A Sustainable Fashion Business Opportunity? Exploring Clothing Redesign with the Theory of Planned Behavior

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Dedication

This dissertation is dedicated to my father, Kenneth Dean Simmons, who died on June 21, 2014. I never in a million years thought that I would have to complete this degree without you there to cheer me on. I would always call you early in the morning, and the time difference made it two hours earlier where you were. But you never minded that I called, since you'd already been up taking your dogs out for a walk, reading your Bible, and preparing for your day. You reassured me that everything would be fine and would work out for the good. You also reminded me to trust in the Lord and pray to him for strength. "For when I am weak, then I am strong" Second Corinthians 12:10.

Shortly after you died, I put all the letters you'd sent me (most of them written while I was away at active duty military training in 2001) into an album. You focused on certain themes in the letters. The main concepts were that you were proud of me, that you thought I had many gifts and talents, and that I should use them in service to God. I am so grateful I saved all those letters in your wonderfully messy half manuscript / half cursive writing. I would give almost anything to have you write me another letter.

Perhaps in a way, the timing of your passing will always be twice as memorable for me, as it coincided with major milestones toward the completion of this degree. I felt you there with me every day of my preliminary written exams in the second week of July, mere days after you died. As I write this, I am looking at a framed photo of my high school graduation. I am absent-mindedly moving my tassel over to the other side. You are proudly looking at me with a smile on your face and holding some of my things.

I am still your little girl, your princess, and I promise to make you proud the rest of my life. I will try to follow the example you set, that being kind, humble, quiet, patient, and loving is far more important than a search for money, power, notoriety, and recognition.

Kenneth Dean Simmons
December 23, 1948 – June 21, 2014
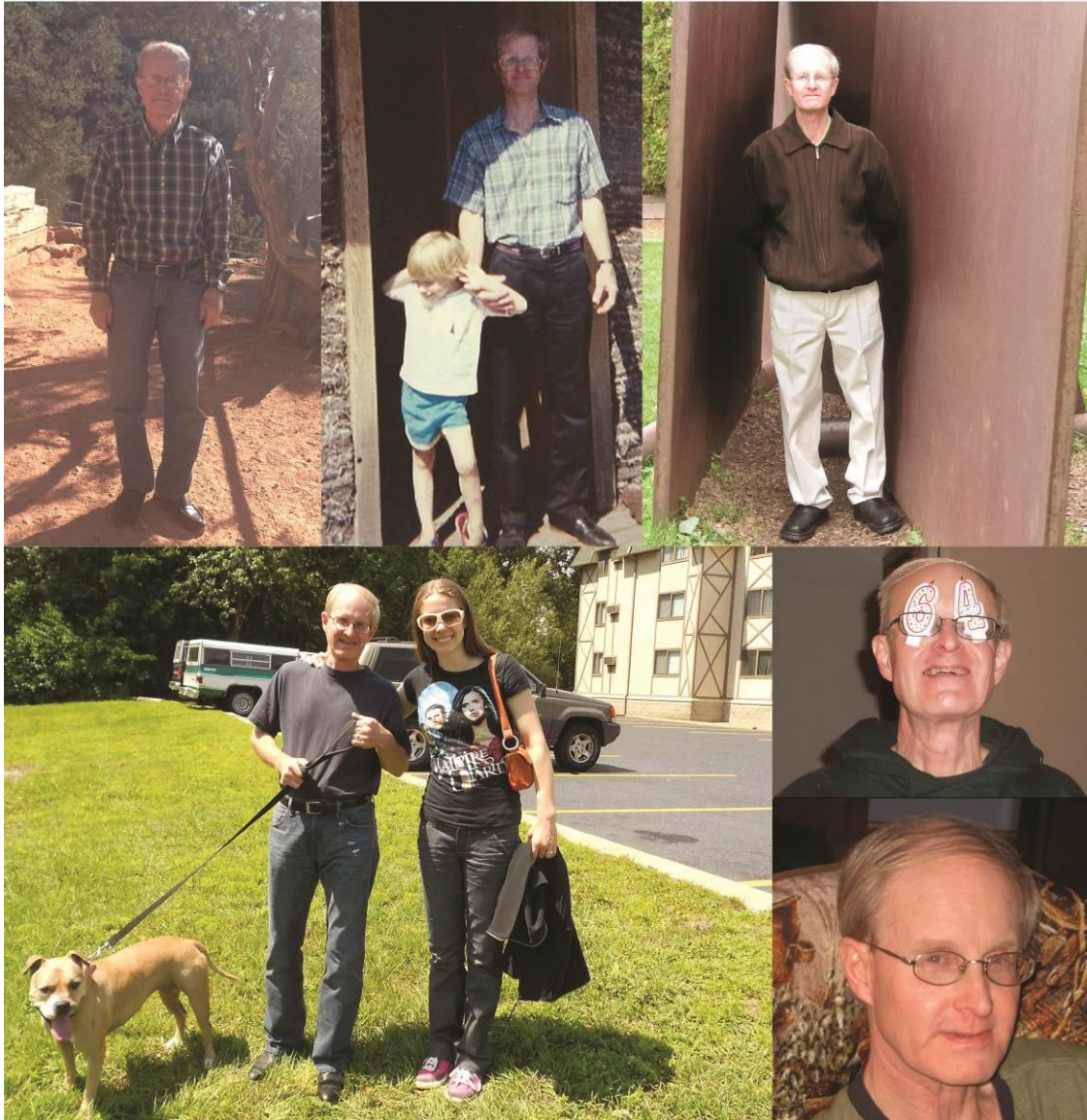
Abstract

In the United States, more than half of post-consumer used clothing has been discarded into landfills (Chen & Burns, 2006). Redesigning used clothing could be a sustainable alternative to disposal. Through in-depth interviews, visual analysis of redesigned clothing, and questionnaires, redesign behavior was explored. Thirty women participated in the study (mean age 43.75, 86.67% Caucasian). Participants were divided into groups based on their experience with redesign. Redesign Consumers (RC) 30% of participants, hired someone for redesign or redesigned without advanced sewing and fashion design skills. Redesign Enthusiasts (RE), 33.33% of participants, redesigned clothing for themselves, implementing advanced sewing and design skills. Redesign Professionals (RP), 36.67% of participants, had sold redesigned garments in the past.

The theory of planned behavior was used as a theoretical framework for data analysis (Ajzen, 1991). Participants had a generally high level of concern for the environment, were somewhat likely feel social pressure from friends and family to behave ecologically, and engaged in several types of sustainable fashion behaviors, especially wearing used clothing. Eighty percent (n = 16) intended to keep their redesigned garments and indicated high likelihood to redesign again in the future. Participants discussed barriers to redesigning clothing, such as worry that the garment wouldn't turn out as expected. Almost half of participants (48.28%), expected to pay less than the original retail price of the garment for redesign which could make it difficult to profit from redesign. The findings will have practical implications for entrepreneurs, who might use these results to weigh the pros and cons of starting a new redesign business.

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CHAPTER 1: INTRODUCTION

Background and Significance

Multiple authors have written books to offer solutions to the fashion industry's

issues related to ecological sustainability (Black, 2012; Black, 2008; Cline, 2012;

Fletcher, 2012; Fletcher, 2008; Hethorn & Ulasewicz, 2015; Hethorn & Ulasewicz, 2008;

Rivoli, 2009) and social responsibility (Dickson, Loker, & Eckman, 2009). Indeed,

sustainability has been an increasingly popular discussion topic in the clothing and

textiles discipline, among academics and industry professionals, especially in the last 10

years. As the problems are identified and the extent of the issues realized through

research, the urgency to solve them grows. There is much work to be done to advance the

sustainable fashion movement. Similar to how the ecological food movement has

progressed, it will be incumbent on the fashion industry to ensure a variety of sustainable

options are conveniently available to consumers. Additionally, fashion consumers'

expectations and behavior must change so that ecological and social impacts of clothing

are considered at the point of purchase and realistic prices are paid for goods.

Before exploring some of these authors' views of sustainable fashion, the concept

of sustainability must first be clarified. A widely cited document that explores the idea of

sustainable development in great detail is the United Nations' "Report of the World

Commission on Environment and Development: Our Common Future." The 300-page

document is more commonly referred to as the Brundtland Report, after the UNWCED

Chairman Gro Harlem Brundtland (UNWCED, 1987). According to the Brundtland

Report, sustainability can be achieved through an equal balance of economic, social, and

ecological considerations. The authors suggested that poverty contributes to poor social conditions and continued environmental degradation globally. Sustainable development should focus on equitable economic situations for both companies and suppliers, including production workers employed in developing countries. Profitable economic growth should contribute to improved social and environmental conditions worldwide (UNWCED, 1987). John Elkington applied this triple bottom line approach to 21st Century business, asserting that companies should seek to improve economic, social, and environmental situations instead of only focusing on the company's financial profitability (Elkington, 1997).

Several views of sustainable fashion exist in the literature. Fletcher described sustainability in the fashion industry as conducting business to promote human well-being and to preserve natural integrity (Fletcher, 2008). To Black (2008), sustainable fashion seemed a paradox because a large portion of the industry is designed to profit from the constant, rapid turn of large quantities of inexpensive and trend-driven items. The ecological sustainability of a garment is cumulative, influenced by decisions made at every stage of its lifecycle, from fiber origin to final disposal (Fletcher, 2008). The fashion lifecycle can be divided into two sub-categories, pre-consumer and post-consumer (Elsasser, 2011).

Sustainable pre-consumer decisions might be made by retailers and their business partners in the various stages of the supply chain, starting with cultivation of natural fibers (e.g., limiting pesticides and reducing water in cotton farming), synthesis of manufactured fibers (e.g., producing biodegradable synthetic fibers such as polylactic

acid, PLA), fabric production (e.g., using energy efficient knitting machines), finishing (e.g. using naturally occurring enzymes instead of potent chemical solutions), dyeing or printing (e.g. selecting low impact dyes or pigments), garment construction (e.g. ensuring safe conditions for workers), and shipment from factories to stores (e.g. choosing domestic manufacturing for shorter shipping distances and reduced use of fossil fuels) (Elsasser, 2011).

Environmental impacts are not constrained to the pre-consumer category of the fashion lifecycle, which is controlled by retailers and manufacturers. The post-consumer part of the fashion lifecycle encompasses purchase, consumer use, divestment, and disposal (Elsasser, 2011). Consumers shape both public and private sector policies through their purchase behavior (Marchand & Walker, 2007). Consumers might influence demand for sustainable fashion based on how much, how often, and what types of clothing they buy. In addition, consumers' decisions on how they care for clothing (e.g. selection of eco-friendly laundry detergents and tumble drying on low) and how they dispose of clothing after use have significant environmental effects. The decomposition process of some fabrications such as polyester and nylon can span several decades (Black, 2008; Fletcher, 2008). Unfortunately, in the United States, more than half of post-consumer used clothing has been discarded into landfills at the end of the use lifecycle rather than reused or recycled (Chen & Burns, 2006).

Problem Statement

Clearly, multiple solutions are needed in order to redeem the fashion industry in the eyes of global citizens, reduce continued harm to the environment, and improve the

safety and well-being of garment workers. Redesigning used clothing could be one of those solutions. Research to examine the viability of redesigning used clothing might be considered in its early stages, as it has been mainly exploratory (Janigo, 2011; Young, Jirousek, & Ashdown, 2004).

My master's thesis study involved consumers in redesigning their own used clothing (Janigo, 2011). I conducted qualitative inquiry via focus groups with 27 women with the aim of co-designing and redesigning an article of their own used clothing (Janigo, 2011). Co-design – a business strategy to reduce inventory and precisely fulfill consumers' demands – was the conceptual model of the study (Pine, 1993). In co-design, clients' specifications are combined with a company's pre-designed modules (Piller, Moslein & Stotko, 2004). Collaborative redesign can be a way for consumers who do not have sewing and design skills to become involved in redesign. I explored the demographics and psychographics of consumers who might be the appropriate target market for the service. Middle-aged and older, educated, and relatively affluent female consumers were more likely to keep their clothing longer, were more informed of sustainable fashion options, and thought about the environment more often when buying clothing than younger consumers (Janigo, 2011).

Most of the participants reported they had purchased used clothing in the past, which could underscore a market that is ripe and ready for redesign (Janigo, 2011). In my previous research, a variety of reasons other than concern for the environment contributed to participants' interest in redesign. Forty-four percent had fit problems with well-liked garments caused by weight loss, pregnancy, and garment shrinkage. For 19%

of participants, the main reason for redesigning was to update the garment's styling, and

11% needed to change the end use from a formal dress for a wedding or dance into a

more functional garment (Janigo, 2011). Nineteen percent had purchased garments years

ago, and these items needed to be updated to match today's trends. These participants

indicated the original garments were purchased at a high price, and the quality of the

fabric made them worthy of redesign. Redesign was a way for the women to regain use of

these items.

Integrating redesigned clothing into the fashion system could be one of many

alternatives to environmentally detrimental consumer behavior, such as disposing of used

clothing into landfills. If consumer intent to redesign and willingness to pay for redesign

are supported in the findings of the present study, entrepreneurs might gain confidence

that a new redesign business venture could become profitable. Additional research is

needed to extend and validate redesign as a sustainable business opportunity.

Research Questions

1. What psychographic characteristics, if any, are shared among redesigners?
    a. To what extent are participants concerned about the environment?
    b. To what extent do participants feel social pressure to consume sustainably?
    c. What are some of the perceived barriers participants face when considering whether or not they will redesign their used clothing?
2. What behavioral characteristics, if any, are shared among redesigners?
    a. What types of sustainable fashion behavior do participants engage in?
    b. What types of clothing redesign, if any, have participants completed in the past four years?
    c. How will participants describe their use of previously redesigned clothing?
    d. How often will participants wear their redesigned clothing?
    e. How long will participants keep their redesigned clothing?
    f. Why and how will participants divest of redesigned clothing?
    g. What are participants' intentions for redesigning clothing in the future?

Sustainable fashion behavior (SFB) requires further discussion and clarification, since its definition is not yet clearly delineated in the extant literature. In my previous research, sustainable fashion behavior questions queried about types of sustainable fashion participants had purchased, if they bought used or vintage clothing, if they had paid for clothing repair services, and length of time they kept clothing. In the present study, sustainable fashion behavior questions again cover these topics, but other items have been added to specifically address areas of sustainable fashion from the literature.

Theoretical Background

The theory of planned behavior (Ajzen, 1991), an updated version of the theory of reasoned action (Fishbein & Ajzen, 1972), was the guiding theoretical framework in the study because of its prominent use in environmental research. Also, in the field of clothing and textiles both frameworks have been successfully used to study consumer behavior where the predictor variables are carefully matched to the outcome variable, the behavior (Kim & Karpova, 2009; Hyllegard, Yan, Ogle, & Lee, 2012).

The TRA was originally developed in response to widespread confusion regarding conceptual definitions, methodological issues in design and operationalization of variables, and inaccurate statistical reporting techniques among researchers within the social psychology field in the 1960s and early 1970s (Fishbein & Ajzen, 1972). Martin Fishbein began working on a new theory in response to disappointing results from attitudes research at that time. Only modest amounts of variance in the endogenous constructs (usually behavior or set of related behaviors) could be explained by attitudes. Although several researchers at that time found that attitudes did not accurately predict

behavior, Fishbein and Ajzen argued that attitudes and beliefs taken together construct intention, and a person's intention was the best predictor of an action. Indirectly, attitudes could influence behaviors within a certain context, if the attitude measure was appropriate for the criterion (specific behavior), and the criterion measurement was methodologically sound (Fishbein & Ajzen, 1972).

Theory of Reasoned Action

The theory of reasoned action has existed for more than four decades and has been used widely in social sciences, psychology, health, and design disciplines. The TRA model begins with general antecedents inherent to the individual and works toward variables that are tailored to a specific behavior. Behavioral beliefs, attitudes, and subjective norms are the most antecedent variables in the TRA model. However, the theory allows for antecedents to these variables as well, depending on the behavior that is being studied. People have past experiences, stable personality traits, deep-seated values, opinions, roles, identities, selves, cultural backgrounds, and group affiliations that might influence behavioral beliefs, attitudes, and subjective norms. The advantage of this model is that antecedents relevant to the research problem could be added wherever appropriate.

Beliefs, attitudes, and subjective norms about a behavior form intentions to engage in a behavior. According to the model, intentions are the best predictor of a specific behavior (Fishbein & Ajzen, 1972). If beliefs, subjective norms, attitudes, and intentions about a behavior are known, the model should accurately predict behavior. Figure 1 is a simple visual model of the TRA. This is a very basic representation of the TRA that is not mapped to a specific behavior.
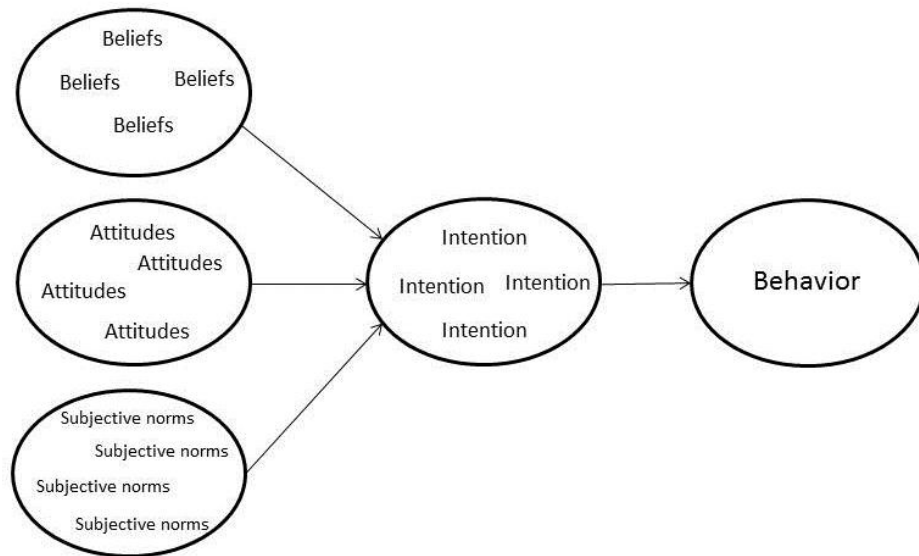
Figure 1. Visual representation of the TRA

There are often multiple beliefs, attitudes, subjective norms, and intentions toward

a given behavior that might contradict or interact with one another. However, only the

most salient intentions are likely to significantly affect behavior. Additionally, situational

variables (such as subjects' personality traits) not included in the model could confound

results in research using the TRA. For this reason, the authors suggested meaningful

antecedents could be added where appropriate. The following are intended to be

independent variables within the TRA model: beliefs, subjective norms, attitudes, and

intentions. Antecedents or moderating variables may be added into the model based on

the research question. The dependent variable is a behavior or behaviors of interest.

Beliefs. An individual could have many beliefs or cognitions about an object, and

some of them might conflict with one another or produce different results in a

corresponding behavior (Fishbein &Ajzen, 1972). For example, a consumer might think

that purchasing organic clothing is good for the environment, but that it is not affordable.

Beliefs are described as subjective probability concepts, that an object, person, or behavior has certain qualities or is related to something else (Fishbein &Ajzen, 1972).

Subjective norms. Subjective norms describe the social pressure one feels from perceived expectations of important others in an individual's social group. Someone who is cooperative or collaboratively oriented will be more concerned with subjective norms than a person who is independent or competitive (Fishbein &Ajzen, 1972).

Attitudes. Attitudes are a function of the affect (positive or negative thoughts or emotions) about an object, person, or behavior. They influence intentions, and indirectly, behaviors (Fishbein &Ajzen, 1972).

Intentions. Behavioral intentions are an individual's willingness to carry out an action. Different intentions toward one object are possible, and they might not be related to one another. They are the strongest predictors of behavior, but are also influenced by situational variables and colored by past experience (Fishbein &Ajzen, 1972).

Behaviors. An action; a specific behavior is the dependent variable in the TRA. In this research, clothing redesign is the behavior of interest.

Theory of Planned Behavior

The theory of planned behavior was created to update the TRA (Ajzen, 1991). It includes the addition of an important variable, perceived behavioral control (PBC). Perceived behavioral control leaves room for including situational variables essential in consumer behavior research such as price, quality, and convenience (McDonald, Oates, Thyne, Alevizou, & McMorland, 2009). One of the main premises of the TRA and TPB

is that antecedents of attitudes and intentions must be specific to the behavior the researcher is trying to predict; otherwise, it will not accurately predict the behavior.
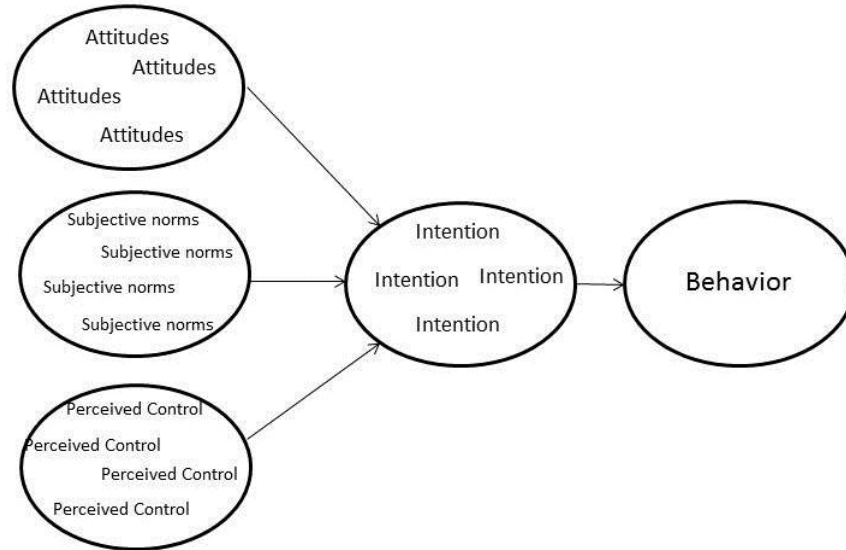
Figure 2. Visual representation of the TPB

CHAPTER 2: LITERATURE REVIEW

There is a vast and almost unending body of research and publications about the environment and sustainability from many fields and industries. I have highlighted relevant previous research from the field of environmental sociology on environmental attitudes and pro-environmental consumer behavior, summarizing in Table 1 how findings might relate to redesign. I then narrowed the scope to discuss sustainable fashion, green fashion marketing, second-hand clothing, and redesigned clothing to lay the groundwork for the present study. Table 2 offers a summary of the sustainable fashion literature, including how findings might relate to redesign.

Attitudes – General Ecological Concern

Riley Dunlap, a political scientist and sociologist, became one of the earliest environmental sociology researchers in the 1970s and later authored the New Ecological Paradigm (formerly the New Environmental Paradigm) Scale (Dunlap, Van Liere, Mertig, & Jones, 2000; Dunlap, 2008). The scale has been extensively used to measure the variable generally known as environmental concern and sometimes as environmentalism. Environmental concern, an individual's general attitudes toward environmental protection (Bamberg, 2003), was defined as the collective of beliefs, values, and intentions a person holds regarding the environment or related issues (Milfont & Duckitt, 2004).

Although hundreds of quantitative scales have been developed since the 1970s to examine environmental attitudes, a synthesis was needed to bring previous research together into a comprehensive theory of environmental attitudes (Milfont & Duckitt, 2004). Researchers utilized previously existing scales from the environmental literature to generate 99 survey items to administer to 455 college students to determine the underlying structure of environmental attitudes and their impact on self-reported environmental behavior (such as recycling, reuse, and biking for transportation).

Two seemingly competing concepts explained environmental attitudes: preservation and utilization. Preservation encompassed pro-environmental attitudes, and utilization, (which could be considered as the anti-environment factor), involved practicality of the need to use resources to live. Utilization and preservation, then, were

expected to be negatively correlated. The authors followed up their work with three additional studies using the environmental attitudes scale to develop a parsimonious, easy to use instrument to measure environmental attitudes that could be used across cultures (Milfont & Duckitt, 2010). The conceptual model in the follow-up research combined preservation and utilization into a second-order factor titled general environmental attitudes (GEA), with utilization reversed scored and summed with preservation. The final scale included 24 total items, 14 for preservation and 10 for utilization. The short form scale, called EAI-24 (Environmental Attitudes Inventory-24) seemed to perform well on a global audience.

The authors' work uncovered a complex balance between preservation and utilization because although individuals might be concerned for the environment, to some degree, they still need to use natural resources achieve well-being and live in today's consumer society (Milfont & Duckitt, 2010). Environmental concern was expected to influence intention to redesign used clothing in the present study. Participants in the present study should also experience this mental conflict between desire to protect the environment and a utilitarian need to use natural resources to dress fashionably. Therefore, redesign could be one of many solutions to improve sustainability of the fashion industry.

Although environmental concern has been found to be a weak direct predictor of ecological consumer behavior, it might have potential as an indirect antecedent filtered through the formation of attitudes toward specific environmental behaviors (Bamberg, 2003). Questionnaires were administered to 380 college students and included items to

measure eight variables, environmental concern, normative beliefs, behavioral beliefs, control beliefs, attitudes, subjective norms, perceived behavioral control, and intention, in terms of their effect on behavior. The behavioral intention to request an informational brochure on green energy (such as wind and solar) was measured in two ways: first, if the participant detached the postcard from questionnaire (intention), and second, if the subject actually filled out and turned in the postcard to request the informational brochure (behavior). Environmental concern was tested as a moderator variable, and responses were split into groups, low environmental concern and high environmental concern.

A weak direct relationship was found between environmental concern and behavioral intention (Bamberg, 2003). Environmental concern did, however, have a direct effect on beliefs, subjective norms and perceived behavioral control. Overall, the high environmental concern group demonstrated higher pro-environmental intentions and behaviors than the low environmental concern individuals. Taken together, this might mean high environmental concern individuals will behave in a pro-environmental manner, unless a situation beyond their control prevents them from doing so. Environmental concern might influence behavior directly in low-cost situations such as voting. Environmental concern could act as a heuristic for decision making (Bamberg, 2003). Perhaps this could also be true for fashion consumers – if presented with a variety of choices similar in price and quality, they might select a more sustainable clothing option such as redesigned clothing.

Focusing on the role of attitudes in the TRA model, researchers were interested in how pro-environmental attitudes were formed (Bang, Ellinger, Hadjimarcou, & Traichal,

2000). Questionnaires were mailed to a randomly selected sample of 347 individuals

(58% male, 41% female). The research model excluded subjective norms, but included

two antecedents related to beliefs about consequences of consumer behavior. Beliefs

about consequences were expected to be formed by one's concern for the environment

and knowledge about renewable energy (the ecological product of interest in the study).

Beliefs about consequences, combined with evaluation of the consequences, were

assumed to influence attitudes, and ultimately, willingness to pay more for renewable

energy (Bang, Ellinger, Hadjimarcou, & Traichal, 2000).

Three main group classifications were derived from the data: individuals with low

to high environmental concern, low to high knowledge, and low to high beliefs. Overall,

the sample demonstrated high concern for the environment and a moderate level of

knowledge about renewable energy. There was no significant difference between low and

high environmental concern groups on how much knowledge they had on renewable

energy. This might mean that concern for the environment does not necessarily motivate

consumers to seek out more knowledge about renewable energy. There was also no

significant difference found between low and high knowledge on beliefs about positive

consequences of using renewable energy. However, those who indicated high

environmental concern, high beliefs about positive environmental consequences, and

high environmental knowledge were significantly more willing to pay for renewable

energy (Bang, Ellinger, Hadjimarcou, & Traichal, 2000). In the present study, high levels

of environmental concern may indicate willingness to pay a premium for redesigned

clothing, although there could be other factors influencing willingness to pay.

One author was interested in the link between personality and environmental concern (Hirsch, 2010). As part of a larger study with the German public, 2,690 (47% female, 53% male) consumers completed questionnaires with the items of interest. A shortened version of the Big Five Inventory including 15 items to tap extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience was used (BFI; John, Donahue, & Kentle, 1991) to determine which personality dimensions were connected to environmental concern.

As expected, agreeableness and openness to experience were positively related to environmental concern. Also, neuroticism and conscientiousness were related to environmental concern, but no relationship was found with extraversion. Likely, those who scored highly on neuroticism were worried about environmental degradation and the impact it might have on their lives. Environmental concern was also positively associated with age, and women had higher levels of environmental concern than men. However, gender was not a significant moderator of environmental concern (Hirsch, 2010). This finding reinforced the importance of age found in my previous research on redesign, where older individuals kept clothing longer, had more knowledge of sustainable fashion, and were more concerned about the environment (Janigo, 2011). Age should also be an important demographic characteristic in the present study.

An individual's self-identity could predict one's likelihood to engage in pro-environmental behavior (Nigbur, Lyons, & Uzzell, 2010). A study was conducted incorporating self-identity variables into the broader structure of the theory of planned behavior (Ajzen, 1991). Two studies were conducted to determine how these additional

variables might contribute to the structural model. Study 1 included 527 individuals in a

middle-class neighborhood recycling program in the United Kingdom. Constructs in the

research model included the following TPB variables: attitudes toward recycling,

subjective norms, perceived behavioral control, intentions to recycle, and actual recycling

behavior (observed by a household placing their recycling bin out on the curb for

collection). The added variables included: self-identity as recycler, perceived injunctive

norms (such as the approval of neighbors), perceived descriptive norms (perceived

behavior of neighbors), and neighborhood identification (Nigbur, Lyons, & Uzzell,

2010).

In Study 2, the sample appeared to be somewhat positively disposed to recycling because

305 (57.9%) set out their recycling bin on collection day, while 222 (42.1%) did not

(Nigbur, Lyons, & Uzzell, 2010). The TPB antecedents (attitudes, perceived behavioral

control, subjective norms) predicted 61% of variance in intention, and the model

improved when including self-identity and descriptive norms. Intention, self-identity, and

descriptive norms significantly predicted behavior, but PBC did not. According to the

TPB, PBC should not have an impact when the behavior is fully under the individual's

volitional control. The authors assumed PBC was not significant because recycling was

fully under their volitional control, as the neighborhood recycling program made it very

easy and accessible to recycle (Nigbur, Lyons, & Uzzell, 2010).

In Study 2, questionnaires including the same antecedent variables from the first

study were administered to 264 people, with the dependent variable self-reported

recycling behavior. Again, the TPB model (attitudes, PBC, subjective norms) predicted a

large amount of variance in intention, and the model improved when self-identity as a

recycler and descriptive norms were added. However, PBC and the other variables did

not have a significant impact on behavior. Based on their findings from the two studies,

the researchers suggested environmental marketing campaigns should include positive

feedback to encourage self-identification as someone who would engage in pro-

environmental behavior (Nigbur, Lyons, & Uzzell, 2010). Likewise, perhaps redesign

businesses would need to tailor their marketing efforts to encourage clients to self-

identify as redesigners. It is also possible that individuals who already self-identify as

redesigners would be more likely to intend to continue to redesign in the future.

Social Pressure / Norms

By now, there is an almost undeniable consensus that people around the globe

need to pay more attention to how their daily living impacts the environment. Ecological

consumer behavior has been the focus of scholarly research around the world, as many

global citizens perceive environmental concerns to be shared worldwide. Studies

focusing on cultural norms as an antecedent to pro-environmental behavior or intentions

have been conducted in China (Chan, 2001), South Korea (Ko, Hwang, & Kim, 2013),

Switzerland (Tanner & Kast, 2003), Monaco (Cervellon & Wernerfelt, 2012), Mexico

(Corral-Verdugo & Figueredo, 1999), Germany (Bamberg, 2003), the United Kingdom

(Smith, Louis, Terry, Greenaway, Clarke, & Cheng, 2012), and the United States

(Ferguson, Branscombe, & Reynolds, 2011).

According to the theory of planned behavior, social norms have been found to be

an important part of the decision making process (Ajzen, 1991). However, the social

norms in the TPB are general interpersonal norms, which do not take into account two sub-sets of norms (Smith, et al., 2012). Two related studies were conducted to differentiate between two types of norms, injunctive norms and descriptive norms, to determine the effect on behavioral intention to conserve energy. Injunctive norms refer to perceptions of what individuals in important reference groups approve or disapprove. Descriptive norms include perceptions of what the reference group actually does (Smith, et al., 2012).

Study 1 included 162 (65 male, 97 female) university students from the U.K. Data were analyzed through a 2 x 2 ANOVA between-participants design (injunctive norms: supportive, unsupportive) x (descriptive norms: supportive, unsupportive). Participants were randomly assigned to one of the four experimental conditions. In the supportive descriptive norms condition, participants were told that 82% of their peers engaged in energy conservation. In the unsupportive descriptive norms condition, they were told that 22% of their peers engaged in energy conservation. In the supportive injunctive norms scenario, they were told that 85% of their peers approved of energy conservation. Finally, in the unsupportive injunctive norms group, subjects were informed that 23% of their peers approved of energy conservation (Smith, et al., 2012).

There were no main effects of injunctive or descriptive norms, but there was an interaction effect between the types of norms. When descriptive norms were supportive, supportive injunctive norms strengthened the results, and participants had stronger intentions to conserve energy. When the descriptive norms were unsupportive, supportive

injunctive norms had no effect. This may mean that misaligned norms can be equally as detrimental to encouraging a behavior as two unsupportive norms (Smith, et al., 2012).

Study 2 expanded the results of Study 1 by including a cross-cultural comparison. Eighty Chinese students (35 male, 47 female) and 72 U.K. students (39 male, 33 female) were randomly assigned to one of the four same experimental conditions. However, the addition of the cultural element (collectivist for Chinese and individualist for British) increased the design to a 2 (injunctive norms: supportive and unsupportive) x 2 (descriptive norms: supportive and unsupportive) x 2 (collectivist and individualist) between-participants design. Other predictor variables from the theory of planned behavior (Ajzen, 1991) were added: general interpersonal norms, attitudes, and perceived behavioral control.

