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**ECOLOGICAL CONSUMER DECISION MAKING:
NATURE, PROCESS, AND BARRIERS IN APPAREL ACQUISITION**

VOLUME I

By

Kim Yvonne Hiller Connell

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ABSTRACT

ECOLOGICAL CONSUMER DECISION MAKING: NATURE, PROCESS, AND BARRIERS IN APPAREL ACQUISITION

By

Kim Yvonne Hiller Connell

By focusing on the population of adult apparel consumers already engaged in ecological decision making through their apparel acquisition decisions and behaviors, this study aimed to contribute to the theoretical understanding of the nature of ecological decision making and to expand the knowledge base of environmentally significant apparel consumption. In examining the ecological consumer decision making of apparel consumers, this study limited itself to apparel acquisition decisions and behaviors.

Altogether, 26 ecologically conscious adults, nine males and 17 females, participated in this study. The participants ranged in age from under 25 to over 64, all had at least a high school diploma, with a majority also having earned post-secondary degrees; and they represented different income levels. Data collection for the study occurred through semi-structured interviews with the research participants.

Characterizing the ecologically conscious apparel consumers participating in this study are the normative-attitudinal variables of environment-oriented values, beliefs about environmental vulnerability and personal responsibility, attitudes of environmental concern, and perceptions of clothing adequacy. Additionally, knowledge of general and apparel-related environmental issues also typifies the study's participants.

Within this study's research participants, ecological decision making manifests itself in their apparel acquisition behaviors in a variety of ways. These manifestations include: adhering to limits for amount of apparel acquired; acquiring apparel with

environmentally preferable attributes; acquiring apparel through environmentally preferable sources; avoiding engaging in behaviors perceived as not ecologically conscious; and making apparel-acquisition sacrifices.

In examining the apparel acquisition decisions of consumers, this study increased the clarification of both the nature and process of ecological decision making. It also identified several simplification processes used by decision makers while acquiring apparel in an ecologically rational manner.

Finally, the results of this study suggest that as the research participants make ecologically conscious apparel acquisition decisions, they face a number of both personal and contextual barriers. On a personal level, barriers to the participants' ecological decision making include a lack of knowledge about ecologically conscious apparel acquisition, attitudes and beliefs about environmentally preferable apparel, apparel acquisition patterns and preferences, and personal resources and priorities. On the other hand, the contextual barriers confronting the research participants in their ecological decision making include limited availability of environmentally preferable apparel, inadequate information about ecologically conscious apparel acquisition, qualities of retail environments, the structure of the global textile and apparel complex, and societal norms.

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DEDICATION:

To My Future Generations

You become responsible, forever, for what you have tamed.

~ The Fox ~

(in *The Little Prince* by Antoine de Saint-Exupéry)

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TABLE OF CONTENTS

List of Tables.....	xii
List of Figures.....	xiii
CHAPTER 1: INTRODUCTION.....	1
Background of the Problem.....	2
Consumption and Environmental Change.....	3
Apparel Consumption and Environmental Change.....	5
Statement of the Problem.....	16
Purpose and Objectives of the Study.....	19
Research Questions.....	21
Organization of Dissertation.....	21
CHAPTER 2: THEORETICAL PERSPECTIVES.....	23
Rationality and Decision Making within Society.....	23
Ecological Rationality and Ecological Decision Making.....	31
Decision Making.....	37
Theoretical Perspectives on Decision Making.....	37
Decision-Making Processes.....	42
Variables Influencing Ecological Consumer Decision Making.....	44
Normative-Attitudinal Factors Influencing Ecological Decision Making.....	45
Contextual Forces Influencing Ecological Decision Making.....	49
Additional Factors Influencing Ecological Decision Making.....	53
Definitions.....	53
Basic Assumptions of the Study.....	58
Theoretical Assumptions.....	58
Methodological Assumption.....	59
CHAPTER 3: REVIEW OF LITERATURE.....	60
Ecologically Conscious Consumer Decision Making and Behaviors.....	60
Demographic Factors Influencing Ecologically Conscious Consumer Decision Making.....	61
Normative-Attitudinal Factors Influencing Ecologically Conscious Consumer Decision Making.....	67
Contextual Forces Influencing Ecologically Conscious Consumer Decision Making.....	79
Personal Capabilities Influencing Ecologically Conscious Consumer Decision Making.....	84

The Role of Habit or Routine in Ecologically Conscious Consumer Decision Making.....	87
Apparel Consumption and Environmental Research.....	88
CHAPTER 4: RESEARCH METHODS.....	98
Population of Interest.....	98
Sampling Strategy.....	99
Statement on the Use of Human Subjects.....	100
Identification of Sample.....	101
Data Collection Strategy and Methods.....	108
Data Analysis Procedures.....	110
Trustworthiness of the Study.....	112
Limitations of the Study.....	118
CHAPTER 5: PERSONAL CHARACTERISTICS OF ECOLOGICALLY CONSCIOUS APPAREL CONSUMERS AND MANIFESTATIONS OF ECOLOGICAL DECISION MAKING.....	120
Introduction to the Research Participants.....	120
Research Question One: Personal Characteristics of Ecologically Conscious Apparel Consumers.....	126
Normative-Attitudinal Variables.....	127
Personal Capability Variable.....	136
Research Question Two: Manifestation of Ecological Decision Making in Apparel Acquisition Behaviors.....	141
Adhering to Acquisition Limits.....	143
Attribute-Focused Acquisition.....	149
Source of Apparel Acquisition.....	155
Avoidance Behaviors.....	161
Making Sacrifices.....	164
Summary and Implications of Research Question Two.....	169
CHAPTER 6: NATURE AND PROCESS OF ECOLOGICAL DECISION MAKING DURING APPAREL ACQUISITION.....	172
Nature of Ecological Decision Making.....	173
Holistic Nature of Ecological Decision Making.....	173
Ecological Decision Making and Apparel Acquisition.....	178
The Distinctness of Ecological Rationality and Ecological Decisions...	181
Summary of the Nature of Ecological Decision Making.....	185
Dominant Decision-Making Process for Apparel Acquisitions.....	186
Recognition and Definition of Apparel Need.....	189
First Stage of Information Gathering and Alternative Generation, Evaluation, and Selection.....	194

Second Stage of Alternative Generation and Evaluation.....	203
Reassessment of Apparel Need.....	214
Summary of the Ecologically Rational Decision-Making Process.....	216
Influence of Ecological Decisions throughout the Consumer	
Decision-Making Process.....	217
Simplification Strategies Used by Decision Makers during Apparel	
Acquisition.....	222
Editing.....	223
Applying Heuristics.....	224
Compromising.....	225
 CHAPTER 7: PERSONAL AND CONTEXTUAL BARRIERS TO	
ECOLOGICAL DECISION MAKING.....	230
 Personal Barriers.....	230
Lack of Knowledge about Ecologically Conscious Apparel	
Acquisition.....	232
Attitudes about Attributes and Relational Characteristics of	
Environmentally Preferable Apparel.....	239
Apparel Acquisition Patterns and Preferences.....	243
Nonhuman Resources.....	246
Personal Priorities.....	248
Contextual Barriers.....	253
Limited Availability of Environmentally Preferable Apparel.....	253
Information about Ecologically Conscious Apparel	
Acquisition.....	262
Retail Environment.....	271
Structure of the Global Textile and Apparel Complex.....	273
Societal Norms.....	276
Relative Influence of Barriers on Research Participants.....	277
Summary and Implications of Research Question Four.....	283
 CHAPTER 8: SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS.....	285
 Summary of Research Design and Sample.....	285
Summary and Discussion of the Research Findings.....	287
Research Question One: Personal Characteristics of Ecologically	
Conscious Apparel Consumers.....	288
Research Question Two: Manifestations of Ecological Decision	
Making in Apparel Acquisition Behaviors.....	290
Research Question Three: Nature and Process of Ecological	
Decision Making during Apparel Acquisition.....	291
Research Question Four: Personal and Contextual Barriers to	
Ecological Decision Making.....	295
Conceptual Model of Ecological Decision Making from the	
Perspective of Apparel Acquisition.....	299

Practical Implications.....	301
Implications for Future Research.....	303
APPENDICES.....	306
Appendix A: Recruitment Questionnaire.....	307
Appendix B: Interview Guide.....	313
Appendix C: Final Code Guide Research Question 1.....	319
Appendix D: Final Code Guide Research Question 2.....	321
Appendix E: Final Code Guide Research Question 3.....	325
Appendix F: Final Code Guide Research Question 4.....	328
Appendix G: Summary Memo Example.....	333
Appendix H: Summary Display Example.....	337
BIBLIOGRAPHY.....	339

LIST OF TABLES

Table	Page
1. Summary Definitions of Rationality Types.....	29
2. Summary of Demographic Variables Influencing Ecologically Conscious Consumer Behavior.....	64
3. Summary of Apparel Acquisition Behaviors Engaged in by Respondents to the Recruitment Questionnaire.....	106
4. Demographics of Research Participants	121
5. Summary of Participants' Ecologically Conscious Apparel Acquisition Behaviors.....	142
6. Distinguishing Features of the Forms of Rationality.....	182
7. Frequency and Relative Frequency of Barriers Facing Apparel Consumers in Ecologically Conscious Apparel Acquisition.....	231
8. Summary of Each Informants' Personal and Contextual Barriers.....	279

LIST OF FIGURES

Figure	Page
1. The apparel product manufacturing life cycle.....	8
2. Examples of life cycle environmental impacts of apparel products.....	17
3. Relationships between types of rationality.....	30
4. The VBN Theory of Environmentalism.....	48
5. Regression analysis results of Kim and Damhorst (1998).....	91
6. Model of ecological rationality as it relates to apparel acquisitions.....	185
7. Decision-making model of ecologically rational, technical apparel acquisition decisions.....	188
8. Combined model of ecological rationality and ecologically rational apparel acquisition decision making.....	219
9. Conceptual model of ecological consumer decision making from the perspective of apparel acquisition.....	300

CHAPTER ONE

INTRODUCTION

Environmental change has been occurring on a global scale since the beginning of time. Even in the absence of humans, through natural and fundamental processes, living organisms evolve and ecosystems transform. However, over the last century, what is novel in regards to global environmental change is the magnitude of anthropogenic contributions. Humans and their behaviors are significantly altering the earth's biological, chemical, and physical systems in unprecedented ways (Gardner & Stern, 2002; Stern, Young, & Druckman, 1992); and as stated by the Intergovernmental Panel on Climate Change in its Fourth Assessment Report (2007), it is "very likely" that many environmental problems, like global climate change, are now the result of human behaviors and not natural causes. "For the first time in history, human activity is beginning to have a major negative effect on global...environmental systems" (Gardner & Stern, 2002, p. 3).

In searching for solutions to many environmental issues such as global warming and deforestation, debate has waged over the root causes of the environmental crisis. A frequent explanation for anthropogenic environmental change is the rapid increase in the world's population over the last century (Brown, 1988; Ehrlich & Ehrlich, 1990). The belief is that the combination of higher birth rates and lower death rates has placed considerable strain on the carrying capacity of the earth and has led to the current state of environmental degradation and unsustainability. However, another side of the debate is an argument that expanding global population is not the only contributor to environmental problems and that as real of a concern is society's patterns of consumption

(Oskamp, 2000). As stated by Baltz (1999), “Although uncontrolled population growth is unquestionably a prescription for ecological disaster, so is over-consumption of resources” (p. 213).

As humans consume goods and services we also contribute towards environmental change and degradation. Consumption not only depletes the earth of both renewable and nonrenewable resources, but it also creates unmanageable quantities of solid waste and emits dangerous substances into the air, water, and land. As stated by Winter (2004), “Unsustainable human behaviors destroy water, land, forests and energy reserves throughout the world. Similar pictures of ecological decline could be drawn for air pollution, mineral depletion, and loss of biodiversity” (p.75).

Our current patterns of consumption are unsustainable. The *Living Planet Report* (World Wildlife Fund, 2006) is a biannual environmental assessment report of the Ecological Footprint, a measure of the area of biologically productive land required to meet human consumption demands. The 2006 report assesses humans to be overshooting earth’s biocapacity by approximately 25%. This report provides evidence that humans are consuming beyond earth’s carrying capacity and are contributing towards environmental vulnerability. Therefore, consumption of both goods and services is an environmentally significant human behavior that needs addressing as an immediate environmental research priority.

Background of the Problem

It is justifiable to state that consumption is a contributor to environmental change. Stern et al. (1992) state that one of the most important social variables associated with

global environmental change is economic growth – which is typically represented as an increase in the measured production and consumption of goods and services. Production and consumption of goods is energy and material intensive; and therefore, causes of environmental vulnerability. This section of the chapter briefly explains the relationship between consumption and environmental change and then further develops the environmental impacts associated with a specific type of consumption – apparel consumption.

Consumption and Environmental Change

Because consumption transforms both matter and energy, it is environmentally consequential. Environmental change associated with consumption of goods and services is the result of two primary factors. The first factor is the pollution and waste generated through consumption and the second is the amount of natural resources expended through consumption.

Both the manufacturing processes involved in the production of goods and the actual consumption of goods generate pollutants. While humans have devised numerous methods for capturing some of these pollutants, there is still a significant portion released into the natural environment. The discharge of harmful chemicals and other pollutants into the atmosphere, water systems, and soil subsequently alters biological, chemical, and physical processes. While the earth's natural systems are able to absorb pollutants and maintain equilibrium to a certain degree, human behaviors release pollutants into the natural environment at a rate and degree to which natural systems cannot always effectively self-regulate. Therefore, in many instances, the net result of the release of

environmental pollutants and alterations to these systems is increased vulnerability of earth's natural ecosystems (Chiras, 1998).

Consumption also creates solid waste through waste raw materials, disposable packaging, and the actual discarded products. While 32% of solid waste is recycled or composted, the majority is either incinerated (14%) or sent to landfills (54%) (Environmental Protection Agency, 2006a). On a yearly basis the United States creates approximately 7.6 billion tons of industrial waste and 251 million tons of municipal waste – which, after recycling approximately 1.5 pounds of waste per person, equals close to 4.6 pounds of waste per person per day (Environmental Protection Agency, 2007). The environmental concerns related to solid waste are multifaceted and include issues such as degradation of land, leaching of toxins into water systems, and release of methane gases and other emissions into soil and atmosphere (Chiras, 1998).

The second major way that the consumption of goods contributes towards global environmental change is through the depletion of finite natural resources. Within mainstream modes of production and consumption it is difficult to produce and consume products without expending both renewable and nonrenewable resources. Production requires natural resources as energy inputs for operating manufacturing processes and as raw materials for manufacturing the actual products. Additionally, in most instances, the consumption of the products requires further inputs of natural resources. For example, washing and drying apparel requires inputs such as water, fuel, and chemical detergents. Unfortunately, the consumption of both nonrenewable and renewable resources significantly contributes to both localized and global environmental change (Chiras, 1998).

It is evident that because of the waste and pollution generated and the natural resources depleted, production and consumption of goods is a significant anthropogenic cause of environmental change. As stated in Stern, Dietz, Ruttan, Socolow, and Sweeney (1997),

Consumption consists of human and human induced transformations of materials and energy. Consumption is environmentally important to the extent that it makes materials or energy less available for future use, moves a biological system toward a different state, or through its effects of those systems, threatens human health, welfare, or other things people value (p.20).

Apparel Consumption and Environmental Change

When considering consumer behaviors and products that degrade the natural environment, it is common to focus on obvious culprits such as the dependence on products that consume petroleum or the high reliance on disposable, one-time use products. Therefore, it is safe to assume that when most people buy a new pair of jeans they do not stop to consider the associated environmental impacts. However, throughout the life cycle of apparel practically everything from the manufacturing of fibers to the disposal of garments contributes towards the degradation of ecosystem health; and therefore, apparel consumption, in the aggregate, is a contributing cause of environmental change.

On an annual basis, global demand for manufactured and natural fibers is 157.25 billion pounds (Fiber Economics Bureau, 2006b). In 2005 the United States consumed a total of 91.7 billion pounds of fibers (Fiber Economics Bureau, 2006a). The majority of the world's apparel products are made from natural fibers, such as cotton or wool, or synthetic chemicals for which petroleum is the primary material input. The Fiber Economics Bureau (2006b) states that approximately 58% of the world total for textile

fibers are synthetically manufactured fibers and 48% are natural fibers. Additionally, while global demand for cotton has remained relatively constant in recent years, since 1990 the demand for synthetic fibers has nearly doubled, largely because of an increased demand for polyester (Allwood, Laursen, De Rodriguez, & Bocken, 2006).

According to the Consumer Expenditures Survey (United States Department of Labor, 2007) the consumption of apparel products is a significant component of household spending within the United States. In 2005 the average household of 2.5 people had a total of \$46,409 in expenditures from disposable income with an average of \$1886 spent on apparel and related services such as dry cleaning, clothing storage, and clothing rentals – representing approximately 4% of total household spending. The three largest categories of spending within apparel and related services in 2005 were women's apparel (average of \$633 per household per year), men's apparel (average of \$349 per household per year), and footwear (average of \$320 per household per year). Households with adults aged 35-44 spent the most on apparel and related services, at an average of \$2365. However, households with adults aged 45-54 and 25-34 spent at similar levels of \$2318 and \$2082 respectively.

From the raw materials needed to make apparel products to the end-of-life impacts, apparel products damage the natural environment and are associated with environmental impacts. Through manufacturing outputs such as the release of toxic chemicals in waste water, the emission of greenhouse gases into the air, and solid waste accumulation, apparel products contribute towards environmental change (Slater, 2003). A report by the University of Cambridge Institute for Manufacturing found some of the most significant ways in which the textile and apparel industry negatively alters systems

within the natural environment is through decreasing air, water, and soil quality; decreasing biodiversity; creating dangerous greenhouse gases; depleting water sources and other renewable resources; and reducing nonrenewable resources (Allwood et al., 2006).

Manufacturing of both textiles and apparel products depends heavily on large and complicated machinery, typically powered through the burning of fossil fuels. For example, the production and consumption of a t-shirt that is 100% cotton consumes 109 mega joules of energy. This includes the energy required to grow and process the cotton fibers, manufacture the yarns, knit the textile, construct the t-shirt, launder it 25 times, and incinerate the shirt after consumer disposal (Allwood et al., 2006). Therefore, the production of fibers, textiles, and apparel carries a high environmental load in terms of energy consumption (Slater, 2003). Because of the serious environmental risks associated with energy consumption (such as climate change), this is environmentally significant.

Apparel products increase environmental vulnerability in other ways as well. As portrayed in Figure 1, manufacturing of apparel products consists of several distinct processes. First is the production and processing of both natural and synthetically manufactured fibers. The second stage is the production of yarns from the fibers; and the third stage, through weaving, knitting, or other fabrications, involves making the yarns or fibers into textiles. The fourth stage, prior to garment construction, usually involves wet processing – the dyeing and/or printing of the textiles.¹ This stage frequently also entails the application of a variety of different mechanical and/or chemical finishes that alter the

¹ In some instances, dyeing may actually occur during yarn production; and in other instances dyeing occurs after the garment is constructed. Fibers may also be colored by pigments in the extrusion of synthetic fibers during fiber production.

performance of the fibers.¹ Finally the actual garment is constructed (Elsasser, 2005). As outlined below, each of these processes contributes toward environmental change in various ways.

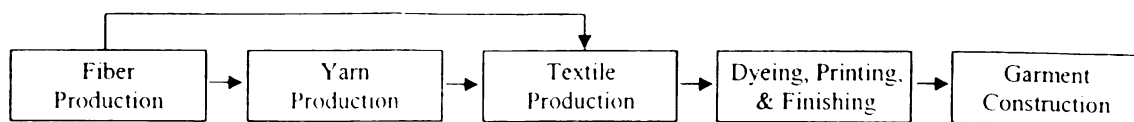


Figure 1. The apparel product manufacturing life cycle.

Environmental Impacts of Fiber Production

The negative environmental impacts of conventional cotton fiber production on soil, air, water, and living organisms are well documented (Arthington, 1996; Bedford, 1996; Chouinard & Brown, 1997; Myers & Stolton, 1999; Walsh & Brown, 1995). A primary reason why conventional cotton is a significant cause of environmental degradation is that cotton is one of the most chemically intensive crops. In fact, 24% of all insecticides and 11% of all pesticides applied annually in the world are administered to cotton (Lewis & Gertsakis, 2001). Synthetic chemicals, including herbicides, pesticides, insecticides, fertilizers, and defoliants are applied to cotton crops throughout its cultivation. The four main classes of chemicals most commonly used in cotton production are organophosphates, carbamates, pyrethroids, and organochlorides (Lee, 2007). The cotton plants absorb and utilize only a small percentage of those chemicals – leaving large amounts of harmful, sometimes toxic, chemicals to disperse through the air, leech into soil and ground water, and run-off into surface water. The ecological impacts of these chemicals are numerous for both human and ecosystem health. For example, one study reports that communities near cotton fields in California had 60 to 100 percent

¹ Similar to dyeing, yarns or completed garments may also have finishes applied to them.

higher complaints of ailments such as nausea, diarrhea, and eye, nose, and throat irritation, when compared to communities near other types of agriculture (Scarborough, Ames, Lipsett, & Jackson, 1989). In addition to the chemicals applied to cotton fields, cotton cultivation requires a variety of other inputs, including water and fossil fuels. Environmentally, results of the intensive chemical applications, irrigation, and other inputs include soil erosion, air and water pollution, decreased biodiversity, and natural resource depletion.

The Aral Sea Basin in Eastern Europe is an exemplary case of the environmental risk associated with cotton production. This body of water touches the northwestern border of Uzbekistan, a country that is one of the world's top producers of cotton (Food and Agricultural Organization, 2007). Uzbekistan and the Aral Sea Basin are geographically located in a very arid part of the world that is not naturally well-suited for the cultivation of cotton. Therefore, the cotton industry in this country is highly dependent on irrigation to meet agricultural needs; and since the 1960s, the Aral Sea Basin's tributaries have had vast amounts of water diverted for this purpose. The outcome of these diversions is that over the last 30 years the volume of water in the Aral Sea has decreased by approximately 75%, resulting in severe environmental consequences including loss of wetlands, decreased biodiversity, and local climate changes (Allwood et al., 2006). The water that remains in the basin is highly contaminated from excessive saline levels, fish cannot survive, and the sea basin's ecosystem is essentially decimated (Bedford, 1996; Myers & Stolton, 1999). Also greatly affected by the region's environmental disaster is human health with increased rates of various diseases, birth defects, and miscarriages. Furthermore, average life expectancy in the Aral Sea Basin

region is 51 years (Ataniyazova, 2000), considerably lower than Uzbekistan's country average of approximately 65 years (Central Intelligence Agency, 2007).

Similarly to cotton, wool fiber production also increases natural environmental vulnerability. For example, sheep farming adds to land degradation through the clearing of land for pasture and through grazing. Moreover, the sheep frequently have environmentally harmful insecticides and fungicides (generally referred to as sheep dip) applied to their wool to protect against infections and destructive pests. The two most common classes of compounds used as sheep dip include organophosphorus compounds and synthetic pyrethroids. Finally, because approximately two thirds of the weight of wool is grease, dried sweat, dead skin, dirt, and plant matter, intense cleaning and scouring must occur before the wool can be spun into yarn. This cleaning process consumes water and utilizes detergents and other environmentally hazardous chemicals such as perchlorethane and hexane, most of which, through the cleaning process, end up in waste water and do not quickly biodegrade – threatening aquatic life as a result (Lewis & Gertsakis, 2001; Slater, 2003).

Besides natural fibers like cotton and wool, synthetic fibers such as polyester, nylon, polypropylene, and spandex are important throughout the apparel and textiles industry. The primary raw material used in manufacturing the majority of synthetic fibers is petroleum. As a result, manufacturing of synthetic fibers contributes to the depletion of a valuable nonrenewable resource and the many ecological risks associated with its extraction and processing (Slater, 2003). In addition to the utilization of petrochemicals, the production of synthetic fibers also requires environmentally dangerous inputs and creates unsafe emissions as outputs. For example, polyester manufacturing commonly

uses antimony (a known carcinogen) as a catalyst during production and emits into both air and water dangerous substances such as heavy metals, sodium bromide, and antimony oxide. In addition to polyester, the production of other synthetic fibers, such as nylon which emits the greenhouse gas nitrous oxide as a by-product, also have negative impacts on the natural environment (Lee, 2007).

Environmental Impacts of Yarn and Textile Production

As the apparel product life-cycle progresses, the processing of fibers into yarns and through weaving, knitting or other processes, the fabrication of yarns into textiles occurs. Prior to being spun into yarns, natural fibers like cotton and wool go through a series of mechanical processes, including carding, combing, and drawing, in order to lengthen and align the fibers for the spinning process. In the case of synthetic fibers and yarns, manufacturing of some of these requires additional chemical inputs in the spinning process in the form of solvents and spinning baths. Finally, further energy, water, and chemical inputs are necessary in the manufacturing of textiles from yarns. For example, cotton textile production utilizes environmentally hazardous polyvinyl or polyacrylic compounds (referred to as sizing) to reduce yarn breakage during weaving (Slater, 2003).

It is generally after textiles are woven or knit that the dyeing, printing, and finishing (the segment of textile production referred to as wet processing) occurs. Prior to these stages, some textiles must be further prepared through desizing (cotton), scouring, bleaching, and drying, all processes that utilize energy and water, chlorine and hydrogen peroxide bleaches, and other chemicals such as sodium hydroxide and sulphuric acid (Ren, 2000; Slater, 2003).

Within the industry, the dyeing, printing, and finishing of textiles depends on the application of additional, often toxic and/or carcinogenic, synthetic chemicals typically derived from petroleum (Moore & Ausley, 2004). These processes also consume additional large volumes of water³ and produce toxic waste water that has considerable environmental impacts (Environmental Protection Agency, 1996; Hessel et al., 2007; Ren, 2000). Some of the most commonly used dyes are azo and triphenylmethane compounds, both of which contain carcinogens and endocrine disruptors. Furthermore, many dyes contain heavy metals such as chromium, cadmium, cobalt, and zinc that are persistent in waste water and resistant to treatment (Lewis & Gertsakis, 2001). In general, the effluents created during the textile coloration process have high levels of biological oxygen demand (BOD) and chemical oxygen demand (COD), and contain toxic substances, salts, metals, colorants, suspended solids, and volatile organic compounds (VOCs), many of which are not easily removed from the effluent by traditional waste water treatments (Hessel et al., 2007; Ren, 2000). Textiles also frequently have finishes applied to them to alter the properties of the fibers and, for example, to prevent staining or make the product water repellant or flame retardant. Like dyes, many of the chemical finishes are environmentally harmful, biologically persistent, and slow to biodegrade. Some of the common finishes include hazardous halogen compounds, antimony oxides, organocompounds, and chlorophenylides (Lewis & Gertsakis, 2001).

Over the last several decades, the American textile industry, recognizing its negative contributions towards environmental change, has taken positive steps to decrease the impacts of some of its manufacturing processes. For example, the industry

³ Some dye processes can require the textiles to be processed through as many as eight separate dye baths before they are completely colored, with each bath consuming additional volumes of water (Hessel, Allegre, Maisseu, Charbit, & Moulin, 2007).

has replaced some harmful chemicals with environmentally benign ones; implemented cold batch dyeing techniques that consume less water and energy; designed closed-loop manufacturing systems that permit the recycling of materials such as water, dyes, and other chemicals; and more effectively treated water effluents prior to leaving the manufacturing facility (Slater, 2003). However, despite these positive changes, textile manufacturing remains one of the largest industrial producers of waste water, requiring 160 pounds of water to produce just one pound of textiles (Environmental Protection Agency, 1996). Moreover, over the last decade, many textile plants in the United States have closed and moved to developing countries where there is insufficient waste water treatment technology and significantly less environmental regulation (Moore & Ausley, 2004).

Environmental Impacts of Apparel Production, Consumer Use, and End-of-Life

The environmental impacts of apparel production continue throughout the remaining stages of the life cycle. Like the processes just described, apparel product manufacturing is dependent on energy intensive machinery. This stage also requires additional material inputs such as thread, buttons, zippers, and trims. After the apparel product is constructed, sometimes the application of more chemical finishes occurs; and the products may be washed again before leaving the manufacturing plant (Slater, 2003). Therefore, this stage in the life cycle further depletes natural resources and creates even more solid waste, along with continued air and water pollution (Lewis & Gertsakis, 2001).

As consumers use and care for their apparel and textile products environmental degradation continues. In fact, research suggests that for some apparel products dry cleaning and home laundry may result in more environmental harm than any other stage

of an apparel product's life cycle (Allwood et al., 2006; Chouinard & Brown, 1997; Franklin-Associates, 1993). Many of the chemicals used in dry cleaning processes, such as perchlorethylene (perc), are toxic to humans and hazardous to the natural environment (Environmental Protection Agency, 1994). Fortunately, in recent years the EPA has increased regulation of perc, and both equipment and operating changes within dry cleaning facilities have made positive improvements towards managing the impacts of dry cleaning to both ecological and human health (Environmental Protection Agency, 2006b). Home laundry of apparel can also be environmentally harmful. Laundry detergents consist of a variety of chemicals such as surfactants, bleaches, and solvents – all of which can be toxic to both human and aquatic life and many of which are also environmentally persistent and bioaccumulative (Environmental Protection Agency, 2006c). Additionally, both home and professional cleaning processes consume energy and water and, through product packaging and waste water treatment sludge, create further solid waste.

Finally, as apparel products reach their end-of life, the contribution towards environmental degradation continues through the creation of solid waste. The textile industry is highly efficient in capturing pre-consumer fiber and textile waste and it recycles 93% of the solid waste created through industrial processes (Council for Textile Recycling, 2003). Common uses for pre-consumer waste fibers and textiles include raw materials for automotive seating, furniture, mattress, coarse yarn, home furnishings, paper and other industries. However, post-consumer recycling of apparel, textiles, and related products is significantly less than of pre-consumer products. Although American consumers (primarily through clothing charities and donation programs) do prevent

approximately 1.25 million tons of textiles from entering the municipal solid waste stream on an annual basis, a large portion becomes solid waste (Council for Textile Recycling, 2003). For example, in 2006 11.8 million tons of textiles entered the American municipal solid waste stream, with only 1.81 million tons being recovered for recycling, a recovery rate of 15.3% (Environmental Protection Agency, 2007); and on a yearly basis, Americans throw away approximately 68 pounds of apparel and textiles per person (Council for Textile Recycling, 2003).

Additional Impacts of Apparel Consumption

In assessing the total environmental impacts of the apparel industry, it is also important to consider the environmental costs of transportation. Through globalization, fiber, textile, and apparel production has spread to many different nations; and a single garment could potentially travel the globe before being sold to an American consumer (Dickerson, 1999). For example, cotton fiber that is grown in California may be processed and spun into yarns in South Carolina, knit into a textile in China, and sewn into a garment in South America. Therefore, in examining environmental impacts throughout a garment's life cycle, the environmental risks associated with transporting the elements of garments throughout the supply chain should not be neglected.

Confounding the environmental consequences of the apparel and textiles industry is Western society's culture of consumption – or more aptly – the culture of over-consumption. Citizens of industrialized countries consume beyond the earth's carrying capacity (World Wildlife Fund, 2006); and the apparel and textiles industry, especially with its emphasis on rapid changes in fashion, contributes towards this phenomenon. On an annual basis the fashion industry cycles through a minimum of four seasons – with

some companies producing even more (Burns & Bryant, 2007; Lee, 2007). The fashion industry depends on rapid style changes and encourages consumers to purchase new and discard old apparel with each season.

As summarized in Figure 2, it is difficult to consume apparel products without depleting natural resources and creating solid and sometimes hazardous waste and pollution. As our society continues to value materialism and consumption, we also place more stress on the natural environment, deplete natural resources, and strain the earth's carrying capacity. From the acquisition of raw materials to end-of-life, apparel production and consumption contributes towards global environmental change and degradation. Therefore, the environmentally unsustainable consumption of apparel and textiles products is an increasingly important phenomenon.

Statement of the Problem

As already substantiated consumption of goods, including apparel and textile products, is an environmental problem; the consumption of these goods is occurring at unsustainable levels. As long as the unsustainable consumption of apparel products persists, environmental degradation will continue as well. Therefore, environmental integrity and overall sustainability require not only efforts by the textile and apparel industry to produce more sustainable products, but also the modification of apparel consumption behaviors of individuals so that they become more environmentally responsible and benign.

In a recent report, the National Academies (Brewer & Stern, 2005) identified attaining an improved and more thorough understanding of environmentally significant

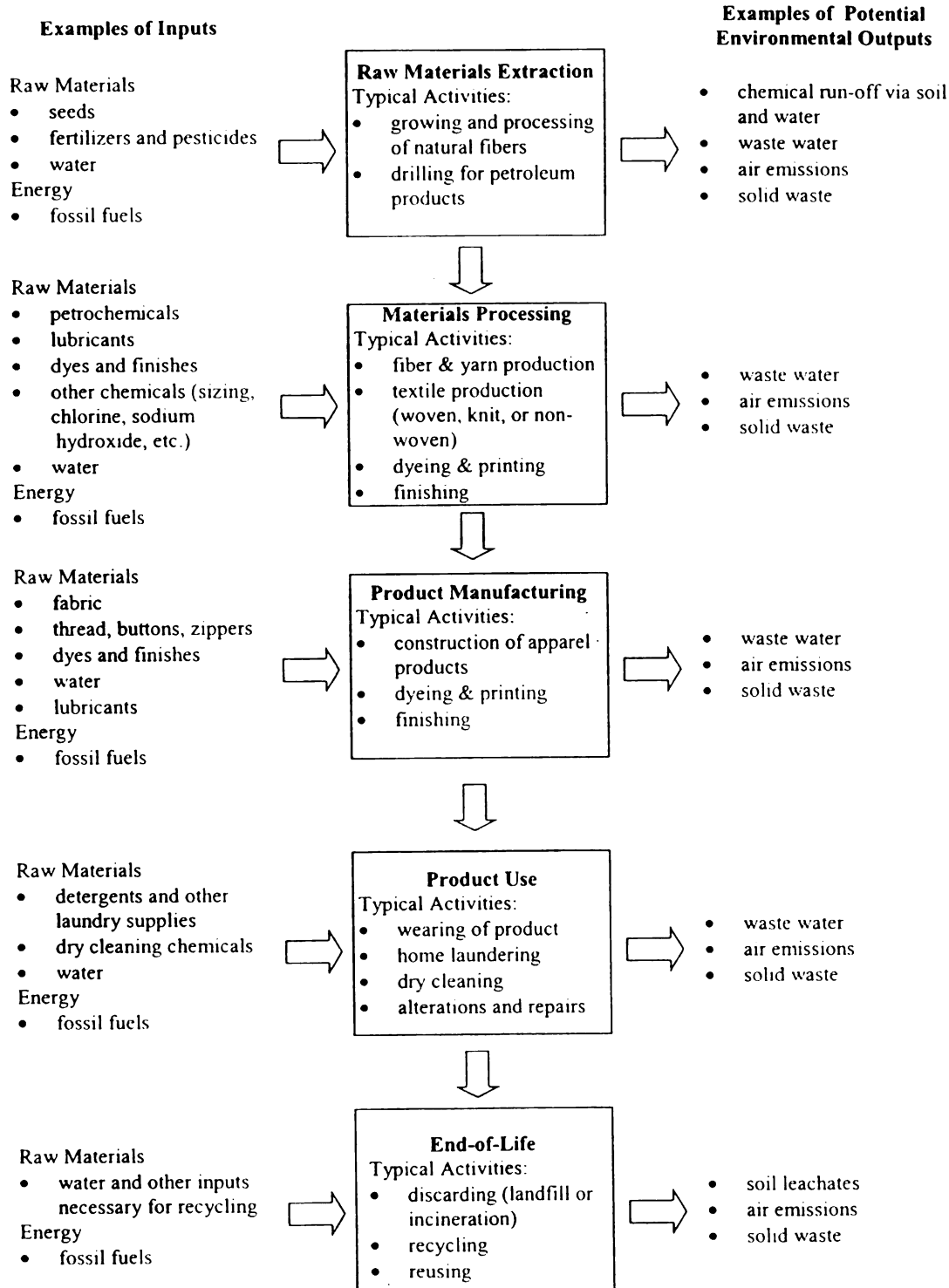


Figure 2. Examples of life cycle environmental impacts of apparel products.

individual behavior to be one of the most important current research priorities.

Because the activities of individuals and households have major environmental consequences in the aggregate, considerable environment improvement can in principle result from change in their behavior. However, fundamental understanding is only beginning to develop regarding how various influences interact to shape and alter that behavior (p.5).

In order to expand understanding of environmentally significant individual behavior, Brewer and Stern encourage focusing on increasing fundamental knowledge of consumer choice and how factors such as information, incentives, and constraints combine and interact with personal values, attitudes, and beliefs to inform and shape the consumer decision-making process. This type of knowledge and understanding is essential for policy and other decision makers who are working to modify environmentally significant consumer behavior.

Apparel consumer behavior is complicated; many different factors, both internal and external to the consumer, influence this behavior. Key to understanding apparel consumer behavior and thus being capable of promoting behavioral modifications is a better understanding of how and why apparel consumers engage in particular behaviors. Moreover, essential to this awareness is an increased understanding of the decision-making processes that drive consumer behavior. Because decision-making processes direct much of human behavior, the world created by humans depends on decision-making processes; and “the ultimate causes of global risks can be found in decision-making processes” (Pfister & Bohm, 2001, p. 89). By more fully comprehending the process of apparel consumer decision making it becomes possible to design and implement effective policies and programs to encourage decision making and consumer behavior that balances human and environmental needs.

Decision making that involves individuals or groups and consideration of the totality of environments (human-built, social-cultural, and natural-physical-biological), with particular concern for the natural environment are referred to in this study as ecological decisions. This study aims to increase the fundamental understanding of ecological decision making from the perspective of the consumer. There are two primary and interconnected problems addressed in this dissertation. First, on a theoretical level, the problem is that the concepts of ecological rationality and ecological decision making are underdeveloped – especially within the context of consumer behavior. The nature and scope of ecological rationality and the process of ecological decision making from the perspective of the consumer require further exploration and development. It is important to better understand how and when ecological rationality manifests itself through consumer behaviors, how consumers balance personal needs with environmental needs, how consumers make decisions when trade-offs are necessary, and what information consumers use in making ecological decisions.

The achievement of environmental sustainability necessitates modification of consumer behaviors – including apparel consumption behaviors. However, there remains a lack of basic understanding about the driving factors of ecologically conscious consumer behavior and the constraints facing ecologically conscious decision makers. This is the second more practical problem which this dissertation addresses.

Purpose and Objectives of the Study

The overall purpose of this dissertation is twofold. First, the study aims to contribute to the theoretical understanding of the nature of ecological decision making.

The second purpose of the study is to expand the knowledge base of environmentally significant apparel consumption. Due to the important contribution of consumption to global environmental change, the study's exploration of the phenomenon of ecological decision making is placed within the context of consumer decision making, and even more specifically, apparel consumer decision making. Therefore, while the study increases the theoretical understanding of ecological consumer decision making in general, it is more specifically focused on decision making by apparel consumers. Finally, according to Winakor (1969) apparel consumption refers both to an individual's apparel purchase decisions and how the individual uses the apparel. This definition of consumption encompasses acquisition, storing, using, maintaining and discarding of apparel products. However, within this dissertation, for the sake of focus and efficiency, the examination of the ecological consumer decision making of apparel consumers is limited to consumption behaviors related to apparel acquisition.

The objectives for the study are:

1. To explore personal variables that characterize ecologically conscious apparel consumers.
2. To investigate the nature and process of ecological consumer decision making and to contribute towards the theoretical understanding of ecological decision making with respect to apparel acquisition.
3. To assess the barriers facing consumers in making ecological consumer decisions within the context of apparel acquisition.

Research Questions

With the above research objectives in mind, this dissertation sets out to answer a number of specific questions about apparel consumers and their related ecological consumer decision making.

1. Which personal variables characterize ecologically conscious apparel consumers?
2. What manifestations of ecological decision making exist in apparel acquisition behaviors?
3. What is the nature and process of ecological consumer decision making for apparel acquisition?
 - a. What is the nature of ecological decision making that distinguishes it from other types of decisions?
 - b. What stages do ecologically conscious decision makers go through in their consumer decision making related to apparel acquisitions?
 - c. What simplification strategies do decision makers use in relation to ecologically conscious apparel acquisition and decision making?
4. What personal and contextual barriers face apparel consumers in the ecological decision-making process? How do these factors act as barriers to ecological decision making and ecologically conscious apparel acquisition?

Organization of Dissertation

This dissertation is divided into eight chapters. Following this introductory chapter, Chapter Two discusses the theoretical perspectives that guide the research. The

third chapter is a review of relevant literature, and the fourth chapter outlines the research methods used in the study for data collection and analysis. This is followed by presenting and discussing the results of the research in Chapters Five, Six, and Seven. Finally, the dissertation concludes with a summary of the study and an examination of its implications for research, practice, and policy.

CHAPTER TWO

THEORETICAL PERSPECTIVES

This chapter outlines the theoretical perspectives informing this dissertation. It begins with an exploration of the concepts of rationality and ecological rationality. The second section of the chapter provides an overview of perspectives on decision making. The chapter then proceeds to examine several perspectives on normative, attitudinal, contextual, and additional factors influencing the ecological decision-making process. The final two sections of the chapter outline the working definitions and assumptions important to this study.

Rationality and Decision Making within Society

The *Oxford English Dictionary* (1989) defines rationality as the quality of possessing reason or being able to exercise reason. Similarly, March (1994) states that rationality is a particular class of procedures utilized in decision making. It is a multifaceted concept frequently theorized about by a variety of scholars. Some of the important examinations of the concept of rationality that inform this research include those of Max Weber, Herbert Simon and Paul Diesing.

Weber writes about rationality throughout much of his work, and he conceptualizes it as the thought process by which social actions and behaviors are determined through reason and efficiency. Weber theorizes rationality as being categorized into four primary types: formal rationality, substantive rationality, practical rationality, and theoretical rationality. Accordingly, formal rationality refers to the use of

rules, laws, standards, and regulations to make decisions and the degree to which behaviors are organized in accordance with these rational principles. Weber states that formal rationality dominates within bureaucracies and other organizations. Substantive rationality is the act of applying rational calculation in order to further goals and is concerned with the ultimate objectives of actions. It is, “the degree to which the provisioning of given groups of persons...with goods is shaped by economically oriented social actions under some criterion of ultimate values, regardless of the nature of these ends” (Weber, 1922, p. 214). Within substantive rationality, an individual’s values and goals rationally inform both actions and decisions; therefore, from this perspective, judgment of the rationality of action can only occur in relation to the social context. Practical rationality refers to the ability of individuals, through systematic decision-making processes, to engage in behaviors or actions that will most efficiently achieve a desired end. Finally, according to Weber, theoretical rationality is an abstract form of rationality that is important within theoretical models because it is the basis of abstract concepts intended to theoretically describe and explain the world.

Simon (1964) defines rationality as, “a style of behavior that is appropriate to the achievement of given goals, within the limits imposed by given conditions and constraints” (p. 573). One of the theoretical contributions of Simon is to distinguish between procedural and substantive rationality. Accordingly, *substantive rationality* is any behavior or choice that is effective in achieving ends or goals because appropriate actions are selected. Similar to Weber’s conceptualization, substantive rationality of an action is determined by the decision maker’s goals and the social context of the action. *Procedural rationality*, on the other hand, refers to the cognitive processes and

procedures used by individuals or organizations to determine the appropriate behaviors and actions for achieving the ends or goals. Simon asserts that because humans have limited capabilities for reason, rationality is bounded by an individual's abilities, or in other words, their capacity for procedural rationality and that "behavior is procedurally rational when it is the outcome of appropriate deliberation" (Simon, 1976, p. 131).

Diesing is another theorist who has examined rationality and decision making within society. According to Diesing (1976), "A decision or action is...rational when it takes account of the possibilities and limitations of a given situation and reorganizes it so as to produce, or increase, or preserve some good" (p.3).

In his work, *Reason in Society* (1976), Diesing outlines five types of rationality present within society: technical, economic, social, legal, and political. Diesing asserts that each of the five forms of rationality fulfill different functional necessities, therefore, all five are present within any society or organization. In order to differentiate between the types of rationality and the associated decision types, Diesing develops the *trend of development* and the *value produced* for each decision type. He defines the trend of development as being the gradual change that occurs within society over time and the value produced as being the "good" that is the end goal.

Diesing (1976) proposes that technical decisions are decisions related to the achievement of a single end or goal already adopted, and "technical rationality appears in actions which are undertaken for the sake of achieving a given end" (p.9). The trend of development in technical decisions is technological progress (more efficient methods of achieving the end goal) and achievement of the end goal is the value produced. Within this framework a technically rational decision is, "one in which each step of a productive

sequence is chosen because it is best fitted to move the sequence along to a given goal” (p.12).

Decisions that relate to the selection among a plurality of alternative ends are considered by Diesing (1976) to be economic decisions, and this is arguably the dominant form of reason within most industrialized societies. Of fundamental importance within economic decisions is the selection among competing ends through the allocation of scarce resources – with the aim of “maximum goal achievement” (Diesing, 1976, p.20). The trend of development within economic rationality is economic progress – typically measured in terms of increasing levels of living and productivity. The value produced through economic decisions is the maximum achievement of goals, and a system is economically rational when utility is maximized.

Diesing (1976) argues that many social theories about decision making limit the conceptualization of rationality to technical and economic decisions. Diesing proceeds to propose that thinking of all rationality as being reduced to either technical or economic rationality is limiting because it does not fully encompass the true nature of decisions and rationality. Therefore, to more accurately represent the breadth of rationality, he develops three further types of rationality – social, legal, and political.

Social rationality applies to interpersonal relations; and within social rationality integrative decisions are ones that relate to the clarification and mediation of values, goals, or roles and are necessary in the face of conflict. Through the making of integrative decisions, the trend of development is harmony, integration of the social system, and a clarification of roles.

A system is integrated when the activity of each part fits into and completes the activity of other parts, and when in addition each part supports, confirms, and

reinforces other parts by its activity. A social system is integrated when the roles of which it is composed are internally consistent and fit together (Diesing, 1976, p.76).

The good or value produced through integrative decisions is social action. “Rational social organizations make action of all kinds possible, so the good achieved by them can be called simply action or social action” (Diesing, 1976, p.122).

Another of Diesing’s (1976) types of rationality is legal rationality. This type of rationality involves the prevention of disputes and the provision of solutions through a fundamental system of clear and consistent rules. Within legal rationality, judicial decision making relates to the establishment of rules that are necessary for a society to function and govern itself and the subsequent application of the rules. A society that is legally rational has developed decision-making structures that effectively prevent and settle disputes and rules that allow for a plurality of norms and values. The trend of development within such a society is both legalism and stratification within society. Additionally, the value produced through a legally rational society is conflict resolution and legal justice.

The final type of rationality discussed by Diesing (1976), political rationality, is the rationality of decision-making structures. A politically rational system is one that is competent in collectively solving problems. Political decisions are decisions regarding the process of decision making. Diesing states that unlike the other four types of decisions, the trend of development for political decision is unknown. The value produced through political rationality is freedom.

Drawing on earlier work by Mannheim (1940), in *Reason in Society* Diesing (1976) also examines the concepts of functional and substantial rationality. As explained

by Diesing, *functional rationality* refers to the existence of an organization that is structured in such a way that it functions effectively and as a result consistently produces or preserves some good or value.

An organization is functionally rational...when it is so structured as to produce, or increase, or preserve some good in a consistent, dependable fashion. The consistently good results must be based primarily on an internal structure which is able to continue effective operation through variations of personnel and through changes of environment (Diesing, 1976, p. 3).

Substantial rationality, on the other hand, as defined by Mannheim and reiterated by Diesing is the making of order through individual decisions. “A decision is substantially rational when it takes account of the possibilities and limitations of a given situation and reorganizes it so as to produce, increase, or preserve some good” (Diesing, 1976, p. 3). In order for rational decisions to be made, both functional and substantial rationality are necessary. It is necessary for the decision-making entity to be structured and organized in such a way that it is possible for a rational decision to be made (functional rationality) and it is just as important to have in place an effective and creative process for making decisions (substantial rationality). Diesing also discusses a third aspect of rationality, which he conceptualizes as an abstraction from both functional and substantial rationality. Although he does not label this third aspect, in regards to it Diesing states that, “Decisions are made according to principles, and organized structures embody principles of order; accordingly principles can be thought of as rational” (p. 4). Diesing labels the totality of these three “phases” of rationality as practical reason.

To summarize, Weber (1999), Simon (1964), and Diesing (1976) contribute towards the understanding of rationality by considering the different types of rationality that exist within society and the nature of each. Weber outlines four types of rationality:

formal, substantive, practical, and theoretical. Simon limits his discussion of rationality to substantive and procedural rationality; and Diesing focuses on functional and substantial rationality, although he also recognizes a third, unlabeled aspect to rationality that encompasses both functional and substantial forms of rationality. Table 1 provides summary definitions for each of these concepts.

Table 1. Summary Definitions of Rationality Types

Type of rationality	Definition	Referenced by
Formal	Formal rationality is the use of rules, laws, standards, and regulations to make decisions; and the degree to which the organization of behaviors is in accordance with rational principles.	Weber
Functional	Functional rationality is the existence of an organization that is structured in such a way that it functions effectively and as a result consistently produces or preserves some good or value.	Diesing
Substantive	Substantive rationality is an attribute of an actual decision or action and is determined according to how rational a decision is given the goals. A substantively rational action is effective at achieving the goals.	Weber, Simon
Substantial	A decision is substantially rational when it takes account of the possibilities and limitations of a given situation and reorganizes it so as to produce, increase, or preserve some good.	Diesing
Practical	Practical rationality is the ability of individuals, through systematic decision-making processes, to engage in behaviors or actions that will most efficiently achieve a desired end.	Weber
Procedural	Procedural rationality refers to deliberative, cognitive decision-making processes and procedures used to determine the appropriate behaviors and actions for achieving the ends or goals	Simon

In considering Weber's (1999), Simon's (1967), and Diesing's (1976) concepts of rationality, four unique types of rationality can be identified. The emphasis within both formal and functional rationality is on the rationality of an organization's structure and its ability to apply rules and standards in order to consistently and effectively make rational decisions. Similarly, because of the concern within substantive and substantial rationality with the rationality of actual decisions given the goals, these two concepts are also referencing the same fundamental concept. The concepts of practical and procedural rationality also are similar in nature as both reference the actual process of rational decision making. Additionally, these two concepts also relate to Diesing's aspect of rationality of principles. Finally, theoretical rationality is an aspect of rationality unique to Weber. Figure 3 depicts this synthesis of the similarities between Weber, Simon and Diesing and their conceptualization of the types of rationality.

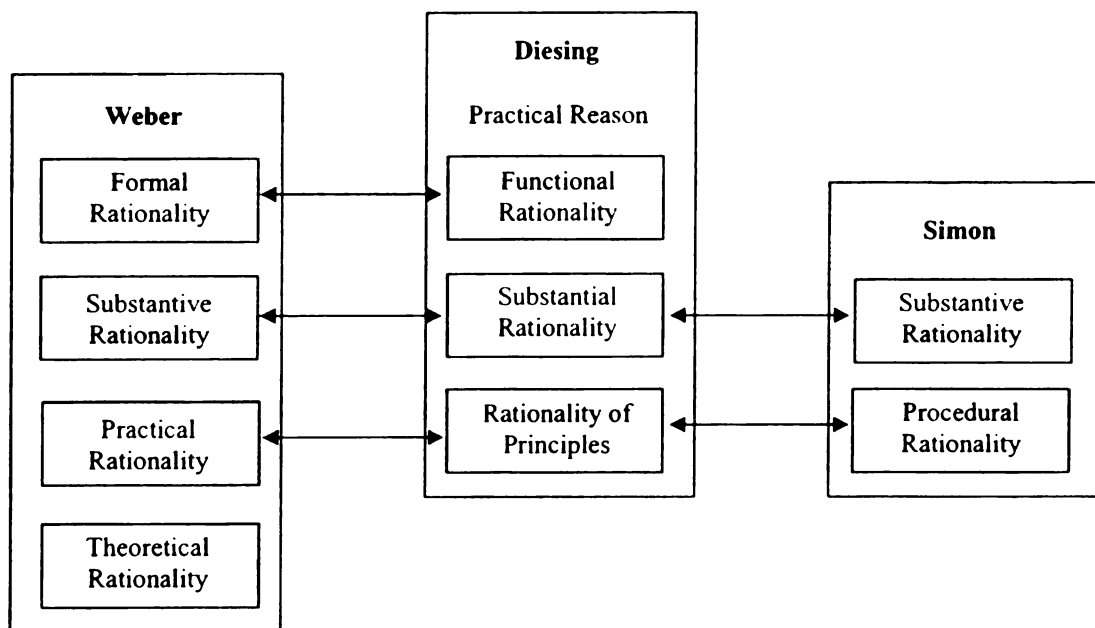


Figure 3. Relationships between types of rationality.

Ecological Rationality and Ecological Decision Making

While the work of Weber (1922), Simon (1964; 1976), and Diesing (1976) contribute to theoretical thinking on rationality, their frameworks do not specifically address the natural environment or reflect on decision making involving the environment. The most acknowledgment of the importance of the natural environment in decision making is Diesing's belief that adaptation to the nonliving environment is congruent with social rationality

The fourth characteristic of a rational social system is its compatibility with the non social environment. Every social system exists in and makes use of a varied environment, to which it must be adapted if it is to continue in existence. The environment includes both geographical-technological-economic conditions and physiological conditions (p.88).

However, in all of the above discussions on rationality there is generally a lack of specific attention to ecological rationality. Several scholars, including Bartlett (1986), Dryzek (1987), and Kurlfink and Harris (2003), recognized this theoretical gap and have written more specifically on the nature of ecological rationality, how and when ecological rationality is applied, and how ecological rationality relates to other forms of rationality.

Bartlett (1986) defines ecological rationality as, "a rationality of living systems, an order of relationships among living systems and their environments" (p. 229).

According to this conceptualization of ecological rationality, when individuals make decisions that take into consideration the balance between the needs of humans and the sustainability of their total environments, the decisions are ecologically rational.

Therefore, the fundamental ideal within ecological rationality is the maintenance of sustainable interactions between humans and environments. Bartlett perceives ecological rationality as being a distinct type of rationality that is less anthropocentric than other

types of rationality. He also recognizes that because of the emphasis on the integration and independence of living systems within decision making, ecological rationality has some commonalities with Diesing's (1976) conceptualization of social rationality.

Bartlett (1986) theorizes about the nature of ecological rationality by applying concepts from both Diesing (1976) and Simon (1976). In theorizing on ecological rationality, Bartlett (1986) states that *functional ecological rationality* is the "organization of actions consistent with or leading toward fulfillment of an ecological ideal" (p.232). Within this framework, organizations structured to sustainably produce, increase, or preserve life-support systems are functionally ecologically rational. He proceeds to say that *substantial ecological rationality* is evident when "a decision or action takes account of the possibilities and limitations of a given situation and reorganizes it so as to produce, increase, or preserve a good" (p.234). Furthermore, the good produced, increased, or preserved through substantial ecological rationality is the capacity of the earth, its ecosystems, and resources to provide sustainable life support capabilities.

