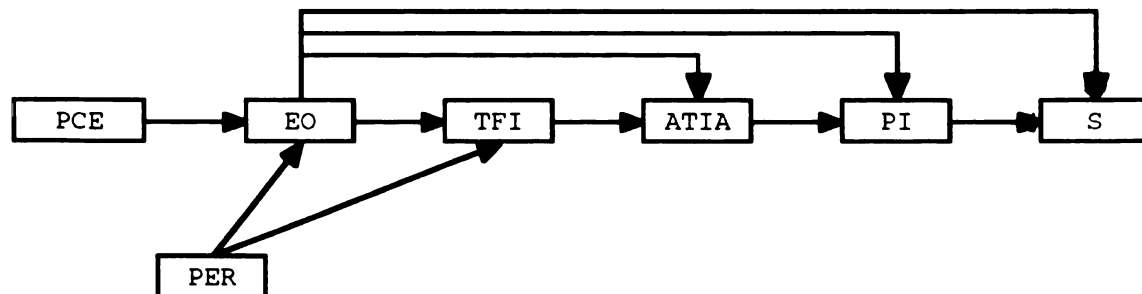


Figure 5.
Proposed Ecologically Oriented
Consumption Paradigm

The path coefficients between Ecological Orientation and its two antecedents are .57 [Perceived Consumer Effectiveness] and .20 [Perceived Ecological Relevance]. The path coefficients for the links between felt involvement and

its antecedents are .30 [Perceived Ecological Relevance] and .37 [Ecological Orientation]. The path coefficient between Eco-Attribute Importance and Ecological Orientation is .60 and between Eco-Attribute Importance and Eco-Ad Involvement is .23. The path coefficients between purchase intention and its predictors are, .37 [Ecological Orientation] and .41 [Eco-Attribute Importance]. The path coefficients between selection and its direct factors are .29 [Purchase Intention] and .32 [Ecological Orientation]. These coefficients describe the paths predicted by theory. If this model is an accurate description of the data, all other paths [relationships between variables without lines drawn directly between them] should be zero or insignificant.

The overall Chi square for Model 2 is 4.19 [critical Chi square is 18.3 at $p < .05$]. This indicates that the unpredicted paths do not significantly differ from random variance. The reported alpha is .938. This indicates the predicted paths fit the data very well (Pedhazur 1982). Model 2 apparently describes the relationships in eco-consumption very well.

Although there is no statistical test for comparing these two alphas, it is clear that Model 2 provides a more complete explanation of the relationships measured in this study. This evidence permits the conclusion that Hypothesis 5 can be supported.

CHAPTER V. DISCUSSION

Summary of the Findings

Results from the reported study can be summarized in general terms. Confirming the findings of earlier studies, this sample did not demonstrate any demographic characteristics that were useful in predicting green brand selection (Ellen et al 1991; Schwepker and Cornwell 1991; Kinnear 1974). All of the predictive characteristics were psychographic in nature.

Comparing this sample to Roper's green scheme, the segment called Green-back Greens is clearly represented. Thirty seven percent of the sample had an income reported over \$35,000 and a full 78% were over \$24,000. The education level was very high as well. Fifty percent of the sample reported having some college, and 35% had graduate degrees. This finding limits the generalizability of the study beyond Green-Back Greens.

Ecological Orientation is significantly related to all the identified factors of eco-consumption. The correlation between it and green brand selection indicates that ecological orientation is a strong predictor of eco-consumption. The EO scale was able to predict which consumers were likely to select a green brand of toilet paper. The attitude measures contained within the scale

appear to be better predictors of eco-consumption than the behavioral items.

The scale created to measure perceived ecological relevance is highly reliable. Subjects who perceived eco-attributes to be relevant to toilet paper were also highly involved with the eco-ads. There is a main effect for eco-ad involvement on eco-ad believability, purchase intention and selection. Perceived ecological relevance, however, is not independently related to green brand selection. Apparently, it exerts its effect through attribute importance and eco-ad involvement.

Perceived ecological relevance and ecological orientation explain a significant amount of variation in consumers' perceptions of eco-attribute importance, both before and after exposure to ads; however, ecological orientation is the more influential factor. Attribute importance was significantly lower before exposure to the manipulations than afterwards.

Shifts in attribute importance were not apparently due to the eco-ad's level of perceived believability. As eco-ad believability rose so did attribute importance, but attribute importance change was not significantly related to believability. Both attribute importance and eco-ad believability were significantly related to ecological orientation, indicating that the more ecologically oriented consumers were, the more believable they found the eco-ads

and the more important they perceived the eco-attributes to be. Subjects who found the ads believable and the eco-attributes important reported a greater intention to purchase.

This relationship is somewhat deceptive. Eco-ad believability was significantly related to purchase intention only for consumers who did not, or were not likely to, select the green brand. Apparently, when consumers are not ecologically oriented enough to actually select the green brand, they want to think they are [or want others to think they are]. This suggests that a social desirability bias affected these findings.

Perceived ecological relevance and eco-ad believability are significantly related independently from ecological orientation. This indicates that the more relevant consumers perceived the eco-attributes to be to toilet paper, the more believable they found the ads. In addition highly ecologically oriented subjects found the eco-ads more believable than less ecologically oriented subjects. This finding contradicts several academics and practitioners who blamed poor green product sales on eco-consumers' failure to believe eco-ads (Coddington 1991; Davis 1993; Rigney 1992).

In terms of information processing, ecological orientation and eco-ad believability are not significantly related with the number of total cognitive responses or negative cognitive responses recorded by subjects. This

indicates one of two things. Either eco-ad believability is not a persuasion cue or, in general, people just do not think about toilet paper ads very much.