Chinese consumers scored higher on collectivism, and the British were more individualistic than the Chinese. Overall, Chinese participants had stronger intentions to conserve energy. Attitudes, PBC, and interpersonal descriptive norms influenced intentions. However, injunctive norms did not influence intentions. There was an interaction effect between the types of norms, as with Study 1, and nationality did not moderate this effect, which may indicate this idea holds true regardless of one's cultural affiliation. These findings underscored the importance of norms in environmental research. Green marketing messages may need to avoid causing conflict between injunctive and descriptive norms, and should emphasize ethical behavior (Smith, et al., 2012). In marketing redesign, messages may need to emphasize that peers will approve of redesigning clothing as an alternative to purchasing trendy, disposable clothing

(supportive injunctive norms) and should promote a perception of popularity of redesign behavior (supportive descriptive norms).

Besides cultural belonging, other types of social group affiliations could influence environmental consumer behavior (Ferguson, Branscombe, & Reynolds, 2011). Two studies were undertaken to explore how competition between groups might influence willingness to participate in sustainable behavior. Study 1 included 55 American undergraduates (15 female, 39 male), and subjects were randomly assigned to one of two conditions. The first condition included a brief explanation about the current environmental outlook and consumer behavior compared to that of 1960 (less sustainable than the present). The second condition included a brief explanation about the current environmental outlook compared to consumer behavior of the year 2060 (more sustainable than the present).

Willingness to make sustainable transportation choices, reduce energy and water use, and advocate for environmental causes (such as wearing a pro-environmental button) were measured. As expected, there was a main effect found on intergroup comparisons. Participants in 1960s comparison group were more willing to make sustainable choices than the 2060 group. It was possible that the 2060 comparison group thought that the environmental future already looked bright, so there was little else they needed to personally do (Ferguson, Branscombe, & Reynolds, 2011).

Study 2 included 33 American undergraduates (9 males, 24 females) again randomly assignment into one of two comparison conditions. In this study, there were added measures related to public policy, such as supporting the implementation of pro-

environmental taxes and laws. There was an added measure of climate change beliefs to capture participants' opinions. There was a significant main effect on group comparison.

As in Study 1, Study 2 participants in 1960s comparison group had more sustainable beliefs in the climate change than the 2060 group. Participants in 1960s comparison group were more willing to perform sustainable behavior, including support taxes and laws. However, they were only marginally more willing to support taxes than the 2060 group, which means both groups were hesitant to pay more in taxes. If consumers felt that they were more sustainable than other reference groups, they may have been more likely to act in support of their sustainable perception of themselves (Ferguson, Branscombe, & Reynolds, 2011). Marketing could use intergroup comparison as a tool to increase sustainable behavior. In marketing redesign, businesses could highlight environmental benefits such as diverting textile waste from landfills. They could even hold contests, so consumers compete with one another to feel more eco-friendly than their peers.

Behavioral Intentions

Perhaps another cause of the gap between pro-environmental intentions and behaviors in the TPB model can be explained by the complexity of the progression through time-ordered stages toward behavior change (Bamberg, 2013). The TPB was combined with the norm-activation model (NAM, which predicts goal intentions, Schwartz & Howard, 1981) to design the conceptual model of a study about sustainable transportation intentions. The dual theoretical framework organized behavioral change into a transition through stages: pre-decision (which included goals, norms, and

emotions), pre-action (which included attitudes and perceived behavioral control), action, and post-action components (Bamberg, 2013). Any stage in the decision making process could cause individuals to revert to old behavior and fail to make lasting changes.

Participants (908) were approached at parking lots at malls and campuses in seven European cities. They were asked to fill out 44-item questionnaires about their intention to reduce automobile use in favor of more sustainable transportation (Bamberg, 2013). A four-cluster solution emerged for stages in the decision making process: Cluster 1 – pre-actional (31.3%), Cluster 2 – actional stage (31.1%), Cluster 3 – pre-decisional (20.2%), and Cluster 4 – post-actional (17.5%). Variances explained by the model were as follows: 78% of goal intention variance, 62% of the variance in behavioral intention, and 38% of variance in implementation intention. The study provided support for a model that includes a chain reaction between the three intention types (goal intention, behavior intention, implementation intention), which were the links between the four stages.

Marketing efforts and interventions may need to be developed to take into account that consumers might fall within any one of the four stages at a given time, and may transition into different stages in the future (Bamberg, 2013). The same could be true for redesign, and garment redesigns could be proposed to clients appropriate to their experience and comfort with the redesigned process. For example, simpler redesigns with a small amount of change might be more appropriate for consumers who are new to redesign, while highly creative, noticeable changes may be more attractive to individuals who are comfortable and knowledgeable with the process.

Perceived Behavioral Control

Although an individual could have strong intentions to complete a behavior, barriers could interfere. In the TPB model, perceived behavioral control refers to an individual's level of confidence in how possible it might be for them to carry out the behavior. A three-part multi-method study was conducted to explore the nuances of barriers consumers face in making green purchases (Gleim, Smith, Andrews, & Cronin, 2013). The first was a qualitative study conducted with 330 consumers through a questionnaire with open-ended questions. Responses were coded and content analyzed.

Overall, participants demonstrated a lack of knowledge of green products, but were most familiar with environmentally friendly cleaning products. They also uncovered several key barriers to purchasing sustainable products: high price (mentioned by almost half of respondents), poor quality compared to traditional products, lack of expertise or knowledge of environmental impact of products, distrust of retailer claims, availability of products, apathy about the environment, and brand loyalty to traditional products (Gleim, Smith, Andrews, & Cronin, 2013).

The second study was conducted with 581 U.S. consumers via online questionnaires to determine the link between the constructs of interest and purchase intentions. Cluster analysis was then conducted to divide consumers into profiles according to their beliefs, attitudes, and intentions to purchase green products. Four clusters were identified, red (n = 74, 12.7%) the least eco-friendly, orange (n = 185, 31.8%), yellow (n = 199, 34.3%), and green (n = 123, 21.2%), which were the most eco-friendly of the consumer groups. Green consumers also reported more knowledge about

sustainable goods than other groups. As with Study 1, key barriers to purchasing green

products were lack of expertise on how to evaluate environmental impacts and high price

of products (Gleim, Smith, Andrews, & Cronin, 2013).

Study 3 was an experimental design with 201 individuals completing a web-based

survey. Consumers were given information cues and explanations about an

environmentally friendly shower spray and asked to indicate their purchase intention,

willingness to pay, quality, and value perceptions. For product information, three

different formats were used: simple verbal explanations, numerical information, and

detailed verbal explanations about the product. There were three different levels of

information quantity in the experiment, where some individuals were given six cues,

some received three cues, and some received no informational cues about the products.

Individuals who had received detailed verbal explanations reported more expertise than

the simple verbal or numerical conditions. This, in turn, increased purchase intentions,

willingness to pay, quality perception, and value perception. There was a significant

interaction effect of information form and information quantity. Those who received

more informational cues and detailed verbal information had higher perceived expertise

(Gleim, Smith, Andrews, & Cronin, 2013).

The three-part research project has several practical implications. Insight was

gained on how retailers should provide information to consumers about green products.

Consumers may need detailed verbal explanations and more information to increase their

expertise and confidence in buying green products. Price has been identified as a key

barrier to purchasing green products, but if detailed verbal explanation would increase

consumers' willingness to pay, the barrier would be mitigated. Messages should be educational about what makes the product environmentally friendly, and should emphasize how individual consumers can make a difference. Green products must deliver quality to ensure the growth of green product markets in the future (Gleim, Smith, Andrews, & Cronin, 2013). For redesign, marketing messages may need to include detailed verbal explanations about the redesign process to reduce uncertainty about the quality, increase confidence in the overall outcome of redesign, and to increase consumers' willingness to pay for redesign.

A different variable, internal environmental locus of control, was developed to predict pro-environmental behavior (Cleveland, Kalamas, & Laroche, 2012). With a sample of 263 recruited near a university in Canada, questionnaires were administered to test the IELOC scale. The authors argued that IELOC would explain environmental behavior well because it incorporated elements of locus of control and self-efficacy (from social psychological research), perceived behavioral control (a theory of planned behavior variable), and perceived consumer effectiveness (a variable from environmental research). IELOC covers individuals' levels of environmental concern but also acceptance of personal responsibility and perceived ability to make a difference (Cleveland, Kalamas, & Laroche, 2012).

Data analysis indicated IELOC was made up of four dimensions: green consumer (three items), activist (five items), advocate (four items), and recycler (four items). Fifty items were used to measure pro-environmental behaviors, covering: recycling behavior, energy and resource conservation, transportation choices, product alternatives, avoidance

of damaging products, and other pro-environmental behaviors. IELOC significantly

predicted behavior in 47 of the 50 self-reported pro-environmental behavior items. It did

not significantly predict consumers' likelihood to hang clothes to dry, compost, or

carpool. Implications for marketers could include that they should tailor marketing

messages along a continuum of low to high IELOC consumers (Cleveland, Kalamas, &

Laroche, 2012). Considering these results, redesign could be marketed to emphasize

environmental benefits of redesigning clothing, so consumers believe their behavior

makes an impact.

Table 1 is a summary of key findings from the environmental literature reviewed

in this section and the potential impact on redesign.

Author(s), Year	TPB Concepts	Key Findings/Implications	Implications for Redesign
Bamberg, 2003	Attitude - Environmental Concern	Environmentally concerned participants showed higher pro-environmental intentions and behaviors than less concerned individuals.	Environmental concern may encourage sustainable fashion behavior and intentions for redesign.
Milfont & Duckitt, 2010	Attitude - Environmental Concern	There was a complex balance between preservation (pro-environmental attitude) and utilization (practical need to use natural resources).	Redesigners may experience conflict between desire to wear eco-friendly clothing (preservation) and a need to use resources to dress fashionably (utilization).
Bang, Ellinger, Hadjimarcou, & Traichal, 2000	Attitude - Environmental Concern	Environmentally concerned participants with high environmental knowledge were willing to pay more for renewable energy.	High levels of environmental concern may indicate willingness to pay a premium for redesigned clothing.
Hirsch, 2010	Attitude - Environmental Concern	Older individuals showed higher levels of environmental concern.	Older individuals who are more environmentally concerned might have higher intentions to redesign.
Nigbur, Lyons, & Uzzell, 2010	Attitude - Environmental Concern	Self-identification as a pro-environmental individual was related to actual pro-environmental behavior such as recycling.	Individuals who self-identify as redesigners may be more likely to redesign clothing than those who do not.
Smith, et al., 2012	Subjective Norms	Descriptive norms had more influence on behavioral intentions to conserve energy than injunctive	Marketing messages may need to emphasize that peers will approve of redesigning

		norms. Green marketing messages should present aligned injunctive and descriptive norms to maximize impact of the messages.	clothing (supportive injunctive norms) and should promote a perception that others already redesign clothing (supportive descriptive norms).
Ferguson, Branscombe, & Reynolds, 2011	Subjective Norms	If consumers feel that they are more sustainable than other reference groups, they will be more likely to act in support of their self-perception.	Redesign businesses could have contests, so consumers compete with one another to support their self-perceptions as redesigners and to feel more eco-friendly than peers.
Bamberg, 2013	Behavioral Intentions	The decision making process is a chain reaction. Consumers are constantly in transition between the stages. Marketing efforts or interventions could ease the transition between intentions and behavior.	Client redesign experiences could be tailored appropriate to their knowledge and comfort with the process in order to move consumers from intention to actual redesign behavior.
Gleim, Smith, Andrews, & Cronin, 2013	Perceived Behavioral Control	Detailed verbal explanations may increase consumers' willingness to pay for green products. Marketing should provide education about what makes the product environmentally friendly, and should emphasize how individual consumers can make a difference.	For redesign, marketing messages may need to include detailed verbal explanations about the redesign process to reduce uncertainty about the quality, increase confidence in the overall outcome of redesign, and to increase consumers' willingness to pay for redesign.
Cleveland, Kalamas, & Laroche, 2012	Perceived Behavioral Control	IELOC (internal environmental locus of control) significantly predicted pro-environmental behavior. Marketing messages should emphasize consumers' ability to make a difference in protecting the environment.	Redesign could be marketed to emphasize environmental benefits of redesigning clothing, so consumers believe their behavior makes an impact.

Table 1. Summary of environmental literature using the TPB

Sustainable Fashion Literature

Three key components of sustainable fashion emerge from the literature: people (or the global society), processes (or systems), and the natural environment. The three-tiered sustainable fashion approach is similar to the triple bottom line sustainable development approach found in the Brundtland Report and Elkington's book (UNWCED, 1987; Elkington, 1997). The people, processes, and environment model was the central focus of a 2008 book and its 2015 second edition. It was structured as a series of essays –

written by clothing and textiles academics and professionals – on topics pertinent to the

fashion industry and sustainability (Hethorn & Ulasewicz, 2015; Hethorn & Ulasewicz,

2008). "People" refers to every human, not only fashion consumers, but also garment

workers, textile technicians, designers, buyers, merchandisers, sourcing managers, and

contractors. Almost everyone wears clothes, and we are all global citizens who must live

with the short- and long-term consequences of environmental degradation from industry

and development. "Processes" refers to the infrastructure, technology, and ways of doing

things in the industry, all of which have implications for the environment (Hethorn &

Ulasewicz, 2015; Hethorn & Ulasewicz, 2008).

Other processes include global economics (supply and demand), retail profit

structures, international politics, agriculture (the growing of, or raising, natural fibers),

the fashion design process, and processes of marketing, retailing, consumption, and use

(Hethorn & Ulasewicz, 2015; Hethorn & Ulasewicz, 2008). "Environment" is the third

key concept. Fashion's impact on the environment includes the entire lifecycle of a

garment. Lifecycle assessments of products help designers, professionals, and consumers

understand the impact of the products holistically. There are many metrics that matter in

LCA's, including carbon footprint, energy, water, and natural resource consumption for a

product. Useful information on ecological impact of various industries can be found from

the websites and published reports from the U.S. Environmental Protection Agency

(EPA, 2010), and from organizations in the United Kingdom, such as the U.K. Waste and

Resource Action Programme, which provides annual reporting and progress.

See Figure 3 for a visual representation of a sustainable fashion framework. I expanded Hethorn & Ulasewicz's (2015, 2008) model by mapping reviewed literature to broad topics that affect or pertain to people, processes, and the environment. Figure 3 is not an exhaustive list, but merely a summary of major contributions to the literature on sustainable fashion. Some of these references will be described in more detail.

Sustainable Consumer Behavior

Ha-Brookshire & Wilson	2012	*CTRJ* Sustainability-Related Marketing Claims and Consumer Behavior. Special issue
Root	2008	*Fashion Theory* Ecofashion. Special issue
Reiley & DeLong	2011	Journal article on consumer vision of sustainability
Watson & Yan	2013	Journal article on fast vs. slow fashion consumer behavior
Kim, Choo & Yoon	2012	Journal article on motivations of fast fashion avoidance
Clark	2008	Journal article on slow fashion
Cline	2012	Book. *Overdressed: The Shockingly High Cost of Cheap Fashion*

Social Responsibility

Dickson, Rudd, & Lennon	2006	*CTRJ* Focused Social Responsibility: Part 1 and 2. Special issue
Dickson	2011	Lecture. ITAA distinguished scholar speech
Dickson & Eckman	2006	Journal article with framework on social responsibility
Dickson, Loker, & Eckman	2009	Book. *Social Responsibility in the Global Apparel Industry*
Bhaduri & Ha-Brookshire	2011	Journal article on consumer willingness to pay for transparent business practices

People

Environment

Processes

Graphic framework based on Hethorn & Ulasewicz. (2008)

Environmental Impact

Chen & Burns	2006	Journal article on eco-logical impacts of textile products
Mhango & Neim.; Milgram	2005; 2004	Journal articles on secondhand Industry in Malawi; the Philippines
Guiot & Roux	2010	Journal article with scale for secondhand shopping
Ha-Brookshire & Hodges	2009	Journal article with framework on clothing disposal to charity shops
Birtwistle & Moore	2007	Journal article on end-of-lifecycle fashion and clothing disposal

Sustainable Fashion Systems

Black	2008	Book. *Eco-Chic: The Fashion Paradox*
Black	2012	Book. *The Sustainable Fashion Handbook*
Black	2013	Lecture. *Sustainable Fashion: Developing New Narratives*
Fletcher	2008	Book. *Sustainable Fashion & Textiles*
Fletcher	2012	Book. *Fashion and Sustainability: Design for Change*
Hethorn & Ulasewicz	2008	Book. *Sustainable Fashion: Why Now?*
Rivoli	2009	Book. *Travels of a T-shirt in the Global Economy*

Figure 3. Holistic sustainable fashion framework

A prominent author who has researched and written extensively on sustainable fashion is U.K. Professor Sandy Black. Her first well-known book cast a wide net of topics, which covered each category of the people, processes, and environment model (Black, 2008). One of her main arguments was that the infrastructure of the existing fashion industry was not congruent with ecologically sustainable and socially responsible business practices. She argued the industry as a whole had to change. Stories of brands and designers which set examples toward sustainability were featured in essays and full color fashion photography, (Black, 2008).

Black highlighted various solutions to problems in the fashion industry. She focused on the role of the designer as an advocate for change. Fashion could be slowed down, with classic (non-trendy) styling and emphasis on quality to promote investment purchases. Bespoke, customized clothing and craft, do-it-yourself movements were also discussed as sustainable alternatives to mass produced, cheap clothing. Technological innovations such as smart clothing, mass customization online, body scanning, and specialized fabric finishes could increase the functionality of the clothing and prolong a customer's satisfaction with it (Black, 2008).

The other sections of the book described mechanisms of the existing fashion industry infrastructure and ecological impacts that could occur from processes that converted fibers to fabric, and fabric to fashion. Black debunked the myth that many consumers hold true, that natural fibers are inherently more ecological than manufactured fibers, by comparing and contrasting the impacts of several key clothing fibers. She also explored social responsibility issues that occur in the industry, such as forced labor and

sweatshops. Waste avoidance through low to no waste pattern cutting, reusing pre-

consumer waste, reusing second-hand clothing, and redesign were also discussed (Black,

2008).

Black released a new book in 2012, which was framed as an inter-disciplinary

conversation tackling questions that remained since her previous book. She gave a lecture

to introduce the book at the University of Minnesota titled "Sustainable Fashion:

Developing New Narratives" as part of the opening of a sustainable fashion exhibit at the

Goldstein Museum of Design, to an audience of design students, professional designers,

and academics (Black, 2013). Black's speech included many inspiring, engaging, and

some blunt messages, such as:

> Everyone is implicated ... in this unsustainable situation.
> Sustainable fashion ... can be a catalyst for change.
> The greening of the fashion industry is an absolute imperative.
> The textiles and clothing industry uses more water and energy than many [other] industries.
> Sustainability is a complex concept to understand in any industry.
> Clothing needs to cost more.
> Retailers have to actually understand their supply chain.
> Fashion is a powerful catalyst for engagement and social change.
> People [consumers] have to be shocked ... we all have to take responsibility ourselves.
> When it [clothing] has a value for them [consumers], it won't be disposable.

The Sustainable Fashion Handbook discussed how industry can reduce ecological

impacts, how designers can become change agents, how fashion might be slowed down,

how ethics and aesthetics might be integrated, and finally, whether fashion can ever be

sustainable (Black, 2012). The book was full of visual examples of sustainable clothing,

featured interviews with prominent designers, and included essays from academics. There

were many examples of eco-fashion designers, socially responsible companies, and

plenty of information to support consumer knowledge and sustainable use of clothing (Black, 2012).

U.K. design consultant Kate Fletcher has also built a career dedicated to the sustainable fashion movement. Her first book also was released in 2008, *Sustainable Fashion and Textiles: Design Journeys* (Fletcher, 2008). The book was written as a handbook for fashion designers to make ecologically sound and socially responsible decisions, and it contained detailed technical information to influence product design. It was divided into two main parts. The first part explored sustainable fashion and textile products, which related to the people and environment parts of the sustainable fashion model. Sub-topics were material diversity, ethical manufacturing, consumer use, reuse, recycling, and resource exchange. The second part discussed sustainable clothing and textile systems, which was roughly related to people and processes. Sub-topics were fashion, needs, and consumption, local and light production, speed to market, and the role of the user-maker (Fletcher, 2008).

In 2012, Fletcher and Linda Grose, a professional designer and advocate for eco-fashion, wrote a book titled *Fashion and Sustainability: Design for Change*. The book, divided into three parts, included new information on sustainable fashion, some of which had been discovered since the previous book. Both authors were industry practitioners and designers, so the main emphasis was on designers' responsibility to advocate for change. They provided solutions for transforming fashion products, systems, and design practices for sustainability.

Social Responsibility

A comprehensive text book was written about social responsibility, called *Social Responsibility in the Global Apparel Industry* (Dickson, Locker, & Eckman, 2009). Regarding the sustainable fashion model outlined in Figure 3, the book provided a great deal of detail for the people part of the model. The authors began the book with a definition and model of social responsibility that was constructed from research. Two of the authors had conducted a study, in which they asked clothing and textile professors to define social responsibility (Dickson & Eckman, 2006). Figure 4 is a visual diagram of the definition of social responsibility, which was the outcome of their research.
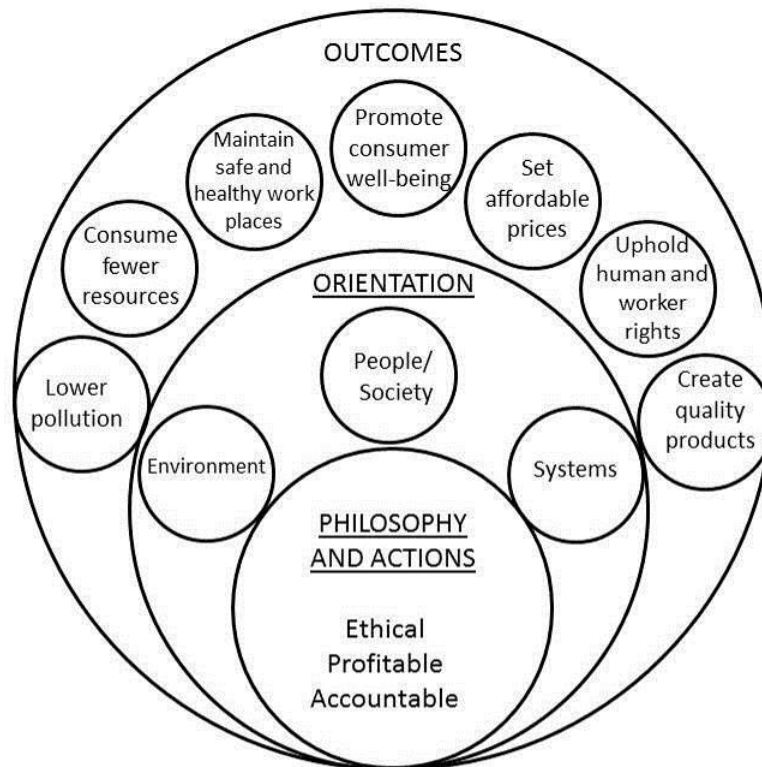
Figure 4. Social responsibility diagram from Dickson, Loker and Eckman (2009, p. 31)

In their book, the authors underscored the complexity of the global apparel supply chain, which makes it difficult to monitor corporate social responsibility (CSR) policies, but not impossible, and very necessary. Key SR issues in the fashion industry included forced labor, low wages, excessive work hours, mandatory or uncompensated overtime, discrimination, health and safety hazards, psychological and physical abuse at work, workers' lack of awareness of their rights, and a lack of worker representation for negotiation with management. Stakeholder theory was applied to social responsibility. Key stakeholders were financial investors, colleges and universities, consumer interest groups, worker advocacy groups, governmental agencies, non-governmental agencies, labor unions, and the workers themselves. The authors discussed exemplary companies which have effective CSR policies and codes of conduct in place (Dickson, Locker, & Eckman, 2009).

Another book on social responsibility was written by Patagonia executives Chouinard and Stanley (2012), in which they discussed lessons learned in running a sustainable company for more than 40 years. Also applying stakeholder theory, they made decisions and changes over time to their business model by considering what was best for their stakeholders – the business, headquarters and stores employees, garment workers and contractors, financial investors, the community, and the natural environment (Chouinard & Stanley, 2012). They moved their corporate headquarters into a LEED certified re-purposed building. They joined and became key players in the Sustainable Apparel Coalition, a cross-company, industry-wide think tank for knowledge sharing and

best practices. They were quantitatively assessing the impact of their products and

processes on the environment.

Contrary to how business was conducted in the past, with companies fiercely

protecting the secrets to their success, the appendices in the back of the book included

checklists for business owners and companies to instruct them how to run a sustainable

company. How-to checklists addressed business health, worker and employee

satisfaction, communication and transparency, customer and community relationships,

and preserving the natural environment (Chouinard & Stanley, 2012). It seemed

Patagonia was practicing many of the recommendations for sustainable business practices

from the SR book (Dickson, Locker, & Eckman, 2009).

Patagonia is just one example of a responsible company. The Sustainable Apparel

Coalition was formed around 2011. The organization is a collective of companies,

including Nike, Walmart, Target, GAP, and many other large apparel businesses

collaborating to improve sustainability. They are beginning to implement tools to score

environmental impact of products, so designers can design into sustainability at the

outset. Many companies have codes of conduct and CSR policies. The policies focus on

some or all of the following issues related to protection of garment workers: prohibiting

child labor, prohibiting forced labor, eliminating harassment, paying living wages, setting

up safe work environments, and ensuring the right to join unions.

Social responsibility has been widely researched in our discipline, and there were

special issues in the *Clothing and Textiles Research Journal* (Dickson, Rudd, & Lennon,

2006). Research on the topic has been ongoing. A qualitative study with 13 consumers in

a small Midwestern U.S. college town (three male) explored the relationship between apparel supply chain transparency and consumer behavior (Bhaduri & Ha-Brookshire, 2011). Consumers recruited through the snowballing technique were interviewed for 20 minutes each. The theory of reasoned action was used to conceptualize the value consumers received from supply chain transparency and how that influenced their intent to buy and willingness to pay for clothing. Twelve of the 13 participants believed they did not know enough about the global apparel supply chain and the conditions in which their clothing were made; however, they all were interested in transparency and disclosure of the manner in which their clothing were made. Participants wanted information on supply chain at point of purchase, such as on clothing tags or care labels.

They were especially concerned about the people who made their clothing, including their pay and working conditions (Bhaduri & Ha-Brookshire, 2011). Prior knowledge about environmental impact of clothing production was connected to positive attitudes toward transparency, which positively influenced purchase intention. However, many consumers distrusted retailers' social responsibility claims and were interested in certification administered by a third-party or the government. Consumers gained social responsibility value from transparency and said they would feel better knowing their clothing was made in a manner that did not harm people and the environment. The value gained from a transparent supply chain would cause participants to pay a premium for clothing, but only within the limits of their purchasing power.

As with previous research (McDonald et al., 2009), price and quality mediated consumers' purchase intention more than the social responsibility value of transparency.

Retailers and marketers could use transparent business practices to add value to their

products, as a selling point (Bhaduri & Ha-Brookshire, 2011). Similarly, it is expected

that consumers will experience conflict between desire to wear redesigned clothing and

desire to save money. Consumers who have knowledge of ecological impacts of the

fashion industry might be more likely to redesign used clothing and pay more for

redesigned clothing than new clothing.

Researchers examined the effect of hang tags with socially responsible

certifications on consumers' attitudes and purchase intentions (Hyllegard, Yan, Ogle, &

Lee, 2012). Online questionnaires were completed by 769 individuals (55% female, 45%

male) from 39 U.S. states. The researchers created fictitious apparel brands with mocked

up hang tags. Different tags facilitated experimental conditions for different types of

messages regarding social responsibility. The experiment was a 2 x 2 x 2 design, with

two levels of message content (eco-fashion and fair labor), two levels of message

explicitness (low and high), and two levels of third party socially responsible business

certification logo (absence vs. presence). The theory of reasoned action was the guiding

theoretical framework. Constructs in the research model included consumers' perceptions

of the hang tags' value, clothing involvement, socially responsible (SR) apparel

purchasing behaviors, evaluation of hang tags, and TRA variables of attitudes, subjective

norms, and intentions (Hyllegard, Yan, Ogle, & Lee, 2012).

Females were more likely to read hang tags and use the information in purchase

decisions and checked tags for fiber content, care, brand, construction, and SR practices.

More explicit and detailed hang tag messages were evaluated more positively than more

vaguely worded messages. The presence of a third-party logo led to more positive evaluations of the hang tags. Hang tags with high message explicitness were evaluated about the same as tags with low message explicitness plus third-party logos. Clothing involvement and past apparel purchasing behavior predicted consumers' evaluation of the hang tags, but gender did not. Consumers' evaluation of hang tags positively predicted attitudes toward brand. Both attitudes and subjective norms predicted purchase intentions, supporting the traditional TRA model. In summary, explicit messages on hang tags were more effective than vague messages, and third-party SR certification logos increased consumers' confidence in a claim (Hyllegard, Yan, Ogle, & Lee, 2012). In marketing redesign, messages on websites, in-store marketing, and on hang tags may need to include detailed explanations about the redesign process to increase confidence in the environmental and social benefits of redesign.

Fibers and Sustainability

A study was conducted to determine consumers' willingness to pay for sustainable wool clothing (Peterson, Hustvedt, & Chen, 2012). A sample of 514 (70% female, 30% male) individuals completed online questionnaires. The surveys were a 2 x 2 x 2 x 3 within-subject design, with two levels of certification (USDA organic or pro-environmental), two levels of country of origin (U.S. or Australian COO), two levels of animal-focused claims (pro-animal or predator friendly), and three levels of price ($7.50, $8.25, $8.50). Most of the participants were interested in animal rights, but were not confident in their knowledge about the impact of the fashion industry on animals and the environment. There was a higher willingness to pay for combined labels of pro-

environment and animal welfare (20 cents more) as compared to organic wool, for most people (86.4%).

Participants perceived more value in U.S. wool than Australian wool (87 cents more per product). This could mean that U.S. wool producers have an advantage over producers in other countries. They may not necessarily need to produce organic wool, which is cost prohibitive and difficult to achieve certification. People who had experience and knowledge of organic food were more willing to pay for organic wool. Wool was valued more than acrylic, which is often used as a less expensive a wool substitute. Older, higher income people who believed in animal rights were already familiar with organic food, and were knowledgeable about environmental impacts of apparel production valued wool more than acrylic (Peterson, Hustvedt, & Chen, 2012). If older people were willing to pay more for wool versus acrylic, perhaps older individuals might be more willing to pay more for redesign than younger consumers.

The sustainability of fibers was the focus of another study to determine willingness to pay for apparel (Norum & Ha-Brookshire, 2011). A telephone survey was carried out by a professional market research firm, and 500 (79% female, 21% male) individuals were interviewed between 15-20 minutes each. The product of interest for men was a woven button down cotton shirt, and for women, a woven cotton blouse. A 2 x 2 x 3 design was employed with country of origin (U.S.-grown fibers with transparency vs. unknown fiber origin with no supply chain transparency), production method (conventional production method vs. sustainable production method), and price (low, $20; medium, $50; high, $80).

Price was the most important variable and accounted for 78.3% of market share, regardless of fiber origin and farming technique. The next most important was U.S.-grown fiber with transparency (30%). The farming technique (11.5%) was least important. Results could indicate that retailers would get most credit for U.S.-grown cotton clothing with transparency, rather than with sustainable farming (Norum & Ha-Brookshire, 2011). Price was again shown to be crucial in the consumer decision making process, reinforcing that consumers of redesign will experience conflict between desire to wear eco-friendly clothing and to save money.

Country of Origin and Sustainability

Country of origin has been found to influence consumer willingness to pay for clothing in previous research (Norum & Ha-Brookshire, 2011; Hustvedt & Bernard, 2008). However, there are multiple components of country of origin (COO) not specified on clothing labels (Ha-Brookshire, 2012). For example, country of production (COP) refers to the country where the fiber was grown or manufactured. Country of manufacture (COM) refers to the country where the garment was sewn together. A study with a convenience sample of 76 individuals (54 were women) completed questionnaires, and data were analyzed through analysis of variance. There were two levels of COP for cotton, the U.S. and China, and also two levels of COM, the U.S. and China, related to the production of 100% cotton t-shirts (Ha-Brookshire, 2012).

There were two measurement periods, before receiving a price cue, and after receiving a price cue (Ha-Brookshire, 2012). COP and COM had significant effect on purchase preference. Consumers' first choice was COP and COM U.S. Second most

popular was COP U.S. / COM China. Third was COP China / COM U.S., and least

preferred was COP / COM China. COP and COM had significant effects on perceived

price. COP and COM U.S. had the highest perceived price $56.88. COP U.S. / COM

China and COP China / COM U.S. had similar perceived prices at $46. The lowest

perceived price was COP / COM China $38.18. Once the price stimulus was introduced,

none of the purchase preferences were significantly different. Price was inversely related

to purchase intention. Interestingly, the COP and COM U.S. purchase preference did not

significantly change before and after introduction of price stimulus. It is possible that

consumers might not pay more for socially responsible apparel. Retailers might include

COP to the COO label on clothing to help consumers value the clothing more. For

example, consumers might have better perceptions of COP U.S. / COM China, if the

information was disclosed on clothing labels (Ha-Brookshire, 2012). Detailed written

explanations about the redesign process may be needed to increase willingness to pay and

confidence in the environmental and social benefits of redesign.

Fast and Slow Fashion

A study was conducted to determine differences between fast fashion and slow

fashion consumers (Watson & Yan, 2013). In a convenience sample with U.S. college

students, focus groups and interviews were conducted (n = 38, 22 fast fashion, 16 slow

fashion; mean age of 21.2 years). The authors defined a fast fashion consumer as

someone "who chooses to purchase trendy, fashion forward clothing at low prices thus

instilling a high replaceable factor allowing them to fulfill a need to purchase frequently

and in quantity" (Watson & Yan, 2013, p.155). Such consumers purchased trendy,

inexpensive clothing that often wore out after one or two seasons. Examples of stores that fast fashion consumers shopped at included Target, Forever 21, American Eagle, Charlotte Russe, Buckle, Urban Outfitters, and H&M.

A slow fashion consumer, in contrast, was defined as "a consumer who chooses to purchase high quality, versatile clothing that allows them to build a wardrobe based on the concept of clothing created out of care and consideration" (Watson & Yan, 2013, p.155). Slow fashion consumers bought classic, seasonless pieces, designed to last, and usually more expensive. They indicated emotional connection to their clothing and perceived themselves as collectors. Slow fashion consumers shopped at Nordstrom, Neiman Marcus, Barney's, J Crew, Banana Republic, Abercrombie and Fitch, Bloomingdale's, and Saks (Watson & Yan, 2013).