Informed by Simon's (1976) delineation between substantive and procedural rationality, Bartlett (1986) also develops the concepts of procedural ecological rationality and substantive ecological rationality. Consequently, Bartlett states that *procedural ecological rationality* refers to the effectiveness of cognitive processes and procedures used to make ecologically important choices or, in other words, the ability to discover ecologically appropriate behaviors. On the other hand, *substantive ecological rationality* describes the extent to which an individual (or other entity) engages in ecologically appropriate actions.

Dryzek (1987) is another scholar who theorizes on the nature of ecological rationality. Drawing primarily on Diesing's (1976) five forms of rationality, Dryzek conceives of ecological rationality as being a sixth and distinct form of rationality. Dryzek's conceptualization of ecological rationality is anthropocentric in nature and has the aim of understanding how the management of environmental problems occurs through social choice mechanisms. Accordingly Dryzek states that ecological rationality is a form of functional rationality and that an ecologically rational system is one that is capable of coping with, "stress or perturbation, so that such a structure can consistently and effectively provide itself with the good of human life support" (p.35). Thus, Dryzek sees the primary consideration within ecological rationality as being whether human and natural systems are capable of dealing with human-induced problems while sustainably supporting human life. Furthermore, Dryzek states that an ecologically rational system is one in which both human and natural elements coexist in a symbiotic relationship and one that constantly produces the good of life-support for both humans and other organisms. In terms of individual behaviors, "ecologically rational behavior on the part of an agent may be defined as behavior which promotes or protects the functional rationality of ecosystems – their stability or homeostasis" (Dryzek, 1983, p. 6).

While Dryzek (1987) clearly conceives of ecological rationality as being a form of functional rationality, this perspective does not appear to encompass the totality of Diesing's (1976) conceptualization of rationality. Diesing asserts that both functional and substantial rationality are interdependent and each is a product of the other. Therefore, it would seem that ecological rationality could not solely be a form of functional rationality.

Rather, in keeping consistent with Diesing, functional and substantial rationality are both necessary conditions for the existence of ecological rationality.

In their thinking about ecological rationality, similarities exist between Bartlett (1986) and Dryzek (1983; 1987). Both Bartlett and Dryzek assert that ecological rationality is a distinct type of rationality that is different from technical, economic, social, legal and political forms of rationality. Dryzek and Bartlett also agree that the types of rationality outlined in Diesing (1976) are inadequate for effective ecological problem solving and management of environmental issues. For example, as discussed by both scholars, economic rationality sometimes results in environmental destruction. Therefore, it is quite possible for a system to be economically rational while not being ecologically rational. “The impetus of economically rational systems is to maximize production, [and] in an ecological context, this goal is in direct conflict” (Dryzek, 1987, p.56). The scholars make similar claims about social, legal, and political rationality. Therefore, in Bartlett and Dryzek’s view, because environmental sustainability is essential for overall sustainability of society, and because the other forms of rationality are insufficient for environmental sustainability, ecological rationality is a more fundamental form of reason. If the goal is to achieve overall sustainability, it is imperative that ecological rationality take priority over other forms of reason and those decisions involving environmental issues utilize the strategies of ecological decision making.

While there are some consistencies in how Bartlett (1986) and Dryzek (1983; 1987) think about ecological rationality, differences also exist. A significant difference between the two scholars is that unlike Bartlett, Dryzek limits his discussion of ecological rationality to functional rationality and does not systematically apply substantive,

substantial or procedural rationality to ecological rationality. On the other hand, Bartlett perceives ecological rationality as having a broader scope that encompasses functional, substantive, substantial, and procedural rationality. A second difference between Bartlett and Dryzek is that Bartlett views ecological rationality as being much less anthropocentric than other types of rationality while Dryzek asserts that ecological rationality is anthropocentric in nature. Finally, Dryzek situates his examination of ecological rationality within the context of collective decision making and does not theorize about ecological rationality in terms of decision-making mechanisms at the individual level. While Bartlett does not exclude decision making at the level of the individual within his framework of ecological rationality, his focus remains primarily at the organizational and societal levels.

By focusing on ecological rationality at the level of the individual decision-maker, Kurlfink and Harris (2003) contribute thinking on the nature of ecological rationality. To understand the strategies utilized by carrot farmers in the state of Michigan, Kurlfink and Harris explored decisions made by the farmers in order to determine the degree to which ecological rationality is present within these decisions. Kurlfink and Harris determine that as carrot farmers make decisions and attempt to balance agricultural production with environmental stewardship they are demonstrating three distinct types of ecological rationality: generative, procedural, and outcome.

The first component of ecological rationality within Kurlfink and Harris' (2003) framework is *generative rationality*. The emphasis in generative rationality is on the motivational aspect of decisions, and generative rationality is what motivates and leads an individual to engage in a behavior that they intend to be ecologically positive.

According to Kurlfink and Harris, within generative rationality, a decision is ecologically rational if the intention in making that decision is to engage in ecologically beneficial behavior. In terms of the development of ecological rationality theory, this focus on motivation and intention is a unique contribution of Kurlfink and Harris and is something that previously reviewed literature on ecological rationality only indirectly discusses through the examination of functional rationality. The second component of ecological rationality identified by Kurlfink and Harris is *procedural*. It is a person's actions and their following of operational procedures that determine the extent of their procedural rationality. "Generatively, one is ecologically rational in terms of one's motivations, and procedurally, one is ecologically rational in terms of one's actions" (Kurlfink & Harris, 2003, p.15). Finally, *outcome* rationality is the third component of ecological rationality proposed by Kurlfink and Harris. This final type of rationality is the consequence of a behavior or action undertaken by an individual, and it represents ecological rationality if the outcome is ecologically beneficial – regardless of the original intentions motivating the decision and behavior. Within outcome rationality, the individual may or may not be aware of how the decision and behavior have been ecologically beneficial.

Despite the positive contributions of the above scholars, on a theoretical level the concepts of ecological rationality and ecological decision making remain underdeveloped, especially at the level of the individual decision maker. From the above theories, it is evident that ecological decisions are concerned with maintaining the quality of the total ecosystem. The perspectives also succinctly state that ecological decision making is a decision-making process that allows the accomplishment of both social and environmental goals and meets the needs of humans while maintaining environmental

integrity. However, the precise nature, scope, and especially the process of ecological decision making remained less clear at the outset of this study. Furthermore, the question of whether or not ecological rationality is a distinct type of rationality or a more fundamental form of rationality that encompasses other forms remained unanswered. And, if ecological rationality is conceptualized as a unique form of rationality, then it is necessary to identify its trend of development and the good produced. Other uncertainties about the nature of ecological rationality included how ecological rationality manifests itself through consumer behavior, along with how and when consumers engage in ecological decision making. Clarification of these characteristics was a significant objective of this dissertation and is made in Chapters Five and Six.

Decision Making

“Decision making is a process by which a person, group, or organization identifies a choice or judgment to be made, gathers and evaluates information about alternatives, and selects from among the alternatives” (Carroll & Johnson, 1990, p. 19). This section of the chapter provides a broad overview of decision-making theory. It outlines some of the important theoretical perspectives of decision making as well as reviews processes of decision making – on a general level and the level of the consumer.

Theoretical Perspectives on Decision Making

One of three perspectives on decision making typically grounds examinations of how individuals and groups make decisions. *Normative* models of decision making, largely informed by rational choice models, consider ideal processes for making decisions and assume that decision makers are highly rational in making decisions.

Descriptive models recognize that decision makers frequently behave in ways very different from that suggested by models of rational choice and, therefore, focus on how individuals and groups actually proceed with decision making. Finally, *prescriptive* models primarily determine ways in which to improve decision-making processes (Hoch & Kunreuther, 2001).

Rational choice models form the foundation of thinking on normative decision making. Within theories of rational choice, a primary assumption is that action depends on anticipations of the effects of current actions on the future and that decision makers follow what March (1994) refers to as a “logic of consequences.” As outlined in March (1994) decision processes within rational choice models are both consequential and preference-based.

They are *consequential* in the sense that action depends on anticipations of the future effects of current actions. Alternatives are interpreted in terms of their expected consequences. They are *preference-based* in the sense that consequences are evaluated in terms of personal preferences. Alternatives are compared in terms of the extent to which their expected consequences are thought to serve the preferences of the decision-maker. (March, p.2)

Within this perspective rational decision makers consider four questions during the decision-making process: What are the alternatives? What are the anticipated future outcomes for each alternative and how likely is each outcome? What are the preferences of the decision maker and what is the relationship of preferences to expected outcomes? What is the decision rule – how does the selection of an alternative occur? Accordingly, the decision-making process concludes with the selection of the alternative expected to maximize utility. The assumptions within rational actor models of decision making are that:

Decision makers have consistent preferences, know their preferences, know the alternatives available, have access to information about the consequences of selecting each alternative, and combine the information according to the expected utility rule, which discounts or weights outcomes by their probability of occurrence (Carroll & Johnson, 1990, p. 25).

In reality, the process of decision making is usually very different from pure models of rational choice (Hoch & Kunreuther, 2001; March, 1994; Zey, 1992) and, “pure rationality strains credulity as a description of how decisions actually happen” (March, p.4-5). Limitations exist on humans’ capacity for rational thought. Decision situations are highly complex and humans are often inadequate in their capacity to calculate expected outcomes. Furthermore, human knowledge is frequently incomplete, leading to decision makers not having all alternatives known to them and not considering or knowing all of the possible outcomes of possible actions. In other words, uncertainty or risk surrounds many decisions.

In response to the above outlined criticism of rational action, descriptive models of decision making, such as limited (or bounded) rationality and reasoned choice, have emerged in attempts to describe how decision makers actually make decisions. Still prevalent within these models is the assertion that actors make decisions based on the assessment of the consequences of different alternatives and the impact of those consequences on personal preferences (March, 1994). However, descriptive theories of decision making modify rational actor models with the idea that while decision makers *attempt* to act rationally in decision-making processes, cognitive abilities and information constraints limit their rational abilities. Some of the constraints acting on decision makers include limits to attention and the ability to attend to information, memory capabilities, capacities for comprehension, and communication skills (March, 1994).

Due to human limitations to rationality, decision makers have developed various strategies for dealing with constraints in cognition and incomplete information. March (1994) outlines four processes of simplification utilized by decision makers, including editing, decomposition, heuristics, and framing. The first process, editing, involves simplification of the decision problem by focusing on small pieces of the problem at a time. In decomposition, decision makers reduce problems into component parts and work to find solutions to individual components of a problem. The third simplification process, using heuristics, involves the recognition of patterns in a decision problem and the application of appropriate rules. Finally, within framing processes, decision makers rely on personal beliefs and paradigms to focus the decision problem and take action.

An important assumption within rational actor models is that the maximization of expected utility forms the primary criterion on which decision makers select final alternatives (March, 1994). According to the assumption of maximization, the rule decision makers should follow is to select the alternative that is associated with the greatest expected utility. However, descriptive models of decision making recognize that decision makers often make decisions that satisfy a set criterion rather than maximize. In satisficing, decision makers select an alternative that adequately exceeds a target rather than pursue an alternative that will maximize expected returns; and it is another technique or decision rule used by decision makers to deal with both cognitive and informative constraints. As stated in Zey (1992), in examining actual decision processes, the basis of many decisions is an evaluation of options, through which decision makers make what they believe to be the best choice.

Another descriptive perspective on decision making perceives it as being more about rule following. March (1994) explains that within this perspective, instead of understanding decision making as following a logic of consequences, it is more about the “logic of appropriateness” and making decisions whereby actions are matched to situations through rules as to what is appropriate for the situation. Within the decision making as rule following perspective, future consequences do not enter into the decision-making process and instead the decision maker asks, “What does a person such as I do in this kind of a situation?” Therefore, the “reasoning process is one of establishing identities and matching rules to recognized situations” (p.58).

To aid in improving the process of decision making, a variety of prescriptive models exist. When faced with an actual decision, as outlined above, it is most common for decision makers to focus on the attributes of various alternatives and then decide to select one of the possible alternatives. Keeney (1992) argues that this alternative-focused approach to decision making may not be the most effective manner in which to make decisions. Instead, Keeney outlines a prescriptive model of decision making that he believes leads to more desirable and meaningful decisions. Rather than making decisions in response to particular problems Keeney conceptualizes decisions as opportunities that decision makers identify. In value-focused decision making the foundation of a decision opportunity is the use of values to guide decisions about the desirable. It is only through clarifying values that the decision maker begins to focus on how to set and attain goals. As described by Keeney, value-focused decision making, “makes the search for new alternatives a creative and productive exercise, it removes the anchor on narrowly defined alternatives and allows clear progress toward ‘solving’ the problem” (p.9). Within value-

focused decision making, decision makers have a desire to make improvements, and the decision-making process is reactive to this desire.

Decision-Making Processes

Decision making is the primary process that directs human actions; and the assumption of most decision-making models is that in decision making, individuals and groups follow a series of stages that are usually reasonably well defined. These stages consist of (1) recognition, (2) formulation, (3) alternative generation, (4) information search, (5) judgment or choice, (6) action, and (7) feedback (Carroll & Johnson, 1990).

During the first stage of decision making, recognition, individuals or groups identify a problem and realize the need to make a decision. Kleindorfer, Kunreuther, and Schoemaker (1993) state this first stage, “involves tracing the perceived source of the problem to the needs, values, and beliefs that the decision maker brings to bear in defining the problem as a decision or choice opportunity” (p.10). After recognizing the existence of a decision problem, decision makers solve the problem through further exploration and definition of the decision problem, including objectives, goals, or preferred outcomes. In the third stage of the process, decision makers generate appropriate alternatives for solving the decision problem; and the fourth stage involves gathering information about each of the possible alternatives. Relevant information includes identification of various attributes for each of the alternatives. After gathering information, the next step is for decision makers, through evaluation of the alternatives and their attributes and the application of decision rules, to make a decision and select an alternative that most effectively solves the perceived problem. Finally the decision is

acted upon, after which the decision maker usually receives some form of feedback about the outcomes of the action (Carroll & Johnson, 1990; Kleindorfer et al., 1993).

Blackwell, Miniard, and Engel (2001) describe the process of consumer decision making very similarly to the general decision-making process outlined above. According to Blackwell et al.'s Consumer Decision Process (CDP) Model, consumer decision making occurs through a series of seven stages: need recognition, search for information, evaluation of alternatives, purchase, consumption, post-consumption evaluation, and divestment.

Within the CDP model, the process of consumption begins when consumers recognize needs, that is, differences between ideal states and actual states. After the recognition of needs, consumers will search for information in order to find a way to meet those needs. This search for information may occur through internal and/or external sources, it may be a passive or active process, and the length and depth of the information search depends on personal and contextual barriers. The outcome of the information search is the identification of alternatives that may meet the needs, after which consumers proceed to the next stage of the decision process – evaluation of alternatives. In this stage consumers evaluate each of the identified alternatives by comparing and contrasting the attributes of each. Because of social-cultural and individual differences, how consumers evaluate alternatives varies from consumer to consumer, and the decision rule used by consumers to make final purchase decisions also varies greatly. The fourth and fifth stages within the CDP model are the purchase and use of the chosen product. Blackwell et al. (2001) emphasize that how consumers use and care for products affects their satisfaction with the product and influences future decisions. After consumers use a

product, post-consumption evaluation occurs – the stage at which consumers evaluate their total level of satisfaction or dissatisfaction with the product and decide whether they made a good purchase decision. The CDP model conceives of the consumption decision process as concluding with divestment – deciding how to dispose of the product.

Variables Influencing Ecological Consumer Decision Making

There are a variety of variables influencing ecological consumer decision making and behaviors. Stern (2000) categorizes the relevant variables into four major types:

attitudinal factors, contextual forces, personal capabilities, and habit or routine.

Attitudinal factors include an individual's values, beliefs and attitudes. Because values and attitudes are distinct concepts, labeling this first category of variables as attitudinal factors may not be fully representative of the variables included in the category.

Therefore, this dissertation classifies this category of variables as normative-attitudinal factors instead of attitudinal factors. The second variable, contextual forces, is a combination of a variety of factors, including interpersonal influences, community expectations, monetary incentives, the ease or difficulty of specific actions, constraints existing in the human-built environment, and other features of the social, cultural, and political environments. All individuals have different skills, knowledge, and capabilities; and therefore, personal capabilities are the third major variable influencing consumer decisions and behaviors. The final major variable is habit or routine. This section of the chapter examines theoretical perspectives on some of these variables and the effect they have on ecological decision making and behaviors.

Normative-Attitudinal Factors Influencing Ecological Decision Making

Normative-attitudinal factors such as individual values, beliefs, and attitudes partially determine if and how an individual engages in ecological decision making. This section reviews several theoretical perspectives on how these normative-attitudinal factors influence decision making and resulting behaviors.

Values

Values pertain to what is desirable. They are “conception(s), explicit or implicit,...of the desirable which influences the selection from available modes, means, and ends of action” (Kluckhohn, 1951, p. 395), and they are thought to be fairly stable over time (Thøgersen & Olander, 2002). Values are concepts about desirable goals or behaviors that transcend specific situations; and as discussed by Rescher (1982), although values are intangible concepts, the values to which individuals subscribe manifest in two ways – through verbal and behavioral actions. Furthermore, values guide in the selection or evaluation of behaviors and events, may be ordered by relative importance (Schwartz & Bilsky, 1987), and are “used to explain and justify action” (Thøgersen & Olander, 2002, p. 608).

As suggested by Rescher (1982), values are “guides to...deliberations in the endeavor to arrive at decisions” (p.29). Therefore, considering the influence of values on decision making, it follows that values are significant motivators in the consumer decision-making process and consumer behavior. Because the common assumption is that values influence decisions, they are crucial to the exploration and understanding of ecological consumer decision making. Values are also important in this regard because

they affect the beliefs an individual holds about the environmental consequences of their behaviors and their willingness to engage in proenvironment behaviors.

Not only do values greatly influence individuals, their decision making, and other behaviors, but also, as discussed in Sontag and Schlater (1995), values have consequences for the objects of value. In this regard, Sontag and Schlater state that as the result of an individual subscribing to a set of values, changes occur not only in the individual and his or her behaviors but also in the object that is the focus of the value. This means, in terms of this current study, that an individual's subscription to environmental sustainability values may subsequently alter not only the individual and his or her behaviors but also the quantity, quality, or other characteristics of apparel, at the level of the individual and in the aggregate.

Offering a classification of value orientations framed within the environmental context Stern, Dietz and Kalof (1993), informed by prior perspectives on environmental concern, proposed three value orientations significant for environmental issues: an egoistic orientation, a social-altruistic orientation, and a biospheric orientation. One of the significant assumptions of this value structure is that individuals holding any of the three value orientations may, under certain circumstances, be motivated to engage in behaviors that are positive for the environment. The authors also assumed that none of the three value orientations is completely distinct from the others and that many individuals' values more closely resemble a combination of the three orientations.

Individuals who hold an egoistic value orientation are primarily concerned with meeting personal needs, along with the needs of their immediate families. An individual with an egoistic value orientation is most likely to support environmental protection when

the effects of environmental degradation threaten their personal well-being. Likewise, they will oppose environmental protection if they consider the personal costs of that protection too large (Stern et al., 1993).

A personal and moral obligation to protect the natural environment underlies the motivations of individuals with a social-altruistic value orientation. Within this value orientation, influenced by Schwartz's (1977) theory of altruism (further discussed in the next section), individuals recognize the costs of environmental degradation in terms of adverse costs to society as a whole, as opposed to only personal costs. Because the perception is that there are adverse social consequences of not protecting the environment and that they have the ability to protect the environment through their personal behaviors, individuals holding this orientation believe they have a moral obligation to protect human life and therefore are obligated to care for the environment (Stern et al., 1993).

The final value orientation outlined by Stern et al. (1993) is the biospheric orientation. This particular value orientation, theoretically informed by deep ecology, differs from the previous two because it considers the costs of environmental degradation on the natural environment and other living organisms in addition to the self and other human beings. People holding a biospheric value orientation believe the natural environment and all non-human organisms have intrinsic value. On the other hand, the other two orientations are anthropogenic in nature and do not subscribe to the belief that the natural environment is intrinsically valuable (Dietz, Fitzgerald, & Shwom, 2005). Research to date suggests that the biospheric value orientation is not empirically distinct from the value orientation of social-altruism and, "whether a separate biospheric value orientation is in the process of emerging in the general population can not be determined

without time series analysis of value structures” (Stern, Dietz, Kalof, & Guagnano, 1995, p. 1622).

Value-Belief-Norm Theory of Environmentalism

Focusing primarily on internal causes of environmentally significant behaviors, the Value-Belief-Norm (VBN) Theory of Environmentalism (Stern, Dietz, Abel, Guagnano, & Kalof, 1999) develops a causal chain of factors contributing towards behavior and works to explain environmentally consequential decision making and behavioral intentions. As depicted in Figure 4, factors included in the chain that determine behaviors are values, beliefs, and personal norms.

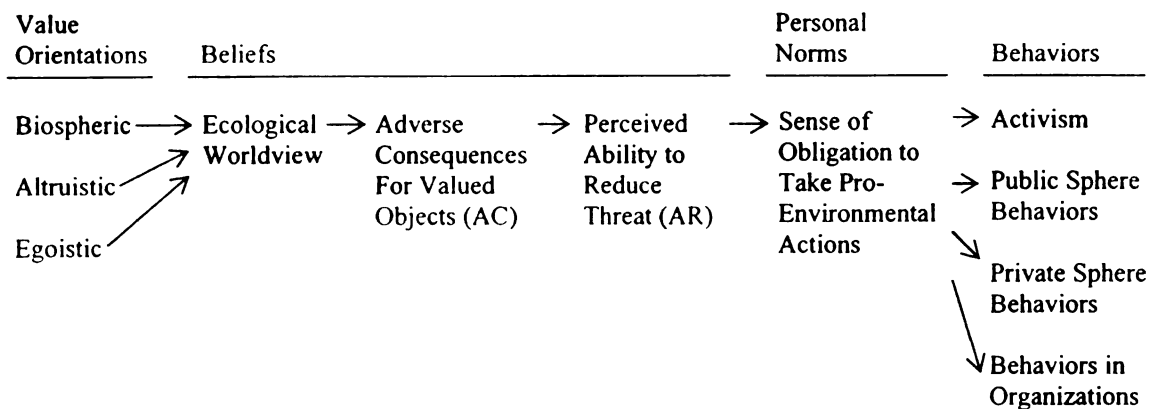


Figure 4. The VBN Theory of Environmentalism (Stern, 2000, p.412).

In developing the VBN Theory of Environmentalism, Stern and his colleagues (1999) drew on previous theorizing by Schwartz (1977) and the Norm Activation Model. This model suggests that a person must hold two particular beliefs for certain actions to occur. First, there needs to be a belief that a particular condition has harmful consequences (awareness of adverse consequences, AC); and second, the individual needs to believe that he or she is, in part, responsible for those consequences because it is possible to take actions to prevent the consequences (assignment of responsibility to

reduce the threat, AR). According to the model, when a person holds both of these beliefs, the individual will experience a sense of moral obligation to take action and prevent the harm. The Norm Activation Model is a general model that is applicable to a wide range of social issues. Therefore, when applied to environmentally significant behaviors the model asserts that a person will perform proenvironmental actions when the individual believes environmental conditions with harmful consequences exist and that it is possible to prevent those consequences through specific behaviors.

The VBN theory postulates that each preceding variable directly affects not only the next variable in the chain but also later variables. The causal chain begins with the relatively stable variables of value orientations. The theory asserts that values are the most fundamental determinants of environmental concern. Intermediary variables of worldview, beliefs, and attitudes link values to environmentally significant behaviors. Therefore, an individual's value orientation, beliefs that certain conditions in the environment threaten personal values, and beliefs that the behaviors that the person engages in will affect those conditions, determines whether an individual consumer engages in environmentally responsible consumer behaviors. Key to the theory is the recognition on behalf of the individual that certain environmental conditions exist and that it is possible to engage personally in behaviors that will positively change those conditions.

Contextual Forces Influencing Ecological Decision Making

“Consumer sovereignty is constrained by a variety of factors outside consumers’ control” (Stern, 1999, p. 461). Therefore, in addition to normative-attitudinal factors, contextual forces that are external to the individual will also greatly influence the

ecological decision-making process. Contextual forces influencing ecological decision making include a variety of factors within social, cultural, economic and political environments. These forces are important in understanding consumer decision making because social structures are influential in affecting personal experiences and therefore also personal values, beliefs, the decision-making process, and behaviors (Stern et al., 1995). Some of the contextual forces that Stern (2000) identifies as being relevant to ecological decision making are monetary costs and incentives, laws and regulations, availability of technology, cultural and social norms and expectations, supportive policies, the actual difficulty of certain actions, and advertising. These factors may encourage engagement in a particular behavior or, in some instances, be constraints and act as barriers to action.

Cultural Level Values

Some research has highlighted the importance of considering the role of cultural or society level values on ecological decision making. Cultural level values are seen as the ideals or guiding principles accepted by a significant portion of that society and partially shape institutional behaviors and general cultural habits. The thinking is that these higher order cultural values are also influential at the micro level, and therefore, guide individual value formation and as a result, decision making.

The work of Inglehart (1977) and his theory on post-materialism suggests how cultural level values may influence individual behaviors. In this theory, Inglehart conceptualized the division of nations according to materialism and post-materialism values. Inglehart asserted that, through development, nations change and as the transformation occurs, so do the dominant cultural level values. At a rudimentary level,

the primary concern of a nation is meeting basic material needs, like hunger and thirst. It is only after meeting these basic needs that a nation evolves and shifts focus to higher order, or post-materialistic needs. Inglehart conceived of the shift from materialism to post-materialism values as occurring when a nation acquires economic growth and affluence. According to this theory, it is much more likely for a country with post-materialism values to emphasize and value environmental protection than a materialistic nation because the theory views a sustainable, natural environment as being a high order value. Therefore, if the theory on post-materialism is valid, individuals who live in post-materialistic nations should be more concerned about environmental issues and more willing to engage in proenvironmental behaviors than individuals within materialistic nations.

Through empirical research on 38 cultures Schwartz (1994) identified seven cultural level value types and stated that nations vary in the degree to which its citizens embrace or reject the values associated with each type. The seven values types are conservatism, intellectual autonomy, affective autonomy, hierarchy, mastery, egalitarian commitment, and harmony with nature. The value types represent fundamental differences that exist among cultures in terms of promoting ideologies of individualism versus collectivism and encompass issues like beliefs about the autonomy of individuals within the culture; egalitarian versus hierarchical treatment of people; whether change is positive or negative; and the legitimacy of individuals pursuing self-centered interests.

The primary intention of Schwartz (1994) in developing a framework for cultural level values was to provide a structure for comparing the values of different nations, and Schwartz did not explicitly develop the relationship between cultural level and individual

values. However, socialization is one of the primary processes through which individuals acquire values, and the socialization process is partially the result of influences from the social-cultural environment. Therefore, it is logical to expect that value types embraced by a particular culture or nation may influence individual values and the decision-making process. Applying this logic to ecological decision making, it is plausible that individuals who are citizens in a nation that highly values harmony with nature will also be more likely to value the natural environment and engage in behaviors that reflect these values.

In addition to cultural level values affecting individual values and subsequent ecological decisions, cultural level values have the potential to influence individual ecological decision making in another manner. To a certain degree, through their contributions towards shaping policy, cultural level values are instrumental within institutions. Therefore, cultural level values may determine the types of institutional policies and incentives in place to support ecological decision making. If a nation holds proenvironment cultural values, it may be more likely than a nation that does not as highly value the environment to implement policies and utilize other tools that will encourage ecological decision making by its citizens. In other words, cultural level values play a role in determining the types and extent of external constraints acting on individuals while making ecological decisions.

A-B-C Model of Behavior

Beyond cultural level values, other contextual forces influence the process of ecological decision making. One model that outlines how external factors affect individual decisions and behaviors is the A-B-C- Model of Behavior (Guagnano, Stern, & Dietz, 1995). This model states that behaviors (B) are the result of both personal

attitudes and values (A) and external conditions (C). Furthermore, external conditions act as either sources of support for or opposition against differing behaviors. In this model, an individual's behaviors are most consistent with attitudes when the external conditions are neutral. However, as soon as the external conditions are such that the behavior becomes complicated, time consuming, or costly, behaviors are less likely to reflect attitudes. As Guagnano et al. state, "For personal behaviors that are not strongly favored by context (e.g., by not being required or tangibly rewarded), the more difficult, time-consuming, or expensive the behavior, the weaker its dependence on attitudinal factors" (p.416). Therefore, this model perceives environmentally significant behaviors as an interaction between both internal attitudes and external constraints.

Additional Factors Influencing Ecological Decision Making

Both personal capabilities and habits are two additional factors that influence ecological decision making and behaviors. Some of the personal capabilities that may act as causal variables to behavior include knowledge, the availability of time, general capabilities and skills, and financial resources (Stern, 2000). Additionally, many behaviors that consumers engage in on a day-to-day basis are the result of personal habits and routines and involve very little conscious decision making. In these types of behaviors there is little personal deliberation or reflection, therefore, it is likely that at times behaviors will be incongruent with normative-attitudinal factors like values.

Definitions

This section of the chapter outlines definitions for concepts important to the dissertation and proposed research.

Apparel acquisition refers to the act of a consumer acquiring both new and second-hand apparel products through retail establishments.

Apparel products include coats and jackets, sweaters and vests, slacks and jeans, shorts, sportswear, blouses and shirts, dresses and skirts, underwear, nightwear, hosiery, uniforms, diapers, and footwear (United States Department of Labor, 2007).

Attitudes are positive or negative evaluations of the quality(ies) of a specific object or behavior, and they often derive from values (Dietz et al., 2005; Leiserowitz, Kates, & Parris, 2006).

Behaviors are concrete (i.e., intentional) actions taken by individuals and groups, and they are often rooted in values and attitudes (Leiserowitz et al., 2006). Decision making is one type of intentional action.

Beliefs are an individual's understandings and perceptions about the state of the world (Dietz et al., 2005).

Consumption refers to both an individual's purchase decisions and how the individual uses those purchases (Stern et al., 1997).

Apparel consumption refers to an individual's apparel acquisition decisions and the use of the apparel by the individual. It encompasses acquisition, storing, using, maintaining and discarding of apparel products (Winakor, 1969). In this dissertation apparel consumption is limited to acquisition related behaviors.

Ecological decisions take into consideration and allow the accomplishment of social and/or environmental goals, while balancing the needs of humans with environmental sustainability.

Ecological rationality is a style of behavior that is concerned with interactions between humans and their environments (Bartlett, 1986) and appropriately balances these relationships to consistently and effectively provide the good of life support for humans and other living organisms (Dryzek, 1987).

Functional ecological rationality is the organization of actions consistent with the fulfillment of ecological goals (Bartlett, 1986) and refers to the existence of an organization that is structured so that it functions effectively and consistently produces, preserves or increases a good – the good of ecological sustainability and long-term life support capability (Bartlett, 1986).

Substantial ecological rationality is the making of order through individual, ecological decisions. It is a style of behavior that considers the possibilities and limitations of a situation and reorganizes it in order to effectively produce, preserve, or increase the good of ecological sustainability and long-term life support (Bartlett, 1986). It is any style of behavior that is effective in achieving ends or goals because of the selection of appropriate actions.

Procedural ecological rationality is a style of behavior that is capable of determining appropriate adaptive behavior(s) and making ecologically important decisions (Bartlett, 1986). It also refers to the cognitive processes used by individuals or organizations to determine the appropriate behaviors for producing, preserving, or increasing some good (Simon, 1976).

Ecologically conscious apparel acquisition behaviors include any apparel acquisition behaviors that are environmentally preferable to mainstream apparel acquisition behaviors because the intent of engaging in the behaviors is to: 1) create less pollution

and waste and/or 2) consume fewer natural resources. Ecologically conscious apparel acquisition behaviors include:

- acquiring apparel designed with environmentally preferable attributes, including apparel made from environmentally preferable fibers (such as organically-grown cotton, hemp, bamboo, or recycled fibers) or apparel manufactured using environmentally preferable processes (such as closed loop manufacturing cycles or reduced utilization of toxic dyes and other harmful chemicals).

Environmentally preferable apparel attributes may also relate to the design and construction of a garment. For example, apparel designed to be multifunctional, durable, and or classic in styling are all examples of environmentally preferable apparel attributes because they permit a consumer to reduce personal consumption and acquire fewer articles of apparel.

- acquiring apparel through environmentally preferable sources such as second-hand sources. Second-hand sources include (but are not limited to) consignment or thrift stores, garage sales, or family or friends. Other ecologically conscious sources for apparel acquisition include ecologically conscious companies and, in some instances, homemade production of clothing.
- limiting the quantity of apparel acquired. This might occur by purchasing apparel to meet needs and not wants, taking care of clothes so that they last longer, repairing or altering apparel, or reconstructing clothing to update the style of garments.

Ecologically conscious consumers are people whose consumption behaviors demonstrate a relatively consistent and conscious concern for the environmental consequences related to the purchase, ownership, use of, and disposal of products or services (Henion, 1976).

Environments are “the totality of the physical, biological, social, political, aesthetic, and structural surroundings for human beings and the context for their behavior, growth, and development” (Sontag & Bubolz, 1996, p. 19). The environment of primary interest in this study is the natural physical-biological environment.

Natural Physical-Biological Environment is the biological and physical world in which we live and includes non-human living organisms, as well as air, water, soil, mountains, and fossil fuels.

Environmentally preferable apparel is apparel made from fibers that are organically-grown or are more environmentally sustainable compared to mainstream fibers or has other environmentally preferable attributes.

Environmentally significant behavior can be defined in two distinct ways. The *impact-oriented* definition refers to environmentally significant behaviors that have an impact on the environment and the extent to which the behavior, “changes the availability of materials or energy from the environment or alters the structure and dynamics of ecosystems or the biosphere” (Stern, 2000, p. 408). The *intent-oriented* definition is behavior that, from the actor’s standpoint, is undertaken with the intention of benefiting the environment (Stern, 2000). This dissertation uses the latter definition of environmentally significant behavior.

Rationality is a “style of behavior that is appropriate to the achievement of given goals within the limits imposed by given conditions and constraints” (Simon, 1964, p.573).

Functional rationality refers to the existence of an organization that is structured in such a way that it functions effectively and consistently produces, preserves or increases some good or value (Diesing, 1976).

Substantial rationality is the making of order through individual decisions. It is a style of behavior that considers the possibilities and limitations of a situation and reorganizes it in order to effectively produce, preserve, or increase some good (Diesing, 1976). Substantially rational behaviors are effective in achieving ends or goals because of the selection of appropriate actions.

Procedural rationality refers to cognitive processes used by individuals or organizations to determine the appropriate behaviors for producing, preserving, or increasing some good (Simon, 1976).

Sustainable consumption is consumption that contributes to a high quality of life, efficient use of natural resources, and effectively satisfies human needs while advancing sustainable social, environmental, and economic development.

Values are conceptions of that which is desirable. Values influence the selection from available modes, means and ends of action (Kluckhohn, 1951). Values define and direct goals and they also frame attitudes (Leiserowitz et al., 2006).

Basic Assumptions of the Study

This final section of the chapter lists both the theoretical and methodological assumptions guiding this study.

Theoretical Assumptions

1. Consumption is an anthropogenic source of environmental change.

2. Through consumption, individuals contribute towards environmental change.
3. Apparel consumption is a type of consumption that contributes towards environmental change.
4. Modifying apparel consumption patterns to be more sustainable is desirable.

Methodological Assumption

1. Research participants can accurately recall ecological decision-making processes related to consumption.

CHAPTER THREE

REVIEW OF LITERATURE

This chapter reviews current literature related to ecological consumer decision making. The first section focuses on studies that examine significant factors influencing ecological consumer decision making, including demographics, normative-attitudinal factors, contextual forces, personal capabilities, and the role of habit and routine. The second section of the chapter discusses research related specifically to apparel consumption and the environment.

Ecologically Conscious Consumer Decision Making and Behaviors

Over the last several decades the natural environment has gradually become more important for many consumers. As awareness of the environmental degradation associated with consumption has increased, segments of consumers focused on balancing personal needs and wants with environmental sustainability have emerged. As evidence of this trend, in a recent survey of 20 different nations Leiserowitz, Kates, and Parris (2006) reported that of the respondents 36% had, because of environmental reasons, abstained from purchasing a product, 27% had declined point-of-purchase packaging, and 25% had researched environment-related information about a product.

This section of the chapter reviews literature focused on the variables that influence ecologically conscious consumer behaviors. The four major types of variables, as categorized by Stern (2000) and summarized in Chapter 2 are normative-attitudinal factors, contextual forces, personal capabilities, and habit or routine. The section begins

with a review of how demographic factors influence ecological consumer behavior and then proceeds to discuss literature related to each of Stern's four variable types.

Demographic Factors Influencing Ecologically Conscious Consumer Decision Making

In order to explain ecologically consequential decision making and behaviors, some research examines how demographics influence these actions. Common demographic variables considered include gender, age, socio-economic status (SES), education, total family income, and occupational prestige. Although a number of such studies exist, the findings as to which demographic variables relate to ecologically conscious consumption and the precise nature of the relationships vary considerably.

One of the demographic variables commonly examined in empirical research on ecologically conscious consumer behavior is gender. Some studies support the claim that women are more likely than men to be concerned about the environment and subsequently more likely to intentionally engage in proenvironment behaviors such as purchasing environmentally safe products and recycling (Berkowitz & Lutterman, 1968; Blake, 2001; Granzin & Olsen, 1991; Roberts, 1996; Shrum, McCarty, & Lowry, 1995; Webster, 1975). Stern et al. (1993) postulate that women may hold different beliefs than men about the environmental consequences of consumer behaviors – resulting in differences in terms of environmentally significant behaviors. Despite these findings, other research on the relationship between gender and ecologically conscious consumption determine nonsignificant relationships (Antil, 1984; Balderjahn, 1988; Oom do Valle, Reis, Menzes, & Rebelo, 2004).

Age of the consumer is another commonly considered variable in studies examining the relationship between demographics and ecologically conscious consumer

behavior. Within this body of literature, some studies indicate that ecologically conscious consumption increases with age (Balderjahn, 1988; Berkowitz & Lutterman, 1968; Roberts, 1996). However, other studies indicate the exact opposite relationship and assert that ecologically conscious consumers tend to be younger in age (Anderson & Cunningham, 1972; Anderson, Henion, & Cox, 1974; Granzin & Olsen, 1991). For example, in their study examining household energy conservation behaviors, Black, Stern and Elworth (1985) determined a positive relationship between age and household temperatures. However, this could be more a reflection of health concerns and changes in thermal tolerance than a measure of ecological consciousness. Finally, there are also some studies that find a nonsignificant relationship between age and ecologically conscious consumption (Oom do Valle et al., 2004; Tucker, 1980).

Similar to age, the degree to which the variables of socioeconomic status, education, occupational prestige, and income can explain variance in ecologically conscious behavior also varies from one study to the next. Berkowitz and Lutterman (1968), Anderson and Cunningham (1972), Anderson et al. (1974), Tucker (1980) and Granzin and Olsen (1991) all find a positive relationship between SES and ecologically conscious behavior but the same relationship is nonsignificant in Brooker, (1976), Antil (1984), and Balderjahn (1988). Although no studies reviewed indicate a negative relationship between education and ecologically conscious behavior, some studies demonstrate that the relationship is positive (Anderson et al., 1974; Balderjahn, 1988; Berkowitz & Lutterman, 1968; Granzin & Olsen, 1991; Roberts, 1996) and others that it is nonsignificant (Anderson & Cunningham, 1972; Antil, 1984; Kinnear, Taylor, & Ahmed, 1974; Oom do Valle et al., 2004; Webster, 1975). The same is true for the

variable of occupational status, with Anderson and Cunningham (1972), Anderson et al. (1974) and Granzin and Olsen (1991) all indicating a positive relationship and Kinnear et al. (1974), Webster (1975), Antil (1984), Balderjahn (1988), and Roberts (1996) a neutral one. Finally, most of the reviewed studies point to income as being positively related to ecologically conscious behavior (Balderjahn, 1988; Berkowitz & Lutterman, 1968; Granzin & Olsen, 1991; Kinnear et al., 1974; Webster, 1975). However, several found nonsignificant relationships (Anderson & Cunningham, 1972; Anderson et al., 1974; Antil, 1984; Tucker, 1980); and one of the more recent studies examining this (Roberts, 1996) actually found a negative relationship between consumers' income and their ecologically conscious behaviors.

As indicated above, a majority of studies interested in demographics and ecologically conscious behavior find at least several of the main demographic variables important for explaining variance in ecologically conscious behavior. However, Kinnear et al. (1974) found no demographic variables other than income to be significant in terms of an individual's ecological consumer behavior. Even more extreme, of the demographic variables hypothesized as predictors of ecologically conscious behaviors, including age, income, education, sex, and occupation, Antil (1984) found no variables to be significant.

The above review of literature, summarized in Table 2, demonstrates a lack of agreement among researchers as to the power of demographics in explaining ecologically conscious behavior. It is evident that although many studies have found demographics able to explain some variance in ecologically conscious consumer behavior, the conclusions as to which demographic variables are important have been scattered and

Table 2. *Summary of Demographic Variables Influencing Ecologically Conscious Consumer Behavior*

Study	Dependent variable			Relationship of demographic variables to dependent variable					
	Construct	Indicator	Sample	Age	SES	Gender	Education	Income	Occupational prestige
Berkowitz & Lutterman (1968)	socially responsible consumer	8 item Social Responsibility (SR) Scale	766 Wisconsin adults	+	+	female	+	+	n/a
Anderson & Cunningham (1972)	socially conscious consumer	8 item Social Responsibility Scale	412 Austin, TX adults	-	+	n/a	o	o	+
Anderson, Henion, & Cox (1974)	socially and ecologically responsible consumers	7 attitudinal scales (including SR Scale)	550 adults from a South-western city	-	+	n/a	+	o	+
Kinnear, Taylor, & Ahmed (1974)	ecological concern	index of ecological concern	500 Ontario adults	o	n/a	n/a	o	+	o
Webster (1975)	socially conscious consumer	Socially Conscious Consumer Index; self-reported measure of recycling	231 New England adults	o	n/a	female	o	+	o

Table 2 (continued).

Study	Dependent variable			Relationship of demographic variables to dependent variable					
	Construct	Operationalization	Sample	Age	SES	Gender	Education	Income	Occupational prestige
Brooker (1976)	socially conscious consumer	observation of detergent purchase; self-report of unleaded gasoline	99 female consumers in Chicago-area grocery stores	n/a	o	n/a	n/a	n/a	n/a
Tucker (1980)	environmentally responsible consumer	observation of detergent purchase; personality and attitudinal scales; Social Responsibility Scale	139 adult females in State College, PA	o	+	n/a	n/a	o	n/a
Antil (1984)	socially responsible consumer	40 item Socially Responsible Consumption Behavior Scale	690 American adults	o	o	o	o	o	o
Black, Stern, & Elworth (1985)	conservation behaviors	12 item scale of personal variables and behavioral patterns	478 households in Massachusetts	- (indirectly)	n/a	n/a	+	n/a	n/a
Balderjahn (1988)	ecological concern	5 dimensions of ecologically responsible consumption patterns	791 West German adults	+	o	o	+	+	o

Table 2 (continued).

Study	Dependent variable			Relationship of demographic variables to dependent variable					
	Construct	Operationalization	Sample	Age	SES	Gender	Education	Income	Occupational prestige
Granzin & Olsen (1991) protection	participation in environmental	donating of used items	348 American adults	-	+	female	+	+	+
Shrum, . McCarty, & Lowry (1995)	green consumer	DDB Needham Life Style Study; self-reported green buying	3264 American adults	n/a	n/a	female	n/a	n/a	n/a
Roberts (1996)	ecologically conscious consumer	30 item Ecologically Conscious Consumer Behavior Scale	582 American adults	+	n/a	female	+	-	o
Oom do Valle, et al. (2004)	recycling behaviors	environmental beliefs, awareness, and attitudes scale	2093 Portugal households	o	n/a	o	o	n/a	n/a

Note: + (positive relationship); - (negative relationship); o (non-significant relationship); n/a (variable not investigated in the study)

inconsistent; and as a result, as suggested by Roberts (1996), “a schizophrenic profile of the demographic characteristics of the green consumer” (p.219) has emerged. Many reasons may contribute to this lack of empirical consistency. For example, from study to study there is a lack of uniformity in both the types of behaviors and populations included and the indicators selected for the dependent variables; and as Granzin and Olsen (1991) propose,

The marginal success of demographic variables in distinguishing an individual’s degree of participation may reflect the greater concern for environmental issues that has emerged throughout society in the last decade...there are now members of all demographic categories who are willing to participate in environmental activities” (p.20).

Black et al. (1985) also believe the inconsistency in studies between demographics and behaviors is because demographic variables most often only indirectly influence behaviors and do not directly determine consumer choice. What is clear is that, based on the inability of demographics to predict environmentally significant consumer behaviors with any reliability, other factors and variables must also play a role in determining behaviors, and a thorough understanding of ecological decision making requires consideration of these variables.

Normative-Attitudinal Factors Influencing Ecologically Conscious Consumer

Decision Making

Due to the lack of empirical consistency as far as profiling ecologically conscious consumers in terms of demographic variables, normative-attitudinal factors are thought by some to be better predictors (Anderson & Cunningham, 1972; Antil, 1984; Roberts, 1996; Webster, 1975). In fact, several studies examining both demographic and normative-attitudinal variables found the normative-attitudinal factors to be significantly

more effective at differentiating between ecologically and non-ecologically conscious consumers (Anderson & Cunningham, 1972; Antil, 1984). Within the category of normative-attitudinal factors, variables commonly examined within the literature include values, attitudes, beliefs, motivations, and preferences, with the precise variables examined varying among studies. This section of the literature review focuses on examining research related to the variables of values, attitudes, and beliefs.

Values

Values act as antecedents to behaviors because values are deeply integrated within an individual. As stated in Dunlap, Grieneeks, and Rokeach (1983) “Once a value is internalized it becomes...a standard or criterion for guiding action” (p.160). Therefore, a common expectation is that a consumer’s value orientation is a core factor influencing consumer decisions. A frequent assumption is that consumers whose values include environmental sustainability and living in harmony with nature are more likely to engage in proenvironmental behaviors than consumers with stronger egocentric value orientations. In fact, the relationship between values and behaviors is complex; and literature only partially supports this assertion.

A number of studies support the idea that people whose values include environmental stewardship are also more concerned about environmental quality and are more likely to make ecologically conscious decisions than people who do not highly value the environment (Axelrod, 1994; Blake, 2001; Dunlap et al., 1983; Grunert & Juhl, 1995; Karp, 1996; Nordlund & Garvill, 2002; Poortinga, Steg, & Vlek, 2004; Schultz & Zelezny, 1999). For example, studies by both Hogan (1976) and Hungerford (1978) determined that the value of eco-consciousness is a meaningful predictor of household

energy conservation behaviors and actual household energy consumption, respectively. Additionally, Poortinga et al. (2004) found individual values to explain policy support for environmental protection through government imposed regulations; and in Grunert and Juhl (1995) environmentally motivated values influenced the purchasing of environmentally preferable consumer products such as organic food.

Offering a different perspective on the relationship between values and behaviors is Stern et al. (1993) and Stern and Dietz (1994). Guided by the three value orientations overviewed in Chapter Two of this dissertation (egoistic, social-altruistic, and biospheric), Stern and his colleagues propose that, under a particular set of circumstances, individuals holding any of the three value orientations may engage in environmentally preferable behaviors.

People would commit themselves to action when proenvironmental personal norms were activated by beliefs that an environmental condition has adverse consequences for self and close kin (in the egoistic value orientation), for other human beings (in the social-altruistic orientation), or for other species or ecological systems (in the biospheric orientation) (Stern & Dietz, 1994, p. 72).

According to this research, the propensity to engage, or not engage, in a proenvironmental behavior is not a matter of whether or not the individual values the environment. Instead, the behavior is relative to how it protects the things of value to the individual. Therefore, “environmental concern...has three distinguishable, although correlated components, “self-interest, concern with others, and concern with other species or natural environments” (Stern et al., 1993, p.339).

Karp (1996) also examined the influence of values on environmentally preferable behaviors such as buying products made from recycled materials, recycling household products, or buying organic food. The study found that consumers who jointly value self-

transcendence and openness to change are the most likely to engage in proenvironmental behaviors. On the other hand, consumers who strongly value self-enhancement and conservation are least likely to engage in such behaviors. Unlike findings by Stern et al. (1993) and Stern and Dietz (1994), Karp found that individuals who hold value orientations that are egoistic in nature are not likely to engage in proenvironmental behaviors – even when there is a link between a particular behavior and self-interest.

In a series of six empirical studies, Verplanken and Holland (2002) found that the influence that a person's environmentally motivated values has on behaviors is dependent on the centrality of those values to the individual's definition of self. Values central to an individual are more likely to result in behaviors congruent with the values than values of less importance to the individual's self-definition. Therefore, this research suggests that fundamental to the relationship between values and behavior is a person's sense of self. From this perspective, when valuing the environment is central to an individual's self definition, those values are more likely to be determinants of behavior than when the environment is more of a peripheral value. Verplanken and Holland also assert that consistency between values and behaviors, even in the case of central values, is further dependent on cognitive activation of the values. Individuals regularly engage in decision making and subsequent behaviors without focusing on how the behavior relates to personal values. Because of this tendency, behaviors are not always congruent with values. However, research by Verplanken and Holland demonstrates that through bringing attention to central values, either through internal or external activations, individuals demonstrate increased congruency between their central values and related behaviors. Based on this research it appears that consistency between values and

behaviors is dependent on the degree of centrality between the values and the self and the activation of central values at the time of the behavior.

Despite a majority of studies finding some type of relationship between values and behaviors, most indications are that the relationship between values and behaviors is probably an indirect one – with the link between values and behaviors mediated through other variables such as attitudes and beliefs, knowledge, or external forces. For example, in their research on recycling behaviors McCarty and Shrum (1994) found that values directly influence attitudes about recycling, and it is the attitudes that determine the recycling behaviors. This relationship is similar to the structural relationship proposed in the Value-Belief-Norm Theory of Environmentalism (Stern et al., 1999), outlined in Chapter Two of this dissertation.

To summarize, empirical research lends support to the claim that values are an important factor influencing ecological consumer decision making. It seems most likely that the influence of values on behavior is indirect but that individuals do, at least some of the time, engage in behaviors consistent with their values. However, the degree of consistency may be dependent on the centrality of the values to the self and the activation of the values at the time of the behavior.

Attitudes and Beliefs

Theory suggests that mediating between values and behaviors are intermediate factors such as attitudes and beliefs. As defined in Chapter Two, attitudes are positive or negative evaluations of the quality(ies) of a specific object or behavior, and beliefs are understandings and perceptions about the world that are often rooted in both values and attitudes. Some of the attitudes and beliefs commonly included for consideration in

studies on ecological decision making include perceived consumer effectiveness, degree of environmental concern, general attitudes about the environment, and political beliefs.

The degree to which consumers believe their behaviors are effective at mitigating environmental impacts and affecting environmental problems, or their perceived consumer effectiveness (PCE), is one of the normative-attitudinal factors that differentiates between consumers' commitment to proenvironmental behaviors (Antil, 1984; Kinnear et al., 1974; Roberts, 1996; Webster, 1975). In a national survey of American adults, Roberts (1996) found that PCE accounts for 33% of the variation in ecologically conscious consumer behaviors. Earlier studies by Antil (1984), Kinnear, et al. (1974), and Webster (1975) produce similar results. Similarly, Balderjahn's (1988) study determined that the more a consumer believes in the power of individual consumers to affect environmental issues, the more the consumer will engage in nonpolluting consumer behaviors such as energy conservation and environmentally responsible purchasing and use of products. These research findings suggest that when consumers are cognizant of environmental issues and believe that they, through their personal behaviors, have the ability to contribute towards solving an environmental problem, they are much more likely to engage in environmentally positive behaviors. Interestingly, in their study, Oom do Valle et al. (2004) found PCE to be nonsignificant in the prediction of household recycling behaviors. However, of the studies reviewed this is the only study that did not find PCE as an important predictor of ecologically conscious behaviors.

A consumer's level of environmental concern is also an important attitudinal variable that differentiates extent of ecologically conscious behaviors among consumers. The general conceptualization of environmental concern is the degree to which an

individual is troubled about environmental vulnerability, the ecological repercussions of this vulnerability, and the inadequate nature of actions taken to ensure environmental protection. Predictably, most studies find that consumers who are more likely to be concerned about environmental issues display higher levels of ecological consciousness within their consumer behaviors (Antil, 1984; Blake, 2001; Borden, Fisher, & Doyle, 1977; Fraj & Martinez, 2007; Grunert & Juhl, 1995; Hogan, 1976; Hungerford, 1978; Minton & Rose, 1997; Roberts, 1996; Schlegelmilch, Bohlen, & Diamantopoulos, 1996). For example, in their study Fraj and Martinez (2007) found that consumers' who are concerned about environmental issues such as pollution are "predisposed to act in an environmentally friendly manner" (p.32). However, Schlegelmilch, et al. (1996) caution that the strength of the relationship between environmental concern and behavior depends on the actual behavior; and Oom do Valle et al. (2004) find that general environmental concern is not a significant predictor of the specific proenvironmental behavior of household recycling. Instead, this study determined that specific attitudes about recycling, and not general environmental concern, explain the significant difference between households who do and do not recycle.

In another study examining the relationship between attitudinal factors and ecological decision making, Brooker (1976), utilized Maslow's (1970) hierarchy of needs and suggested that ecologically conscious consumers are more self-actualized and psychologically healthy than nonecologically conscious consumers. According to Maslow, the closer an individual comes to self-actualization, the less impeded that person is by self-concern. Brooker's postulation is that because a self-actualized consumer is free from self-concern, the individual will be more likely to engage in consumer

behaviors that are altruistic and socially responsible in nature. The conclusions of the study are that, “the more psychologically healthy the person is, the more likely it will be that the person will take [consumer] action which recognizes the needs of others in the society” (p.110). Along similar lines, in a study focusing on conservation behaviors, Granzin and Olsen (1991) found that consumers who donate items (including clothing) for reuse instead of discarding the items are associated with more altruistic and prosocial values than consumers who do not.

In their study, Shrum, McCarty, and Lowery (1995) examine specific attitudes and beliefs of self-defined ecologically conscious consumers and how they differ from less ecologically conscious consumers. The authors conceptualize ecologically conscious consumers as being individuals for whom environmental issues influence their consumer behavior, and the study found that these types of consumers have significantly different attitudes and beliefs than consumers less influenced in their purchase decisions by environmental factors. For example, the ecologically conscious consumers define themselves as being opinion leaders often interested in purchasing new-to-the-market products. They are also consumers who regularly seek out product information, consider themselves careful consumers, are price sensitive, and are not likely to purchase products impulsively. These characteristics differentiate ecologically conscious consumers from other consumer groups.