No significant differences in eco-ad believability scores were found according to which treatment ad the subject was exposed. No difference in the level of perceived believability of eco-ads compared to the level of perceived believability regarding traditional ads is evident.

Eco-Consumption Paradigm

The major research question investigated the relative abilities of two models to describe the ecologically oriented consumption process. The proposed eco-consumption paradigm describes the observed data better than the current eco-consumerism model.

The eco-consumption paradigm was tested using path analysis. The results of that analysis indicate the proposed paradigm offers an accurate description of the observed data. This supports the theorized relationships among the individual characteristics which have not been previously studied in this context.

In essence, the proposed paradigm illustrates that consumers who believe their actions are effective in preserving the environment are more ecologically oriented. Consumers who are highly ecologically oriented and who perceive eco-attributes to be relevant to the product are

likely be more highly involved with an eco-ad. They are also likely to perceive eco-attributes to be more important than less ecologically oriented consumers. Purchase intention is predicted by high levels of ecological orientation and perceived eco-attribute importance. Selection is predicted by ecological orientation's direct effect. This prediction is enhanced when its indirect effects, along with the indirect effect of perceived ecological relevance, are also included. High levels of ecological orientation affect green selection indirectly by increasing eco-ad involvement and perceived eco-attribute importance. Perceived ecological relevance indirectly contributes to green brand selection by increasing involvement with eco-ads and perceived attribute importance. The importance of the eco-attribute determines purchase intention among highly ecologically oriented consumers, and is an accurate predictor of actual green brand selection. Consumers who are not ecologically oriented may say they intend to purchase a green brand, or that it is a wise idea, but the evidence indicates they will not actually select it.

Interpretation of the Findings

The ineffectual manipulation of eco-ad believability has several ramifications for the analysis. By failing to elicit significantly different perceptions of believability, the study is no longer composed of three equivalent

comparison groups. The post hoc design is actually a pretest-posttest, with no separate control group. This design is commonly referred to as non-experimental theory testing, which is a valid method of predicting relationships and interactions among variables (Cook and Campbell 1979).

Consumers apparently brought a certain perception of ad believability into the experiment, which the treatments may or may not have affected. It is unknown whether the reported believability differs from the level of believability that consumers brought into the experimental setting. However, it is evident that believability is related to consumers' ecological orientation.

In all, the failure to manipulate believability in the manner prescribed by the literature offers some substantive information. To the extent that the treatment ads reflected the type presented in the literature, believability was not dependent on executional tactics. Future efforts at constructing advertisements to meet these specifications are likely to be a waste of time, as they apparently do not address significant problems in eco-consumption.

Subsequent analysis must be made in light of the finding that believability is not independent from a subject's a priori attitudes and that causal inferences cannot be drawn about eco-ad executions. Recognizing that fact, the problems normally associated with a manipulation failure in an

experiment should offer no serious threat to the internal or external validity of the remaining analysis.

The Individual Characteristics of Eco-Consumption Ecological Orientation

All of the relationships among individual characteristics in eco-consumption were found to be predicted by ecological orientation. Ecological orientation was a composite index created for this study to capture an individual's attitudinal and behavioral predisposition to engage in eco-consumption.

The ecological orientation scale incorporates Kassarian's (1971) and Kinnear's (et al. 1974) thinking about the best way to predict eco-consumption. The scale alpha of .88 indicates that the items selected to measure ecological orientation are reliably measuring the same construct. This scale also demonstrated criterion-related validity by its highly significant relationship with perceived consumer effectiveness and its ability to predict eco-consumption (Kerlinger 1988; Kinnear and Taylor 1983).

Ecological orientation was related to perceived consumer effectiveness, confirming earlier studies in this field (Ellen et al 1991; Kinnear et al 1974). This shows that the more effective consumers believe their actions are in protecting the environment, the more likely they are to be ecologically oriented. However, given the single item measurement used here, it is impossible to evaluate Ellen et

al.'s (1991) contention that perceived consumer effectiveness is an antecedent of ecological orientation. The model analysis supported this conclusion, but without more items, there is little certainty. The path would predict the same thing if PCE were merely another facet of ecological orientation.

Evidence from this study suggests that perceived consumer effectiveness is a component of ecological orientation. The finding that perceived consumer effectiveness is related to product selection only through ecological orientation contradicts findings by Ellen et al. (1991) which indicate it is directly related to ecological activities. One explanation for this difference may be that Ellen et al. (1991) measured consumers' self-reported intentions to engage in activities such as recycling and petition signing and not actual product selection as this study did. This indicates that a social desirability bias may have been reflected and unaccounted for in their work.

Perceived Ecological Relevance

Moore (1993) stated that the most pervasive theme emerging from his research was the cynical response consumers reported having when confronted with eco-ads. An alternative explanation presented here suggested that cynical responses were likely to be triggered when consumers perceived the eco-ad as a self-serving attempt by green marketers to attach irrelevant green claims to products. The perceived

ecological relevance scale was created to study this suggestion. It was designed to assess consumers' perception of how relevant environmentally friendly attributes are to a product.

The validity and reliability of this scale were assessed. Criterion-related validity was found by analyzing theoretical and logical relationships between perceived ecological relevance, eco-ad involvement and eco-ad believability. Boush et al. (1991) theorized that a cynical response to an advertisement would likely be characterized by low message involvement. Consumers responding cynically would dismiss the message without much consideration. This relationship is demonstrated inversely by the observed data. As perceived ecological relevance increased, consumers' involvement with the eco-ad did as well.