Data were analyzed through a grounded theory process. The guiding theoretical framework was the consumer decision process. The consumer decision process included need recognition, which prompted a search for information, evaluation of alternatives before a purchase, the actual purchase, consumption of the product, post-consumption evaluation, and divestment decisions. The research focused on only the stages from purchase and beyond. Nine main themes emerged from the data: avoidance of buyer's remorse, utilitarianism, hedonism, style / self-image, instant satisfaction vs. continued satisfaction, consumer expectation confirmation, and divestment (Watson & Yan, 2013).

Fast fashion consumers and slow fashion consumers differed in terms of how they avoided buyer's remorse (Watson & Yan, 2013). Fast fashion consumers bought clothing that was low priced, and in contrast, slow fashion consumers bought clothing that would

last longer, an investment. Fast fashion consumers sought clothing that had personal utility; however, slow fashion consumers searched for clothing that was versatile, fit, was durable, and could be worn in multiple settings. Fast fashion consumers enjoyed the social experience of shopping and the thrill of finding trendy items at a low price. In contrast, slow fashion consumers gained hedonic value from purchasing clothing made with high quality workmanship, and perceived clothing as art. Regarding the development of one's personal style and self-image, fast fashion consumers wanted clothing that flattered their body and features; whereas, slow fashion consumers looked for items that expressed their unique personal style (Watson & Yan, 2013). Slow fashion consumers who have emotional connection to their clothing might be more likely to redesign used clothing than fast fashion consumers.

Fast fashion and slow fashion consumers demonstrated marked differences in post-consumption and divestment behavior. Fast fashion consumers were dissatisfied with their clothing purchases shortly after buying something. However, because they made their purchases thoughtfully and carefully, slow fashion consumers continued to be satisfied with clothing after wearing them repeatedly. Fast fashion wearers actually expected their clothing to wear out quickly, and therefore, weren't disappointed when it happened. Slow fashion consumers were satisfied because their well-made clothing often met their high expectations. Regarding divestment, fast fashion wearers often disposed of clothing, but slow fashion wearers rarely to never disposed of clothing. Fast fashion owners disposed of clothing when they were bored with it, or the clothing was damaged. On the other hand, slow fashion owners divested of clothing if it no longer fit or became

worn out over time. Both fast and slow fashion consumers donated, resold, passed along, and reused clothing. Fast fashion consumers were willing to throw clothing in the trash, while slow fashion consumers were not. Slow fashion consumers kept clothing significantly longer than fast fashion consumers.

Although slow fashion consumers behave differently from fast fashion consumers, slow fashion behavior is not the same as fast fashion avoidance (Kim, Choo, & Yoon, 2012). A team of researchers explored the concept of fast fashion avoidance, which they considered "encompasses active forms of the attitudes and behaviors against fast fashion and its consumption" (Kim, Choo, & Yoon, 2012, p.244). Fast fashion avoidance is related to anti-consumption, a rejection and opposition of the mass production process and consumption of related goods. The conceptual model was a modified version of the brand avoidance model, which was designed to explore behavior related to deliberate refusal to purchase certain brands. The reasons for brand avoidance were assumed to be distinct from price-prohibitive limitations and lack of product availability (Kim, Choo, & Yoon, 2012).

The authors conducted an analysis of blogs that discussed negatives of fast fashion industry to identify constructs to create the research model (Kim, Choo, & Yoon, 2012). The first construct, unmet expectations, was present in 33 blog articles and covered poor performance of fast fashion clothing, overly trendy style of clothing, large store discomfort, and a lack of personal customer service. The second construct, symbolic incongruence, was found in 22 blog articles and pertained to a lack of authenticity of the clothing (such as clothing that copied high-fashion brands) and deindividuation, or a lack

of individualism and uniqueness of the clothing. The third construct, incompatibility, was found in 10 blog articles and included dimensions of irresponsibility (the belief that fast fashion retailers were not socially and environmentally responsible) and foreignness (or fast fashion clothing did not mesh with their cultural values and preferences).

A sample of 400 South Korean women filled out the questionnaires. All eight dimensions were statistically significant, meaning they were related to intentions to avoid fast fashion (Kim, Choo, & Yoon, 2012). Poor performance of fast fashion clothing, deindividuation, and foreignness had direct impact on fast fashion avoidance. Inauthenticity had significant indirect effects on intent to avoid fast fashion. The indirect effect of inauthenticity and fast fashion purchase intent could mean that South Korean consumers were not concerned about fast fashion brands copying high-fashion brands and even perceived it as a positive attribute. Lack of alternatives was found to be a significant moderator in the model that caused increased feelings of big store discomfort and foreignness, which increased avoidance intentions. Irresponsibility was not related to avoidance intentions, which could indicate Korean consumers did not think about environmental concern or social responsibility issues as reasons to avoid fast fashion. Regarding foreignness, there was a belief that fast fashion business displaced local fashion business and was perceived negatively (Kim, Choo, & Yoon, 2012).

Green Fashion Marketing

Fashion marketing campaigns might be designed to encourage sustainable fashion consumption (Lee, Choi, Youn, & Lee, 2012). In a study in Korea, 200 individuals (50% male, 50% female) read hypothetical scenarios in the form of news articles about fashion

retailers and responded to questionnaire items. The guiding theoretical framework was persuasion theory, and constructs in the research model included perceptions of green private brand, perception of green marketing campaign, green consciousness, and green behavior. Communication involvement was expected to be a moderating variable (Lee, Choi, Youn, & Lee, 2012).

Consumers' perception of green fashion marketing campaigns had a positive, direct effect on green consciousness (Lee, Choi, Youn, & Lee, 2012). Green consciousness (or level of concern for green and environmental issues) had a positive direct effect on green behavior intention. Perception of green campaign had a positive, indirect effect on green behavior, mediated through intentions. Participants were separated into high message communication involvement (MCI) group and low MCI groups to gauge the effect of the variable as a moderator. MCI was not a significant moderator between green private brand (PB) perception and behavior. The impact of MCI on the relationship between green PB perception and green consciousness was significantly different based on level of MCI, and the effect was stronger in the low involvement group. Educational campaigns may help to increase eco-friendly behavior. A few different messages might be needed to increase green consciousness and green behavior for low MCI individuals. For high involvement individuals, repeated and varied campaigns might be necessary (Lee, Choi, Youn, & Lee, 2012).

Researchers were interested in understanding how young consumers in Generation Y (born between 1977 and 1994) perceived sustainability in the apparel industry (Hill & Lee, 2012). A qualitative study was conducted with 80 female college

students enrolled in fashion majors at a U.S. university. The instrument included 11 open-ended questions and some ranking items of 17 specific sustainable practices. Participants defined sustainability as long lasting, preserving resources for future generations, and environmentally friendly. They did not mention other aspects normally included in the definition of sustainability such as economic longevity and social responsibility. They placed more emphasis on action rather than general concern for the environment. Consumers mentioned several negative impacts the clothing industry had on the environment, such as those related to industrial inputs (chemicals, water, fossil fuels) and those related to outputs and by-products (pollution of air and water). They demonstrated a low level of concern for global warming (Hill & Lee, 2012).

Consumers had an awareness of environmental issues but lacked extensive knowledge specific to apparel industry (Hill & Lee, 2012). Regarding clothing, many participants (28.7%) did not know or care that there was an impact on the environment. Some (27.75%) were aware of environmental impacts related to fiber cultivation or manufacturing, air and water pollution, depletion of natural resources, toxicity of dyes and chemicals, and various types of waste. Almost half of respondents thought sustainable apparel was a good thing but didn't see the connection between sustainability and clothing. Many (60%) would support eco-friendly apparel brands. One fifth of subjects thought eco-friendly clothing would be expensive. Issues perceived as important in apparel industry included energy efficiency, water usage control, and reduction of fabric waste. Issues perceived as not important included consumer laundering and care. Unfortunately, consumers didn't understand how their post-purchase actions affected the

environment. More than half believed retailers should improve their sustainable business practices. There was a gap between general environmental concern and knowledge about the ecological impacts of the apparel industry. Consumer education is needed, especially regarding the effects their purchases and clothing care have on the environment (Hill & Lee, 2012).

An important development in ecological fashion was the advent of knowledge sharing communities online (Cervellon & Wernerfelt, 2012). Two online environmental forums, Treehugger and Care2, were observed across two non-consecutive time periods. The authors conducted a netnography, or an ethnography of the two online discussion forums between 2007-2008 and 2010-2011. Between 2007 and 2008, 196 posts were analyzed. Between 2010 and 2011, 282 posts were analyzed. The criteria for selection of posts to include in the analysis were that they had to be non-commercial messages and focused on green fashion. Posts were content analyzed using nVivo9 software.

There were marked differences between the two time periods (Cervellon & Wernerfelt, 2012). Between 2007 and 2008, participants were actively engaged in searching for knowledge and developing their expertise. Being green was a higher priority than being fashionable. Posts were related to possessions and having, which indicated that green consumer behavior was not necessarily the opposite of materialism. Participants discussed health concerns, climate change, pollution, and protection of the environment in their posts. Discussions were emotionally charged, and there were complaints about barriers to green consumption, such as time, money, effort, and energy required to consume sustainably. Individuals' comments were not always based on fact,

and often they could not clearly articulate their ideas, likely due to a lack of knowledge. Fashion brands were rarely mentioned, possibly because fashion was emerging at the time, as well as the green fashion community (Cervellon & Wernerfelt, 2012).

Between 2010 and 2011, participants appeared to be better informed about green fashion. They discussed nuances of supply chain and environmental impacts of clothing. The focus shifted to being fashionable rather than being green, likely because there were several options for green fashion. There was more discussion on social responsibility and more awareness of the role of corporations, companies, and businesses in going green. Price and availability of sustainable clothing were less problematic. Participants expected sustainable clothing to be expensive and didn't mind paying more. Consumers in this time period still discussed a lack of clear labeling on environmental claims, standardization, and transparency in supply chains. The research highlighted how green communities could be used to support word of mouth and disseminate information about sustainable clothing to larger audiences (Cervellon & Wernerfelt, 2012).

Intercept surveys (n = 186, 60% male, 37% female) were conducted at the REI flagship store, a renovated historic building, in downtown Denver. The theory of reasoned action provided the basic framework of the research model, and data were analyzed through regression. Constructs in the research model included environmental concern, environmentally conscious behaviors (such as recycling), awareness of REI's corporate and social responsibility policies, perceived importance of REI's retail characteristics, consumer lifestyle orientation, social identity variables, and demographics. TRA variables included attitudes, subjective norms, and five different

behavioral intention items, including intent to shop at any REI, intent to purchase goods from any REI, intent to shop at the Denver flagship store, intent to purchase goods from the Denver flagship store, and intent to tell a friend about the REI Denver flagship store (Ogle, Hyllegard, & Dunbar, 2008).

Attitudes significantly predicted intentions, but subjective norms did not. When the extended variables were added (environmental concern, awareness of REI's SR policies, etc.), the model's predictive power increased dramatically, and subjective norms' predictive power increased also. Store atmospherics (the physical design and décor elements or the space) predicted all five types of behavioral intentions. Different variables contributed to shopping at REI stores in general, as compared to shopping at the Denver flagship REI store specifically. Merchandise assortment significantly predicted intent to patronize REI stores. Consumer lifestyle orientation predicted intent to patronize REI flagship store specifically. Age had an inverse relationship with intentions. Older people were less likely to patronize REI, which could mean older individuals were less likely to engage in outdoor activities to necessitate purchasing gear from REI. Gender, education, and income did not predict behavioral intentions. The findings of the study suggest that variables important to the research question should be included into the TRA model to increase the power of the research model (Ogle, Hyllegard, & Dunbar, 2008).

Research was conducted with Hong Kong consumers to gauge their knowledge about environmental and social responsibility concerns related to the fashion industry (Shen, Wang, Lo, & Shum, 2012). Consumers were approached at department stores (n = 109; 53% female, 47.7% male) and were asked to complete 43-item questionnaires.

Regarding social responsibility, there were items addressing concern about sweatshop labor, knowledge of sweatshops, and beliefs about sweatshops. To measure perceptions of environmentally responsible businesses, items covered concern about environmental impact, knowledge about environmental effects of business, and beliefs about the environment. The two dependent variables were willingness to pay a premium and consumer purchase behavior (CPB).

Almost 90% of consumers had never purchased, or weren't sure if they had purchased, eco-fashion (Shen, Wang, Lo, & Shum, 2012). Only 10% of participants could name a brand that produced eco-fashion. There were low mean scores for knowledge about sweatshop issues and ecological fashion. Concern for the environment was an influential factor for perceptions of socially responsible business (SRB) and environmentally responsible business (ERB). Knowledge was not an influential factor for SRB and ERB, likely because knowledge was lacking in the sample. Both SRB and ERB influenced willingness to pay a premium for sustainable clothing. Consumers were more willing to pay for clothing produced with social responsibility compared to environmental responsibility. Results indicated that among Hong Kong consumers, eco-fashion has not been well promoted, and consumers need more education. Consumers might perceive social issues as more important than environmental issues (Shen, Wang, Lo, & Shum, 2012).

Also in Hong Kong, researchers were interested in consumers' evaluation of product related attributes and store related attributes in predicting eco-fashion consumption decisions (Chan & Wong, 2012). Participants were approached at a

shopping mall (n = 216; 25% male, 75% female) and were asked to complete questionnaires. The authors' definition of eco-fashion was clothing designed and manufactured to minimize impact on people and the environment, while maximizing benefit to the wearer. Antecedents in the research model included product related attributes (PRA) including quality, comfort, design, trendiness and store related attributes (SRA) such as customer service, store display, convenience, and the store's ethical practices. Control variables were age, gender, income level, and education level. The endogenous variable was eco-fashion consumption decision (ECD), with a moderator of price premium (PP).

PRA was not significantly related to ECD; however, SRA was significantly related to ECD (Chan & Wong, 2012). PP did not significantly moderate the relationship between PRA and ECD. But PP significantly moderated the relationship between SRA and ECD. If the price premium for eco-fashion was too high, the effects of positive SRA were diminished. Store related attributes could mediate environmental attitudes and ECD. Too high a price premium would discourage ECD and might cancel out positive effects of PRA and SRA. Consumers didn't want to pay too much more for eco-fashion than for regular products, and they also didn't want to be inconvenienced. Companies must not only design sustainable products but also have the right SRA to promote ECD. Visible and well-designed signage might make it easy to find eco-fashion within a store environment. Websites might make it easy to search for information on eco-fashion and increase convenience (Chan & Wong, 2012).

Second-hand Clothing

The second-hand clothing trade has become a multi-million dollar global market (Mhango & Niehm, 2005). Developed countries such as the United States and the United Kingdom generate much of the global supply of used clothing, more than consumers in those countries buy, and developing countries are often recipients of these excess supplies.

According to the United States Environmental Protection Agency, 250 million tons of municipal solid waste (MSW) was generated in 2010 before recycling (U.S. EPA, 2010). Rubber, leather, and textiles accounted for 8.4% of the total MSW. Textile waste weighed around 13.12 million tons, and of that amount, 15% was recovered for reuse or recycling. Textiles can further be broken down into two categories: durable (lasting more than three years) and non-durable (lasting less than three years). Roughly nine million tons of non-durable textile items were generated in 2010. Clothing, footwear, and related products fall under the non-durable category and have a recycling rate of approximately 14% (U.S. EPA, 2010). Based on these numbers and percentages, it is clear that there is opportunity in the United States to increase the recycling rate and recover materials that are still viable for reuse and recycling.

A similar story can be told about textile and clothing waste in the United Kingdom, whose collective consumption and disposal behavior mirrors the United States'. According to the U.K.'s Waste and Resource Action Programme (WRAP), the total amount of textile waste generated in the U.K. each year is about 1.13 million tons (U.K. WRAP, 2012). About 350,000 tons are sent to the landfill. This represents

approximately one third of textile products bought in the U.K., worth £140 million in revenue if donated or recycled instead of disposed. Half of British citizens admitted to throwing at least some of their clothing in the trash because they didn't think it had value. Therefore, WRAP launched a campaign to educate the public, called "Valuing Our Clothes: The True Cost of How We Design, Use, and Dispose of Clothing in the U.K." (U.K. WRAP, 2012).

Almost half of end-of-lifecycle clothing was reused (about 540,000 tons), either in the U.K., or overseas (213,000 tons sent to developing countries). Unfortunately, 80,000 tons, or seven percent, were incinerated. WRAP recommended incentives to increase the recovery rate of clothing, including retailer buy-back programs, repair and alteration services, peer to peer swaps, and design decisions to reduce environmental impacts or increase clothing's useful life (U.K. WRAP, 2012). Interestingly, charity shops in the United Kingdom recently had difficulty meeting demand for used clothing (Let's Recycle, 2012). Because of global economic challenges since the late 2000s, the popularity of second-hand clothing has increased dramatically, contributing to charity shops' 2011 revenue of approximately £1 billion. However, two consumer behaviors diverted clothing from charity shops: retaining unused clothing in wardrobes and selling used clothing through consignment venues. Charity shops in the U.K. have asked people to consider donating their clothing instead of keeping unused clothing or selling them to consignment shops (Let's Recycle, 2012).

Researchers in France developed a conceptual model to explain consumers' motivations to shop second-hand (Guiot & Roux, 2010). The authors defined second-

hand shopping as "the acquisition of second-hand objects through methods and places of exchange that are generally distinct from those for new products" (Guiot & Roux, 2010, p.356). They specified that motivations for second-hand shopping included "the psychological and material motives that orient consumers toward second-hand products and/or channels" (Guiot & Roux, 2010, p.357). Scale development procedures were followed, including qualitative focus groups and interviews to generate items for the research instrument. One study was conducted to identify scale purification opportunities (n = 224). Finally, the scale was validated on a separate sample (n = 484).

The purified scale included 24 items, and the data indicated a hierarchical structure of second-hand shopping motivations (Guiot & Roux, 2010). Three second-order factors were identified: economic motivations, critical motivations, and hedonic and recreational motivations. There were eight first-order factors: fair price, gratificative role of price, distance from the system, ethics and ecology, treasure hunting, originality, social contact, and nostalgic pleasure. Consumers' interest in frugality contributed to economic motivations to shop second-hand. Critical motivations pertained to consumers' criticism of traditional retail channels for creating a culture of mass consumption, which was contrary to their ethical or ecological beliefs. Frugality was an antecedent to critical motivations and recreational motivations, but not economic motivations. Materialism was an inverse predictor of critical motivations, and lower levels of materialism led to increased levels of critical motivations to shopping second-hand (Guiot & Roux, 2010).

Consumers enjoyed second-hand shopping because the products gave them nostalgia value, supporting hedonic and recreational motivations for shopping (Guiot &

Roux, 2010). Second-hand shopping motivations as a whole effectively explained browsing behavior and impulsive buying behavior. Need for uniqueness also influenced all three second-hand shopping motivations. The second-hand shopping motivations identified in the research explained 46.2% of variance in frequency of second-hand shopping (Guiot & Roux, 2010). Motivations explained 31.8% of variance in number of channels visited in second-hand shopping. Critical motivations were negatively associated with economic motivations. Critical motivations accounted for 23.4% of variance in general recycling behavior.

A cluster analysis was also conducted to create four different consumer segments to explain types of second-hand shoppers (Guiot & Roux, 2010). Polymorphous enthusiasts accounted for 28.5% of the sample, and these individuals scored high on all dimensions of second-hand shopping motivations. They frequented different types of channels for a variety of product types. They were middle-aged or older and had higher than average income. Thrifty critics composed 30.4% of the sample and scored high on economic and critical dimensions. They had low scores on recreational dimensions, meaning they did not purchase second-hand products for nostalgic reasons. The thrifty critics cluster included more men than women, had a mean age of 30 years, had lower income levels than polymorphous enthusiasts, and often bought used electronics (Guiot & Roux, 2010).

Nostalgic hedonists represented 19.3% of the sample. They had low scores on economic and critical motivations, but high scores on recreational motives, especially nostalgia (Guiot & Roux, 2010). There were more women than men in the cluster, and

the mean age was 34 years. Participants had an intermediate income level, and primarily

bought used jewelry, books, CDs, and decorative items. Regular specialist shoppers

consisted of 21.7% of the sample. They scored low on all three second-hand shopping

motivations. The cluster included young people of both genders, with moderate income.

They did not often buy second-hand products, and when they did purchase second-hand,

it was for specific items such as bikes or cell phones. The researchers developed a scale

that could be used to determine if a business venture for used products were worthwhile

and viable. It also identified customer segments and highlighted the interconnection

between new and second-hand markets. There may be profitable business opportunities

for stores solely devoted to second-hand products, and for new retail stores to integrate

some second-hand products (Guiot & Roux, 2010). Regarding redesign, a similar

approach could be followed. Redesigned clothing could be sold in stores which already

offer used clothing and might also be sold as part of the assortment of a new clothing

store.

Clothing was the most commonly reused commodity in a study in Mexico.

Questionnaires were distributed to 130 individuals in a medium-sized city (Corral-

Verdugo & Figueredo, 1999). On the questionnaires, the authors defined reuse as, "an

object, which has lost its original utility, in a similar or different way than that it

previously had" (Corral-Verdugo & Figueredo, 1999, p. 813). Three multi-method

techniques were used to gauge clothing, metal, and glass reuse, including self-reported

count of how many reused items they had, self-reported frequency of reuse of the items,

and quantitative observation of reused items found in the participants' homes. Clothing

was the most reused item of the households, followed by glass, and steel. An individual's

reuse behavior of one item was not necessarily related to reuse behavior of other items

(Corral-Verdugo & Figueredo, 1999).

One study examined secondary sources of information in attempt to describe the

second-hand clothing supply and distribution chain in Malawi, a third-world African

country (Mhango & Niehm, 2005). Large amounts of second-hand clothing were

regularly imported into Malawi to be sold through informal channels such as open-air

markets, on carts or kiosks along streets, and in private homes. The authors determined

the supply chain of second-hand clothing distribution in Malawi was longer and more

complicated than in more developed countries, but not necessarily less efficient. Vendors

often made 100% profit or more from selling second-hand clothing, which presented

profitable opportunities for entrepreneurs to open brick-and-mortar consignment and

retail stores (Mhango & Niehm, 2005).

The Philippines is another country that receives large quantities of second-hand

clothing from Westernized countries such as the U.S., the U.K., Japan, and Australia

(Milgram, 2004). Since the late 1980's, when import restrictions were relaxed, used

ready-to-wear clothing has become widely integrated into Filipinos' wardrobes.

Unfortunately, second-hand clothing has displaced some of the local clothing production

businesses, causing the government to often consider bans on imported used clothing.

Filipinos have purchased a variety of used clothing from informal markets, often

managed by women. Shipments of used clothing arrived in boxes or bales organized by

clothing type and receive an A (best quality), B, or C (worst quality) ratings. Consumers

have learned to find clothing to suit their personal style, reflect current fashion trends, and display globally recognized brand names, such as Nike, Levi's, and LaCoste (Milgram, 2004). In the Philippines, like in Malawi, second-hand clothing has become an important and sought-after commodity. Used garments were widely reused; however, some items were damaged or otherwise unusable as clothing. However, damaged clothing could be down-cycled to rags, recovered for fibers, or otherwise repurposed.

A study was conducted with U.S. American participants (n = 840; 81% female, 19% male) to determine if there might be potential to include textiles in curbside recycling programs (Domina & Koch, 2002). Respondents were randomly selected and were mailed questionnaires to determine what programs were available to participants, what materials they recycled, how often they recycled, why they didn't recycle certain materials, their willingness to purchase environmentally friendly products, self-reported shopping behavior related to environmental considerations, and textile recycling behavior (Domina & Koch, 2002).

Many participants had access to curbside recycling programs (75%), some used drop-off recycling (20%), and some did not recycle (6%). Materials recycled included newspaper, various kinds of paper, cardboard, glass, plastic, aluminum, and magazines. Curbside collection facilitated higher frequency of recycling traditional materials. There were high levels of recycling reported for some nontraditional materials such as plastic bags (80%) and textiles (63%). There were no significant differences of these two materials by availability of recycling program, likely because most recycling programs do not include these items, and people have to drop plastic bags off at receptacles at grocery

or retail stores, and textiles can be sold at garage sales, given to friends and family, or donated to charity shops (Domina & Koch, 2002).

A common reason for not recycling was that a material was not included in curbside recycling program (48%). Regarding textiles, those who did not recycle textiles stated they were not included in the curbside program (68%) and they did not have enough storage space to collect used textiles (30%). There were several key differences between frequent and infrequent recyclers. Frequent recyclers had access to curbside programs, had higher environmental concern, demonstrated several ecological shopping behaviors (such as buying products with recyclable packaging), already donated textiles, and did not consider recycling textiles to be a hassle. In terms of demographic differences, frequent recyclers were comparatively older, had more children, and higher income recycled. Taken together, these results indicated households that already recycle would probably be willing to recycle other types of goods, such as textiles (Domina & Koch, 2002).

Redesigned Clothing

Post-consumer used clothing is clothing that has already been washed, worn, used, and discarded by the consumer who originally purchased it. Post-consumer used clothing is different from recycled clothing because it has not undergone remanufacturing or reconstruction but is acquired by a different consumer in its current state (Young, Jirousek, & Ashdown, 2004). Post-consumer recycled clothing, which will be named redesigned clothing in this study, requires deconstruction and reconstruction of the original garment. Redesign is a more involved process than repair and alterations a tailor

might make to fix functional issues or improve a garment's fit. Redesign could be considered a form of upcycling because it adds value by refashioning a used or discarded item into something different. Redesign could vary by the extent of the garment's change, from adding minor design details such as a decorative trim, to changes of the garment's silhouette such as adding a peplum, and to complete transformation of the garment's original purpose such as changing from a dress to a top.

Dresses, in particular are strong candidates for redesign because of the larger amounts of fabric available than pants or jackets (Janigo, 2011). The redesign process could be tailored to meet the needs of various target markets, from incorporating elements of mass production (such as computer patternmaking or industrial sewing methods) for ready-to-wear clothing, to employing high-end, hand-worked couture construction, and personalized fitting techniques for a high-quality, customized result (Young, Jirousek, & Ashdown, 2004).

Two recent books have been written on redesign. Sass Brown's book included a wealth of examples of fashion products made from pre- and post-consumer waste (2013). The book was structured as a visual documentation of examples and descriptions of redesign. The main premise was that good design will promote consumer acceptance of redesign or design from waste products – even an example of jewelry made from human hair was featured – whether pre- or post-consumer waste. Several of the designers who specialized in redesign – Alabama Chanin, Junky Styling, and From Somewhere – also were mentioned in other sustainable fashion books (Black, 2012; Fletcher, 2012). Some of the raw materials to create redesigned fashion products included used clothing,

parachutes, used menswear, used knitwear, vintage tees, military surplus fabrics, hair, flour sacks, swimwear, rope, paper, and pop tops.

Another book on redesign was written by the co-founders of Junky Styling, a small but famous U.K. fashion design business (Sanders & Seager, 2009). The book was largely a recap of the two designers' 10 years in the business of creating redesigned fashion. It recapped runway shows and events, including full color images of designs on live models. Initially, the designers focused on creating clothing from used menswear as the raw material. But, they later used other sources, such as vintage Chinese dressing gowns in their Chinese Burn collection. They added a custom redesign service to their offerings called Wardrobe Surgery, which has been patronized by celebrity Gwen Stefani. They have sold redesigns in small amounts at the wholesale level, but realized they did not want to take orders for mass quantities, as it would compromise their values. Their clothing has been sold in several European countries, but mostly in the U.K. They completed a partnership with Topshop to sell some of their designs in the chain.

In addition to the history and evolution of the Junky Styling business, there was a how-to section giving do-it-yourself enthusiasts directions on how to deconstruct and design with used clothing, formulate shopping lists, and efficiently source raw materials. There were step-by-step directions on how to deconstruct and sew iconic Junky Styling looks with six different design formulas (Sanders & Seager, 2009).

Table 2 is a summary of key findings from the sustainable fashion literature reviewed in this section and the potential impact on a redesign business.

Author(s), Year	Concepts	Key Findings/Implications	Implications for Redesign
Bhaduri & Ha-Brookshire, 2011	Social responsibility	Consumers perceived added value from a transparent supply chain and were willing to pay a premium for transparently made clothing, but only within the limits of their purchasing power.	Redesigners may experience conflict between desire to wear eco-friendly clothing and limited purchasing power.
Hyllegard, Yan, Ogle, & Lee, 2012	Social responsibility	Explicit messages on hang tags were more effective than vague messages, and third-party SR certification logos increased consumers' confidence in a claim.	Marketing messages may need to include detailed verbal explanations about the redesign process to increase confidence in the environmental and social benefits of redesign.
Peterson, Hustvedt, & Chen, 2012	Fibers and sustainability	People who had experience and knowledge of organic food and older, higher income people were willing to pay a premium for organic wool.	Older individuals might be more interested in redesign, and have higher intentions to redesign.
Norum & Ha-Brookshire, 2011	Fibers and sustainability	Price was more important to consumers than fiber origin and farming technique (such as organic farming).	Redesigners may experience conflict between desire to wear eco-friendly clothing and limited purchasing power.
Ha-Brookshire, 2012	Country of origin and sustainability	Price was more important to consumers than COP and COM, but they preferred COP/COM U.S. if prices were similar.	Redesigners may experience conflict between desire to wear eco-friendly clothing and limited purchasing power.
Watson & Yan, 2013	Fast and slow fashion	Slow fashion consumers had emotional connection to their clothing. Fast fashion consumers divested of clothing more often than slow fashion consumers.	Slow fashion consumers who have emotional connection to their clothing might be more likely redesigners than fast fashion consumers.
Kim, Choo, & Yoon, 2012	Fast and slow fashion	Participants avoided fast fashion due to poor performance, lack of uniqueness, and perceptions of foreignness of the clothing.	Fast fashion avoiders might be more likely redesigners than fast fashion consumers.
Lee, Choi, Youn, & Lee, 2012	Green fashion marketing	Educational campaigns may help to increase eco-friendly behavior. Marketing messages need to be tailored to audiences depending on their level of message communication involvement.	Marketing messages may need to include detailed verbal explanations about ecological impacts of the fashion industry to emphasize environmental and social benefits of redesign.
Hill & Lee, 2012	Green fashion marketing	Consumers had an awareness of environmental issues but lacked extensive knowledge specific to apparel industry.	Marketing messages may need to include detailed verbal explanations about ecological impacts of the fashion industry to emphasize environmental and social benefits of redesign.
Cervellon & Wernerfelt, 2012	Green fashion marketing	Consumers have more knowledge on environmental impacts of the fashion industry than they did a few years ago. Participants	Consumers who have knowledge of ecological impacts of the fashion industry might be more likely to

		expected sustainable clothing to be expensive and didn't mind paying a premium.	redesign used clothing and might be willing to pay a premium for redesign.
Ogle, Hyllegard, & Dunbar, 2008	Green fashion marketing	Environmental concern and awareness of social responsibility policies increased purchase intentions.	Environmental concern may encourage sustainable fashion behavior and intentions for redesign.
Shen, Wang, Lo, & Shum, 2012	Green fashion marketing	Participants had little knowledge about sweatshop issues and ecological fashion. Participants were more willing to pay a premium for clothing made by socially responsible businesses than environmentally responsible businesses.	Marketing messages may need to include detailed verbal explanations about ecological impacts of the fashion industry to emphasize environmental and social benefits of redesign.
Chan & Wong, 2012	Green fashion marketing	Consumers would not pay a premium or accept inconvenience for eco-fashion.	Redesigners may experience conflict between desire to wear eco-friendly clothing and limited purchasing power.
Guiot & Roux, 2010	Second-hand clothing	There may be profitable business opportunities for stores solely devoted to second-hand products, and for new retail stores to integrate some second-hand products into their assortments.	Redesigned clothing could be sold in stores which offer used clothing and might also be sold as part of the assortment of a new clothing store.
Corral-Verdugo & Figueredo, 1999	Second-hand clothing	Recycling of one type of product was not necessarily related to recycling another type of product. Textiles were frequently recycled.	People who already recycle other materials may (or may not) be interested in redesign.
Mhango & Niehm, 2005	Second-hand clothing	Street vendors in Malawi often made 100% profit or more from selling second-hand clothing, which presented profitable opportunities for entrepreneurs to open brick-and-mortar consignment and retail stores in the country.	Redesigned clothing could be sold in stores which already offer used clothing.
Milgram, 2004	Second-hand clothing	Consumers in the Philippines bought used clothing to suit their personal style, reflect current fashion trends, and display globally recognized brand names.	Individuals who already wear used clothing might be more likely to redesign clothing.
Domina & Koch, 2002	Second-hand clothing	Frequent recyclers had higher environmental concern, ecological shopping behaviors, already donated textiles, and did not consider recycling textiles to be a hassle. Frequent recyclers were comparatively older, had more children, and higher income recycled.	People who already recycle other materials may be interested in redesign and may not mind additional effort required to redesign clothing. Older individuals might be more interested in redesign, and have higher intentions to redesign.
Young, Jirousek, & Ashdown	Redesigned clothing	The redesign process could be tailored to meet the needs of various target markets, from mass market to high-end markets.	Client redesign experiences could be tailored to fit within a certain price point.

Janigo, 2011	Redesigned clothing	Older, educated, and relatively affluent female consumers were more likely to keep their clothing longer, were more informed of sustainable fashion options, and thought about the environment more often when buying clothing than younger consumers.	Older individuals might be more interested in redesign, and have higher intentions to redesign.

Table 2. Summary of sustainable fashion literature

CHAPTER 3: METHOD

The primary aim of this mixed methods study was to research the viability of a service or business involving consumers in redesigning their used garments as a sustainable alternative to disposal. Through in-depth interviews, visual analysis of consumers' redesigned clothing, and questionnaires with closed-ended items, the conditions under which collaborative redesign of used clothes might be most successful were explored. The theory of planned behavior was used as a theoretical framework for data analysis and interpretation (Ajzen, 1991).