Some of the research examining the influence of attitudinal factors on environmentally significant behaviors also considers the political views of these consumers and their degree of conservatism or liberalism. Two such studies determined that ecologically conscious consumers are less conservative than nonecologically

conscious consumers (Anderson & Cunningham, 1972; Anderson et al., 1974; Dunlap, 1975), and Dunlap also found individuals who identified themselves as being Republican to have lower rates of proenvironmental behaviors than self-identified Democrats. Therefore, there is some evidence to support the assertion that political attitudes and beliefs distinguish between ecologically conscious and nonecologically conscious consumers. However, one study (Antil, 1984) found only a weak relationship existing between ecologically conscious consumption and conservatism. While the study found ecologically conscious consumers to be less conservative than other consumers the difference was not significant enough to describe ecologically conscious consumers as extremely liberal.

Although many studies use attitudinal factors to profile and describe ecologically conscious consumers, other research is less conclusive. For example, while Balderjahn (1988) determines some attitudes and beliefs (such as a belief in the power of the individual and positive attitudes towards ecologically conscious living) are more likely within consumers who engage in proenvironmental behaviors, the study still concludes that, “no general picture of the ecologically concerned consumer can be drawn from our results” (p.56).

Despite the fact that research has made correlations between the attitudes and behaviors of ecologically conscious consumers, there is other evidence indicating that proenvironment attitudes often do not result in consumers consistently engaging in environmentally preferable behaviors. Research indicates that a large number of Americans are concerned with the state of the natural environment and believe that a number of environmental problems are very serious. For example, the 2002 Green Gauge

Report found that, of those surveyed, 56% believed water pollution to be an important environmental problem and 52% that global warming was serious. Furthermore, 49% felt that environmental protection laws and regulations in the United States have not gone far enough to protect the environment and natural resources (Roper ASW, 2002). However, despite the fact that a majority of Americans' perceive certain environmental issues as being serious and support environmental protection, it is common for personal behaviors not to be consistent with general environmental concerns and for proenvironmental attitudes not to translate into proenvironmental behaviors (Bamberg, 2003; Nordlund & Garvill, 2002; Roberts, 1996). This disjunction between people's beliefs and attitudes and their subsequent behaviors is what environmental literature commonly refers to as the attitude – behavior gap.

In addition to values and attitudes, many intervening factors, such as contextual forces and personal capabilities, influence and complicate the decision-making process. As a result, environmentally consequential behaviors, including consumption, are not simplistic in nature. The relationship between attitudes and behaviors is further complicated because many of the intervening factors such as laws and regulations or social norms are external to the individual and beyond personal control. In addition to the external constraints intervening between attitudes and behaviors, it is also true that some behaviors are the result of habit. Other behaviors require decisions be made quickly. In both cases, an individual's values and attitudes may not factor into the decision or behavior at all.

In regards to the attitude – behavior gap, Nordlund and Garvill (2002) see some environmentally preferable behaviors as requiring consumers to make decisions about

trade-offs between short-term personal interests and longer-term environmental ones. For example, many environmentally preferable consumer products carry higher prices than conventional products. Therefore, in this instance consumers must make decisions that require trading off between personal finances and purchasing products that are ecologically conscious. Roberts (1996) also suggests that the higher price of environmentally preferable products is one of the primary reasons for incongruence between consumers' attitudes and behaviors. Other trade-offs with which consumers may be confronted include (but are not limited to) availability of products, convenience of purchasing products, quality of products, or a reduction in quality of living if, for example, the house is kept cooler or warmer in order to conserve energy. "Thus, in everyday life, individuals repeatedly face choices where their decisions have positive consequences for themselves and negative consequences for the environment, or negative consequences for themselves and positive consequences for the environment" (Nordlund & Garvill, 2002, p. 742).

Furthermore, environmental decisions involve what Pfister and Bohm (2001) refer to as a dissociate of positive and negative consequences which may also affect the decision-making process and lead to a gap between attitudes and behaviors. Usually consumers experience the positive, personal benefits of purchasing mainstream products relatively soon after making the purchase. Unfortunately, there is likely a delay in the negative environmental consequences associated with that purchase and in fact the environmental risks of consuming the product may never be tangible for the consumer (Pfister & Bohm, 2001). Roberts (1996) states that in addition to the decisions facing consumers with regard to balancing short and long term interests, the attitude – behavior

gap may also be the result of consumer confusion about environmentally responsible products or the products simply not being available for purchase.

Bamberg (2003) asserts that, “the weak direct relationship between general environmental concern and specific environmental behaviors is due to an inadequate understanding on the part of researchers of how general attitudes influence specific behaviors” (p.30). According to Bamberg, general attitudes such as environmental concern are not good predictors of specific behaviors because general attitudes only indirectly influence behavior. Further, Bamberg also demonstrates that while general attitudes may be poor predictors of specific behaviors, situation specific attitudes are effective determinants of specific behaviors. Therefore, the attitude – behavior gap may be at least partially explained through research design.

To summarize, there are a number of studies focused on understanding ecologically conscious consumers in terms of normative-attitudinal factors, including consumers’ values, attitudes and beliefs. It is apparent that these studies provide some evidence that relationships exist between consumers’ normative-attitudinal factors and ecologically conscious consumer behaviors. However, there is also clearly some inconsistency between the studies as to which variables are important and how the variables influence consumer behavior. Furthermore, the fact that normative-attitudinal factors such as environmentally motivated values and proenvironmental attitudes do not always result in consumer behaviors congruent with these values and attitudes supports the idea that other variables, such as the social context and personal capabilities, are also important within the process of ecological decision making.

Contextual Forces Influencing Ecologically Conscious Consumer Decision Making

Consumers do not make decisions or behave in isolation from the broader social context; and to a large degree, individual functioning is a product of social, economic, and cultural experiences. Therefore, these contexts influence the ecological consumer decision-making process; and to understand ecological consumer decision making, it is important to consider the influence that contextual forces have on ecological decision making. The contextual forces considered as a part of this review of literature include cultural level values, geographical location, regional environmental issues, and micro-level contextual conditions such as home ownership.

As previously discussed in this dissertation, it is rational to assume that, to at least a certain degree, national or cultural level values precede individual values, with these higher order values, through the process of socialization, influencing individual values. Broad cultural level values reflect a society's shared conceptions of morality, and they contribute towards the formation of more personal values. Therefore, cultural values provide at least an initial context for understanding environmental values, decision making, and behaviors at the individual level.

Oreg and Katz-Gerro (2006) conceive cultural level values as antecedent to other determinants of behavior. Drawing on previous thinking by Ingelhart (1977) and Schwartz (1994), Oreg and Katz-Gerro examine whether or not countries that have cultures emphasizing post-materialistic and harmony values⁴ also have high individual support for environmental protection compared to countries without these cultural level values. Through a sample of 27 different countries, the research found that the promotion

⁴ A society adopting harmony values emphasizes integrating individual and societal activities with the rest of the world while not contributing to exploitation.

of harmony values within a country is not predictive of individuals engaging in ecologically conscious behaviors such as recycling or financially supporting environmental protection. However, post-materialism values at the country level were significant predictors of participation in ecologically conscious behaviors. Based on these findings the conclusion of the authors is, “that the culture within which individuals behave constitutes a meaningful context for the creation of the attitudes and beliefs that ultimately guide behavior” (p.466).

Ingelhart (1995) also examined the relationship between national level values and individual support for environmental protection. The study concludes that most nations that have high post-materialism values are also generally more in favor of environmental protection than nations with materialistic values – although there are a few countries, like Russia, that demonstrate no relationship between national level values and degree of support for environmental protection. Ingelhart still asserts though that, for the most part, whether or not a country holds post-materialistic or materialistic values at the national level does affect environmental attitudes of individuals and that countries with post-materialistic values are more supportive of environmental protection than countries with materialistic values.

Schultz and Zelezny (1999) challenge the above studies and the claim that environmental concern is stronger in developed countries with post-materialistic values than in poorer and less developed countries. Citing empirical evidence comparing non-Hispanic residents of the United States (a post-materialist country) to Hispanics from developing nations, the authors assert that Hispanics from developing nations consistently report higher levels of environmental concern compared to non-Hispanic

residents of the United States. Further evidence that post-materialistic nations may not have higher levels of concern about environmental issues are provided in studies by Dunlap, Gallup, and Gallup (1993) and Dunlap and Mertig (1995). The finding of Dunlap et al. (1993) was that 11% of respondents in the United States believe the environment to be the most important issue facing the nation, while 29% of Mexican and other Latino respondents outside the United States believed it to be the most important issue. Additionally, Dunlap and Mertig, when analyzing data from 24 different countries, found a negative correlation between nations' GDP and support for protecting the environment.

As evidenced by the above studies, the precise relationship existing between cultural level values and environmental attitudes is ambiguous. Also uncertain is whether countries with post-materialism values are more concerned about environmental issues than other countries. However, what research does make evident is that some manner of a relationship does exist between cultural-level values and individuals' environmental attitudes.

Another contextual force thought to influence ecological decision making is the geographical context surrounding the consumer (Aitken, McMahon, Wearing, & Finlayson, 1994). Individuals experience different environmental conditions as their geographical location changes, and many environmental issues vary in type and severity between regions. For example, a study by Blake (2001) uses objective measures of regional pollution levels to understand how geographical location and differing environmental conditions influence individual behavior. The results of the study strongly support the hypothesis of a positive relationship existing between individual concern about environmental conditions and regional pollution levels. The study also

substantiates the existence of a relationship between the type of action individuals engage in and their geographical and environmental contexts. In this study, individuals were more likely to engage in environment-related political action in regions where the cause of the area's environmental degradation was clear.

There is also some research exploring the question of whether or not subjective perceptions of environmental degradation in an individual's immediate, near environment influences engagement in environmentally significant behaviors; however, the results are conflicting. A study by Baldassare and Katz (1992) indicates that individuals are more likely to engage in proenvironmental behaviors such as recycling when they perceive personal health risks from circumstances in their immediate, natural environment. However, both Rohrschneider (1988) and McAllister (1994) determined that perceptions about environmental degradation in the near environment do not consistently result in individual support for environmental protection. One possible explanation for these differences is that an individual's attitudes and beliefs about environmental issues in his or her immediate environment may encourage the engagement in proenvironmental behaviors on the individual level but those attitudes and beliefs do not transfer to a larger environmental concern and support for more macro level environmental protection policies (Blake, 2001).

Compared to broader contextual forces like cultural values and geography, a study by Black et al. (1985) proposes that micro level contextual forces, because of their impact on attitudinal factors, also affect ecological consumer decision making. Within this study, contextual forces found to influence household energy conservation behaviors include home ownership, the ages of the people living in the household, the size of the home, and

energy costs. For example, compared to renters, consumers who own their homes are more likely to invest in home improvements designed for energy conservation; and when energy costs are high, consumers are more likely to make low-cost energy efficiency improvements in their homes. Likewise, as both home size and energy costs increase, more consumers engage in other energy conservation behaviors such as lowering hot water temperatures or turning off lights. In all of these instances, self-interest appears to be the primary motivating factor behind the behaviors. The study also found that higher temperatures are more common in households with older people and with people who are frequently at home during the day.

Finally, a study by Axelrod (1994) suggests that contextual forces and value orientations interact, and the influence that context has on the decision-making process depends on an individual's value orientation. This study, presented research participants with ecological dilemmas and asked them to make decisions to resolve the dilemmas. The dilemmas contained manipulated contextual information such as information about economic need or social pressures. The study determined that the contextual manipulations influence individuals with a value orientation that emphasizes economics but not individuals with socially- or universally-oriented values. Therefore, this study indicates that contextual forces do not have the same influence within the decision-making process for all individuals and is partially dependent on an individual's value orientation.

Because humans are in almost constant interaction with natural, human-built, and social-cultural environments, it is not surprising that contextual forces from these environments influence the ecological decision-making process. While normative-

attitudinal factors are certainly important within ecological decision making, consideration of contextual factors such as cultural level values and geography are also important in understanding ecological decision making and encouraging ecologically conscious behaviors.

Personal Capabilities Influencing Ecologically Conscious Consumer Decision Making

The third type of variable that Stern (2000) identifies as influential in ecological decision making is personal capabilities. Examples of such capabilities include knowledge, skills, and access to time and money. In order to understand the role personal capabilities play in the ecological decision-making process, literature sometimes examines demographical indicators such as education, occupation, and income. However, since a previous section in this chapter discussed these indicators, this section focuses on the personal capability of knowledge.

A prevailing perception is that a lack of sufficient knowledge about environmental issues is one of the reasons why consumers make decisions leading to behaviors that are not ecologically conscious. According to Thøgersen (2000) there are a number of reasons why limited knowledge may act as a constraint. First, consumers may be unaware that a particular behavior is even associated with negative environmental impacts. Second, while consumers might be cognizant of the environmental impacts associated with different behaviors, they may be uncertain of the exact nature of the impacts and thereby not understand the nature of the necessary behavior change. Finally, while some consumers may be aware that a particular behavior is negative for the environment, they may not know how to change their behaviors in order to be more environmentally sustainable.

There is considerable evidence that ecologically conscious consumers have more knowledge about environmental issues when compared to other consumers. For example, Thøgersen (2000) examines how a lack of environmental knowledge may prevent formation of environmental attitudes and engagement in environmentally preferable behaviors. This study concludes that knowledge is one important reason why consumers make unsustainable choices and that the more knowledge a consumer has about an environmental issue, the more likely the individual is to engage in an environmentally preferable behavior. A study by Antil (1984) presents similar relationships; and similarly, Henion (1972) concludes that when consumers are informed about the environmental consequences of high phosphate content detergents, they are more likely to purchase environmentally safe detergents than consumers who are not provided with the information. Finally, in their study, Granzin and Olsen (1991) found that knowledge about environmental protection is a significant predictor of some environmental behaviors such as walking for conservation purposes or recycling household waste.

Not only does research support the assertion that consumers who understand the environmental impacts of certain behaviors are more likely to engage in ecologically conscious behaviors, but some research also suggests that it is just as important for consumers to understand *how* to engage in behaviors with lower environmental impacts. For example, a study by DeYoung (1988-89) discovered that the only significant differences between recyclers and nonrecyclers of household wastes were their level of knowledge about how to recycle and perceptions about the difficulties of recycling.

In their study, Borden and Schettino (1979) tested the relationships between environmental concern, environmental knowledge, and environmentally consequential

behaviors. According to the study, a high level of concern about the environment does not consistently translate into a person actively seeking out information related to the environment. The study also indicates that the reverse is true; as individuals' increase their knowledge about environmental issues, they do not necessarily gain an increased concern for the environment. Additionally, in contrast to previously reviewed literature, the study finds that increased knowledge about environmental conditions does not necessarily result in increased participation in proenvironmental behaviors.

Stern (1999) considers possible explanations as to why knowledge may not translate into behaviors. Accordingly he states that providing consumers with information and increasing their understanding of the impacts of environmentally significant behaviors may sometimes encourage consumers to engage in behaviors that are positive for the environment. However, the commitment to environmentally preferable behaviors depends on the effectiveness of both the design and delivery of relevant information to the consumer. Furthermore, Stern also establishes that when there are considerable external constraints on particular behaviors, the relationship between knowledge and behavior is much less certain. For example, a consumer may know that buying organically-grown food is environmentally beneficial, and the individual may even know where to buy organic products, but the higher cost of the food acts as a constraint on the behavior and, as a result, behavior modification does not occur.

Knowledge of environmental issues associated with particular behaviors and of environmentally preferable alternatives is a personal capability important within ecological decision making and the behaviors that follow. While some research indicates that increased environmental knowledge leads to ecologically conscious decision making,

that relationship is less apparent in other studies. It seems reasonable to state that the adoption of behaviors that are ecologically conscious at least partially depends on knowledge and awareness about environmental issues.

The Role of Habit or Routine in Ecologically Conscious Consumer Decision Making

While ecological consumer decision making is in part the result of interactions between the variables of normative-attitudinal factors, contextual forces, and personal capabilities, these variables are not always influential. This is because, as a result of habit or routine, on a daily basis consumers engage in behaviors that actually involve very little decision making (Dahlstrand & Biel, 1997).

On a day-to-day basis, many of the behaviors that consumers display are the result of habit or routine. For example, when purchasing products like food or household cleaning solutions many individuals will not actively engage in a decision-making process when selecting a brand to buy. When the behavior is the result of habit or routine consumers are likely to purchase the brand that they always buy or the brand with the lowest price. Because of the role habit plays in consumer behavior, many behaviors involve very little deliberation or consideration of how their personal values, attitudes, and beliefs relate to their behaviors. Therefore, in situations where a habit is strong, behaviors may be incongruent with normative-attitudinal factors like values and attitudes without the consumer even recognizing the inconsistency (Dahlstrand & Biel, 1997).

Research demonstrates that when a consumer performs a routine behavior, the individual is often inattentive to new information about the product or other similar products – including information about the products' environmental impacts. Therefore, even when environmental sustainability is highly valued, consumption patterns may be

harmful to the environment because the behavior is habitual, and the consumer is not mindful of the environmental consequences of the behavior (Dahlstrand & Biel, 1997). Dahlstrand and Biel also propose that most consumers will not realize that a behavior is in conflict with their values and attitudes on their own. In this instance it is necessary for an external source to draw attention to the existing dissonance. Because of the influence that habit has on consumer behaviors, any attempts at modifying behavior in the direction of environmental sustainability must also consider how to break routines that are environmentally harmful and cultivate new, environmentally sustainable habits.

This section of the chapter highlighted the significant variables that influence ecological decision making. Along with demographics, normative-attitudinal factors like values and attitudes, contextual forces such as cultural values and physical location, and personal capabilities are influential to the decision-making process. In understanding ecological decision making and the fostering of this behavior within consumers, a thorough consideration of all these variables is essential.

Apparel Consumption and Environmental Research

Consumer behavior related to apparel consumption is an area not extensively investigated by researchers examining ecological decision making. This final section of the chapter reviews the small body of literature that explores aspects of ecologically significant apparel consumption.

One of the first studies to examine ecological issues in relation to apparel consumption was Stephens (1985). By focusing on apparel acquisition and discard behaviors, this study sought to understand both the attitudes and behaviors related to

ecologically conscious clothing consumption and determine characteristics of ecologically conscious apparel consumers. The major finding of the study was that consumers who are concerned about the environment associate apparel consumption with increased environmental vulnerability. Furthermore, those who understand how apparel consumption affects the environment try to decrease clothing waste through behaviors such as purchasing second-hand clothing, recycling clothing, and purchasing classically styled garments. However, Stephens also learned that awareness of the environmental consequences associated with apparel products is less than with other products such as gasoline and soft drink bottles. Finally, Stephens concludes that compared to other consumers, apparel consumers who engage in ecologically conscious apparel consumption behaviors have higher educational levels and are older in age.

Another early study exploring the relationship between environmental attitudes and apparel consumer behaviors is by Shim (1995). This study examined the influence that consumers' environmental attitudes and recycling behaviors have on their patterns of clothing disposal. The clothing disposal patterns examined in the study were resale to a second-hand store, donation to a clothing charity, reuse, and discarding. Understanding the motivations underlying a consumer's disposal patterns was of particular interest in the study. A second objective was to determine how variables related to economics, the environment, convenience, or a lack of awareness influenced the disposal patterns. The study established that a consumer's environmental attitude had a positive impact on charity motivated donation, environmentally motivated donation, and environmentally motivated reuse. Additionally, environmental attitudes had a negative impact on convenience discarding and unawareness discarding. Therefore, the conclusion of Shim

was that environmental attitudes are influential in clothing disposal patterns. Consumers with proenvironmental attitudes are likely to consider the environmental impacts when disposing of their garments and these consumers will find ways to dispose of their clothing in such a way as to minimize environmental impact.

Several other studies also explore relationships between apparel consumption and environmental attitudes. Through a nationally administered survey of American adult female consumers, Butler and Francis (1997) examined factors influencing the purchasing of clothing and the relationships between general environmental attitudes, clothing related environmental attitudes, and environmental clothing purchasing behaviors. Although consumers in the study held environmental attitudes that were at least somewhat proenvironment, they were more neutral in regards to their attitudes about clothing and the environment. In fact, a large majority of the consumers in the study never, or only sometimes, considered the environmental impacts of their apparel purchasing behaviors. Butler and Francis concluded that the existing discrepancy between apparel consumers' attitudes and purchasing behaviors may be because apparel consumers make purchasing decisions based on a variety of different factors (such as price, style, fit, and fashion) that outweigh any environmental attitudes held by the consumer.

Like Butler and Francis (1997), Kim and Damhorst (1998), focused on the relationships between environmental attitudes and apparel consumption behaviors. However, this study also assessed the relationship between environmental awareness and knowledge and apparel consumption behaviors, a variable not factored into the Butler and Francis research. The study accomplished this by investigating the level of

knowledge consumers have about environmental issues related to textile and apparel production and the relationship between general environmental concern (NEP), environmental apparel product knowledge ($EA_{\text{Knowledge}}$), general environmentally responsible behavior (EG_{Behavior}), and environmentally responsible apparel consumption behavior (EA_{Behavior}). The environmentally responsible apparel consumption behaviors considered in the study included the acquisition of second-hand apparel, apparel that was environmentally preferable, and avoidance of apparel products for environmental reasons.

According to the conclusions of Kim and Damhorst (1998), depicted in Figure 5, there was only a limited degree of proenvironment apparel consumption among the respondents. The study also found that the research participants were not highly involved in general proenvironment behaviors in other areas of their life, and there were only low levels of knowledge about environmental issues in the textile and apparel industries. The only strong relationship between variables proved to be between the variables of EG_{Behavior} and EA_{Behavior} . Therefore, the study concludes that, “many intervening factors disrupt a clear and direct predispositional path between attitude and consumer behavior,” and “environmental concern and environmental knowledge are not strongly related to specific environmental behaviors for apparel consumption” (p.132).

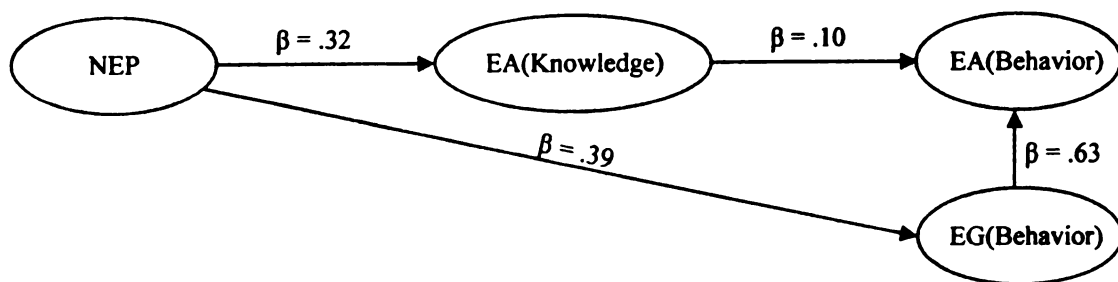


Figure 5. Regression analysis results of Kim and Damhorst (1998).

A final study resulting in increased understanding of environmental attitudes and apparel consumption behaviors is a recent study examining consumer preferences for cotton apparel in which a portion of organically-grown cotton fiber is blended with mainstream cotton fiber (Hustvedt, 2006). This study determined that there are market segments that use the attribute of organic content in their apparel acquisition decisions. Furthermore the study concluded that while some consumers desire, and are willing to pay price premiums for 100% organically-grown cotton apparel, another segment of consumers are more likely to acquire apparel where the organically-grown cotton is blended with mainstream cotton – resulting in lower prices compared to 100% organically-grown cotton apparel. This study also found that compared to consumers indifferent to organic cotton, market segments that use organic content of apparel to inform their apparel acquisition decisions are more aware of the environmental impacts of clothing products, supportive of organic agriculture, and have more positive attitudes towards purchasing organic cotton apparel.

In another study, Hines and Swinker (1996) investigated factors that influence consumers' willingness to purchase apparel containing recycled polyester fibers. The study used six identical sweatshirts with manipulated information on the garment tags. The researchers labeled three of the sweatshirts as containing 100% polyester and the other three as containing 100% recycled polyester. After pairing the sweatshirts into three sets, the researchers manipulated the price of the sweatshirts. The first set priced the recycled garment higher, the second set had the non-recycled garment priced higher, and in the third set both garments were the same price. So that the subjects would not determine the purpose of the study, the study also included three additional product sets

with different factors manipulated on the labels. The study determined that 53% of the subjects always selected the lower priced garment and only 27% always picked the recycled fiber garment. However, when the price was constant between the two shirts, 66% selected the recycled polyester sweatshirt. The results of this study suggest that consumers are willing to purchase apparel made from recycled fibers, but the higher prices of the products act as an external constraint on their behavior.

In another related study, Paff Ogle, Hyllegard, and Dunbar (2004) aimed to better understand consumer behavior within a retail environment⁵ that applied sustainable building principles into the physical design of the building (such as the utilization of environmentally preferable building materials). The study also questioned whether the sustainable nature of the store influenced consumers' intentions to shop at the store in the future. Results of the study demonstrate that, in addition to the sustainable nature of the retail environment, a variety of other factors affect consumers' future purchase intentions. Specifically, factors such as the store atmosphere, merchandise assortment, consumer lifestyle orientations (activities they are involved in), and demographics, all contribute towards shaping intentions. Therefore, the study shows that consumer behavior is multifaceted and that an ecologically conscious retail building is not the only important factor in making patronage decisions.

According to the Council for Textile Recycling (2003) only approximately 15% of post-consumer textile waste that enters municipal solid waste streams is recovered by the textile recycling industry and reused or recycled. Within that 15% of recycled post-consumer textile product waste 35% is resold as used clothing, 33% is reprocessed into

⁵ The retail company examined within this study specializes in apparel and equipment for outdoor enthusiasts. While it is not exclusively an apparel company, clothing is a significant product category within the company and retail stores.

fibers, 25% is used as rags or wipers, and 7% is unusable and sent to a landfill. Therefore, due to the low rate of post-consumer textile product recycling, the end-of-life fate for most textile products is a landfill. Since, through second-hand clothing stores and other avenues it is possible to recycle clothing and keep it out of landfills, the question remains as to why consumers are not engaging more consistently in ecologically conscious behaviors regarding the disposal of their garments.

As suggested by Nordlund and Garvill (2002), engagement in ecologically conscious behaviors is partially influenced by the convenience of performing the behavior, and an important reason why consumers do not recycle household waste, including apparel and textiles, is that consumers consider the process inconvenient and time consuming. Therefore, in order to remove the external barriers of convenience and time, many communities have established curbside recycling programs; as of 2002, the United States had over 9000 curbside programs in operation, with approximately half of all Americans having access to such programs (Environmental Protection Agency, 2006d). Unfortunately most of these programs are limited to recycling materials like glass and paper and do not include textile recycling. A study by Domina and Koch (2002) found that one of the most important contributors towards the low rate of post-consumer textile recycling is that textile recycling is not available as part of most curbside recycling programs. This study also concluded that the willingness to recycle more materials depends on the expansion of curbside recycling programs to include items like apparel and textiles.

In another attempt to better understand constraints on post-consumer apparel recycling, Daneshvary, Daneshvary, and Schwer (1998) examined variables that

influence support for including textile recycling within curbside programs. The study determined that 62% of the households within the sample supported implementation of this type of a program. The significant determinants of program support were current recycling habits (positively correlated) and political affiliation, with self-identified Democrats being supportive more than self-identified Republicans or Independents. The study also stated that as family size and income increased, approval of textile curbside recycling decreased.

Although not exclusively focusing on ecologically conscious apparel consumption, by examining characteristics of alternative trade organizations' (ATOs) consumers, Dickson and Littrell (1996, 1998) contribute towards the understanding of ecologically conscious consumption. ATOs are a specific type of a socially responsible business that, through policies related to fair trade, sell primarily handicraft and apparel items made by artisans in developing countries. In the first study, Dickson and Littrell (1996) determined that consumers buying from ATOs hold strong society-centered values, are concerned about citizens within developing countries, and that these values and attitudes motivate consumer behaviors and support of ATOs. The study also showed that consumers are generally willing to make some product related sacrifices in order to purchase from the ATOs. In the second study on the ATO consumer, Dickson and Littrell (1998) concluded that ATO consumers are not a homogeneous market segment and that in fact, two distinct segments of ATO consumers exist, with the segments' clothing preferences being the primary distinguishing factor. Creative Ethnics are ATO consumers who prefer a unique and dramatic look and purchase apparel that is ethnic and traditional in style and that has bright colors and elaborate surface designs. On the other hand, Plain and Simple

consumers tend to purchase ATO apparel that have simple surface designs and prefer dark or more neutral colors. This study is important in that it serves to remind both educators and companies that ecologically conscious consumers may still be a diverse group of consumers and not a single market segment.

Dickson (1999, 2000) further contributes towards increased understanding of ecological decision making of the apparel consumer by examining the personal values, beliefs, knowledge, and attitudes of consumers who intend to purchase from socially responsible apparel businesses. Dickson (1999) concludes that a majority of the study's respondents felt they were uninformed about ecological issues within the apparel industry. The study also discovered that a large portion of the consumers in the study were not willing to make sacrifices in order to support ecologically responsible companies and that they would only consider purchasing this type of apparel if it was of high quality, comparatively priced to similar, mainstream products, and if it fit their fashion style. Dickson (2000) also determines that although many Americans remain uninformed about the ecological issues within the apparel industry, consumers who have greater knowledge and concern about the issues are more likely to support ecologically responsible apparel companies than consumers with less knowledge. This is a conclusion contrary to Kim and Damhorst's (1998) finding that environmental knowledge is not strongly related to ecologically conscious apparel consumption. Findings from Dickson also suggest that the consumer's perception about the degree to which consumers believe they will have to make sacrifices in desired attributes of clothing is another important factor in determining why consumers support ecologically conscious apparel companies.

To summarize, there is a small body of research examining environmentally significant apparel consumption and ecologically conscious consumer decision making. Emerging from these studies is a number of important issues. First, there is a general lack of awareness on the part of consumers about ecological issues within the apparel industry and the environmental impacts of apparel consumption; and when purchasing apparel, most consumers rarely consider the associated ecological issues. Consideration of the environment increases when consumers are ready to discard apparel, and proenvironment attitudes do lead to more environmentally responsible clothing disposal patterns. The research also indicates that both price and convenience may be factors constraining consumers from engaging in apparel consumption behaviors that are environmentally positive.

CHAPTER FOUR

RESEARCH METHODS

From the perspective of the apparel consumer, this dissertation is interested in the nature and process of ecological consumer decision making; personal characteristics of ecologically conscious apparel consumers; and the barriers facing apparel consumers in making ecological consumer decisions. In order to increase comprehension of the complex phenomenon of ecological consumer decision making, from the perspective of apparel consumers, this dissertation utilizes qualitative research methods. Because qualitative research is intended to “capture the complexity of the reality we study” (A. Strauss, 1987, p. 10) it is a particularly appropriate approach to investigating the research questions of this dissertation.

This chapter outlines the research methods utilized in this dissertation. The first section describes the study’s population of interest and the process for research participant selection. The chapter then proceeds to explain the qualitative techniques used for data collection. Following the section on data collection is an explanation of data analysis procedures. The chapter concludes by addressing the issues of the study’s trustworthiness.

Population of Interest

This dissertation’s objective of exploring ecological decision making from the perspective of apparel acquisition informed decisions about the study’s population of interest. In order to achieve this objective it is important to target apparel consumers who are already engaging in ecological decision making through their apparel acquisition

decisions and behaviors. Therefore, the population of interest for this study is adult apparel consumers who, during apparel acquisition, take into consideration environmental impacts associated with apparel consumption and attempt to be ecologically conscious in at least some aspects of their apparel acquisitions.

The decision to focus on the population of ecologically conscious, adult apparel consumers is justifiable on several accounts. First, as evidenced by the review of literature in the previous chapter, ecological decision making by apparel consumers is not widely studied. Therefore, a first step to expanding the understanding of ecological consumer decision making is to focus on consumers who are already making ecologically conscious decisions. Second, according to the Consumer Expenditure Survey (United States Department of Labor, 2007) adults between ages of 25 and 54 are spending more on apparel products than any other age group, and the population of interest for this study includes these ages. A final justification for focusing on adult consumers is that many within this population likely are not making decisions only about apparel purchases for themselves, but are also selecting clothing for children and possibly even for elderly parents. Therefore, focusing on increased understanding of the ecological decision making of this group of consumers has the potential to make significant contributions towards encouraging sustainable consumption of apparel products.

Sampling Strategy

This research study involves purposive, criterion-based sampling procedures for selecting research participants. Ritchie, Lewis and Elam (2003) define purposive sampling as a technique by which, “sample units are chosen because they have particular

features or characteristics which will enable detailed exploration and understanding of the central themes and puzzles which the research wishes to study” (p.79).

Ritchie et al. (2003) state that in purposive sampling a set of established criteria informs selection of research participants, and that the selection criteria varies between studies because research objectives and relevant literature inform the formulation of the criteria. The participants should have certain characteristics relevant to the phenomenon of interest; and these may encompass demographics, attitudes, experiences or a range of other characteristics. The sample should also be sufficiently diverse to be able to identify a full range of relevant factors and the contributions of the factors to the phenomenon.

The objectives and research questions for this dissertation inform the selection criteria guiding the study’s sampling plan. The most important selection criterion is the research participants’ consideration of environmental impacts associated with apparel consumption and their attempt to be ecologically conscious in at least some aspects of their apparel acquisition behaviors. The second criterion considered in sampling is gender, with the sampling plan working to achieve representation from men and women. Finally, the study also intentionally strives to include diverse perspectives of research participants, working to include participants that represent a range of occupations and income and educational levels.

Statement on the Use of Human Subjects

The Human Research Protection Program at Michigan State University approved the procedures for protecting research participants involved in this research study on June 7, 2007, agreeing that the design of the study protected the rights and welfare of the voluntary research participants, assured confidentiality of information received from the

participants, avoided possible risks to the participants, and utilized acceptable procedures of informed consent.

Identification of Sample

Selection of a sample for this research study involved several different stages. In order to identify adult apparel consumers who are involved in ecologically conscious apparel acquisition, the first stage of sampling involved the design of a recruitment questionnaire. Second, administration of the questionnaire occurred to individuals who were potential members of the population of interest. Finally, analysis of the data from the recruitment questionnaire led to formation of the study's sample frame, which facilitated the identification of potential participants to invite for further participation in the study. The following section outlines each of these stages in more detail.

Recruitment Questionnaire

The identification of adult apparel consumers who are already engaged in ecologically conscious decisions in at least some aspect of their apparel acquisition occurred through the administration of a recruitment questionnaire. Designed specifically for use in this study, the questionnaire includes two parts. Part One assesses participants' engagement with different types of ecologically conscious apparel acquisition behaviors. The second part measures general demographic information about the research participants. A copy of the complete questionnaire is available in Appendix A.

Part One of the recruitment questionnaire assesses the types of ecologically conscious apparel acquisition behaviors in which the respondents of the questionnaire engage. Twelve questions ask respondents if, for environmental reasons, they have engaged in a variety of ecologically conscious apparel acquisition behaviors. These

behaviors include purchasing clothing made from environmentally preferable fibers or purchasing clothing from second-hand stores or garage sales. The behaviors also include acquiring clothing from friends or family and purchasing clothing that will remain fashionable for many years or that can be mixed-and-matched with clothes they already own. Other questions are whether respondents have tried to reduce the amount of clothing owned, reconstruct clothing already owned, repair or alter clothing, and avoid or support buying clothing from a company because of its environmental practices. The response categories for these twelve questions are *yes* or *no*.

The recruitment questionnaire also includes several questions to assess general demographic information about respondents. These questions measure age, gender, marital status, educational background, and annual household income before taxes in 2006. The categories for age follow the age groupings used within the Consumer Expenditure Survey (United States Department of Labor, 2007): under 25 years, 25-34 years, 35-44 years, 45-54 years, 55-64 years, 65-74 years, 75 years and older. Gender is measured as male or female; and marital status is measured as single, married, divorced, widowed, or other. For education level, the questionnaire asks, "What is the highest level of education you have completed?" and provides the following categories: elementary or middle school; high school; 1-3 years of technical or vocational school; associate's degree; bachelor's degree, graduate school; or other. Finally, assessment of household income is through the following categories: less than \$5,000; \$5,000 to \$9,999; \$10,000 to \$14,999; \$15,000 to \$19,999; \$20,000 to \$29,999; \$30,000 to \$39,999; \$40,000 to \$49,999; \$50,000 to \$69,999; and \$70,000 and more. These categories also replicate the groupings used within the Consumer Expenditure Survey to assess income levels.

Administration of the Recruitment Questionnaire

Because this dissertation focuses on a narrowly defined population, at the outset there was concern that it would be difficult to locate a sufficient number of people who fit into the study's population. Therefore, the sampling strategy involved utilizing several different avenues to administer the recruitment questionnaire. Those avenues included membership meetings for environment-related organizations in the Greater Lansing, Michigan area, Michigan-based retail outlets that sell environmentally preferable apparel products, and environment-focused email listservs. By recruiting participants from a variety of different avenues, the expectation was that the chances of identifying sufficient numbers of adult consumers who fit into the study's population and were willing to participate in the study would increase.

In the spring of 2007, the researcher made contact with a number of different environment-related organizations in the Greater Lansing area about the study, with a request to attend a meeting and recruit participants to the study. In the end, due to timing and/or interest, recruitment occurred at a membership meeting for one of these organizations. The researcher attended the organization's monthly meeting in June 2007 where she introduced the research study, passed out paper copies of the questionnaire, and collected them from members at the conclusion of the meeting.

Also in the spring of 2007, the researcher made contact with several retail outlets that sell environmentally preferable apparel. The stores included two second-hand clothing stores in the Greater Lansing, Michigan area and a store in Grand Rapids, Michigan that sells clothing made from environmentally preferable fibers like organic cotton and hemp. In the end, only the clothing store in Grand Rapids agreed to be

involved, with the owner permitting the display of a recruitment flyer on a bulletin board in the store. The recruitment flyer briefly stated the purpose of the study and invited interested people to contact the researcher through email or over the phone. None of three stores contacted were willing to have the researcher present in the store to recruit participants, and neither of the second-hand stores wanted a recruitment flyer in their stores.

In addition, the researcher also sent a recruitment email through two Michigan-based, environment focused listserv groups. The email invited participation in the study and included a link to an online version of the recruitment questionnaire.

As an incentive for completing the questionnaire, anyone who completed a questionnaire received an entry into a prize drawing of a \$25 gift certificate for an ecologically conscious apparel company.

Selection of the Sample

In administering the recruitment questionnaire through the three above-mentioned avenues, 206 questionnaires were completed and returned, with 133 of the respondents being female and 73 male. Members of the environment organization completed 26, one patron of the eco-conscious clothing store completed a questionnaire, and the remaining 179 responses were the result of the email sent through the two listserv groups.

Out of the 12 questions asked on the questionnaire, the most common acquisition behavior engaged in for environmental reasons, was acquiring apparel from second-hand sources – a behavior in which 57.3% of the respondents reported engaging. Other common, environmentally motivated apparel acquisition behaviors among the respondents included reducing the amount of apparel acquired (56.3%), supporting

ecologically conscious apparel companies (54.4%), acquiring apparel made from organically-grown materials (51.5%), and avoiding acquiring apparel from a company because of its environmental management practices (51.5%). A complete summary of the respondents' behaviors and their relative frequencies are included in Table 3.

From the 206 completed questionnaires, 109 respondents indicated that they were available for further participation in the research study. However, after doing an initial analysis of the data collected from the questionnaire, ten of the respondents agreeing to an interview had never engaged in any of the ecologically conscious apparel acquisition behaviors included in the questionnaire. Because achieving the objectives of this necessitated the selection of participants who engage in ecological decision making in relation to their apparel acquisition, these ten individuals were removed from the sample frame, leaving a frame of 99 people.

The study's time and monetary resources did not permit interviewing all 99 individuals identified as engaging in some form of ecologically conscious apparel acquisition behaviors and available for further participation. Therefore, the study used the following process to make decisions about whom to select as research participants. First, because the study intended to represent the experiences of both males and females, the researcher categorized the 99 respondents by gender – 38 males and 61 females. The researcher then randomly selected five males and five females, contacted all ten individuals, and attempted to set up a meeting with each of them. If one of those individuals was no longer available to participate in the study, random selection of a new

Table 3. *Summary of Apparel Acquisition Behaviors Engaged in by Respondents to the Recruitment Questionnaire*

Behavior	Male		Female		Total	
	n (N = 73)	%	n (N = 133)	%	n (N = 206)	%
Second-hand sources	37	50.7	81	60.9	118	57.3
Reduce amount	41	56.2	75	56.4	116	56.3
Support eco-conscious companies	35	47.9	77	57.9	112	54.4
Organic materials	32	43.8	74	55.6	106	51.5
Avoid certain companies	34	46.8	72	54.1	106	51.5
Family and friends	32	43.8	73	54.9	105	51.0
Mix-and-match	25	34.2	79	59.4	104	50.0
Classically styled apparel	26	35.6	75	56.4	101	49.0
Repair apparel	35	47.9	66	49.6	101	49.0
Reconstruct apparel	10	13.7	44	33.1	54	26.2
Recycled materials	20	27.4	29	21.8	49	23.8

Table 3 (continued).

Behavior	Male		Female		Total	
	n (N = 73)	%	n (N = 133)	%	n (N = 206)	%
Low impact materials	12	16.4	28	21.1	40	19.4

respondent occurred. Making the decision to contact respondents in groups of ten, as opposed to contacting everyone at once, was a pragmatic decision based on the realization that the researcher could coordinate the scheduling of approximately ten appointments at a time. As the initial ten appointments were close to being completed, the researcher then randomly selected and contacted another ten respondents and continued this process until collection of data was complete. As data collection proceeded, contact occurred with all 38 of the men in the sample frame. Because in the end, many of these men were unavailable for further participation in the study, the researcher ran out of male participants to recruit and proceeded to select female participants only.

Altogether, 26 informants participated in this research study. In making the decision about sample size and when to end data collection, the study relied on Strauss and Corbin's (1998) concept of data saturation, which is defined as the point at which no new themes or information are surfacing in the data being collected. Therefore, the researcher continued selecting research participants and collecting data from them until data saturation occurred and it was evident that data collection was revealing no new concepts.

Data Collection Strategy and Methods

The primary data collection method employed in this study was semi-structured interviews. In using semi-structured interviews, this study established clear objectives for the interviews, including the type of information desired for acquisition by each interview. To facilitate this, the interviews utilized an interview guide which is a written list of the objectives of the interview and the topics and questions that the interviewer attempted to

cover. However, the interviews also provided for flexibility and the exploration of new **topics** and leads.

The design of interview questions was the result of having four main objectives **for** the semi-structured interviews:

1. To understand variables influencing ecological consumer decision making in regards to apparel acquisition.
2. To explore the phenomenon of ecological consumer decision making and the process individuals use to make ecological decisions about apparel acquisition.
3. To continue to assess participants' engagement in environmentally significant apparel consumption behaviors (related to acquisition).
4. To uncover the major barriers facing individuals and their ecological decision making in regards to apparel acquisition.

Guided by the interview objectives, the interviews asked all the participants about **apparel** acquisition decisions, their engagement with specific ecologically conscious **apparel** consumption behaviors, their knowledge about apparel-related environmental **i**ssues, and their perceptions about barriers to ecologically conscious apparel **C**onsumption. Appendix B outlines the questions designed for the interviews.

The interviews, conducted at the participants' convenience, occurred in a variety of locations, typically local coffee shops and, occasionally, the participants' homes. Each interview varied in length between 40 to 90 minutes, with the average being approximately 60 minutes. Interviews conducted in this research study, with the permission of all of the interviewees, were tape-recorded; and the researcher also took

notes during the interview. At the conclusion of each interview, the tape-recordings were fully transcribed for data analysis and coding.

Data Analysis Procedures

Miles and Huberman (1994) outline three interconnected components to qualitative data analysis. These three primary “steps”, utilized in this study for analyzing the qualitative data include: data reduction, data display, and conclusion drawing.

Due to its nature, qualitative research has the potential to produce superfluous amounts of data. Therefore, through data reduction and by focusing on the purpose of the study and the research questions, the researcher simplifies the data and eliminates unrelated data. In qualitative research, data reduction typically occurs through the process of coding and uncovering the major concepts and themes that will answer the study’s research questions. To guide the data reduction stage, this study made use of the process for coding data outlined in Rubin and Rubin (1995). This stage began immediately after transcribing the first interview by reading over the transcription and compiling a list of emergent concepts related to each research question. This process continued for each of the interviews – reading each interview transcript and continually adding and revising the coding lists to reflect data themes. The end-product, upon completion of the last interview, was a preliminary coding guide for each research question that originated from, and was representative of, the data. Other than grouping the codes according to their respective research questions, very little categorizing of the codes occurred during this initial stage.

The second stage in the development of codes was, for each research question, to categorize and organize the codes by grouping similar concepts together. This permitted the elimination and/or combination of concepts and the formation of sub-concepts. Additionally, at this stage of code development, modification of the titles of some of the concepts occurred so that the codes better reflected standard terminology used within decision making, environmental science, and apparel and textiles literature. The end-products of this process were second-stage, preliminary coding guides for each research question.

In order to judge the completeness and accuracy of the codes, a random selection of two interviews occurred; and the researcher applied the second-stage, preliminary codes to the interviews. Through this initial coding process, some further clarification to the coding guides occurred, resulting in final code guides for each research question. The final code guides are available in Appendices C, D, E, and F; and they include the actual code, a definition, and rule for when to apply each code. After finalizing the coding guides, the researcher applied the codes to all of the interviews by focusing on one research question at a time. The qualitative data analysis computer program NVivo 7 assisted in the final coding of the interviews.

The writing of a summary memo for each research participant followed the completion of the coding of the data, for a total of 26 summary memos. Four sections divided each of the summary memos, with one section for each of the study's research questions. Focusing on one research question and one participant at a time, and using the codes as a guide, the researcher added passages from the interviews related to each research question to the relevant summary memo. The final step in completing each

memo was to write statements summarizing what the participant revealed about each research question. The overall purpose of the summary memos was to reveal and organize the major themes and concepts related to each research question, from each individual data collection. See Appendix G for an example of a portion of a summary memo from this study.

After compiling the summary memos for each interview, condensing of the data into summary displays occurred, producing a separate summary display for each research question. The process for developing the summary displays was, while reading the summary memos, to consider a particular research question and summarize what all of the interviews revealed about that question. Similar to the summary memos, the summary displays permitted the determination of the major themes for each research question. See Appendix H for an example of a portion of a summary display from this study.

After compiling summary memos and displays, the method followed for extrapolating meanings from the organized data and answering the study's research questions was to reread each of the summary memos and displays and relevant sections of interview transcripts. With each research question focused on independently, from the various summaries, the researcher drew conclusions and selected supportive quotations to provide evidence of those conclusions.

Trustworthiness of the Study

In conducting research, it is important that other people are convinced that the findings of a study are worthy of attention and trustworthy. Scholars typically assess the

trustworthiness of a study through standards of validity, reliability, and objectivity.

Therefore, this final section of the chapter discusses these issues.

Within a conventional, positivist research paradigm, a research study establishes the validity of the study by taking steps to control both the internal and external validity of the study and by demonstrating that the study minimizes and explains threats to validity. However, Lincoln and Guba (2005) state that within non-positivist paradigms of inquiry, validity should be assessed according to how secure the researcher is in acting upon the research findings and how confident the researcher is in implementing public policy or engaging in social action on the basis of the findings. As summarized by Lincoln and Guba,

To return to the central question embedded in validity: how do we know when we have specific social inquiries that are faithful enough to some human construction that we may feel safe in acting on them, or, more important, that members of the community in which the research is conducted may act on them? (p.207).

This is the fundamental standard of validity guiding this dissertation.

Qualitative research typically views validity as a measure of whether or not the data interpretations and conclusions are representative of the reality of the situation and the research participants. Within this perspective Lincoln and Guba (1999) propose a criterion of *truth value* as a measure of a study's validity or, as they prefer, credibility. Underlying the criterion of truth value is the assumption of the existence of multiple realities and that "reality" is essentially a multiple set of mental constructions made by humans. Therefore, Lincoln and Guba state that research studies hold truth value when researchers demonstrate they have sufficiently represented multiple constructions of reality and that the findings of the study are credible to the individuals who originally constructed the multiple realities. From this perspective, a valid, credible study is one that

utilizes research methods and techniques that enhance the probability that the conclusions of the study are credible and that demonstrates this credibility by having the constructors of the realities approve the research findings. In this dissertation, after analyzing and summarizing each interview, via email, the researcher provided each participant with the opportunity to review, and provide feedback on, the researcher's interpretations and conclusions related to his or her interview. Several of the participants responded to this opportunity by affirming the pertinent findings and stating their interest in learning more about the overall conclusions of the study. No participants provided feedback challenging the interpretations of the researcher.

Lincoln and Guba (2005) present several additional assessments for determining the validity of a research finding within non-positivist research paradigms. According to these authors, one primary criterion for research validity should be fairness and the degree to which the research findings represent the voices of all research participants. This dissertation worked to ensure the study achieved this criterion for validity by representing all research participants in the findings and conclusions and not excluding thoughts or beliefs because they were controversial or did not align with the rest of the findings.

Lincoln and Guba (2005) propose two other assessments of a study's validity – ontological/educative authenticity and catalytic/tactical authenticity. Ontological and educative authenticity refers to the degree to which the research increases awareness about certain issues and social phenomenon and whether or not the research encourages and enables people to engage in moral discourse. On the other hand, catalytic and tactical authenticity is a response to what Lincoln and Guba assert should be an aim of research –

to prompt action. Therefore, within this perspective, the degree to which the research initiates action and social change is a very significant criterion for judging the validity of the research findings. If a study does not do this, according to the terms of catalytic authenticity, the validity of the research findings should be questioned.

To the degree to which it can be presently determined, this study has achieved validity. As evidence of the study's credibility, after the conclusion of the interviews many of the participants proceeded to ask a variety of questions about ecologically conscious apparel consumption. Several of the participants also contacted the researcher after data collection ended to share relevant information they had acquired or to pass along antic notes of their ecologically conscious apparel acquisition experiences. Therefore, for at least some of the participants, involvement in this study resulted in their increased awareness of the issue. Although it is not possible to foreshadow if this study will, on a broad scale, increase awareness related to ecologically conscious apparel consumption or prompt relevant action, the presentation of the research findings in the following chapters includes numerous implications of the study; and the researcher is confident that by acting upon these implications increased awareness and behavior modification will occur – further validating the study's findings.

The applicability of research findings to alternate contexts is another criterion widely used to assess whether or not the findings of a study are worthy of attention. From a more traditional perspective external validity, “the approximate validity with which we infer that the...relationship can be generalized to and across alternate measures...and across different types of persons, setting, and times” (Cook & Campbell, 1979, p. 37), is commonly used as a measure of applicability. However, within qualitative research,

Lincoln and Guba (1999) propose the *transferability* of a study's findings to a different research setting as a more appropriate measure of the applicability of the study. The transferability of a study's conclusions to a different context depends on the provision of adequate, rich descriptive data so that other researchers can make judgments about when and where transferability may occur. Therefore, to ensure transferability of this dissertation to alternate research sites and contexts this dissertation aimed to describe the research participants, the research context, and the findings from the study in sufficient detail and provide information that will allow other researchers to make decisions about the potential application of the study elsewhere.

Reliability of methods used in any research study is also important for determining the study's trustworthiness. This dissertation ensures the reliability of this research study through the maintenance of a quality "audit trail" (Lincoln & Guba, 1999). Throughout the study, detailed and explicit field notes of methods and procedures were kept, the purpose being to demonstrate how data were collected, condensed, and displayed for the conclusion drawing. The records are detailed enough to permit other people to follow both how the study was conducted and how conclusions were made. Information collected as part of the audit trail for this study include raw data (interview transcripts and field notes), products from data reduction (code guides and summary memos and displays), and process notes. The products included in this dissertation include the code guides and examples of summary memos and displays. Individuals interested in reviewing the study's raw data, additional summary reduction products, or process notes, may do so by directly contacting the researcher.

Finally, in addition to the validity and reliability of a study, how trustworthy findings of a study are also depends on the neutrality of the researcher(s) throughout the research process and the objectivity of the conclusions. Neutrality of a study is concerned with the degree to which the research participants and conditions of the study determine the findings of a study, as opposed to the biases and perspectives of the researcher(s) (Lincoln & Guba, 1999).

Throughout the research process, personal bias can affect what a researcher chooses to see, hear, and record. Personal bias can also influence data analysis, interpretations, and subsequent study conclusion. A good researcher is aware of the personal biases brought to the research study and develops controls for the effects the bias may have on both data collection and analysis (Hamel, 1993; Miles & Huberman, 1994). “Bias requires us to identify the perspective that we bring to our studies and to anticipate how that may affect what we report” (Wolcott, 1995, p. 165). Therefore, in this research study, using a research journal, the researcher worked to be self-aware and open about personal biases and their potential effects. The primary personal bias uncovered through this process related to the classification of ecologically conscious apparel acquisition behaviors. Prior to the start of data collection the researcher, based on her knowledge and experience, had qualified what constituted an ecologically conscious apparel acquisition behavior. However, because this study was interested in learning what apparel acquisition behaviors consumers engage in with the intention of being ecologically conscious, the researcher worked to remain open to all behaviors discussed by the research participants as having engaged in for environmental reasons.

Limitations of the Study

Prior to presenting the study's research findings, there are several methodological limitations to the study to note.

1. The study was limited to 26 research participants. Therefore, data from this study cannot be generalized to a wider population of ecologically conscious adults. However, the study never had an objective of generalizing the findings. Instead, because this is the first study to explore ecologically conscious decision making from the perspective of apparel consumers, the intent was more exploratory in nature. Therefore, due to the nature of the study, the number of individuals participating in the study does not jeopardize the integrity of the findings.
2. A substantial number of the research participants have educational backgrounds in environment-related studies and/or environment focused careers. This is the result of, during sampling, targeting email listservs to which environmental scientists and other professionals belong. Having research participants with a high level of environmental awareness may influence the study's findings. However, achieving the objectives of the study depended on sampling strategies that allowed for the identification and recruitment of ecologically conscious apparel consumers as participants in the study. Therefore, it was more important to find participants who belonged to the study's population of interest than it was to have the participants represent a range of educational backgrounds and occupations. Additionally, because this study does not have an objective of generalizing the findings to a wider population, this limitation is relatively insignificant.

3. Data collection relied on the participants' ability to recall decision-making procedures related to recent apparel acquisitions in an accurate manner. Because of the time lag between the decision and data collection, it is possible that research participants forgot details of the decision-making process. During data collection, in order to reduce this limitation as much as possible, the interviewer used a series of prompts to trigger the memories of the research participants and guide them back through the decision-making process.