As additional support for construct validity, the relationship between perceived ecological relevance and eco-ad believability was examined. The more relevant a green attribute was, the more believable consumers found the eco-ad. Logically, consumers responding cynically should be expected to find the ad to be unbelievable as well.

The perceived ecological relevance scale was created for this study. To examine the reliability of the measure, Cronbach's alpha, a test that compares each item to every other item, was computed. This test indicated that all of the items reliably measured the same construct which is

perceived ecological relevance, at least according to the criterion-validity information.

Perceived ecological relevance was also shown to be a significant contributor to product selection aside from its ability to predict cynical responses to eco-ads. However, this effect is indirect. Perceived ecological relevance apparently exerts influence on eco-consumption through its role as a determinant of eco-attribute importance.

The more relevant consumers found green attributes to be for toilet paper, the more important they perceived them to be. The more important eco-attributes were perceived to be, the more likely consumers were to select the green brand.

The finding that ecological orientation is relatively more important in determining an eco-attribute's importance than perceived ecological relevance indicates the strength of that construct. Perceived ecological relevance asked consumers to assess how relevant eco-attributes were, in general, to toilet paper. But this assessment was not as influential in determining their perception of an eco-attribute's importance as their ecological orientation. This indicates that ecologically oriented consumers are apparently willing to set aside their objectivity to some degree.

Eco-Advertising Believability

Perceived believability was defined as consumers' evaluation of an ad's acceptability. It was suggested that perceived believability was a function of the interaction

between consumers' skepticism toward an ad and the executional characteristics of the ad. In effect, perceived believability represents the reaction to a specific ad caused, to some degree, by consumer skepticism. This understanding indicates that perceived ad believability is a response which specifically refers to the acceptance of a specific ad.

Given that consumers are supposed to be very skeptical toward eco-ads and that different executional strategies are supposed to be less believable than others, this suggestion was examined (Moore 1993; Coddington 1993). According to the literature, consumers who were exposed to the Image type eco-ads were supposed to find them significantly less believable than the control ad. They were also expected to perceive the Image ads as significantly less believable [in an absolute sense] than consumers who viewed the other ads. However, consumers' perceptions about the believability of eco-ads did not differ by executional strategy; nor did those perceptions differ significantly from the perceptions' of consumers who were exposed to the traditional ad. This indicates that consumers are not necessarily more skeptical toward eco-ads. Different executional strategies do not seem to trigger more skeptical responses [in terms of generating negative cognitive responses]. If consumers responded skeptically, they would have listed significantly more negative cognitive responses for eco-ads than for traditional

ads, especially for ads which were unbelievable. The fact that consumers did not list a significantly different number of negative cognitive responses might indicate that they were not skeptical or that they were just not thinking about the toilet paper ads.

Consumer involvement with the eco-ads should have made these relationships more apparent. According to the Elaboration Likelihood Model, advertising believability should have one of two effects on the cognitive responses subjects to advertisements. If the subject was highly involved with the eco-ad, advertising believability should have reduced the number of counter arguments or negative cognitions made in relation to that eco-ad. In subjects who reported low involvement with the eco-ads, advertising believability should have also reduced negative cognitions, distracting the consumer from any detailed processing, the net effect being less total cognitions. However, the findings indicate that there was no relationship between the number of cognitions, or the perceived believability of the eco-ad for either involvement condition. This indicates that either advertising believability is not a cue to persuasion or, once again, that subjects just do not think much about eco-ads for toilet paper.

The sources of involvement with eco-ads, intrinsic involvement with toilet paper and the issue of environmental protection as well as situational involvement, were also

measured. Intrinsic involvement with the environment did correspond with an increase in felt involvement with the eco-ads. However, situational involvement was measured, not manipulated, so further analyses of these relationships is precluded.

The positive relationships between eco-ad believability, purchase intention and green brand selection were governed by ecological orientation. Subjects who were highly oriented toward the environment were also likely to find eco-ads highly believable. They were also most likely to report high purchase intentions and to support those intentions by actually selecting the fictitious GreenLeaf brand of toilet paper. However, these subjects perceived eco-attributes to be important even before exposure to eco-ads. Subjects who selected the green brand experienced less change in perceived attribute importance because they already held an extremely favorable position. Eco-ad believability did not have any direct or independent relationship with purchase intention or selection for any subjects who actually selected GreenLeaf brand toilet paper.

Given the finding that attribute importance increased significantly after exposure to the manipulations, it is reasonable to conclude that all the eco-ads, regardless of message strategy, supported and reinforced ecological beliefs. It appears that the net effect of exposure to these ads was increased salience of eco-attributes for all

subjects. Increasing the salience of a unique attribute is an accepted and often effective advertising strategy (Schultz 1985; Ray 1982).

This effect offers an explanation for the significant, direct and independent relationship which was observed between eco-ad believability and purchase intention for subjects who did not select GreenLeaf. Attribute importance also increased among these subjects, but not as significantly as for those who ultimately did select. Apparently, after exposure, and as perceived eco-ad believability increased, consumers were more willing to say they intended to purchase a green brand. But when they were forced to choose, they selected the more traditional brand. Eco-attribute salience was increased, but perhaps not enough to alter selection.

This contradiction makes data interpretation difficult. It may be responsible for the misleading conclusions drawn by researchers and polling organizations that low eco-ad believability is related to poor product performance (Rigney 1992; Coddington 1993). Those erroneous conclusions are even supported when the mean level of eco-ad believability is inspected for consumers who select green brands and those who do not. Consumers who did not select the green brand found eco-ads significantly less believable than consumers who did select. However, rigorous analysis shows that eco-ad believability is positively related to ecological orientation, the driving force behind ecologically oriented

consumption. So, while eco-ad believability is a confusing correlate of green brand selection, it falls short of actually affecting green product selection.