Participant Characteristics

The 2011 study was used as a starting place for participant recruitment. Every individual in the 2011 sample of 27 women was contacted and asked to participate in the present study, in an attempt to extend and enhance the findings of the previous research. In the 2011 study, participants' ages ranged from 18-62 with a mean age of 30.37 years. The majority (89%) were Caucasian with a mean income of $81,840. It was hoped that following up with 2011 study participants could provide a longitudinal aspect to the investigation.

Since four years passed since the previous study, it was challenging to gather enough participation from the original sample. In fact, the response rate of individuals

from the previous study was only 22% (n = 6). Thus, I searched for women ages 18-65 who had redesigned used clothing in the past, whether it was a co-design with a seamstress, tailor or designer, or whether they completed redesign on their own. Having sewing and design skills was not necessarily a pre-requisite to participation. Additional participants were recruited through word of mouth, with posters displayed in a fabric store and common areas near fashion design and merchandising college students' classrooms, and through approaching clothing and fiber artists at their booths at a local art fair. It was expected that for individuals who have the skills and knowledge to complete redesign, a service might still be of interest to them if they lacked the time to complete their ideas. If professional redesigners participated, they would have expertise to share what makes a successful clothing redesign business. Questions were framed broadly, so professional redesigners could offer insight into how they might approach redesign with their clients.

<div align="center">Data Collection</div>

In-depth interviews, approximately one hour in length, were primarily held in the participants' homes, and in some cases, at participants' studios. For individuals who were in the 2011 study, participants were asked to find their redesigned garment from the previous study and to set aside the outfit. Participants were asked to arrange their hair and makeup as they would when wearing their redesigned garment ensemble. They were asked to bring out any other clothing they have had redesigned since the original study, either on their own or co-designed with a professional. They were asked to describe clothing they would like to redesign in the future and to draw sketches or make collages.

Participants were asked for permission to have their photograph taken in their redesigned

garment ensembles. Visual materials from participants' future redesign ideas (sketches,

collages, written descriptions) were collected and scanned into electronic files for further

analysis. Participants who did not participate in the 2011 study were asked to show

examples of their redesigned garments from the past four years. Some also had examples

of redesign from prior to that time period. For participants who were artisans,

photographs were taken of their studios to capture actual representations of redesign

working spaces.

<div style="text-align:center">Questionnaire and Interview Schedule Organization</div>

Before beginning the in-depth interviews, participants were asked to complete a

questionnaire tool with closed-ended questions. The questionnaires were designed to

gather data most efficiently collected in this format and took participants approximately

15 minutes to complete. In-depth interviews were constructed to add detail and rich

description to each area of interest. The questionnaires and interview schedules were

organized into nine main parts: demographics, general ecological concern (GEC), social

pressure / norms (SPN), sustainable fashion behavior (SFB), redesign behavior (including

retention, use, and divestment) for participants from the 2011 study, redesign behavior

(including garment retention, use, and divestment) between 2011 and the present for all

participants, future garment redesign intention (GRI), and perceived behavioral control

(PBC). The following demographic information were collected: age, ethnic background,

major or occupation, and yearly family income (five choices in ranges $0-25,000, $26-

50,000, $51-75,000, $76-100,000, and more than $100,000).

General Ecological Concern

General ecological concern questions were structured to gauge participants' level of concern for the environment, interest in environmental issues, and action regarding the issues (for example, conducting one's own research on ecological problems).

Social Pressure / Norms

Subjective norms are perceived expectations of important others in an individual's social group. Someone who is cooperative or collaboratively oriented will be more concerned with subjective norms than a person who is independent or competitive (Fishbein &Ajzen, 1972). These questions addressed participants' perceptions of important friends' and family members' level of concern for the environment, pressure important others' exerted on them, interest in environmental issues, and action regarding the issues (for example, conducting one's own research on ecological problems).

Sustainable Fashion Behavior

An encouraging result from the 2011 study was that participants indicated they had purchased used clothing in the past, so consumers would probably be comfortable wearing redesigned clothing (Janigo, 2011). Based on the findings, it was expected that acceptance of used clothing (including hand-me-downs, swapped clothing, vintage clothing, clothing purchased from charity shops, and clothing purchased from consignment stores) would lead to increased clothing redesign intent. Since research into sustainable fashion is ongoing in the clothing and textiles field, there was no holistic sustainable fashion measurement tool available to use in this study. Sustainable fashion behaviors were gleaned from multiple studies to generate items for this section.

The questions included socially responsible apparel (Hyllegard, Yan, Ogle, & Lee, 2012; Bhaduri & Ha-Brookshire, 2011; Dickson, Loker, & Eckman, 2009), organic and fair trade apparel (Peterson, Hustvedt, & Chen, 2012; Norum & Ha-Brookshire, 2011), slow fashion and fast fashion avoidance (Watson & Yan, 2013; Kim, Choo & Yoon, 2012), made in the U.S. (Ha-Brookshire, 2012; Peterson, Hustvedt, & Chen, 2012), second-hand clothing (Guiot & Roux, 2010; Domina & Koch, 2002), and vintage clothing (DeLong, Heinemann, & Reiley, 2005). Participants were also asked how long they kept clothing in general, if they designed and made clothing at home, and if they completed their own clothing repairs at home.

Redesign Behavior, Retention, Use, and Divestment for 2011 Participants

The questions mainly explored the use of the garment they had redesigned in the 2011 study, including frequency of wearing, how they might wear the garment, and if they were considering getting rid of it. For those who consented, participants' photographs were taken while wearing the redesigned garment in an ensemble they would typically wear. (This section was skipped for participants who did not participate in the 2011 study). The divestment section was used only if participants had divested of the garment that was redesigned in the 2011 study. Questions captured how long participants kept clothing before divestment, reasons for getting rid of redesigned clothing, and how the clothing was disposed. (This section was skipped for participants who did not participate in the 2011 study, and if participants from the 2011 study kept their redesigned clothing).

Redesign Behavior, Retention, Use, and Divestment for All Participants

These questions queried about other garments participants might have had redesigned since the 2011 study. (For participants who did not participate in the 2011 study, the questions were answered regarding clothing they redesigned in the past four years). They were asked questions about frequency of wearing, how they wore the garments, how much involvement they had in the redesign process, how much they paid for the redesign, and if they were considering getting rid of any of them. Some visual imagery was gathered of participants wearing the redesigned garments.

Garment Redesign Intention

These questions gauged future intention to redesign participants' used clothing, including types of clothing they might redesign, why they might redesign certain pieces, and how much involvement they would want to have in the redesign process. High levels of intention should indicate likelihood toward redesign behavior. However, as observed in previous research, there could be a gap between intention and behavior caused by situational barriers (Bamberg, 2013).

Perceived Behavioral Control

These questions addressed barriers consumers might face in redesigning their used clothing. From the previous study, price, effort, convenience, and risk were some of the reasons consumers were hesitant to redesign their used clothing (Janigo, 2011). Consumers generally wanted to pay less than the original retail price of the garment, which could be a challenge, given the labor-intensive processes in redesign, such as time consuming disassembly. In general, participants did not want to invest too much time or

effort in redesign themselves, since purchasing new clothing can be very easy comparatively, especially with recent technological developments in online and mobile shopping.

Participants did not want to sustain inconvenience to redesign their clothing. For example, one participant from the previous study complained about driving to the pickup location for her redesigned garment, which was in a downtown metro area with limited parking. Some consumers were nervous about ruining a treasured garment and that they wouldn't like the final outcome. Several had brought clothing they were about to donate to a charity shop, or purchased a garment from a charity shop to be redesigned. For them, the financial and emotional risk of ruining the garment was low. However, that was not always the case, since some participants brought originally expensive garments to which they had formed an emotional bond (Janigo, 2011). For these reasons, perceived behavioral control was predicted to be an important concept in the present study.

<div align="center">Developing a Conceptual Model for Redesign</div>

Upon completion of the present study, a rough conceptual model was created to explain redesign behavior. I incorporated elements from the 2011 study and the models of previous researchers who also applied the TRA or the TPB on related topics in clothing and textiles research (Ha-Brookshire & Hodges, 2009; Kim & Karpova, 2010). The below model summarizes findings from the previous study (Janigo, 2011).
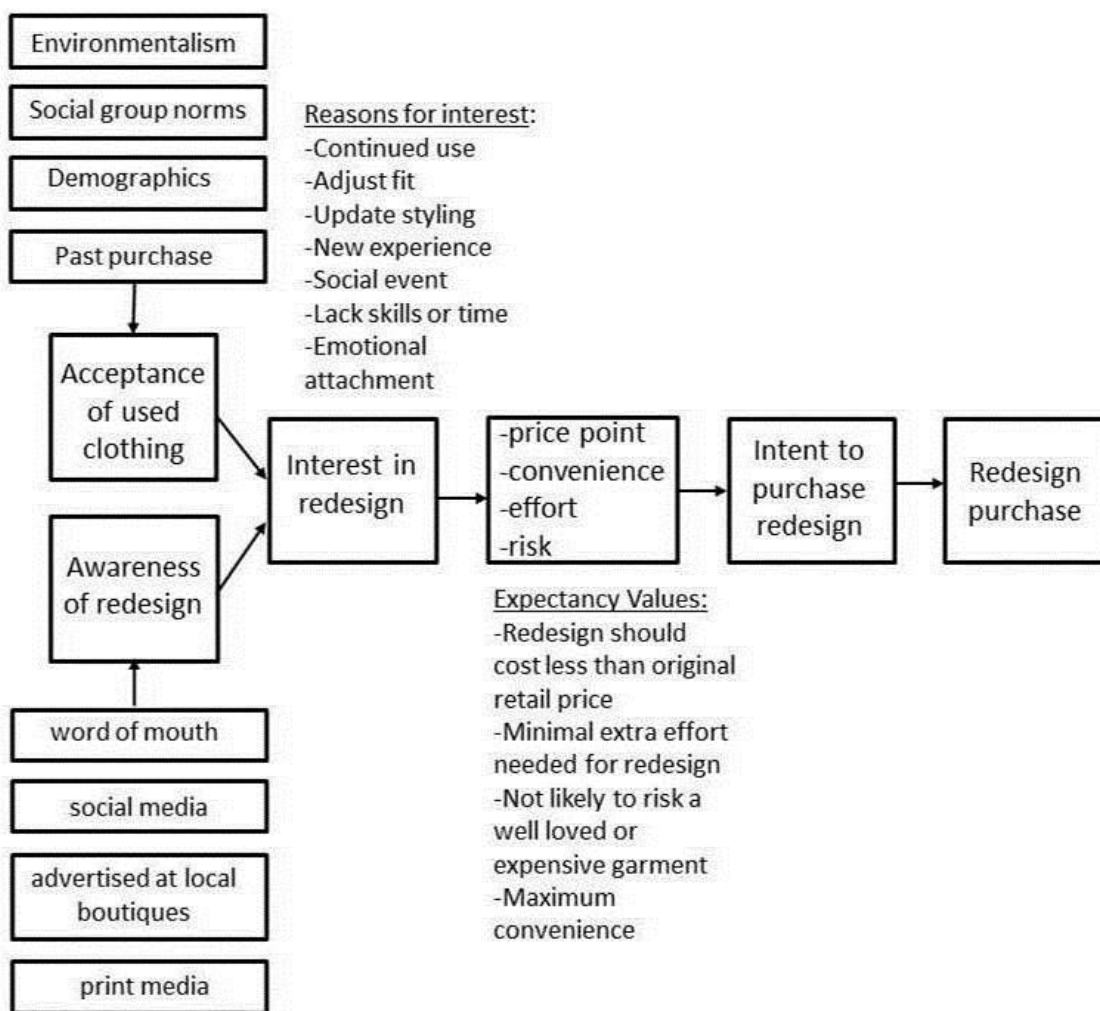
Figure 5. Visual representation of Janigo, 2011

Ha-Brookshire and Hodges developed a conceptual model for used clothing

donation behavior (2009). Clothing donation is a closely related concept to redesign

because both are sustainable end-of-lifecycle alternatives to landfill disposal. Instead of

the social norms variable found in TRA and TPB, the researchers renamed this

component as social pressure regarding ethical consumption. Researchers used the TPB

to predict consumer behavior related to counterfeit fashion goods (Kim & Karpova,

2010). Consumption of counterfeit goods is an ethically charged topic, as is sustainable

consumer behavior. People might assume someone who buys counterfeit goods is unethical, converse to how people might assume someone why buys sustainable clothing is ethical. Similar to Ha-Brookshire and Hodges (2009), Kim and Karpova (2010) selected attitudes and subjective norms as antecedents to behavioral intentions. They also included perceived behavioral control, following the updated theory of planned behavior (Kim & Karpova, 2010).

Upon review of the literature and the findings from the 2011 study, Figure 6 was the proposed conceptual model for the present study, with research questions, questionnaire items, and in-depth interview items mapped to the concepts of interest. Some of the items from the previous study's conceptual model were out of scope and were not explored in this study (awareness of redesign and its antecedents).
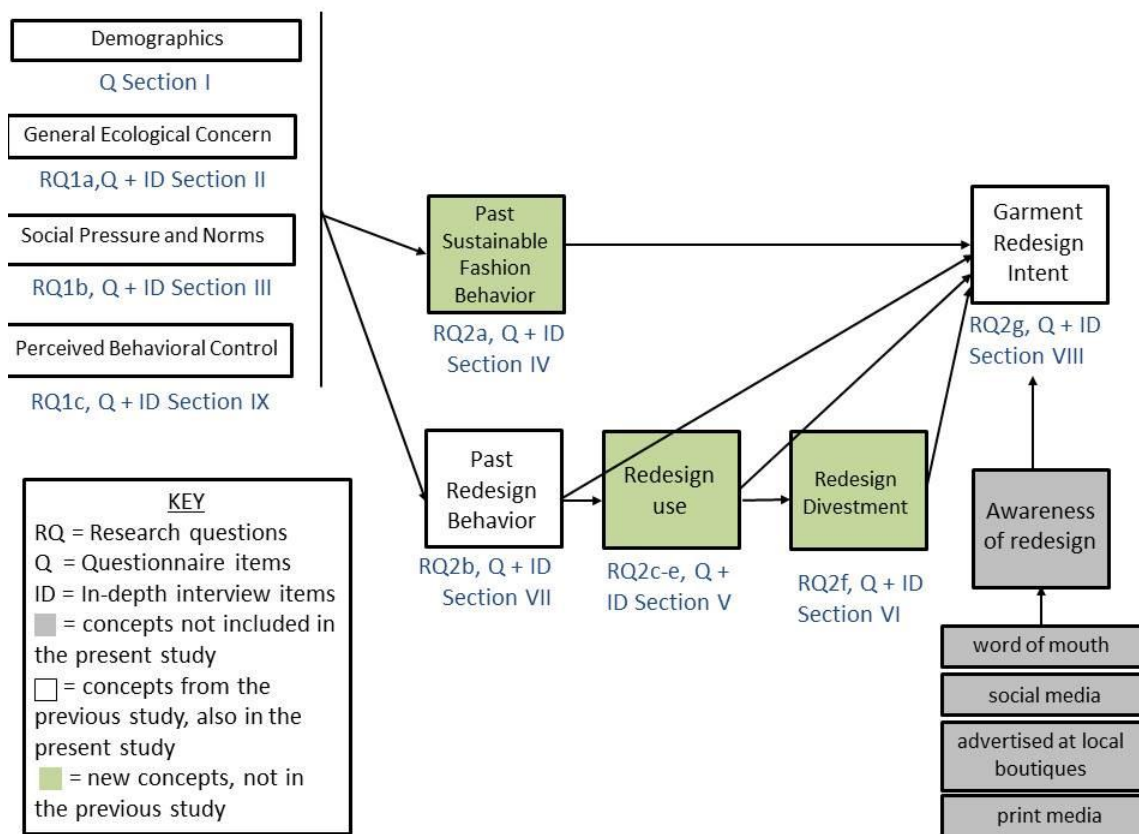
Figure 6. Visual representation of the present study with research questions, questionnaire items, and in-depth interview questions mapped to the model's concepts

Data Analysis

All in-depth interviews were recorded using audio devices. I transcribed all audio recordings myself, reviewing the progress frequently. Detailed field notes were taken during the interviews. Transcripts were first read several times to gain a high-level understanding of the data. Then data were organized according to themes found in the theory of planned behavior, allowing for emergent themes.

Phenomenological data analysis procedures were followed, as specified by expert qualitative researchers (Creswell, 2007; Moustakas, 1994). Within the data, I searched for significant statements and highlight these quotes in my manuscript, capturing important

points of view from the participants (Moustakas, 1994). These were used statements to develop to clusters of meaning and holistic descriptions of the phenomena (Moustakas, 1994). Finally, narrative descriptions of each theme were constructed to capture the essence of participants' experience with the redesign process and future intention to redesign their clothing (Bloomberg & Volpe, 2008). My advisors were consulted to provide an outsider's perspective (Lincoln & Guba, 1985).

Some components of quantitative data analysis were employed to analyze responses to closed-ended questionnaires, although the final sample size of 30 was too small for complex statistical analysis. Frequencies were reported in the upcoming results section, along with the narrative descriptions of participants' experiences. Scale and ranking questionnaire items were analyzed through SPSS to explore central tendencies and the distribution of the data.

CHAPTER 4: RESULTS AND DISCUSSION

Participant Characteristics

First, demographics of the 30 women who volunteered to participate in the study are discussed. Their ages ranged 19-83, with a mean age of 43.75 years. Two participants' ages fell outside the intended target age range for the study. However, when the outlier (P23, age 83) was excluded from the mean age calculation, the mean age dropped by one year. P18 was age 66, one year outside the intended age range. These two participants' data were retained because they did not represent significantly different patterns from other participants and did not have much effect on the mean age. Also, participants were given the study information sheet with participation criteria but were

self-selected volunteers. Participant self-selection made it difficult to exclude anyone

prior to gathering demographic information on the questionnaires, which were

administered before the interviews. Two participants, P24 and P29, did not disclose their

age on the questionnaires. Below is a histogram for participants' age.
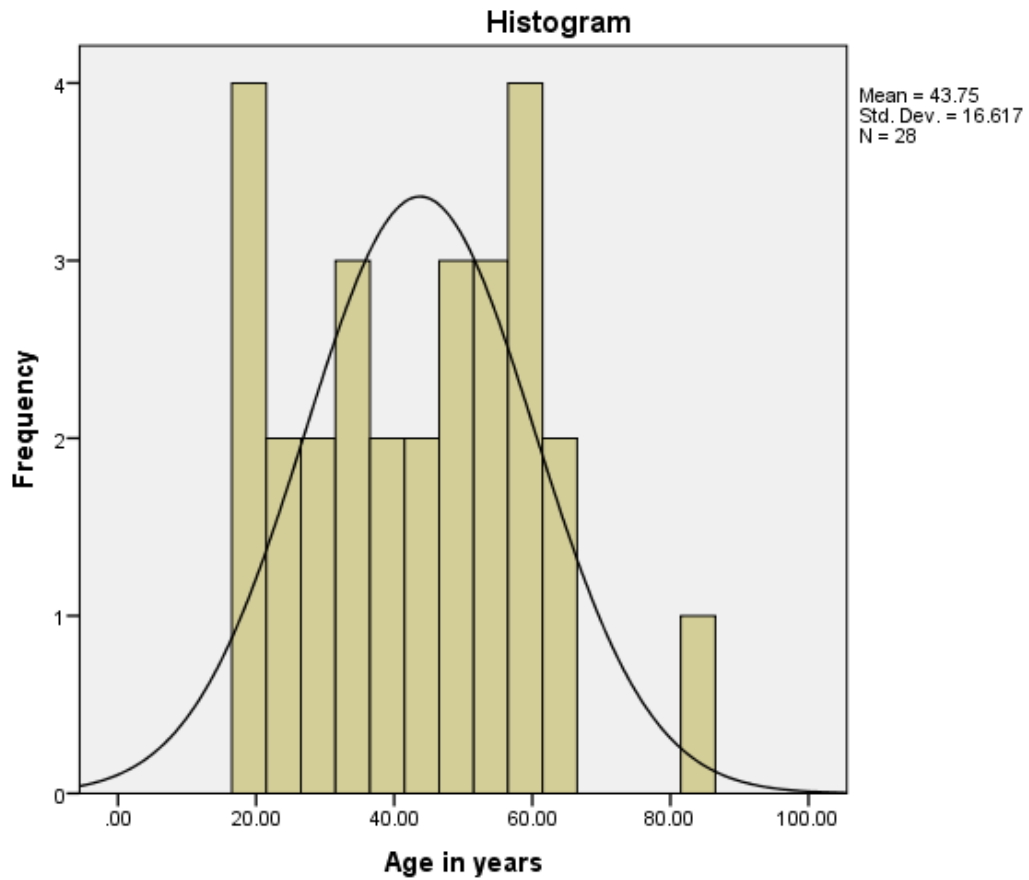
Figure 7. Age histogram

In addition to age within the target range, the other eligibility requirement was for

participants to have redesigned used clothing in the past, whether it was a co-design with

a seamstress, tailor or designer, or whether they completed redesign on their own.

Question 30 on questionnaires was used to confirm if participants met the criteria. The

question asked participants to indicate (yes or no) whether they had redesigned used

clothing since 2011. Four individuals of the 30 reported they had not. However, three of

the individuals were participants from the 2011 study (P2, P4, and P5), and they had

valuable information about how they used their garment that was redesigned as part of

the previous research. Their data were retained. One individual (P22) gave a no answer to

question 30. In interviews, P22 stated she wasn't sure exactly when she had the

bridesmaid dresses remade into a quilt, but she thought it was more than four years ago.

The data set was retained because it did not appear to be significantly different from the

remainder of participants, and her perspective as a redesign consumer was useful.

The majority of participants (n = 26, 86.67%) were Caucasian, with one

participant black, one Asian, and two of other ethnic background. Participants were asked

to indicate annual family income on a five-point scale (1 represented $0-25,000; 2 was

$26,000-50,000; 3 was $51,000-75,000; 4 is $76,000-100,000; and 5 was more than

$100,000). No participant fell into the $0-25,000 range, while 28.57% (n = 8) had an

income of between $26,000-50,000. Only two participants were in the $51,000-75,000

range, but 25% (n = 7) made between $76,000 and $100,000. The largest percentage of

participants 39.29% (n = 11) had annual family income of more than $100,000 per year.

Below is a histogram for participants' annual income.
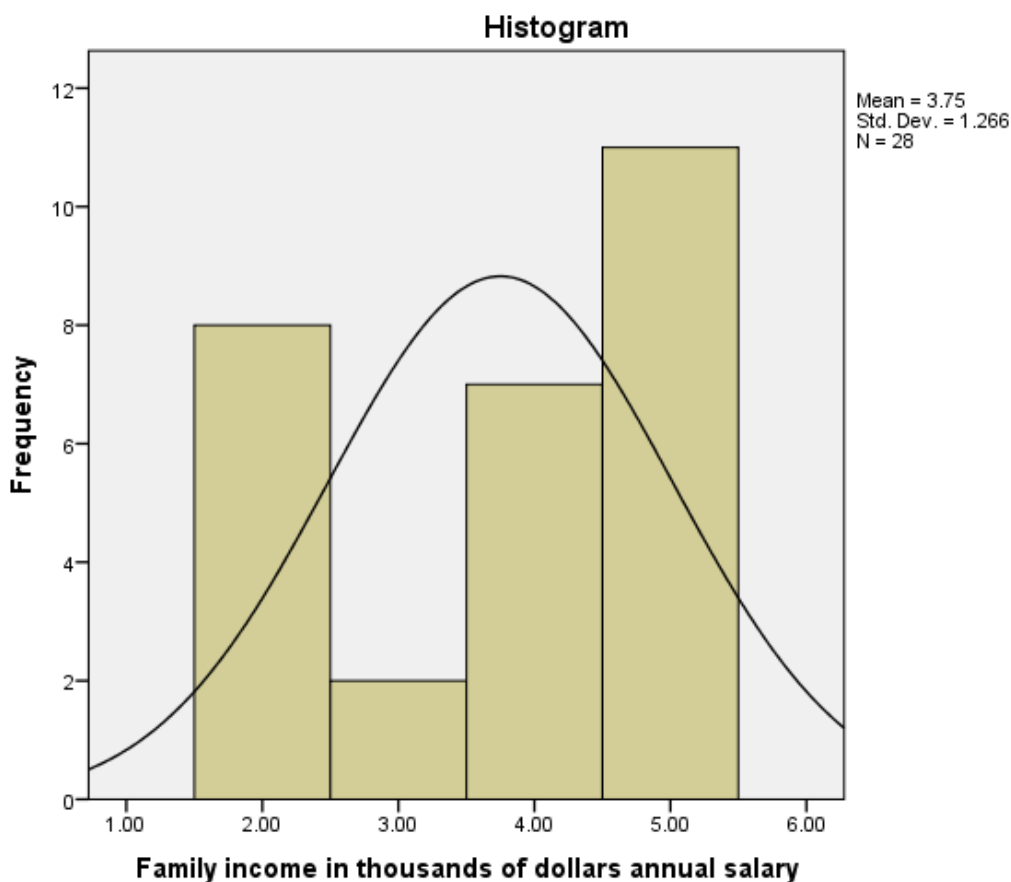
Figure 8. Family income histogram: 1 = $0-25,000; 2 = $26,000-50,000; 3 = $51,000-
75,000; 4 = $76,000-100,000; and 5 = more than $100,000

Regarding occupation, participants' work covered a wide range of industries, such

as law, health care, social work, fashion design, and freelance art. Some groupings were

identified among occupations. Twenty percent (n = 6) were students, 23.33% were some

type of artist or freelancer (n = 7), and 36.67% (n = 8) worked for retail companies. Two

participants were retired, and 23.37% (n = 7) held a variety of other occupations.

The mean age for all participants in the present study (43.75 years) was older

than the 2011 study (30.37 years). However, the 2011 study had primarily college

students and young professionals, although some older individuals participated. The

inclusion of participants recruited from the local art show, older professionals, retired,

and those who had been sewing for many years likely had an impact on the mean age.

Overall, the participants in the present study were mainly Caucasian, middle aged, and

relatively affluent. Below is a chart summarizing participant demographics.

Participant	Age	Ethnic Background	Occupation	Family Income	Redesign Grouping
P1*	35	Caucasian	speech pathologist	$76-100,000	RC
P2*	26	Caucasian	retail merchandiser	$26-50,000	RC
P3*	64	Caucasian	retired	$76-100,000	RE
P4*	63	Caucasian	law professor	$100,000+	RC
P5*	35	Other	physician's assistant	$100,000+	RC
P6*	58	Caucasian	clinical social worker	$76-100,000	RE
P7	35	Caucasian	international transportation specialist	$26-50,000	RE
P8	51	Black	student	$26-50,000	RE
P9	30	Caucasian	product development manager	$100,000+	RE
P10	25	Caucasian	merchandise specialist	$26-50,000	RC
P11	21	Caucasian	student	$100,000+	RC
P12	20	Asian	student	$76-100,000	RE
P13	20	Caucasian	student	$100,000+	RC
P14	19	Caucasian	student	$100,000+	RC
P15	45	Caucasian	project manager	$100,000+	RE
P16	30	Caucasian	teaching specialist	$51,000-75,000	RP
P17	50	Caucasian	technical designer	$100,000+	RP
P18	66	Caucasian	fiber artist	$51,000-75,000	RP
P19	55	Caucasian	freelance technical designer	$26-50,000	RP
P20	46	Other	merchandise specialist	$26-50,000	RE
P21	59	Caucasian	artist	$26-50,000	RP
P22	37	Caucasian	paralegal	$76-100,000	RC
P23	83	Caucasian	retired	$26-50,000	RE
P24	No response	Caucasian	fiber artist	No response	RP
P25	56	Caucasian	freelance textile artist	$76-100,000	RP
P26	49	Caucasian	technical designer	$100,000+	RE
P27	57	Caucasian	facilities manager	$100,000+	RP
P28	38	Caucasian	student, Ph.D.	$100,000+	RP
P29	No	Caucasian	fiber artist	No response	RP

	response				
P30	55	Caucasian	seamstress	$76-100,000	RP

Table 3. Demographic summary. The asterisk denotes participants who were part of the 2011 study. Most of the participant numbers in the previous study were different. P2 was P4, P3 was P15, P4 was P18, P5 was P22, and P6 was P30.

After data were collected and analyzed, another way to group participants emerged as a theme. Participants intuitively fell into three groups based on their level of experience with redesign. The first group was labeled Redesign Consumers (RC), which consisted of 30% of participants (n = 9). The mean age for RC individuals was around 31 years. Redesign Consumers were defined as someone who either purchased redesign as a service or product or else completed redesign without advanced sewing and fashion design skills. The second group was labeled Redesign Enthusiasts (RE), which consisted of 33.33% of participants (n = 10). The mean age for RE individuals was around 47. Redesign Enthusiasts were defined as someone who redesigned clothing for themselves, implementing advanced sewing and fashion design skills. Often, RE participants had completed multiple redesigns and regularly redesigned clothing for themselves. They may have had a fashion design degree or else several years of sewing or design experience. The third group was labeled Redesign Professionals (RP), which consisted of 36.67% of participants (n = 11). The mean age for RP individuals was around 51 years. Individuals in this group had sold redesigned garments in the past, but may have also redesigned clothing for themselves.

Types of Redesigners - Redesign Consumers

First, redesigns of Redesign Consumers will be discussed. Three RC individuals had brought items to professional seamstresses to be redesigned, making special requests

outside of normal tailoring operations. P1 had a tailor add a modesty panel to a dress that had a lace-up back to make it less risqué. P4 took a vintage dress that belonged to her mother to a tailor to transform an older-style silhouette to be more modern. The change entailed shortening the dress length, removing shoulder pads, and reshaping the shoulders, sleeves, and armholes. P13 had taken several pieces to a tailor to redesign, including an asymmetrical hem with beaded fringe made from '90s style tube dress, a chiffon high-low hem long sleeve top made from the skirt of an evening dress, and a short-length mixed-stitch sweater dress made from a longer sweater dress by removing a middle panel.

Figure 9. Redesigned clothing belonging to P13

Two RC participants made redesign requests of relatives. P10 had her grandmother make several swimsuit cover-ups from her grandfather's tropical printed button-down shirts. The men's shirts were transformed into swimsuit cover-ups by removing the sleeves, re-cutting the armholes, and shaping the waist. P22 decided to

make use of three satin bridesmaid dresses she no longer wore and asked her aunt to make a quilt with the fabrics.

Figure 10. Quilt belonging to P22, made of bridesmaid dresses

P5 had purchased a redesigned dress, which was made from three plus-sized women's tops. She bought the dress from a consignment shop that had a redesign contest involving local fashion design college students and industry professionals. The contestants redesigned used clothing from the shop and displayed the new looks in a runway show. The redesigned clothing was then for sale after the show and later at the shop. The dress that P5 bought was the winning design and had a knit sweetheart style bodice, woven straps, a full woven skirt, a wide sash, and an invisible zipper at the back.

Figure 11. Redesigned dress belonging to P5

Two participants redesigned items themselves, mainly by cutting garments. P11 redesigned a game day tank top and high-waisted denim shorts. She had the idea to make a fashionable game day tank top from a friend. She cut off the sleeves of a jersey with her college's logo and colors, cut the body to be shorter, and cut the hem so it could be tied in a knot. She said she held up the shirt to her body to decide how wide she wanted the shoulders. She and her friends made high-waisted denim shorts together. They looked on Pinterest for ideas and instructions on how to make the shorts. They all bought a few pairs of high-rise used jeans from Goodwill. They had ruined a few pairs of the pants while learning how to redesign them before having success. They made the shorts by cutting the legs off to the desired length and then used a tweezers to make a width of fringe at the leg openings. P13 made a pleated skirt from a dress by cutting off the bodice with enough fabric left above the waistline to fold the excess under as a make-shift waist facing. She did not finish the raw cut edge at the waistline.

Figure 12. Redesigned items from P11 (left) and P14 (right)

Types of Redesigners - Redesign Enthusiasts

Next, redesign enthusiasts will be discussed. An interesting case is the story of P3, who would have been classified as a Redesign Consumer in the 2011 study. After the study, she had taken a semester-long college-level sewing class to improve her skills and had discovered multiple ways to redesign clothing. She said she was inspired to do more redesign after the study and would like to form a clothing redesign group with members of her neighborhood. She had made napkins for her children from her husband's woven button-down shirts and a color-blocked denim tote from used jeans. For class projects, she made an A-line skirt for herself from a full pleated skirt that she no longer liked. She also made a two-piece children's outfit by combining red ditsy floral fabric scraps (left over from making a dress for herself for a trip to Africa) and striped fabric from a woven shirt. She made an infinity scarf and button down shirt from tie dyed recycled fabric. P3

had plans to continue to use her newfound redesign skills for activism and causes, such as

neighborhood organization and ways to benefit an orphanage in Uganda.

Figure 13. Redesigned items from P3, RE. See Appendix E for more images of items P3 had made after the 2011 study.

P6 shared a similar story to P3, that after participating in the 2011 study, she was

inspired to redesign used clothing. She said that she has always known how to sew quite

well, but that she had not really considered redesigning used clothing before she was

given the idea in the previous study. She made several pairs of boxer shorts for male

relatives from second-hand silk skirts. She redesigned her daughter's wedding dress by

dyeing it blue, removing beads from the bodice and placing them in new areas,

shortening the skirt to tea length, and reshaping the skirt silhouette. Her daughter wore

the dress for semi-formal events, such as weddings of friends and family.

Figure 14. Redesigned dress from P6, RE, front view (left) and back view (right)

P9 was still in the process of redesigning a floral printed corduroy Isaac Mizrahi

jacket into a pencil skirt at the time of interviews. She explained her creative process in

detail and said she was inspired by the work of Elsa Schiaparelli.

> P9: I got a jacket from the thrift store. It was like six dollars, and then I cut all the seams and deconstructed ... I bought it because I liked the print, basically. It's actually a Target jacket, an old Isaac Mizrahi, and it's a corduroy fabric ... I'm making it into this, like, high-waisted pencil skirt ... I took the collar and I flipped it ... I've taken the sleeves and have kind of, um, pulled them behind and have just wrapped them in a knot ... You can't tell from the front at all that it's a jacket, but if you saw the back, you'd be questioning maybe that was something else at one time ... I had to take off the two front panels. The jacket was thankfully a bigger size so I had quite a bit of fabric to work with ... I'm fitting that obviously to be a skirt and not so much fullness. And then I'll have an exposed zipper up the back ... I might have to fold in and tuck the sleeves and then tack, like, sew those down so they're not as bulky. Then you could probably like sew [the sleeves] into the zipper. [I'm] still working through the design. It's a process.