CHAPTER FIVE

PERSONAL CHARACTERISTICS OF ECOLOGICALLY CONSCIOUS APPAREL CONSUMERS AND MANIFESTATIONS OF ECOLOGICAL DECISION MAKING

This chapter presents the findings and discussion of the research study's first two research questions. The chapter opens by introducing and providing background information on the research participants. The chapter then proceeds to summarize the results for each of the first two research questions. In order to substantiate the analysis and conclusions, the chapter makes use of illustrative quotations from the interviews with the research participants.

Introduction to the Research Participants

A total of 26 individuals participated in this research study, and these participants represent a range of different types of people. Of the 26 research participants, nine were men and 17 were women. The reason for the imbalance between male and female participants in the study is that compared to men, women were more willing to participate in the study and easier to recruit. The participants in the study represent a variety of ages, with the youngest participants being under the age of 25 and the oldest participant being between the ages of 65 and 74. All of the participants had at least a high school education and 23 had post-secondary degrees – with 12 having bachelor's degrees and 11 having graduate degrees. The research participants also represent a range of income levels, from lower through upper. Finally, as planned in the participant selection process, all of the

study's participants are interested in environmental issues and are ecologically conscious individuals in at least some aspect of their lives. Refer to Table 4 for a complete summary of the demographics of the study's participants.

Table 4. Demographics of Research Participants

ID #	Sex	Age	Marital status	Education	Income
M1	Male	< 25	Single	High School	\$10,000-\$14,999
M2	Male	25-34	Single	Graduate	\$5000 or less
M3	Male	25-34	Married	Graduate	\$30,000-\$39,999
M4	Male	25-34	Single	Graduate	\$30,000-\$39,999
M5	Male	35-44	Divorced	Bachelor's	\$50,000-\$69,999
M6	Male	35-44	Married	Graduate	\$70,000 and over
M7	Male	55-64	Divorced	Bachelor's	\$15,000-\$19,000
M8	Male	55-64	Married	Graduate	\$70,000 and over
M9	Male	65-74	Married	Graduate	\$70,000 and over
F1	Female	< 25	Single	Bachelor's	\$5000 or less
F2	Female	< 25	Single	Bachelor's	\$5000 or less
F3	Female	< 25	Single	High School	\$5000 or less
F4	Female	< 25	Single	High School	\$5000 or less
F5	Female	< 25	Single	Bachelor's	No answer
F6	Female	25-34	Divorced	Graduate	\$50,000-\$69,000
F7	Female	25-34	Single	Bachelor's	\$10,000-\$14,999
F8	Female	25-34	Single	Graduate	\$5000 or less

Table 4 (continued).

ID #	Sex	Age	Marital status	Education	Income
F9	Female	25-34	Single	Bachelor's	\$50,000-\$69,000
F10	Female	25-34	Single	Bachelor's	\$20,000-\$29,999
F11	Female	35-44	Single	Graduate	\$40,000-\$49,999
F12	Female	35-44	Single	Bachelor's	\$40,000-\$49,999
F13	Female	45-54	Married	Graduate	No answer
F14	Female	45-54	Married	Bachelor's	\$70,000 and over
F15	Female	45-54	Divorced	Bachelor's	No answer
F16	Female	55-64	Married	Graduate	\$70,000 and over
F17	Female	55-64	Widowed	Graduate	\$10,000-\$14,999

In order to provide some perspective and increased understanding of the participants prior to presenting the research results, a brief profile of each participant follows.

- Informant M1 is in his last year of university studies for his bachelor's degree. He is completing a double major in history and philosophy with an environment concentration.
- Informant M2 has a master's degree in environmental studies. He works as a campus sustainability coordinator at a university.

- Informant M3 has a law degree, as well as a master's degree in environmental science. At the time of data collection he was looking for a job as a lawyer. He enjoys hiking and camping.
- Informant M4 has a master's degree in zoology, and he works for a non-profit organization that focuses on making environmental protection a priority with politicians, political candidates, and voters. He enjoys cycling.
- Informant M5 has a bachelor's degree in environmental science. He currently works as an information technology technician for an environment focused nongovernmental organization. He enjoys outdoor activities such as hiking, skiing, cycling, and running.
- Informant M6 has a master's degree in American history, and he works as a development director in charge of fundraising within a nongovernmental organization that advocates for a sustainable natural environment. He is a cyclist.
- Informant M7 is a professional film maker. He has directed over 100 advocacy films, focusing on a range of issues including labor unions, the environment, and social justice issues. He has served as a board member for the Sierra Club, and he is an experienced activist.
- Informant M8 has a doctoral degree in fisheries. He has been working as a scientist in the area of Great Lakes research management and water policy for over twenty years. He also is an adjunct faculty member at a university.
- Informant M9 has a doctoral degree in family and child ecology. He is a retired university professor where he taught in the field of family and child ecology. He is a master gardener and a birder.

- Informant F1 has a bachelor's degree in urban and regional planning and a specialization in environmental studies. She is in graduate school studying human environment relations. While an undergraduate student she worked for a university recycling initiative.
- Informant F2 has a bachelor's degree in environmental economics. She is in a resource development graduate school program, and she is conducting research on recycling knowledge and behaviors on a university campus.
- Informant F3 is in her third year of university studies for her bachelor's degree. She is majoring in biochemistry and specializing in international agriculture. She is an active member of an university student environment organization, and she works for a campus recycling initiative.
- Informant F4 is in her last year of university studies for her bachelor's degree. She is majoring in environmental studies and specializing in environmental economic policy. She has plans to attend graduate school and study sustainable agriculture. She enjoys yoga and volunteers at a student-run organic farm.
- Informant F5 is in her third year of university studies for her bachelor's degree. She is enrolled in a double major in environmental policy and psychology. She previously lived on a zero-waste conservation reserve in Australia.
- Informant F6 has a master's degree in environmental science. She works as an environmental specialist at a university and is responsible for managing the university's environmental regulations. In the past she worked as an environmental auditor for the International Standards Organization. She is originally from Ireland.

- Informant F7 has a master's degree in education. Prior to graduate school she was an Americorp volunteer for a year, and she worked as a campus sustainability coordinator at a university. At the time of data collection she was unemployed.
- Informant F8 has a master's degree in community development. She works as the executive director of a nongovernmental organization that focuses on the development of socially and environmentally sustainable communities.
- Informant F9 has a bachelor's degree in community relations. She works as a director of a county's waste management department. She enjoys running.
- Informant F10 has a bachelor's degree in parks and recreation and human resources. At the time of data collection she was unemployed. She enjoys running, hiking, camping, and traveling – having been to Europe, Africa, and Antarctica.
- Informant F11 has a doctoral degree in natural resources and environmental studies. She currently holds an environment-related, post-doctoral research position at a university.
- Informant F12 has a master's degree in resource development. She works as an environmental specialist within a university extension program, focusing on issues related to species extinction and land use planning. She is a birder.
- Informant F13 has a master's degree in corporation communications. She works as a special projects coordinator at a university, and her primary project is working to advance sustainability initiatives within the university
- Informant F14 has a bachelor's degree in sociology. She works as a director of a public library. She enjoys sewing.

- Informant F15 has a bachelor's degree in business administration. Throughout her career she has worked primarily in the areas of sales and marketing, although at the time of data collection she was looking for employment more related to sustainability. She is interested in sustainable architecture and design.
- Informant F16 has a doctoral degree in education. She is a retired university professor who taught in the field of education. She has traveled extensively, and she is a birder.
- Informant F17 has a doctoral degree in rhetoric and technical communication in which she focused on the technology and communication challenges related to energy efficiency. She lives half of the year in India where she works with a rural development organization, and she is building an energy efficient home. She also loves fibers arts, including sewing, knitting, and crocheting.

Research Question One: Personal Characteristics of Ecologically Conscious Apparel

Consumers

In this dissertation, the first research question asks which personal variables characterize ecologically conscious apparel consumers. This study does not attempt to determine correlation or causality of relationships between personal variables and apparel-related ecological decision making. This was not the intention of the study. Instead, the objective of this research question was to identify and describe personal variables among the research participants characteristic of the ecologically conscious apparel consumer.

Normative-Attitudinal Variables

As discussed in previous chapters, when examining environmentally significant behaviors, research frequently cites individuals' normative-attitudinal variables as playing an influential role in those behaviors. Within studies focusing on the human dimensions of environmental change, the normative-attitudinal variables commonly considered include values, attitudes, beliefs, motivations and preferences. Within this research study, the normative-attitudinal personal variables most consistently present among the research participants include environmental values, beliefs about environmental vulnerability, attitudes of environmental concern, beliefs about personal responsibility for protecting the environment, and perceptions about clothing adequacy.

Environmental Values

The first attitudinal-normative variable characteristic of the research participants is their environment-oriented values. As Informant F14 said, "I really appreciate the natural world." Overall, evident by the way they spoke about the natural environment, among the research participants in this study there is a consistent valuing of the natural environment. Comments made by Informants M9 and F4 highlight how the participants feel about the environment.⁶

Informant M9: I just feel very strongly about the environment.... [My wife and I] respect our wildlife and everything else..... I think that the environment should be a concern of all of us because it not only *protects wildlife* and things but it also *protects us*, because we are part of the environment.... I want to be a friend to nature.

Informant F4: Well I think just my philosophy on life is that it's kind of like the Gaia principle, like were all connected and we all share this universe and I don't really think... I don't feel like it's moral to just take it over and exploit it, do whatever we want with it.... I'm all about balance and I want to be able to find a really *harmonious balance with the earth*.

⁶ The researcher has italicized verbal value descriptors or labels.

In addition to valuing the natural environment, the research participants, including Informants F2, M6, and F11, also emphasized why environmental protection and stewardship is important to them.

Informant F2: It is important to protect the environment from a very simple standpoint of *prolonging the human race*. We're so dependent on everything and I mean the earth doesn't belong to us, we belong to it so we have to kind of not pollute it in order to live on. That's about it, I mean it's a basic simple standpoint of *protecting the earth*.

Informant M6: The basic values that I was raised with and that is that the environment's a *shared resource*. It shouldn't be exploited for private gain at everyone else's expense so that it's spoiled for everyone else.

Informant F11: For me it is sort of an equity issue. I mean I feel like plants and *animals have the right to exist* on this earth just like we do.... I feel like the environment and the earth should be protected and it can't really speak for itself so that is a primary value. And then I also do *derive enjoyment* from it, *aesthetically*, and then I think that it *provides us with services*. So it is a useful thing to have around.

Emerging from the data is a number of specific values related to the participants' broader environmental values. The italicized phrases in the above quotations identify the specific values related to the environment identified by the participants as important to them. First, the participants value the protection and other ecosystem services provided by the natural environment to humans because it permits the continuance of the human race. Second, the participants also value protection of the environment and maintaining a harmonious balance between humans and earth's ecosystems, as well as shared equity between humans and other living organisms. Finally, the research participants also derive aesthetic value from the natural environment. Therefore, within the broad category of environmental values, the research participants also expressed a number of more specific environmental values.

Because this research study did not formally assess the values of the research participants, it is necessary to remain cautious about assigning the participants to particular value orientations. However, the verbal comments and expressed actions of the research participants do provide some indication that many of the research participants appear to adhere to a social-altruistic value orientation.⁷ Comments quoted above by Informant F2 in which she emphasized her moral obligation to protect the environment for the well-being of society as a whole provides evidence for this assertion. There is also evidence to suggest that perhaps some of the research participants have values more oriented towards the biospheric orientation. For example, in the above quotations, both Informant F4 and Informant F11 spoke about their beliefs in the intrinsic value of the natural environment and non-human organisms. Informant F9 also expressed beliefs that indicate a biospheric value orientation.

Informant F9: I really feel like [the environment] directly impacts our health and well-being as humans on this earth as well as all the other living things. For me personally it is almost a moral decision in wanting to take care of the earth that was given to us by the creator and have reverence for that honor.

Attitude and Beliefs

In addition to values, the research participants also hold a number of ecologically conscious attitudes and beliefs.

Beliefs about environmental vulnerability. First, the research participants believe that the natural environment is currently in a state of vulnerability. Informant M7 expressed his belief in the at risk state of the natural environment by saying:

Informant M7: With consumption as it currently is – *we are heading towards disaster*. The way we are currently living and interacting with the natural environment, the *integrity of the earth is so severely undermined*. We are

⁷ See Chapter 2 for a complete explanation of social-altruistic and biospheric value orientations.

living in a state where we are pretending that we have all the time we need to fix our mistakes and figure out solutions to our problems. We are in denial that we are not going to destroy the earth. I think we are already near the end game and we are seeing a series of different events that when added together are going to equal *ecological disaster*. I think that the environmental crisis is something that has been slowly building over time and as we continue to ignore the issues, it continues to build. As I see it, we are going to eventually reach the tipping point – at which point change and disaster is going to come rapidly and severely. I don't know exactly what that tipping point is going to be – it could perhaps be the permafrost melting because that will then affect so many different things – but when it arrives, *we are going to see drastic environmental changes*.

From these comments, it is obvious that Informant M7 feels very strongly that human behaviors have led to environmental vulnerability and that environmental disaster is imminent. Many of the other research participants iterated similar personal beliefs about the natural environment currently being in a state of extreme risk.

Informant F9: Our ecosystems are in *crisis*.

Informant F16: Our *natural environment is suffering* and it certainly needs attention, and not just because of global warming. I think *it is in bad shape*.

In discussing their beliefs about the state of the environment, some of the research participants referenced very specific environmental issues that they believe to be increasing the vulnerability of earth's natural systems. For example, Informant F6 spoke about her belief in loss of wilderness,

Informant F6: The truth is that we're losing thousands if not hundreds of thousands or millions of acres of wild land every day to make way for that stuff and to create the resources that go into the manufacturing of all these things that we don't really need.

And Informant M3 discussed his beliefs in regards to unsustainable land development and ineffective land use policies,

Informant M3: On a more local basis, I think a lot of regions are dealing with very weak land use policies and continued development in an unsustainable manner.

Overall, among the research participants, there is a belief that humans are interacting with the natural environment in very unsustainable manners and that these interactions are placing the health of the natural environment at risk. As Informant M7 said, “We are in this situation where we are going to fundamentally destroy the earth.”

Attitudes of environmental concern. In addition to the research participants believing that the natural environment is vulnerable, they also have an attitude of concern about this vulnerability and its repercussions for both humans and the natural environment. As Informant M2 said:

Informant M2: I think we are sort of heading down the path to environmental degradation.... I think we are seeing some signs of that, more and more, everywhere. And I believe that if we don't start doing things differently then it might be too late for us to live well in coming years.

Similar comments by others include:

Informant F3: I think a lot of people are going to suffer if things keep going the way that they're going.

Informant F14: I'm really concerned about the state of our environment and climate change and extreme weather and all the kind of stuff that's coming about because of the way we live and the way we consume.

This finding that the ecologically conscious apparel consumers in this research study have an attitude of environmental concern, is a finding that is also confirmed in other studies. Indeed, a large number of studies show that consumers who are concerned about the state of the natural environment are more likely to engage in ecologically conscious behaviors than consumers who do not have this attitude of concern (Antil, 1984; Blake, 2001; Borden et al., 1977; Fraj & Martinez, 2007; Grunert & Juhl, 1995; Hogan, 1976; Hungerford, 1978; Minton & Rose, 1997; Roberts, 1996; Schlegelmilch et al., 1996). This finding is also supported by Shim's (1995) conclusion that environmental

attitudes influence clothing discard behaviors and the finding by Hines and Swinker (1996) that individuals who have greater concern about environmental issues are more likely to make apparel selections based on recycled fiber content.

Beliefs of personal responsibility. During the interviews, when asked what level of personal responsibility the research participants felt they had in addressing environmental issues, the participants repeatedly asserted their belief that they had a great deal of responsibility. Therefore, the final environment-related belief consistently present among the study's participants is the belief that they have a personal responsibility to address the vulnerability of the natural environment.

Informant M1: I definitely feel like I have a personal responsibility to do something. We have to do something and sitting back is not going to do anything.... Too often people make choices without looking at the consequences so I think it is important to at least consider the consequences for our choices.

Informant F14: I think everybody has a personal responsibility to address environmental issues. I think that's the only way we can do it. If everybody thinks that it's someone else's responsibility, then it just never gets done.

Informant F16: I am one of those people who feel that everyone is responsible because we live in this environment and my grandchildren are going to someday going to inherit the earth and all of their surrounds, and so on and so on – so I just feel like it is everyone's responsibility.

From these comments it appears that the research participants believe it is their personal responsibility to do their part to protect the environment. The above quotations by Informants F14 and 16 also express their belief in the concept of shared responsibility and in the power of aggregate action to make a difference. Together these beliefs characterize their ecologically conscious lifestyles. This conclusion has some similarities to previous research findings that link perceived consumer effectiveness to engagement

in environmentally preferable behaviors. For example, studies such as Antil (1984), Balderjahn (1988), Kinnear et al. (1974), Roberts, (1996), and Webster (1975) all found that consumers are more likely to engage in ecologically conscious behaviors when they believe individual consumers have the power to affect the environment positively through those behaviors. The research participants in this study did not explicitly express perceptions of consumer effectiveness, but based on their belief in having a personal responsibility to engage in behaviors that protect the environment and the modification of their apparel acquisition behaviors, it is possible to deduce that they also believe their behaviors are effective in affecting the environment.

To summarize, the participants in this study consistently expressed three environment-related attitudes and beliefs. First, they believe that the natural environment is in a state of degradation and vulnerability; and, second, the participants are concerned about this vulnerability. Third, the research participants believe they have a personal responsibility to protect the environment. These attitudes and beliefs follows Stern et al.'s (1999) VBN Theory of Environmentalism reviewed in Chapter Two. In the terminology of this theory, the research participants are aware of the adverse consequences associated with current environmental conditions. They also believe they are in part responsible for the consequences because it is possible for them to engage in behaviors that will help prevent the adverse consequences; and therefore, they feel they are morally obligated to take such actions – contributing to their attempts to make ecologically rational decisions and acquire apparel in an ecologically conscious manner.

Perception of Clothing Adequacy

In addition to values, attitudes, and beliefs about the environment and their role in protecting the environment, another normative-attitudinal variable characteristic of the research participants emerged from the data. Common among many of the participants in this study is a perception of having adequate clothing to meet their needs. As Informant F3 said, "I feel like I have enough clothes, and I don't need any more." In fact, as is expressed by Informants F6, F16, and M6, many of the participants spoke about owning an over-abundance of apparel.

Informant F6: I already have more than I can possibly wear.... I can't wear everything that I have every day which is kind of insane.

Informant F16: I just look at what my husband and I have and I think that we have just far too many clothes. I mean you can't wear all those clothes anyways.

Informant M6: I still have way more [clothes] than I need.

And as the following comments indicate, this perception of having sufficient or more than sufficient clothing results in the participants feeling like they do not need to acquire additional clothing and, therefore, limits their acquisitions.

Informant M1: It is easy [to not acquire apparel] if you already have everything that you need. And that is the case with me.... I don't really have great clothing needs. Shoes and socks, I guess yes. But I don't really feel like I need a lot of clothing so it is easy for me to feel like I don't have to buy a lot of clothing.

Informant F6: I already have more than I can possibly wear.... I never feel like I need something new, to be honest with you.... It would be rare.

Informant F8: I mean I already have so many clothes that I can't imagine where I would go that I would need an outfit. I tend to get by with what I already own.

Informant F17: I have enough clothes now, except for say underwear or occasionally replacing things, that I could go a while without needing to buy anything. Clothes last a very long time.

Perception of clothing adequacy is a personal variable not examined in previous research focused on human dimensions of environmental change or ecologically conscious apparel consumption. However, scholars within the broader field of apparel and textiles have theorized about the concept. For example, in their research Winakor, MacDonald, Kunz, and Saladino (1971) refer to clothing budgets for low income families that allow for what they termed “minimum decency,” and Winakor (1975) conducted similar research with rural and urban families. And in her research on female adolescent clothing selection in Korea, Hwang (1988) found the concept of clothing adequacy to emerge through the data as well. In this study, Hwang defines clothing adequacy as:

The acceptable (tolerable) fulfillment of clothing expectations for an individual or a group in a variety of environmental settings in order to achieve a better adaptation with the conditions of the environment or simply to maintain the status quo between humans and their environments.

Hwang proceeds to assert that all individuals have a tolerable range of adequate clothing, and this range is dependent on two factors.

The first factor is the assessment people make of how well or poorly they are enabled to fulfill expectations for clothing in a given environmental context in a culture within the range of clothing attributes and relational characteristics of clothing. This assessment influences what they decide to select or to wear in the future. Second, expectations of adequate clothing, either manifest or latent, may be derived from precedents, long-term experiences, (e.g., habitual expectations) and learning (training) through the socialization process and are conditioned by dynamic interaction among the self, clothing, and other environments.

With Hwang’s (1988) definition of clothing adequacy in mind, many of the participants in the current study perceive to have fulfilled their clothing expectations to acceptable degrees. This perception is largely the result of the participants’ assessments that they can meet clothing expectations for the environments they interact with given their current wardrobe.

The finding that the study's participants appear to have a perception that they have adequate clothing to meet their needs and, as demonstrated later, that this perception influences their decisions during apparel acquisition by limiting the amount of apparel they acquire, is an important finding emerging from this study. It is possible that one of the variables that differentiate ecologically conscious apparel consumers from mainstream apparel consumers is their perceptions of clothing adequacy, how they define an adequate wardrobe, and the role these perceptions play in the decision-making process. Therefore, there is a need to understand the concept of clothing adequacy to a fuller degree and if it is relevant for consumer education programs wanting to modify apparel acquisition behaviors so that they become environmentally sustainable.

Personal Capability Variable

Along with normative-attitudinal variables such as values, attitudes, and beliefs, research investigating human behaviors and environmental change commonly also consider the role played by personal capability variables. In this research study, one personal capability variable emerged as characteristic of ecologically conscious apparel consumers – their knowledge of general and apparel-related environmental issues.

Knowledge of General Environmental Issues

Overall the study's participants appear to be knowledgeable about a range of environmental issues. Although data collection did not include a formal assessment of their environmental knowledge, many of the comments made throughout their interviews lead to this conclusion. For example, during his interview Informant M5 articulated some of the environmental issues that he believes are contributing to increased ecosystem vulnerability.

Informant M5: Our natural environment is threatened in just about every way – loss of habitat, loss of biodiversity, over-consumption of resources such as water, soil, coal, fish, as well as air and water pollution. Our environment is basically threatened by over-consumption of food, energy and consumer goods, over-population, poor agricultural practices, poor land planning, poor waste management and disregard for the impact that we have on the world.

Other research participants, such as Informants M2 and M3, made additional comments which highlight their knowledge of environmental issues.

Informant M2: I think we are seeing signs of environmental degradation all over – whether it's different pollution problems like air pollution and water pollution. It's worse in certain parts of the country but pretty ubiquitous across the country. And general energy use – which is contributing to that pollution. I will read studies that although some bigger countries like China or India might be jumping ahead of us in consumption of certain things, per capita we are still the largest consumers of different nonrenewable resources. And I just think we are seeing signs of ecological degradation in the United States, of species decline or extinction or...things like that.

Informant M3: There a lot of issues both globally and locally. I probably could go on for hours. But I do think that the big issue, in my opinion, is that with a lot of environmental issues you do not see them and you may not really recognize them. Like with our oceans, everything is under water and I just expect to be able to use the oceans and not really protect them, I guess. And there are just a whole range of environmental issues there – like exploiting of species and over fishing. And it ties into global warming too – in terms of rising ocean temperatures and coral reefs and all that.

The finding that the research participants have a high level of knowledge about environmental issues is not unexpected. Since many of the participants have educational backgrounds in environmental studies and work in environment-related fields, it is understandable that they also have a high awareness of environmental issues. Even the research participants that do not have environment-related educational backgrounds are still university educated and informed about many environment-related issues.

Knowledge of Apparel-Related Environmental Issues

In terms of their knowledge about environmental issues associated with apparel production and consumption, because the research participants understand that the consumption of goods typically is associated with environmental costs, they also have a basic understanding that apparel consumption is environmentally significant. As Informant F6 said, “I would say any clothing on the shelves has an environmental impact.”

More specifically, the research participants are most informed in terms of the environmental impacts of cotton production, particularly the high volumes of ecologically harmful chemicals required to cultivate and harvest cotton. In asking the research participants if they were aware of any environmental impacts associated with cotton production, most of the research participants discussed the chemically intensive nature of the crop. Many of the participants restated comments like these made by Informants M2, F2, and F4:

Informant M2: I do know that conventional cotton has a fairly big environmental footprint.... I hear about pesticides and how they have to be used on cotton crops.

Informant F2: I heard cotton is in the top three of pesticide use crops, I think tobacco is probably up there and I can't remember what the other third one was. And so I've heard a lot about that.

Informant F4: Well I know a lot of cotton production heavily uses pesticides.... They have an extremely terrible impact on the environment, on the natural environment.

In addition to being knowledgeable about conventional cotton's necessary chemical inputs, a couple of the participants demonstrated being aware of other

environmental issues associated with cotton production. For example, Informant F6 spoke of the water requirements for cultivating cotton,

Informant F6: Cotton is one of the worst offenders in terms of pesticides use in the world.... And it is a very needy crop as well so it needs a hell of a lot more irrigation than most other crops.

Informant F10 focused on pollution issues,

Informant 318: Pretty much like with any agriculture type thing you are going to have high nitrogen inputs into watersheds and things of that nature. And then you are just going to be dealing with the general pollution that is associated with mass production of any type of agriculture – it is not always done in the most environmentally responsible manner.

Informant F17 mentioned the crop's high energy load,

Information F17: Cotton has to be farmed so you are using equipment that requires fossil fuels – to plant and tend and harvest that particular plant.

And Informant F13 spoke in some detail about a variety of environmental issues associated with cotton production,

Informant F13: I have a real issue with pesticides and some herbicides that get used on [cotton]. And you're talking about a monocrop. I mean that's just the nature of the beast with something like that.... If they're going to be able to do more production, you're talking about a monocrop and if you're going to do a monocrop and then you have other attendant environmental impacts such as biodiversity loss, and certainly with cotton you've got impacts on land. There are no competing crops that you can have in there because of soil loss and erosion.

The research participants have a general awareness and understanding that conventionally cotton production is ecologically destructive; and organic cotton is an environmentally preferable fiber. As Informant M3 said, "I like the less harmful aspects of organic cotton." Moreover, their apparel acquisition behaviors suggest that this knowledge plays a role in the participants' ecological decision making related to apparel. Throughout the interviews, the research participants made frequent references to

acquiring apparel made from organically-grown cotton. Therefore, because the participants know that conventional cotton is associated with environmental risk, in their apparel acquisitions they are choosing to acquire organically-grown cotton apparel products instead. This is a finding also maintained by Hustvedt's (2006) conclusion that market segments that use organic content of apparel to inform their apparel acquisition decisions are more aware of the environmental impacts of apparel products.

In addition to knowledge about conventional cotton, a few of the research participants referenced other environmental issues related to apparel production. In this regards, Informant F6 discussed the impacts related to textile dyeing,

Informant F6: The dye process alone is such a chemically intensive process and that stuff has to be disposed of as pollution, as waste.

Informant F3 talked about the energy requirements of apparel manufacturing,

Informant F3: I've started to hear stuff you know about the energy that goes into clothing production especially if you're getting clothes from other countries.

And Informant M2 referenced the general waste and pollution created through apparel manufacturing,

Informant M2: And I also think that the processing of the materials releases stuff that has to be disposed of somehow and that can be pretty nasty for the environment if it is released in to the water or into the air.

Finally, Informant F8 spoke of the environmental issues related to apparel consumption.

Informant F8: That the biggest environmental impact of clothing is the end-user washing and drying their clothes – no matter what. Even when compared to the growth of cotton, the environmental impact is greater when considering the end-user – through washing and drying.

Generally speaking, despite having knowledge about general environmental issues and an awareness of the environmental impacts of conventional cotton production

and a few other isolated issues, the research participants have relatively basic knowledge of apparel-related environmental issues. This is a conclusion consistent with the findings of Kim and Damhorst (1998) and Stephens (1985), and this barrier and its implications to ecological decision making is further discussed in Chapter Seven.

Research Question Two: Manifestations of Ecological Decision Making in Apparel Acquisition Behaviors

The second question that this study set out to answer was what manifestations of ecological decision making exist in the apparel acquisition behaviors of the participants. Analysis of the data to answer this question utilized an intent-oriented definition of environmentally significant behavior as opposed to an impact-oriented one. As outlined in Chapter Two, and originally proposed by Stern (2000), when environmentally significant behaviors are defined using an impact-oriented definition, the behaviors are assessed based on the actual impact the behaviors have on the environment and how the behaviors, “change the availability of materials or energy from the environment or alters the structure and dynamics of ecosystems or the biosphere” (Stern, 2000, p. 408). On the other hand, environmentally significant behaviors defined as intent-oriented are behaviors that the actor undertakes with the intention of benefiting the environment. Therefore, this dissertation considers apparel acquisition behaviors to be ecologically conscious and demonstrate evidence of ecological decision making when the participants indicate that they engage in particular behaviors because they believe the behaviors to be environmentally beneficial. This is a justifiable decision because, according to Stern, it is

appropriate to make use of the intent-oriented definition when research, such as this dissertation, focuses on understanding and changing people's behaviors.

Within this study's research participants, ecological decision making manifests itself in their apparel acquisition behaviors in a variety of ways, including: 1) adhering to limits for amounts of apparel acquired; 2) acquiring apparel with environmentally preferable attributes; 3) acquiring apparel through environmentally preferable sources; 4) avoiding engaging in acquisition behaviors perceived as not ecologically conscious; and 5) making apparel-acquisition sacrifices. Table 5 summarizes the frequency with which the research participants reported engaging in each of these behaviors.

Table 5. Summary of Participants' Ecologically Conscious Apparel Acquisition Behaviors

Behavior	n (N = 26) ^a	Relative frequency (%)
Adhering to limits	26	100
Attribute-focused acquisition		
Environmentally preferable fibers	24	92.3
Environmentally preferable apparel	20	76.9
Source of acquisition		
Second-hand sources	22	84.6
Eco-conscious companies	19	73.1
Independent companies	15	57.7
Home sewing	6	23.1

Table 5 (continued).

Behavior	n (N = 26) ^a	Relative frequency (%)
Avoidance behaviors		
Avoidance of fibers and dry clean only	20	76.9
Avoidance of companies	17	65.4
Avoidance of mail order	4	15.4
Avoidance of certain apparel items	1	3.8
Making acquisition sacrifices		
Sacrificing nonhuman resources	16	61.5
Sacrificing style of apparel	6	23.1
Sacrificing amount of apparel	7	26.9
Sacrificing source of acquisition	2	7.7

^a Each research participant was able to identify multiple ecologically conscious apparel acquisition behaviors in which they engage.

Adhering to Acquisition Limits

Among the research participants of this study, the most consistent evidence of ecological decision making occurring in regards to their apparel acquisition is that the participants adhere to limits to the amount of apparel that they acquire. In fact, 100% of the participants state that because of their desire to be ecologically conscious apparel consumers, they control the quantity of their apparel acquisitions. This behavior is directly related to the ecological decision making of the research participants because one of the fundamental, ecological decisions made by the participants related to their apparel

acquisitions is establishing limits to the quantity of apparel they acquire. Chapter Six further discusses this ecological decision while this section explains how the participants control the amount of apparel acquired.

To limit the quantity of apparel acquired, the research participants utilize two primary strategies and, as Informant F6 asserts, “go to great lengths to use what I already have.” These strategies are (1) acquiring apparel on a needs basis and (2) extending the initial lifetime of apparel items as long as possible to reduce the need to acquire replacement garments.

Need-Based Acquisition

Throughout data collection, the most commonly discussed strategy for limiting apparel acquisition was to question personal apparel needs and acquire apparel intentionally and on a needs basis. Informant F11’s statement, “when I am [at the mall]...I guess I just think more about whether or not I really need the item of clothing,” was reiterated by many of the other participants, including Informants M2, F2, and F14.

Informant M2: Well I guess I would think about what I currently have. I will go in stores and I will see stuff that I think looks awesome and I would really like to have even but I might not need it because I have something similar already and it will suit my needs. So I guess I just think about what I currently have and what I would need it for and then base the decision on that – knowing that what I currently have, when it gets – you know, if I need to replace it, then I will have something in mind of what I might want to get.... To ask if I really, truly need something has really eliminated me from buying a lot of stuff.

Informant F2: I try to focus on things that I need. I need a brown pair of pants but I don’t need this pink skirt.

Informant F14: I ask that question every time that I see something I want, whether it’s in a thrift store or whether it’s at a department store, “What do I already have and do I really need this? Is this something that I need?”

Many of the participants, such as Informants M3, M4, and M9, also indicated that they generally only acquire apparel in order to replace worn out items.

Informant M3: I try to use the things that I have and not necessarily buy new things unless I have to.... For me that is usually when there are too many holes in a pair of shorts or in a shirt.

Informant M4: Usually though when I finally do get to the store to buy clothing it is because I desperately need to replace an article of clothing that I already have. So it is not like I am continually acquiring new masses of clothing.

Informant M9: When I get down to about two or three pairs [of socks], because they wear out, I don't let the holes get too big, then I will go out and buy some pairs.

Or, as discussed by Informants F3 and F7, they need to acquire apparel when attending a special event or meeting for which they lack appropriate apparel.

Informant F3: I usually don't go to the store and just buy something because it's cute. I will have thought about it before. I'll be like...I need to look nice for this presentation.

Informant F7: It's usually when an event is coming up, like a job interview. Then obviously that would trigger me to say, "Okay, I need to go shopping."

Related to the behavior of need-based acquisition, in order to acquire limited clothing, several of the participants also set restrictions or guidelines to direct their decision making and remain focused on apparel needs. For example, Informant M9 says, "I limit myself on how much of each thing I have. Like I have 14 pairs of underwear. I have seven white t-shirts – enough for one week," and Informant F9 states, "When I shop for clothes I usually have a list." In both of these instances, the research participants control the quantity of apparel they acquire by setting limits prior to engaging in the acquisition behaviors. Informant F5 is also a participant who sets guidelines for her apparel acquisition, although as she says, "My rule [for acquiring clothing] is I have to be absolutely in love with something. So I'm a very picky shopper when it comes to that."

Extension of Apparel Lifetime

Every apparel product has two distinct lifetimes, its technical lifetime (the length of time the product functions as intended) and the aesthetic lifetime (the length of time the user finds the product attractive). As outlined above, the participants in this study typically only acquire new apparel to replace an item of clothing with an exhausted technical or aesthetic lifetime. However, in order to extend the technical and aesthetic lifetimes of their apparel products, and therefore reduce the amount of apparel necessary to acquire, the participants engage in a number of related behaviors, including taking good care of their clothing, repairing and altering clothing, and refashioning clothing.

A number of the research participants spoke about how they take care of the clothing they already owned in order to make them last longer and reduce the need to acquire new ones. As Informant F13 articulated, “I have things, like some suit jackets and things, that I just take care of, that I may have had eight to ten years.” A related behavior, also common among the research participants is wearing clothes for the garments’ complete technical lifetimes, in other words, utilizing apparel items until they no longer function as intended. As Informant M7 expressed, “Generally when I buy things...I wear them until they fall off of me.” Informant M8 stated a similar sentiment, “I really wear my clothes a long time. My wife has to tell me when it is time for new clothes,” and Informant M3 described his strategy for extending the technical lifetime of his apparel;

Informant M3: I will cycle things through. Like if it is a nice pair of pants that are too worn out for being worn in the work environment then I will make them into casual, Sunday afternoon attire. Or if the bottoms are frayed, I will cut them off and make them into shorts or something like that.

Two other behaviors discussed by the research participants as ways in which they limit the amount of apparel they acquire are to make repairs and alterations to clothing

and to refashion garments they already own. For example, Informants F6, F13 and F15 describe some of the repairs they have made to garments:

Informant F6: I had a shirt that I bought secondhand that I wore for about seven years that started to get tears in it and I actually embroidered flowers on top of the tears so I could continue to wear it for another – I think it tore again after about three months.

Informant F13: Right now I'm even having slacks...relined. The outside fabrics are good [but] the lining tends to go.

Informant F15: I actually had my leather coat dyed because I wanted to keep it. After a while leather gets a little worn but [the jacket] is still okay.

And as Informant M8 discussed, some of the participants even consider the repairability of items prior to acquisition.

Informant M8: I always buy shoes that I know can be resoled.

Similarly, in discussing how they limit the amount of apparel they acquire, many of the research participants, including Informants F5, F14, and F15, spoke about refashioning apparel they already owned into garments that better suited their needs and aesthetic tastes, in other words, extending the aesthetic lifetime of the garments.

Informant F5: Sometimes I will sew something I have into something new, so I'm not just throwing away a bunch of clothes.... I've turned a lot of t-shirts into halter tops and one time...I combined a t-shirt and a dress to make it just like a longer, flowy shirt.

Informant F14: I just took a shirt that my daughter was going to get rid of that I always liked the fabric. Sometimes it's as simple as recutting sleeves that don't flatter you. So I just did that and hemmed them back up and now it's a shirt that I wear to work instead of something that went in the waste stream.

Informant F15: I have some skirts, and I have some dresses but...some of the dresses are so long.... What I did is I went to a tailor and I cut them off to just below the knee.... So what's amazing about just shortening that dress, because I was going to get rid of it, but I thought well let's see what it looks like short and I was like, "Oh, this is great."

And although all of the participants who are engaged in the more intricate reconstruction of apparel items are women, a few of the male participants, including Informant M4, reconstruct some of their garments in simple ways to extend their lifetime.

Informant M4: I will take pants that are getting frayed or worn out along the bottom and make them into shorts or, I don't know what you would call them, but for women they would be called Capri pants I guess – I like to wear them when I am hiking and camping. So yes, I do that a lot.

Similar comments were made by Informants M1 and M3.

Informant M1: I am always turning, you know, pants into shorts or little things like that.

Informant M3: If the bottoms [of the pants] are frayed, I will cut them off and make them into shorts or something like that.

Another strategy of note, only mentioned by Informant F11, to limit the quantity of apparel acquired, is to avoid the behavior altogether. As she says, “I find that I don't go to the mall as much, so that I am just not faced with the decision.” Finally, in addition to the above mentioned strategies for limiting the amount of apparel acquired, Informant M1 spoke of a unique strategy – trying not to acquire certain items of apparel at all, particularly footwear.

Informant M1: I have been trying, lately, just not wearing shoes so then I don't need socks.... [summer] is the best time to go barefoot but I might end up doing it all the rest of the year. Of course in the winter time it might be a little chilly.

Therefore, this study's research participants are not only limiting the amount of apparel they are acquiring as a way to be ecologically conscious consumers, they are also employing a variety of strategies to limit their apparel acquisition. As described above, these strategies include: acquiring apparel only when necessary and decreasing their need for new apparel by taking care of their current garments; only replacing garments when

their old ones are beyond their technical lifetime and are not repairable; and refashioning apparel.

Attribute-Focused Acquisition

A second behavior providing evidence of ecological decision making in apparel acquisition behaviors is the participants acquiring apparel specifically because the garments exhibit certain environmentally preferable attributes. Particularly, the participants, such as Informants M2 and F14, acquire apparel because the fibers are environmentally preferable and/or because of other attributes considered environmentally preferable.

Informant M2: So when I do need to buy something, [I] try to make the most environmentally friendly choice that [I] can – whether it is fair trade clothes or ones that are made with more sustainable materials, or if it's an organic cotton or companies that we know about that practice – whether it is an educational aspect of the environmental issues or companies that try to model that with the way that they make stuff – conserve water and energy and use those more sustainable materials. [I] try to support those as well.

Informant F14: When I buy new things I try to look for things that are produced sustainably, as far as I know.

Environmentally Preferable Fibers

This research study defines environmentally preferable fibers as organically-grown fibers or fibers that are more environmentally sustainable in at least one aspect when compared to conventional fibers; and among the study's participants, 92.3% of them have acquired clothing made from environmentally preferable fibers. The fibers mentioned by the participants, including Informants M8, F14, and M4, as having acquired include organic cotton, hemp, recycled content fibers, bamboo, and soy. Organic

cotton was the most commonly discussed (53.6% of the participants), hemp the second most (30.8%), and recycled content the third (26.9%).

Informant M8: [My wife and I] have recognized the large quantities of dangerous chemicals that are being used to grow cotton so we have been trying to move towards more sustainable fibers.

Informant F14: I tend to try to [buy] natural fibers first and then stuff with sustainable fibers. Like if I see bamboo or organic cotton that's in the affordable range that will be second and then third I look for things with recycled content.

Informant M4: I have just recently started to purchase organic cotton t-shirts.... I think that as I need to get new items of cotton clothing I think I will try to get cotton that is organic over other cotton.

The range of apparel items made from environmentally preferable fibers that the participants discussed having acquired include shirts, pants, jackets, shoes, pajamas, fitness apparel, undergarments, and socks. Informants F16 and F15 have also purchased bed sheets made from organic cotton, and Informant F12 stated that she owns a wallet and purse, both made from hemp.

Several participants, including Informants M9 and F6, also indicated that, for environmental reasons, they prefer to acquire apparel made from natural fibers versus synthetic fibers.

Informant M9: I only wear natural fibers. I believe that if you are going to be out in nature then wear natural clothing.... Plastic is not kind to the environment so why would you want to buy anything that has plastics in it? I don't buy anything made from synthetics. I stick to natural fibers like cotton.

Informant F6: I definitely go for natural materials.... I buy cotton, wools and hemp and silk and linen because all of that stuff is biodegradable at least.

Although empirical evidence indicates that most mainstream natural fibers have as much, if not more, of an environmental impact compared to synthetic fibers (Chouinard &

Brown, 1997), as previously stated, this dissertation uses an intent-oriented approach in examining behaviors for ecological decision making. Therefore, in acquiring apparel made from natural fibers, because the intent is to be ecologically conscious, these behaviors can be seen as manifestations of ecological decision making.

Although 92.3% of the participants have acquired apparel made from environmentally preferable fibers, a majority of the participants engage in this behavior inconsistently. To illustrate, when probed for details about the quantity of apparel made from environmentally preferable fibers that they had acquired, many of the participants responded similarly to Informant F12, “I don’t have a lot of it. I think I literally have one or two t-shirts,” or Informant F9, “I don’t go out of my way to purchase organic clothing.” And only some of the participants (30.8%), such as Informants M1, M8, and F10, stated that when they do need to acquire new apparel they consistently attempt to meet the need by finding an environmentally preferable fiber alternative.

Informant M1: And if I do think about buying some new clothing, I would like to buy some hemp clothing or some organic clothing.... The last item of clothing that I bought was a pair of hemp pants. So I look at it like, if I am buying something new, at least I am buying something that is ecologically good.

Informant M8: If [my wife and I] are buying cotton clothing, we look for organic cotton. And more recently we have been looking for hemp as well.... It is rare for us to buy regular cotton anymore.

Informant F10: Lately, every time I buy new clothing, I have been trying to purchase organic clothing – things made from organic cotton and hemp and stuff like that.

Environmentally Preferable Apparel

Similar to the definition for environmentally preferable fibers, this study considers environmentally preferable apparel to be any apparel in which at least one of

the garment's attributes, other than fiber content (which is covered separately above), is environmentally beneficial. Of the study's participants, 76.9% expressed that they try to acquire apparel that has environmentally preferable attributes, and the most common attributes sought by participants are attributes related to the design and construction of the garments and attributes related to the production of the garment. Among the research participants, two primary attributes related to the design and construction of apparel influence their acquisition decisions: durability and classic styling. The environmentally preferable attribute related to the production of the garment that the research participants most indicated is important to them is the garment's country of origin.

Durable, high quality apparel. Many of the participants, when asked in the interviews about how their eco-conscious lifestyles have influenced the type of apparel they acquire, spoke about trying to purchase clothing that is durable and high quality. This is a common behavior among the participants because as Informant M5 said, "I am considering the quality of a garment before purchasing it because I am looking to wear something for a long period of time" and, therefore, decrease their need to acquire new apparel. Similar comments by Informant M9 and F5 reiterate this sentiment.

Informant M9: When I purchase a new jacket it will be [Brand A] because I know it is very good. Their jackets are very good and they last very long.

Informant F5: I want clothing that [will] last a long time.... I've been the same size for a really long time. I'm not growing any time soon. So [the clothing] would just have to be durable and get a lot of use out of it.

Several of the participants, like Informants F7 and F13, spoke about how important the attribute of durability is to them specifically when acquiring shoes.

Informant F7: When I buy shoes I more think about the durability of the shoe and try to buy shoes that will last me a long time and serve the function

that I need them to and make do with those kinds of shoes.

Informant F13: I'll try to buy good quality leathers, good classic cuts, you know looking at the workmanship of it and think is this thing going to last for a couple/two/three years, in terms of the ways I wear shoes, and be comfortable but be good looking?

And as Informant F3 iterates, for some of the participants, durability is such an important attribute for their apparel that they will buy leather shoes (despite being vegetarians or opposed to other items of apparel made from leather) simply because of how long leather footwear lasts.

Informant F3: I do buy leather shoes because I know that they're going to last awhile.

Classically-styled apparel. The second product design attribute that many of the research participants, like Informant F13, desire when acquiring apparel is classic styling.

Informant F13: I look for nice stuff that I could wear multiple years, because it is for me an investment. So I want classic lines. I don't want real trendy stuff.... I tend to wear very, very classic kinds of clothes.

The participants indicated several different reasons why they perceive acquiring classic apparel as an eco-conscious behavior. For example, as Informant F16 discussed, having classically-styled apparel reduces the quantity of clothing needed.

Informant F16: I think that if you buy good basic garments you can interchange them and then you don't need a lot of clothing.

Or as Informant F2 expressed, with classic apparel, garments do not pass in and out of fashion, therefore it is not necessary to be continually acquiring new apparel in order to feel stylish.

Informant F2: It's fun to buy things which are pretty fashionable at the moment, but if you wear that two years from now you're going to look like an idiot. For example, I'll try to find something timeless rather than like a ballet flat with a giant bow on it which is popular right now, but they will look stupid in a couple years. It's good to buy things that are timeless.

A final reason some of the participants focus on acquiring apparel that is classically styled is so that the apparel can be worn in a variety of different environments and circumstances, also contributing to the goal of limiting the quantity of apparel necessary to acquire.

Informant M2: When we got married last summer I was going to wear a suit in the wedding and...I wanted a suit that was what we needed but would be a good environmental choice as well.... So I ended up getting a standard, tan suit which I will have for years.... Something that wasn't too fancy so that I would have occasion to wear it more often than something that was super nice and that I would never wear again.

Apparel country of origin. In addition to the research participants demonstrating evidence of ecological decision making by acquiring apparel that is durable and classically styled, many of the participants also stated that they try to acquire apparel produced in an environmentally preferable manner. In this regard, the factor that is of most concern for the participants is where the garment was made or its country of origin.

Many of the research participants, such as Informants M6 and F2, desire to acquire apparel made in the United States.

Informant M6: I look for the "Made in the USA" tag.

Informant F2: I would prefer clothing made in America.

And for most of the participants for whom a garment's country of origin is an important attribute, the environment is a significant influencing factor. For example, as Informant F6 expressed, many of the participants want to reduce the transportation impacts of their apparel acquisitions.

Informant F6: If I have a choice between buying something from China and buying something made in the States, I'll go for something made in the States because at least I know it hasn't traveled half way around the world and had that increased carbon footprint.... So I definitely prefer to buy

something that is produced locally or that's made locally or at least within the state, if not the state, at least the country.

And as a few other participants, like Informant F10 stated, they have more confidence that, as compared to in lesser developed countries, stricter environmental regulations govern apparel manufacturing in the United States.

Informant F10: Where [the garment] was made would be a consideration for me because there are certain [environmental] standards that we have here versus, like Malaysia or Indonesia...like rules for what they can and can not do to the environment.

In trying to acquire apparel produced in an environmentally preferable manner, the research participants definitely focused on garments' country of origin as opposed to other indicators. However, this may be the result of, other than fiber content, country of origin being the only production information that is available to the participants and not because they are not concerned with other production related environmental issues. Therefore, if the participants had other, easily accessible, production information (like carbon outputs or energy requirements) these indicators may be of concern to them as well.

Considering these behaviors, it is apparent that a second way this study's research participants are making ecological decisions as they acquire apparel is by focusing on environmentally preferable attributes of the apparel they are acquiring. The attributes focused on by the participants include apparel fiber content, apparel durability, apparel styling, and apparel country of origin.

Source of Apparel Acquisition

The third behavior the research participants engage in that provides evidence of ecological decision making during apparel acquisition is the fact that they are acquiring

apparel through environmentally preferable sources. The sources most commonly referenced by the participants include second-hand sources, ecologically conscious companies, independent companies, and home sewing.

Second-Hand Sources

A large majority (84.6%) of the research participants stated that they have utilized second-hand sources for acquiring apparel, and although there is typically an economic factor partially motivating this behavior the research participants definitely engage in the behavior for environmental reasons. Comments by the participants that highlight this include:

Informant F4: When my environmental passions kind of developed, I realized that [second-hand shopping] was better not only for economic reasons but for environmental reasons too.

Informant M4: I made the decision [to shop second-hand] because I wanted to reuse clothing that someone else didn't want anymore. There are a lot of really good clothes in second-hand clothing stores and so it seemed like a good way to lower my own environmental footprint – by purchasing clothing that someone else had worn – that had already gone through one life and now I could use it for a second life and keep it from a landfill and also decrease my need to purchase new clothes.

In addition to acquiring apparel from the more traditional second-hand sources of consignment and vintage resale stores and charity thrift stores, many of the participants also discussed receiving second-hand apparel from family and friends. For example Informant M1 stated that he acquires most of his apparel from family members.

Informant M1: It has been probably six years since I have bought any new clothing. I have people that pass on clothes to me – used clothes passed down.... Like I have an aunt who lives in New Orleans; and she sent me a couple of boxes of shorts and shirts – some nice, name brand stuff. So it is all stuff that I didn't have to pay for, and it is really more clothing almost than I can use. And I also have an older brother so I get a lot of clothing passed down from him as well.

Another example is from Informant F6 who organizes and attends clothing swaps with

friends as a way to acquire second-hand apparel.

Informant F6: In recent years I've started going to clothes swaps with friends.

Primarily it is for a free way to get new clothes but then the added bonus is that the environmental impact is low.

Similarly, Informant F2 described how she has acquired apparel through unconventional second-hand sources.

Informant F2: I lived at a vegetarian co-op for most of my undergrad [years] and we had a table where you put things that you don't want and then anyone in the co-op can take from the table. I accumulated a lot of clothing that way.

From the nearly 85% of participants who make use of second-hand sources for apparel, 77.2% rely on these sources for a large portion of their apparel acquisition needs, as is evident by the following comments:

Informant F6: I go to great lengths to try and buy secondhand.... The majority I purchase is from...a second-hand clothing store and their stuff is great. It's really good quality. They are really picky about what they buy so you get a wonderful selection of very good, very low cost clothing. I buy 40 if not 60% of my clothing there.

Informant F8: Pretty much everything that I buy is used from thrift stores or I get them as hand-me-downs.

Informant M4: I do purchase quite a bit of my clothes through second-hand clothing stores. I think that is the most significant way that my environmental values have influenced me in the way of clothing. I am willing to purchase clothing second-hand and do that a fair bit. In fact both the shirt and the pants that I am wearing today are from second-hand stores.

Therefore, acquiring apparel through second-hand sources is a significant, environmentally motivated behavior among the study's participants, providing further evidence of ecological decision making during apparel acquisition.

Ecologically Conscious Companies

For 73.1% of the participants, another source for their apparel acquisitions is ecologically conscious companies – companies that have a reputation for selling environmentally preferable apparel, conducting business in an environmentally responsible manner, and supporting environmental protection. The companies may be traditional brick-and-mortar stores, internet companies, or print-catalog companies. The study's participants patronize these companies not only because they sell environmentally preferable apparel but also because the companies represent a greater environmental consciousness. Comments made by Informants M1 and F1 demonstrate this sentiment.

Informant M1: I do know that if I heard something positive about what a company was doing, either labor wise or in terms of the environment, that I would be very willing to support that company with my money if they had products that I needed.

Informant F1: I like buying...from bigger companies that are making products that are organic or sustainably made.... So if I do buy clothing I'll try to look for [eco-conscious] types of companies if I can.

Furthermore, several of the participants, such as Informant M1, stated that acquiring apparel from ecologically conscious companies was a primary source for apparel.

Informant M1: If I absolutely had to buy [a shirt] I would want to choose somewhere that has organic clothing.

As indicated in comments made by Informant M8, because it is difficult to find traditional brick-and-mortar stores that are ecologically conscious, often the easiest method for acquiring eco-conscious apparel is through the mail.

Informant M8: Since I have been trying to purchase more sustainable clothing I have been doing more mail order – catalogs and the internet.

Most of the participants who are acquiring apparel through mail order continue to acquire through traditional stores. However, because of his commitment to acquiring apparel with

environmentally preferable attributes and the realization that he cannot readily find traditional retail stores selling apparel made by ecologically conscious companies, Informant M5 said, “I do all of my clothes shopping either online or through mail-order catalogue.”

Independent Companies

In addition to acquiring apparel through second-hand sources and ecologically conscious companies, 57.7% of the participants also attempt to acquire apparel at local, independently owned companies. For example, Informant F8 states;

Informant F8: Pretty much I am shopping local if I am store shopping at all.... I am not likely to purchase something just because it is made from bamboo but I am more likely to purchase something that is made by a local artist. Like one of my good friends is a textile artist and she makes skirts and stuff and so I am quite likely to support her and her work.... And she uses either, you know, funky materials or hemp and other natural materials. Or she is going to thrift stores and buying old fabric and making them out of that.

And as Informant M4 says;

Informant M4: I like the store because it is locally owned and not a chain and that is one of the things that I really do try to do – support locally owned businesses.

Similarly, a number of the participants, including Informants F8, F9, and F17, also spoke about acquiring environmentally preferable apparel while attending conferences and trade shows focused on environmental issues.

Informant F8: When we host the Great Lakes Bioneers Conference we also have vendors that show up there.... And several of them are textile vendors, and I have bought from them.

Informant F9: I’m willing to purchase stuff from vendors at festivals and supporting those economies, assuming the clothing is consistent with what I want.

Informant F17: I was at an energy and sustainable living conference recently and there were booths set up there and I did look for clothes there. There were some shirts that were all cotton and were sustainably made – organic like – and I did buy a couple of t-shirts.

The research participants choosing to acquire apparel from independent companies is another instance of when intent-oriented and impact-oriented definitions of environmentally preferable apparel consumption may not coincide. This is because it is not known whether acquiring apparel from local and independent companies is environmentally preferable compared to acquiring from national chains.

Home Sewing

The final source that 23.1% of the research participants, including Informant F17, discussed relying on for the acquisition of apparel was home sewing of the apparel.