A limitation of this research is that, while eco-ad exposure heightened consumers' perception of attribute importance no measure of the importance of the attribute focused on in the control ad (softness) was assessed, meaning relative change is unknown. Subjects' perception of the importance of softness might have increased just as much or more by exposure to the control ad; however, this limitation does not discount the observed findings. Any eco-advertising effort has been shown to increase the immediate perception of green attribute salience. This caveat indicates that this study does not offer information about whether eco-attribute importance is increased more than traditional attribute importance in similar exposure settings.

Price and Quality

Ottman (1992), Coddington (1993), Moore (1993) and several others have noted that consumers are unwilling to trade off product performance on price and quality for eco-attributes. The findings reflect those concerns for quality, but not for price. This might be accounted for by the Green-back Green type sample. According to Roper (1994) price is not a prime consideration among these consumers. In addition, there were no price differences between the brands in this study, nor were there any explicit quality differences.

Implications of the Findings

The purpose of this dissertation was to clarify how advertising believability affects eco-consumption. To complete this task it was necessary to make order from the chaotic eco-consumerism literature. From that review a model of eco-consumerism emerged. It depicted advertising's effect to be direct and based almost solely on its believability. But that model lacked several components widely recognized by consumer behavior researchers to be highly explanatory in most consumption situation. A second model was created, built on the basic framework of the first, but incorporating a number of ideas that proved to offer a more comprehensive understanding of how advertising affected the eco-consumption process.

An important implication of this research is that ecological orientation drives eco-consumption. The ecological orientation variable was created specifically for this study. Green marketers must concentrate their efforts toward discovering advertising and promotion strategies which can convince consumers who are not highly oriented to change their attitudes or related behaviors. This advice has been offered by researchers in the past and it holds true today (Ellen et al. 1991; Ottman 1992). This study has provided evidence that consumers do not fail to respond to eco-ads due to a general lack of believability; thus other problems,

perhaps related to quality and price, must be identified and confronted.

Green marketers who are targeting eco-consumers should also note the finding that mere exposure to eco-ads heightened ecologically oriented respondents' perception of eco-attribute importance. While the greatest attitude change was experienced by consumers who selected GreenLeaf, the correlation between attribute importance change and selection is insignificant. This indicates that change in attribute importance was not an important factor in generating selection in this study. A ceiling effect is most likely the cause. The subjects who experienced the most change already had the highest perception of eco-attribute importance before exposure.

Suggestions for Future Research

Given the era of the early research, the assumption that ecologically oriented consumption was a niche market, and that eco-consumers were not really part of the main stream marketplace was appropriate. However, times have changed. Eco-consumption is no longer the domain of a few "hippies". The overall level of ecological orientation found in this study supports the existence of a fundamental change in mainstream consumer concerns (Ottman 1992; Stisser 1994).

Future research should be directed at identifying the terminal values consumers associate with eco-consumption.

Recent reports indicate that consumers are unsure of how environmental claims translate into real benefits to them (Goldman 1994). A means-end chain analysis might offer ideas for more effective advertising strategies and executions than have been offered thus far.

A limitation of this study also provides direction for future research. Ten subjects who reported not being highly ecologically oriented chose the green brand. But with only 10 subjects meaningful analysis was precluded. This group represents the primary target market for future green marketing efforts. A larger sample is necessary to understand how these consumers differed from the 30 others who also reported not being ecologically oriented and did not select the green brand. Analysis of the factors determining their selections promises to provide a helpful and necessary direction for eco-advertising.

The next step in the current research agenda is to examine the Eco-Consumption Paradigm in a high involvement product selection situation. High involvement products might elicit more response to eco-ads. This should make it easier to address questions about advertising believability, and its relationship to cognitive responses. The addition of pre-test measures for the control product attribute's importance should also make it possible to determine the relative impact of green and non-green strategies on increasing attribute importance and product selection.

Conclusions

This study represents a unique contribution to the eco-consumption literature. It has clarified the existing theory and extended it. It also represents a significant contribution to green marketing practitioners by providing evidence as to what the important factors determining green brand selection are likely to be. It also stands as a call to forego placing blame on the cynicism of consumers and the general lack of eco-advertising believability and to look elsewhere for real solutions to poor green product performance. While this study does not offer concrete suggestions about how advertising might be used to increase consumer response to green marketing communications, it does suggest that it can be done, if applied to relevant products.

In another sense, this study contributes to the consumer behavior field with the finding that ad believability does not operate as predicted by the ELM. This indicates that advertising believability might be conceptually different from other persuasion cues like advertising credibility. Perhaps it represents an entirely independent component of advertising response. But again perhaps these findings merely reflect subjects' disinterest in toilet paper ads.

As with any study limitations must be taken into account. The high representation of the Green-Back Green market segment [5% of the U.S. adult population] limits the generalizability of these findings. So do the assumptions

that eco-consumption is an effortful information processing situation and that consumers actually make special, conscious decisions concerning ecologically oriented purchases.

The use of toilet paper, a low involvement product probably contributed to the low variance observed in the cognitive responses. People just don't think about toilet paper ads. Some of the scale reliabilities were not as high as could be hoped for and while there were no significant measured differences among ad executions, the different message strategies might have contributed extraneous executional variation. The experimental setting and the forced choice might have artificially increased the propensity to select the green brand. The use of a dummy variable, while algebraically identical to an interval level variable, might have increased the descriptive ability of the path analysis.