P26 transformed a size 3T children's holiday dress into a costume for her dog. She had a party at her house to watch and celebrate a red carpet movie awards event and wanted to dress her dog up as one of the movie characters for a film that was nominated. She said this was the only redesign she has done in a while, but when she was in college, she was an avid thrift shopper and redesigner. She used to buy brightly colored and loudly printed vintage quilted robes from the '50s or '60s from thrift stores to change them into suits.

> P26: You could just chop off the bottom, and then you had a jacket. And there were buttons on them, and a lot of times they had like Peter Pan collars. And then I would take the bottom half and turn them into a skirt. I made probably six of those and ... I was starting to give them to some of my friends. But, you know, how you find things in vintage clothing stores and then thrift or vintage, suddenly the supply dries up somehow. But I always thought those were kind of funny ... But I remember one time I put a feather boa collar on one of them.

Figure 15. Redesigned toddler dress to dog outfit from P26, RE

P12 has been redesigning clothing for five years into outfits inspired by traditional

Hmong dress. She has created a collection of brightly-colored outfits incorporating

themes from her culture (such as pleats and embroidery), which she wears for local

fashion shows and celebrations. She maintains a journal with rough sketches, design

ideas, magazine tears, and other types of inspiration. She said she has a working

knowledge and skill level of garment construction, but her mother handles the more

complex operations. P12 usually directs the process, sketches the design, clips or pins

fabrics and components together on herself and her sister before they are sewn, and is

present during every step. Her raw materials are often from an array of sources, including

parts of Halloween costumes, head wraps, scarves, corset-like tops, traditionally

embroidered fabric, old clothing, and cheap clothing bought on sale. Here is a summary

of her process, in her own words.

> P12: I usually co-design things with my mom because my sister and I have always participated in fashion shows since we were in high school, so it's always been a family tradition to just keep on designing. Every year we always design things together, so my mom always helps us as well. We're doing smaller things, and she's doing the bigger things ... I usually sketch it out, or I look through magazine pictures or pictures online of similar things that I kind of get inspiration from. I would also physically like clip it together as if it's like, so before we sew it, just pinning it. I probably have, a larger portion, even though she does sew. I direct the sewing, so if things are looking a little off, or unexpected, like, things happen, like we can always change it and tailor it to look in the way I would picture it. I always come up with the ideas. I always come up with how we're going to put things together, what materials we can use.
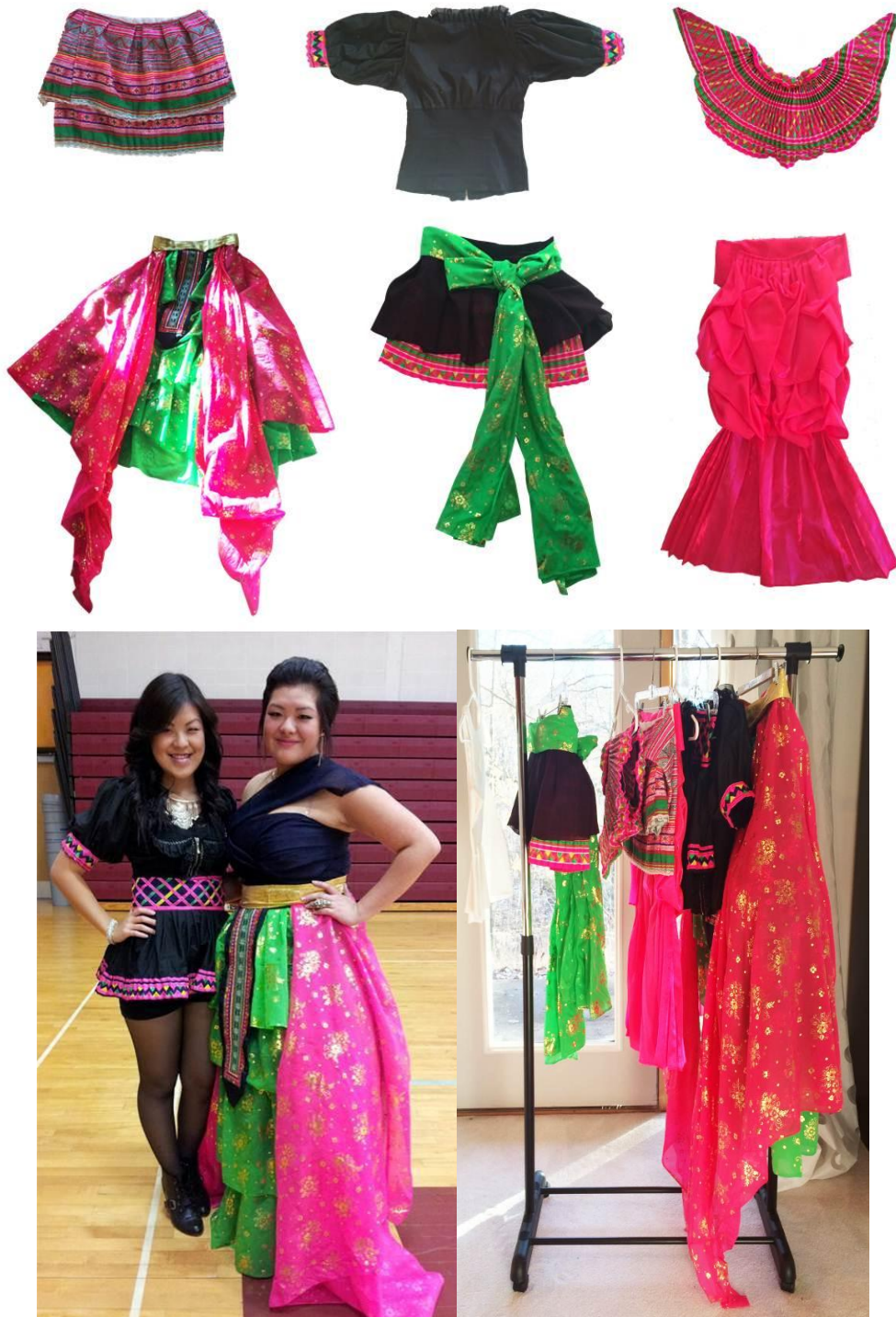
Figure 16. P12, RE, with her sister in Hmong-inspired costume made from redesign (left) and a rack in P12's home to store the outfits (right)

P20 redesigned clothing and other items for herself and her daughter. She made a plaid handbag, a tea length open-back dress for her daughter to wear to prom, a maxi dress, a shorter flared dress, a pillow, and several tops. She was resourceful when it came to finding raw materials for designs. She looked for items while on vacation, shopped for used clothing at Goodwill, and even used a floral bed sheet to make the short flared dress. She always completed the construction, except for when making her daughter's prom dress. She ran out of time working through the night on the dress, so her mother finished installing the lining.

Figure 17. P20, RE, redesigned items, including tops, dresses, a handbag, and a pillow

At the time of the interview P15 was preparing to clear out unwanted items from her house and closet. She had piles of clothes several feet high, covering nearly every piece of furniture in her living room. She planned to do a holistic review of her wardrobe to determine which things she should get rid of, and this gave the PI the perfect chance to see what she had redesigned. She began sewing at a very young age and had a skill set that left almost no constraints when it came to modifying clothing. P15 had redesigned the majority of her wardrobe because she enjoyed sewing and customizing pieces to suit her body and style. Almost everything was fair game for her, and she had grown accustomed to making her clothing fit and look just the way she wanted it. She had redesigned tops, sweaters, dresses, leg warmers, skirts, scarves, shorts, and jackets, among other things. Images of her redesigned clothing were captured and will be shown below, but it is important to note that there were so many redesigned items that it would be very difficult to show all of them.

Of all the redesign enthusiasts, P15 seemed to have had the greatest potential to make money from her work. For a number of years, she kept a blog to document her various redesigns and share her work with other people, thrumypeepers.blogspot.com. The website is still active; however, it appears the last post was dated May, 2013. She said she no longer blogged and did not seem interested in selling her items. For this reason, she was not classified as a redesign professional; however, she had many high quality items that could have been sold at art fairs or on Etsy, rather than being given away. She had a lucrative fulltime career at a large retail company and seemed to regard redesign as a hobby for fun in her spare time rather than a serious business venture.

Figure 18. P15, RE, redesigned casual clothing

Types of Redesigners - Redesign Professionals

The next group of individuals that will be discussed is the Redesign Professionals. These individuals redesigned regularly and often, creating saleable items including wearable art garments, hats, scarves, jewelry, jackets, fur coats, hand bags, women's clothing, fiber art wall hangings, quilts, teddy bears, pillows, placemats, and rugs. As with P15, these participants had made so many redesigned items that it would be very difficult to display all their work, so examples are shown. Additionally, since they are professionals, the items they already sold were not available for photography.

Although most of the RP individuals had a wide array of skills, they usually specialized in a specific product category. For example, P16 enjoyed biking, so many of the items she made were purchased by avid bikers. She mainly sold the wool hats she had designed for biking in the winter, but she also made herself and her husband biking jackets, tool cases, and bags.

Figure 19. P16, RP, handbag, biking jacket, bike tool holder, and biking hats of redesigned clothing

P29 and her business partner sold wool scarves and other accessories at art fairs. They made the items from felting used wool sweaters, sourced from second-hand stores, in the washing machine. P27 also sold mainly at art fairs. She specialized in loose and

flowy pieced tunic tops and dresses and had developed a system of efficiently making

these items, which she sold for $45-$200, depending on the piece.

Figure 20. P27, RP, redesigned clothing for sale at art fairs

P19 made tote and satchel bags from bivouac supplies in olive drabs and camouflages she'd purchased at military surplus stores. "They were the bivouac things [for] the military. They were waterproof. I would call that fabric ... oilskin ... impervious to weather," -P19. She also made tote bags from cloth sacks which contained harvested coffee beans. She lived in an apartment which had a storefront on the first floor, in a neighborhood close to an arts district. She had participated in local art crawl events and also planned to sell the bags on Etsy.

Figure 21. P19, RP, handbags and tote bags made from military surplus items and coffee bean bags

For a time, P30 had a partnership with a vintage shop owner. She updated and repaired the vintage clothing sold in the store and sometimes fulfilled specific requests for the store's customers.

Figure 22. P30, RP, redesigned vintage clothing

Three of the participants (P18, P21, and P24) considered themselves as fiber artists. They specialized in couture construction methods and hand-crafted details to make wearable art pieces, some of which retailed for more than $1,000 at boutiques, runway shows, and other events. These individuals had many years of experience and had fine-tuned skills in needle punching, resist dyeing, stencil printing, and an array of embellishment techniques to create nuanced bricolage looks. They discussed how they were still learning and expanding their skills into other techniques. P21 showed examples of sun printing, which was done by saturating fabric yardage in dye solution, placing items (such as doilies) on the fabric, putting wax paper on either side, and leaving the package out in the sun. The items on the fabric caused the dye to migrate away from

those areas, and the sunlight set the dye in the rest of the fabric. P24 was exploring eco-

dyeing, which used materials found in nature as dye stuffs.

Figure 23. P18 overdyed redesigns

Figure 24. P21 embellished redesigns

Figure 25. P24 overdyed and embellished redesigns

Other participants (P28 and P25) also worked with high-end original garments.

P28 had previously worked for a company called Foxx and Furs that repurposed vintage

fur coats into other items at clients' requests, such as teddy bears, stoles, vests, and

sweater collars. She had learned the skills specific to working with fur, such as piecing

pelts together so the seams did not show color differences and so the fur faced in the

same direction. One of her recent fur redesigns was featured in a museum exhibit for

sustainable fashion. P25 sewed for a local designer label as one of her freelance projects.

She was given vintage silk kimonos to deconstruct and remake into the designer's newly

conceived garments, usually shorter length robe-style jackets. She said that at times it

could be intimidating to approach a new project with the knowledge that the original

kimono might have cost the designer $500-$1000.

Figure 26. Redesigned kimono jackets made by P25, RP. The jackets were made from deconstructed vintage silk kimonos.

Five participants had redesigned items for clients to celebrate life events, such as

a college student leaving home for the first time, and to commemorate loved ones who

had died. P30 created woven memory rugs on looms in her studio from loved ones'

clothing. The rugs were a utilitarian way for family members to retain the clothing and to

remember the person who had owned them. P25 designed small teddy bears of deceased

individuals' clothing, and the bears' outfits were intended to convey the person's style

and interests. Both P25 and P30 made t-shirt quilts and memory pillows.

Figure 27. T-shirt quilts made by Redesign Professionals. Quilt on left made by P25. Quilt on right made by P30.

Figure 28. Memory pillows made by P25 and P30. The pillows in the two images in the upper right corner were made by P30, and the rest by P25.

Figure 29. Memory bears made by P25

Taking a closer look at the occupations of Redesign Professionals, it appeared redesign was not their main source of income. Indeed, three of the 11 (27.27%) listed other fulltime jobs on questionnaires (P16 teaching specialist, P17 technical designer, and P27 facilities manager), so any profits made from redesign supplemented their annual income. P28 had just started a Ph.D. degree, so her studies and graduate assistantship were considered her main occupation. She said she likely would not be as active with redesign in upcoming years while earning the degree.

Seven participants (64.64%) listed occupations such as artist, fiber artist, seamstress, freelance technical designer, and freelance textile artist that implied they were chiefly self-employed. In reviewing the transcripts from these seven RPs, they discussed a wide variety of short-term or part-time jobs they combined to make a living. For example, P24 discussed just having finished a short-term project to design and make costumes for a theater production. P30 indicated that she worked with furniture,

sculpture, and industrial design projects as much as she did with clothing and soft goods

such as rugs. P29 directly said that redesign was not her main source of income. "I don't

have to live on this salary ... If you had to make a living on this, it would be more

challenging ... One year to the next, you have to keep expanding ... can you get your

bottom line costs down?"-P29.

Participant	Age	Ethnic Background	Occupation	Family Income	Redesign Grouping
P16	30	Caucasian	teaching specialist	$51,000-75,000	RP
P17	50	Caucasian	technical designer	$100,000+	RP
P18	66	Caucasian	fiber artist	$51,000-75,000	RP
P19	55	Caucasian	freelance technical designer	$26-50,000	RP
P21	59	Caucasian	artist	$26-50,000	RP
P24	No response	Caucasian	fiber artist	No response	RP
P25	56	Caucasian	freelance textile artist	$76-100,000	RP
P27	57	Caucasian	facilities manager	$100,000+	RP
P28	38	Caucasian	student, Ph.D.	$100,000+	RP
P29	No response	Caucasian	fiber artist	No response	RP
P30	55	Caucasian	seamstress	$76-100,000	RP

Table 4. RP demographic summary

General Ecological Concern

Next, the results of the TPB concepts will be discussed, starting with General

Ecological Concern. A total GEC score was calculated for each participant from

questionnaire responses to four questions: 1. Are you concerned about the environment?

(check yes or no), 2. Do you ever think about ecological issues? (check yes or no; then

check which ones from a list of seven issues), 3. Have you ever done your own research

on ecological issues? (check yes or no; then check sources consulted from a list of eight

choices), and, 4. Have you ever modified your behavior to minimize your impact on the

environment? (check yes or no; then check ways behavior was modified from a list of nine choices).

The GEC score summed responses to the four questions, assigning one point for question one if yes was checked, adding the number of checks for issues they thought about, adding the number of sources consulted for research on environmental problems, and adding number of ways participants had modified their behavior to reduce impact on the environment. All of participants indicated they were concerned about the environment. All participants also marked that they were concerned about ecological issues and checked 2-7 (the maximum) of the listed issues. Interestingly, almost half of participants (48.28%, n = 14) had not done their own research on environmental issues, so number of sources consulted ranged from 0-8 (the maximum). Only one person stated they had not changed their behavior to minimize their impact on the environment, and the remainder of participants ranged from 2-9 (the maximum) ways they had changed their behavior.

Summed GEC scores ranged 6-23, and no one had the maximum score (25) or the minimum score (0). The mean score for GEC was 14.48, calculated on 29 responses. Note that one of the 30 participants, a redesign professional, did not complete a questionnaire, although effort was made to follow up and gain the missing questionnaire responses. Comparing GEC means by redesign group, the mean GEC for RC individuals was 12.56 (n = 9), for RE 18.9 (n = 10), and for RP, 18.1 (n = 10, since one of the responses was missing). RE and RP participants had comparatively higher general

ecological concern scores than RC participants. Below is a histogram showing the distribution of GEC scores for all participants.
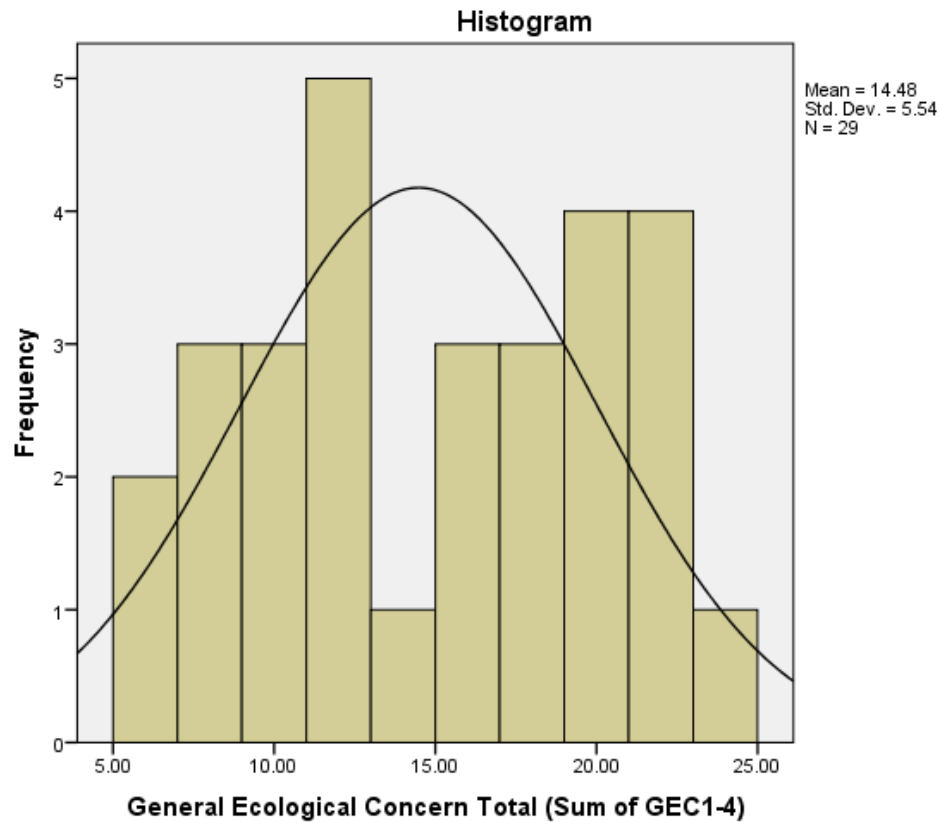
Figure 30. General Ecological Concern histogram

Much qualitative data was gained from discussions with participants on their general ecological concern. The four GEC questions from the questionnaires were rephrased as open questions in the interviews, with additional probing questions to promote more discussion. Several participants expressed worry about the future as reasons why they were concerned about the environment. "This is the one earth that we have and we need to take care of it. And I don't think we've been doing the best at it, so just a little nerve wracking for the future" –P2. "There is no future for the human race if

we don't do something" –P19. Participants who had children and grandchildren seemed

to have intensified emotions of concern for the environment.

> P1: I have kids that will be part of the environment for much longer than I will be.
> P15: I am concerned because I want to keep the earth as wholesome as it can be, and concerned about what my son's life will be like in the future.
> P8: I'm concerned about the environment because I have grandchildren who will live in this environment when I'm long gone.
> P29: I have three kids, and I think you just hit an age where you start to wonder … we're a little bit excessive in how we consume.

Three participants had grown up on a farm and said their environmental concern

stemmed from their experience with the family farm.

> P1: My parents are actually farmers so they try to take good care of the land because it's good for all involved, the farmer included.
> P18: Yes, for one thing, I grew up on a farm ... But back in those days too you'd have, the chickens were free range, everything was. The fields were fertilized with the cow manure from the barn.
> P25: Growing up on a farm ... planting, and soil preservation and water preservation ... People [nowadays] ... are destructive to the environment.

Others' environmental concern was related to the impact on health. "I buy organic

... I guess I care more about what I put into my body and just the chemicals and that type

of thing..." –P10. Another participant expressed similar opinions. "I'm on a little bit of a

food kick. I'm a little bit worried about the pesticides and the amount of ... chemicals we

use on our food, including the amount of antibiotics, the hormones, the close quarters

they keep them [animals raised for meat] in..." –P29. One person was a breast cancer

survivor and suspected toxicity of environmental factors as a cause for high cancer rates

in Western societies.

> P28: Yes, I am concerned about the environment. I am concerned for several reasons. One, I am a breast cancer survivor. So, I am worried about what types of food we are eating and how that is impacting my health on a cellular level. I am worried about what pollution and chemicals are being sprayed on our food or our

clothing products leaching into our water supply. Everything is disposable, but yet nothing is biodegradable, and that is having an impact on our environment through the gases that would go into the environment from such a large disposal site to all that affects the water supply to air pollution to how it would even … wondering if there's an interaction between the chemicals that they used while they were growing the crop or manufacturing it, touches your skin, if that has any impact on your health over time even.

Other areas of concern for participants were the depletion of limited natural resources, decreasing availability of landfill space, excessive raw material consumption for products and packaging, limited clean water and air, loss of wildlife biodiversity, deforestation, glacial melting, scarcity of energy sources, pollution, global climate change, adverse impacts from global trade, and the effects of overpopulation.

> P21: It's pretty obvious that we're depleting our resources and destroying what resources we have left ... not paying attention to what we're doing to ourselves. Corporate greed is what it comes down to generally.
> P4: I've seen so much change. I grew up in the country, and I'm a bird watcher. And I've seen it degrade. And I've seen the birds decrease.
> P5: When I think about ecological issues, it's more about, like, why aren't I seeing monarch butterflies? ... It has more to do with nature.

On the other hand, two participants stated they were not very concerned about the environment, or said they rarely thought about it.

> P9: Yes and no ... not a lot ... I do think about them [environmental issues], but not often.
> P15: My husband and I joke about global warming especially in the wintertime. It's like, really? No. I don't know about global warming...

Although almost half of participants (48.28%, n = 14) indicated on the questionnaires that they had not done their own research on environmental issues, but some had actively pursued knowledge. Two participants said they even took formal courses to learn more. However, it seemed more common for participants to seek information informally on their own, whether through reading books, watching

documentaries, listening to radio programming, conducting Internet searches, and reading

content on social media sites.

> P10: I have a lot of books on how to just use herbs and essential oils for everyday uses, versus like buying like a lot of medicines, a lot of remedies, things like that.
> P16: I have a number of books on the fashion industry and sustainable design. I read a lot of blogs of people who like to sew and do their own things.
> P20: Mainly just watching videos and documentaries. Usually like pesticides, herbicides, and our food supply and water supply.
> P29: I read everything I come across as well. A lot of different books. *The Empty Ocean* talks about overfishing and how we fish in the ocean.
> P18: I listen to NPR [National Public Radio] a lot, and so they have a lot on pollution and stuff.
> P26: I calculated my carbon footprint. I was curious about that. And then I also did some research trying to figure out if I'm ruining the world by ordering from Amazon.

Most participants indicated they had changed their behavior considering the

environment at least to some extent. Participants made some small changes, such as

recycling, keeping products for extended periods of time, minimizing household waste,

and conserving resources. "I'm always very conscious of how many water bottles I use"

–P12. "I always turn off the lights when I leave the room. Turn off the water when

brushing my teeth. Save water, take public transportation" –P14. Other individuals put

forth additional effort, or accepted some inconvenience to support environmental causes,

such as attending environmental activism meetings, biking to work, encouraging co-

workers to change their behavior, and planting to replenish natural habitats.

> P21: I have been to some MN350 [environmental activism] meetings and things like that. In Oberlin, Ohio, in the 1970s, the very first Earth Day, I was still in high school and, we started a group called Eco Obe ... and the city took over the recycling [program]. [I'm] very proud of that accomplishment.
> P3: [I'm] possibly starting a group of people in the neighborhood who might be interested in recycling and remaking clothing.
> P4: I always print double sided ... I say, for my event, we're going to get those gallon pitchers, those water dispensers and have paper cups or I always bring my

own mug to events for coffee and things. It's sort of like, I need to help my institution.

P5: There's not as much milkweed anymore, and so I will be planting milkweed this year because there's like the monarch butterflies ... they don't have a lot of food source anymore.

P18: All those years that I worked, I always rode my bike or took the bus to work ... My best days were when I could bike. I even biked in a blizzard.

P16: I bike to work as much as possible and take the bus. We built our fence out of recycled shipping palettes.

Social Pressure / Norms

The third concept that will be discussed is Social Pressure / Norms. A total SPN score was calculated for each participant from questionnaire responses to four questions: 5. Are your close friends and family concerned about the environment? (check yes or no), 6. Do your close friends and family ever talk with you about ecological issues? (check yes or no; then check which ones from a list of seven issues), 7. Have your close friends and family ever done research on ecological issues? (check yes or no; then check sources consulted from a list of eight choices), and, 8. Have your close friends and family ever modified your behavior to minimize your impact on the environment? (check yes or no; then check ways behavior was modified from a list of nine choices).

The SPN score summed responses to the four questions, assigning one point for question 5 if yes was checked, adding the number of checks for issues their close friends and family talked with them about, adding the number of sources close friends and family consulted for research on environmental problems, and adding number of ways participants' close friends and family had modified their behavior to reduce impact on the environment. All except two participants indicated their close friends and family were concerned about the environment. Six participants (20.69%) indicated they did not speak

with their close friends and family about ecological issues. However, the remainder

(79.31%, n = 23) spoke with their close friends and family about ecological issues and

checked a range of 2-7 (the maximum) of the listed issues. Similar to results about

individuals' own behavior, almost half (44.83%, n = 13) of participants' close friends and

family had not done their own research on environmental issues, so number of sources

consulted ranged from 0-8 (the maximum). All participants indicated their close friends

and family had changed their behavior to minimize their impact on the environment, and

participants marked between 2-8 (maximum of 9) ways their close friends and family had

changed their behavior.

Summed SPN scores ranged 1–22, but no one had the maximum score (25) or the

minimum score (0). The mean score for SPN was 12.24, calculated on 29 responses,

since one of the 30 participants (an RP individual) did not complete a questionnaire.

Comparing the means by redesign group, the mean SPN score for RC participants was

12.44 (n = 9), for RE participants was 16.56 (n = 10), and for RP participants was 13.00

(n = 10). RE participants had a comparatively higher mean SPN score than RC and RP

individuals. Below is a histogram showing the distribution of SPN scores for all

participants.
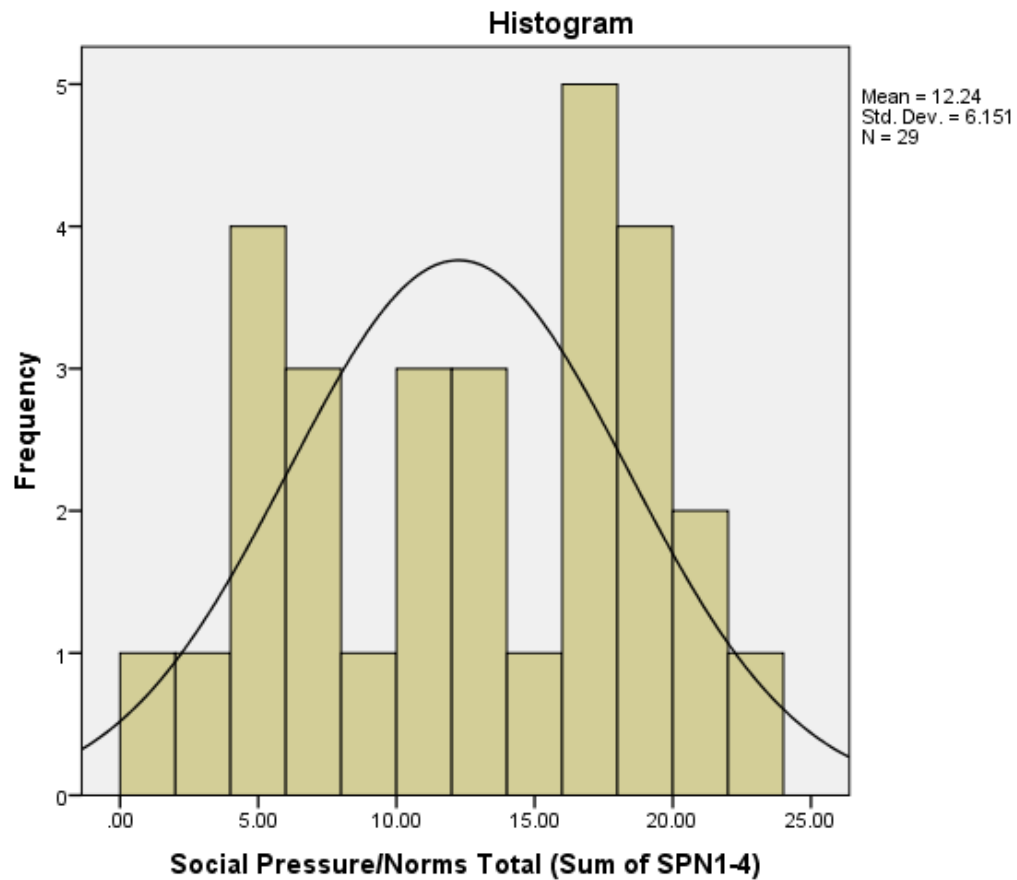
Figure 31. Social Pressure / Norms histogram

The four SPN questions from the questionnaires were rephrased as open questions

in the interviews, with additional probing questions to promote more discussion. Several

themes emerged from the data. Eleven participants said their close friends and family

were similar to them in terms of their level of ecological concern and behavior

modifications. On the opposite end of the spectrum, five participants mentioned that they

had some friends and family members who didn't care too much about the environment.

> P9: They are [concerned], but I would say on the same level as I am.
> P17: I would say about to the same extent that I am. You know, we don't have
> frequent conversations about it, but ... I'm sure being with my parents up at the

lake this weekend, something will come up ... discuss something we saw on the news or whatever.

P10: I know a lot of people in my personal life that don't recycle. They throw everything in the trash. They don't compost, and yet, they'll go out and buy, like, chemical, miracle grow for their plants. Just with how much people drive, you know. People drive everywhere.

Sustainable and healthy of food was a topic that many participants (41.38%, n = 12) discussed with close friends and family regularly. Participants seemed passionate about food, since their responses were lengthier and more detailed than other topics in this section. P26 had a friend who was vegan, and she respected the individual for her commitment to that choice. Reasons for interest in healthy food included avoiding cancer, reducing the amount of toxins ingested, avoiding miscarriages, and fostering normal growth and development of their children. They were interested in where their food came from and how it was grown or raised. As an alternative to factory farmed food, these participants preferred small, local farms, organically grown produce, and co-ops, which they stated could have been grown with pesticides, herbicides, genetic modifications, and other unknown toxins.

P10: My grandma brings up ... the pesticides and stuff, and how it's linked to cancer in so many different ways ... She's always telling me ... strawberries and all that stuff that just has a very soft ... porous outer shell, always buy organic, just because cancer has run in our family.

P20: She [a friend] was, like, trying to have a baby, and [she was in] her 40s. She had a miscarriage and was trying to look into why and started eliminating a lot of things so she could have a baby.

P29: I have a couple foodie nut friends with me that have kind of bought as much organic food as you can afford, and the buying from a farm instead of factory farming ... Like, if your child has ADHD, or just the amount of chemicals that you're exposed to as a woman and ... being pregnant and then having a child ... All these chemicals have been traced to breast milk.

Another topic that came up in conversation among participants' (31%, n = 9)

friends and family was an interest in preserving natural resources for agriculture, forestry,

hunting, trapping, water recreation, bird watching, and aesthetic appreciation.

> P17: The rest of it [discussion] tends to be hunting, fishing, Pheasants Forever, things, causes like that ... Natural Turkey Federation.
> P23: My family in Wisconsin, they're hunters and fisherman, and so they're quite concerned about the environment.
> P18: She [sister] has a river going through her backyard. So, she's worried about the river and the pollution in the river.
> P27: Some of them are [interested in] Boundary Waters, a lot of canoeing and stuff like that. So they have a lot of interest in water, preserving the natural habitats.

While almost half (44.83%, n = 13) of participants indicated on the questionnaires

that their close friends and family had not done their own research on environmental

issues, the remainder did. Often, a specific family member or friend was influential in

shaping participants' beliefs about the environment. Family members were educated or

employed in environmental fields, lending their expertise in discussions about the

environment. These individuals were credible opinion leaders in their circles.

> P23: One of my nieces has her master's degree in some type of environmental thing. When companies are going to build big installations, and [it] involves water in the area, she has to go ahead and do evaluations of what impacts that will have.
> P16: My sister-in-law works with the Citizens' Climate Lobby as her current life work. So, she is teaching, training, lobbying, unendingly, for laws that will help the environment.
> P3: My son was in forestry and forest products ... so sustainable forests, and um, what do you call that, carbon sequestering in wood buildings. My daughter is in international development, specifically, in agriculture ... She's concerned about exploiting developing countries so they can't grow their own food, or not exploiting them so they *can* grow their own food.

As with individual participants, it was more common for participants' close

friends and family to seek information informally on their own, including reading books,

newspapers, or articles issued by environmental organizations such as the Department of

Natural Resources, watching documentaries, listening to TV news, conducting Internet

searches, and reading content on social media sites.