Informant F17: I also make a lot of my clothes. The pair of pants that I am wearing were made from probably about six yards of corduroy.... I also search resale shops for things that may not fit me but then I alter them. I am also an expert sewer and I love to sew – fibers arts are my passion. So I will reconfigure something so that it works for myself.... I think the idea of making clothes is really important.

And as expressed by Informants F1 and F2, this behavior, to a large degree, is environmentally motivated.

Informant F1: I just bought myself a sewing machine and I'm learning how to sew my own clothes.... It is something I've always kind of wanted to do and at the same time it was environmentally motivated. I felt like if I can sew my own clothing, at least in some ways, it's cutting down on how far my clothes have to travel.

Informant F2: I would like to start producing my own clothing. I just started this project last week.... I know the cotton or whatever I'll be buying will be unsustainable but at least like the production and labor will all be internalized by myself. So I feel like that's one way to do it.... So right now I'm just making a dress.

Regarding the sources the research participants rely on for acquiring apparel, it is apparent that they are engaging in ecological consumer decision making. The participants acquire apparel through second-hand sources, ecologically conscious companies, independent companies, and home sewing, all behaviors influenced by the participants' attempts to lead eco-conscious lifestyles.

Avoidance Behaviors

Another behavior discussed by the research participants which provides evidence of ecological decision making during apparel acquisition is the participants' avoidance of engaging in behaviors they perceive as not ecologically conscious. Primarily the participants are avoiding apparel made from certain fibers and acquired from certain companies, with a smaller number avoiding acquiring apparel through mail order.

Avoidance of Fibers and Dry Clean Only Apparel

Among the research participants 76.9%, for environmental reasons, avoid certain fibers when acquiring apparel. Most commonly the participants, as specified by Informant F6, avoid synthetic fibers such as polyester, spandex, and nylon.

Informant F6: Polyester, nylons, and all the rest, I really don't think they're good for sweating capabilities and the human body but the other thing is they're not biodegradable so if you're throwing something into the landfill, that's not biodegradable. And the manufacturing of those materials causes pollution.

Informants M7 and F9 also indicated their avoidance of synthetic fibers when acquiring apparel.

Informant M7: I really don't like the plastic [fibers]. I really don't. I mean as somebody who has spent his life fighting the chemical industry I know what it costs [environmentally] to make those.

Informant F9: I don't typically like buying fake fabrics, synthetic fabrics.... I would have to say just I don't like the way it feels, but I also just don't like

the idea of wearing something that is petroleum based.

In addition to synthetic fibers, some of the participants, including Informants M9 and F4, also avoid acquiring apparel products made from fur and leather for environmental reasons.

Informant M9: I don't like shoes made of real leather because of the chemicals used in processing the leather. That is probably one area where I sometimes go into a synthetic.

Informant F4: Leather I will buy if it's second-hand, but never in like a shirt or pants or anything. But if there's a bag that I like and it's leather and it's second-hand I might buy it if it's cheap enough.... I don't know if I have any shoes with leather in them.... Or like belts... I think my belt is leather.... If I saw a really awesome pair of shoes that were leather, I wouldn't buy it if it was new. Like I think any type of leather I would only get second-hand. And I still feel kind of weird about it.

Other participants discussed additional apparel they avoid. For example, Informant M2 said, "Conventional cotton stuff I generally avoid," and Informant F14 stated, "I also look at trying not to get 'dry clean only' things because that's to me that's a negative in a number of ways. It's really a chemical laden process."

Avoidance of Companies

In addition to avoiding apparel made from certain fibers, 65.4% of the participants also expressed that they avoid acquiring apparel from certain companies, also for environmental reasons. For some of the participants, like Informants F6 and F7, if the environmental or other practices of a company are not in line with personal attitudes and values, they will no longer patronize that particular company.

Informant F6: I would never purchase at [Company A] because I've gone looking there and every piece of clothing they had was made in China or the Philippines. I went there twice, and I didn't go back again because I couldn't in all of good conscience buy something there because I knew what the environment implications are of what they have on their shelves is.

Informant F7: I came across...a website that ranked corporations based on environmental and social criteria; and I've used that for a while now. Not to make decisions about individual articles of clothing, but if I see that [Company B] invests in a pulp and paper facility that is clear-cutting the heck out of southeastern forests, I will rule them out – external of the products that they're selling but based on other corporate practices.

Additionally, when asked if, for environmental reasons, they avoid acquiring apparel from any companies, a number of the participants, such as Informant F8, said they, “avoid anything that is a national chain.” Informant M2 made similar comments.

Informant M2: I generally don't shop at any box store chain thing. And they might carry a brand that I might like but I just don't want to bother with them so I have just sort of ruled them out...because there are usually issues on the local level with those anyways – wherever they plop one down – that I might not agree with – as far as their location or their huge new parking lot that they partially covered a wetland...or something like that.

More specifically, Informant M9 asserted that he avoids acquiring apparel from Company A because for environmental reasons he only wears apparel made from natural fibers and, “almost all of their clothes there are synthetics and I don't like synthetics.... I don't go there because of the type of fabrics that they use.”

Avoidance of Mail Order

The final avoidance behavior that 15.4% of the research participants engage in while making ecologically conscious apparel acquisition decisions is the avoidance of mail order. The participants who avoid mail order for their apparel acquisition perceive this as an ecologically conscious behavior because, as Informant F5 expressed, “There are a lot of options online to buy eco-conscious clothing, but then you need to factor in where it is being shipped from. So, I mean it might be eco-conscious, but then does its mileage outweigh all that was used to make it?” Similarly, Informant F3 said;

Informant F3: Part of the reason I don't purchase clothing online is, environmentally speaking, I know that it's going to be shipped from farther and there's all that packaging.

Making Sacrifices

The final behavior that provides evidence of ecological decision making in regards to apparel acquisition is that many of the research participants make a variety of different personal sacrifices in order to be able to acquire environmentally preferable apparel. The sacrifices that the study's participants indicate making include: sacrificing nonhuman resources, the style of apparel acquired, the amount of apparel acquired, and the sources from which the participants acquire apparel.

Sacrificing Nonhuman Resources

In terms of nonhuman resources, 61.5% of the study's participants sacrifice money and/or time in order to acquire environmentally preferable apparel, although more of the participants spoke about sacrificing money than time.

When asked, most of the participants agreed that they would pay extra money for an item of apparel that they believed to be environmentally preferable because as Informant M2 said, "I am willing to pay more for what I believe in." An attitude echoed by Informant F11.

Informant F11: I realize that maybe it is okay to pay more for something if it is better environmentally.

Despite a consensus about being willing to pay more for environmentally preferable apparel, among the participants there is variance in how large of a premium they are willing to pay.

Informant F6: I would be willing to pay probably 20% more for an organic t-shirt.

Informant F9: I would definitely be willing to pay more for clothing that was low impact – like maybe 30%.

Informant M5: In general I guess I would pay 30 – 50% more.

Most of the participants, including Informants M5 and M6, agreed that there is a limit to the amount of money they will sacrifice.

Informant M5: Sometimes the price of eco-conscious clothing is an obstacle, but most of the time I think it's worth it. But I'm not going to pay \$200 for a pair of organic cotton jeans, either.

Informant M6: I'd pay 50% more for something like that. I wouldn't pay 100% more. I have other priorities, obligations, responsibilities that would be a factor.

But for a few participants there really is not a limit to how much extra they are willing to pay for eco-conscious apparel. These participants include Informant M7 and F5.

Informant M7: I would pay extra for [organic clothing] too. I don't think there is any limit.... Well there probably is but even double wouldn't phase me. If I could find that right stuff that would fit me and last forever – which is not unreasonable because, as I said, clothes are not something that I think about when I wake up in the morning – so I don't buy a lot of clothes and they tend to last a long time – so why not pay more for something that I know is better for the environment.

Informant F5: If I could find something that was eco-conscious and even if it was really expensive, if I felt I would use it over and over and it would be a key piece to my wardrobe, I would put the money down for it. But I haven't found anything yet like that.

In addition to sacrificing money, Informants M5 and M1 also communicated that they also sacrifice time in order to acquire environmentally preferable apparel.

Informant M5: I will go to pretty great lengths to try and find something that is organic cotton or hemp or something sustainable. I am willing to look until I find what I want.

Informant M1: I would probably drive all the way to another city to find a store that had organic cotton – to try and find that kind of clothing. I would go to that extent because I am sure there are not those stores in my town.

Yet these are the only two participants who discussed this issue during data collection and most participants focused only on sacrificing monetary resources.

Sacrificing Style of Apparel

A second factor that 23.1% of the research participants discussed as sacrificing in order to acquire environmentally preferable apparel is the style of their apparel.

Compared to mainstream companies, there are far fewer apparel companies selling environmentally preferable apparel. As a result, there is also less of a range of apparel available in terms of style; and consumers who want to acquire eco-conscious apparel have less variety from which to select. This limitation in style is something that several of the research participants said they accept, and as a result they sometimes end up acquiring apparel that is not precisely what they had originally wanted, as Informants M5 and F13 explain.

Informant M5: I am happy with my new [hemp] shoes but I am not thrilled...because the style isn't quite what I was looking for..... I think they look more like a running shoe – well not even like a running shoe really. I kind of wanted something that looked like a casual Oxford, sort of – and these are nothing like that – these kind of look more like skater shoes or something..... I mean I think they are good shoes and they are attractive too but they are just not quite what I wanted.

Informant F13: I needed a business suit and I struggled to find something that I thought was a good enough quality and I actually had to settle. I didn't find what I really wanted, but I ended up having to go with something that I thought would last a long time but it was still a blend of synthetics and wool and I really wanted 100% wool.

Along different lines, Informant F2 spoke about how she is willing to acquire apparel that is less trendy in nature so that she can wear her apparel for longer and acquire less apparel as a result, but that it is still a difficult behavior for her.

Informant F2: It's fun to buy things which are pretty fashionable at the moment, but if you wear that two years from now you're going to look like an idiot.... It's good to buy things that are timeless. Which has been hard for me to do.

Therefore, although some participants are not always able to acquire their first choice style of apparel, their commitment to engaging in eco-conscious apparel acquisition behaviors means they are willing to make some sacrifices in terms of the style of the apparel that they do acquire.

Sacrificing Amount of Apparel Acquired

Another sacrifice that 26.9% of the research participants discussed making in order to be ecologically conscious in their apparel acquisition is the amount of apparel they acquired. For example, according to Informant F6, "I would definitely buy more clothing if I wasn't environmentally conscious," and Informant F3, "My environmental attitudes have made me purchase less clothing." Similar comments made by Informants F1 and F13 highlight the feelings of giving something up that the participants associate with this behavior.

Informant F1: I would say my belief in environmental responsibility has actually made me acquire less clothing.... I don't think I buy as much as I used to which is sometimes something that is hard to do because I really liked buying clothing.

Informant F13: I used to be a real fashion maven, a real shoe hound and I can't do that now. I'm now very, very conscious of my shoe choices now. So even that kind of thing has changed for me.... I do buy stuff, but I'm really am stepping back. I used to have no qualms about you know if I wanted something and I liked it, I'd just buy it. And now I'm very, very conscious of it.

This behavior of sacrificing the amount of apparel acquired is distinct from the behavior of limiting amount of apparel acquired because for the research participants sacrificing the amount of apparel acquired there is a definite feeling that they are giving up a

behavior in which they previously enjoyed engaging. On the other hand, the research participants who are limiting the amount of apparel they acquire, do not speak about this behavior in the same sacrificial sense and do not perceive the behavior as being challenging for them.

Sacrificing Source of Apparel Acquisition

The final sacrifice that 7.7% of the participants mentioned as making is from where they acquire their apparel. In her interview, Informant F11 discussed how, prior to thinking about environmental issues while acquiring apparel, she was a mainstream consumer who enjoyed the excitement of going to the mall and acquiring new apparel. However, over the last two or three years, motivated by her desire to be more eco-conscious, she has switched to acquiring apparel primarily through consignment stores. When asked what had prevented her from acquiring apparel through second-hand sources in the past, Informant F11 replied, “Oh just mad consumerism and the feeling that I liked things that are fashionable, new, and shiny.” Presently, Informant F11, because of her environmental attitudes, is willing to sacrifice her desire for apparel that is “new and shiny” for apparel acquired in consignment stores.

Informant F15 also spoke of a recent change in how she acquires apparel. Over the last several years, motivated partially by her environmental values and attitudes, Informant F15 has undergone a radical change in her lifestyle; and she currently acquires all of her apparel through either second-hand sources or eco-conscious companies. But as she expressed, “This is a huge shift for me. I mean [Company E] and [Company F] were like my stores. I mean I called [Company E] when I moved to ask if they would build a store [here]. That’s how much I liked [them]. I still really like them.” However,

shopping at mainstream companies does not fit with the participant's current eco-conscious lifestyle so she is willing to sacrifice the experience of acquiring apparel through these sources so that she can instead acquire apparel with greater environmental consciousness.

It is clear the study's participants engage in ecological consumer decision making during apparel acquisition by making certain sacrifices in their acquisition of apparel. Most of the participants are willing to sacrifice money. Other sacrifices made include time, style of apparel, amount of apparel, and source of apparel acquisition.

Summary and Implications of Research Question Two

A contribution of this dissertation is to affirm that not only are certain consumers engaging in ecological consumer decision making while acquiring apparel, but this study also provides evidence that consumers are actually engaging in a range of ecologically conscious apparel acquisition behaviors beyond those previously considered. Prior research examining ecologically conscious apparel consumption behaviors focused on a select range of apparel acquisition behaviors, including acquiring apparel made from environmentally preferable materials (Hines & Swinker, 1996; Hustvedt, 2006; Kim & Damhorst, 1998), acquiring second-hand or classically-styled apparel (Kim & Damhorst, 1998; Stephens, 1985), and avoiding apparel products for environmental reasons (Kim & Damhorst, 1998).

Although the research participants in this study engage in these above mentioned ecologically conscious apparel acquisition behaviors, this study identifies a number of additional behaviors not previously discussed in the literature. First, the research participants adhere to limits in terms of the quantity of apparel they acquire. The

participants achieve this by focusing on apparel needs and extending the lifetime of their apparel products. Second, besides the participants acquiring apparel made from environmentally preferable fibers and apparel that is classically styled, they are also selecting apparel with other environmentally preferable attributes, including durability and country of origin. The third unique behavior discussed by the participants in this study is that, for environmental reasons, they are acquiring apparel from independent companies and home sewing. Further, ecologically conscious behaviors unique to this study are the participants' avoidance of companies they believe are not ecologically conscious and their avoidance of mail order for acquiring apparel. Finally, the participants also spoke of being willing to sacrifice nonhuman resources, style, amount of apparel acquired, and source of apparel acquisition in order to be ecologically conscious apparel consumers – all behaviors that have not previously been discussed in research.

The findings for this second research question hold a couple of important implications. The first implication is in respect to the range of apparel acquisition behaviors in which ecologically conscious apparel consumers engage. Apparel consumers, who are engaging in ecologically conscious apparel acquisitions, are doing so in a variety of ways; and they are not only buying apparel made from organically-grown cotton or other environmentally preferable fibers. Therefore, with this in mind, consumer education programs focusing on modifying the apparel acquisition behaviors of consumers and encouraging ecologically conscious apparel consumption should educate on all of the possibilities for ecologically conscious apparel acquisitions. Among the research participants in this study, two of the most common behaviors are limiting their consumption of apparel and acquiring apparel through second-hand sources. Because

neither of these two behaviors requires increased financial resources and because second-hand sources for apparel are typically readily available, these may be the most practical ways for apparel consumers to be ecologically conscious. Therefore, these behaviors may also be logical ones to encourage in consumer education programs trying to modify the apparel acquisition behaviors of mainstream consumers. Based on the behaviors emerging from this study, other ecologically conscious apparel acquisition behaviors that consumer education programs could focus on include educating consumers how to identify high quality or classically-styled apparel products and teaching ways to refashion and update garments already owned by consumers.

The second implication of the findings of this research question is that among some consumers an apparent gap exists between the intent and impact-oriented definitions of environmentally preferable apparel acquisition behaviors. Some of the research participants engage in apparel acquisition behaviors that they believe are environmentally preferable when in actuality, this may not be the case. Therefore, in order to decrease the negative impacts of apparel acquisitions on a more consistent basis, greater consumer education about the environmental impacts of various apparel acquisition behaviors needs to occur.

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**ECOLOGICAL CONSUMER DECISION MAKING:
NATURE, PROCESS, AND BARRIERS IN APPAREL ACQUISITION**

VOLUME II

By

Kim Yvonne Hiller Connell

A DISSERTATION

**Submitted to
Michigan State University
in partial fulfillment of the requirements
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DOCTOR OF PHILOSOPHY

Department of Human Environment: Design and Management

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CHAPTER SIX

NATURE AND PROCESS OF ECOLOGICAL DECISION MAKING DURING APPAREL ACQUISITION

Understanding both the nature and process of ecological consumer decision making for apparel acquisition is this study's second research question. This next chapter resolves this research question by answering three sub-questions: (a) What is the nature of ecological decision making that distinguishes it from other types of decisions? (b) What stages do ecologically conscious decision makers go through in their consumer decision making related to apparel acquisitions? (c) What simplification strategies do decision makers use in relation to ecologically conscious apparel acquisition and decision making?

As this chapter examines each of the above questions, it provides evidence ecological decisions are a distinct decision type made by the research participants and that ecological decisions are holistic in nature. The chapter also demonstrates the participants' ecological decisions are influential to at least some of their other types of decisions. In the context of apparel acquisition, the fundamental aspects of the participants' ecological decision making occur outside of, and prior to, individual acquisition decisions. Furthermore, this study finds that, while their ecological decision making shapes individual apparel acquisition decisions, the decisions made by the research participants while acquiring apparel, in many ways, are technical decisions. However, ecological decision making heavily influences these technical decisions; and

through their apparel acquisition decisions, the participants aim to make technical decisions that are also ecologically rational in nature.

Nature of Ecological Decision Making

In examining the apparel acquisition decision making of this study's research participants, the finding is that ecological decision making is a perspective that, individuals apply to other decisions in a holistic manner. Unlike other types of rationality such as economic or technical, in the case of apparel acquisition, ecological rationality does not appear to include a particular class of procedures utilized in apparel acquisition decision making. Instead, the ecological rationality present among the research participants is a broad perspective they apply to many of their decisions that aims for balance between humans and their environments so as to consistently and effectively provide the good of life support for humans and other living organisms. Therefore, in the case of apparel acquisitions, ecological decision making is not a process utilized to make individual apparel acquisition decisions. Instead, ecological decisions are higher-order decisions that influence an individual's future decisions, including apparel acquisition decisions, and lifestyle as a whole.

Holistic Nature of Ecological Decision Making

Overall, this study's data indicate that at some point in their lives, as their awareness of human impacts on the natural environment increased, the research participants became interested in environmental sustainability. Because of this interest, they considered how they desired to interact with the natural environment and subsequently made intentional choices to be ecologically conscious individuals and live

ecologically rational lives. As demonstrated in comments made by Informants M1, F2, and F8, a few of the participants perceived their efforts to make ecologically rational decisions the result of their childhood socialization process.

Informant M1: My parents have always tried to instill in us appreciating the earth. I grew up in a very rural environment, and I was an Eagle Scout. So I grew up a lot in the woods, played a lot in the woods, and loved the environment.

Informant F2: As a child I lived on a three-and-a-half acre old goat farm. And my parents liked to pretend they were Bob Vila, and they remodeled the house themselves and my dad's really into energy efficiency and stuff. My parents also sent me to – we had a nature center nearby – so I went to their day camps because I wasn't athletic at all. I couldn't participate in the normal day camps like soccer, so I did that. My mom's an artist so I would do art stuff, and so I guess inadvertently I was always shown to respect nature through those activities.

Informant F8: My parents are very environmentally minded so I was just born into it. And I was a PBS child. So the animals drew me in, and it all just sort of followed from there.

However, most of the study's participants, including Informants F4 and F9, spoke about how this ecological rationality developed as an evolutionary process in their adult lives.

Informant F4: My interest in environmental issues evolved during college. I mean my mom recycles and stuff like that, but...I grew up in the suburbs of Detroit and I knew what the environment was but I had no clue about impacts on the environment and what it all meant. So in high school I wasn't thinking about it at all. And then in college my interest arose mostly from professors and the courses that I had and then I tried a few groups on campus.... I just met some nice people and it just kind of evolved from there.

Informant F9: I think I became more conscious about these things because I just grew up and recognized that I had certain values, and I didn't feel the need to give in to what society thought or said was beautiful or quality. So it was more of an almost self-confidence thing too.... I think when I was 19 and 20 – my freshman and sophomore years in college were really epic in terms of a complete shift in my perspective on reality.

Another participant, Informant F15, spoke at great length as to how she has developed into an individual determined to make ecologically rational decisions.

Informant F15: Certain personal changes started happening for me in my 40's.... I made a spiritual change first. That was really I think the first thing I did – was I switched to – I grew up Christian Reformed and I joined a nondenominational church. So, a big switch from the way my family raised me. So I started meeting people there.... I started getting interested in organic things. There was an organic living group that was started there, and I got on a committee and then got very involved in it and then that opened up learning about a whole range of things. I took some courses...what people do is they meet in small groups and they read the readings and then they come back the next week and they discuss them. One was on voluntary simplicity.... So there was one on voluntary simplicity and then there was one on sustainability, I forget the exact name of it.... So I just started reading more and more. Financially I started looking at how I was spending money, and I was really spending money unconsciously before.... So it kind of started from a spiritual stand, then it went to financial. But before it went to financial what I did is I quit my job at the law firm.... I wanted to make a change.... During that time, that's when I started the whole financial aspect. Where am I spending money? What am I spending it on? And totally started pulling in what I was spending. Because I had made a lot of money at the law firm, but I spent a lot of money, because I was just totally unconscious of what I was doing. Being part of the voluntary simplicity small group I learned about certain cleaning supplies that people use. So it started to change all these different parts of my life. All my bulbs are compact fluorescent at home, so I did that change. You know, during this time I cleared my closet, I got rid of the suits because I wasn't going to go back to a job where I had to have all that. Then the owner of an eco-conscious clothing store came and spoke to our group. That's how I, you know... that's when I started buying some things there..... So you can see how it just started snowballing into different areas of my life...

Irrespective of how it developed, what is common among the research participants is that they are ecologically conscious individuals and that this consciousness is an essential component of their definition of self, fundamental interests, and values.

Once the research participants made the decision to be ecologically conscious individuals, environmental sustainability became a significant influence in their lives, with an ecological consciousness underlying and governing most aspects of their daily

decision making and behaviors. Therefore, a conclusion of this study is that, on a daily basis, the research participants engage in ecological decision making. This is because integrated throughout many of the participants' decisions is a consideration of the natural environment and the goal of balancing personal needs with environmental sustainability. A comment made by Informant F14 expresses this effort.

Informant F14: I think about the environment all the time.... I try to think about it in pretty much every aspect of my life. We still want to live happy lives and enjoy our lives, but I don't think it's mutually exclusive. I don't think you have to be out-of-control consuming in order to enjoy your life. We try to find a balance in there and make everyday decisions to both enjoy our lives and be mindful of the environment.

The research participants also perceive their environmental values, attitudes and beliefs greatly influencing their daily decisions and actions. As Informant F7 said, "I think of my environmental values as being essential to my being so most choices would, therefore, be influenced by them." Similarly, Informant M4 said, "I try to live my life in an eco-conscious manner overall." And many of the research participants, including Informants M2 and F6, gave specific examples as to how the value they place on the natural environment and their related attitudes and beliefs about protecting the environment guide their decisions and actions on a daily basis.

Informant M2: I would say my attitudes and values about the environment influence my life very much....because of my own personal passions and beliefs it is always sort of on the forefront of my mind. So my wife and I have changed every light bulb in the house that we are renting with efficient light bulbs, and we are frequent customers at farmers' markets around here and in stores that have locally produced or other environmentally friendly products.

Informant F6: Pretty much everything I do has the environment in mind. For years and years I have recycled. I have always composted my own vegetable waste, and I've always been extremely conscious about energy use so I always turn things off inside the house. I turn my air conditioning down to 86 during the day. And then I minimize water use as well. I do everything

that I possibly can to minimize water use.... I re-use almost absolutely everything. I mean I re-use envelopes; I will cut stamps off envelopes and reuse them. I reuse everything I possibly can. I use cloth shopping bags. I even re-use the small plastic bags that I bring my vegetables and grains and things home in. I actually bring those plastic bags back to the store and use them again.

From the comments of these participants, and additional ones made by many of the others, this study finds that ecological decision making touches many aspects of the participants' lives including food, transportation, and home energy consumption. Furthermore, as the participants make decisions related to these issues, they aim to make decisions that are as ecologically rational as possible.

One of the areas of their lives where ecological rationality is evident is in the participants' general approach to the consumption of goods. As they make consumption decisions, the goal of the participants is to be ecologically rational and consume products in an environmentally sustainable manner because, as Informant F17 said, "We need to take a look at our individual lifestyles and we need to do the very opposite of what the American way-of-life and capitalism tells us to do. We must constrict. We must downsize. We must reassess our needs." Overall, many of the participants spoke about consumption habits being one of the primary ways in which their ecological consciousness influences their daily decisions and behaviors.

Informant M4: I think I am pretty conscientious in general about how much I consume and the types of products that I consume.

Informant M5: I try to balance my actions, balance that responsibility with living a comfortable life – trying to find that balance and trying not to consume too much.

Informant F9: A lot of how my daily decisions are influenced by the environment is through purchasing choices and consumption and choosing not to be as huge of a consumer.

Based on the research participants' self-definition as being ecologically conscious individuals and their explanations as to how that consciousness infuses itself throughout their decisions and behaviors, including consumption, the holistic nature of ecological decision making is evident. In this study, ecological decisions are derived from a type of rationality that does not appear to apply to a particular set of circumstances. Instead, it is a rationality that has implications and influences throughout a variety of decisions.

Ecological Decision Making and Apparel Acquisition

In aspiring to be ecologically rational decision makers and consumers, the research participants recognize that decisions they make about apparel acquisitions are environmentally consequential. Furthermore, this understanding influences their apparel acquisition decisions as they aim to limit the environmental impact of their apparel acquisition behaviors and make ecologically rational acquisition decisions.

All of the research participants are aware that their apparel acquisitions affect the environment. When asked about how much of an impact they felt their apparel acquisitions had on the environment, despite engaging in many ecologically conscious apparel acquisition behaviors, many of the participants responded along the lines of Informants F2 and F4:

Informant F2: I guess I would still say a lot just based on knowing true costs.

Pretty much all my clothes are made overseas, that's going to cost oil.... I mean all of that has obvious costs to it. I mean everything that goes into it is negative pretty much. I mean me driving to the store, paying for it on a credit card which is connected to a bank which might support forest logging even has an impact.

Informant F4: I mean I think I impact it more than I would like to...mostly because I do shop at [mainstream] places. I would like to not do that because I feel like it does have a negative impact on the environment.... But on a scale of 1 to 10, 10 being the best and having no impact on the environment at all I would say I am like a 4.

Based on the awareness that apparel consumption is environmentally consequential and frequently ecologically irrational, the individuals participating in this study, such as Informant M2, have made ecological decisions to be as ecologically rational apparel consumers as possible.

Informant M2: I would say I have been really concerned about the environment and my clothing consumption for about five years.... At first it started with me realizing that maybe it would be best to, instead of buying new stuff – before I was really even aware of companies that might make eco-friendly clothing, I would go shopping at thrift stores or take better care of the clothes that I had in order to make them last longer.... So that was the way that I started.... And then as I have gone along in life and have learned more information and actually need new clothes, I try to make good choices.

Ecological Decisions Specific to Apparel Acquisition

In order to achieve their goal of acquiring apparel in an ecologically rational manner, the research participants discussed making several ecological decisions specifically related to apparel acquisitions. These decisions are distinct from, but highly influential to, the individual acquisition decision-making process; and they include setting limits on apparel quantity and establishing specific decision rules about the types of apparel they will acquire. The research participants made these decisions prior to initiating the consumer decision-making process for a particular apparel acquisition. Additionally these decisions appear to, once made, remain relatively stable and consistently applied from one acquisition to the next.

Setting ecologically rational acquisition limits. The first ecological decision made by the research participants related to their apparel acquisitions is deciding to set limits to the quantity of apparel they acquire. As discussed in Chapter Five, one of the most habitual ecologically conscious apparel acquisition behaviors engaged in by the

research participants is their adherence to limits to the quantity of apparel that they acquire. Prior to this behavior of adhering to limits, the research participants make the decision to set limits related to their apparel acquisitions and then establish limits that they believe balance their personal apparel needs with the integrity of the natural environment. It is through these two processes that the research participants engage in ecological decision making.

Stated repeatedly, the consensus among the participants is that setting limits for apparel acquisitions is fundamentally important in terms of decreasing the environmental impact of their personal apparel consumption. Some of the related comments from the interviews include:

Informant M2: I feel that the best environmentally-friendly choice of consumption or buying something is not to buy it.

Informant M6: One lens to kind of put on your life is to ask, “Do I need it?” An understanding that from this perspective, less is always better...you can’t do better than not buying something...if I don’t buy it and don’t throw something else away in the process, I’m keeping things longer, reducing consumption.

Informant F3: To me there are a lot of people who are...“armchair” environmentalists. They’re like, “Oh you know I’ll build my second home out of sustainable materials.” But I wonder why he needs a second home? Environmental consumerism itself is kind of contradictory. So for me it’s more about consuming less than about what I am actually consuming.

Therefore, in setting limits to the quantity of apparel acquired, the research participants believe they are making important, ecologically rational decisions.

In setting limits, most research participants spoke of their current wardrobe being their limit. As detailed in Chapter Five, a personal characteristic of the research participants is their perception of already having an adequate amount of clothing. Based on this consideration, the research participants believe they do not need to acquire

additional apparel and have reached their clothing limits. Therefore, based on this limit, the research participants primarily acquire apparel only when their wardrobes fall below their current levels.

Establishing ecologically rational decision rules. Besides making the ecological decision to set apparel acquisition limits, the research participants also set decision rules about the types of apparel they acquire, which is an additional ecological decision. Many of the ecologically conscious acquisition behaviors of the research participants outlined in Chapter Five are the evidence of these decision rules. The decision rules established by the research participants to guide their apparel acquisition decision making and ensure the decisions are as ecologically rational as possible include:

1. acquiring apparel made from environmentally preferable fibers when possible,
2. acquiring apparel that has environmentally preferable attributes such as being durable or classically styled, and
3. acquiring apparel from second-hand or other environmentally preferable sources when possible.

Chapter Five presents evidence that the research participants follow these rules while making apparel acquisition decisions.

The Distinctness of Ecological Rationality and Ecological Decisions

To achieve this study's objective of understanding the nature of ecological decision making it is important to examine how ecological rationality differs from other forms of rationality. Diesing's (1976) framework of rationality guides this analysis. Within his framework, Diesing conceptualizes five forms of rationality present within society. To differentiate between the rationalities, he defines the types of decisions

related to each form and identifies a unique trend of development and value produced.

Chapter Two of this dissertation outlined these distinguishing features. However, in order to illustrate how ecological rationality is a form of rationality that differs from the others,

Table 6 provides a supplementary review of Diesing's framework.

Table 6. Distinguishing Features of the Forms of Rationality

Form of rationality	Decision type	Trend of development	Value produced
Technical	Technical decisions – which relate to the achievement of a single, already determined, goal.	Technological progress	Achievement of given goal
Economic	Economic decisions – which relate to the selection among alternative, competing ends through the allocation of scarce resources.	Economic progress	Maximum achievement of goals
Social	Integrative decisions – which relate to the clarification and mediation of values, goals, or roles in the face of conflict.	Harmony, integration of the social system, and clarification of roles	Social action
Legal	Judicial decisions – which relate to establishment of rules necessary for a society to function and govern itself.	Legalism and stratification	Conflict resolution and legal justice
Political	Political decisions – which relate to the process of decision making.	Unknown	Freedom

In his discussion of rationality, Diesing (1976) states that the five forms of rationality co-exist and fulfill different functions within any society. Therefore, to justify

this study's conclusion that ecological rationality is a distinct form of rationality, it is necessary to demonstrate the functional necessity(ies) it fulfills that the other types of rationality do not cover.

This dissertation defines ecological rationality as a style of behavior that is concerned with interactions between humans and their environments and appropriately balances these relationships as to consistently and effectively provide the good of life support for humans and other living organisms. Ecological rationality is the only form of rationality that explicitly focuses on the functional necessity of balancing human—environment interactions – therefore distinguishing it from other rationalities. Continuing with Diesing's framework, the decision type associated with ecological rationality are ecological decisions, which this dissertation defines as decisions that take into consideration and allow the accomplishment of both social and environmental goals, while balancing the needs of humans with environmental sustainability. Furthermore, through the making of ecological decisions, the trend of development is integration of living and non-living systems, and the value produced through ecological decisions is sustainable interactions between humans and environments and the ability of earth's ecosystems to sustain life.

The review of Diesing (1976) in Chapter Two stated that his framework of rationality does not pay specific attention to rationality related to the natural environment, although he does acknowledge a congruence between social rationality and humans' adaptation to what he refers to as the non-social environment. Therefore, of Diesing's five forms of rationality, social rationality is the only form that acknowledges the importance of the natural environment in decision making. However, while

commonalities exist in that both aim for integration, ecological rationality remains distinct from social rationality because social rationality is primarily concerned with decisions and actions dealing with interpersonal relations and not, as is the case with ecological rationality, decisions and actions dealing with human—environment relations. Additionally, while the trend of development in social rationality is integration of social systems, ecological rationality's trend of development more broadly focuses on the integration of living and non-living systems – further distinguishing it from social rationality.

Also reviewed in Chapter Two, both Bartlett (1986) and Dryzek (1987) have reasoned about the nature of ecological rationality at the theoretical level. By providing empirical evidence and concluding that ecological rationality is a sixth, distinct type of rationality that fulfills functional necessities not covered by Diesing's (1976) five types of rationality, this dissertation supports the theoretical reasoning of both Bartlett and Dryzek. Additionally, findings from this dissertation support Bartlett's, and contradict Dryzek's, perceptions about the degree to which ecological rationality is anthropogenic in nature. Whereas Dryzek conceptualizes the nature of ecological rationality to be anthropogenic, Bartlett asserts that it is a less anthropogenic form of rationality compared to others. Considering the values and attitudes of the research participants (see Chapter Five), and their aim to be ecologically rational individuals not only to support human life but also to create systems capable of supporting other living organisms, this study shares Bartlett's conclusion that ecological rationality is less anthropogenic in nature than other forms of rationality.

Summary of the Nature of Ecological Decision Making

To summarize, and as depicted in Figure 6, this study concludes that, among the participants of this study, ecological decision making is a decision-making perspective applied by individuals who have chosen to interact with the natural environment in ecologically conscious and sustainable manners. This study also concludes that it is a holistic decision-making perspective that, once adopted, influences and changes decisions at many different levels, including apparel acquisition decisions. Consumers making ecological apparel acquisition decisions are individuals who recognize the environmental significance of apparel consumption and desire to acquire apparel in an ecologically rational way. In order to do so, the ecological apparel acquisition decisions made by the study's participants are to set limits to the amount of apparel that they acquire and to establish decision rules that are ecologically rational and that guide their apparel acquisitions. These are ecological decisions that, once made, the participants apply to individual apparel acquisition decisions on a consistent basis. Therefore, as the next section of this chapter develops, although the participants make decisions about individual acquisitions through a predominantly technical decision-making process, it is a modified process highly influenced by their ecological decision making.

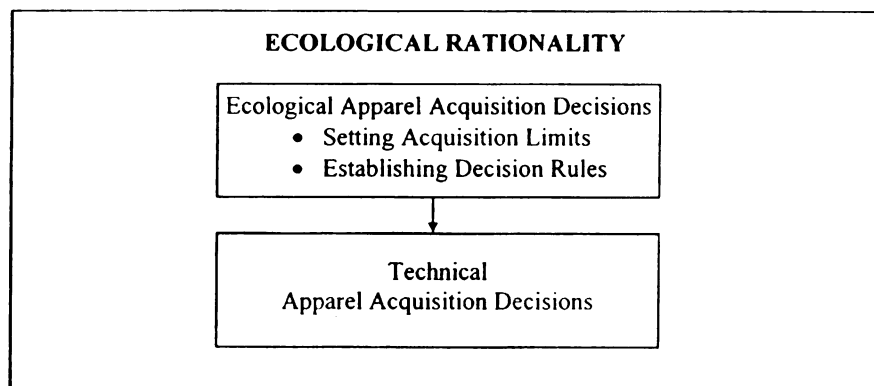


Figure 6. Model of ecological rationality as it relates to apparel acquisitions.

Dominant Decision-Making Process for Apparel Acquisitions

Absent from both Bartlett's (1986) and Dryzek's (1987) reasoning of ecological decision making is an examination of the process of making ecological decisions. Clarifying this process, from the perspective of apparel acquisition decisions, was an objective of this study. Therefore, to understand the process of ecological decision making related to apparel acquisitions, the second part of this study's third research question asks what stages ecologically conscious decision makers go through in their apparel acquisitions. In order to gather data relevant for answering this research question, the researcher asked each participant to discuss a recent acquisition decision about a specific clothing item or items that was motivated by environmental reasons. In asking the participants what induced the decision and how they went about making the decision, it became possible to analyze their decision-making processes. Also, while answering other questions throughout the interviews the research participants often made comments that revealed additional information about their process of decision making. Related to this interview question, five participants (Informants M1, M2, M6, M7, and F9) could not recall the last time they had acquired apparel. Therefore, it was not possible to analyze the decision-making process of these participants in regards to a specific item of apparel. However, other comments made during the interviews with these participants still revealed important data related to their ecologically conscious apparel acquisition decisions.

Because of this study's objective of better understanding ecologically rational consumer decision making, analysis of the decision making of the research participants focused only on environmentally motivated apparel acquisition decisions. During data

collection the participants occasionally referenced apparel acquisition decisions not influenced by their environmental values and attitudes but for this particular study, analysis of those decisions, in terms of the decision-making process, did not occur.

The data from this study indicate that in making ecologically conscious decisions about premeditated apparel acquisitions, a dominant decision-making process is present among the research participants. In this model, depicted in Figure 7, the decision-making process begins with the research participants recognizing and then defining an apparel need. After definition of the decision problem, the next stages of the decision process are information gathering, alternative generation, evaluation, and selection – which the participants repeat twice – first to decide the source for acquiring the apparel item and second to determine which apparel item to select. After selecting an item that best resolves the decision problem, the final stage in the decision making of the research participants is a reassessment of the decision problem by questioning apparel need a second time. This next section of the chapter explains, in detail, the various components of this decision-making process.

In the exploration of the consumer decision-making process of the research participants, it is evident that as they make decisions related to individual apparel acquisitions, their process results in technical decisions. This is because the intention of their decision making is the selection of means that lead to the achievement of a single, already accepted goal (Diesing, 1976). However, in ways indicated below, as the participants make technical decisions related to their apparel acquisitions, their intent to be ecologically rational apparel consumers significantly influences their decisions; and therefore, the participants utilize a distinct decision-making process in their apparel

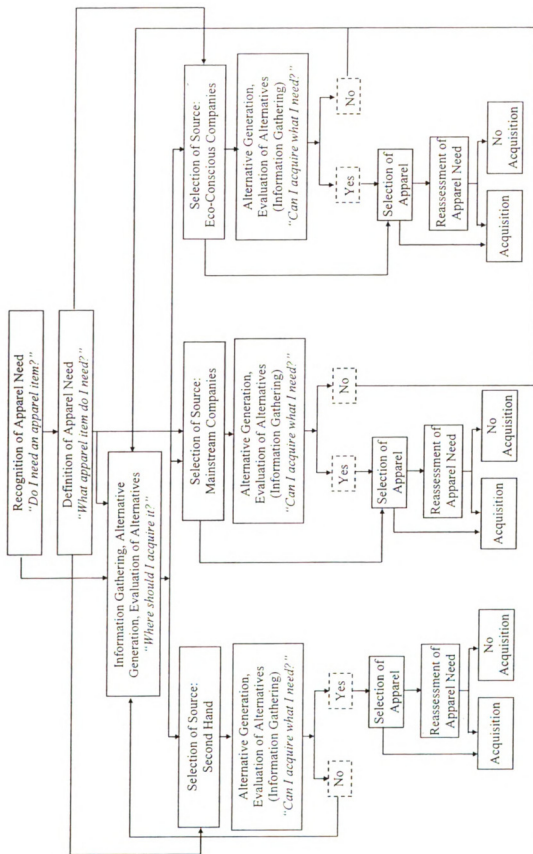


Figure 7. Decision-making model of ecologically rational, technical apparel acquisition decisions.

acquisitions that is ecologically rational and different from traditional consumer decision-making models.

Recognition and Definition of Apparel Need

Similar to other consumer decision-making models (Blackwell et al., 2001; Carroll & Johnson, 1990), the ecologically rational consumer decision-making process presented in this study, and employed by most of the research participants, begins with their identification of a problem and the understanding they need to make a decision. The recognition of the existence of a decision problem is typically because the participants realize they need a particular item of clothing. And as outlined in Chapter Five, their identification of apparel needs typically results from the recognition of having worn-out clothing that needs replacing or having an event to attend for which they lack appropriate apparel. Therefore, the participants define apparel need primarily in physical, and to some extent social-psychological, terms.

In the interviews, the participants provided some specific examples of this first stage in the decision-making process.

Informant F2: The last time I went shopping it was because I realized I needed some more professional clothes for the fall semester.

Informant F7: I had to go shopping recently because I was going to a wedding and I didn't really have anything to wear to it.

Informant F12: I just went to [Second-hand Company B] last weekend, mainly because I have a [job] interview coming up; and I wanted to see if they have any business suits because the interview is with a consulting firm so I knew I would probably have to step up my wardrobe. Where I work now is very casual.

Informant M3: Last fall I was doing an internship in DC and I noticed that a lot of my nicer clothes were getting older and they apparently needed to be replaced.

In each of the above examples, in identifying a gap in his or her current wardrobe, the research participant recognized a decision problem. Informant F2 lacked professional clothes for work, Informant F7 did not have dress clothes for a wedding, Informant F12 required a suit for a job interview, and Informant M3 needed apparel appropriate to wear to his internship.

During this first stage of the decision-making process the research participants focus on apparel need. As the participants identify a deficiency in their current wardrobe, they recognize a decision problem and a decision-making opportunity. Therefore, in the decision model that dominates among the research participants, the primary decision made at this stage in the process is whether the individual needs “*apparel item x.*” Because, as previously discussed, the participants assert that their environmental values and attitudes at least partially motivate their tendency only to acquire apparel when they have an actual need this study considers this an ecologically-motivated decision.

In this model of the decision-making process, after the research participants recognize a decision problem they further explore and define the problem by determining preferred outcomes. It is at this stage in the process that the participants, based on their apparel need, more precisely define the apparel item(s) they want to acquire. For example, after Informant M3 identified that he lacked appropriate clothing to wear at his internship, he proceed to define the decision problem by deciding, “I needed to get a couple of pairs of pants and a few dressier shirts that I could wear.” Informant M4 also discussed his process of recognizing and defining a recent decision problem related to an apparel acquisition.

Informant M4: I bought a new pair of jeans just last week actually. I actually had needed a new pair of jeans for quite a while already. I really hate shopping and so even when I really do need to get something new, I usually procrastinate getting it for as long as I possibly can. And that was the case with the jeans. I had a pair of jeans that were getting pretty worn out and ratty but I just kept wearing them until I was embarrassed to be seen in them. So then last week I decided I couldn't put it off any longer and I finally went out and bought a new pair.

In this particular example, the research participant recognized a decision problem when he noticed he had worn-out jeans; and he further defined the problem by deciding that he needed to acquire replacement jeans.

To aid in this process of defining the decision problem and the apparel need, some of the participants spoke about keeping lists of apparel needs. As Informant M9 explains, "I am a list maker. I keep lists.... And I have a list of clothing that I need. Currently I need a spring jacket, some deck shoes and penny loafers, some jeans, and some shirts." Similarly, Informant F9 also said, "I usually have a list. It's like, 'I need these specific items to round out my wardrobe.'" These lists precisely define the decision problem by specifying the precise apparel items that will meet the needs of the decision-maker.

During these first two stages of recognition and definition of apparel need, because the research participants are deciding whether to acquire new apparel, significant influence by their prior ecological decision making occurs. The previous section of this chapter examined how one of the most significant ecological decisions made by the research participants is their setting of limits as far as the amount of apparel they acquire. Also discussed earlier in the chapter, the ecological decision making concerning the setting of apparel acquisition limits occurs prior to individual acquisition decisions. However, during apparel acquisitions, the decision process stages of recognition and definition of apparel need are highly influenced by the previously set limits; and therefore,

although the decisions made during these stages of the decision problem may be technical in nature, they are also ecologically motivated technical decisions. In fact, for a few of the research participants, these are the only two stages in their decision making influenced by their ecological decision making. This is because after these participants go through these steps of the decision-making process and determine they need to acquire apparel and those needs fit within their set limits, they then proceed to acquire what they need and do not think about the environmental consequences of the acquisition through any of the other stages of their decision making. A comment made by Informant F3 illustrates this phenomenon.

Informant F3: If I am out shopping the environment doesn't even cross my mind. But before I actually go to a store I'm like, "Do I need another sweatshirt? Do I need to go shopping?" So that is when the environment plays a role in my decisions.

Therefore, within this study's decision-making model, because the decision process begins with the ecologically conscious behavior of questioning needs, even if the process results in the acquisition of non-environmentally preferable apparel from mainstream stores, this study still considers the participant as subjectively having made an ecologically rational decision.

In the aggregate, reduced apparel acquisitions have significant positive environmental implications. Therefore, because it is during the decision-making stages of recognition and definition of apparel need that these consumers determine if they will acquire apparel, focusing on the improvement of decision making at these beginning stages has the potential to increase the ecological rationality of apparel consumption decisions. Based on this realization, consumer education tools, at least partially, should focus on aiding consumers in the identification and definition of their apparel needs.

Variations in Recognition and Definition of Apparel Need

While most of the research participants begin their apparel acquisition decision-making process by recognizing and defining their apparel needs, there are deviations from this pattern. For example, Informant F4's decision-making process still begins with a recognition and definition of a decision problem, but she focuses less on physical needs compared to other participants. As she explained,

Informant F4: I wear the same things a lot, so every once in a while if I get kind of frustrated with not having something new to wear then I'll decide, "Okay, it's time. I can get a new shirt today.".... It's mostly because I'm bored, because essentially I could wear the same things for a year. I don't really need new clothes.

In her apparel acquisition decision making, Informant F4 still recognizes decision problems, which in this above case was frustration with her current clothes; and she still defines the decision problem by specifying what apparel items she wants to acquire. However, unlike other participants, her physical apparel needs do not form the basis of this process – primarily because she does not perceive herself as requiring a lot of new apparel. Instead her need for novelty or aesthetic stimulation through apparel triggers the acquisition.

A second way that Informant F4 is different from other research participants within this decision-making model is that, as she says, "A lot of times when I'm shopping it's not like I have an idea of what I want." This indicates that she may go shopping for apparel when she recognizes that she is bored with her current clothes (recognition of decision problem) but that she does not always define the decision problem and goes shopping because she wants a new article of apparel without knowing exactly what she wants.

Despite not focusing on physical or other social-psychological needs while acquiring apparel and perhaps acquiring apparel on a wants basis as opposed to a needs basis, Informant F4 still perceives herself as engaging in ecological decision making. This is because, for environmental reasons, she limits the frequency of her acquisitions; and she only occasionally gives herself permission to acquire apparel that may not fulfill needs. Furthermore, even when not defining her apparel needs, and instead acquiring apparel because she wants it, a large portion of that apparel is from second-hand sources. So she may be acquiring apparel even when it may not meet a need, however she is doing so through an environmentally preferable source; and therefore her desire to be ecologically rational still heavily influences her acquisition behaviors.

First Stage of Information Gathering and Alternative Generation, Evaluation, and Selection

After identifying and defining their apparel item need(s), the next stage of the decision-making process dominant among the research participants is the first stage of information gathering and alternative generation, evaluation, and selection. The goal of this stage is selection of the source for the apparel acquisition. To make this decision, this stage of the process involves a number of different steps. These include gathering information, generating potential sources for the acquisition, and evaluating the potential sources – all of which contribute to the participants' selection of the source for their apparel acquisition.

Stage One of Information Gathering

As the participants decide from where to acquire their desired apparel item, the first thing that some discussed doing is gathering information about potential sources for

the acquisition, both in terms of information about companies and the sources' availability of the desired apparel item. For example, as he decides the source for his apparel acquisitions, Informant M5 sometimes researches background information on companies.

Informant M5: What I usually do is I will read something about a company and then I will go and try to find out more information.... So I would go and look at their website and read about them.

Informants F1 and F7 also spoke about gathering company related information.

Informant F1: There's Co-op America...they have the Green Pages, it's like the Yellow Pages for sustainable businesses. So you can go there and find out about new kinds of businesses, and I've used that a lot when it comes to purchasing. I feel that is very helpful.

Informant F7: I came across a link that was a website that ranked corporations based on environmental and social criteria, and I've used that for a while now.

Additionally, during this process some of the participants, including Informants M2, F7, and F13 stated that at this stage in their decision making they sometimes gather information in terms of what apparel products different sources sell.

Informant M2: I like to look online to see what's out there and see what companies have.

Informant F7: I just recently went to a wedding and...instead of just going out to the stores to look for a dress, I first went on websites for a bunch of department stores just to see what was out there and try to make a choice.

Informant M13: In the case of...the business suit that I was looking for, I did do some Internet searching online first to kind of scope out some of the designers and whatever, just to see if anybody was making that kind of stuff lately and ...so that I could see if I could rule out any of the companies.

Although the first stage of information gathering is not a decision-making step engaged in by all of the research participants, for those that do, this step plays an

important role in the decision-making process and in the participants' decisions about sources to utilize for their apparel acquisitions. Also evident by the above comments is the important role played by the Internet during the stage of information gathering, with all of the quoted participants relying on online sources for their information searches.

Stage One of Alternative Generation, Evaluation, and Selection

After gathering information about apparel acquisition sources (if any information was sought), the research participants' next step in their decision making is to generate and evaluate alternative sources for acquiring the desired article of clothing. The results of this study's second research question (see Chapter Five) indicate that in acquiring apparel, the research participants make use of four environmentally preferable sources: second-hand stores, ecologically conscious companies, independent companies, and home sewing. Additionally, the participants also acquire some of their apparel from mainstream apparel companies. Therefore, in generating alternatives for acquiring their apparel, these are the sources considered by the research participants. However, because only one of the participants relies on home sewing to meet a large portion of her apparel needs, it is not included as an alternative in the dominant decision-making model in this study. Additionally, because the participants consider acquiring apparel through independent companies a source for environmentally preferable apparel, the model merges independent companies with ecologically conscious companies. With these considerations, in generating alternative sources for acquiring apparel, as a group the research participants consider three primary sources, second-hand, mainstream, and ecologically conscious sources.

In analyzing the decision making of the research participants, not every research participant considers each of the three sources as an alternative for acquisition. For example, Informants M5 and M9 never consider second-hand sources when acquiring apparel and other participants such as Informants M3, M6, F3, F5, and F16 rarely do. Therefore, in generating and evaluating sources for acquisition, these participants focus on ecologically conscious and mainstream sources. Conversely other participants rely heavily on second-hand and ecologically conscious companies to meet their apparel needs and only infrequently take into consideration mainstream sources as an alternative during their decision-making process. As Informant F15 said, “My philosophy is that if I need something to consciously say okay, ‘Where am I going to go to look for this [Eco-conscious Company A] or consignment?’” However, as a model representative of the decision making of the research participants, all three sources for apparel acquisitions are important.

In generating and evaluating alternative sources for their apparel acquisitions, the participants tend to select one source over another because, based on acquired information, they believe (or know) they will be able to attain the desired apparel item through that source, and it will be at a price that they are willing to pay. Informant F16’s explanation related to an acquisition illustrates this decision variable.

Informant F16: I wanted to buy my sister a shirt for her birthday and I ended up getting it at [Eco-conscious Company D]. But I looked around for a while first. I looked at some of the local stores. But I just didn’t find anything that worked.... I had looked on the Internet at organic shirts as well and some of them were just so pricey. And when I got to [Eco-conscious Company D] – I think the shirt was \$23 – which is good for that type of style.

Comments by Informant F7 also show how the participants select a source because it is known to have desired products.

F7: I know, as an example, if I need an article of clothing, I know that [Eco-conscious Company E] is a good place to go to get it because I know that they carry a lot of organic cotton products.

For the participants who do acquire substantial portions of their apparel from second-hand sources, their decision to attain a particular item of apparel from a mainstream source instead factors down to two issues. First, as Informant F9 explained, the participants sometimes select mainstream sources over second-hand sources when they need a very definite item of clothing.

Informant F9: When I need a specific article of clothing and I know I want something that's quality I will go to a department store then. A thrift store is kind of like the jackpot. It's like you hit the jackpot or you don't.... It's like sometimes you can find great stuff, but if I need something specifically then I definitely go to a retail establishment or look online.

Therefore, because it is difficult to predict the merchandise of second-hand sources, and despite acquiring a lot of their apparel through second-hand sources, some participants decide to utilize mainstream sources when they have very precisely defined their apparel need and are not confident that second-hand sources can meet the need.

The second factor that causes some participants to decide to acquire some of their apparel from mainstream sources instead of second-hand is time. A general feeling among the research participants is that acquiring apparel through second-hand sources is a time-consuming process because they may have to return several times before finding the desired article of clothing and because apparel at second-hand stores is generally not as organized or easy to find compared to mainstream stores. Therefore, even though a large number of the participants prefer to acquire apparel through second-hand sources,

they choose mainstream sources when they lack the time to invest in meeting their apparel needs through the second-hand sources. Comments from both Informant F9 and F11 illustrate this tendency.

F9: I feel strongly about looking at thrift stores first but it also depends on how long I wait before buying what I need. If I absolutely need something, and I need it tomorrow, I'll go to a department store.

F11: Last year when I first started this job and I was really trying to get some more professional clothes, I ended up going to [mainstream stores] a lot. And that was partly just an efficiency thing. I think if I had been willing to take more time and go back, and back again, to consignment stores I could have found stuff but it just would have taken longer.

As a final note about this stage, the ecological decision-making model portrayed in Figure 7 groups together the steps of information gathering and alternative generation, evaluation, and selection. This is because, typically, these steps are interdependent and not necessarily distinct stages of decision making. This is evident in a decision-making process described by Informant F2.

Informant F2: I need a new yoga mat because I was borrowing my friend's but he moved to San Francisco. So I was researching that last night and it turns out there's jute yoga mats.... And so I was trying to get online and buy one of those, and the closest source I found was the UK. So then I was like, "Well I can't buy something from the UK because that defeats the purpose," and then I found one made by an American company and it was like \$60, which is a lot for a yoga mat, regular ones usually cost like \$10 or \$12 so I'm kind of debating about what to do. But this one that I like is PVC and latex free, and something else, like no VOCs, and it's completely biodegradable so when you're done I suppose you could put it in a compost pile....