However, the strength and significance of the correlations obtained from a sample of non-student adults provides considerable reassurance that the findings are reliable. Overall, this study has provided useful indications of how consumers engage in eco-consumption and how they are affected by eco-ads.

Appendix I

**DISSERTATION
QUESTIONNAIRE**

**TOILET PAPER
AND THE
ENVIRONMENT**

Dissertation Survey

Thank you for participating in this study. The following questionnaire is designed to measure your general impressions about toilet paper and the environment. This survey should take you approximately 15 minutes to complete. Your decision to participate is voluntary and you may choose not to participate, however your efforts will be greatly appreciated. This survey is completely anonymous, there is no way you can be identified or matched with your responses. You indicate your voluntary agreement to participate by completing and returning this questionnaire. Please contact Elizabeth Tucker at Michigan State University with any questions or concerns: (517) 355-5084.

The use of the phrase "Environmentally Friendly" indicates any quality, product attribute or consumer action that is ecologically prudent and made with environmental protection or conservation in mind. Please place an X in the space that describes your reaction to each of the following statements.

1. Please rate TOILET PAPER on the following scale:

Boring to me	_	_	_	_	_	_	_	Interesting to me
Totally unconcerned about	_	_	_	_	_	_	_	Highly concerned about
Important to me	_	_	_	_	_	_	_	Unimportant to me
I care a lot about	_	_	_	_	_	_	_	I couldn't care less about
Relevant to me	_	_	_	_	_	_	_	Irrelevant to me

2. Please rank the following TOILET PAPER attributes in order of importance, where 1 is the most important and 6 is the least important:

- ___Softness
- ___Absorbency
- ___Value
- ___Price
- ___Environmental Friendliness
- ___Brand_____ (name)

3. Toilet paper is very relevant to environmental protection.

Strongly Agree _ _ _ _ _ _ Strongly Disagree

4. Environmentally friendly toilet paper benefits the environment.

Strongly Agree _ _ _ _ _ _ Strongly Disagree

5. Environmentally friendly toilet paper attributes are important to protecting the environment.

Strongly Agree _ _ _ _ _ _ Strongly Disagree

6. Please evaluate how environmentally friendly the following products are. The word Green means environmentally friendly and the word Brown represents environmentally unfriendly.

LAUNDRY DETERGENT

Environmentally								Not
Environmentally	Harmful	—	—	—	—	—	—	Harmful
Environmentally								Not
Environmentally	Beneficial	Beneficial						
	Green	—	—	—	—	—	—	Brown

BATTERIES

Environmentally								Not Environmentally
Environmentally	Harmful	—	—	—	—	—	—	Harmful
Environmentally								Not Environmentally
Environmentally	Beneficial	—	—	—	—	—	—	Beneficial
	Green	—	—	—	—	—	—	Brown

TOILET PAPER

Environmentally								Not Environmentally
Environmentally	Harmful	—	—	—	—	—	—	Harmful
Environmentally								Not Environmentally
Environmentally	Beneficial	—	—	—	—	—	—	Beneficial
	Green	—	—	—	—	—	—	Brown

AUTOMOBILES

Environmentally								Not Environmentally
Environmentally	Harmful	—	—	—	—	—	—	Harmful
Environmentally								Not Environmentally
Environmentally	Beneficial	—	—	—	—	—	—	Beneficial
	Green	—	—	—	—	—	—	Brown

JEANS

Environmentally								Not Environmentally
Environmentally	Harmful	—	—	—	—	—	—	Harmful
Environmentally								Not Environmentally
Environmentally	Beneficial	—	—	—	—	—	—	Beneficial
	Green	—	—	—	—	—	—	Brown

FROZEN DINNERS

[illegible]

PERSONAL COMPUTERS

Environmentally Harmful	—	—	—	—	—	—	—	Not Environmentally Harmful
Environmentally Beneficial	—	—	—	—	—	—	—	Not Environmentally Beneficial
Green	—	—	—	—	—	—	—	Brown

NEWSPAPERS

Environmentally Harmful	—	—	—	—	—	—	—	Not Environmentally Harmful
Environmentally Beneficial	—	—	—	—	—	—	—	Not Environmentally Beneficial
Green	—	—	—	—	—	—	—	Brown

7. Please rate toilet paper on the feature: "environmental friendliness":

Not at all important	—	:	—	—	—	—	—	—	Very Important
A feature I would not consider	—	:	—	—	—	—	—	—	A feature I would definitely consider
Irrelevant to my choice	—	:	—	—	—	—	—	—	Very Relevant to my choice

8. Please rate the issue of Environmental Preservation on the following scale:

[illegible]

9. Circle the statement that best describes how you usually select a brand of toilet paper.

- Price is my most important criteria, so I always buy the cheapest brand available.
- I will buy my usual brand_____.
- I usually evaluate the good and the bad points of each brand before selecting one.
- I will select the brand that performs best on my most important criteria.
- I will buy any brand as long as it meets my minimum requirements for the most important criteria.
- None of these statements describe how I arrived at my toilet paper selection.

Please rate the following statements concerning Toilet Paper purchasing.

10. When I am planning a shopping trip, and I notice an advertisement for toilet paper, I always stop and see what it says.

Strongly Agree Strongly Disagree

11. When I know supplies are running short, I always check-out toilet paper ads.

Strongly Agree Strongly Disagree

12. I never pay attention to ads for toilet paper, even when it's on my list.

Strongly Agree Strongly Disagree

Treatment or Control ad would be randomly inserted here [see Appendix III]

THESE QUESTIONS REFER TO THE ADVERTISEMENT ON THE PREVIOUS PAGE.