Close friends and family of participants changed their behavior to minimize their

impact on the environment in several main ways. First, almost all participants said their

close friends and family recycle household products, and several indicated members of

their social circle also composted. Five participants' (17.24%) said their close friends and

family made choices that reduced their impact on the environment, such as conserving

water, fuel, and energy, but they were mainly motivated by saving money. Seven

participants' (24%) close friends and family used alternative modes of transportation,

such as carpooling, taking the light rail, biking, using smaller or fewer cars, and buying

hybrid cars such as a Prius. P26 said she had a friend whose family avoided using

transportation altogether, choosing to work from home and living in a neighborhood

where basic services and goods were within walking or biking distance. An especially

interesting story was recounted from two participants who lived in the same

neighborhood, which had a collective plan to become a Transition Town, a self-

sufficient, compact, and sustainable community.

> P3: This neighborhood has lots of Priuses, and lots of Car to Go [cars owned and
> shared by the community] ... They're all over the neighborhood, so people must
> be using them ... This neighborhood has an organization called Transition Town.
> It's basically ... trying to do things as a community to lighten the carbon load ...
> doing things you can't do as an individual, but you can do as a community.
> P4: We're into retro-fitting the neighborhood, you know, making the
> neighborhood more, um, compact ... Transition Town got the $15,000 dollar
> [grant] prize to expand their website and their community outreach. I went out to
> the Green Line [newly installed light rail] on the day it opened ... The future
> health of our neighborhood is connected to the world. And energy self-sufficiency

is maybe the thing I've had the most conversations about. Our neighbors on this block are building a zero emissions house.

Sustainable Fashion Behavior

The fourth concept that will be discussed is sustainable Fashion Behavior (SFB).

Data were gathered from items 9-22 on the questionnaire. Question 9 asked participants

to indicate (check yes or no) if they had bought the following: 9.1 organic clothing, 9.2

fair trade clothing, and 9.3 vintage clothing. Question 10 asked participants how long

they kept their clothing on a scale of four (1 was less than six months, 2 six months to

one year, 3 one to three years, and 4 more than three years). Questions 11-20 were 10 yes

or no questions that addressed a variety of potential sustainable fashion behaviors. The

last two questions in this section were yes or no questions about participants' comfort

level with used clothing: 21. Are you worried about soil, bacteria, or germs from wearing

used clothing? 22. Are you worried that others will judge you negatively if you wear used

clothing? Table 5 contains a series of charts with frequencies for SFB items.

Total = 29	9.1 bought organic	9.2 bought fair trade	9.3 bought vintage	11. bought socially rspnsble	12. bought luxury or high-end	13. avoided fast fashion	14. bought from local designers and brands
Frequency	8	13	22	15	13	18	9
Percent	27.59%	44.83%	75.86%	51.72%	44.83%	62.07%	31.03%

Total = 29	15. bought made in USA	16. hired tailors and cobblers	17. other sustain. clothing	18. repaired own clothing	19. made or designed clothing	20. bought and wore used clothing
Frequency	14	16	28	25	29	28
Percent	48.28%	55.17%	96.55%	86.21%	100.00%	96.55%

Total = 29	10.3 Kept clothing 1-3 years	10.4 Kept clothing 3+ years	21. Not worried about germs or bacteria from used clothing	22. Not concerned about others judging them negatively for wearing used clothing
Frequency	3	26	25	29
Percent	10.34%	89.66%	86.21%	100.00%

Table 5. Sustainable Fashion Behavior item frequencies

Five SFB sub-scores were calculated from questionnaire responses to questions 9-22. The number of clothing sources participants bought from (check yes or no if you purchased organic, fair trade, vintage clothing) were added up to calculate the sub-scores SFB2 (maximum possible score of 3). Question 10 SFB3 was renamed SFB3b and re-coded as binary scores (1 was assigned if participants kept their clothing more than one year, and 0 if participants kept clothing less than one year) for the purpose of summation into the total SFB score. In questions 11-20 (SFB4) yes responses were added up for the SFB4 sub-score. In questions 21-22 (SFB5) no responses were added up for the SFB5 sub-score. In SFB5, the sub-score was reverse coded (with no responses assigned 1's) because a no answer should indicate a higher level of comfort with used clothing and less aversion to wearing it.

Finally, the sub-scores were added together into total SFB scores: SFB2 (3 possible points), SFB3b (1 possible point), SFB4 (10 possible points), and SFB5 (2 possible points). Total SFB had a maximum possible score of 16. Scores ranged 6–16, with a mean of 10.79 calculated on 29 responses, since one of the 30 participants (an RP individual) did not complete a questionnaire. Comparing the means by redesign group, the mean SFB score for RC participants was 10.89 (n = 9), for RE participants was 10 (n = 10), and for RP participants was 11.5 (n = 10). The SFB mean scores for the three

groups were quite similar, resulting in data that had relatively normal distribution. Below

is a histogram showing SFB scores for all participants.
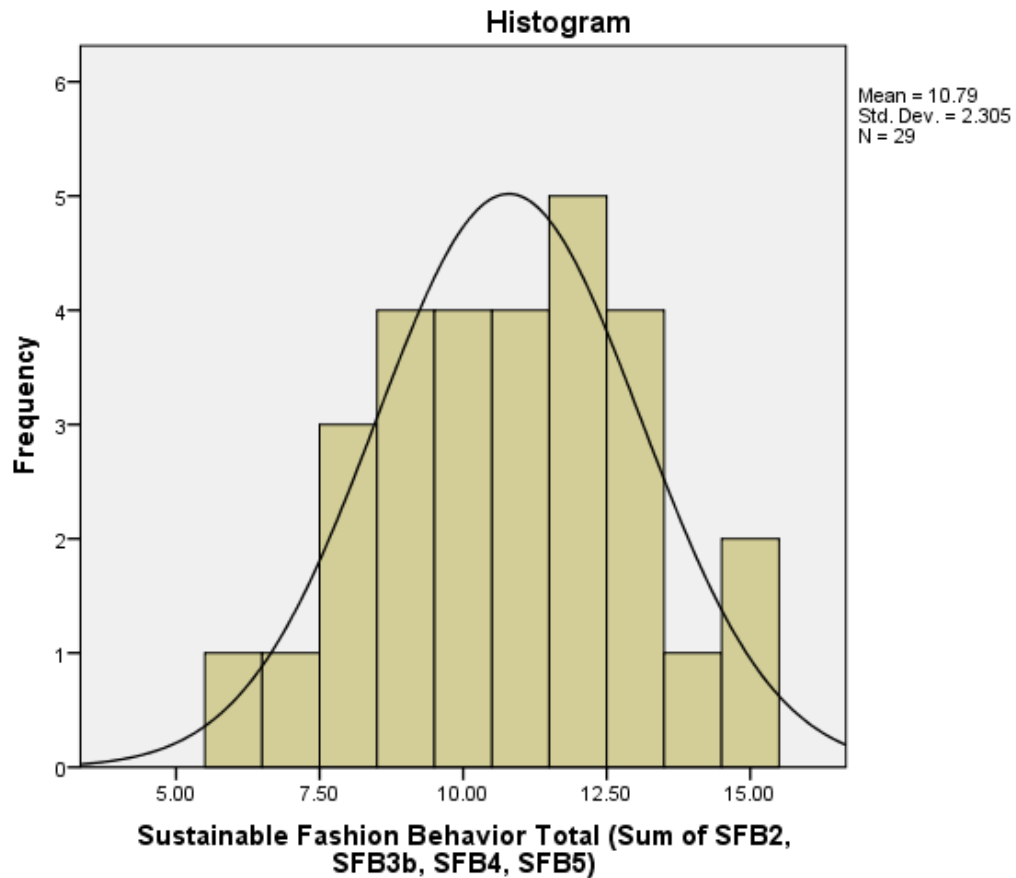
Figure 32. Sustainable Fashion Behavior histogram

In interviews, participants were asked to list all the sustainable clothing and

services they could bring to mind. The most commonly mentioned sustainable clothing

type was used clothing, which was not surprising, given questionnaire responses. All

except for one participant indicated they bought and wore used clothing. All of

participants were not concerned about others judging them negatively for wearing used

clothing. Most of participants (86.21%, n = 25) were not worried about germs or bacteria

from used clothing, and 75.86% (n = 22) had purchased vintage clothing. Comments in

qualitative interviews matched questionnaire results, and most of the comments were

positive about wearing used clothing.

> P6: I just take them home and wash them first thing. But, yes, I feel like it's a
> treasure hunt.
> P15: Doesn't bother me at all. I have even bought used shoes, which I know some
> people are really grossed out by like the shoe factor. I don't know. I wear socks.
> P21: I feel perfectly fine about it ... I heard about people not wanting to go even to
> new clothing stores because other people have been trying those clothes on and
> there are germs in them. So I thought, wow, I never thought of that. And then I
> was thinking about the thrift store clothes … You know they fumigated. You can
> smell it on there, so I'm not really concerned about that. And I'm more concerned
> about the chemicals that are on there from the fumigation process, and so I
> generally won't wear anything until I wash it probably a couple of times and hang
> it outside to air out.

However, one participant discussed contracting ring worm from trying on

clothing as a teen in used clothing stores and department stores, so the negative past

experience influenced her behavior today.

> P28: I do worry about the dirty part. And before I'll wear it, I'll have to wash it or
> have it dry cleaned for sure ... I was working at Marshall Field's one time, and I
> was trying on clothing ... that were put-away clothes that I thought were cute, and
> I ended up with a rash that is transferrable from clothing to clothing. It was
> ringworm ... The doctors did tell me I got it probably by changing clothes … It
> was really horribly devastating because you don't know what the hell you got and
> when it's going away. I got ringworm from trying on clothes at a department
> store, so in a thrift shop, I'm like extra aware ...

Goodwill and Goodwill affiliates (for example, Gia and Will, a thrift store

targeted to younger consumers) were the most commonly mentioned charity shops where

participants bought their used clothing. Two participants mentioned shopping at the same

used clothing store, G2, where clothing was sold by the pound, unsorted by type, size, or

color. These individuals described shopping at G2 as a treasure hunt. Participants

shopped at consignment shops, such as Turnstyle, Plato's Closet, and consignment stores

that carried gently used high-end designer brands, such as St. John. New clothing department stores offered sections of used clothing such as Ragstock and Urban Outfitters. Local boutiques sold used and redesigned clothing, including the Bibelot Shop, the Textile Center, Three Sisters, and Scarborough Fair. Three participants also purchased used and redesigned clothing online, such as from Etsy or eBay.

When participants bought new clothing from retail stores, they sometimes paid attention to fiber types. Fibers thought to be sustainable included bamboo, recycled polyester, recycled wool, angora wool, silk, cotton, and organic cotton. Questionnaire responses that showed only 27.59% (n = 8) bought organic clothing and 44.83% (n = 13) bought fair trade clothing. Participants listed the following retailers that carried organic clothing: Hanna Andersson, Garnet Hill (an online retailer), and REI. Patagonia and H&M were listed as retailers which sold garments made from recycled polyester. Some bought fair trade clothing from the Fair Indigo catalog, at co-ops and at farmers' markets (n = 8, 27.59%). Participants voiced skepticism about the overall sustainability of certain apparel fibers, such as concern over the conditions in which merino sheep for wool were raised in Australia, the global scarcity of organic cotton, and the amount of water, pesticides, and herbicides used to grow conventional cotton. Two participants were critical of the styling and colors in which organic and fair trade clothing were designed.

> P20: I think it's really hard to find organic and fair trade.
> P16: I've seen lots of organic clothing. I don't find that one quite as effective, personally ... I tend to not like a lot of organic brands or sustainable brands' aesthetics as much ... There's a brand called Everlane that I have bought some basics from because they're really transparent about their processes.
> P26: I don't really seek out organic clothing or not very often fair trade because I tend to not like the style of the clothing of fair trade. It's a little too hippy in feel. I want something, you know, a little more cutting-edge, or fashion-forward. So I

don't really find very many options. I think the color palette is another reason
why I don't really buy organic and fair trade clothing. It just doesn't appeal to me.

As with organic and fair trade clothing, some but not the majority of participants
(n = 15, 51.72%) had purchased clothing from brands that had social responsibility
policies and personnel, brands that offered luxury or high-end goods (n = 13, 44.83%),
clothing made in the U.S. (n = 14, 48.28%), and clothing from stores that featured local
designers and brands (n = 9, 31.03%). Participants listed some retailers which they
believed had social responsibility policies or personnel, such as Toms shoes, Garnet Hill,
REI, Everlane, Eileen Fisher, and Ten Thousand Villages. However, seven individuals
did not know if they had bought clothing made by socially responsible brands.

> P6: Well, because I mostly buy used, I don't pay attention to the brand.
> P3: You know, I don't really know what those brands would be, except like I said,
> I like Land's End, partially because the style and the durability and the ease in
> laundering, and I know about Fair Indigo. But beyond that, I don't really know
> what else there is. I know there's some kind of high end fashion, expensive things
> but I don't buy that kind of clothing.

Some participants (n = 11, 37.93%) said they purchased items from local artisans
and boutiques such as novelty clothing, real fur and leather goods, jewelry, hand-knitted
items, scarves, and wool sweaters. Local boutiques were Shop in the City, i like you,
Primp, Picky Girl, Cliché, The Showroom, Katherine Tilton, Foxx and Furs, Tom
Thomas, and the Minnesota Maker's Guild. One participant even owned, designed for,
and managed her own local boutique for a time. Plus sized individuals found it difficult to
shop local because often the clothes were not offered in their size. For luxury and high
end clothing, participants had bought items from designer brands such as Kate Spade,
BCBG, Gracia, Burberry, Betsey Johnson, Dana Buchman, and Ellen Tracy. Other luxury

and high end retailers listed were AG Jeans, Paige jeans, 7 for All Mankind jeans,

Nordstrom, Nordstrom Rack, Free People, Patagonia, and North Face.

One somewhat contradictory finding was that in the questionnaires, the majority

indicated they purchased other types of sustainable clothing (n = 28, 96.55%). However,

in question 18 of the interviews, participants were asked if they had purchased items

other than what was already discussed in questions 9-17 (organic, fair trade, luxury and

high-end, local, and made in the U.S.). All except for three participants said they could

not think of anything else. One participant mentioned size adjustable clothing which will

last longer and, another, jewelry purchased to benefit women in Africa.

> P15: We bought this Columbia jacket [for our son] and it's got ... like a pocket sewn in the lining to let it out so it can grow with you, so it can last more than one year ... To me it was worthwhile to invest a little more money in a coat that I know he'll wear for two years.
> P16: If I see something made by women in Africa who are, like, the widows who make the necklaces, I've bought stuff like that from people during fundraisers. Like the little paper beads, so I've bought that kind of stuff. Or I've bought yarn that was spun by women in like another country. A lot of times if it's like a women's empowerment project, I'd be more inclined to get something.

A larger amount of participants indicated on questionnaires that they avoided

buying clothing from fast fashion stores (n = 18, 62.07%), with Forever 21 mentioned

several times in interviews as a store to avoid. Other fast fashion clothing stores avoided

were Target, Walmart, Kohl's, Old Navy, Gap, H&M, Charlotte Russe, Heartbreaker,

and Dots. Reason for avoiding fast fashion stores included concern for the quality of

clothing and skepticism over the ethics of their business practices. However, seven

individuals still shopped at fast fashion stores for affordability or else did not specifically

avoid shopping there. Two participants had purchased items from H&M's Conscious

Collection, which participants said incorporated recycled fibers and lower-impact fibers

and dyes.

> P9: Abercrombie, I don't like to support them ... I guess that I don't just because
> of things that I've heard that they're doing, or processes, that type of thing.
> P28: I tend to avoid certain places because I don't believe in a lot of the ethics of
> the company. But there's a sense of turning a blind eye because of affordability,
> that it comes down to necessity at this point.
> P4: [I avoid] H&M. I do not buy clothes at Target. I am not saying I never would
> ... I haven't found anything at Gap in years that is worth buying ... I'm always
> disappointed by the quality.
> P8: Dots are not plus-sized women's friends. The clothes [at Dots] ... they're not
> durable. You wash them, they're done ... Those ... are a one-time wear.
> P10: I do like the Conscious Collection ... I just noticed that the quality doesn't
> hold up as much as I'd like it to.
> P2: I would say I buy a lot of clothes from Forever 21.

Participants tended to keep clothing for a long time, as nobody indicated on the

questionnaires that they kept clothing less than one year. Considering their entire

wardrobe, the majority (n = 26, 89.66%) kept clothing for more than three years, and the

rest (n = 3, 10.34%) kept their clothing 1-3 years. Quite possibly the reason why

participants kept clothing for as long as they did was because of the emotional bond they

had formed and memories they associated with their clothing. All of participants

indicated on the questionnaires that they had an emotional connection to their clothing

(question 39).

Regarding which types of clothing they kept around, responses covered almost

every garment type and purpose. Special occasion clothing kept for long periods of time

included wedding dresses, bridesmaid dresses, prom dresses, and their own or their

children's first communion and baptism dresses. Everyday clothing were also kept,

including t-shirts, undershirts, sweatshirts, turtle necks, sweaters, button-down shirts,

embellished tops, jeans, leggings, skirts, other bottoms, outerwear jackets, and pajamas.

Other types of clothing retained were Halloween costumes, clothing from high school

and middle school, clothing from trips and vacations, maternity clothing, children's

clothing, and durable sport clothing such as ski pants. Additionally, they held onto brand

name clothing, vintage pieces, and items hand-knitted or home-sewn by themselves or a

close friend or family member. A garment's fiber type could be another reason why

participants might keep a piece in their closet. Silk, wool, Persian lambs' wool, and

cotton were mentioned. Garments made of these fibers would be kept.

> P2: Definitely, sweatshirts and jeans and things that I will keep until they're worn and holey ... I guess like if it's something that has a little meaning ... I do tend to keep even if I don't wear it or plan to wear it.
> P10: Well, I for sure keep like all of my natural fibers, silk, cotton, all that stuff just like stays ... I keep a lot of just like key pieces or things that I think might come back into style ... A lot of the vintage stuff I buy is silk, too.
> P13: I really hold on to all my clothes. I mean, I would say that I'm embarrassingly attached to all my clothing. Something has to be really, really broken for me not to wear it ... Unless it's completely depleted, I'll keep it.
> P16: I started keeping clothing ... longer because I've gotten better about choosing styles that are more long lasting. It's been a conscious decision on my part.

Perhaps what allowed participants to hold onto their clothing for longer periods of

time was that most participants completed basic to advanced repairs on their own

clothing (n = 25, 86.21%). Participants repaired minor issues such as snags in sweaters,

rips in fabric, and tears in seams by hand. They also sewed buttons back on, re-attached

neck ribs on t-shirts, and sewed patches onto jeans. Some of the more advanced

operations, usually done by RE and RP participants, were hemming, altering clothing to

fit, tapering pant legs, taking in waistlines, shortening sleeves, replacing zippers, and

replacing linings.

Participants occasionally hired tailors and cobblers to repair clothing and shoes (n

= 16, 55.17%). For RE and RP individuals, they were not as likely to hire tailors to alter

their clothing because they had adequate sewing skills; however, REs and RPs still used cobblers to repair or alter shoes and handbags. Common repairs participants had completed by shoe repair shops included resoling boots and shoes, taking in calf circumferences of boots, shortening heels of shoes, fixing straps of sandals, stretching a shoe to fit the foot, replacing zippers, and repairing closures on handbags. In terms of tailoring, participants brought clothing to tailors to change maternity clothes into regular clothes, shorten jeans keeping the original hem, re-cut and reshape shoulders of fitted blazers, repair large tears in the fabric, and tailor form fitting special occasion dresses. Also, RE and RP individuals would take items to tailors if they lacked specialized machinery to work with a specific material such as leather, or if they did not have enough time to do it themselves.

On questionnaires, all participants indicated they had made or designed their own clothing. This finding seemed contradictory to what was discussed in interviews, as some individuals (n = 8, 27.59%) verbally stated they did not make or design their own clothing. This is almost the same number of participants classified as Redesign Consumers (n = 9, 30%). The classifications into three groups of redesigners were gleaned from participants' own descriptions of their skills and redesign behavior in the qualitative interviews. It was expected that the Redesign Consumers group would not have had the skills to make their own clothes. Perhaps they considered basic modifications to clothing as making their own clothing, or else they considered themselves designers when they hired someone to sew something they planned.

It seemed that the number of participants who made or designed their own clothing should realistically be around 70% because it should exclude RC individuals, who would not have advanced sewing and design skills. Approximately 68.97% of participants (n = 20) said in interviews that they made or their own clothing. The most common items were dresses, made for special occasions, travel to warm climates, professional dresses, or for casual every day wear, such as sun dresses. Several also made their own skirts, bags, purses, scarves, pants, tops, blazers, jackets, knitted scarves and sweaters, Halloween costumes, children's clothing, and men's clothing.

Redesign Behavior, Retention, Use, and Divestment for 2011 Participants

The fifth and sixth concepts involved responses from the six individuals who participated in the 2011 study and also completed interviews and questionnaires for the present study. The response rate was 22.22%, since there were a total of 27 participants in the 2011 study. (See Appendix D for before and after images of garments from 2011 study for these six participants). The response rate was lower than anticipated, but four years had passed between the two studies. The mean age of this sub-group was 46.83 years. The majority were Caucasian, with an annual family income of more than $76,000 per year (n = 5, 83.33%). Four individuals were classified as Redesign Consumers because they mainly did not have advanced sewing and design skills, or else had not redesigned anything on their own since the 2011 study. Two were labeled as Redesign Enthusiasts because they knew how to sew and had redesigned additional garments since the 2011 study for themselves or family members.

All except one participant kept their clothing from the previous study. P1 had her redesigned garment for one year, wore it once to a wedding, and then donated it to a charity shop during spring cleaning. She discussed issues with the garment including the sheer mesh over-layer at the bodice was too revealing, the bodice was too tight, and the mesh edges at the neckline and armholes were raw cut instead of hemmed. However, she liked the floral print, and that was why she had kept for a year. "Realistically, it probably wasn't going to work for me again. But I thought I would turn it into a skirt, and I was going to save it for that" -P1. The remainder intended to keep their redesigned garment, except for P4 who was undecided. If P4 did divest of her redesigned garment, she would give it to a family member, as the blazer was originally her mother's. Three participants indicated they wore their garment every six months, one stated she wore it at least yearly, and P3 wore her jacket an estimated 10-15 times every fall.

Participants were asked if they had any problems with their redesigned clothing, or if there were any reasons why they wore them infrequently. Certain garments were only usable in certain seasons or situations, such as lightweight fall jackets, swim cover-ups, and special occasion dresses. For two participants, the garment did not turn out as they had imagined. Others had problems with the functionality of trims such as buttons.

> P3: One of the things I don't like is this jacket kind of falls open, or it comes unbuttoned … It's kind of a narrow, you know, fall colors and fall fabrics, and I wear sweaters in the winter, especially when I keep the house cold. So it's like, I don't have a lot of places to wear it and it's a real narrow seasonal window.
> P6: Well, I know I wore it several times before it seemed to not get brought out … I still like it. I like the color and I like the fabric, and I just don't like ironing it. Well, probably the weather because in the winter, you can see I've got two sweaters on right now. I do go back and forth. So this, is not as heavy as a sweater if I'm wearing a turtle neck under it. So it's also the issue, when is it the right temperature for me because this is so much easier to throw on and off if I get hot

flashes or I'm working in the kitchen I don't want both layers on, but the single layer wouldn't be enough. So just this would be harder to throw on and off. So that is another factor, and the buttons, and the non-stretchability.

A few of the participants (P2, P3, and P4) modeled an outfit incorporating their

redesigned garments for photographs and explained how they would normally style their

outfits. P2 modeled a knit blazer she had redesigned by the primary investigator in 2011.

The blazer was not the garment she had redesigned for the study. (See Appendix D).

However, after the 2011 study was completed, the participant asked the PI to redesign the

blazer and a pair of jean shorts. The PI agreed because the garment for the study, a

swimsuit cover-up made from two oversized sweaters, did not turn out as the participant

had hoped. P2 said she had worn the knit blazer to dates, happy hours, and dinners with

friends. The garment was considered a restyled redesign because it was not structurally

changed. Eyelet ruffle trim was removed from the jacket's center front and hem. The

edges of the jacket were then bound with bias tape to finish the overlocked edges. The

removed eyelet ruffle trim was attached to the frayed edges of cut-off shorts to finish and

decorate them.

> P2: That [the knit blazer] I would probably just do with jeans and like boots probably just I'm not really big on like accessories. And I don't really accessorize. Maybe just like a tank underneath and just natural hair and makeup because … it's got the frilly stuff, so I tend to kind of tone everything else down a little bit.

Figure 33. P2 in a restyled redesign

P4, an RC individual, had a blazer redesigned in the 2011 study. She wore it with a gray skirt, boots, and shell top. She was classified as RC because although she knows how to sew, her busy career prevented her from spending time on sewing projects. She said she would be interested in hiring someone to redesign her clothing simply because she lacked time to do it herself. The redesign was considered a tailored and restyled redesign because there was a significant amount of internal tailoring that had to be completed to change the silhouette according to the participant's request. (See appendix D for before and after images). The lining inside the blazer was detached at the bottom hem and the sleeve armhole, so the shoulders, sleeves, and body seams could be

reshaped. The shoulder pads were removed for a softer silhouette. The front patch pocket

and back yoke decoration trim were then attached. The jacket body length was shortened,

hemmed by hand, and the lining was hand-sewn back into place at the armhole and

bottom hem. Lastly, the decorative velvet fringe trim was machine stitched to the collar

and lapels. The PI completed the redesign.

Figure 34. P4 in a tailored and restyled redesign

Figure 35 shows images of P3 in her redesigned jacket, which was made from

multiple used garments. "This is great because it goes with so many different things,

jeans, navy, khaki clothes" –P3. The garment was considered a full transformation

redesign because few to none of the structural elements of the original garments

remained. Six garments, including three pairs of pants, a shirt, a dress, and a skirt were taken apart and used as yardage. Pattern pieces were cut from the deconstructed garments, which was challenging because the pieces had to be fitted carefully so they were all cut on the correct grainline. The back of the jacket had an interesting visual effect because it was made of a deconstructed denim skirt. The pleats were let out from the original garment and the flat-felled denim seams showed their wear and tear and were lighter on the final garment than the rest of the fabric. The PI completed the redesign.

Figure 35. P3 in a full transformation redesign

Another participant, P5 an RC, shared how she wore her garment, and that the outfits she would wear the dress with have changed over time. The garment was

considered a tailored and restyled redesign because significant structural change was
made to the original garment. The dress silhouette had changed from a fitted waist midi-
length dress with sleeves to a sleeveless short-length shift dress. (See Appendix D for
before and after images). The PI had hired a professional tailor to complete the redesign
because the fabric was vintage lace, and the taffeta lining was fragile. (Interestingly, the
tailor was P17, RP, a participant in the present study).

> P5: I used to wear like a black belt around it, um, like a little skinny belt, but now
> I don't really wear any belt with it, and I throw like a denim … button-up top over
> it … Before, I used to wear like a some kind of like a bootie with it, like a heeled
> bootie, but now I just wear sandals. I used to dress it up, and now I really dress it
> down. I feel like I get more use out of it that way and it's not just sitting in my
> closet.

Figure 36. P5 tailored and restyled redesign

Redesign Behavior, Retention, Use, and Divestment for All Participants

The seventh concept that will be discussed is garment redesign behavior of all participants over the past four years. This section included questions 30-35 on questionnaires and 30-40 on interviews. Question 30 on questionnaires asked participants to indicate (check yes or no) if they had redesigned anything since 2011. Question 31 asked participants how many times they have worn the garment on a scale of four (1 weekly, 2 monthly, 3 every six months, and 4 yearly). Questions 32 called for participants to indicate on a five-point scale how much they had paid for the redesign (1 was $0-25, 2 was $26-50, 3 was $51-75, 4 was $76-100, and 5 was more than $100). Question 33 asked whether there were any reasons why they wore the garments infrequently (check from four potential problems, such as design, fit, functionality, and no longer liking it). Question 34 asked about participants' intent to divest of the clothing (check yes or no), and question 35 asked them to indicate how they would get rid of it (check from a list of six ways to get rid of clothing, including give to a family member, take to a clothing swap, sell at a garage sale, sell at a consignment shop, drop off at a charity shop, and throw it in the trash).

The majority of participants (n = 26, 87%) had redesigned clothing in the last four years, while a few had not (n = 4, 13%). All four individuals who had not redesigned clothing in the past four years were classified as RC. Regarding how many times they had worn their redesigned clothing, several individuals wore them monthly (n = 9, 30%), and some wore them yearly (n = 6, 20%). The rest of participants were evenly divided among wearing every six months (n = 5, 16.67%), wearing weekly (n = 5, 16.67%), and not

having worn the redesigned clothing at all (n = 5, 16.67%). One RE individual was still in the process of redesigning a corduroy jacket into a skirt at the time of interviews, so she had not worn the garment yet. Regarding how much they paid for the redesign, the majority paid $25 or less (n = 21, 70%). Five individuals (including the ones who had not worn redesigned clothing made since 2011) marked non-applicable (16.67%), three paid $26-50 (10%), and only one person (3.33%) paid $50-$75.

Regarding reasons why participants wore their redesigned clothing infrequently, many (n = 18, 60%) did not check any from the list, indicating they did not have these particular issues. For example, P6 wrote that she had too many clothes and that was the reason for wearing redesigned items infrequently. Five participants (the four who had not worn redesigned clothing made since 2011 plus the one who had not finished her redesign) marked non-applicable, and one person did not answer the question. Six individuals checked at least one of the issues (20%). Five had problems with the fit, four no longer liked it, and three had issues with the design and functionality of the garment. P12 indicated she sometimes had all four of the issues, problems with the design, fit functionality, and no longer liked it. She was the RE individual who mainly redesigned garments into costumes for Hmong cultural events. In interviews, she said that if she no longer found something she'd redesigned as useful, she would take it apart and make it into something else.

In terms of divesting of redesigned clothing, most intended to keep their garments (n = 16, 80%). However, seven (23.33%) indicated they were likely to get rid of redesigned clothing, and one person wrote maybe. Six of these eight individuals reported

they would drop off their redesigned clothing at a charity shop. Each of the following ways to divest of clothing received two checks: give to friends or family, sell at a garage sale, take to a clothing swap, and sell at a consignment shop. Two also wrote in that they would sell it on Etsy. One person (P24) remarked that she would not throw something in the trash unless it was "totally done" or worn out beyond ability to reuse. Nobody else mentioned throwing garments in the trash as a viable method of divestment.

<div align="center">Involvement in Redesign</div>

Participants were asked to discuss who completed the redesign and how much involvement they had in the process overall. Seventy percent of participants (n = 21) completed the redesign construction and all other parts of the redesign process themselves. This result was not surprising because RE and RP participants were roughly two-thirds of the total, and these participants have advanced sewing and fashion design skills. However, six did not complete the redesign on their own. Three individuals co-designed clothing and asked a family member (grandma, mother, or aunt) to complete the construction for them. Two co-designed with a professional tailor, and one purchased a redesigned ready-to-wear garment from a retail store.

In the 2011 study, three levels of involvement in the collaborative redesign process were identified (low involvement: work with redesigner on idea, give body measurements, review/approve a sketch, then receive finished garment; medium involvement: same process, but add multiple sketch options and a midpoint fitting; high involvement: same process, but add two or more rounds of sketch options and two or more fittings fittings). The three levels of involvement in co-design were not applicable

where participants conceived of and completed the redesign themselves. A fourth level of

involvement, full involvement, was added to describe those who fully and solely

completed the redesign. Table 6 shows quotes in participants' words representative of the

four levels of involvement.

Low Involvement (Co-design)	Medium Involvement (Co-design)	High Involvement (Co-design)	Full Involvement
P10: I just gave it to her, and she measured me, and just, like, used a fabric marker to mark a couple spots. And then I left for the weekend, and came back probably two months later, and she had it ready.	P6: Well [there were] a couple [of fittings], as you went along, again, you know, once I cut it shorter. Um, and checking out the progress of beading ... We did another fitting and got it done.	P12: I basically, um, I probably have, a larger portion, even though she [mother] does sew. I direct the sewing, so if things are looking a little off, or unexpected, like, things happen, like we can always change it and tailor it to look in the way I would picture it.	P18: One thing I find is ... I'm kind of a perfectionist, and I kind of like the sewing part ... I make a lot of design decisions when I'm sewing it. And, so if I give it to someone else and hand it off, then they're not going to be making those little decisions in the process that I would make.

Table 6. Participant quotes summarizing levels of redesign involvement

Time Invested in Redesign

Participants were asked to estimate how much time they invested in the redesign

process. On questionnaires, 17 participants (58.62%) indicated they were willing to spend

five hours or more of their own time involved in redesign of a garment. In qualitative

interviews, if participants redesigned multiple different types of items, they were asked to

give estimates for each type, if they could recall. Responses are summarized in Table 7.

The majority of participants preferred shorter projects which took less than 10 hours to

complete. Only five individuals specifically reported spending more than 10 hours on a

project. Participants tried to minimize the amount of time invested in redesign; however,

when working with expensive or complicated items such as vintage silk kimonos, fur

coats, and quilts, it was not possible to work faster. RPs were concerned about making a

profit on items that took too long to make.

> P17: Yeah, so we're in the one to four-[hour] range, depending on how major ….
> I'm into fast. If I have to put a ton of time into it, I gotta really, really love it and
> plan to keep it.
> P8: I would say about four hours. Really, it was just a night before thing.
> P27: Well, when I started, way too much time. But now, some of the pieces, I can
> actually get done in an hour. And other pieces maybe a couple of hours. In order
> for them to be profitable for me, I've gotta kind of keep the time frame under …
> Usually an hour and a half would be max of what I would want to spend.
> P19: Everything together would be eight hours. It was a day at least. I mean, just
> cannot get your money out of that.