Although the decision described by Informant F2 did not involve an apparel product, the jute fiber is an element of the textile and apparel complex. Furthermore, it illustrates the nonlinear decision-making process of some research participants. In this particular case, Informant F2's decision-making process began with recognition and definition of a

decision problem in that the person she borrowed a yoga mat from was moving away and so she needed to acquire her own. The next step of her decision making involved information gathering and learning that jute is an environmentally preferable material used to make yoga mats. She then proceeded to generate and evaluate alternatives. However, when the alternatives did not meet her acquisition criteria based on country of origin and price, she retreated in the decision-making process by generating and evaluating additional alternatives.

Variations in First Stage of Information Gathering, Alternative Generation and Evaluation

As the decision-making model depicted in Figure 7 indicates, some research participants move directly from defining their apparel need to selecting their source for acquisition. In other words, these participants skip over the steps of information gathering and/or alternative generating and evaluation.

Some of the research participants do not include information gathering as a regular part of apparel acquisitions. Frequently, these participants do so because they instead draw on previously gathered information about apparel sources. Quite a few of the research participants discussed their tendency to spend time reading about different companies and apparel sources for the sake of general interest and that this behavior was not necessarily tied to a specific apparel acquisition decision. As Informant F14 said, “I spend some time online looking for different eco-conscious clothing companies. I am just being curious of what’s out there and what is being offered so far.” So if this is the case, when it comes to making a decision about the acquisition of an item of apparel, the research participants already have stored information for utilization in their decision-

making process, even though they did not gather the information specifically for that particular decision.

After deciding to acquire apparel, in addition to skipping the information gathering step of the decision-making process, some research participants also proceed past the steps of alternative generation or evaluation and instead automatically select the source for that acquisition. This movement along the decision-making process appears to be the case in a number of instances.

First, the participants tend to select their source for acquisition after immediately defining their apparel need when their need is for an item of clothing to replace a similar item in their wardrobe, in which case they will return to the store where they acquired the original item. Informant M4's comments about an acquisition of jeans illustrate this instance.

Informant M4: I bought a new pair of jeans from a small clothing store that I knew of from before. I had bought clothes there in the past. So before buying the jeans I had decided ahead of time where I was going to go. I knew that they would have what I was looking for so I just went there.

The movement from definition of apparel need directly to selection of source for acquisition also commonly occurs among the participants who acquire a large portion of their apparel from second-hand sources. As Informants F14 and M4 explain, the participants reliant on second-hand sources do not go through the decision-making stages related to source selection because it is routine or habit for them to begin their search for apparel items at second-hand sources.

Informant F14: I always try to look first for used clothing.

Informant M4: I generally do try to go to a second-hand store first.

Furthermore, for the most part, the participants have a preferred source for second-hand acquisitions and automatically utilize that source as opposed to deciding among different second-hand sources.

A third instance in which some of the research participants select the source for their apparel acquisition without gathering information or generating and evaluating alternatives is when they select sources based on previous successful acquisitions. For example, Informant F6 says that she decides the sources for her apparel acquisitions by “wandering into the type of store that I’ve had success with before and just going to places that I know I’ve found good stuff at before.” Similarly Informant M9 said, “I know what I want and where to go and get it.” Informant F4 is another participant who described comparable decision making.

Informant F4: I bought this t-shirt that I am wearing about two or three weeks ago from [Eco-conscious Company B]. I knew that I wanted a new t-shirt and so I went right to that store. I have bought shirts from there before and I know that they sell ones that fit me. Plus I know they sell organic cotton shirts.

On this occasion not only did Informant F4 return to a store to acquire a shirt because previous acquisitions informed her that she would be able to acquire apparel that fit her, but she also knew she would be able to acquire environmentally preferable apparel so she did not feel it necessary to search for other alternatives.

Finally, in thinking about how the ecological decision making of the research participants may sometimes vary from the dominant model, a recent acquisition decision of Informant M3’s provides a unique example.

Informant M3: I actually recently discovered that with [Eco-conscious Company C] you can order things from their outlet stores. I had been to an outlet store before in Freeport, Maine. So I looked up their website but they don’t do mail orders so then I searched for another [outlet store] that does.

You can pretty much just call them up and ask them if they have something. And so I needed a new pair of shorts because the pair that I had were frayed at the edges and I had worn holes in them so I bought a new pair of organic cotton shorts from an [Eco-conscious Company C] outlet store.

This is an interesting variation from the decision-making model because after the participant decided that he needed a new pair of shorts, he did not generate or evaluate sources and instead immediately decided to try to acquire them from Eco-Conscious Company C. His decision to acquire his shorts from this company was because, as he stated earlier in the interview, “When I can I try to buy – like I am interested in [Eco-conscious Company C] and what they do.” So he had some previous knowledge of this particular company, and he knew that he could acquire environmentally preferable apparel there. However, despite not generating or evaluating sources for this particular acquisition, the participant still gathered information about the acquisition source by researching which of the outlet stores for Eco-Conscious Company C would agree to mail-order.

Second Stage of Alternative Generation and Evaluation

After the research participants select the source for their apparel acquisition, as shown in the decision-making model in Figure 7, they go through a second stage of alternative generation and evaluation – this time in regards to the specific apparel item they will acquire to solve the decision problem. However unlike in the first stage, in this second stage information gathering occurs more as an integrated part of alternative evaluation than as a separate step. During this second stage of alternative generation and evaluation many of the participants determine whether a particular item of apparel is environmentally preferable and aim to acquire the most environmentally preferable item

possible; thus it is another stage along the process significantly influenced by ecological rationality and previously made ecological decisions.

Second Stage of Alternative Generation

Similar to how the research participants generate alternative sources for acquisition, they also engage in this behavior for specific articles of clothing. It is at this step of the decision-making process that decision makers see what apparel options exist within their selected source.

As far as a method for generating apparel alternatives, the participants appear simply to search their selected source to see what apparel is available that they like. Both Informants F4 and F11 described this process in regards to their recent apparel acquisitions.

Informant F4: I went in to the store; and I walked around, looking at a lot of different styles.

Informant F11: I just looked around the store.

At this stage in generating apparel alternatives none of the participants described a process any more involved or detailed than those described by these two participants.

Second Stage of Alternative Evaluation

After the participants have a general sense of the apparel alternatives available at their selected source, they proceed in their ecological decision making by evaluating the alternatives. In this evaluation the research participants utilize two categories of purchase criteria: 1) standard apparel attributes and relational characteristics and 2) environmental impact characteristics.

Evaluation of apparel attributes and relational characteristics. Although the participants desire apparel that is environmentally preferable, they also want apparel that

meets certain standards in terms of the physical attributes and relational characteristics of the apparel. As Informant F12 stated,

Informant F12: To me it is a little more than just that the shirt is environmentally made. I need to like the design of it. There still has to be that sort of fashion – what I like for fashion – behind that organic material.

Physical attributes are the characteristics belonging to the physical garment, such as color, form, design, and price. As opposed to the physical attributes, relational characteristics of apparel imply more of a wearer's judgment based on their perceptions about appropriateness of clothing attributes for a particular situation. Examples of relational characteristics of apparel include thermal comfort, fit, practicality, and aesthetics (Hwang, 1988). Comments made by the participants indicate that both physical attributes and relational characteristics influence their decision making. For example, when asked if he had two pairs of cotton socks⁸ to choose between and he was only going to purchase one pair, how he would make his decision, Informant M9 replied, "Color." And as statements by Informants F1, F4 and M7 show, the participants typically consider physical attributes and/or relational characteristics in their evaluation of apparel alternatives.

Informant F1: If something costs a lot more, like a ton more, it will influence my buying decision.

Informant F4: Fit is probably my number one issue when I buy clothes, and cost, and environmental issues come in third. I may not be the happiest with that prioritizing, but that's how it is right now in my life.... If I had money I might buy more of it and if they were smaller I might buy more of it.

Informant M7: I am interested in how the clothes look – the fit. Color is also important.

⁸ Socks were selected by the interviewer to use as an example because the research participant had already said he had recently bought six new pairs of socks.

In these examples, the physical attribute of price was important in the decisions of Informants F1 and F4. For Informant F4, the relational characteristic of fit was also a deciding factor. And for Informant M7 both the physical attribute of color and the relational characteristic of fit played a role in his apparel acquisition decision making.

The finding that the research participants include both the physical attributes and relational characteristics as purchase criteria in their apparel consumption decisions has important apparel product development implications. In developing and designing environmentally preferable apparel, in addition to focusing on decreasing the environmental impact of their products, apparel companies must also concentrate on meeting consumer expectations in terms of both the physical attributes and relational characteristics of apparel.

Evaluation of environmental impact characteristics. In regards to the research participants using physical attributes and relational characteristics of the apparel alternatives as purchase decision criteria, their decision making does not vary from that of non-ecologically conscious apparel acquisition decisions. In fact, a study by Eckman, Damhorst and Kadolph (1990) found that the relational characteristics of aesthetics and fit and the physical attributes of color, styling, and fabric were all critical in the decision making of apparel consumers. Therefore, what separates the decision making of this study's research participants from more mainstream apparel consumers during the step of alternative evaluation is the inclusion of environmental impacts of the alternatives as a consideration.

As the research participants consider the available alternatives and decide which of the options is the most sustainable, based on their knowledge about environmental

issues related to apparel and the information available to them, they consider a number of apparel characteristics. These include fiber content, country of origin, and physical attributes contributing to environmental preferability.

In considering environmental impact characteristics, the research participants gather additional information to aid in their decision making, and this primarily occurs in terms of reading apparel labels. In fact, all but a few of the participants engage in gathering information in this manner.

The first characteristic most of the participants spoke about thinking about when trying to decide whether an alternative is environmentally preferable is its fiber content – which, as Informants F5, F8, and F10 discussed, they learn by reading products' fiber content labels.

Informant F5: I've actually started looking at labels...to see what it's made of.

Informant F8: I use primarily the label to determine whether or not a particular item of clothing had a good or bad impact on the environment. I would look at...what material it was made out of.

Informant F10: I do take the moment to read the tag and see what products are made of.

Among the participants most evaluate natural fibers as environmentally preferable over synthetic fibers and organically-grown/sustainably-produced fibers as environmentally preferable over conventionally-grown/produced fibers.

Informant M5: I look at the material/the fabric – if it is organic, if it is hemp, or if it is some other material.

Informant M1: I look to see what it is made from – if it is cotton or even better, if it is organic cotton. Or hemp even better, I think.

Therefore, in evaluating the environmental preferability of different articles of apparel, the research participants consistently consider fiber content and select items they believe to have the lowest environmental impact.

As illustrated in Chapter Five, the participants in this study, due to the environmental impacts associated with transportation, perceive acquiring apparel made in the United States as environmentally preferable compared to apparel made overseas. Therefore, the second characteristic used by the research participants in evaluating the environmental preferability of the alternatives is where each of the alternatives was made – which, as the comments below illustrate, they evaluate by reading products' country of origin labels:

Informant M1: And then I look at where it came from.

Informant M6: I think the thing I do most is look at where it's produced.

And as Informant F6 asserts, for at least some of the participants, country of origin is an important decision criterion used to compare the environmental preferability of alternatives and select the garment with the least impact on the environment.

Informant F6: If I have a choice between buying something from China and buying something made in the States, I'll go for something made in the States because at least I know it hasn't traveled half way around the world and had that increased carbon footprint.

Besides learning a product's country of origin and fiber content, the research participants gather very little other information about the apparel alternatives during this stage of decision making. This is because, first, unless the participants are acquiring the apparel over the Internet or from a progressive company providing environmental information with their products, there is very little additional information available for the participants. Although, in addition to products having fiber content and country of

origin labels, United States law also mandates all apparel products carry care labels; but the participants did not discuss gathering information from these labels in any consistent manner. A second reason information gathering at this stage is primarily limited to reading fiber content and country of origin labels is that the participants sometimes rely on previously gained knowledge about environmentally preferable apparel to aid in their decision making. As an example, when Informant M5 acquired a new pair of hiking shoes partially made from hemp, he did not gather information about the environmental benefits of the hemp fiber because as he said,

Informant M5: I have bought a lot of hemp clothing in the past so I already knew about it as a sustainable clothing option. So I knew that it was made from hemp and that it was made from a good company so that was really all that I needed to know.

In this instance, the participant did utilize information in his decision-making process; he just did not seek out that information during the actual acquisition. Likewise, during his acquisition decision making, Informant M2 also often relies on previously gained knowledge to aid in the process.

Informant M2: I can usually get some kind of frame of reference in my head that I can use – like sorting through information that I know about different materials and things like that.

In addition to the research participants using fiber content and country of origin to evaluate alternatives and assess environmental impact, a number of other characteristics factor into the decision. These include garment quality,

Informant F16: There are certain criteria that I use in deciding if a piece of clothing is good or bad for the environment.... Is it something that is going to last a while or is it going to go away in four to five washings?

Informant F10: I generally buy clothes that are durable, that will have a long life instead of buying the ones that don't. I buy things that are durable and sort of long-lasting.

Informant F13: I'm looking for good workmanship. I want it to hold up. I want it to last.

the degree of garment functionality,

Informant M5: I consider am I going to use it a lot? Is it something that I am going to use every week or is it something that I am only going to use once a year?

and the longevity of the garment style - which also relates back to the quality and durability of the garment.

Informant F2: In terms of the environment, I am thinking about...the longevity which I can use the item – if the item will stand up to the test of time.

Informant F13: I tend to step back and say, "Okay is what I'm contemplating buying going to last, can I live with it for multiple years, is it a good style? For example, I needed a new black suit.... And I struggled to find something that I thought was a good enough quality and I actually had to settle. I didn't find what I really wanted, but I ended up having to go with something I thought would last. The material was higher end but still not what I would have wanted to have. But the cut seemed as though it would last a number of seasons and not look dated and the workmanship seemed marginally acceptable.

Importance of environmental impacts during alternative evaluation. The degree to which environmental impacts of alternatives factor into the decision making of the research participants during alternative evaluation depends on the source selected for the acquisition. More specifically, when the participants select second-hand sources, the environmental preferability of individual apparel items does not factor heavily into the participants' evaluations. Informant F12's discussion of a recent shopping experience at a second-hand store illustrates this tendency.

Informant F12: I bought three business suits – two two-piece suits and one three-piece suit. I actually bought all three that I originally grabbed from the rack and tried on. I also purchased the shirt that I have on, and I purchased the slacks that I have on. Before I set out that day I think I knew that I would probably like to get more than one – two, if they had two. And then

it was just a matter of liking the style of all three. And I considered, based on the price and what else I was getting if I was able to get more. There were also a few things that I tried on that I didn't end up getting. Not so much in the business suits but in the dress shirts and in the pants. I was trying on some slacks and they just didn't fit me right – too big, too small, too wide in the leg – whatever. So probably half of the shirts and pants that I tried on I put back.

In this description of the participant's decision making, her evaluation of the alternatives focused on the physical attributes of style and price and the relational characteristic of fit; there was no consideration of the environmental impacts of the garments. Overall, the research participants who select second-hand sources for their acquisitions believe that this source selection is the primary portion of their decision making that is ecologically rational. Furthermore, because the apparel available through second-hand sources is generally already on at least its second "life," the participants believe it is not necessary to continue to consider environmental impacts of apparel while evaluating individual articles of clothing. Informants F6 and F17 communicated this general perception.

Informant F6: When I go to [second-hand stores], to be honest, I am not too concerned about the environment because I'm wearing something that somebody else has used once already.

Informant F17: I feel terribly self-righteous being in resale shops because I am purchasing something that has already been through one user – and they paid full price. So I don't think my choices are overly environmentally focused in there.

As a final note to this stage of the decision-making process, the research participants did say that after going through the process up to this point and evaluating all of the alternatives available through whatever source they selected, sometimes they are unsuccessful in finding an article of clothing to meet their needs. When this occurs, the research participants move back up the decision-making process to generate and evaluate

additional alternative sources for the acquisition and then continue to proceed through the ecological decision-making process with a different source. As Informant M4 said,

Informant M4: I generally do try to go to a second-hand store first but then if they don't have what I want then I will go somewhere else. I will not keep going back to the second-hand store to see if they have what I need.

Deviations from Second Stage of Alternative Generation and Evaluation

In the apparel acquisition decisions of the research participants there are instances in which they deviate from the steps of apparel alternative generation and evaluation. This deviation primarily occurs when the research participants narrowly define their decision problem at the start of the decision-making process; and because of this narrow definition, they may end up only being able to generate one or two alternatives and, therefore, relatively little alternative evaluation occurs. This occurred when Informant M5 searched for a new pair of hiking shoes. During the definition of his apparel need he determined the style of shoe he desired, and he also decided that they had to be made from environmentally preferable materials. With these criteria in mind, Informant M5 said,

Informant M5: It was pretty slim pickings. I don't think I even had a choice between a couple of different shoes.... I can find quite a few sustainable footwear options but I was looking specifically for a nondescript, walking shoe that I could wear just about anywhere.... So ya, that was the only pair – I didn't have any other ones that I was trying to decide between.

So in this instance, the research participant attempted to generate alternatives but he was unsuccessful and only had one option to select.

Another example of a research participant who, in acquiring a new pair of shorts, could not generate and evaluate alternatives because of a lack of alternatives meeting his apparel need, was Informant M3. This research participant acquired a pair of casual,

cotton shorts over the phone from an outlet store of an ecologically conscious apparel company. The participant described the results of this acquisition.

Informant M3: In this case I was really just looking for a basic, standard cotton short. They did have other options but they were more made from synthetics or more canvas – more outdoorsy and mine are just more casual – which is what I was looking for. And I was fine with the selection because I knew it was an outlet store and that would be the case – that they wouldn't have too much of a selection.

Therefore, not only because he selected an outlet store for the acquisition, but also because he had previously defined the style and fiber content of the shorts that he wanted, Informant M3 could not generate or evaluate alternatives and acquired the only option available to him. For this particular participant, however, buying the shorts from a company he knew to be ecologically conscious was more important than being able to generate multiple alternatives.

A final instance when research participants proceed directly from the selection of the source for their acquisition to selecting the actual garment is when, during definition of apparel need, they decide exactly what they want to acquire. In acquiring a new pair of jeans this was the path of Informant M4's decision making.

Informant M4: I bought the only pair of jeans that I tried on. I pretty much knew what I was looking for because I had bought jeans from the store before so I just picked up the pair that I thought I wanted, tried them on, and then bought them.

In this instance, the research participant was acquiring an article of clothing similar to something he had bought in the past so he felt confident in not generating or evaluating other alternatives.

As a final note about deviations from the steps of alternative generation and evaluation, none of the research participants spoke about skipping these steps in relation

to acquiring apparel from second-hand sources. Due to the unpredictable nature of available merchandise at second-hand apparel sources and the resulting need to generate and evaluate alternatives, it is understandable that the research participants do not appear to deviate from the dominant decision-making process when acquiring through these sources.

Reassessment of Apparel Need

After generating and evaluating apparel alternatives that satisfactorily resolve their decision problems, a number of the research participants do not immediately acquire an item of clothing. Instead, some of the research participants reassess the decision problem and, for a second time, question their need for the article of clothing they selected. This is not a behavior engaged in by all participants. As the ecological decision-making model presented in Figure 7 indicates, some participants move directly from deciding that a source has the apparel item needed to meet their need to acquiring the article. However those participants that include this stage of reassessment of apparel need in the decision making do as Informants F2 and F13 described,

Informant F2: Sometimes when I am at the store, before I actually purchase something I will stop and think about what I already have in my closet that could meet that need and if I already have something I will put the clothing back and not buy it.

Informant F13: I look at something I have selected and say, "Do I really need it? Do I have something else close enough to it that I can use?"

Similarly Informant M2 said, "In deciding if I need an article of clothing I think about what I currently have and what I would need it for and then base the decision on that."

And Informant F6 said,

Informant F6: When I go to a store that sells new clothing, there's more of a decision that has to take place for me to buy something there because I already have the question, "Do I need this? Am I going to wear this? Am I going to make use of this?"

Finally, in reassessing her apparel needs, Informant F10 goes as far as leaving the store to think about whether she needs the garment before making an acquisition.

Informant F10: I will see clothing that will catch my eye. I will then usually go home and have to think about it and whether or not I really need whatever the garment is. And then I will go back there however many times...and eventually I may end up purchasing something.... If I am going to buy a new garment, I absolutely have to have it and it usually takes me a few times of looking at something before I decide whether or not I really want to get it and decide that yes, this is really what I want.

As Informant F10's comment suggests, this step in the decision-making process may result in the research participants deciding they really do need the selected article of clothing, at which point the participants acquire the item. However, it may also result in the decision that the acquisition is not presently necessary, at which point the decision-making process concludes without an acquisition.

This study's realization that many of the research participants, in making ecologically conscious apparel acquisition decisions, engage in a reassessment of their apparel need before actually acquiring an article of clothing is a new contribution to the understanding of ecologically conscious consumer decision making. Traditional consumer decision-making models such as the CDP Model proposed by Blackwell et al. (2001), and reviewed in Chapter Two of this dissertation, do not include reassessment of need in the decision-making process. Therefore, by identifying this additional element to ecological decision making, this study contributes to the clarification of how ecologically rational consumer decision making differs from other types of consumer decisions.

Summary of the Ecologically Rational Decision-Making Process

This study has identified a dominant decision-making process used by the participants to make apparel acquisition decisions. The stages of decision problem recognition and definition begin this decision-making process, after which two stages of information gathering and alternative generation and evaluation follow. Finally the decision-making process concludes with a reassessment of the decision problem before making a final apparel acquisition decision.

In addition to recognizing the stages decision makers go through in their ecological consumer decision making, this study has also learned several key ways that the ecologically rational decision-making process related to apparel differs from other apparel consumption decision processes.

1. In ecologically rational decision making, apparel consumers consider a variety of sources for making apparel acquisitions, including second-hand, mainstream, and ecologically conscious sources. Therefore, apparel consumers aiming to be ecologically rational consider a different range of sources as alternatives for their acquisitions compared to mainstream apparel consumers.
2. In the evaluation of apparel alternatives, as part of their decision-making process, ecologically conscious consumers use a criterion not considered by mainstream apparel consumers. In addition to evaluating apparel alternatives based on physical attributes and relational characteristics, the ecologically rational consumer decision-making process also involves an evaluation of the environmental impact of alternatives and selection of an item that best balances all purchase criteria.

3. Because the decision making results in apparel acquisitions that are ecologically rational, the nature of the selected apparel is also different when compared to mainstream consumer decision making – with ecologically conscious consumers selecting apparel that is environmentally preferable in nature.
4. Prior to making an apparel acquisition, ecologically rational decision making sometimes involves a second assessment of the decision problem and a reassessment of apparel need that is absent in other apparel consumer decision processes.

All this considered, in regards to apparel acquisitions, there are important differences in the process of ecologically rational consumer decision making and other consumer decision-making processes to which programs working to modify apparel consumption behaviors to be ecologically rational on a consistent and widespread basis must attend.

Influence of Ecological Decisions throughout the Consumer

Decision-Making Process

As the research participants make apparel acquisition decisions, because they use a process focused on selecting among multiple means to achieve a given end, a conclusion of this study is that the research participants, in many ways, make technical decisions as they acquire apparel. However, this study also concludes that that these technical decisions differ when compared to mainstream apparel consumers' technical decisions because, in addition to being technically rational, the decisions are also ecologically rational. Because the research participants desire to be ecologically conscious individuals, ecological decision making influences their consumption decisions,

including apparel acquisitions. Ecological decisions influence the research participants as they make apparel acquisitions and progress through the decision-making process in two ways. For some of the research participants all apparel acquisition decisions have elements of ecological decisions directly and intentionally embedded throughout. These participants perceive themselves as thinking about and focusing on being ecologically rational with the majority of their apparel acquisitions. For other research participants, their ecological decisions are less influential in terms of individual apparel acquisitions. Instead, these particular participants identify their ecological consciousness as being significant in their decision making prior to decisions about individual acquisitions. Figure 8 represents both of these influences on the decision making of the research participants.

The first way that ecological decision making influences the decision-making process related to the apparel acquisitions of the research participants is through being embedded directly into their decision processes. Among the research participants demonstrating this influence, there is not only a constant awareness while acquiring apparel of the environmental impacts of that particular acquisition, but also an intent throughout the decision-making process to select garments that are as environmentally preferable as possible. A number of the study's participants discussed having this focus in their decision making.

Informant M2: Every time I purchase new clothing the environment factors into my decision of whether or not to purchase it.

Informant M8: I think that when I am shopping for clothing, I am always thinking about the environment now.

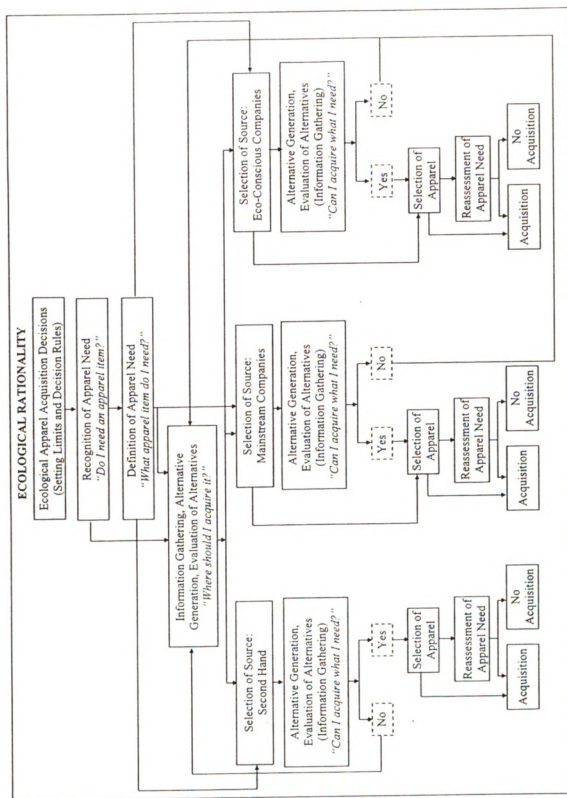


Figure 8. Combined model of ecological rationality and ecologically rational apparel acquisition decision making.

Informant F2: When I am out shopping for clothes I would say that I am always actively thinking about environmental issues.

Informant F16: I always think about the environment when purchasing new clothing. I really do.

Therefore, in terms of selecting between alternate means, technical decisions may dominate the decision-making process of individual apparel acquisitions. However, those technical decisions remain embedded within the more holistic perspective of ecological decision making. Furthermore, because they think about and focus on being ecologically rational with the majority of their apparel acquisitions, the participants perceive their decision-making process as different from the norm.

Among some of the research participants, ecological decision making influences their apparel acquisition decisions in more of an indirect manner compared to those who embed the ecological decisions directly into their individual acquisition decisions. The research participants in this particular category have an overall awareness of the environmental impacts associated with apparel production and have made a lifestyle decision to be ecologically rational apparel consumers. They are also individuals who have made the previously discussed ecological decisions to limit the quantity of apparel acquired and to follow ecologically rational decision rules in their apparel acquisition. Because of these decisions, these particular participants focus less on the environmental impacts of individual acquisition decisions.

As Informant F3 explains, the ecological aspects of her apparel acquisitions factor into her decision-making process before even deciding to acquire apparel.

Informant F3: If I'm out shopping usually [the environment] doesn't even cross my mind...but before I actually go to the store I'm like, do I need another sweatshirt? Do I need to go shopping? So that's when [the environment] plays a role in my decisions – when I have more time to think about it.

Similarly, Informant M4 does not consider environmental impacts during apparel acquisition because, aware of the environmental impacts of apparel consumption, he previously made the decision to engage in the behavior of acquiring apparel only when necessary and then to be as ecologically conscious as possible. Because he is consistent in carrying out this decision and innately acquires apparel in an ecologically rational manner, he does not feel it is necessary to consider the environment every time he is acquiring apparel.

Informant M4: To be perfectly honest, I would have to say I hardly ever think about the environment while purchasing clothes.... It is just not something that really comes to my mind when I am purchasing clothing.... I try to live my life in an eco-conscious manner overall and because of that I don't think my clothing purchases are very environmentally demanding to begin with so when I do need to purchase new clothing I don't really feel guilty about it I don't take much time to think about how to be eco-conscious with that specific clothing purchase. Especially since so much of my clothing is already second-hand and because I rarely buy new clothes.

Several of the research participants, who expressed that they commonly do not think about the environment during the actual process of acquisition, further explained this behavior. As an example, in response to being asked how often the environment comes into her decision-making process while acquiring apparel, Informant F8 explained that she does not often think about the environment while acquiring apparel because, out of habit she already engages in ecologically conscious apparel acquisitions on a consistent basis, and it no longer requires deliberation or thought.

Informant F8: For clothing it just comes in naturally because of how I live my life but it is not something that I commonly think about when it comes to clothing. There are other things that I purchase where I might think about the environment more directly but not with clothing really.... So when it comes to my clothing I am acting on a habit so I am not really thinking about the environment.

Informant F9 shared similar sentiments as to why the environment is not part of her decision-making process while acquiring apparel.

Informant F9: I have to be honest, the environment is not highly up there [when acquiring apparel], but it's more like ingrained in my behavior.

Overall, what this demonstrates is that some of the research participants believe they habitually make ecologically rational decisions prior to acquiring apparel and, therefore, do not think about the environment while making individual apparel acquisition decisions.

Simplification Strategies Used by Decision Makers during Apparel Acquisition

As explained by March (1994) theories of decision making usually accept the viewpoint that although individual decision makers, including apparel consumers, intend to engage in rational decision making, limitations of cognitive capability and incomplete information constrain these attempts. March also suggests that in struggling with these limitations, decision makers develop simplification strategies which permit them to adhere to the basic process of rational choice while accommodating for the limitations. Therefore, in this study, the final part of the decision-making research question asks what strategies ecologically conscious decision makers use, while acquiring apparel, to simplify their decision making.

One of the constraints on individuals during the decision-making process that contributes to the consumers engaging in limited rationality while making apparel acquisition decisions is information. In making decisions, individuals frequently must confront a number of information constraints, including limitations in attention, memory, comprehension, and communication. Therefore, in order to cope with these constraints, decision makers utilize a variety of simplification strategies to aid in the decision-making

process (March, 1994). In this research study, evidence suggests that, while making apparel acquisition decisions, the research participants utilize three simplification strategies. These strategies are editing, applying heuristics, and compromising.

Editing

Editing⁹ is a simplification strategy used by individuals whereby, in making decisions, they utilize a minimal number of cues, attend to attributes sequentially, and eliminate alternatives with attributes not meeting the set standard (March, 1994). In the case of apparel acquisition decisions, editing as a form of simplification means that the decision-maker focuses on a small number of apparel attributes or characteristics, considers them in an order of importance, and eliminates apparel that does not meet a standard set by the decision-maker.

The study's participants use the process of editing to simplify their ecological decision making. For instance, in generating alternatives during the apparel acquisition decision-making process many of the research participants have a decision rule to eliminate from consideration any apparel made from certain fibers such as conventional cotton, synthetic or dry-clean only fibers, fur, and leather. Other forms of editing occurring in the apparel acquisition decisions of the participants include eliminating apparel manufactured and/or sold by certain companies, and eliminating apparel not meeting certain attribute/relational characteristic standards such as styling, comfort, and practicality. The analysis and discussion of this study's second research question in Chapter Five provides full evidence of these behaviors.

⁹ The process of editing is also known in some decision-making literature as elimination-by-aspects (Kleindorfer et al., 1993).

Applying Heuristics

A second type of simplification strategy used by some of the research participants in this study as they make apparel acquisition decisions are applying heuristics.

Heuristics are the “rules-of-thumb” that guide decision makers and aid them in coping with information constraints. When individuals utilize heuristics in their decision making they recognize the existence of patterns in particular decision problems and subsequently apply rules of behavior they perceive as appropriate (March, 1994).

In the ecologically rational decision making of the consumers in this research study, heuristics simplify their decisions related to apparel acquisitions primarily in terms of how the participants select the source for their apparel acquisition. For instance, in discussing how he decides where he will acquire his footwear, Informant M2 explained,

Informant M2: I heard and checked out something that I liked about [Company I] shoes, a while ago, and I love the ones that I have. And so now I won't even ask. I don't think I have been on their website in a long time, and I haven't looked up that company on any of the consumer groups that I check things out on. I sort of just take it for granted that that is going to be the good option, and that is usually what I go for when I need shoes.

This is a decision making heuristic for this research participant because at a point in the past, through an information search, Informant M2 determined that Company I was a company that, in terms of environmental issues, he felt comfortable supporting. Now when Informant M2 needs new shoes, instead of going through the complete decision-making process, he automatically acquires the footwear from Company I. In other words, he recognizes a pattern in his decision problem and applies the rule he deems to be appropriate – which compacts and simplifies the decision-making process. As he said, “Sometimes it is difficult to decide if something is good or bad for the environment. And the way that I compensate for that is that I go with what I know.... So I might go for

something that I know about before I try something new.” Other research participants, like Informant M6, also appear to employ heuristics in making acquisition decisions.

Informant M6: [Company J]...produces a lot of cycling clothing, and a lot of it's made in the USA. So I look for that brand.

On this occasion a heuristic is guiding the informant's decision about the brand of cycling apparel he purchases. However, many other participants also spoke about how they rely on particular companies or sources for particular items of apparel because of successful previous acquisitions. In other words, to simplify their decision making the participants have rules-of-thumb that they consistently apply when acquiring certain items of apparel.

Although the application of heuristics to decision problems by the research participants simplifies their decision-making process, reliance on heuristics also results in the possibility of non-ecologically rational decisions. This is because, in relying on heuristics during the decision-making process, an individual does not consider the full range of available alternatives. For example, in the case of Informant M2's shoe acquisition heuristic, there could be alternate footwear companies that produce shoes environmentally preferable to the ones produced by Company I. However, because Informant M2 habitually tends to acquire his footwear from Company I, he does not generate or evaluate additional alternatives. This holds true for any research participant relying on heuristics in making apparel acquisition decisions. Therefore, while heuristics may aid apparel consumers in their decisions, they may not result in ecologically rational decisions.

Compromising

In addition to the simplification processes of editing and applying heuristics, some of the research participants rely on compromising as a third simplification strategy in

their decision making. This is an emergent simplification strategy that, as far as is known, previous decision-science literature does not discuss.

As explained earlier in this chapter, in evaluating apparel alternatives and deciding if an article of clothing is environmentally preferable, the research participants consider many different attributes and characteristics including fiber content, country of origin, quality, durability, and styling. Because a range of both personal and contextual barriers such as limited availability of environmentally preferable apparel, limited sources for acquiring it, and the high costs associated with it¹⁰, it is extremely difficult to acquire apparel that meets all of any consumer's desired attributes and characteristics. Therefore, in order to make decisions they perceive as ecologically rational, a number of the research participants spoke about compromising.

The first apparel attribute that some of the research participants discussed within the context of compromising is a garment's country of origin. This dissertation discusses a number of times how one of the ecologically conscious apparel acquisition behaviors the research participants engage in for environmental reasons is acquiring apparel made in the United States. However, in order to acquire apparel with environmentally preferable and other attributes that are more important, the research participants often compromise in regards to the country of origin and acquire apparel made in other countries. As Informant F15 explained,

Informant F15: I try to balance so many things when I am looking at [apparel] that if I came onto something that met all of my other criteria and it was made in the Ukraine or it was made in Malaysia or made in Korea or something. I can't say that right now if it met all of my other criteria – for me it's just such a gold mine to find something that is reasonably good fabric, construction, design, quality and feel and appearance. So right now

¹⁰ For a full discussion of the personal and contextual barriers constraining the ecologically conscious apparel decision-making of the research participants, see Chapter Seven.

if it were made on the moon I might buy it.... You know, if all other things were equal, if I could find a domestic product and something made in Malaysia, I would pay more for the domestic made product if it met all the same criteria for all those reasons.

And Informant M5 shared similar feelings.

Informant M5: I prefer to acquire apparel made in the U.S. but if something was made in Malaysia that wouldn't prevent me from purchasing it, if it had something else going for it – like if it was made from organic cotton and produced in Malaysia, I might still decide to purchase it.

These comments indicate that at least some of the study's participants have a set of attributes they desire for their apparel, and although country of origin is a consideration in their decision making, it is less of a priority than other attributes¹¹.

Therefore, when utilizing the simplification strategy of compromising, if apparel meets all of an individual's criteria, except for country of origin, he or she will decide the article of clothing is sufficiently ecologically rational and, if so, ignore the country of origin in the decision-making process.

In addition to compromising in terms of country of origin, another behavior common among the research participants is, when having difficulties acquiring apparel made from environmentally preferable fibers, compromising by substituting criteria and acquiring apparel that is, for example, classically styled or durable in construction instead. Informant M2's comments about his attempts to purchase an environmentally preferable suit for his wedding illustrate this strategy.

Informant M2: When we got married last summer...I wanted a suit that was what we needed but would be a good environmental choice as well. And I did

¹¹ It is possible that acquiring apparel made in the United States is less of a priority to the research participants when compared to other physical attributes and relational characteristics because it is increasingly difficult to acquire apparel meeting this standard. Globalization of the textile and apparel complex means that a large percentage of apparel sold in the United States is imported from other countries. Therefore, if there were more prevalent sources for apparel made in the United States, it is possible that the research participants would not compromise in regards to the country of origin to the same degree as they do currently.

have trouble finding that. So I ended up getting a standard, tan suit which I will have for years, of course.... I ended up going to just a regular store that sold suits and nice clothes and got a good one.... Something that wasn't too fancy so that I would have occasion to wear it more often than something that was super nice and that I would never wear again.

In this instance, the research participant had wanted to get a suit made from environmentally preferable fibers, but when he realized this type of garment was not available, he compromised by acquiring a standard, classic suit that he would have occasion to wear on other occasions. Informant F7 provides another example of how the research participants use compromising as a simplification strategy when they can not find environmentally preferable apparel that meets all of their purchase decision criteria.

Informant F7: When I buy shoes I more think about the durability of the shoe and try to buy shoes that will last me a long time and serve the function that I need them to and made to with those kinds of shoes – because I haven't found a source for environmentally preferable shoes that are also really durable, stylish, functional and affordable.

In this example because the participant can not acquire functional, stylish, and affordable footwear made from environmentally preferable materials, she compromises and instead buys mainstream footwear that is durable and will have a long technical lifetime.

Overall, March's (1994) proposal that individual decision makers deal with constraints to their decision-making processes by utilizing simplification processes holds true in this research study. As the research participants make decisions about their apparel acquisitions, they cope with information constraints and simplify the decision-making process by editing and eliminating alternatives based on physical attributes and relational characteristics. They also simplify their decision making by applying heuristics. Additionally, to further aid in their ecological decision making, this study also

determined that the research participants compromise while making apparel acquisition decisions.

CHAPTER SEVEN

PERSONAL AND CONTEXTUAL BARRIERS TO ECOLOGICAL DECISION MAKING

The last research question that this dissertation set out to answer was to determine what personal and contextual barriers face apparel consumers in the ecological decision-making process and how these factors act as barriers to ecological decision making and ecologically conscious apparel acquisition. In order to explore this question, the interviews with the research participants asked whether they found it difficult to meet their clothing needs while trying to be ecologically conscious and if there were things they found to be challenging about acquiring environmentally preferable apparel. The participants' responses to these questions, and other comments they made throughout data collection, provide evidence to support Stern's (2000) assertion that both personal and contextual barriers prevent consumers from engaging in environmentally preferable behaviors. Indeed, in this study there is evidence of a range of barriers constraining the ecological decision making of the research participants. Table 7 summarizes the frequencies and relative frequencies of these barriers among the research participants, and the rest of this chapter fully discusses each barrier, along with their implications and suggestions for overcoming them.

Personal Barriers

In examining the ecological consumer decision making of the research participants related to their apparel acquisitions, the data indicate five predominant personal barriers to this process. These barriers include knowledge about ecologically

Table 7. Frequency and Relative Frequency of Barriers Facing Apparel Consumers in Ecologically Conscious Apparel Acquisition

Barrier	n (N = 26)^a	Relative frequency (%)
Personal barriers		
Lack of knowledge about		
Apparel-related environmental issues	15	57.7
Environmentally preferable apparel	15	57.7
Attitudes	15	57.7
Apparel acquisition patterns and preferences	11	42.3
Nonhuman resources	14	53.8
Personal priorities	7	26.9
Contextual barriers		
Availability of		
Environmentally preferable apparel sources	18	69.2
Environmentally preferable apparel	23	88.5
Eco-conscious apparel acquisition information	17	65.4
Retail environment	6	23.0
Structure of the textile and apparel complex	7	26.9
Societal norms	3	11.5

^a Each research participant was able to identify multiple personal and or contextual barriers. If a single informant identified more than one barrier within a single category, that individual was still only included once within the category.

conscious apparel acquisition, attitudes and beliefs about environmentally preferable apparel, apparel acquisition patterns and preferences, nonhuman resources, and personal priorities.

Lack of Knowledge about Ecologically Conscious Apparel Acquisition

As outlined in Chapter 3, research indicates that limited knowledge commonly acts as a constraint against consumers engaging in a range of proenvironmental behaviors. Data from this research study also support this assertion because, among at least some of the research participants, insufficient and/or inaccurate knowledge is a barrier facing them in apparel-related ecological decision-making processes. More specifically, both limited knowledge about environmental issues linked to apparel consumption and about environmentally preferable apparel play a role in constraining the ecological decision making of some research participants.

Lack of Knowledge about Apparel-Related Environmental Issues

In this study, 57.7% of the participants only have a basic awareness of the relationship between environmental issues and apparel production and consumption. For instance, in questioning the participants about what they believe were the environmental impacts associated with the production of cotton and polyester shirts, a number of them could not articulate impacts beyond broad generalizations. To illustrate, some of the participants' comments about the environmental impacts associated with the production of a cotton shirt include:

Informant M1: I don't know of anything specifically.... But I know that with any manufacturing there is waste, and I am sure they dump some in the environment. And depending on what they use – like a local water source or anything like that.

Informant M9: There is environmental impact but I am not sure what it is. All of

the processes – there is always something and sometimes they will wash it with a chemical and you have no idea what is in it.

Informant F3: I know stuff about agriculture in general, like all the pesticides, the herbicides, labor issues, but I don't know anything specifically about cotton.

And similarly, comments made about the environmental impacts associated with a polyester shirt include:

Informant F3: Things that are plastic, like they're produced with toxins – so that's what I know about that.... Yeah, I'm not really aware of how that affects the environment. I hear unofficially about those kinds of things.

Informant F11: Well it would be petroleum based so there would be all of the issues associate with oil. But I don't have a sense of how much.

Besides the participants' limited knowledge of how cotton and polyester apparel manufacturing affects the environment, the research participants also do not have a thorough understanding of impacts related to other aspects of apparel production. For example, in regards to the environmental impacts of dyes, Informant F12 said, "I don't know how good the dyes are. I am unfamiliar with the impact that the dyes have when they enter the water stream." And in regards to his lack of knowledge, Informant M8 expressed, "I will say that I don't think I am as informed yet about all of that as I am about a lot of the other environmental things that I do."

Additionally, several of the participants communicated that they feel like they do not have enough knowledge about the various types of fibers and their associated environmental impacts to make the most ecologically rational decision possible.

Comments made by Informant F1 illustrate this particular factor.

Informant F1: I think when it comes to types of fabric that are really bad for the environment I'm kind of at a loss, except for cotton...but I don't really know comparatively how it matches up against other types of fabrics....

That's one area I really do feel kind of ignorant about. I don't know how different materials match up as far as environmental impact.

This limited knowledge serves as a constraint to ecologically conscious decision making because the research participants do not have the knowledge they need in order to be able to compare the ecological footprints of different fibers and select ones that are the most environmentally preferable.

Finally, in addition to the role that limited knowledge plays in constraining ecologically conscious decision making, misunderstanding of the environmental impacts associated with apparel production also appears to be a barrier present among some of the research participants. In particular, there is a perception among a number of the participants that natural fibers are better for the environment than synthetic fibers. For example, as stated in Chapter Five, Informant M9 only wears apparel made from natural fibers for this very reason. Comments made by Informants M8 and F10 indicate that others among the research participants have a similar impression that natural fibers are the better environmental choice.

Informant M8: Recognizing how much pesticides go into growing cotton and so forth – even though that's better than a lot of the oil based products – that is why we have been trying to move towards more of the environmentally friendly textiles.

Informant F10: I feel like cotton is the lesser of evils to synthetics.... Because it is natural.

However, as empirical research shows, over the complete product lifecycle, a garment made from cotton has environmental impacts at least equal to that of a polyester garment (Chouinard & Brown, 1997; Walsh & Brown, 1995). Therefore, this reliance on incorrect knowledge is an obvious hindrance to ecologically conscious decision making because

the participants are unknowingly basing their decisions on misinformation; and they believe they are making environmentally rational choices.

Altogether, the participants' limited understanding in regards to the environmental impacts of apparel consumption is constraining their ecological decision making. As long as the participants lack knowledge about ecologically conscious apparel acquisition, they also will continue to lack an understanding as to which of their behaviors have the greatest environmental impact and will not have the knowledge necessary to guide their decision-making processes and modify their behaviors so they become more sustainable. More specifically, the participants need increased knowledge in two areas. First, they need a more complete understanding of the environmental impacts associated with common fibers. Second, the informants need to know how to make decisions that will allow them to make choices between apparel alternatives and select fibers and apparel that are the most environmentally preferable. Therefore, it is evident that increasing consumer education about apparel-related environmental issues is necessary for the achievement of sustainable apparel consumption patterns. Proposals for increasing apparel consumer knowledge in these areas are discussed later in this chapter in conjunction with the contextual barrier of information.

Lack of Knowledge about Environmentally Preferable Apparel and Sources

The second area where limited knowledge is acting as a barrier, also for 57.7% of the participants, is in regards to their knowledge about environmentally preferable apparel and sources for acquiring this type of apparel.

All of the study's research participants understand that organically-grown cotton is an environmentally preferable fiber to non-organically-grown cotton, and a large

portion of the participants is aware of the environmental benefits of hemp. However, beyond these two fibers, the participants have much less awareness about other environmentally preferable fiber alternatives. For example, in response to being asked if he had heard of any other fibers (besides organic cotton and hemp) that could be considered low-impact, Informant M1 replied, “I don’t know that I have. I am sure that there are. I guess you can probably make stuff out of soy too. But I don’t know really. I guess I should check up on that.” Similarly, Informant F12 said, “I am somewhat uneducated when it comes to environmentally friendly fibers but I would think linen could be fairly low-impact.” Other comments that highlight the participants’ limited knowledge about options for environmentally preferable fibers include:

Informant F4: If it’s made out of a material that’s environmentally friendly, I am not that knowledgeable.

Informant M8: I don’t know about any eco-fibers other than organic cotton or hemp, but I would be interested in knowing what they are.

Greater knowledge about the range of environmentally preferable fibers that is available for apparel, such as lyocell, soy, or bamboo, would increase the likelihood of the research participants engaging in ecologically conscious apparel decision making because this knowledge would expand the range of alternatives considered by the participants during the decision-making process.

Many of the research participants also indicated that they have limited knowledge about sources for acquiring environmentally preferable apparel. As Informant F12 stated, “I am not aware of a lot of companies that make environmentally conscious clothing.” Similar responses by other participants also indicate their limited knowledge in this regards.

Informant F4: I don't know of many places to go buy environmentally friendly stuff except on the internet.

Informant M8: It is difficult for me to find this type of clothing. And this is probably partially because I am not a big fan of shopping so I am probably unaware of some of the possibilities that are out there. Because I shop so little I haven't tried as hard as I could to find sources for organic clothing.

In addition to not knowing where to acquire new apparel that is environmentally preferable, some of the participants, including Informants M6 and F3, also spoke of not knowing where to go to acquire quality second-hand apparel – and that they would acquire more second-hand apparel if they had this knowledge.

Informant M6: I wouldn't be opposed to going to a second-hand store and purchasing clothing from there but I am just not aware of where they are around here.

Informant F3: I would just need to be more aware of where the second-hand shops are before I would purchase more of my clothing there.

By these comments, it is apparent that increased knowledge about sources would also increase the likelihood that the research participants would acquire apparel through second-hand sources, and therefore, engage more fully in ecologically conscious consumer decision making.

The limited understanding of where to go to acquire environmentally preferable apparel is an obvious barrier to engaging in ecologically conscious decision making and consumption. As Informant M3 states, when participants do not know from where to acquire environmentally preferable apparel, they then rely on mainstream companies to meet their apparel needs.

Informant M3: If I needed something like a suit I would probably just go to...a department store or something like that because I don't know of any organic options.

To summarize, the first personal barrier of limitations in consumer knowledge constrain the ecological decision making of the research participants in two primary ways. First, the imperfect understanding of the environmental impacts related to apparel acquisition means research participants do not fully know how their acquisition behaviors contribute towards environmental degradation and which behaviors they should try to modify. Second, the lack of awareness of the existing range of options for environmentally preferable apparel and sources for acquiring it indicates that even when consumers are open to engaging in ecologically conscious consumer decision making and behaviors, they do not necessarily know the range of alternatives available and the best way of doing so.

Prior to this research study, Kim and Damhorst (1998) and Stephens (1985) demonstrated that apparel consumers lack an understanding about how apparel manufacturing affects the natural environment. This study, for the most part confirms this finding¹² and sees this as a barrier to ecologically conscious decision making. However, beyond assessing participants' awareness of the relationship between apparel production and environmental degradation, this study also determined that the participants also lack awareness about environmentally preferable apparel alternatives and sources for acquiring this apparel. This study also expands understanding of the knowledge barrier by identifying how this barrier constrains the decision making of apparel consumers.

Given the knowledge barriers that exist for the research participants in terms of both their knowledge of the environmental impacts of apparel production and environmentally preferable alternatives for apparel, the implication is that more effective

¹² Although, as shown in Chapter Five, this study's research participants do have a high level of awareness of the environmental impacts associated with conventional cotton cultivation.

consumer education about these issues is necessary. A complete discussion of possible solutions for overcoming these barriers along with the contextual barrier of information occurs later in this chapter.

Attitudes about Attributes and Relational Characteristics of Environmentally Preferable Apparel

Throughout the interviews, 57.7% of the research participants indicated that one of the primary reasons they do not meet all of their apparel needs through environmentally preferable apparel is that they believe this type of apparel often has certain physical attributes and/or relational characteristics¹³ that they do not like or feel do not meet their apparel needs. In this study the physical attribute of environmentally preferable apparel that the participants discussed not liking is style. On the other hand, the comfort and fit of environmentally preferable apparel are the primary relational characteristics with which the participants discussed being unsatisfied.

Style of Environmentally Preferable Apparel

The commonly discussed attribute of environmentally preferable apparel that constrain the participants' apparel acquisition behaviors are overall stylishness. For the most part, the research participants who feel these attributes act as a barrier perceive environmentally preferable apparel to be less stylish or fashionable when compared to mainstream apparel. For example, in the opinion of Informant F16, "A lot of things that are organic are not very stylish. I mean they look like a sack more or less and I am just not going to wear a sack, so I will go and buy something else." Informant F1's comment, "I've come across some products that haven't been that nice looking," indicates that she

¹³ Refer to Chapter Six for an explanation of these concepts.

shares Informant F16's opinion that environmentally preferable apparel does not always meet her expectations for style.

Related to the attribute of style, a number of the study's participants find it difficult to acquire environmentally preferable apparel on a consistent basis because they perceive much of this type of apparel to be counter-culture in style and not sufficiently mainstream for their personal tastes. As Informant M5 describes:

Informant M5: Most of the time I don't like the styles.... A lot of eco-conscious clothing seems to be made for a very particular type of consumer - like a counter-culture, sub-culture type and not for people who are mainstream, style conscious people.

Several of the participants, including Informants F9 and F14, ascribed the alternative style believed common in environmentally preferable apparel to a hippy culture – to which they do not identify; and therefore, they do not want to wear apparel that portrays them as such.

Informant F9: It's almost like the people who produce that clothing assume that everyone that wants hemp clothing is a hippy or something.

Informant F14: A lot of what I've seen is kind of, I don't know, like the hippy style clothing. I hate to say that. But it's just coming around to I think having more fashionable kind of things that are actually made out of those fabrics and not just having that limited style selection.

Hence, based on the comments made during data collection a number of the research participants perceive some environmentally preferable apparel as lacking in style and being unfashionable. These attitudes act as personal constraints to ecological decision making because they decrease consumer desire to acquire environmentally preferable apparel, resulting in apparel acquisition decisions that may not be environmentally rational.

Fit of and Comfort in Wearing Environmentally Preferable Apparel

Besides research participants' attitudes about apparel attributes, in this study, attitudes about two relational characteristics of environmentally preferable apparel also act as barriers to ecologically conscious decision making. The first relational characteristic is the fit. As Informant F13 explains, "There's a lot of stuff out there if people don't mind looking like what I call sort of schleppy - very unconstructed, loose fitting, very flowy kinds of things." Informant F4 shares a similar opinion.

Informant F4: A lot of times when I've found clothes that are made from organically-grown hemp or like something like that, they are kind of loose and a little bit baggy. And fit is an issue with me already.... I might buy more of it and if they were smaller.

These comments suggest that consumers sometimes perceive environmentally preferable apparel as less tailored and well fitting than mainstream apparel. Furthermore, participants are not fond of the fit of environmentally preferable apparel, limiting their acquisitions as a result. For at least some of the research participants, their evaluation of garment fit is a purchase decision criterion that frequently takes precedence over environmental issues.

The second relational characteristic constraining decision making is attitudes about apparel comfort. More specifically, several of the research participants discussed having negative attitudes and beliefs related specifically to the environmentally preferable fiber hemp, which some participants, including Informants F1 and F16, perceive to be physically uncomfortable.

Informant F1: I haven't [bought hemp]. I think the only reason for that probably is because when I felt it...it was actually really coarse.... I need to see a fabric that's a little bit – like comfortable.... And I think that if I am going to pay – usually they've been pretty expensive too – so I guess I just want

it to be a fabric that's going to feel good and not be something that doesn't appeal to me.

Informant F16: I don't like hemp.... I just don't like the texture.

For the research participants who consider hemp an uncomfortable fiber, this attitude acts as a barrier to ecological rationality because it prevents them from considering apparel made from hemp as an alternative for their apparel acquisitions and thereby restricting the full range of environmentally preferable apparel available for acquisition.