- 13. Without turning back to remind yourself, please write down everything you were thinking about while you looked at the advertisement. Please number each thought and indicate whether each of the thoughts listed was positive (+), negative (-) or neutral (?).**

- 14. Please rate the advertisement on the following scale:**

Believable	—	:	—	:	—	:	—	:	Unbelievable
Trustworthy	—	:	—	:	—	:	—	:	Untrustworthy
Convincing	—	:	—	:	—	:	—	:	Not Convincing
Credible	—	:	—	:	—	:	—	:	Not Credible
Reasonable	—	:	—	:	—	:	—	:	Unreasonable
Honest	—	:	—	:	—	:	—	:	Dishonest
Unquestionable	—	:	—	:	—	:	—	:	Questionable
Conclusive	—	:	—	:	—	:	—	:	Inconclusive
Authentic	—	:	—	:	—	:	—	:	Not Authentic
Likely	—	:	—	:	—	:	—	:	Unlikely

- 15. Please rate your impression of this ad on the following scale**

Good	—	:	—	:	—	:	—	:	Bad
Pleasant	—	:	—	:	—	:	—	:	Unpleasant
Favorable	—	:	—	:	—	:	—	:	Unfavorable

- 16. The message in the ad was important to me.**
 Strongly Agree — : — : — : — : — : Strongly Disagree
- 17. The ad didn't have anything to do with me or my needs.**
 Strongly Agree — : — : — : — : — : Strongly Disagree
- 18. I believe this brand of toilet paper is:**
 Expensive — : — : — : — : — : Inexpensive
- 19. I believe the quality of this brand is:**
 Very High Quality — : — : — : — : — : Very Low Quality

Second ad would be randomly inserted here [see Appendix III]

THE NEXT QUESTIONS REFER TO THE ADVERTISEMENT ON THE PREVIOUS PAGE.

- 20. Without turning back to remind yourself, please write down everything you were thinking about while you looked at the advertisement. Please number each thought and indicate whether each of the thoughts listed was positive (+), negative (-) or neutral (?).**

- 21. Please rate the advertisement on the following scale:**

Believable	—	:	—	:	—	:	—	:	Unbelievable
Trustworthy	—	:	—	:	—	:	—	:	Untrustworthy
Convincing	—	:	—	:	—	:	—	:	Not Convincing
Credible	—	:	—	:	—	:	—	:	Not Credible
Reasonable	—	:	—	:	—	:	—	:	Unreasonable
Honest	—	:	—	:	—	:	—	:	Dishonest
Unquestionable	—	:	—	:	—	:	—	:	Questionable
Conclusive	—	:	—	:	—	:	—	:	Inconclusive
Authentic	—	:	—	:	—	:	—	:	Not Authentic
Likely	—	:	—	:	—	:	—	:	Unlikely

- 22. Please rate your impression of this ad on the following scale:**

Good	—	:	—	:	—	:	—	:	Bad
Pleasant	—	:	—	:	—	:	—	:	Unpleasant
Favorable	—	:	—	:	—	:	—	:	Unfavorable

- 23. The message in the ad was important to me.**

Strongly Agree — : — : — : — : — : Strongly Disagree

- 24. The ad didn't have anything to do with me or my needs.**

Strongly Agree — : — : — : — : — : Strongly Disagree

- 25. I believe this brand of toilet paper is:**

Expensive — : — : — : — : — : Inexpensive

- 26. I believe the quality of this brand is**

Very High Quality — : — : — : — : — : Very Low Quality

27. Please circle which one of the toilet paper brands presented earlier you would take home if you were forced to make a choice right now?

Greenleaf

Soft n' Gentle

- 28. Purchasing environmentally friendly toilet paper is:**

Good	—:	—:	—:	—:	—:	—:	—:	Bad
Foolish	—:	—:	—:	—:	—:	—:	—:	Wise
Beneficial	—:	—:	—:	—:	—:	—:	—:	Harmful

- 29. Please rate toilet paper on the attribute “environmental friendliness”:**

Not at all important	—	—	—	—	—	—	Very Important
A feature I							A feature I would
would not consider	—	—	—	—	—	—	definitely consider

Irrelevant to my choice ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very Relevant to my choice

PLEASE INDICATE YOUR POSITION ON THE FOLLOWING STATEMENTS:

- 30. Environmental problems do not affect my life.**

Strongly Agree Strongly Disagree

- 31. It is important to purchase recycled paper products to help preserve our forests.**

Strongly Agree Strongly Disagree

- 32. The United States is facing a serious solid waste disposal problem.**

Strongly Agree Strongly Disagree

33. I believe that industry could reduce the amount of packaging it presently uses for some consumer items.

Strongly Agree **Strongly Disagree**

- 34. Environmentally friendly toilet paper does not really help protect the environment.**

Strongly Agree **Strongly Disagree**

- 35. There is not much that any one individual can do about the environment.**

Strongly Agree Strongly Disagree

36. When I buy products, I try to consider how my use of them will affect the environment and other consumers.

Always Never

- 37. Whenever possible, I buy products which I consider environmentally safe.**

Always _____ Never

38. I am concerned with the state of the environment today
Strongly Agree _: _: _: _: _: _: _: Strongly Disagree
39. Please name the last brand of toilet paper you purchased: _____
40. Rank the following problems faced by Americans in order of importance, where 1 is the most important and 5 is the least important.
- ___Economy
 ___Health Care
 ___Environment
 ___Crime
 ___Education
41. I recycle whenever possible.
Always _: _: _: _: _: _: _: Never
42. An individual can protect the environment by buying products that are kind to the environment.
Strongly Agree _: _: _: _: _: _: _: Strongly Disagree
43. Please rank the following TOILET PAPER attributes in order of importance, where 1 is the most important and 7 is the least important:
- ___Softness
 ___Absorbency
 ___Value
 ___Price
 ___Environmental Friendliness
 ___Brand_____ (name)