1-4 hours	5-10 hours	11-15 hours	16+ hours
P4: 2-3 hours apiece for napkins from men's button-down shirts. P15: Less than 5 hours, from concept to completion, including shopping for trims. P17: 1-4 hour range. P8: 4 hours. P10: 1.5 hours. P11: 40 minutes for a tank top. 3 hours for shorts. P20: Pillows – 1 hour or less. Bags – 3-4 hours. Dresses –	P6: 5 hours redesigning daughter's wedding dress, including dyeing, rinsing, hemming, and sewing. P16: 5-6 hours for redesigning skirts. 5-10 hours for most projects. P18: 5.5 hours for resist dye item that required hand stitching to prepare. P19: 8 hours. P20: 4-6 hours for a prom dress for her daughter.	P12: 15 hours for one Hmong-inspired outfit (3 hours a day for five days). P25: 8-12 hours for redesigned kimono.	P17: 20 hours or more on a redesigned dress for a contest. P25: 18-20 hours for a t-shirt quilt. P28: 16 hours (two 8-hour days) for redesigned fur coat. P30: 20 hours for a t-shirt quilt. 50 hours for woven rug.

2 hours. P25: 3 hours for a memory bear. Pillows – 2 hours per pillow. P26: 1-2 hours. P27: 1-2 hours. P29: 1 hour for wool felted scarf. P30: 2 hours for a skirt.	P30: 6-8 hours for a dress.		

Table 7. Time estimates from participants for redesigns

Equipment, Supplies, and Space for Redesign

Participants were asked to discuss what equipment and supplies would be necessary to make a redesign service successful. Similar to the 2011 study, the following equipment and supplies were mentioned: sewing machines, mannequins, cutting tables, measuring tapes, trims, embellishments, linings, fabrics, magazines, cork boards for posting ideas, portfolios of previous redesigns, computers, visualization software, and tools for sketching. One participant described her idea of 3D visualization software for redesign.

> P26: Someday, how they have the [virtual reality] mirrors that you can put the clothing on ... so you can see what it looks like ... some sort of way of envisioning how things could look in the future, with the, this garment might be kind of a fun thing to do, kind of get inspiration.

Several also said that dressing rooms, photography space, and natural lighting would be important. Specialty equipment was discussed, such as dye labs, furrier tools,

upholstery tools, power tools, and die cutters, mainly by RE and RP individuals who had

need for these. RE and RP individuals were asked to describe the layout and equipment in

their studios or working spaces. P19 rented a building that had living quarters on the

second floor and a storefront on the first floor, in a neighborhood close to an arts district.

P24 rented two adjacent studio spaces in an art building. P30 had an entire wing of her

house as her studio, and it had skylights and a large set of picture windows for natural

lighting. However, most worked from home and had retro-fitted bedrooms and basements

into studios. Through experience, they were keenly aware of what their spaces might be

missing, or what might make their work more efficient.

> P17: It's a converted bedroom ... on the third floor. People would have to walk
> through my entire house to get there. And, they currently do when they come
> over. The room is done very nicely. It's just not in a very convenient location in
> the house.
> P18: What I would love to do someday is have a real authentic dye lab ... I do a
> lot of carrying of hot water downstairs to my basement. I would love to tear off
> my garage and put in a dye lab that had a gas stove that was low ... I would love
> to have a really good ventilation system and not connected to the house, so I could
> do thiox in the winter and not have the house smell for two or three days
> afterward ... It would be nice to have all my stuff in one area where I'd have like
> the washing machine and the water and the pots and everything ... They're kind of
> scattered throughout my house now.
> P21: I did at one point attempt to ... have a bridal business. And it is pretty clear to
> me that it would be a good idea to have a nice, clean, um, spot separate from the
> living quarters of your home ... Something along the retail idea ... A studio in an
> art building would be fine.

Images of the studios of RPs (P24 and P30) were taken to document the working

space for Redesign Professionals. Clearly, these individuals had collected supplies, tools,

and equipment over the course of many years. The studio spaces were customized to their

specialties. For example, P30 specialized in weaving, so she had looms, industrial sewing

machines for straight stitching and blind hemming, labeled boxes of supplies, storage

space for fabrics and other components, and a large cutting and work table. P24

specialized in dyeing, and she had a sink area for dyeing, several industrial machines for

straight stitching and overlocking, storage space for threads, trims, and fabric, and a

variety of found objects for incorporating into wearable art pieces. Her studio was

noticeably colorful, which matched her design aesthetic. Both studios had natural

lighting, mannequins, and storage space.
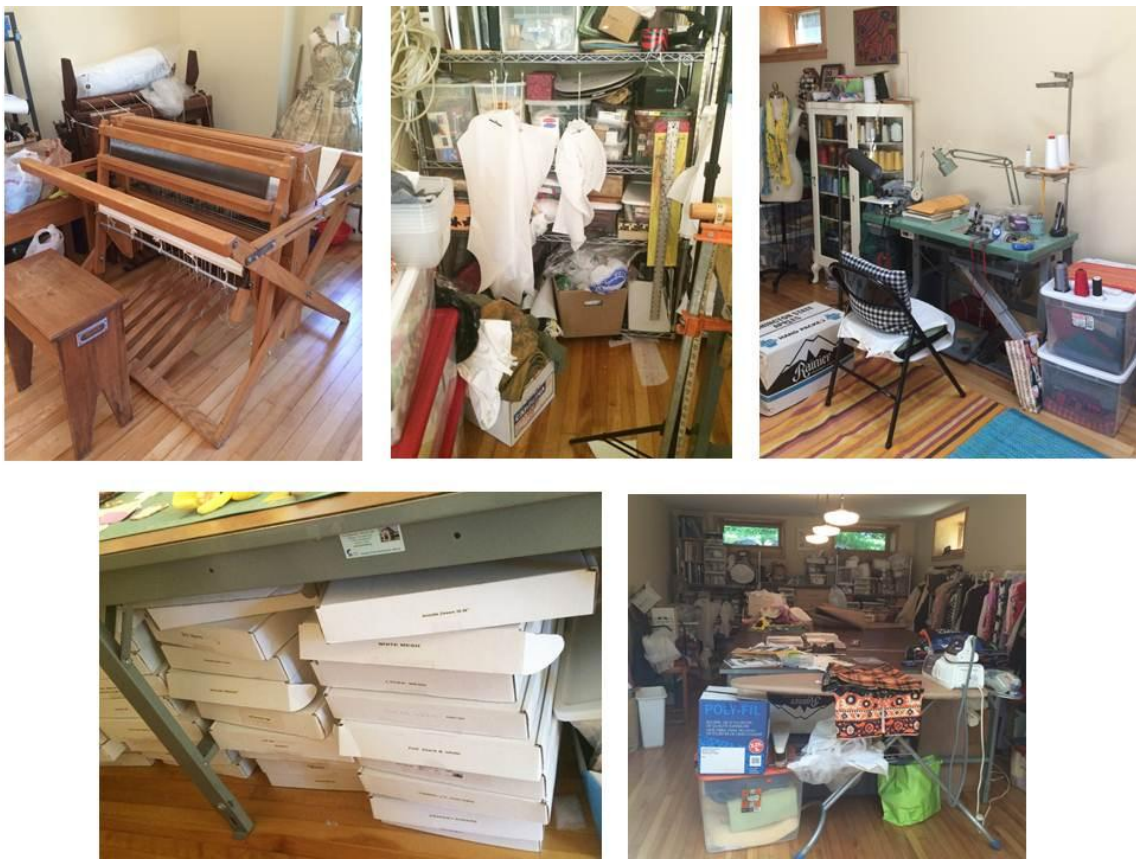
Figure 37. The studio of P30

Figure 38. The studio of P24

Garment Redesign Intention

The eighth concept that will be discussed is Garment Redesign Intention (GRI). A total GRI score was calculated for each participant from questionnaire responses to three questions: 36. What would cause you to be interested in redesigning your used clothing in the future? (check which ones from a list of six reasons), 37. Do you intend to redesign any of your used clothing in the future (check yes or no), 38. If you said yes, which would you redesign? (check yes or no, from a list of four types of clothing you would redesign).

The GRI score summed responses to the three questions, assigning one point for question 37 if yes was checked, adding the number of checks from question 36 for reasons they might redesign clothing, and adding the number of types of redesign they checked from question 38. All except three participants indicated intent to redesign

clothing in the future. Summed GRI scores ranged 2-11 (the maximum). The mean score

for GRI was 8.00, calculated on 29 responses. Note that one of the 30 participants, a

redesign professional, did not complete a questionnaire. Comparing GRI means by

redesign group, the mean GRI for RC individuals was 7.11 (n = 9), for RE 7.3 (n = 10),

and for RP, 9.5 (n = 10, since one of the responses was missing). RP participants had

comparatively higher GRI scores than RC and RE participants. This could be explained

because RP individuals redesign clothing for sale and thus will be highly likely to

continue. Below is a histogram showing the distribution of GRI scores for all

participants. The normal curve skews to the right, indicating high future intention to

redesign for most of participants.
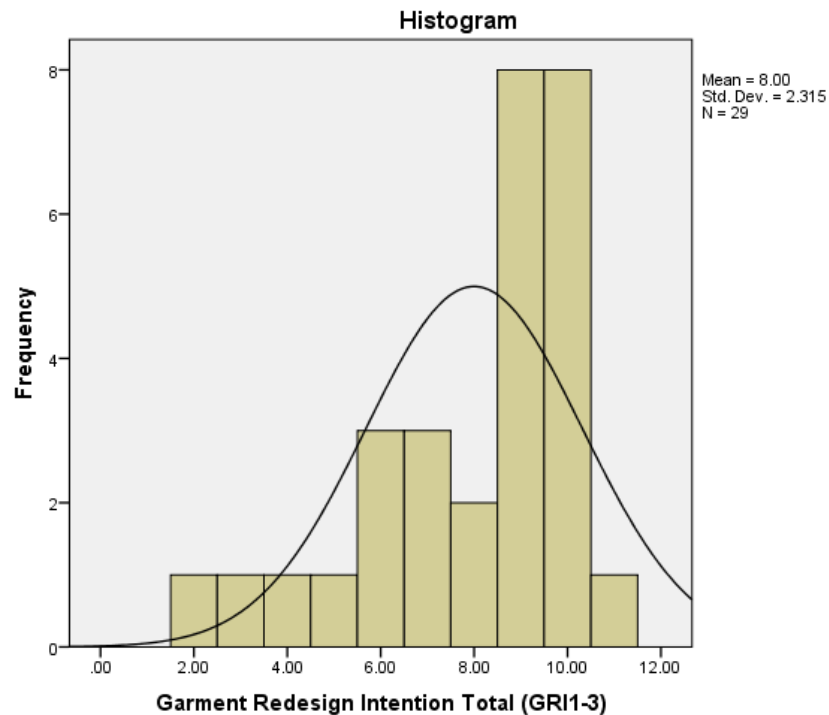
Figure 39. Garment Redesign Intention histogram

In interviews, participants were asked to discuss why they might use a redesign service. Most of the individuals who were interested in using a redesign service were RCs, or else they were RE and RP participants who wanted something for a special occasion that required specialized equipment or skills they did not possess. Reasons for interest in using a redesign service included lack of time to redesign something themselves, adjusting for sizing and fit, getting more use out of clothing in their closet, repurposing clothing from a loved one who had died, achieving a unique appearance, and not liking the style and price of new clothing. However, several participants said they would not use a redesign service for themselves, mainly because they enjoy the creative process of redesign and would not want to miss out on the experience by hiring someone.

> P1: I'm kind of picky. I have a really hard body to fit ... Just after having four kids ... more like adapting things if they're really close, just not quite right.
> P2: I have a closet full of things that I don't wear, and I don't want to get rid of them, so it's just kind of finding a way to wear them again ... I think a lot of it, too, is the fit of things.
> P4: I just got some nice things when my mom died three years ago ... It's time to figure out what to do with a few of them.
> P6: I'm the kind of person that I just don't like appointments. I just would be very unlikely to set up something for that purpose. I don't have very many fashion needs ... I'm just not that fussy.
> P9: I enjoy the redesign process, and I often don't know what I'm going to do with something yet. That's part of the process to me is draping it and taking it off, that ideation process.

Three RPs had considered incorporating instructional services to their business models, so they could charge to show consumers how to redesign their clothing.

> P29: I'm a teacher by trade, so I'm ... trying to figure out if I'm going to do instruction …
> P27: I actually already got asked to teach a class at a new art center down in Hastings to teach recycling ... but I'm just getting my feet wet. I need to get enough stuff made before I start teaching other people how to do it.

Participants were asked to share stores about clothing they had become

emotionally attached to because findings from the previous study suggested this could be

a compelling reason to redesign. One hundred percent of participants indicated on the

questionnaires that they had an emotional connection to their clothing (question 39).

Types of clothing that participants were emotionally connected to included everyday

clothes worn to memorable events (n = 15, 51.72%), wedding dresses (n = 11, 37.93%),

home-made clothing (n = 7, 24.14%), evening dresses (n = 5, 17.24%), clothing that

belonged to a deceased family member (n = 6, 20.69%), and kids' clothes (n = 4,

13.79%). (These categories were not mutually exclusive, and participants could have

emotional connections to multiple types of clothing).

> P1: My wedding dress ... I have all my old prom dresses. I have bridesmaid
> dresses ... the first really expensive pair of jeans I bought ... And the kids' clothes.
> There's some clothes that I know I'll never get rid of, like I can hardly bear the
> thought of getting rid of them.
> P28: I have kept a couple of my [deceased] fiancé's clothes ... He was 6'4", 170
> pounds, and I'm 5'7", 125 pounds ... They're the only thing I have left of him, the
> things he had worn, so I will go to sleep in his t-shirt. Nothing I'll wear out in
> public, but around my personal time, to remember him by.
> P19: I'm attached to my evening dresses ... They're all part of a time, an event
> that was special ... I went to an opera. It was outdoors in England ... You took a
> picnic and champagne, and I went with this guy, and you sit by the river and drink
> your champagne and [eat] caviar and ... smoked salmon. And then you go and
> watch the opera afterwards. It was so cool, and I've still got the dress.

All except six individuals indicated on questionnaires that they were open to

redesigning clothing to which they were emotionally attached (question 40). Two of the

RPs had created multiple types of products for clients from clothing of a loved one

(memory bears, pillows, rugs, and t-shirt quilts), which further underscores interest in

redesigning clothing, an object of emotional significance. Several participants stated that

if they were having an emotionally significant piece of clothing redesigned, they would

want to be more involved in the redesign process than for a similar item to which they

had little emotional connection. They wanted to reduce their uncertainty about the final

outcome by having more check-points with the redesigner. However, sometimes the

potential risk of losing the item, and the emotional connection, was too powerful.

> P9: Not my studio line. I like that too much ... I don't know if I could actually cut it apart when it comes to it.
> P27: I'm kind of delaying a process ... about making memorial outfits ... My brother passed away last year ... He was 51, leaving behind a six- and three-year-old daughter. So, I just recently got the bags of his clothing from his widow, my sister-in-law, and now I have to pull those out and start creating something from that. And that's been something I've been putting off because of that emotional connection ... I'm also going to make memory pillows from some of his stuff for my family for an upcoming thing that's coming up.

Participants discussed specific plans for clothing they intended to redesign in the

near future. Four talked about plans to redesign dresses that were stained, had a hole, or

needed to be updated to a more modern silhouette. Three would continue redesigning

items similar to what they had done in the past. For example, P12 had specific plans to

redesign more outfits following the traditional Hmong cultural themes. P6 planned to

make more silk boxers from the collection of used items she'd found at used clothing

stores. P3 redesigns items for an annual holiday sale at a local boutique, where proceeds

are donated to an orphanage. She planned to redesign used denim into vests for kids,

men, and women. She also planned to make houseware items for the boutique's sale out

of used clothing, such as placemats, napkins, hot pads, and aprons.

Images and sketches were gathered of specific examples of planned redesigns. P2

had a plan to transform a zip-back woven top into a skirt and had pinned the garment to

show how she planned to redesign it. P10 sketched a pair of shorts, a shirt dress, and a matching set of a bra top and shorts from used clothing found in her grandparents' garage. P12 planned to make another outfit inspired by Hmong traditional style, and she wanted to use a stretchy tank top with a peplum as the foundation for the blouse.

Figure 40. P2 plan to redesign a zip-back top into a skirt

Figure 41. P10 outfits she plans to redesign

Figure 42. P12 outfit she plans to redesign

Perceived Behavioral Control

The ninth and final concept that will be discussed is Perceived Behavioral Control (PBC). A total PBC score was calculated for each participant from questionnaire responses questions 44-52. Questions 44-47 were grouped into the first sub-score PBC1. The questions asked if participants had certain concerns and worries about the redesign process; thus, no answers were assigned one point, and yes answers zero points, with a maximum of four in PBC1. Question 48 (PBC2a) asked how far participants would travel for redesign on a four-point scale (1 was less than 5 miles, 2 was 5-10 miles, 3 was 10-30 miles, and 4 was more than 30 miles). This sub-score was re-coded as binary (PBC2b) for easier summation, where one was assigned if participants would travel more than 10 miles, and zero if participants would not travel more than 10 miles.

Question 49 (PBC3a) asked how long participants would wait for redesigned clothing to be completed on a four-point scale, (where 1 was one week, 2 was one month, 3 was one to three months, and 4 was more than three months). The sub-concept was also re-coded as binary (PBC3b) for easier summation, where one was assigned if participants would wait one month or more, and zero was assigned if participants would not wait one month. Question 50 (PBC4a) asked how much time a participant would invest in the redesign process on a four-point scale (where 1 was 30 minutes, 2 was one hour, 3 was five hours, and 4 was 10 hours). The sub-score was re-coded as binary (PBC4b) where one was assigned if participants would invest five hours or more and zero if participants would not invest five hours or more in the redesign process. Question 51 (PBC5) asked participants to indicate if they expected to pay less than the original price. Yes answers

were coded as one and no answers as zero. Question 52 (PBC6a) asked participants to indicate how much they would pay for redesign on a five-point scale (where 1 was $0-26, 2 was $26-50, 3 was $51-75, 4 was $76-100, and 5 was $100 or more). The sub-score was re-coded as binary (PBC6b) where one was assigned if participants would pay more than $50 and zero if they would not pay more than $50.

The PBC score summed responses to the nine questions, adding the number of no responses for questions 44-47 (PBC1), adding one point if participants would travel more than 10 miles for redesign (PBC2b), would wait more than one month for redesign (PBC3b), would invest more than five hours in the process (PBC4b), if they do not expect to pay less than the original price of the garment (PBC5), and if they would pay more than $50 for redesign (PBC6b). The maximum possible PBC score was nine.

The mean score for PBC was 4.14, calculated on 29 responses. Note that one of the 30 participants, a Redesign Professional, did not complete a questionnaire. Comparing PBC means by redesign group, the mean PBC for RC individuals was 3.78 (n = 9), for RE 3.3 (n = 10), and for RP, 5.3 (n = 10, since one of the responses was missing). RP participants had comparatively higher PBC scores than RC and RE participants. This could mean that RP individuals were unconcerned about the result of redesign because they were confident in their skills, which they had honed for several years. Below is a histogram showing the distribution of PBC scores for all participants. The normal curve skews to the left, possibly indicating that there are barriers that might prevent individuals from redesigning clothing, such as price, time, and convenience. It

was also interesting to note the result of PBC5, where almost half of participants (n = 14, 48.28%) wanted to pay less than the original retail price of the garment.
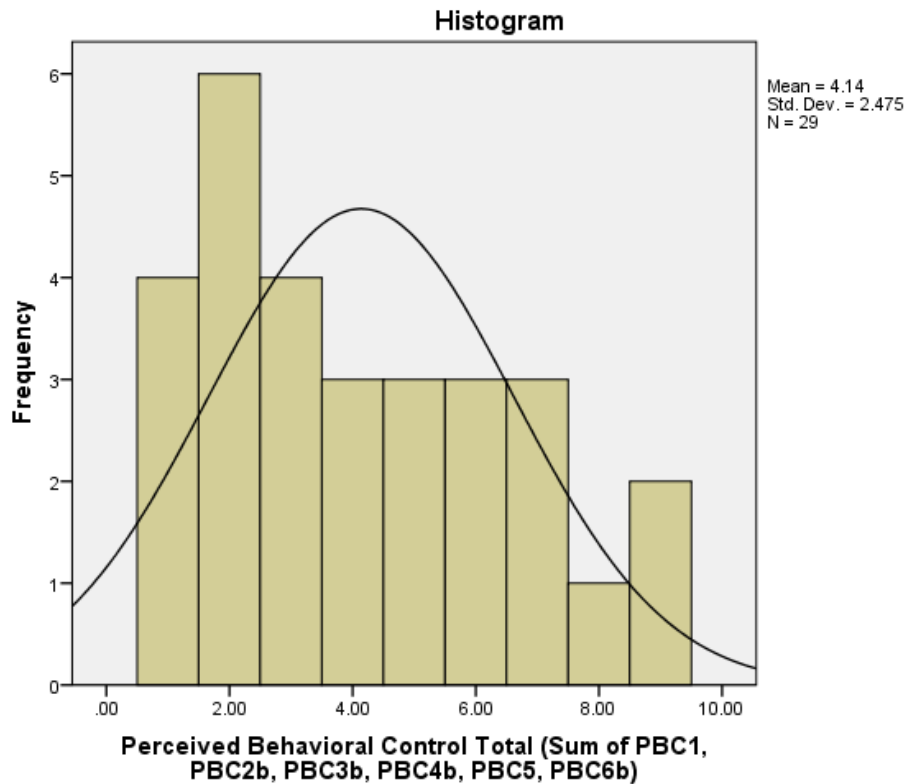
Figure 43. Perceived Behavioral Control histogram

In interviews, participants were asked to discuss their worries and concerns about the risks of redesigning clothing. The first major concern was that a garment could be ruined in the redesign process (n = 14, 48.28%). The second was that the garment may have turned out fine in terms of fit and construction, but that they just didn't like it or it wasn't flattering on them (n = 11, 37.93%). The third worry was that the garment would not fit them (n = 7, 24.14%). On the other hand, several participants (n = 8, 27.59%) were not concerned. Participants also shared stories of redesigns they had attempted that were flops, which did not turn out as expected.

P3: I might hate it, and then a perfectly good garment is ruined.
P4: My main concern is that I have an idea that … I don't know how you do that in terms of brainstorming ideas for things, what will look good without trying it on. So, my concerns are of investing time and energy and money and not having it fit right or look good on my body type. And you keep changing, you know?
P16: A lot of times when I am confident in it, I just go for it and I'm also OK experimenting with things and ruining things sometimes … Sometimes it's the fit that doesn't turn out.
P23: No. I'm very … I'll take whatever time and do whatever it takes until it does turn out. So it's not a concern, but it's a determination. If I'm going to put this much work into it, it's going to be good, you know?

Participants believed it would be necessary to reduce barriers as much as possible for clients through offering an easily accessible location, convenient hours of operation, quick turn-around time, affordable prices, and building awareness of the service with advertising. Almost half of participants (n = 14, 48.28%) indicated they were not willing to drive more than 10 miles on questionnaires. However, if they really wanted to use the service, equally as many people (n = 14, 48.28%) were willing to travel as far as 30 miles. They suggested that having plenty of free parking and having the location close to public transportation routes would encourage patronage. P27 suggested having a redesign business close to a dry cleaner or a charity shop could encourage partnership of services. For example, a client could shop for clothing at a thrift store, knowing if they wanted to change the garment somehow, they could take it directly to a nearby redesigner. Similarly, having the business close to a dry cleaner could allow them to drop off or pick up dry cleaning and redesign in the same trip.

Redesign could be convenient by allowing clients to maximize their time. Participants said that having evening and weekend hours would make them more likely to use a service. For others, convenience pertained to how much time they had to wait to get

their clothing back. Most of participants indicated on questionnaires (n = 18, 62.07%) that they would not wait more than one month. People tend to procrastinate, and sometimes do not plan ahead for events. Quick turn-around time to allow customers to have immediate gratification and fulfill last-minute requests was attractive to participants.

An affordable price was important to participants; however, they discussed how it could be difficult to estimate how long a piece would take to redesign and therefore how much it would cost. Roughly half of participants (n = 14, 48.28%) were not willing to pay more than $50 for redesign, and slightly more wished to pay less than the original retail price of the garment (n = 15, 51.72%). For REs, price may not have been as salient because they were mostly designing for themselves from clothing they already had. REs expenditures would be minimal because they were not paying for their own labor. For RPs, the way they could offer an affordable price to their clients was to work as efficiently as possible and reduce the number of labor hours to complete a project. P21, an RP, stated, "Time is money." On the other hand, if RPs worked with high-end products requiring careful and meticulous construction, their wares would always have to be high-priced, prohibitive to the mass market.

Effort required in the redesign process could be another barrier. Level of involvement in the redesign process muddied the issue of pricing for participants. P10 and P13, RCs, thought that if they were more involved in the process, they should pay less for redesign because more time and effort was required on their part. However, P16 and 17, RPs, believed if their clients were more involved in the process, they should charge an hourly rate for time spent with clients. P16 and P28, RPs, stated they did not

like the idea of a high level of involvement because they did not want to be

micromanaged during the creative process. P27 said that the price shouldn't change based

on client involvement because satisfaction with services is based on trust in the

professional. To her, allowing clients to be involved helped build trust and confidence.

Here is a sampling of participants' comments.

> P4: From the designer's point of view, I think the more involvement somebody wants, the more it would cost ... From the client's point of view, the more you put in ... it should cost less. I would think it would affect the price, but which way, I'm not sure.
> P17: For me, it all comes down to the number of hours put in because I'm used to charging roughly hourly ... and that will include meetings, running out to your house, fitting, shopping, you know, but the clock is added up for all those things.
> P8: As far as their individual involvement, there is a limit ... Just tell me your idea and I'll work around that ... I definitely want them to be involved ... I try to get people to believe in my work ... They can entrust it in me, that they are going to get what they asked for.
> P16: I think about my hourly rate ... I feel like more time you have to spend with the client is less time you have to work on your own stuff, so I would think it would cost a little more if it was going to be that personalized, and it gives you less autonomy to make your own decisions, too, so you're kind of accommodating a lot more requests.

Extent of redesign, or amount of change between the original garment and the

redesign, could also influence the price. Participants were asked to comment on what

they thought the price could be for three different co-designed garments from the 2011

study, which were selected to be representative of the three categories of extent of

redesign. Figure 44 is the image of the restyled co-design, classified as such because the

internal structure of the dress was not changed. The dress was shortened, and the lace

machine stitched to the shell fabric.

Twenty participants gave estimates of how much they would pay or how much

they would charge for the example of a restyled co-design. Individuals who did not state

a specific amount instead gave a range. Means were calculated for the 20 estimates, and if a participant gave a range for the price, the dollar amount in the middle of the range was used for the calculation. The price estimates ranged from $15-$250. The mean price for the restyled co-designed dress was $58.50. Mean estimated prices were different based on redesign group. RCs estimated a range of $15-100 and a mean price of $52.50 (n = 9). REs estimated a range of $15-250 and a mean price of $71.67 (n = 6). RPs estimated a range of $30-100, with a mean price of $53.50 (n = 5). It is interesting that mean price estimates for RCs and RPs were very similar, but REs' estimates were significantly higher. Compared to RCs, REs should be less likely to use a co-design service, and it seemed contrary to that the REs were most willing to pay for the restyled dress. The similarity in RC and RP estimates could mean that clients and professionals are aligned on price expectations.

Before   After

Figure 44. Restyled redesign

Figure 45 is the image of the tailored and restyled co-design, classified as such because the internal structure of the garment was altered, as well as some of the aesthetic components. The blazer was taken in at the shoulders, armholes, sleeves, and body. It was fully lined, so the lining was removed during the body alteration and then re-attached by hand. A seam was added at the natural waist, the bottom part of the jacket gathered as a peplum, and a silk sash added. Twenty participants gave estimates of how much they would pay or how much they would charge for the example of the tailored and restyled co-design. Means were calculated for the 20 estimates, and if a participant gave a range for the price, the dollar amount in the middle of the range was used for the calculation.

The prices ranged from $20-$200. The mean price for the tailored and restyled co-designed blazer was $88.43. Mean estimated prices were different based on redesign group. RCs estimated a range of $25-150 and a mean price of $81.67 (n = 9). REs estimated a range of $20-100 and a mean price of $58.00 (n = 5). RPs estimated a range of $75-200, with a mean price of $123.92 (n = 6).

The price differences by group seem to make logical sense, since the highest mean price was found in the RP group, which should be keenly aware of how many hours of labor might be needed for such a redesign. The next highest mean price was found in RCs, but it was significantly less than RPs. This could mean it might be difficult for RPs to charge a profitable price based on the labor required for this type of redesign. The REs price estimate was the lowest of the three groups, and that could be because REs tend to complete redesigns on their own versus co-designing. REs may not have thought much about the labor when giving their estimates because they generally redesigned clothing on their own.

Before   After
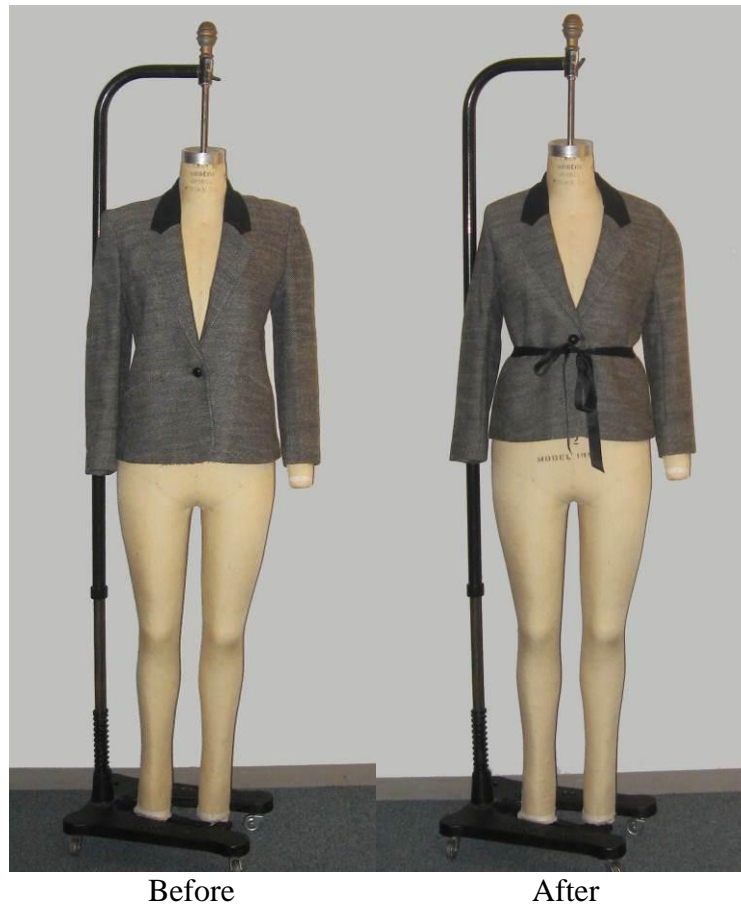
Figure 45. Tailored and restyled redesign

Figure 46 is the image of the full transformation co-design, classified as such because the dress was completely deconstructed before being reassembled into a tunic. The redesigner made a custom pattern for the tunic, carefully pieced different patterns of eyelet and lace together, added embroidery at the neckline, and added a channel for the waist sash. Eighteen participants gave estimates of how much they would pay or how much they would charge for the example of the full transformation redesign. Means were calculated for the 18 estimates, and if a participant gave a range for the price, the dollar amount in the middle of the range was used for the calculation. The prices ranged from $30-$200. The mean price for the full transformation co-designed tunic top was $117.50.

Mean estimated prices were different based on redesign group. RCs estimated a range of $30-200 and a mean price of $106.88 (n = 9). REs estimated a range of $75-120 and a mean price of $97.50 (n = 5). RPs estimated a range of $100-205, with a mean price of $154.50 (n = 5). The mean price differences by group follow a similar pattern as that of the tailored and restyled co-designed garment in Figure 45.

Before   After

Figure 46. Full transformation redesign

Another idea from the 2011 study was that redesign could be offered to customers as a social event. People are often seeking experiential entertainment where they are involved in hands-on activities, as compared to passive entertainment (e.g. a movie). Redesign could be a group event attended with one's circle of friends. Occasions for

which group redesign events could be specifically planned could include birthday parties,

bachelorette parties, and a girls' night out. The events could be held at the design studio

or at a customer's house.

Participants were asked how much seemed reasonable to charge per person for

attending such an event. Twenty participants gave estimates of how much they would pay

or how much they would charge per person for a redesign event. (Participants were told

that their estimated prices should exclude any additional hourly charges incurred after the

event to finish the redesigns). Means were calculated for the 20 estimates, and if a

participant gave a range for the price, the dollar amount in the middle of the range was

used for the calculation. Estimates ranged from $0-$100. The mean estimated price per

person for a redesign event was $37.75. Mean estimated prices were different based on

redesign group. RCs estimated a range of $10-100 and a mean price of $37.22 (n = 9).

REs estimated a range of $10-100 and a mean price of $42.00 (n = 5). RPs estimated a

range of $0-80, with a mean price of $35.00(n = 6). The price estimates by group

followed a similar pattern to those of the restyled co-designed garment in Figure 44, with

RCs and RPs showing similar prices but REs estimates significantly higher. Perhaps REs

are most interested of the three groups in the experiential aspects of redesign for a social

event and thus more willing to pay.

Not all participants were convinced that redesign as a social event was a good

idea, however. Two RPs expressed concern in the outcome of such an event.

> P18: It can be so much fun to work with somebody else ... if they're the right
> person ... I took part in a couple things a couple years ago where it's like certain
> people just took over and then the whole focus went out the door and it was just
> like they were having a party and they weren't really paying attention. So I think

it would be really important to have it understood that it's going to be ... fun, obviously, but it's not a party.

P28: I would think that's a horrible idea. Just watch wedding shows, and everybody's got a different opinion and nobody understands how to make anything ... You can't take a Fashion Bug $9.99 special into a Balenciaga, you know? I think the expectation could be there ...

In contrast, two RPs expressed interest in holding redesign social events for their clients, especially as a marketing tool to gain exposure with wider client bases.

P25: I don't know if you would charge for the party, but it would be a great way to share ideas, get ideas and then base your rate on the individual project. The party or event would be more of a marketing tool to attract the business, but I don't think you could really charge for the party, just like any other event that you get the free knives at and you know they want to sell you that condo but they're giving you the dinner and the free knives for taking your time.