Data from this study indicate that among the research participants there are a number of attitudes about attributes and relational characteristics of environmentally preferable apparel that act as personal barriers in the process of ecological consumer decision making. Shifting these attitudes and having consumers more fully engage in ecological decision making and acquire environmentally preferable apparel more consistently depends on a couple of factors. First, some modification of the attributes and relational characteristics of environmentally preferable apparel to better meet the needs and wants of consumers should occur. By producing environmentally preferable apparel in a wider range of styles, fabrics, and sizes, companies will appeal to a greater variety of consumer segments. Second, apparel companies can do a better job at marketing their environmentally preferable apparel products so that consumers are aware of the range of well fitting, comfortable, stylish, and fashionable environmentally preferable apparel alternatives already on the market and available to them. For example, companies selling apparel made from hemp could better market the versatile physical qualities of the fiber and its capability of being a very soft and comfortable fiber with tactile qualities similar to cotton. With improved marketing, consumer attitudes about the attributes and

relational characteristics of environmentally preferable apparel may also improve, hopefully resulting in increased acquisition of these products.

Apparel Acquisition Patterns and Preferences

In addition to personal knowledge and attitudes, throughout the process of making consumer decisions and acquiring their apparel, 42.3% of research participants appear to engage in certain apparel acquisition patterns and have specific apparel preferences that also act as barriers to ecological decision making and the acquisition of environmentally preferable apparel.

Inconsistent Attention to Environmental Impacts

The first apparel acquisition pattern is that when acquiring apparel some of the participants consider the environment and environmental impacts of apparel consumption inconsistently. For example, when Informant F12 was questioned as to how often she thought about the environment when shopping for apparel, she replied, “I would probably say 30 percent of the time. So maybe it would be some of the time but less than half.” Similarly, when Informant F7 was asked if she felt like she thought about the environment when she was at an apparel store, trying to make purchase decisions, her response was, “It doesn’t really enter the process unless...there are two things next to each other and one’s organic cotton and one isn’t. Then I’m probably going to choose the organic cotton one.” Among these participants the lack of consistency in considering the environment in the apparel decision-making process is constraining their ecological decision making. This is because these participants do not always focus on the environment while making apparel acquisition decisions, resulting in an increased possibility of acquiring apparel that is not environmentally preferable.

Preference for Newness

Also acting as a barrier to engaging in ecological decision making for some of the research participants is their reliance on only new apparel to meet their needs. Although, as outlined in Chapter Five, a large percentage of the participants utilize second-hand sources for at least some of their apparel acquisitions, a few of the participants never acquire from second-hand stores. For example, Informant M9 said, “I never go into second-hand shops.... I just like new clothes.” Informant M5 is another participant who prefers new apparel and does not acquire apparel through second-hand sources. As he said, “I don’t know if I really like wearing someone else’s clothes.” Additionally several participants, including Informant M8, only acquire through second-hand sources on rare occasions.

Informant M8: I typically use second-hand stores for getting clothes for like winter sports but not for like shirts and pants and every day clothes. I think it is the feeling of newness and liking the feeling of having that brand new shirt or brand new pants.

This preference among some of the research participants for new apparel acts as a barrier to engagement in ecologically conscious decision making because consumers reluctant to acquire second-hand apparel eliminate one of the most economical and readily available sources for environmentally preferable apparel. Instead these consumers must meet their apparel needs through other, potentially less sustainable avenues.

Delegation of Acquisition Decision Making to Others

In addition to the research participants not consistently focusing on environmental impacts of apparel acquisitions and relying predominantly on new apparel, other, more isolated patterns constraining ecological decision making are also evident. For instance, a significant apparel acquisition behavior creating a barrier to ecological rationality for

Informant M6 is that he does not make many of his own apparel acquisition decisions; and therefore, he does not have frequent opportunities to engage in ecologically conscious decision making.

Informant M6: A lot of my clothing comes to me as Christmas and birthday presents.... I'm not a shopper..... My spouse and my mother are the two people who tend to buy me clothes at those occasions.

Ignoring Product Information

A second isolated pattern that is acting as a barrier is that, when asked if they analyze apparel product tags prior to acquiring items Informants M6 (when he does purchase his own apparel) and F3 both answered, "No." This is a barrier to ecologically conscious apparel consumption because it indicates that these participants consider neither the fiber content nor country of origin while acquiring apparel – both important factors contributing to the degree to which apparel is environmentally preferable.

Between the inconsistent consideration of the environment while acquiring apparel, never utilizing second-hand sources of apparel, rarely acquiring their own apparel, and not examining apparel labels, it is clear that some of the research participants have certain apparel acquisition behaviors that act as barriers to ecological consumer decision making. All of these behaviors constrain the decision-making process because they increase the likelihood that apparel acquisition will not be ecologically conscious.

Considering the apparel acquisition patterns and preferences evident among some of the research participants, a few implications result. Primarily these barriers suggest a need for the strategic design and execution of consumer information. If, while acquiring apparel, consumers had information available that triggered them to consider the environmental implications of an acquisition they may experience increased ecological

rationality in their apparel acquisition decisions. Furthermore, in regards to second-hand apparel acquisitions, consumers should be educated about the environmental benefits of acquiring second-hand apparel, and these sources for apparel should be better marketed as a positive environmental alternative.

Nonhuman Resources

The fourth personal barrier apparent among the research participants relates to nonhuman resources. To be more precise, in this study 53.8% of the participants indicated that they sometimes lack the nonhuman resources that they need in order to engage in ecologically conscious decision making and acquire environmentally preferable apparel on a more consistent basis. By nonhuman resources, this dissertation is referring to matter and energy external to the individual that is converted into specific forms for the purpose of attaining goals (Bubloz & Sontag, 1993). Nonhuman resources can include a range of resources including housing and clothing. However, the primary nonhuman resources mentioned by the participants include economic resources and transportation.

The most consistently discussed resource barrier constraining behaviors of the research participants was economics, with many of the participants stating that their financial circumstances did not permit them to acquire environmentally preferable apparel on a steady basis. The study data indicate that a number of the research participants associate environmentally preferable apparel (especially apparel made from environmentally preferable fibers) with high prices. In turn, these participants feel that the prices result in apparel that is not always affordable and not acquired as a result.

The general sentiment among the research participants who spoke of this economic resource barrier was that they would be willing to acquire more apparel made from environmentally preferable fibers such as organic cotton or hemp, but financial limitations and the more expensive price tags typically coupled with these types of apparel make it problematic. This is evident in comments made by Informant F16:

Informant F16: Well I would like to be able to buy all organic clothing but they are so expensive.... Because I am retired, I can't extend a lot more towards organic.

As well as comments by other participants,

Informant F4: In my experience, [environmentally preferable apparel] cost a lot more and I'm willing to pay more for it, but I can't consistently pay more for it because of the financial constraints.

Informant F7: If everything new that I've purchased needed to meet my own green or someone else's green environmentally preferable standards, I would be spending all of my income on clothes. The materials and fabrics are just prohibitively expensive for me.

Informant F14: I work in the nonprofit sector. I would love to go online and just be able to buy some organic denim or whatever, but I can't really afford to do that. I still have to think about affordability, definitely. There are getting to be options that are more affordable, but it's definitely still a barrier to going completely organic because a lot of it's really expensive.

Throughout the interviews, many other research participants repeated similar sentiments, and although the participants understand why environmentally preferable apparel is more expensive than a lot of mainstream apparel, their economic constraints remain a significant barrier controlling the ecological decision-making process related to apparel acquisitions.

Prior to initiating this research study, there was an expectation that the price of environmentally preferable apparel would act as a barrier. In their experiment with recycled fiber shirts, Hines and Swinker (1996) identified the higher price of the recycled

shirts as constraining participants' willingness to acquire them, supporting findings from this dissertation. Until demand for environmentally preferable apparel increases, the higher prices when compared to mainstream apparel will remain. However, as evidenced in Chapter Five of this dissertation, compared to acquiring new apparel made from environmentally preferable fibers, there are more affordable alternatives for engaging in ecologically conscious apparel acquisition such as acquiring through second-hand sources. Therefore, increased education about such alternatives should occur so that the price of environmentally preferable apparel becomes less of a determining factor to being an ecologically conscious apparel consumer.

Informant F1 also finds the lack of transportation limiting her ability to acquire ecologically conscious apparel. As she says, "I don't actually have a car so I'm constrained by that too." The lack of transportation means she does not have easy access to appropriate sources for acquiring environmentally preferable apparel, and as a result she must sometimes rely on less ecologically conscious methods for apparel acquisition. Informant F3 also found her lack of transportation to be a barrier to acquiring environmentally preferable apparel because she is unable to, "explore the area very much," and find sources for the apparel.

Personal Priorities

Finally, in terms of personal barriers acting as constraints in the process of ecological decision making, 26.9% of the research participants also referenced not always engaging in ecological decision making and the acquisition of environmentally preferable apparel because other needs or wants in their life take priority.

Economic Priorities

Some of the participants, including Informants F12 and M6, spoke about economic priorities at times taking precedence over the acquisition of environmentally preferable apparel.

Informant F12: Ultimately it is priorities. I have to pay my house bill first, food next, then I have to get to work, and then whatever I have left is my clothing money.

Informant M6: I'd pay 50% more for organic clothing. I wouldn't pay 100% more. I have other priorities, obligations, responsibilities that would be a factor.

And of course, as already put forward, the fact that environmentally preferable apparel usually carries a high price point, further contributes to the fact that some research participants must forgo acquiring this type of apparel in order to meet other financial obligations, making the barriers of economic resources and economic priorities interrelated.

Time Priorities

Also constraining ecological decision making in regards to apparel acquisition for some of the research participants are time priorities. Both Informants F1 and F14 explained how time demands in their lives sometimes lead them to engage in behaviors that perhaps are less ecologically conscious than if they had more time to acquire environmentally preferable alternatives.

Informant F1: When I need new clothing, with my time constraints and everything, I am not able to wait and wait for something organic to come online.

Informant F14: I think actually just more time because in that 20 years I've had three kids and...I really just didn't have the time or the emotional energy to research more. And I needed to work because economically we both needed to work so I didn't have the time either to go back and try sewing.

These comments indicate that at least some of the research participants perceive the acquisition of environmentally preferable apparel to be too time consuming for their full engagement. This perception could be because finding sources for environmentally preferable apparel can be challenging (a contextual barrier discussed later in this chapter) and/or because acquiring apparel through second-hand stores is typically more time consuming than through traditional retail environments. Therefore, time demands can be a barrier to ecological decision making because consumers may decide to forgo acquiring environmentally preferable apparel and instead acquire apparel through easier, but less ecologically conscious ways.

Convenience Priorities

Another personal priority discussed by a number of the participants relates to the convenience of acquiring apparel and not wanting to spend a lot of time focusing on ecologically conscious apparel acquisition. As Informant F9 states,

Informant F9: There's just not enough convenient choices. It's not always convenient to buy something online or through a catalog. It's nice to be able to try things on you know? And convenience.... There has to be a certain amount of reality for me in terms of being able to reasonably conveniently find what I need.

Informants F1 and F11 also commented on the role the priority of convenience plays in their apparel decision-making process.

Informant F1: If I...have the time I'll plan but if I don't and it's not really convenient...then I'm probably not going to buy the organic or the sustainable material.

Informant F11: Last year when I first started this job and I was really trying to get some more professional clothes I ended up going to [Company C and H] a lot. And this sweater that I am wearing is from [Company F]. And that was partly just an efficiency thing. I think that if I had been willing to take more time and go back and back again to consignment stores I could have found stuff but it just would have taken longer.

These comments highlight that, similar to the resource barrier of time, because of the contextual barriers examined later in this chapter, some consumers perceive engaging in ecologically conscious apparel acquisition as difficult. Moreover, because of these perceptions, consumers may not always acquire environmentally preferable apparel because of the inconvenience – resulting in consumer decision making that is not necessarily ecologically rational.

Ecological Priorities

Also partially related to the resource of time, Informant M6 believes that part of the reason why he does not engage in ecological decision making while acquiring apparel on a more consistent basis is that in his life there is only room for focusing on a finite number of ecological issues at a given time. As he explains:

Informant M6 I have a busy life, like everybody does; I have a full-time job, three kids, coaching this and that and just wanting some recreation time. So I think – I don't think as a society we should under estimate the extent to which how busy we are is going to impact our ability to make changes.... Right now I'm more focused on the transportation and home heating and cooling and the food thing.

This comment seems to indicate that he has chosen to engage in ecological decision making in regards to other aspects of his life and that compared to these areas, modifying his apparel acquisition patterns is less of a priority.

Style Priorities

Lastly, a small number of the participants feel that at least some of the time, their preference for stylish apparel takes priority over their desire to acquire environmentally preferable apparel. As Informant F5 explained, "If I didn't care so much about the style then it wouldn't be a problem [to acquire environmentally preferable apparel]."

Comments from Informants F11 and M4 also indicate that the style factor of apparel is a priority that constrains their engagement in ecologically conscious apparel consumption:

Informant F11: I think also I really try to strike a balance between being crunchy – like being in crunchy society and being in mainstream society. So I try to think about all of these things but not look like I think about all these things.

Informant M4: I don't want my clothing to be too boring or plain or unfashionable. I still like to look like I am in style even if I don't buy clothes too often.

In the known studies examining ecologically conscious apparel acquisition, prior to this study, no research previously identified personal priorities as a barrier to ecologically conscious decision making. Therefore, the range of personal priorities that play a role in ecological decision making during apparel acquisition is a contribution made by this research study.

In sum, on a personal level the research participants in this study find it difficult to acquire environmentally preferable apparel on a consistent basis because a number of barriers stand in the way. These barriers include consumer knowledge and attitudes about ecologically conscious apparel acquisition, certain apparel acquisition patterns and preferences, nonhuman resources, and personal priorities. Furthermore, among all of the personal barriers, the three that the participants perceive as being dominant in terms of constraining the decision making the most are: (1) their knowledge about apparel-related environmental issues and environmentally preferable apparel alternatives, (2) their financial resources, and (3) their attitudes about the style, fit and comfort of environmentally preferable apparel. Consequently, the implication of this conclusion is that any interventions, policies, or incentives intending to encourage sustainable

acquisition of apparel products should at least partially focus on diminishing or eliminating these personal barriers.

Contextual Barriers

In addition to personal barriers, among the research participants, contextual barriers also constrain their decision making and apparel acquisition behaviors. They spoke about a variety of such barriers including: the limited availability of environmentally preferable apparel; inadequate information enabling ecologically conscious apparel acquisition; qualities of retail environments selling environmentally preferable apparel; the structure of the global textile and apparel complex; and societal norms.

Limited Availability of Environmentally Preferable Apparel

One of the most significant contextual barriers constraining the research participants' ecological decision making and engagement in ecologically conscious apparel acquisition behaviors is the limited access the research participants have to environmentally preferable apparel. As Informant F6 explains;

Informant F6: The vast majority of items that are out there, 98% of them are grown with pesticides, intensive water use, and all the rest so it is difficult to purchase clothing that has a low impact on the environment.

This limited availability hinders ecological consumer decision making because, in the words of Informant F9, "It is hard to make environment based decisions because there's so few choices for environmentally friendly clothes." This is a sentiment echoed by Informant M8.

Informant M8: “I am always thinking about the environment when I am buying clothes. It may not be the final deciding factor – mainly due to availability – but I am always thinking about it.”

Overall, the research participants spoke about two primary aspects contributing to the limited availability of environmentally preferable apparel. First, there is limited availability of sources for acquiring environmentally preferable apparel. Second, there is limited availability of apparel with attributes desired by the participants.

Limited Availability of Sources for Acquiring Environmentally Preferable Apparel

Over two-thirds (69.2%) of the research participants believe that limited availability of sources for acquiring environmentally preferable apparel is a significant barrier facing them as they aim to engage in ecologically conscious apparel acquisition. As Informant M3 states, “I do think there are just a limited number of sources for environmentally friendly clothing.... There is just not that much out there.” And as Informant M8 explains,

Informant M8: [My wife and I] haven’t gone as far with our clothes as we have with our food because it is much more difficult to find organic clothing compared to food. Quite frankly, we haven’t been able to figure out a way to meet all of our clothing needs sustainably. It has nothing to do with money or style – mostly just supply.

Overall, the research participants spoke about sources for environmentally preferable apparel being limited in a number of different ways. First, as emphasized by Informants F10 and F14, there is a lack of environmentally preferable apparel sold through mainstream apparel companies.

Informant F10: I don’t really go to the mall but when I do it is not like I am seeing any of the mainstream stores selling these clothes.

Informant F14: I do think that even though [environmentally preferable] clothing is out there, it...would be nice to see more of that in the regular stores and shops because it’s still definitely the minority of what you look at in most

places.... It is obtainable online or in the larger cities but to really go out and to be able to look at stuff and try stuff on...there's not a ton of it just in a regular store yet.

The second manner in which the research participants, including Informants M5, M1, and M7, feel sources for environmentally preferable apparel are limited is that they have a difficult time finding any local sources for apparel made from environmentally preferable fibers.

Informant M1: If I want to buy something in an actual store it is very difficult because I just can't find stores around me that sell organic clothing. I can go online and try to buy organic cotton or hemp clothing but it is usually from a company that is out in California so then my consumption is just contributing to environmental impacts in other ways – like through the transportation I mean.

Informant M7: But I would like to be able to buy local, organic clothes. That would be great – if there were blue jeans that were made in the Midwest from organic fibers – or shirts or whatever. But there is nowhere to do that.

Finally, Informants F5, F7 and F16, discussed how limited local sources for second-hand apparel also act as a barrier in their ecologically conscious decision making.

Informant F5: I don't as frequently shop in second-hand stores as I have in the past because...there are a lot more [second-hand stores] around where...I'm from...there [are] more options around there.

Informant F7: I used to a lot more. Since moving – for the past three years, I haven't shopped at thrift or second-hand clothing stores very much at all.... There aren't as many choices here and they tend – the used clothes stores tend to be more like a boutique as opposed to just a used clothing store.

Informant F16: Until recently we never had a [Second-hand Store A] here – it was always on the other side of town and I am not going to drive 30 miles to go shopping.

Therefore, because many of the research participants do not have access to a range of sources for acquiring environmentally preferable apparel, even in the absence of any

other barriers, they are limited in the amount of environmentally preferable apparel they can acquire.

Limited Availability of Environmentally Preferable Apparel with Desired Attributes.

The second factor adding to the limited availability of environmentally preferable apparel is that the research participants find it difficult to acquire apparel with appropriate and desired attributes. Among the research participants, 88.5% of them stated this as a barrier.

First, many of the research participants communicated that it is difficult for them to find environmentally preferable apparel in styles that are appealing to them and that; in general, when it comes to environmentally preferable apparel their style options are limited. As Informant F14 said, “I do think that your options as far as the range of clothing styles are more limited.” Informant M5 articulated similar feelings:

Informant M5: There is really only one company that makes organic cotton and hemp shirts that I like...but they have a very limited selection and I think I own pretty much every shirt that they have available – which isn’t even a lot – like four or five shirts.... Or like an online store’s entire men’s collection will be of basic t-shirts.

Similar comments by other research participants include:

Informant F9: A lot of times if you do find a nice organic cotton pant there’s just one style in different colors so there’s not a lot of options.

Informant F17: I bought a couple of organic cotton t-shirts when I was at a conference because they were right there.... And I probably would have bought more shirts from them but they didn’t have the size and colors that I liked.

Besides having limited options in terms of the style of apparel available to acquire, the research participants also indicated there are certain apparel product categories that they have a difficult time acquiring while also being ecologically conscious. The two

product categories most commonly mentioned by the participants were business wear and footwear.

Throughout the interviews, both male and female research participants reiterated that they find it problematic to acquire environmentally preferable apparel that is appropriate to wear in a business environment. As Informant M5 expressed, “It would be pretty much impossible to find a suit through the environmentally friendly companies that I purchase from.” Other research participants, including Informants F1 and F7, made similar statements.

Informant F1: There’s not a lot of work-business casual type clothing out there.

Informant F7: I would love to be able to make better choices when it comes to...business casual kind of stuff. Because I haven’t been able to really meet my needs for that kind of clothing with something that’s a good choice for the environment.

Other participants, such as Informant F2, who rely on second-hand clothing sources for the majority of their apparel acquisitions, share this sentiment.

Informant F2: I’ll try to shop at [second-hand stores] a lot but it’s not always easy to find professional looking clothing there.

Additionally, two of the male research participants, Informants M5 and M8, spoke about their troubles in acquiring environmentally preferable pants.

Informant M5: It is not easy at all to find pants that are organic.

Informant M8: It is much easier to [buy] organic shirts than it is pants. Pants always seem to be a blend of some kind.... The next time that I need to go and buy some pants I will be more careful about what I buy but I really do think it is difficult to find organic pants.

In the interviews, many of the research participants also commented on the difficulty of acquiring footwear that they consider environmentally preferable. Informants F7 and F9 describe this struggle:

Informant F7: I just haven't really found footwear that meets sort of my needs of footwear and is environmentally preferable.

Informant F9: It would be great if I could just do vegan shoes but I just don't feel like it's realistic for me in terms of the choices that are available.

Similar to their complications with business wear, as discussed by Informant F12, some of the research participants acquiring apparel through second-hand sources also find footwear a difficult second-hand acquisition.

Informant F12: Well the harder thing about consignment shops is shoes. So shoes are a little harder. I tend to go more to the department stores for that sort of thing.

Therefore, because the participants find it challenging to acquire environmentally preferable footwear, many, like Informant F15 (also expressed above by Informant F12), find it necessary to rely on mainstream retailers to meet their footwear needs.

Informant F15: And with shoes I haven't bought any that are sustainable. Instead I go to [Company G] but like the shoes at [Environmentally Preferable Store] just don't fit me where I am at right now.

Other apparel product categories mentioned by the research participants as being difficult to acquire while being ecologically conscious include more formal apparel,

Informant F15: What I haven't seen is more of that evening wear, a dressier kind of outfit. That's a market I think that they haven't really come to.

Informant M2: I would think that when it comes to your nicer and more formal type of clothes.... From my experience of looking for my suit for my wedding, I do think that with formal clothing there are not a lot of sustainable options.

intimate apparel such as bras and underwear,

Informant F17: I do find it hard to find sustainably produced underwear.... I tend to wear sports bras and I haven't found those in the more natural cotton. And I also wear undershirts. Like if I am wearing an outfit where it doesn't matter I will just wear undershirts but they generally don't have any that are cotton – they usually are made of some kind of synthetic.

and outdoor apparel,

Informant F10: I do a lot of camping and hiking and it is kind of hard – there is [sic] no sustainable companies that produce stuff that are, I will say, environmentally oriented, so it is not very easy with that kind of stuff.... It is not like I can get a tech jacket or rain jacket – like the materials that those clothes are made from, to begin with, are not very environmentally friendly because it is major synthetics and it is not like you can wear a cotton raincoat.

Besides apparel style and apparel product category, a considerable number of the research participants also spoke of limitations in the availability of environmentally preferable apparel in the size and fit that they desire.

Informant M5: There is a British company that makes dress shirts out of organic cotton, and I was all excited about that. But the sizes are way too big. When the shirts were first announced I emailed them – the owner of the company – and told him I thought it was a great product and asked if they had plans to make the shirt in smaller sizes. I was assured that they were going to expand to a greater size range but I just checked a couple of weeks ago and the sizes are all still way too big. You would think they would have a bigger range of sizes.

Most commonly, the barrier of limited environmentally preferable apparel in appropriate sizes was in reference to difficulties with second-hand acquisition.

Informant F7: I'm under five feet tall so there's no used clothes store in the world that's going to provide everything I need.... In terms of finding the size that I want it's not always easy.

Informant F16: I am difficult to fit because I am small. I have gotten things for my grandkids [at second-hand stores] but it is too hard when you are five foot one and you are petite. There are just not that many clothes like that for me there.

Informant M7: I buy [second-hand] clothes but not pants...because I have a strange body and they don't manufacture pants for my body so I have to be very careful about buying them and figure out which are the best.

Finally, unique among the research participants, Informant F13 suggested that one of the most significant barriers facing her as she attempts to be an ecologically conscious

apparel consumer is that it is increasingly difficult to find apparel that meets her standards for quality.

Informant F13: Fabric quality has declined dramatically. Unless you really move into you know the top tier, even beyond what I can well afford.... The last three years I've been tearing my hair out. I cannot find classic business separates at all that are of quality – quality construction, quality materials, quality cut.... I'm looking for a number of things that you just don't find out there readily and it's very frustrating for me.

This same research participant also spoke of her difficulties in acquiring business suits that do not include some portion of synthetic fibers.

Informant F13: It's difficult to find suits these days that are all natural fibers.... I [can] not find anything new that [is] not at least a semi-synthetic blend, which is very frustrating for me. You know I am not finding wool. I am not finding silk. I am not finding rayon.

Suggestions for Eliminating the Barrier of Limited Availability

This study identifies a number of ways in which the limited availability of apparel with desired attributes acts as a barrier to the ecological decision making of the participants. Preventing the participants from meeting all their apparel needs in an ecologically conscious manner is the fact that the participants have difficulty acquiring apparel in appealing styles, the necessary product categories, and that fit properly. This suggests that apparel companies that are manufacturing environmentally preferable apparel should work to develop their products in a wider range of styles, sizes, and categories. For example, throughout data collection both male and female research participants repeatedly suggested that ecologically conscious companies develop environmentally preferable business wear. As Informant F1 suggested;

Informant F1: I would say as far as clothing they need to make, I think that if they made clothing that a person can wear to an office setting.... I would say that would be a good place for them to expand into.

Similarly, Informant F13 said;

Informant F13: I would love to see more tailored kinds of things.... The other thing is good quality. I would like to see just good quality, good fabrics, and good cuts and classic lines – not stuff that’s really trendy, that might not even last a whole season before people are just tired of wearing it or tired of seeing it. That would be my advice to a designer.

And when asked if she would support a company that produced a line of women’s business wear that was environmentally preferable and met her standards for style and quality, Informant F13 replied, “Believe me, I will be their best customer.”

Based on the comments of the research participants a strong market may exist for environmentally preferable business wear. Therefore, a suggestion is that product developers for companies that manufacture environmentally preferable apparel should conduct further research into the potential of this market opportunity as there appears to be a current void in the apparel industry in this product category for both men and women. Other product categories that the research participants indicated are difficult to acquire environmentally preferable alternatives include footwear, formal wear, and outdoor wear – additional categories for market research and possible product development.

Several of the research participants also specified that a better understanding of ecologically conscious apparel consumers on the part of apparel companies would contribute to increasing the range of available apparel that is environmentally preferable. For example, Informant F16 suggested, “I think they ought to do some focus group with people that are my age – and well every age – but particularly the baby boomers because they are the ones that have the money to spend.... And really listen to what the needs are.” And Informant M7 said, “I think what they need to do is an analysis and gain a better understanding of the clothing needs of men.”

Finally, in terms of suggestions for eliminating the barrier of limited availability of environmentally preferable apparel, a couple of the participants stated that they would like to see more mainstream stores carrying some environmentally preferable alternatives. As Informant F14 said, “It would be nice to see more of it in the regular stores and shops because it’s still definitely the minority of what you look at in most places.” And Informant F6 stated;

Informant F6: Or like ideally someone mainstream...would start up a clothing line that would cater to that market.... Like for example in Britain there’s...a grocery/clothing store, it’s a huge chain all over Britain and actually in Ireland also. And they have a number of designers that have done lines of clothing for them.... But if you’ve got someone who was high profile to design a line of clothing for a department store and it’s going to be made out of only organic material manufactured here in the United States. That would be a big deal, I think.

Information about Ecologically Conscious Apparel Acquisition

A second important contextual barrier acting as a constraint against the ecological decision making of the research participants is the limitations that exist in terms of information about ecologically conscious apparel acquisition. In fact, 65.4% of the research participants spoke about the sufficiency and validity of information as hindering their behaviors in this area. To illustrate, when Informant F16 was questioned as to what types of barriers she felt were preventing her from purchasing all environmentally preferable apparel, she responded, “Lack of information.” Other research participants made similar comments as well.

Informant M6: I don’t always have the information I need to make the right decisions.

Informant M9: If I had more information...if I was educated about it I would be able to further decrease the impact I am having on the environment through my clothing purchases. But I don’t feel it is possible right now because I don’t have that information available.

Overall, the research participants feel that information about ecologically conscious apparel acquisition is often not sufficient to guide ecological decision making in regards to their apparel acquisitions. As Informant F3 said, “You know I hear stuff here and there about certain companies but I don’t hear enough.”

Specifically, the participants spoke about wanting more detailed information about the environmental impacts of apparel production:

Informant M3: I would like to know where the material is sourced from and where it is processed and whether the people there are making a fair wage.

Informant M5: Dyes are definitely a concern and it is something that I definitely wished I knew more about.... And other treatments too.

And the benefits of environmentally preferable apparel:

Informant F3: I don’t just want to know this is organic, I want to know it is made with sustainable agriculture practices and fair wages for the workers, and maybe recycled materials, those kind of things would draw my attention.

Some of the research participants, including Informants F12 and M6, also stated that they feel ecologically conscious companies are not doing enough to educate consumers about their apparel products.

Informant F12: Part of it is advertising. I am not aware of a lot of companies that make environmentally conscious clothing. I don’t feel like they do a good job, if they are making it, of advertising.

Informant M6: I wouldn’t say that I feel like any company has done a highly effective job, at least to me as a consumer, in marketing their environmental values in selling their clothing.

Additionally, a few research participants believe the validity of existing information about ecologically conscious apparel acquisition also acts as a barrier to ecological decision making.

Informant M2: Sometimes the company's website will say all the right things but you still kind of wonder, just based on what it is made of and where it's made, and then I will not necessarily be able to find any other information on it.... Hopefully the companies are being straightforward and they are not trying to greenwash anything.

Informant F5: What I do get kind of bothered by though is since we have had this environmental wave take over, a lot of companies market that they are organic or whatever and if you look at the labels they're not at all.

Informant F13: How do you really drill in and know whether what you're being told is real? In the absence of any other information how do you make those kinds of decisions?

Suggestions for Eliminating Knowledge and Information Barriers

The research participants' comments in regards to the sufficiency and validity of ecologically conscious apparel acquisition information suggest improved information may enhance the decision making of apparel consumers. This barrier of inadequate information closely relates to the personal barrier of limited knowledge. It is at least partially because the research participants lack adequate information that they also lack knowledge about ecologically conscious apparel consumption. Therefore, designing effective consumer education strategies that improve information related to environmentally preferable apparel will decrease the prevalence of both knowledge and information barriers. For example, during his interview Informant M6 spoke several times about how if he had more information about ecologically conscious apparel consumption, he would be able to be a more ecologically conscious apparel consumer;

Informant M6: I would definitely be inclined to look and consider [the environment] in my purchases. Like for instance I've learned that partially hydrogenated oils aren't the best so I buy cereals that don't contain them when I go to the grocery store. Or high fructose corn syrup and stuff for my kids. I'm somebody who's willing to take that extra couple minutes to do that, when presented with the information. At this point in time, I couldn't tell you what I should be looking for in a fabric.... If at some point I were presented with that information, I would use that as a factor in

purchasing clothing moving forward.... If you handed me a piece of paper and said to me, when you buy a suit think about these things, I would definitely think about those things.

The research participants indicated that in their apparel acquisitions, their decisions are constrained because they lack insufficient information, information is not available for them to use, and information is not always reliable. For these barriers, there are a number of possibilities for diminishing their effect on decision making.

Range of information needed. To increase their knowledge and subsequently improve their decision making during apparel acquisition, the research participants require more information about the apparel they are acquiring. In this regards, the research participants identified a number of issues that they lack knowledge about and need increased information. For example, a number of the participants, including Informants M1 and F1, spoke about desiring more information about where and how their apparel is produced.

Informant M1: I would like to know the distance it has traveled, and the emissions that it has produced. And if it says that it is organic or produced organically – how the crop was grown, and things like that.

Informant F1: It would be nice to have a better idea I think of – I heard of actually a company that now tracks where your clothing comes from. I haven't heard of anything around here doing that – it is actually in some Scandinavian company. It's a company that will tell you – you put in whatever the company's name is and you can find out where their clothing comes from exactly and the processes. It's kind of cool and that's the kind of thing I think would be nice.

More specifically, the research participants feel it would be possible to improve their apparel acquisition decisions with better information on the total distance their apparel traveled during manufacturing, the carbon outputs associated with the manufacturing and transportation of the product, and the processes involved in manufacturing the product.

From data collection it is also evident that the research participants lack basic knowledge about the life cycle and associated environmental impacts of apparel products; and therefore, in this regards this is a need to improve information. Primarily apparel consumers need more information about the environmental impacts of different fibers, finishes, and manufacturing processes so that they can make more informed decisions about the types of apparel they acquire. Informant F1 expressed a similar sentiment.

Informant F1: I think that would be great to get a way to compare types of fabrics and what goes into it from the pesticides to grow it or what all is used in it, just so you know what actually is there so you're not blindly doing it. That way even if you don't have something that says organic on it you can say well okay, this came from this far away and it's probably not as bad as something else. I'd like to know the really bad ones so that I could avoid those. That would be nice.

In addition to increased information about the environmental issues associated with apparel, the research participants also need more information about acquiring environmentally preferable apparel. In recent years, a substantial supply of environmentally preferable apparel has emerged. Although a limited supply of this type of apparel exists in traditional brick-and-mortar stores, through e-commerce it is possible to acquire a wide range of environmentally preferable apparel. However, most of this study's research participants are unaware of these companies which indicate that Informant F12's suggestion, "They could do some better advertising," holds truth; and apparel companies that are selling environmentally preferable apparel need to find creative marketing strategies for reaching apparel consumers who are ecologically conscious and desiring to acquire apparel consistent with their values.

Making the information available. In discussing how they would like information about ecologically conscious apparel acquisition to be available to them, the research participants primarily spoke of two avenues: the internet and product labeling.

Many of the study's participants rely on the Internet as a source of information. Therefore, it is not surprising that several of the participants, including Informants F12, M2 and M7, suggested an efficient method for informing consumers of the range of issues related to apparel consumption and the natural environment would be the Internet.

Informant F12: Maybe there could be a one-stop website where you go for eco-conscious clothing and then you have a number of companies listed underneath that website. Like a clearinghouse. Like this one-stop place and then from there I could go to other links and websites. That would be helpful.

Informant M2: I think that, if there was a resource that I could always go to that had every company and something that is updated regularly about that company's brands or clothing so that I could stay up-to-date. I would like to have one place that I could go to and that I could trust.

Informant M7: You ought to do a website that focuses on all of the ecological issues connected with fabric so that people could go and educate themselves – you know, cotton, wool, hemp, bamboo, whatever. I think that would be really be a way of beginning to develop conversations so that people could ask questions. You could do a whole nonprofit on this – educate people on this issue. Or find someone in the industry who wants to do it.

Although a lot of information related to apparel consumption and the natural environment already is available on the Internet, from personal experience of the researcher, it is scattered and often difficult to find. Therefore, there is an apparent need to provide consumers with an internet-based resource that would help them to decide between buying a 100% cotton shirt or a 100% polyester shirt or assist them in finding a company that sells environmentally preferable apparel in a certain product category. Rather than duplicate information that is already available on the Internet, such a resource could act

more as a conduit to resources and companies about environmentally preferable apparel so that consumers would find this information easier to locate and absorb.

The second manner that a large number of research participants spoke about wanting to have information made available to them is through improved product labeling. Many of the participants suggested providing environmental impact information on apparel labels would aid in their decision making.

Informant M2: I would love some kind of label...that would indicate its environmental footprint or its resource use – like how much water it took to make a shirt or how many kilowatts of energy it needed. And things like that. I would like to know that stuff.... I would love to have that on the label.

Informant F6: I would love to see every label of every piece of clothing in the United States and everywhere around the world, have carbon footprints on that label. And also the pound of pesticides that went into growing the cotton or whatever.

Informant F10: The big thing for me is if more information was on the tag. I do take the moment to read the tag and see what and where products are made. So if there would be more information provided on the tags – something like that I think would make a huge difference.

Currently, a number of eco-labeling programs are in existence. For example, the European Union established its “Flower” eco-label program in the 1990s; and the third-party body that governs the program has certified several hundred different products, including footwear and apparel, as being environmentally preferable (Europa, 2007). Similarly, in the United States eco-labeling schemes also exist. These include, among others, the Green Seal labeling program which certifies a number of products including cleaning products, paper, paint, and windows and doors (Green Seal, 2007); and the Energy Star program, which is an energy efficiency certification program jointly run by

the United States Environmental Protection Agency and Department of Energy (Energy Star, n.d.).

Despite the existence of a number of eco-labeling programs, there are no third-party labeling systems in the United States for apparel or textile products. Presently, the only type of eco-labeling that American apparel consumers can utilize are first-party labeling schemes that a select number of apparel companies have internally initiated. For example, in 2007, a national shoe company began including carbon footprint information with all its shoes. This company calculates the pounds of carbon dioxide and other gases emitted during production. It then uses this information to rank each shoe on a climate impact scale. The company also combines the carbon emission information with other data about resource and chemical consumption to provide consumers with an overall Green Index rating for each shoe (Mello, 2007). This company is also currently working with a number of other footwear companies to develop a standardized method for calculating and labeling carbon footprints for application across companies.

As another example of a first-party eco-labeling scheme, a national retail department store announced in March 2008 its “Simply Green” program. The company places this label on both private label apparel and home accessories that have a lower impact on the environment compared to traditionally produced products. The products assigned the Simply Green label are made from either 70% organically produced raw materials, 25% renewable materials, or 25% recycled materials. Product hang tags also carry additional information to educate the consumer as to how the products’ attributes are environmentally preferable (Ecotextile News, 2008).

Despite these isolated examples, until a third-party labeling scheme exists in the United States for apparel products, consumers have very little information to guide their decision making about specific products and/or they must trust the first-party labels of a small number of companies that do provide their consumers with environment-related information. And due to the high costs and complications of implementing eco-labeling programs, it is unlikely that many apparel companies beyond the most ecologically conscious will commit to such a program. Furthermore, evidence from fair trade labeling schemes suggests that only a select portion of consumers actually use such a labeling system in their decision making (Dickson, 2001). Therefore, because eco-labels probably would not drive mainstream consumer choices, it is difficult to believe that apparel companies beyond the ones that are the most committed to environmental sustainability would have enough incentive to adopt eco-labels on a voluntary basis. With all of this in mind, the implication is that public policy mandating eco-labels for apparel products may be necessary before consumers can expect to have this information provided to them on a regular basis. In addition, it may be necessary to consider alternate possibilities for effectively providing consumers with this information.

Ensuring validity of information. Finally, in addition to the participants feeling like they needed more readily available information, they also asserted it was important to them that they felt the information they did receive was valid. The participants felt that third-party information from reputable sources was the most trustworthy and that information provided directly by the individual companies was less valid. As Informant M6 said,

Informant M6: If I'm in the Gap and they have something posted - like the environmental facts, I'm going to say to myself that they are probably just trying to sell me one thing over another. But if you were the executive director of an organization that was focused on this and you had a flyer, that would be a much more valuable format or source for it to come from.... I would trust third-party information more than self-reporting.

Many of the other research participants also stated their preference for third party information.

Informant M2: I would love some kind of label, or some kind of label on the label that is already on the clothing by some sort of third-party company or a nonprofit.

Informant M9: Well if the claims came from the federal government I would figure they were true or if they came from university research I would figure they were true.

Informant F13: I don't think there are the independent standards and oversight bodies that are looking at these. And it would be great to have.... Those kinds of third-party certifying programs are golden for people like me to be more comfortable, to feel that they've made a reasonably good decision.

A major conclusion of this research study is that one of the most significant personal barriers constraining the ecological decision making of apparel consumers is their limited knowledge about ecologically conscious apparel consumption. Additionally, the primary factor contributing to this knowledge gap of consumers is the contextual barrier of limited information. Therefore, assuming that alteration of apparel consumer behaviors to be more environmentally sustainable is desirable, the significant implication of this research finding is that there is an overall need for effective consumer education programs and potentially policy related to third-party labeling.

Retail Environment

An additional contextual barrier that 23% of the research participants highlighted as sometimes preventing ecologically conscious apparel acquisition decisions is the

nature of apparel retail environments. More precisely, they spoke of two aspects of the retail environment that constrain their decision making, the organization of the store merchandise and the knowledge of the establishments' salespeople.

The research participants, both males and females, who mentioned the barrier of the organization of the retail environments' merchandise all referred to this as a barrier only in relation to second-hand clothing stores.

Informant F1: You've got to be creative about it when you're going into a secondhand store, you've got to find the right one and be able to...go through all the racks at a bigger place. It's a little bit more intimidating I think to people, and me, to find things you can actually use.

Informant M8: I really hate shopping. I go with a list and I get in and out as quick as possible. But in a second-hand clothing store that isn't really possible – you can't just go in and grab what you need and then leave. That is a big thing that is preventing me from buying more clothes that way.

Informant F11: [Second-hand Store B]...it just sort of seems like a big barn. It is actually not a very pleasurable shopping experience. It is hard to find things in there. So I think they could make it more pleasurable and make it more like a boutique.

These comments suggest that patronage of second-hand sources for apparel might increase if the stores took more care to organize the products and make a more enjoyable, hassle free apparel acquisition experience. This barrier also relates back to the two personal barriers of time and convenience priorities. Therefore, by focusing on improving merchandise organization in second-hand stores, there is the potential for decreasing the constraining natures of at least three barriers.

Two of the research participants, Informants F5 and F16, also discussed under-informed salespeople as a barrier in their decision making.

Informant F5: It would be great if like employees were informed about it and they knew, you know if I were to ask them if they knew where their clothes came from or what they were made of, if they actually knew what I was talking about.

Informant F16: It is frustrating to me to talk to people who seem to have no recollection of what is going on with the clothing industry.... It is surprising I guess the lack of awareness. I just wonder, "How could you not know this?"... I remember one time I was buying a pair of pajamas...and I was trying to tell this clerk what I wanted and she was clueless, just clueless. She kept bringing me things that were in my size but just weren't what I was looking for in terms of fabric so – she just didn't have any idea.

Among the participants these were the only two who discussed perceiving this as a constraint on their decision making. However, perhaps better educated personnel in regards to environmentally preferable apparel would reduce constraints faced by the research participants while acquiring apparel. An important implication of this finding is that currently in some academic merchandising and retailing programs there is a trend to move away from a product knowledge based approach to education and focus exclusively on business management related issues. However, if ecological awareness about apparel consumption continues to grow and consumers begin to demand product information as a result, it will be important for professionals working in retailing to have that product knowledge and awareness so that they can meet the needs of their customers.

Structure of the Global Textile and Apparel Complex

As discussed in Chapter Five, many of the research participants, for environmental reasons, prefer to acquire apparel made in the United States because they want to decrease the transportation impacts of the apparel they acquire and they feel more assured that adequate environmental standards govern apparel manufactures in the United States. Related to this behavior, the predominant trend over the last couple of decades of

American apparel companies outsourcing the manufacturing of apparel products overseas is another contextual barrier that 26.9% of the research participants perceive as an obstacle to their ecological consumer decision making. As evidence, when asked how her attitudes and values about the environment have influenced her decisions about how she acquires clothing, Informant F12 responded;

Informant F12: I think that's become harder for me, just because how globalized the economy has become in America. You used to be able to buy clothes that were made in America.... The majority of your clothing now is not made in the U.S. It's not. It's simply not. I do get excited when I do pick up the one piece of clothing that is made in the U.S. It has the "Made in the United States" label and I think, "Wow, today I am actually buying something that was made in the U.S." You know? That is unusual.

Informants M6 and F13, made similar assertions.

Informant M6: I've noticed that it has become less; I've noticed it's difficult...and the incredible frequency with which you see "Made in Taiwan," "Made in China."

Informant F13: What has been frustrating for me is that then in this 10 year span what I have seen, as everybody does see, much more outsourcing of construction. So now I can't find labels that aren't made in...China or wherever.

Also in regards to how the structure of the global textile and apparel complex acts as a barrier in ecological decision making, Informant M7 spoke more specifically about the complexity of the supply chain and how that constrains his decisions.

Informant M7: I prefer U.S. procured clothing. Although sometimes – like when I buy online – it doesn't say where it is coming from.... I mean the problem is that, because the clothing business is so international, it is just hard to connect to the resources of anything. If it was local, it would be easy. It is really hard.

Unlike the other barriers to ecologically conscious decision making discussed in this chapter, because the structure of the global textile and apparel complex is something that is highly complicated and beyond individual control, it is difficult to make

suggestions for overcoming this particular barrier. It would be overly simplistic, and extremely unrealistic, to suggest that apparel companies start manufacturing apparel in the United States again. However, if eliminating the barrier is not possible, a couple of possibilities do exist for its minimization.

First, the primary environmental concern the research participants have with acquiring apparel made from other countries is the environmental impacts associated with transporting the garment throughout the supply chain. Therefore, while continuing to outsource manufacturing to other countries, companies could work to decrease the total distance traveled by a garment. Instead of sourcing yarns, textiles, and garment production from three different countries, companies could source their materials and hire manufacturing contractors from within the same country. By decreasing a garment's distance traveled (and making this information publicly available), ecologically conscious consumers may not perceive the difficulty with acquiring apparel made in the United States as a contextual barrier.

A second possibility for minimizing the barrier to ecologically conscious apparel acquisition caused by the complex structure of the global textile and apparel complex is for apparel companies to have more transparent supply chains. As the above quote by Informant M7 demonstrates, if they are acquiring apparel through a catalog or the internet, consumers do not always know garments' country of origin because this information is typically only available on garment labels. Furthermore, even if consumers do know the country of origin, it applies only to the country of garment assembly and not the fibers, yarns, textiles, and other materials. Therefore, with more information related to country

of origin for all components of garments, apparel consumers could even further improve their ecological decision making.

Societal Norms

Finally, in addition to the above mentioned contextual barriers, 11.5% of the research participants also suggested that society's appearance expectations also produce barriers to their decision making and ecologically conscious apparel consumption. As Informant F11 proposes, "In my professional life, I am expected to carry a certain appearance. If I were working for an environmental group I think I would feel more comfortable wearing hemp or something like that." But since she works in academia, she believes others do not perceive a lot of environmentally preferable apparel as sufficiently professional in style so she must continue to acquire some mainstream apparel. A few other participants made similar comments as to how it is difficult for them to portray the professional image expected of them while also acquiring environmentally preferable apparel.

Informant M1: I would think about the environment when in the process of buying dress shirts but then if it wasn't possible to get something that was organic or whatnot, umm, I would still think about it but then I would still have to buy something. That is the unfortunate thing. I guess as I can always say that I want to do something and be environmentally conscious but yet in order to have that job, I need to get the shirt and the only shirts that were available were not environmentally conscious – so I would have to get them.

Informant F2: I'll try to shop at [Second-hand C] a lot but it's not always easy to find like professional looking clothing there. I usually find most of my fun clothing there which was fine when I was an undergrad and you can look like a complete slob in class. But when you're going to meetings with people, and I already feel self conscious about my age and maybe being like sweaty from bicycling, I don't want to exactly be wearing something too crazy or not fitting. So I've had some issues with that.

From these above comments, it is evident that some of the research participants perceive societal norms related to appearance expectations to be a constraint that prevents them from acquiring more environmentally preferable apparel. Unfortunately, not a lot can be done to overcome this barrier since, similar to the structure of the global textile and apparel complex, societal norms are not under individual control nor rapidly changed. However, as awareness of environmentally preferable apparel increases and more people begin to adopt an ecologically conscious approach to apparel acquisition, perhaps societal appearance norms will also change, making it more acceptable for people to wear environmentally preferable apparel in a variety of environments. Or an increased range of environmentally preferable apparel available on the market that permitted consumers to meet societal norms would negate the requirement of changing these norms.

As illustrated by the data, as the research participants aim to engage in ecological consumer decision making and acquisition of environmentally preferable apparel, they face a number of contextual barriers. In this study, these barriers include the availability of environmentally preferable apparel, information about ecologically conscious apparel acquisition, retail environments, the structure of the apparel and textile complex, and societal norms. All of these are significant constraining factors with which practitioners must deal in any efforts to modify apparel consumer behavior so that it becomes more sustainable.

Relative Influence of Barriers on Research Participants

Despite the fact that this study indicates that both personal and contextual barriers constrain ecological decision making, among the research participants these barriers

inhibit ecological rationality to varying degrees. As demonstrated in Table 8, some of the research participants identified a majority of the barriers discussed in this chapter as constraining their decision making while others acknowledged relatively few. In general, the participants who acquire a substantial portion of their apparel from second-hand sources or overall do not acquire much apparel, are not as constrained by barriers as the participants who are predominately acquiring new apparel. For example, when asked if he felt it was difficult to meet his clothing need while being ecologically conscious Informant M1 replied, “Well not particularly but just because I don’t really have great clothing needs.” And, similarly, Informant M1 said;

Informant M1: If I want to buy something in an actual store it is very difficult because I just can’t find stores around me that sell organic clothing.... But by being willing to buy and wear second-hand stuff, it helps to alleviate some of those difficulties. And also just by the fact that I don’t buy a lot of stuff.... It is easy for me to feel like I do not have to buy a lot of clothing so then I don’t have to worry about trying to find environmentally conscious stuff.

Other research participants who acquire a substantial portion of their apparel from second-hand sources include Informants F3, F6, F8, F10, F14, F15, and F17. And these research participants appear to be less constrained in their ecological decision making by barriers as well.

Informant F6: I don’t find it too difficult to meet my clothing needs but being able to buy in a really good secondhand store helps.

Informant F10: It is absolutely not difficult to meet my needs for clothes while being eco-conscious. Absolutely not. I can always find clothes that I like at second-hand stores.

On the other hand, a number of research participants who do not rely on second-hand sources for a large portion of their apparel, perceive it to be quite difficult to meet

Table 8. *Summary of Each Informants' Personal and Contextual Barriers*

	Personal barriers						Contextual barriers					
	K:EI	K:EPA	A&B	AAB	PR	PP	AvailS	AvailA	Info	Retail	Struct	Norms
M1	X	X					X	X	X			X
M2							X	X	X			
M3	X	X		X	X		X	X	X			
M4	X	X		X		X	X	X				
M5		X	X		X		X	X	X			
M6	X	X	X	X		X			X		X	
M7		X					X	X			X	
M8	X	X		X			X	X	X	X	X	
M9	X		X	X					X			
F1	X	X	X		X		X	X	X	X		
F2			X		X			X		X	X	X

Table 8 (continued).

	Personal barriers						Contextual barriers					
	K:EI	K:EPA	A&B	AAB	PR	PP	AvailS	AvailA	Info	Retail	Struct	Norms
F3	X	X	X	X	X				X			
F4	X	X	X		X		X	X				
F5		X	X	X	X	X	X	X	X	X		
F6					X			X	X			
F7				X	X		X	X	X		X	
F8				X	X			X				
F9			X	X		X	X	X				
F10	X	X		X			X	X	X			
F11	X		X	X	X	X	X	X	X	X		X
F12	X	X		X	X	X	X	X	X		X	
F13		X	X		X		X	X	X		X	

Table 8 (continued).

	Personal barriers						Contextual barriers					
	K:EI	K:EPA	A&B	AAB	PR	PP	AvailS	AvailA	Info	Retail	Struct	Norms
F14	X		X		X	X	X	X				
F15			X		X			X				
F16	X		X		X		X	X	X	X		
F17	X	X	X	X				X				

Key: K:EI = Knowledge of Apparel Environmental Issues; K:EPA = Knowledge of Environmentally Preferable Apparel and Sources; A&B = Attitudes and Beliefs; AAB = Apparel Acquisition Behaviors; PR = Personal Resources; PP = Personal Priorities; AvailS = Availability of Sources; AvailA = Availability of Apparel; Info = Ecologically Conscious Apparel Acquisition Information; Retail = Retail Environment; Struct = Structure of the Textile and Apparel Complex; Norms = Societal Norms

their apparel needs while being ecologically conscious. For example, in response to this issue Informant F5 stated, “If I didn’t care so much about the style then it wouldn’t be a problem. But if I do want to take into consideration my environmental views then it is very hard to find things that I would want.”

Also, in terms of the degree to which the participants perceive barriers to constrain their desire to engage in ecologically conscious apparel acquisition decisions, the participants, like Informant F8 or F10, who do not have to wear business wear to work or who buy business wear at second-hand stores also find the barriers to be less substantial. For example, when asked if the style of environmentally preferable apparel acted as a barrier to acquisition, Informant F8 replied;

Informant F8: Not in my life, no. But I don’t wear a lot of professional type apparel so maybe if I did that would be an issue.

Finally, from her interview it was evident that Informant F3 also felt it is not overly difficult to meet her apparel needs while being an ecologically conscious consumer. This is probably because her primary strategy is to reduce the amount of apparel that she owns, she does not acquire new, environmentally preferable apparel. When she does need to acquire apparel, because it is a rare and necessary behavior, she does not worry about the environment and purchases them through mainstream stores.

This finding that the research participants who are acquiring a substantial portion of their apparel through second-hand sources or participants who are not acquiring a lot of apparel overall, perceive less barriers constraining their ecological decisions than compared to the other participants is an important conclusion of this study. It also provides further support to the suggestion that consumer education programs aimed at modifying behaviors so that apparel consumption becomes more environmentally

sustainable focus on fostering behaviors of reduced consumption and acquisition through second-hand sources.

Summary and Implications of Research Question Four

An important contribution of this dissertation is its identification and increased understanding of barriers constraining ecologically conscious apparel acquisition decisions. As far as is known, this is the first study that explicitly asks ecologically conscious apparel consumers about the barriers and how they constrain ecologically conscious apparel consumption. As recognized earlier in the chapter, a few previous studies examining ecologically conscious apparel consumption did identify product price and consumer knowledge as barriers (Hines & Swinker, 1996; Kim & Damhorst, 1998; Stephens, 1985). However, none of these studies had identification of barriers as a primary objective. Therefore, by focusing on barriers to ecologically conscious apparel consumption this dissertation has learned that beyond those previously considered, a number of other barriers, both personal and contextual, are constraining these behaviors.

The personal barriers to ecologically conscious apparel acquisition newly uncovered in this research study include consumer attitudes about the style, fashionability, fit, and comfort of environmentally preferable apparel, apparel acquisition patterns and preferences, and personal priorities. Also, in addition to confirming that economic resources sometimes act as a barrier, this study also demonstrated that additional nonhuman resources of time and transportation constrain the ecologically conscious apparel acquisition decisions of some consumers. The new contextual barriers that this research study discovered as facing apparel consumers as they try to make ecologically

conscious apparel acquisition decisions include the availability of both environmentally preferable apparel and information about ecologically conscious apparel acquisition, retail environments, the structure of the textile and apparel complex, and societal norms.

Taking into consideration all of the barriers, on both personal and contextual levels, facing ecologically conscious apparel consumers as they aim to engage in ecologically conscious apparel decision making, the overall conclusion is that the current organization of the textile and apparel complex is not functionally rational in this regard. In other words, for many reasons detailed in this chapter the structure of the textile and apparel complex, within which ecologically conscious consumers try to make ecologically rational decisions, does not consistently support or produce ecologically conscious apparel acquisition decisions. Many of the suggestions, made in this chapter, for overcoming contextual barriers would also contribute towards increasing the ecological functional rationality of the complex. For example, if the complex was organized in such a way that all apparel products sold in the United States included a standardized eco-label, the capacity of consumers to make ecologically rational decisions would greatly increase. However, until such changes occur and the textile and apparel complex becomes more ecologically rational as a whole, it will remain challenging for individual apparel consumers to produce on a consistent basis the good of ecological sustainability through their apparel acquisitions.