PLEASE INDICATE YOUR PARTICIPATION IN THE FOLLOWING ACTIVITIES:

44. Attended a meeting for an environmental organization.
Often _: _: _: _: _: _: _: Never
45. Recycled anything other than cans or bottles.
Often _: _: _: _: _: _: _: Never
46. Donated money to an environmental protection group.
Often _: _: _: _: _: _: _: Never
47. Called or written a political figure to express my opinion about an environmental issue.
Often _: _: _: _: _: _: _: Never
48. Signed a petition in favor of protecting some part of the environment.
Often _: _: _: _: _: _: _: Never

- Often Never

- Strongly Agree Strongly Disagree

- Very Likely** —: —: —: —: —: —: —: **Very Unlikely**

Very Likely **Very Unlikely**

Very Likely Very Unlikely

- f. None of these statements describe how I arrived at my toilet paper selection.**

- AGE:** ____ **Gender:** M F **INCOME:**
- | | | |
|----|---------------------|---------------------|
| \$ | 0 - \$15,000 | \$35,001 - \$50,000 |
| | 15,001 - \$24,000 | \$50,001-\$70,000 |
| | \$24,001 - \$35,000 | \$70,001 + |

Type of Occupation (circle one)

Professional

College Degree:	AAS	BA	BS	Masters	JD	PhD	Thank You!
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Thank You!

Appendix II

Copy Platform

Copy Platform

NAME: ELIZABETH TUCKER
DATE: NOVEMBER 8, 1993
TITLE: ECO-ADS: Toward an Understanding of Advertising's Role in Green Marketing.

PROJECT: COPY PLATFORMS FOR ECO-AD TREATMENTS:
PRODUCT: GreenLeaf™ toilet paper

Experimental design: A modified prettest/posttest design will be used to assess what impact different levels of perceived believability have on purchase intention. Three advertising treatments should manipulate believability into three different levels; high, medium and low.

Marketing Objective: to launch and generate sales for Greenbrand toilet paper among U.S. shoppers.

Advertising Strategy: to generate purchase intention for Greenbrand toilet paper.

Product Identity: GreenLeaf is an environmentally friendly toilet tissue. It is made from 100% post-consumer recycled paper products and uses no bleach in the manufacturing process. The product is medium to low grade toilet paper. It is not particularly soft or absorbent and it is rather grey and dingy looking. It is priced at the mean for low end brands (\$.99). GreenLeaf has 200 sheets per roll, four rolls per package. It is packaged in plastic shrink-wrap, just like all the other brands, using green as the dominate color. Ten cents from each package sold is donated to a non-profit, worldwide wildlife and environmental protection organization called the Nature Conservancy.

Competition: All other low end toilet papers with a price of .59¢ to .89¢. Direct competition with toilet papers are positioned as environmentally friendly; TreeFree and GreenMark.

Advertising Tactics: three full page, four-color magazine advertisements will be created. All will have identical layout and type styles. Each will use a different message strategy to manipulate the consumers' level of believability. These ad treatments will then be tested to assess which generates the greatest purchase intention.

Treatment #1:

Image Ad Strategy: This advertisement characterizes **GreenLeaf** as "environmentally friendly". This ad positions the product and producer as caring and concerned for the future - using no product attribute information. The characterization must rely on showing general good-will through image statements. This ad will rely on what Carlson, Kangun and Groves termed: Image Orientation Claims.

Headline: "Greenleaf: protecting our planet and our future."

Copy: "Every GreenLeaf product is made considering the balance between the needs of people and the needs of nature. GreenLeaf brand toilet tissue - seriously committed to a greener future."

Treatment #2:

Product Ad Strategy: This ad should rely solely on the two ecological product attributes noted above. There should be no attempt to characterize the product or the producer as "environmentally friendly". The message should instruct the consumer to purchase based solely on the environmental merits of the product. This ad is made up of the Carlson et al. Product Orientation type of claims.

Headline: "Greenleaf: Made from 100% recycled papers without toxic bleaching."

Copy: "GreenLeaf brand toilet tissue is made from 100% post-consumer recycled paper. Compared to competitors, significantly fewer air and water pollutants are generated during GreenLeaf's manufacturing process."

Treatment #3:

Promotional Ad Strategy: This ad should show the product and highlight the .05¢ donation to the Nature Conservancy. There should be no attempt to categorize the product or producer as environmentally friendly, nor should there be any mention of the specific product attributes that make the product environmentally benign. This ad uses the Environmental Fact type of message strategy noted in Carlson et al.

Headline: "Greenleaf: 5¢ of every sale is donated to the Nature Conservancy."

Copy: "The Nature Conservancy is a world-wide, non-profit organization devoted to preserving bio-diversity wherever it's found. GreenLeaf brand supports these efforts by donating 5 cents from every sale to the Nature Conservancy."

Control ad:

This ad should be a real toilet paper. See example attached. Use a less well-known brand and simple statements about softness and absorbency. Potential brands include; Angel Soft, Coronet, Cottonell and Nice n' Soft. This ad should emphasize the package/label. A headline idea is: "Nice n' Soft - 'Nuff Said." This technique should increase external validity and offer a base for comparing perceived believability.

Appendix III

Ad Treatments

Image	Type	Eco-Ad
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Greenleaf:
Protecting our planet
and our future

Every Greenleaf product is made considering the balance between the needs of people and the needs of nature. Greenleaf brand toilet tissue — seriously committed to a greener future.

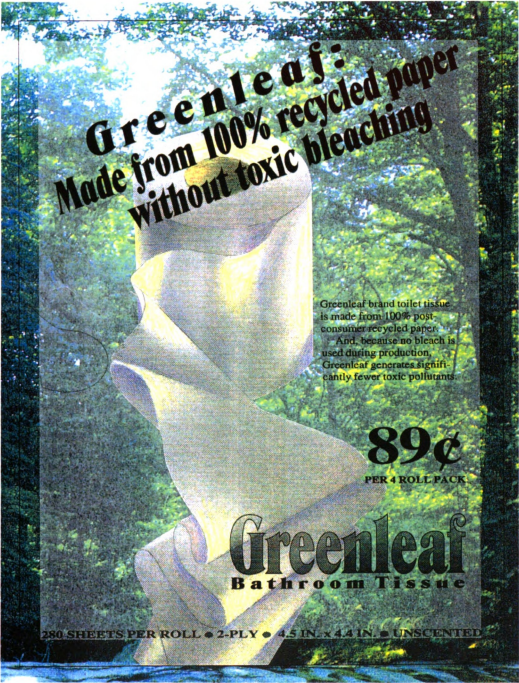
89¢

PER 4 ROLL PACK

Greenleaf
Bathroom Tissue

280 SHEETS PER ROLL • 2-PLY • 4.5 IN. x 4.4 IN. • UNSCENTED

Product	Type	Eco-Ad
---------	------	--------



Greenleaf:
Made from 100% recycled paper
without toxic bleaching

Greenleaf brand toilet tissue
is made from 100% post-
consumer recycled paper.

And, because no bleach is
used during production,
Greenleaf generates signifi-
cantly fewer toxic pollutants.

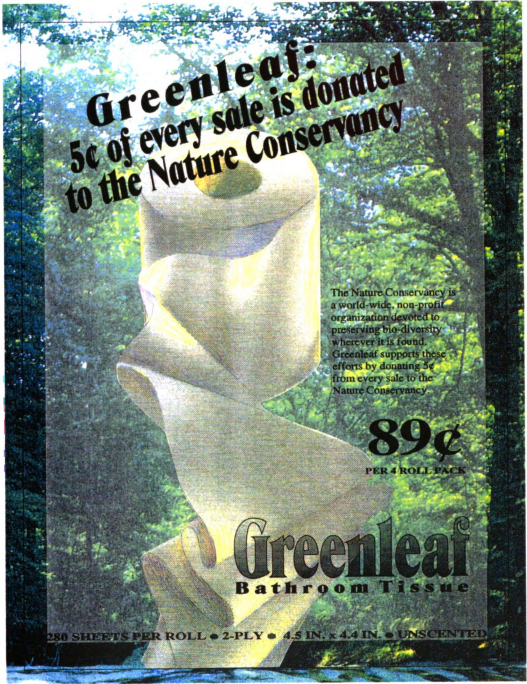
89¢

PER 4 ROLL PACK

Greenleaf
Bathroom Tissue

280 SHEETS PER ROLL • 2-PLY • 4.5 IN. x 4.4 IN. • UNSCENTED

Promotional Tie-In Type Eco-Ad



Greenleaf:
5¢ of every sale is donated
to the Nature Conservancy

The Nature Conservancy is a world-wide, non-profit organization devoted to preserving bio-diversity wherever it is found. Greenleaf supports these efforts by donating 5¢ from every sale to the Nature Conservancy.

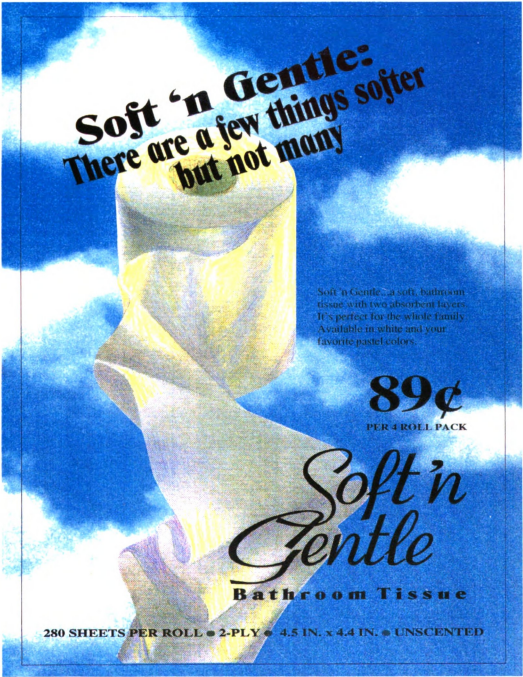
89¢

PER 4 ROLL PACK

Greenleaf
Bathroom Tissue

280 SHEETS PER ROLL • 2-PLY • 4.5 IN. x 4.4 IN. • UNSCENTED

Control Ad



Soft 'n Gentle:
There are a few things softer
but not many

Soft 'n Gentle...a soft, bathroom tissue with two absorbent layers. It's perfect for the whole family. Available in white and your favorite pastel colors.

89¢

PER 4 ROLL PACK

*Soft 'n
Gentle*

Bathroom Tissue

280 SHEETS PER ROLL • 2-PLY • 4.5 IN. x 4.4 IN. • UNSCENTED

Appendix IV

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