CHAPTER 8

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

This concluding chapter of the dissertation serves a number of purposes. First, it provides a summary of the study's objectives, research design, and research participants. Second, it reviews the findings and conclusions for each of the study's four research questions. The final purpose of the chapter is to discuss the study's implications and recommendations both in terms of improving apparel-related ecological decision making, encouraging more sustainable apparel acquisition behaviors, and for future research.

Summary of Research Design and Sample

By focusing on the population of adult apparel consumers already engaged in ecological decision making through their apparel acquisition decisions and behaviors, this study aimed to understand the nature of ecological decision making and expand the knowledge base of environmentally significant apparel consumption. Although apparel consumption includes acquiring, using, storing, maintaining, and discarding of apparel, in examining the ecological consumer decision making of apparel consumers, this study limited itself to apparel acquisitions.

The following four research questions guided this study:

1. Which personal variables characterize ecologically conscious apparel consumers?
2. What manifestations of ecological consumer decision making exist in apparel acquisition behaviors?
3. What is the nature and process of ecological consumer decision making for apparel acquisition?

4. What personal and contextual barriers face apparel consumers in the ecological consumer decision-making process?

Utilizing purposive, criterion based sampling procedures, recruitment of research participants occurred through a recruitment questionnaire designed for this study. The questionnaire included two types of questions – those that asked individuals if they had engaged in a variety of ecologically conscious apparel acquisition behaviors and additional questions to collect general demographic data. Administration of the recruitment questionnaire occurred through three avenues: a membership meeting for an environment-related organization, a retail outlet selling environmentally preferable apparel products, and several environment focused email listservs.

Administration of the recruitment questionnaire returned 206 completed questionnaires, with 109 respondents indicating their willingness to participate further in the study. After eliminating ten respondents because they had never engaged in any of the questionnaire's ecologically conscious apparel acquisition behaviors, the final sample frame for the study was 99 people. To select the study's research participants, from the 99 eligible respondents, the researcher randomly selected five males and five females and contacted them with an invitation to be participants in the study. If an individual was no longer available to participate, random selection of another potential respondent occurred. This process continued until the conclusion of data collection.

Altogether, 26 individuals, nine males and 17 females, participated in the study. The participants ranged in age from under 25 to over 64 and all had at least a high school diploma, with a majority also having earned post-secondary degrees. They also represented different income levels and were all ecologically conscious individuals.

Data collected through semi-structured interviews formed the basis of the findings of this study. Using an interview guide, questions in the interviews focused on 1) personal characteristics of ecologically conscious apparel consumers; 2) engagement in ecologically conscious apparel acquisition behaviors; 3) ecological consumer decision making related to apparel acquisition; and 4) barriers facing individuals and their ecological decision making about apparel acquisition. The tape-recorded interviews lasted between 40 and 90 minutes. After each data collection, full transcription of the data occurred.

The study analyzed data through a three stage process. First, the researcher developed and applied codes to each interview. These codes reflected major themes and concepts emerging from the data and focused on the four research questions. Second, the researcher compiled 26 summary memos and statements – one for each research participant – summarizing what each participant revealed about the study's research questions. Finally, further condensing and analysis of data occurred by developing four summary displays which compiled what the research participants as a whole revealed for each of the four research questions. It was through this process of data analysis that major themes emerged and conclusions drawn.

Summary of the Research Findings

This section of the chapter reviews the findings for each of the four questions related to ecologically conscious decision making and apparel acquisition. Also included in this section is a discussion focusing on integrating the research findings of the four

research questions to demonstrate, overall, what this study has learned about the nature of ecological decision making and environmentally significant apparel consumption.

Research Question One: Personal Characteristics of Ecologically Conscious Apparel

Consumers

The normative-attitudinal variables of environment-oriented values, beliefs about environmental vulnerability and personal responsibility, attitudes of environmental concern, and perceptions of clothing adequacy characterize this study's research participants. Additionally, knowledge of general and apparel-related environmental issues typifies the study's participants.

Summary of Normative-Attitudinal Variables

The individuals participating in this research study hold a number of environment-oriented values. Overall, the participants value ecosystem services provided by the natural environment. They also value protecting and living in harmony with the natural environment and non-human, living organisms. Finally the participants value the natural environment for aesthetic reasons and the enjoyment they derive from it.

A number of environment-related attitudes and beliefs also characterize the participants in this study. First, the participants believe the natural environment, because of human behaviors, is vulnerable and threatened. Second, the participants are concerned about the current state of the natural environment because of the implications of environmental vulnerability for both humans and non-human organisms. Finally, the participants believe that they hold a certain level of personal responsibility and should contribute, through their daily decisions and behaviors, towards addressing and resolving environmental issues.

In addition to the above normative-attitudinal variables common among the research participants, this study also determined the participants' hold a perception of clothing adequacy. Because many of the participants perceive themselves as already owning a sufficient amount of clothing to meet their apparel needs they typically do not accumulate apparel in excess of current levels, but rather acquire apparel for maintenance purposes.

Summary of Personal Capacity Variable

Knowledge about general and apparel-related environmental issues is an additional characteristic present among the research participants. This study found that the participants are knowledgeable about general environmental issues and the relationship between human behaviors (including consumption) and natural environment degradation. The participants have awareness of a range of issues including, but not limited to, loss of biodiversity, land degradation, resource over-consumption, air and water pollution, and global climate change. Additionally, although to a lesser degree compared to other issues, the participants also have some knowledge in terms of how apparel production and consumption are environmentally significant. Mostly, they are informed of the environmental impacts associated with the cultivation of conventional cotton. Some participants also have a basic awareness of the environmental impacts of textile dyeing and the energy requirements of, and the pollution created by, apparel manufacturing.

***Research Question Two: Manifestations of Ecological Decision Making in
Apparel Acquisition Behaviors***

As the research participants of this study endeavor to be ecologically conscious consumers, this study found that ecological decision making manifests itself in their apparel acquisition behaviors in a variety of ways.

First, in engaging in ecological decision making related to their apparel acquisition, the participants adhere to limits in terms of the amount of apparel they acquire. This is the most consistent evidence of ecological decision making among the research participants, with all of the participants limiting the amount of apparel they acquire. The participants engage in this behavior by acquiring apparel on the basis of need and extending the lifetime of their apparel by taking care of their apparel, altering and repairing clothing, and refashioning clothing.

The second manifestation of ecological decision making in the apparel acquisition behaviors of the research participants is their acquisition of apparel with environmentally preferable attributes. More specifically, the participants acquire some of their apparel because it is made from environmentally preferable fibers or because it has other attributes they consider environmentally preferable. The environmentally preferable fibers most commonly acquired by the participants are organically-grown cotton, hemp, and recycled fibers. Other environmentally preferable attributes important to the acquisition decisions of the research participants include the durability and quality of the apparel, classic styling of the apparel, and country of origin.

In this study, the third behavior providing evidence of the participants' ecological decision making is their acquisition of apparel through environmentally preferable

sources. These sources include second-hand (retail, family, and friends), ecologically conscious companies, independent companies, and home sewing.

The research participants' avoidance of apparel acquisition behaviors they perceive as not ecologically conscious is the fourth manifestation of ecological decision making evident in this research study. The research participants are avoiding certain fibers when acquiring apparel – primarily synthetic fibers, furs, and leather – and dry-clean only apparel. They also avoid companies that have environmental practices with which they do not favor. Finally, a few of the participants avoid the acquisition of apparel through mail order because they perceive the environmental impacts of shipping the product to be greater than driving to a store and acquiring a similar product.

Finally, as the research participants make ecologically conscious apparel acquisition decisions they also make sacrifices. More precisely, the participants sacrifice nonhuman resources, including money and time, the style and amount of apparel they acquire, as well as the sources for their apparel acquisitions.

Research Question Three: Nature and Process of Ecological Decision Making During Apparel Acquisition

In examining the apparel acquisition decisions of consumers, this study increased the clarification of both the nature and process of ecological decision making. It also identified several simplification processes used by decision makers while acquiring apparel in an ecologically rational manner.

Summary of the Nature of Ecological Decision Making

Ecological decisions take into consideration and allow the accomplishment of both social and environmental goals, while balancing the needs of humans with

environmental sustainability. And it is the conclusion of this study that ecological decisions are sufficiently different from other decisions, such as economic or technical, to qualify as a distinct decision type. However, all individuals do not engage in ecological decision making. Rather, it is a type of decision making engaged in when individuals hope to achieve sustainable interactions with their environments. Evidence from this study indicates that ecological decisions are holistic in nature in that, as individuals make a range of decisions, they aim to balance personal needs with ecological sustainability. Therefore, ecological decisions are higher-order decisions influential to and integrated throughout individuals' daily decision making, including apparel acquisition decisions. By consistently making ecological decisions, integration of living and non-living systems occurs, which in turn produces sustainable interactions between humans and their environments and supports the ability of the earth to sustain life.

A conclusion of this study is that prior to initiating the decision-making process for a particular apparel acquisition, ecologically conscious individuals make ecological decisions. The two ecological decisions made by the research participants in this study include deciding to set limits to the amount of apparel acquired and deciding to establish ecologically rational decision rules. These decisions are distinct from acquisition decisions related to specific apparel items because the related decision making occurs outside, and prior to, individual acquisitions of apparel, and because they are decisions that are relatively stable and are applied from one acquisition to the next. However, they are also decisions that are very influential for specific apparel acquisitions because they, at least partially, guide the acquisition decision-making process of the participants in an ecologically rational manner.

Summary of the Decision-Making Process for Ecologically Rational Apparel

Acquisitions

This study also determined that as the study's participants make ecologically conscious apparel acquisitions, a dominant technical decision-making process is used. However, because it is an ecologically rational process which considers the environmental significance of acquisition decisions and aims to balance personal needs with the integrity of the natural environment, it is also a distinct process compared to conventional consumer decision-making models.

The process of making ecologically conscious apparel acquisition decisions identified in this study begins with an individual recognizing an apparel need and defining the type of apparel item that will meet that need. The individual's ecological decision to limit the amount of apparel acquired factors heavily at this stage of the decision-making process as he or she questions apparel need and adheres to personal limits.

In the next stage of decision making, the individual must select a source for acquiring the apparel item. In order to make this decision the individual gathers information about potential sources and then proceeds to generate and evaluate alternative sources. After evaluation of sources, selection of either a second-hand, mainstream, or an ecologically conscious source occurs. The focus on selecting sources that will enable the acquisition of environmentally preferable apparel is not only a distinguishing feature of the ecologically conscious decision-making process, but also evidence of the integration of ecological rationality within other types of decisions.

The third stage of the decision-making process is the generation and evaluation of apparel alternatives and a determination if the selected source has an appropriate apparel item. This stage may also include the gathering of information about the alternatives by reading product labels. There is an integration of ecological rationality at this stage of the decision-making process as well because, in addition to conventional evaluation criteria such as fit and style, evaluation of apparel alternatives to determine whether the article of clothing is environmentally preferable occurs. This stage of decision making results in either the selection of an item that appropriately meets apparel needs or a decision that the source cannot meet the defined need, necessitating the utilization of alternative sources.

If, during the third stage of the process, selection of an apparel item occurred, a subsequent fourth stage of decision making occurs. This stage is the reassessment of apparel need. In this stage, prior to acquisition, the individual stops and again considers if the acquisition is necessary and if he or she will make use of the apparel item. This stage, absent from conventional decision-making models, is influenced heavily by ecological decisions and the determination to acquire apparel within set limits.

To conclude the review of the process of ecological decision making, this study also determined that the research participants rely on several processes that aid in simplifying their decision-making processes. The first process utilized by the research participants is editing, that is eliminating alternatives by sequential analysis of attributes. In apparel acquisition decisions the participants commonly edit by eliminating apparel made from certain fibers and companies they consider not ecologically conscious. They also eliminate from consideration apparel alternatives not meeting attribute and or

relational characteristic standards. Applying heuristics, or rules-of-thumb, to decisions is the second process relied on by the research participants to simplify their decision making. Most commonly the participants apply heuristics when selecting the source for acquisition and automatically selecting a source because of successful previous acquisitions. Finally, the third simplification process aiding the decision making of the research participants is compromising. Because the research participants consider a range of criteria in identifying and selecting environmentally preferable apparel, it is sometimes necessary for them to make concessions on some of the attributes. The criteria the participants most frequently compromise on are an apparel item's country of origin and fiber content.

Research Question Four: Personal and Contextual Barriers to

Ecological Decision Making

The results of this study suggest that as the research participants make ecologically conscious apparel acquisition decisions, they face a number of both personal and contextual barriers. On a personal level, barriers to the participants' ecological decision making include a lack of knowledge about ecologically conscious apparel acquisition, attitudes and beliefs about environmentally preferable apparel, apparel acquisition patterns and preferences, and personal resources and priorities. On the other hand, the contextual barriers confronting the research participants in their ecological decision making include limited availability of environmentally preferable apparel, inadequate information about ecologically conscious apparel acquisition, qualities of retail environments, the structure of the global textile and apparel complex, and societal norms.

Summary of Personal Barriers

In two ways, a lack of knowledge about ecologically conscious apparel acquisition acts as a personal barrier in the ecological decision making of individuals. First, the participants only have a basic level of awareness as to how apparel production affects the natural environment. Beyond their knowledge about conventionally grown cotton, most of the participants can only articulate environmental impacts of apparel manufacturing in very general terms. This is a barrier to the ecological decision making of the participants because it limits their understanding of how their apparel acquisition behaviors affect the environment. The second way that limited knowledge acts as a barrier to the participants' ecological decision making is in terms of their lack of knowledge about options for environmentally preferable apparel and sources for its acquisition. This limited knowledge means that the participants are unaware of the full range of environmentally preferable apparel and sources available to them; and, therefore, the participants do not always consider the full range of available alternatives during decision making.

Attitudes of the research participants about attributes and relational characteristics of environmentally preferable apparel also act as personal barriers to ecological decision making. Some of the participants in this study do not consistently acquire environmentally preferable apparel because they do not like the style, fit, and/or tactile qualities. More specifically, the participants feel that environmentally preferable apparel is not stylish enough and often too counter-cultural. They also do not like the tendency of environmentally preferable apparel to be untailored and believe that some environmentally preferable fibers, such as hemp, are uncomfortable.

Additional personal barriers to ecological decision making are certain apparel acquisition patterns and preferences of the research participants. More specifically, these barriers include some of the participants' inconsistent consideration of the environment while acquiring apparel, preference for new apparel, delegation of apparel acquisition decisions to others, and ignoring apparel product tags during the decision-making process.

The final two personal barriers to ecological decision making uncovered in this study are nonhuman resources and personal priorities. Some of the research participants lack nonhuman resources that are necessary for acquiring environmentally preferable apparel. These resources include money and transportation – with participants finding it difficult to make ecological decisions and acquire environmentally preferable apparel because of the higher associated costs and/or because they do not have a form of transportation to travel to acquisition sources. Several personal priorities also constrain the participants' decision making. Individuals' priorities related to finances, convenience, time, other ecological issues, and apparel style sometimes take precedence over, and act as barriers to, the acquisition of environmentally preferable apparel.

Summary of Contextual Barriers

In terms of contextual barriers, the limited availability of environmentally preferable apparel significantly constrains the ecological decision making of the participants in this study. More specifically, the study's participants find it difficult to locate sources for acquiring environmentally preferable apparel because only a minority of mainstream apparel companies sells it and minimal retail sources are devoted entirely to it. Also contributing to the barrier of limited availability is that it is difficult for the participants to locate environmentally preferable apparel that also has other desirable

attributes and characteristics – such as being stylish, work-appropriate, and well fitting. The participants also find it difficult to acquire specific articles of clothing that are environmentally preferable, including footwear, formal wear, and men's pants.

In addition to limited availability of environmentally preferable apparel, the limited availability of information related to ecologically conscious apparel acquisition is another contextual barrier to the participants' ecological decision making. As evidenced by their knowledge in this area, the research participants have insufficient and unreliable information about the environmental impacts of apparel production and environmentally preferable alternatives. Therefore, as they aim to make ecologically rational decisions related to their apparel acquisitions, they have inadequate information to guide that decision making.

A third contextual barrier that some of the research participants feel constrains their ecological decision making related to apparel acquisition is a couple of factors related to the nature of apparel retail environments. First, some participants believe there is poor organization of apparel merchandise in second hand stores. For these participants, this poor organization results in frustrating shopping experiences and, sometimes, avoidance of second hand sources altogether. Second, the lack of knowledge of salespeople also occasionally acts as a contextual barrier to the participants' decision making, especially when the salespeople are unable to provide the participants with environment-related product information.

The two final contextual barriers facing the participants are the structure of the global textile and apparel complex and societal norms. The result of restructuring of the textile and apparel complex over the last several decades is that other countries make a

significant portion of apparel sold in the United States. Therefore, the participants find it difficult, on a consistent basis, to acquire apparel made in the United States. Additionally, the participants find societal norms surrounding appearance and dress expectations in their professional lives as constraining their ecological decision making especially because of the generally casual style of environmentally preferable apparel and the limited availability of business wear that is environmentally preferable.

Conceptual Model of Ecological Decision Making from the Perspective of Apparel Acquisition

The conceptual model of ecological consumer decision making from the perspective of apparel acquisition depicted in Figure 9 represents the compilation of the findings and interconnections between the study's four research questions. As the model outlines, a number of personal variables, including values, attitudes, beliefs, and knowledge characteristic of ecologically conscious apparel consumers, may inform and shape the ecologically rational decision making of apparel consumers. Ecological rationality is a higher-order rationality that encompasses ecological decision making in general, as well as apparel acquisition decisions. It is through the decision-making procedures associated with ecological rationality that consumers engage in a number of apparel acquisition behaviors that are ecologically conscious. However, these decision-making procedures are constrained by both personal and contextual barriers, preventing consumers from exclusively acquiring environmentally preferable apparel. Finally, the model also indicates a link between personal and contextual barriers – especially the personal barrier of knowledge and the contextual barrier of information and the personal

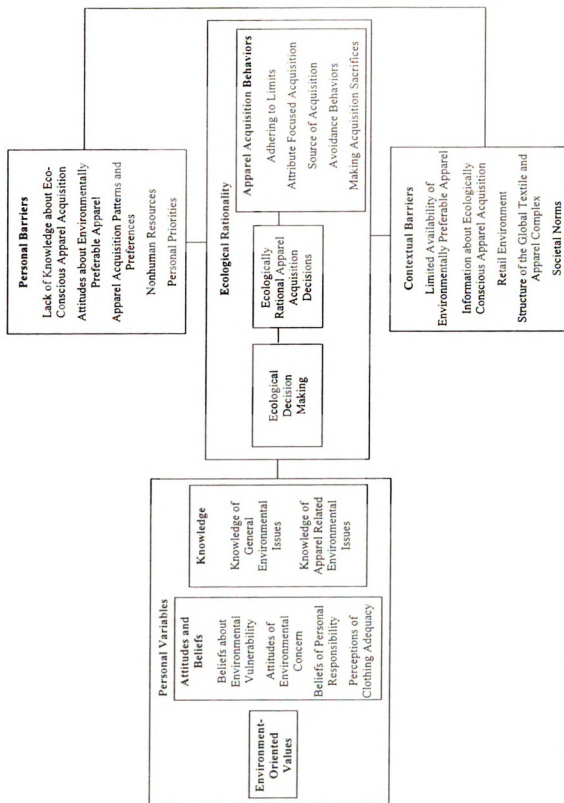


Figure 9. Conceptual model of ecological consumer decision making from the perspective of apparel acquisition.

barrier of attitudes about environmentally preferable apparel and the contextual barrier of apparel availability.

Practical Implications

Emerging from this study are important implications for both the apparel and textile industry and practitioners. Previous chapters discuss most of these implications in detail; therefore, this section is a compilation and summary of the study's most significant practical implications.

From the perspective of the apparel and textiles industry, an important implication of this study is that a market segment of ecologically conscious apparel consumers exists, and these consumers want a wider availability of environmentally preferable apparel. Frequently, the participants in this study find it difficult to acquire environmentally preferable apparel that is stylish, functional, and appropriate for their lifestyles. Furthermore, as public concern for environmental issues and awareness of environmentally preferable products increases, demand for environmentally preferable apparel also will increase. Therefore, it is in the interest of apparel companies to expand and develop environmentally preferable apparel in a greater range of garment types, styles, and colors and launch effective marketing campaigns to ensure consumer awareness of their products.

Another industry related implication of this study is that consumers find it difficult to acquire environmentally preferable apparel on a consistent basis because of the higher costs of such apparel. The higher price point is attributable to the increased manufacturing costs and demand for the apparel, which is still relatively small.

Companies cannot lower prices of their environmentally preferable apparel until demand increases, and demand may not increase until the price decreases. Therefore, a possible solution is to introduce public policy intended to provide incentives for apparel companies manufacturing apparel that use environmentally preferable materials and/or manufacturing processes, encouraging more apparel companies to produce this type of apparel, thereby, increasing supply, and lowering costs paid by the consumer.

The findings of this study related to the barriers of knowledge and information have important implications for both the industry and practitioners. This study shows that even among ecologically conscious consumers, there is limited knowledge about the impacts of the apparel industry on the natural environment and the range of options available for acquiring environmentally preferable apparel. Consumers find it difficult to make ecologically conscious apparel acquisitions because they do not have desired information to aid in their decision making such as the ecological footprint of apparel items or other environmental labeling. Based on these findings, industry and practitioners should collaborate and improve information provided to consumers about the environmental impact of apparel products and ecologically conscious apparel acquisition behaviors. Since the consumers in this study consistently gather information from product labels, point-of-sale information may be the most effective avenue for disseminating product information. Efforts should be made to provide environmental information for a greater range of apparel products and to standardize labels across the industry, similar to current, mandated, apparel care labels. Other suggested methods for information distribution include company websites and a third-party, clearinghouse-type, website.

However, provision of this information should only be a supplement to product label information as not all consumers will utilize the Internet for information gathering.

Implications for Future Research

The conclusions drawn from this study successfully contributes to the theoretical understanding of ecological decision making and the knowledge base of environmentally significant apparel consumption. However, future research in this area remains necessary and several research directions need further investigation.

First, there is a need to define ecologically conscious apparel acquisition behaviors from an impact-oriented perspective and gain a better understanding of which apparel acquisition behaviors are environmentally preferable. While there are a small number of life cycle studies assessing the environmental impact of fibers and a general acceptance that, for example, clothes made from organically-grown cotton or hemp are environmentally preferable, currently there is no definitive research outlining what qualifies as an ecologically conscious apparel acquisition behavior. Research, whether it be life cycle assessment studies, expert elicitation, or some other form, would greatly benefit professionals designing consumer education tools and consumers trying to make ecologically rational apparel acquisitions. Defining ecologically conscious apparel acquisition from an impact-orientation would also more explicitly reveal acquisition behaviors that apparel consumers engage in with the intention of being ecologically conscious that are actually not environmentally preferable.

A second recommendation for future research is to examine in more detail the concept of clothing adequacy. This concept emerged as being an influential personal

variable in the apparel acquisition decisions of the research participants, and it is possible that a difference between ecologically conscious and other consumers is how they define adequate clothing. Research should further investigate how ecologically conscious consumers determine clothing adequacy and if they perceive it differently when compared to mainstream consumers. Additionally, the role that perceptions of clothing adequacy play in apparel acquisition decision making needs further development.

Another suggestion for expanding research is to apply a similar research design to other stages of apparel consumption. This study focuses on ecologically conscious apparel acquisition. However, consumers also make important ecological decisions at other stages of apparel consumption, including while caring for apparel and when discarding apparel. Expanding research into these aspects of apparel consumption would not only increase knowledge related to environmentally significant apparel consumption but it would also continue to contribute towards theoretical understanding of ecological rationality. Alternatively, to further increase comprehension of ecological rationality from the perspective of consumers, future research should also examine additional consumer behaviors beyond apparel consumption.

A further recommendation for future research is to develop and administer an instrument, based on the findings of this study, to a wider population of ecologically conscious consumers. This type of research would potentially allow for the drawing of generalizations about the decision making and apparel acquisition behaviors of ecologically conscious consumers. It could also assess personal variables such as value orientations and environmental knowledge and barriers constraining consumers' ecological decision making. This additional information about ecologically conscious

consumers would further inform consumer education programs and policy initiatives aiming to modify apparel acquisition behaviors and promote greater sustainability. An additional, related recommendation would be to administer the instrument, with perhaps some modifications, to more mainstream consumers – allowing for comparison of different consumer segments and further expansion of the knowledge base of environmentally significant apparel consumption.

APPENDICES

APPENDIX A

Recruitment Questionnaire

Environmentally Conscious Clothing Consumption

Michigan State University, East Lansing, MI

Introduction

We invite you to participate in an important Michigan State University research study focused on environmentally conscious clothing consumption. The purpose of this research study is to learn more about environmentally conscious clothing consumption and decision making, including how personal factors such as values, beliefs, and attitudes influence the decision making process and the barriers consumers face while trying to make environmentally conscious decisions about clothing consumption.

We are inviting you to participate in this study because you are a consumer of clothing and we believe you will bring a unique perspective to the study. If you decide to participate, you will complete this short questionnaire and indicate whether or not you have ever engaged in certain behaviors related to clothing consumption. The questionnaire should take no more than 10 minutes to complete and by participating in this study your name will be entered into a drawing for a \$25 gift certificate that is redeemable at an environmentally conscious clothing company.

Your completion of the following questionnaire indicates that you voluntarily agree to participate in this research study, that you are over the age of eighteen, and that you have read and received a copy of the study's articles of consent.

Part One: Clothing Consumption

The following questions focus on different types of clothing consumption behaviors that can be considered environmentally conscious. In answering the questions, please consider whether or not you have engaged in any of the behaviors FOR ENVIRONMENTAL REASONS. Please place an X in the box in front of the most appropriate answer.

1. For ENVIRONMENTAL REASONS, have you ever bought clothing made from organic materials (such as clothing made from organic cotton or hemp)?

☐ Yes

☐ No

2. For ENVIRONMENTAL REASONS, have you ever bought clothing made from recycled materials (such as clothing made from recycled soda bottles)?

☐ Yes

☐ No

Part One Continued

3. For ENVIRONMENTAL REASONS, have you ever bought clothing made from low environmental impact materials (such as clothing made from bamboo or soy)?

☐ Yes

☐ No

4. For ENVIRONMENTAL REASONS, have you ever bought clothing from second-hand stores or garage sales?

☐ Yes

☐ No

5. For ENVIRONMENTAL REASONS, have you ever acquired clothing from friends or family (not including gifts)?

☐ Yes

☐ No

6. For ENVIRONMENTAL REASONS, have you ever bought clothing that will be fashionable for many years?

☐ Yes

☐ No

7. For ENVIRONMENTAL REASONS, have you ever bought clothing that can be mixed and matched with other articles of clothing?

☐ Yes

☐ No

8. For ENVIRONMENTAL REASONS, have you ever tried to reduce the amount of clothing you purchase?

☐ Yes

☐ No

9. For ENVIRONMENTAL REASONS, have you ever reconstructed clothes to update them?

☐ Yes

☐ No

10. For ENVIRONMENTAL REASONS, have you ever had clothing repaired or altered?

☐ Yes

☐ No

Part One Continued

11. For ENVIRONMENTAL REASONS, have you ever avoided buying clothing from a company because of its environmental management practices?

☐ Yes

☐ No

12. For ENVIRONMENTAL REASONS, have you ever bought clothing from a company because of its commitment to environmental issues?

☐ Yes

☐ No

Part Two: Demographics

To help us understand the characteristics of our participants better, please answer a few questions about yourself. For each question place an X in the box in front of the most appropriate answer.

1. What is your sex?

☐ Male

☐ Female

2. What is your age range?

☐ less than 25 years old

☐ 55 – 64 years old

☐ 25 – 34 years old

☐ 65 – 74 years old

☐ 35 – 44 years old

☐ 75 years and older

☐ 45 – 54 years old

3. What is your marital status?

☐ Single

☐ Married

☐ Divorced

☐ Widowed

☐ Other _____(specify)

Part Two Continued

4. What is the highest level of education you have achieved?

- ☐ Elementary or Middle School
- ☐ High School
- ☐ 1 - 3 years Technical or Vocational School
- ☐ Associate's Degree
- ☐ Bachelor's Degree
- ☐ Graduate Degree
- ☐ Other _____(specify)

5. What was your annual household income before taxes in 2006?

- | | |
|--|--|
| <input type="checkbox"/> less than \$5000 | <input type="checkbox"/> \$30,000 - \$39,999 |
| <input type="checkbox"/> \$5000 - \$9999 | <input type="checkbox"/> \$40,000 - \$49,999 |
| <input type="checkbox"/> \$10,000 - \$14,999 | <input type="checkbox"/> \$50,000 - \$69,999 |
| <input type="checkbox"/> \$15,000 - \$19,999 | <input type="checkbox"/> \$70,000 or more |
| <input type="checkbox"/> \$20,000 - \$29,999 | |

Follow-Up Interviews

In addition to the information gathered in this survey, we are also looking to interview people to further explore related issues. The interview would take approximately one hour to complete and, as a thank you, all interview participants will receive a \$10.00 gift certificate that is redeemable at an environmentally conscious clothing company.

Can we contact you for a follow-up interview?

- ☐ Yes ☐ No



If yes, please complete the contact information on the attached card and we will be in touch with you.

Conclusion

If you would like your name to be included in a drawing for a \$25.00 gift certificate, please complete the attached prize drawing ballot and submit it with this questionnaire.

Thank you for taking the time to complete this questionnaire. Your assistance in providing this information is greatly appreciated and will be very helpful. If there is anything else you want to share with us about this questionnaire, please do so in the space provided below.

APPENDIX B

Interview Guide

INTERVIEW GUIDE

General Opening Questions

Could you tell me how you personally feel about the state of our natural environment?
How have you come to feel this way?

What do you value about the environment? (if relevant)

What actions, if any, do you think should be taken to protect the natural environment?
Why? How have you come to believe this is/is not important?

What level of personal responsibility do you feel you have in addressing environmental issues?

How do you think your environmental attitudes and values influence your daily decisions and actions?

Ecological Decision Process Questions

In general, do you think your attitudes and values about the environment influence your decisions about how you acquire your clothing? How? Why? Do they (i.e., environmental attitudes and values) influence the types or amount of clothing you acquire? How? Why?

In your response to the questionnaire you recently completed for me, you indicated that, for environmental reasons you have, _____. Could you tell me a little about how you decided to do this? (Note: This question will be repeated for each of the behaviors the individuals answered “yes” to on the recruitment questionnaire.)

Probes:

What were the circumstances surrounding the decision (what, when, where, why)?

One time occurrence or a consistent behavior?

- If consistent: When did you start engaging in the behavior?
How did you come to the decision to make such a change?
Why?
- If one-time: Why? Would you consider it again?

How does your attempt to “specify an acquisition behavior mentioned by participant” influence your decisions as you purchase clothing?

Can you please give me an example of a recent decision about a specific clothing item or items that you have made, for environmental reasons, in the area of acquisition? Please describe for me how you came to make this decision – what motivated you and how you went about making such a decision.

Probes

- What did you acquire?
- When did you acquire it?
- What motivated you to acquire it? What needs were you trying to satisfy through this acquisition? How did you come to the decision that you needed to acquire this piece of clothing?
- From where did you acquire it? Why from there? Was that the only store that you shopped at for it or did you go to several stores before purchasing it?
- Before this most recent acquisition, had you ever bought that same article of clothing (brand and style – not necessarily color) before?
 - Do you still have that previous acquisition? Do you still wear that previous purchase?
 - Did your previous acquisition of the item of clothing influence your decision to purchase it again?
- When you set out to go shopping on the day that you purchased _____ had you already decided to purchase it?
 - How did you come to the decision to purchase it?
 - Was there any type of information that you sought out before making the decision to purchase it?
 - Where did you get the information that you wanted?
 - Was there any information that you wanted but couldn't find?
- While you were shopping did you consider other alternatives before making your final purchase?
 - If Yes:
 - What other alternatives did you consider before making your final decision? Other products within the same store? Products in other stores? (or online, catalogues, etc)
 - What information did you use to compare your alternatives?
 - How did you evaluate each of the alternatives?
 - Why did you select the item that you did over the other alternatives that you were considering?
 - If No: Why?
- Have you worn the article of clothing since the purchase?
 - If Yes: Are you satisfied or dissatisfied with your purchase? Why?
 - If No: Why?
 - Would you make the same decision again? Why? Why not?

- Would you say that the process of purchasing (most recent purchase) was fairly typical of how you buy most of your clothing?
 - If No: How and why was it different?
- Is your process of purchasing clothing that is ecologically conscious similar or different to when purchasing mainstream clothing? Are you still looking for the same attributes?

Knowledge and Barriers Questions

Clothing Acquisition

- Could you tell me about where you most frequently buy your clothes? Why?
- Do you ever purchase or acquire second-hand clothing?
 - If Yes:
 - Why?
 - Where?
 - How often? Approximately what portion of your clothing is purchased or acquired this way?
 - What kinds of clothes do you purchase or acquire second-hand?
 - Is there anything preventing you from purchasing or acquiring more of your clothing through second-hand sources?
 - If No:
 - Why?
 - Are there any clothing items that you would consider purchasing or acquiring second hand?
 - What would need to change (if anything) about second hand clothes shopping before you would consider purchasing or acquiring this way?
- Are there clothes made out of any fibers that you avoid purchasing? Which? Why?
- Do you think there are environmental impacts associated with the production of a cotton t-shirt? Such as?
- Do you think there are environmental impacts associated with the production of a polyester blouse? Such as? (For a male interviewee: Do you think there are environmental impacts associate with the production of a polyester shirt?)
- Do you think you are significantly impacting the environment through your clothing purchases?
 - If Yes: How?
 - If No: Why?

- How often do you think about the environmental impacts when you are purchasing new clothing?
 - If often:
 - When did you start considering the environment in your clothing purchases?
 - Why?
 - How do you usually go about assessing the impact an article of clothing might have on the environment?
 - Is it a difficult decision to make? Why? Why not?
 - How could the decision be made easier for you?
 - In regards to the environment, is there any type of information about the clothes you purchase that you wish you had and can't find? What?
 - Do you find it difficult to purchase clothing that has a low impact on the environment?
 - Why?
 - How might it be made easier for you?
 - If rarely or never:
 - Why?
 - What might prompt you to consider the environment in your clothing purchases?
 - What kind of information do you need?
 - Do you know where to purchase clothing that has a low impact on the environment?
- Do you think it is possible to (further) decrease the impact your clothing purchases have on the environment? How?
- Have you heard of clothing made from low environmental impact fibers?
 - If yes:
 - Can you give me some examples?
 - How did you learn about clothes made from these fibers?
 - Do you know of any specific stores or companies that sell clothing made from such fibers?
 - Have you bought clothing made from these fibers before?
 - If Yes: What? Why?
 - What portion of your clothing do you think is made from organic fibers?
 - Do you find it difficult to purchase clothing made from organic fibers? Why?
 - How might it be made easier?
 - If no:
 - If you knew where to purchase clothing made from organic fibers do you think you would be interested in purchasing it?

- What would need to change (if anything) about clothes made from organic fibers before you would consider purchasing this type of clothing?
- Do you find it difficult to meet your clothing needs while trying to be eco-conscious? Why? What is difficult?
- Do you try to purchase clothing that will be fashionable for many seasons? Why?
- Do you try to purchase clothing items that can be mixed and matched with other items? Why?
- Do you “reconstruct” or has a tailor or seamstress reconstructed any of your own clothes? How? Why? Why not?
- Are there any other things that you find particularly challenging about trying to acquire clothing that has a low impact on the environment? Why? Do you have any suggestions for overcoming these issues?

APPENDIX C

Final Code Guide: Research Question 1

(Personal Variables Characterizing Ecologically Conscious Apparel Consumers)

Concept	Definition	Rule for applying
Normative-attitudinal variables		
Environmental values	An individual's conceptions of that which is desirable about the natural environment.	Apply when interviewee refers or alludes to his or her environmental values.
Environmental attitudes	An individual's evaluations and understandings about the natural environment.	Apply when interviewee refers to his or her attitudes or beliefs about the current state of the natural environment.
Clothing adequacy	Evaluation of having a sufficient amount of clothing to meet current needs.	Apply when interviewee refers to believing s/he already has enough apparel to meet personal needs.
Personal capability variables		
Knowledge of general environmental issues	An individual's familiarity with general environmental issues.	Apply when interviewee indicates his or her familiarity with various environmental issues.
Knowledge of apparel-related environment issues	An individual's familiarity with various environmental impacts of apparel production and consumption.	Apply when interviewee indicates his or her familiarity with the environmental impacts of apparel production and consumption.

APPENDIX D

Final Code Guide: Research Question 2

(Manifestations of Ecological Decision Making in Apparel Acquisition)

Concept	Definition	Rule for applying
Adhering to acquisition limits		
Limiting apparel acquisition	Controlling the overall quantity of apparel acquired.	Apply when interviewee, for environmental reasons, refers to controlling the quantity of clothing acquired.
Strategies for limiting	Methods employed to control the overall quantity of apparel acquired.	Apply when interviewee refers to the methods employed to control the quantity of clothing acquired.
Attribute-focused acquisition		
Environmentally preferable fibers	Fibers that are organic or are more sustainable compared to mainstream fibers.	Apply when interviewee refers to acquiring clothing made out of an environmentally preferable fiber – including (but not limited to) organic cotton, hemp, bamboo, soy, recycled.
Environmentally preferable apparel	Apparel that is environmentally preferable for a reason other than being made from environmentally preferable fibers.	Apply when interviewee refers to acquiring apparel (new or used) because of environmentally preferable attributes of the garment – including (but not limited to) durability and classic styling.
Source of acquisition		
Second hand sources	Sources for acquiring apparel that has already been used by another consumer.	Apply when interviewee, for environmental reasons, refers to acquiring used apparel – including (but not limited to) second hand apparel stores and family and friends.

Concept	Definition	Rule for applying
Eco-conscious companies	Companies selling apparel that have a reputation for trying to conduct business in an environmentally responsible manner and for supporting environmental protection.	Apply when interviewee refers to acquiring apparel through companies because s/he believes the company to be eco-conscious.
Independent companies	Companies selling apparel that are locally and/or independently owned. Companies do not necessarily have an eco-conscious focus.	Apply when interviewee, for environmental reasons, refers to acquiring apparel through local and/or independently owned retail establishments.
Mail order	Sources for acquiring apparel through mail order catalogs and/or the internet.	Apply when interviewee, for environmental reasons, refers to acquiring apparel through mail order catalogs and/or the internet.
Home sewing	Constructing apparel in the home – either by hand and/or with a machine.	Apply when interviewee, for environmental reasons, refers to acquiring apparel by home construction – including being made by self, family, or friends.
Environment-related conferences and/or trade shows	A large meeting or exposition that increases awareness on a particular topic or products.	Apply when interviewee refers to acquiring environmentally preferable apparel while attending conferences, trade shows, or other similar events.
Avoidance behaviors		
Avoidance of fibers and dry clean only apparel.	Restraining from acquiring apparel made from certain fibers and/or apparel that has to be dry cleaned.	Apply when interviewee, for environmental reasons, refers to restraining from acquiring apparel made from certain fibers or apparel that has to be dry cleaned.
Avoidance of companies	Restraining from acquiring apparel manufactured and/or sold by certain companies.	Apply when interviewee, for environmental reasons, refers to restraining from acquiring apparel from certain companies.

Concept	Definition	Rule for applying
Avoidance of countries of origin	Restraining from acquiring apparel manufactured in certain countries.	Apply when interviewee, for environmental reasons, refers to restraining from acquiring apparel made in certain countries.
Avoidance of mail order	Restraining from acquiring apparel through mail order catalogs and/or the internet.	Apply when interviewee, for environmental reasons, refers to restraining from acquiring apparel through mail order catalogs and/or the internet
Avoidance of certain apparel items	Restraining from acquiring certain articles of apparel.	Apply when interviewee, for environmental reasons, refers to restraining from acquiring certain articles of apparel.
Making sacrifices		
Nonhuman resources	Matter-energy that is converted into specific forms in order to help an individual meet wants and needs and accomplish goals.	Apply when interviewee refers to being willing to forfeit personal resources to acquire environmentally preferable apparel – including (but not limited to) money and time.
Amount of apparel acquire	Quantity of apparel owned by an individual.	Apply when interviewee, for environmental reasons, refers to being willing to have less apparel (compared to when not making ecological decisions).
Style of apparel acquired	Aesthetic and form aspects of apparel.	Apply when interviewee, for environmental reasons, refers to being willing to have less trendy or stylish apparel (compared to when not making ecological decisions).
Source of acquisition	Consumer's point of origin for apparel.	Apply when interviewee, for environmental reasons, refers to being willing to acquire/not acquire apparel from certain sources (compared to when not making ecological decisions).

Appendix E

Final Code Guide: Research Question 3 (Nature and Process of Ecological Decision Making)

Concept	Definition	Rule for applying
Decision-making process		
Recognition of decision problem	Identification of a decision opportunity.	Apply when interviewee refers to the circumstance(s) triggering the apparel acquisition decision-making process.
Definition of decision problem	Clarification of decision opportunity through the determination of preferred outcomes.	Apply when interviewee refers to the motivating factor(s) driving an apparel acquisition decision.
Information gathering	Assembling of information related to the decision problem.	Apply when interviewee refers to any information s/he gathered to aid in the apparel acquisition decision-making process. Apply in reference to gathering information about sources and apparel.
Alternative generation	Establishment of options that may resolve the decision problem.	Apply when interviewee refers to generating options during the decision-making process. Apply in reference to source and/or apparel alternatives.
Alternative evaluation	Judgment of options and how effectively they resolve the decision problem in terms of a predetermined set of criteria.	Apply when interviewee refers the criteria s/he uses to evaluate different alternatives. Apply in reference to source and/or apparel alternatives.
Simplification strategies		
Editing	Decision is made by utilizing a minimal number of cues, attending to attributes sequentially, and eliminating alternatives with attributes not meeting a set standard.	Apply when interviewee refers to making apparel acquisition decisions on the basis of elimination by aspects. Apply in reference to source and/or apparel alternatives.

Concept	Definition	Rule for applying
Heuristics	Decision is made by the recognition of a pattern in a decision problem and the application of appropriate rules.	Apply when interviewee refers to making apparel acquisition decisions through the application of "rules-of-thumb." Apply in reference to source and/or apparel alternatives.
Compromising	Decision is made by making some concessions in selected alternative	Apply when interviewee refers to making apparel acquisition decision by selecting the alternatives that meets enough criteria to be deemed good enough. Apply in reference to source and/or apparel alternatives.

Appendix F

Final Code Guide: Research Question 4

(Barriers to Ecological Decision Making in Apparel Acquisition)

Concept	Definition	Rule for applying
Lack of knowledge about ecologically conscious apparel acquisition		
Lack of knowledge of apparel-related environment issues	An individual's lack of familiarity with various environmental impacts of apparel production and consumption.	Apply when interviewee indicates having limited comprehension about the environmental impacts of apparel production and consumption.
Lack of knowledge of personal impacts	An individual's lack of familiarity with how their apparel acquisition behaviors affect the environment.	Apply when interviewee indicates being uncertain of how their personal apparel acquisition behaviors affect the environment.
Lack of knowledge of eco-conscious apparel	An individual's lack of familiarity with environmentally preferable apparel.	Apply when interviewee indicates having limited acquaintance with environmentally preferable apparel.
Lack of knowledge of eco-conscious apparel sources	An individual's lack of familiarity with sources for acquiring environmentally preferable apparel.	Apply when interviewee indicates having limited acquaintance with sources for acquiring environmentally preferable apparel.
Attitudes about eco-conscious apparel attributes and/or relational characteristics.	An individual's evaluations and understandings about the physical characteristics and/or appropriateness of environmentally preferable apparel.	Apply when interviewee refers to not engaging in eco-conscious apparel acquisition because s/he believes s/he does not like certain physical characteristics of the apparel – including (but not limited to) the style, comfort, or fit of the apparel.
Apparel acquisition patterns	Manner in which an individual acquires apparel.	Apply when interviewee refers to any apparel acquisition behavior that appears to be constraining his or her engagement with eco-conscious apparel acquisition.

Concept	Definition	Rule for applying
Nonhuman resources	Matter-energy that is converted into specific forms in order to help an individual meet wants and needs and accomplish goals.	Apply when interviewee refers to not engaging in eco-conscious apparel acquisition because of nonhuman resource limitations – including (but not limited to) money.
Personal priorities	An alternative that is given attention before competing alternatives.	Apply when interviewee refers to not engaging in eco-conscious apparel acquisition because of other needs or wants taking priority.
Limited availability of environmentally preferable apparel		
Limited availability of sources for acquisition	A lack of sources for acquiring environmentally preferable apparel are present and convenient.	Apply when interviewee refers to not engaging in eco-conscious apparel acquisition because s/he does not have access to environmentally preferable sources for apparel.
Limited availability of apparel with desired attributes	A lack of environmentally preferable apparel with necessary characteristics are present for acquisition.	Apply when interviewee refers to not engaging in eco-conscious apparel acquisition because s/he can not find apparel with characteristics appropriate to needs – including (but not limited to) style, quality, garment type, and size.
Ecologically conscious apparel acquisition information		
Sufficiency of information	Degree to which enough information about environmentally preferable apparel acquisition exists to meet needs.	Apply when interviewee refers to not engaging in eco-conscious apparel acquisition because of a lack of appropriate information about eco-conscious apparel acquisition.

Concept	Definition	Rule for applying
Availability of information	Degree to which information about environmentally preferable apparel acquisition is obtainable.	Apply when interviewee refers to not engaging in eco-conscious apparel acquisition because of a lack of information about eco-conscious apparel acquisition – including (but not limited to) information about the impacts of apparel acquisition and environmentally preferable fibers.
Reliability of information	Degree to which information about environmentally preferable apparel acquisition is dependable and free from variation or contradiction.	Apply when interviewee refers to not engaging in eco-conscious apparel acquisition because of having a lack of information about eco-conscious apparel acquisition that is dependable and free from variation or contradiction.
Retail qualities		
Retail environment	Physical aspects of a retail establishment.	Apply when interviewee refers to not engaging in eco-conscious apparel acquisition because s/he does not like the particular aspects of retail environments where environmentally preferable apparel can be acquired.
Product knowledge of Salespeople	The knowledge individuals working in retail establishment have about products.	Apply when interviewee refers to not engaging in eco-conscious apparel acquisition because of salespeople's lack of knowledge about environmentally preferable apparel
Structure of apparel and textiles complex		
Prevalence of outsourcing	The high proportion of production of textiles and apparel products that occurs outside of the United States.	Apply when interviewee refers to not engaging in eco-conscious apparel acquisition because of the difficulty of acquiring apparel manufactured in the United States.

Concept	Definition	Rule for applying
Societal norms	A standard pattern of behavior that is regarded as expected by a group of people.	Apply when interviewee refers to not engaging in eco-conscious apparel acquisition because of the difficulty of doing so while also adhering to certain societal dress expectations.

APPENDIX G

Summary Memo Example

Summary Memo: Informant #M5

Research Question #2: What manifestations of ecological decision making exist in apparel acquisition behaviors?

Adhering to Acquisition Limits

Strategies

- When considering something new, I ask myself if I really need it or if I have something similar already. [Need Based Acquisition]
 - R: And you also said that you are considering the quality of a garment before purchasing it. Why?
I: Because I am looking to wear something for a long period of time. [Quality]
 - R: Did you have a pair of shoes that needed replacing?
I: Ya, I had a pair that were getting older.
R: So you were replacing a pair of shoes and not adding an additional pair?
I: Ya. [Purchasing to replenish]
 - I decide to get new clothes when something wears out, or less often, if I see something that I really like. [Purchasing to replenish]
-

Attribute-focused Acquisition

Environmentally Preferable Fibers

- R: Do you primarily try to purchase organic cotton or hemp or other types of low-impact materials?
I: I would like to but it is difficult to.
- R: What low-impact fibers have you purchased?
I: Well hemp and organic cotton are the most common ones. I think this shirt that I have is part ramie so that is another one but you don't see that one very often...I have a belt made out of recycled rubber and I think I have some shoes that have recycled content in them.
- I have a winter jacket that is made from recycled soda bottles.
- The shoes that I am wearing right now are made of hemp.
- I have a bamboo/cotton t-shirt, and a couple of soy t-shirts.

Environmentally Preferable Apparel

- I look at the quality of it. Is it going to last a long time? And am I going to use it a lot? Is it something that I am going to use every week or is it something that I am only going to use once a year? [Quality]
- R: And you also said that you are considering the quality of a garment before purchasing it. Why?
I: Because I am looking to wear something for a long period of time. [Quality]
- I: It is preferable that [the clothes] are made in the United States.... Because

of the better treatment of workers and less energy costs in transportation.
[Country of Origin]

- R: Were you trying to purchase a pair of shoes that you could wear at work and outside of work as well?
I: Yes. [Multifunctional]
 - I have bought a pair of shoes from a company in Australia and they are made out of polyester basically – some kind of microfiber and they are really nice shoes. They are breathable. They look good. And the thing that I like most about that company is that their shoes are made by a real cobbler – somebody who gets paid a good salary and I know that the shoes are not being mass produced. The shoes are made to order. You send them measurements of your foot and they make the shoes from that..... The company is in Australia so there is shipping involved and the material is not organic but it is material that I am looking for because of other reasons – for ethical reasons I prefer the synthetic material over leather and they are durable and they are made with sustainability in mind – in one way or another. Plus the people that make the shoes are compensated fairly for it so... [Quality]
-

Source of Acquisition

Eco-conscious Companies (companies previously identified by participant)

- I: I do all of my clothes shopping either online or through mail-order catalogue.
R: So for how long would say you have been purchasing exclusively online or through the mail?
I: Probably a couple of years.
R: And why did you make that switch?
I: I just began to realize that what I want wasn't available in traditional retail stores. I knew what I wanted and they didn't have it.
-

Avoidance Behaviors

Avoidance of Fibers and Dry Clean Only Apparel

- R: Do you buy leather?
I: No I don't and that makes finding shoes even more particularly difficult. I don't completely stick to it but I try really hard.
- I think the only thing that I avoid in term of fabric is treated fabrics.
- I do not refuse to buy synthetics. Like if I needed some outdoor gear like a winter jacket or something then I would probably buy something made out of nylon or a microfiber fleece or something.

Avoidance of Companies

- I won't buy from...[Company A] and [Company B]. I really don't like them anymore...mostly because I don't like the quality and I don't like where they are made. But the thing that bothers me the most about those two companies that I have realized in the last five years or so is the fabric treatments they use. They really irritate my skin. I have allergies to begin with and they [fabric treatments]

will make my skin itch, irritate my throat, and make my eye water. It took me a while to realize that – that the clothes that I wore were causing running noses and puffy eyes – every time I wore this [Company A] shirt. I think it formaldehyde and I don't know if they use nanoparticles...I wouldn't be surprised either if they were coating their clothes with Teflon.

Avoidance of Countries of Origin

- R: And if something was made, say in Malaysia, would that prevent you from purchasing it?
 - I: It wouldn't prevent me from purchasing it, if it had something else going for it.
-

Making Sacrifices

Nonhuman Resources

- R: Are you willing to pay more for an item of clothing in order to ensure quality?
- I: Oh definitely, ya. [Money]
- Sometimes the price of eco-conscious clothing is an obstacle, but most of the time I think it's worth it. But I'm not going to pay \$200 for a pair of organic cotton jeans, either. In general, I guess I would pay 30-50% more. [Money]
- I am willing to look until I find what I want. [Time]

Style of Apparel Acquired

- R: Are you satisfied or dissatisfied with your [shoes]?
 - I: Well I am happy, I am not thrilled...because the style isn't quite what I was looking for..... I think they look more like a running shoe – well not even like a running shoe really. I kind of wanted something that looked like a casual Oxford, sort of – and these are nothing like that – these kind of look more like skater shoes or something..... I mean I think they are good shoes and they are attractive too but they are just not quite what I wanted.
-

Summary Statement: Works very hard to be eco-conscious in his apparel consumption and invests a lot of time and effort into finding sustainable sources of clothing. Uses the internet frequently to seek out relevant information. Primarily purchases clothing online because that is the best source he has found for eco-conscious clothing. Is willing (to a certain degree) to sacrifice style in order to be able to buy eco-conscious clothing, however he also wants the ability to look mainstream while wearing eco-conscious clothing. Typically only purchases new clothes when he needs to replace an article that is worn out.

APPENDIX H

Summary Display Example

Partial Summary Display Research Question #2

Research Question #2: What manifestations of ecological decision making exist in apparel acquisition behaviors?

Informants					
	M1	M2	M3	M4	M5
Adhering to acquisition limits	Adheres to limits by acquiring apparel on a needs basis and by reconstructing apparel.	Adheres to limits by acquiring apparel on a needs basis and by reconstructing apparel.	Adheres to limits by acquiring apparel on a needs basis and by taking care of his clothing.	Adheres to limits by acquiring apparel on a needs basis and by reconstructing apparel.	Adheres to limits by acquiring quality apparel and apparel on a needs basis – to replenish.
Attribute-focused acquisition	When he acquires new apparel he tries to acquire environmentally preferable fibers – usually hemp or organic cotton.	Tries to acquire environmentally preferable apparel as much as possible.	When he acquires new apparel he tries to acquire environmentally preferable fibers – usually organic cotton or hemp. Also tries to acquire classically-styled apparel and apparel made in the U.S.	Has recently started acquiring apparel made from organically-grown cotton.	Primarily acquires apparel made from environmentally preferable fibers. Also acquires quality and multifunctional apparel and considers country of origin.
Source of acquisition	Relies on second-hand sources (primarily family) for most of his apparel acquisitions. Will sometimes acquire apparel from eco-conscious companies.	Relies on one eco-conscious company for most of his environmentally preferable apparel acquisitions. Occasionally acquires apparel through second-hand sources.	Acquires most of his apparel through eco-conscious companies and second-hand sources.	Acquires a lot of his apparel through eco-conscious companies. Also relies on second-hand sources for a lot of his apparel acquisitions.	Acquires almost all of his apparel through eco-conscious Internet or mail-order companies.

Informants					
	M1	M2	M3	M4	M5
Avoidance behaviors	Avoids acquiring apparel made by certain companies. Avoids synthetic fibers.	No avoidance behaviors discussed.	Avoids acquiring apparel made by certain companies. Avoids conventionally-grown cotton apparel. Avoids mail-order.	No avoidance behaviors discussed.	Avoids acquiring apparel made by certain companies and leather products.
Making sacrifices	Is willing to sacrifice time and drive to another city to acquire environmentally preferable apparel.	No sacrifice behaviors discussed.	Is willing to pay more for environmentally preferable apparel.	Is willing to pay more for environmentally preferable apparel.	Is willing to pay more for environmentally preferable apparel. Also somewhat willing to sacrifice style.

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