P29: We've done that ... We did a scarf party. And I did it for my daughter's birthday. We did three scarves, and we cut them out, and then you let the kids put the dots on them, and then we'd send them out to our sewers. And they each designed their own purse, and it was fun. And then you know it's a little bit challenging to find a sewer. And we also did it for a group of co-op ladies, and it was also fun. We did charge for it, you know, pay the cost of our regular scarf, and we charged them by number of dots that you put on because that's how we figured our sewing costs. I still think it has the potential to be a cool idea, but the hard part was how to market it and how to package it because if you let them design it ... We had a hard time, and to be honest with you, not everybody should design their own scarf.

Finally, participants were asked how much they thought they would pay (or charge) for a one-on-one wardrobe consultation to plot out which items needed to be redesigned and what they could become. Twenty participants gave estimates of how much they would pay or how much they would charge for such a consultation, considering the meeting would last between one and four hours. (Participants were told that their estimated prices should exclude any additional hourly charges incurred after the consultation to finish the redesigns). Means were calculated for the 20 estimates, and if a

participant gave a range for the price, the dollar amount in the middle of the range was used for the calculation.

Estimates ranged from $20-$200. The mean estimated price for a one-on-one redesign consultation was $83.88. Mean estimated prices were different based on redesign group. RCs estimated a range of $40-200 and a mean price of $105.36 (n = 7). REs estimated a range of $20-150 and a mean price of $64.00 (n = 5). RPs estimated a range of $20-140, with a mean price of $77.50 (n = 8). P1 suggested that clients could pre-select certain items they wanted the redesigner to review with them, and the redesigner could bundle consulting fees on a certain number of items for a flat rate. RPs mainly said they would probably charge their hourly rate for the consultation. RCs were most willing to pay for wardrobe consultation of the three groups. This may mean that RPs could charge a premium for wardrobe consultation redesign services offered to RCs.

CHAPTER 5: SUMMARY AND CONCLUSIONS

The goal of this mixed methods study was to explore the viability of a service or business involving consumers in redesigning their used garments as a sustainable alternative to disposal. Psychographic and behavioral characteristics of individuals who redesigned clothing were of primary interest. The research questions and their answers will be recapped in this section, and the types of redesigners (Redesign Consumers, Redesign Enthusiasts, and Redesign Professionals) will be compared and contrasted.

Research Questions

1. What psychographic characteristics, if any, are shared among redesigners?
    a. To what extent are participants concerned about the environment?
    b. To what extent do participants feel social pressure to consume sustainably?

    c. What are some of the perceived barriers participants face when considering whether or not they will redesign their used clothing?

2. What behavioral characteristics, if any, are shared among redesigners?
    a. What types of sustainable fashion behavior do participants engage in?
    b. What types of clothing redesign, if any, have participants completed in the past four years?
    c. How will participants describe their use of previously redesigned clothing?
    d. How often will participants wear their redesigned clothing?
    e. How long will participants keep their redesigned clothing?
    f. Why and how will participants divest of redesigned clothing?
    g. What are participants' intentions for redesigning clothing in the future?

Research Question 1 – Psychographics of Redesigners

Sections II, III, and IX of the questionnaires and interviews were designed to answer RQ1. General Ecological Concern (GEC) was the concept in the literature that provided the basis for framing RQ1a. Social Pressure / Norms (SPN) was the concept in the literature that provided the basis for framing research RQ1b. Perceived Behavioral Control (PBC) was the concept in the literature that provided the basis for framing research RQ1c.

RQ1a - General Ecological Concern

In terms of GEC and RQ1a, it seemed participants in this study had a high level of concern. Summed GEC scores ranged 6–23 (maximum of 25). The mean score for GEC was 14.48, calculated on 29 responses. Comparing GEC means by redesign group, the mean GEC for RC individuals was 12.56 (n = 9), for RE 18.9 (n = 10), and for RP, 18.1 (n = 10, since one of the responses was missing). RE and RP participants (who redesign clothing more frequently) had comparatively GEC scores than RC participants. The finding was consistent with previous research in which frequent recyclers (of common products such as cans, bottles, and paper) scored higher on environmental concern than

less frequent recyclers (Domina & Koch, 2002) and a study where individuals who scored higher on environmental concern demonstrated higher pro-environmental intentions and behaviors than their peers who were less concerned (Bamberg, 2003).

Several participants expressed worry about the future as reasons why they were concerned about the environment. This finding was consistent with previous research in which participants were concerned with preserving resources for future generations (Hill & Lee, 2012). Environmental concern did not appear to be related to interest in increasing one's knowledge about ecological issues for roughly half of participants (48.28%, n = 14). This finding was consistent with a previous study, in which concern for the environment did not necessarily motivate consumers to seek out more knowledge about renewable energy (Bang, Ellinger, Hadjimarcou, & Traichal, 2000).

Participants had changed their behavior considering the environment at least to some extent. They made small changes, such as recycling, keeping products for extended periods of time, minimizing household waste, and conserving resources. On the other hand, two participants stated they were not very concerned about the environment, or said they rarely thought about it. Only one person stated they had not changed their behavior to minimize their impact on the environment.

RQ1b – Social Pressure / Norms

For SPN and RQ1b, overall, participants had a medium level of social pressure to consume sustainably. Summed SPN scores ranged 1–22 (maximum of 25). The mean score for SPN was 12.24, calculated on 29 responses. Comparing the means by redesign group, the mean SPN score for RC participants was 12.44 (n = 9), for RE participants

was 16.56 (n = 10), and for RP participants was 13.00 (n = 10). RE participants had a comparatively higher mean SPN score than RC and RP individuals, which could indicate social pressure was stronger for REs.

All participants indicated their close friends and family had changed their behavior to minimize their impact on the environment such as recycling. All except two participants indicated their close friends and family were concerned about the environment. For 11 participants, their close friends and family were similar to them in terms of their ecological concern and behavior modifications. As with results about individuals' own behavior, almost half (44.83%, n = 13) of participants' close friends and family had not done their own research on environmental issues.

The majority of participants (79.31%, n = 23) spoke with their close friends and family about ecological issues. Sustainable and healthy food was a topic that many participants (41.38%, n = 12) discussed with close friends and family regularly. This finding was similar to a previous study in which people who were knowledgeable about organic food were willing to pay a premium for organic wool clothing (Peterson, Hustvedt, & Chen, 2012). Perhaps individuals who already purchase sustainable foods will be more likely to redesign clothing.

RQ1c – Perceived Behavioral Control

Participants in this study faced significant barriers, which could prevent future redesign behavior. PBC scores were skewed slightly to the left, showing a potentially low level of perceived behavioral control. The mean score for PBC was 4.14 (maximum of 9). Comparing PBC means by redesign group, the mean PBC for RC individuals was 3.78 (n

= 9), for RE 3.3 (n = 10), and for RP, 5.3 (n = 10, since one of the responses was missing). RP participants had comparatively higher PBC scores than RC and RE participants. RP individuals might have been unconcerned about the result of redesign because they were confident in their skills, which they had practiced and expanded upon for several years.

Other researchers noticed barriers to purchasing sustainable products: high price, poor quality compared to traditional products and limited availability of products (Gleim, Smith, Andrews, & Cronin, 2013). From the 2011 study, convenience, effort, risk of ruining the garment, and price were reasons consumers were hesitant to redesign their used clothing (Janigo, 2011). The same constraints were found in the present study.

Convenience. Participants said having evening and weekend hours would make them more likely to use a service. For others, convenience pertained to how much time they had to wait to get their clothing back. Most of participants (n = 18, 62.07%) indicated that they would not wait more than one month. Almost half of participants (n = 14, 48.28%) indicated they were not willing to drive more than 10 miles for redesign. However, if they really wanted to use the service, equally as many people (n = 14, 48.28%) were willing to travel as far as 30 miles. They suggested that having plenty of free parking and having the location close to public transportation routes would encourage patronage.

Effort. Effort required in the redesign process could be another barrier. In the 2011 study, three levels of customer involvement could be incorporated in redesign. In the present study, RC and RE individuals (n = 19) were most likely to prefer a low level

of involvement in collaborative redesign (7 out of 19), then medium (5 out of 19), and least number preferred high involvement (3 out of 19). However, P13 thought it would depend on the relationship between the redesigner and the client, or would depend on the original garment. The tendency to minimize effort in redesign is consistent with previous research which indicated consumers did not want to purchase eco-fashion if it was less easy to acquire than conventional clothing (Chan & Wong, 2012).

Risk of Ruining the Garment. A major concern was that a garment could be ruined in the redesign process (n = 14, 48.28%). Participants were also concerned the garment could turn out fine in terms of fit and construction, but that they just wouldn't like it or it wouldn't be flattering on them (n = 11, 37.93%). The third worry was that the garment would not fit them (n = 7, 24.14%). On the other hand, several participants (n = 8, 27.59%) were not concerned about the outcome of the garment.

Price. Regarding how much they paid for redesign, the majority (n = 21, 70%) paid $25 or less. Three paid $26-50 (10%), and only one person (3.33%) paid $50-$75. Roughly half of participants (n = 14, 48.28%) were not willing to pay more than $50 for redesign, and slightly more wished to pay less than the original retail price of the garment (n = 15, 51.72%). It could be hard for redesigners to make a profit when low prices are expected, given the labor-intensive processes in redesign, such as time-consuming disassembly. Furthermore, extent of redesign, or amount of change between the original garment and the redesign, could also influence the price. The result was consistent with past research which showed consumers were not willing to pay a premium for eco-fashion, clothing made in the U.S. or clothing made of organic fibers (Chan & Wong,

2012; Ha-Brookshire, 2012; Norum & Ha-Brookshire, 2011). The finding was contrary to a previous study in which participants expected sustainable clothing to be expensive and didn't mind paying more (Cervellon & Wernerfelt, 2012).

Perhaps the most plausible explanation for the lack of consistency among previous research about price expectations for sustainable fashion could be best explained by authors who suggested consumers were willing to pay a premium for clothing made from socially responsible retailers, but only within the limits of their purchasing power (Bhaduri & Ha-Brookshire, 2011). Thus, it will be important to keep redesign prices within consumers' purchasing power, which seems to be $50 or less. Otherwise, it will be necessary to change consumers' price expectations through educational marketing messages, so they perceive more value in redesigned clothing.

Considering PBC findings, preferred conditions for redesign were surmised. However, the requirements did not seem realistic. Most participants wanted to pay less than $50 for redesign, or even less than the original price of the garment. Redesign should be completed in less than a month, with minimal client involvement or time invested in the process, and without the client having to travel far. Redesigned garments need to fit well and suit the client's taste. Redesigners need to establish a high level of trust with clients, so they would not be worried about the final outcome. These criteria would place much pressure on a professional redesigner, including strain on pricing strategies toward the lowest possible price, and stress to fulfill high client expectations.

Research Question 2 – Behavioral Characteristics of Redesign

Sections IV, V, VI, VII, and VIII of the questionnaires and interviews were

designed to answer RQ2. Sustainable Fashion Behavior (SFB) was the concept gleaned

from the literature that provided the basis for framing RQ2a. Findings from the 2011

study provided basis for framing research RQ2b-f. Garment Redesign Intention (GRI)

was designed to be the behavioral intent antecedent from the TPB and was used to frame

RQ2g.

RQ2a – Sustainable Fashion Behavior

SFB scores showed high tendency of participants to engage in sustainable fashion

behaviors. Scores ranged 6 – 16 (maximum of 16), with a mean of 10.79. Comparing the

means by redesign group, the mean SFB score for RC participants was 10.89 (n = 9), for

RE participants was 10 (n = 10), and for RP participants was 11.5 (n = 10). The SFB

mean scores for the three groups were quite similar, which could mean type of redesigner

didn't influence sustainable fashion behavior in general.

The questions covered types of sustainable clothing or services participants

purchased, length of time they keep clothing, fast and slow fashion behavior, and clothing

repair at home. The most commonly mentioned sustainable clothing type was used

clothing, which was not surprising. All except for one participant indicated they bought

and wore used clothing. All of participants were not concerned about others judging them

negatively for wearing used clothing. Most of participants (86.21%, n = 25) were not

worried about germs or bacteria from used clothing, and 75.86% (n = 22) had purchased

vintage clothing.

When participants bought new clothing from retail stores, they sometimes paid attention to fiber types. Fibers thought to be sustainable included bamboo, recycled polyester, recycled wool, angora wool, silk, cotton, and organic cotton. Questionnaire responses that showed only 27.59% (n = 8) of participants bought organic clothing and 44.83% (n = 13) bought fair trade clothing. Likewise, some but not the majority of participants had purchased clothing from brands that had social responsibility policies and personnel (n = 15, 51.72%), brands that offered luxury or high-end goods (n = 13, 44.83%), clothing made in the U.S. (n = 14, 48.28%), and clothing from stores that featured local designers and brands (n = 9, 31.03%). A larger amount of participants indicated on questionnaires that they avoided buying clothing from fast fashion stores (n = 18, 62.07%), with Forever 21 mentioned several times in interviews as a store to avoid. However, seven individuals still shopped at fast fashion stores for affordability or else did not specifically avoid shopping there.

Participants tended to keep clothing for a long time, as nobody indicated on the questionnaires that they kept clothing less than one year. Considering their entire wardrobe, the majority (n = 26, 89.66%) kept clothing for more than three years, and the rest (n = 3, 10.34%) kept their clothing 1-3 years. All of participants indicated on the questionnaires that they had an emotional connection to some of their clothing, so that could be a reason for keeping them. This finding was consistent with previous research in which participants had emotional connection to their clothing and perceived themselves as collectors (Watson & Yan, 2013). Regarding which types of clothing they kept around, responses covered almost every garment type and purpose. Perhaps what allowed

participants to hold onto their clothing for longer periods of time was that most

participants completed basic to advanced repairs on their own clothing (n = 25, 86.21%).

Participants occasionally hired tailors and cobblers to repair clothing and shoes (n = 16,

55.17%). Approximately 68.97% of participants (n = 20) said in interviews that they

made or designed their own clothing.

RQ2b-f: Redesign Behavior, Retention, Use, and Divestment for 2011 Participants

RQ2b – Redesign Behavior. In terms of redesign use for 2011 participants

(RQ2c, section V on questionnaires and interviews), it was difficult to gather many

insights, since only six individuals, a response rate of 22%, from the original study

participated. Four of the six individuals did not increase their redesign behavior or

redesign anything else since 2011, but two continued to redesign additional items. Two

(P3 and P6) were labeled as Redesign Enthusiasts because they knew how to sew and had

redesigned additional garments since the 2011 study for themselves or family members.

After the study, P3 had taken a semester-long college-level sewing class to improve her

skills and had discovered multiple ways to redesign clothing. P3 had plans to continue to

use her newfound redesign skills for activism and causes, such as neighborhood

organization and to benefit an orphanage. P6 shared that although she had always known

how to sew well, after participating in the 2011 study, she was inspired and had some

ideas for redesign.

RQ2c-e – Retention and Use. Five of the six 2011 participants kept their

clothing from the previous study. Three participants indicated they wore their garment

every six months, one stated she wore it at least yearly, and P3 wore her jacket an

estimated 10-15 times every fall. Participants were asked if they had any problems with their redesigned clothing, or if there were any reasons why they wore them infrequently. Some garments were only usable in certain seasons or situations, such as lightweight fall jackets, swim cover-ups, and special occasion dresses. For two participants, the garment did not turn out as they had imagined. Others had problems with the functionality of trims such as buttons. It seems plausible that people would keep their redesigned clothing at least as long as their other clothing, although more evidence is needed to support this conjecture.

RQ2f – Divestment. P1 was the only participant who got rid of her redesigned garment. She had the garment for one year, wore it once to a wedding, and then donated it to a charity shop during spring cleaning.

RQ2b-f: Redesign Behavior, Retention, Use, and Divestment for All Participants

RQ2b – Behavior. Twenty-six participants (87%) had redesigned clothing in the last four years, while four had not (13%). All four individuals who had not redesigned clothing in the past four years were classified as RC. (Three were part of the 2011 study, and one person was unsure of the exact year she had bridesmaid dresses remade into a quilt). The majority of participants (n = 20, 68.97%) completed the redesign construction and all other parts of the redesign process themselves. Three individuals had a family member (grandma, mother, or aunt) complete a redesign for them. Two hired a professional tailor to complete redesign, and one purchased a redesigned garment from a consignment shop.

Many participants (n = 17, 58.62%) indicated they were willing to spend five

hours or more of their own time involved in redesign of a garment. Participants generally

preferred shorter projects which took less than 10 hours to complete. Only five

individuals specifically reported spending more than 10 hours on a project. Participants

tried to minimize the amount of time invested in redesign; however, when working with

expensive or complicated items, it was not possible to work faster.

RQ2c-e – Retention and Use. In terms of divestment of redesigned clothing

(RQ2f, section VI and VII on questionnaires and interviews), most did not plan to get rid

of them. Sixty percent of participants (n = 18) stated they were not likely to get rid of

their redesigned clothing in the near future. Perhaps participants' retention behavior with

redesigned clothing could be likened to slow fashion behavior in which purchases were

made thoughtfully and carefully, and clothing satisfaction was ongoing (Watson & Yan,

2013). This was best summarized in the words of P19, when asked if she would get rid of

any of her redesigned items, "They're like babies ... my babies."

In terms of frequency of wearing redesigned clothing for all participants (RQ2d,

section VII on questionnaires and interviews), several wore them monthly (n = 9, 30%),

and some wore them yearly (n = 6, 20%). The rest of participants were evenly divided

among wearing every six months (n = 5, 16.67%), wearing weekly (n = 5, 16.67%), and

not having worn the redesigned clothing at all (n = 5, 16.67%). Regarding reasons why

participants wore their redesigned clothing infrequently, many (n = 18, 60%) did not

check any from the list, indicating they did not have these particular issues. Six

individuals checked at least one of the issues (20%). Five had problems with the fit, four

no longer liked it, and three had issues with the design and functionality of the garment.

RQ2f – Divestment. Seven out of 29 (23.33%) indicated they would divest of the

clothing. Six reported they would drop them at a charity shop. Each of the following

ways to divest of clothing received two checks on questionnaires: give to friends or

family, sell at a garage sale, take to a clothing swap, and sell at a consignment shop. Two

also wrote in that they would sell it on Etsy.

RQ2g – Garment Redesign Intention

Regarding participants' garment redesign intention (RQ2g, section VIII on

questionnaires and interviews), participants were highly likely to redesign clothing in the

future. All except three participants indicated intent to redesign clothing in the future.

Summed garment redesign intention (GRI) scores ranged 2-11 (maximum of 11). The

mean score for GRI was 8.00, calculated on 29 responses. Comparing GRI means by

redesign group, the mean GRI for RC individuals was 7.11 (n = 9), for RE 7.3 (n = 10),

and for RP, 9.5 (n = 10, since one of the responses was missing).

RP participants had comparatively higher GRI scores than RC and RE

participants. This could be explained because RP individuals redesign clothing for a

profit and thus will be highly likely to continue. Also, previous research has shown that

an individual's self-identity could predict their likelihood to engage in behavior that is

beneficial to the environment (Nigbur, Lyons, & Uzzell, 2010). Perhaps RPs' self-

identification as ecologically conscious redesign professionals contributed to their high

levels of future garment redesign intention.

Most of the individuals who were interested in using a collaborative redesign service were RCs, or else they were RE and RP participants who wanted something for a special occasion that required specialized equipment or skills they did not possess. Reasons for intending to use a collaborative redesign service included lack of time to redesign something themselves, adjusting for sizing and fit, getting more use out of clothing in their closet, repurposing clothing from a loved one who had died, achieving a unique appearance, and not liking the style and price of new clothing. However, several participants said they would not use a collaborative redesign service for themselves, mainly because they enjoy the creative process of redesign and would not want to miss out on the experience by hiring someone.

<div align="center">Types of Redesigners</div>

To recap, the first group was labeled Redesign Consumers (RC), which consisted of 30% of participants (n = 9, mean age 31 years). Redesign Consumers were defined as someone who either purchased redesign as a service or product or else completed redesign without advanced sewing and fashion design skills. The second group was labeled Redesign Enthusiasts (RE), which consisted of 33.33% of participants (n = 10, mean age 47 years). Redesign Enthusiasts were defined as someone who redesigned clothing for themselves, implementing advanced sewing and fashion design skills. The third group was labeled Redesign Professionals (RP), which consisted of 36.67% of participants (n = 11, mean age 51 years). Individuals in this group sold redesigned garments, but may have also redesigned clothing for themselves.

There were marked differences among the groups on almost every concept in the research model. (See Table 8 for mean and frequency comparisons). The age differences among redesign groups could also have had some effect on results. RCs had a mean age of approximately 31 years, REs 37 years, and RPs 51 years. In the 2011 collaborative redesign study, older consumers were more likely to keep their clothing longer, were more informed of sustainable fashion options, and thought about the environment more often when buying clothing than younger consumers (Janigo, 2011). Other researchers also noted age was positively associated with pro-environmental attitudes, intentions, and behaviors (Domina & Koch, 2002; Hirsch, 2010; Peterson, Hustvedt, & Chen, 2012).

Figure 47 shows a visual comparison of items created by the three different types of redesigners. Table 8 contains mean and frequency comparisons among the groups.

Figure 47. Visual comparison of products from the three types of redesigners

Group	Age	GEC	SPN	PBC	SFB	Past Redesign Behavior	Redesign Use	Redesign Divestment	GRI
Redesign Consumers	31	12.56	12.44	3.78	10.89	66% had redesigned in last four years	40% at least every six months	N = 2 planned to divest	7.11
Redesign Enthusiasts	47	18.9	16.56	3.3	10	100% had redesigned in last four years	60% at least every six months	N = 2 planned to divest	7.3
Redesign Professionals	51	18.1	13.00	5.3	11.5	100% had redesigned in last four years	81.82% at least every six months	N = 5 planned to divest	9.5

Table 8. Mean and frequency comparisons by redesign groups

CHAPTER 6: IMPLICATIONS, LIMITATIONS AND FUTURE RESEARCH

Implications

Redesigning used clothing could be one of many alternatives to environmentally

detrimental post-consumer behavior, such as disposing of used clothing into landfills. In

the present study, participants showed high intention to redesign clothing in the future,

but did not seem willing to pay a premium for redesign as compared to new clothing

prices. The price threshold of redesigned clothing seemed to be $50 or less. Since

redesign is labor intensive, if clients would not pay more for redesign than new clothing,

it could be difficult for businesses to make a profit. A sustainable product, although

beneficial to the well-being of humans and the natural ecosystem, should not be less

profitable than competing alternatives (Bell & Morse, 1999). As the title of this

dissertation suggests, the question remains whether redesign could be a sustainable

business venture. However, in this section, some ideas are posed as to how the price

barrier could be overcome.

An implication from the previous study was that pricing menus could be created

based on the level of consumer involvement, for certain alterations procedures (for

example, shortening, lengthening, tailoring), by complexity of labor or type of redesign

(restyling, tailoring and restyling, and full transformation), by nature of the work (such as

sketching, ideation, construction, deconstruction), and for an hourly rate of labor (Janigo,

2011). In the present study, participants were asked to comment on what they thought the

price could be for three different garments from the 2011 study, which were selected to

be representative of the three categories of extent of collaborative redesign. For restyled

co-design, the simplest type, prices ranged from $15-$250, with a mean price of $58.50.

For a tailored and restyled co-design, price estimates ranged $20-$200, with a mean of

$88.43. For a full transformation co-design, price estimates ranged from $30-$200, with a

mean of $117.50.

An idea from the 2011 study was that redesign could be offered to customers as a

social event. In fact, P29 and her business partner had facilitated redesign parties in the

past for felted wool scarves. Estimates for redesign as a social event in the present study

ranged from $0-$100. The mean estimated price per person for a redesign event was

$37.75. Participants were asked how much they thought they would pay (or charge) for a

one-on-one wardrobe consultation to plot out which items needed to be redesigned and

what they could become. Estimates for redesign wardrobe consultations ranged from $40-

$200. The mean estimated price for a one-on-one redesign consultation was $91.90. P27

said she had been approached by clients for wardrobe consultation in the past but had

never thought about adding the redesign component.

	Restyled (Co-design)	Tailored and Restyled (Co-design)	Full Transformation (Co-design)	Social Event	Redesign Consultation
Range	$15-250	$20-200	$30-$200	$0-100	$20-200
Mean Price	$58.50	$88.43	$117.50	$37.75	$83.88

Table 9. Price estimates for various redesign services

The price estimates should be considered with caution due to significant

differences in perspectives among participants based on their experience with redesign.

Redesign Consumers, Redesign Enthusiasts, and Redesign Professionals answered the

questions about price differently. RCs potentially had less understanding of the labor processes required for redesign. They may have considered the prices they personally would pay for co-design, since it is expected that they cannot sew on their own. Redesign Enthusiasts mainly completed redesign for themselves, so the questions about price may not have been relevant to them and their resulting estimates inaccurate. Finally, Redesign Professionals' estimates could have been skewed higher because they had the most experience with redesign. Their estimates could have included the thought processes behind the extensive labor, work hour estimates, and the need to make a profit from their work.

Nevertheless, it seems garment redesigns could be proposed to clients appropriate to their desired price, experience, and familiarity with the redesigned process. Restyled redesign with refreshed aesthetic elements and a small amount of structural change might be more appropriate for consumers who are new to redesign. On the other hand, highly creative full transformation redesigns may be more attractive to individuals who are already knowledgeable and comfortable with the process. Previous researchers also suggested the redesign process could be customized to meet the needs of various target markets, from mass market to high-end markets (Young, Jirousek, & Ashdown, 2004).

Redesigned products and services could be customized by redesigner type. Redesign Consumers may be interested in completing simple redesigns on their own such as restyling garments through cutting, hand sewing, or ironing on fusible decorative trims. They might be interested in purchasing pre-made ready-to-wear redesigned clothing directly from Redesign Professionals, craft fairs, online craft sites such as

Etsy.com, and from retail stores. They could co-design with a family member or hire a Redesign Professional for help them execute a redesign. Finally, they could take classes from Redesign Professionals to build their redesign skills and even transition to a Redesign Enthusiast.

Redesign Enthusiasts are capable to make full transformation redesigns on their own, and they enjoy the creative process of redesign. However, there might be situations where they would hire a Redesign Professional to help them with specialized operations, such as dyeing or working with fur. Additionally, they could hire a Redesign Professional as a problem solving adviser, if they happened to "get stuck" or ran out of time on a project. REs could also take hands-on classes from RPs to increase their skills and even transition to a Redesign Professional.

Redesign Professionals could offer ready-to-wear redesigned clothing for sale directly to clients, at craft fairs, through retail stores, and online craft stores such as Etsy.com. They could offer collaborative redesign services to clients, including restyling redesign, tailoring and restyling redesign, and full transformation redesign. They could also host group redesign events for free to market the business or else for profit. They could offer wardrobe consulting services to clients to plot out redesigns. RPs could offer formal workshops and classes to teach others about redesign. They would also play an important role as community activists to increase excitement about redesign and advocate for sustainable living in general.

One solution to the issue of the difficulty of making a living from redesign might be to bundle compatible services into the business, such as alterations and tailoring. Six

out of 11 of the RPs already offered alterations as part of their businesses. P17 said she

generally charges clients $25 per hour for alterations and tailoring. Three RPs (P16, P29

and P27) had already considered adding instruction to their array of services. P16 thought

a premium could be charged for instruction. P27 discussed having a location close to a

thrift store so that shoppers could immediately drop off items to be redesigned. Another

idea participants had was close proximity to a dry cleaner or tailor shop, so that items

could be dropped off and picked up from those brick and mortar locations. Partnering

with a thrift store, dry cleaner, or tailor shop might give flexibility to the redesigner to

work out of his or her own studio or home.

Modularization and efficiency in the redesign process could greatly enhance

profitability. Specializing in production of a small number of redesigned products might

make working efficiently easier. Some RPs discussed this in terms of favoring projects

that take less time and looking for ways to work more quickly. P27 already had

incorporated efficiencies and specialization into her process. She mainly makes loose,

flowy tops with sharkbite hems. She taught herself how to use a multi-thread serger so

she could quickly finish seams. She used pre-made templates for square shapes to create

the sharkbite hems on the tops.

Figure 48. P27, RP, modular redesigns

Another participant who seemed to have learned efficient ways to work was a P15, RE. She said she mostly preferred projects that would take her one to two hours to complete. She had made several embellished t-shirts, with varying embellishment techniques from adding pouch pockets to attaching different kinds of rosettes. The embellishments added aesthetic interest to the t-shirts and made them unique, with what seemed a low amount of labor, especially if she had practice with a similar design before. She used to have a blog with ample photographs to document her redesign process.

P15 was not interested in selling her redesigns, but her example could be a useful model for a professional redesign business. Someone could purchase used t-shirts from thrift stores for one to three dollars (or for a few cents each if purchased by the pound or from garage sales), spend one hour on embellishing, and then sell the t-shirts for a moderate price such as $45. Customers might enjoy following a professional redesigner's blog and perceive higher value in the products from following the craft online.

Figure 49. P15, RE, embellished t-shirts

Marketing might play a role in changing consumers' price expectations through educational messages, so they perceive more value in redesigned clothing. Marketing efforts could emphasize benefits of redesign, other than sustainability aspects. Researchers found hedonic and utilitarian values were present in second-hand shopping behavior (Guiot & Roux, 2010). Redesign could have similar benefits; however, hedonic values might be more powerful. Utilitarian values such as frugality might be less salient because redesign may not be less expensive than new clothing. Needing to change clothing to fit the body is probably not the main reason to compel someone to redesign clothing. Instead, consumers could take clothing to an alteration service to solve fit issues.

There are potentially many hedonic values of redesign, other than satisfaction of reducing one's volume of discarded textiles. The experience of redesign, even when someone else completes the construction, could allow individuals to feel like a fashion designer. Art and design fields have been made popular in recent years through social media and conventional media, especially with the growing number of TV shows featuring fashion design, culinary, and home design talent. Those who do not possess natural creative talent seem to envy artists for their "creative genius." Other hedonic motivations may include the benefit of making clothing more aesthetic and up-to-date, matching current trends. For some individuals, it is calming and therapeutic to complete hands-on projects. They might feel an increased sense of accomplishment, purpose, self-efficacy, and self-esteem. Young fashion consumers could have hedonic value in competing with their peers, sharing and comparing redesigns on social media to feature their fashion sense, personality, and creative skill.

The role of emotional attachment to clothing seemed important, and all participants indicated some emotional attachment to clothing. Previous researchers noticed slow fashion consumers had emotional connection to clothing and perceived themselves as collectors (Watson & Yan, 2013). In both the 2011 study and the present study, participants discussed emotional bonds to their clothing (Janigo, 2011). Types of clothing to which participants formed emotional bonds included everyday clothes worn to memorable events (n = 15, 51.72%), wedding dresses (n = 11, 37.93%), home-made clothing (n = 7, 24.14%), evening dresses (n = 5, 17.24%), clothing that belonged to a deceased family member (n = 6, 20.69%), and kids' clothes (n = 4, 13.79%). Sometimes

an emotional connection was formed simply because the individual looked and felt good when wearing it.

Participant's stories about their clothing underscored a variety of causes of emotional connection, which could influence intention to redesign. Individuals interested in preserving an item to which they are emotionally attached could motivate them to redesign. However, redesigning a treasured garment could create anxiety and hesitation to redesign the item due to uncertainty of the outcome. Some might opt not to redesign an emotionally connected item to avoid the risk of ruining it. On the other hand, perhaps redesign could be a way to forget. For example, a wedding dress from a failed marriage could be redesigned into something new to replace and overcome negative past memories the dress symbolized. Individuals in this situation might have less to lose because if the garment were ruined, perhaps they could divest of it with a clear conscience, knowing that they attempted to redesign the item.

Redesign could offer competitive advantage for businesses, fulfilling a niche currently not addressed in the fashion market. For example, redesigned clothing has the potential to offer something more unique than new clothing. Also, redesign can change the overall appearance, functionality, and purpose of clothing more than traditional tailoring or alteration services offer. P13 suggested retail consumer demand for redesigned products and redesign service may not yet have reached a peak in the United States, although redesign shops she visited in the United Kingdom seemed to have had success. P6 commented that eventually redesign and general repurposing will be a necessity if ecological resources and raw materials continue to be depleted. P15 had ideas

for other ways to entice consumers to purchase redesign, such as tax breaks and monetary incentives from the government.

Redesign seems to have an important place in the do-it-yourself art, craft, and hobby movement, which has become increasingly public due to social media sites such as Pinterest and the rising popularity of the online shop Etsy.com. In fact, P11 first had the idea to redesign clothing from Pinterest. Even where money is not exchanged for redesign, it could become a tool used in communities to teach its members about sustainability, as several participants suggested. P3 had specific plans to start her own redesign circle in her neighborhood. P38 planned to organize a redesign event at her church next year during their annual Women's Week.

Redesign could also play a role in public policy. Some states in the U.S. have already banned certain types of waste from landfills. For example, tires have been banned in some states because they have been linked to landfill fires. The banned materials are being put to good use. Tire companies collect used tires, restore the treads, and re-sell them to consumers. Other creative uses have been found for tires such as in the design of jewelry (Brown, 2013). Landfill space is limited, and synthetic clothing fibers can take decades to decompose, continuing to use up precious space. As with tires, there are many uses for textile waste, so it is not unreasonable to consider that the government could ban textile waste from landfills in the future. Additional solutions would be needed, other than what is being done today to process excess supplies of textile waste.

Today, charity organizations such as Salvation Army are relied upon to process enormous amounts of textile waste, selling clothing in their shops and to rag traders for

cleaning rags and fiber fill, and sending clothing to global relief efforts. However, the

organizations are inundated with increasing supplies of used clothing, and the market

seems saturated with more supply than local demand. Western countries' unsold used

clothing is shipped in large amounts to developing countries such as Malawi (Mhango &

Niehm, 2005) and the Philippines (Milgram, 2004). The developing countries also cannot

use all of the supply, and excess discarded clothing takes up limited space in local

landfills, where the infrastructure is less sophisticated to handle such a problem. Some of

the leftovers are incinerated, causing harmful gases to be emitted into the atmosphere and

to leach into scarce clean water supplies, because these countries have few other options

than to burn them.

If Western countries banned textile waste from landfills, both domestic and

overseas redesign businesses could make good use of the diverted materials. Textile rag

traders and charity organizations could sell quantities of used clothing to redesign

businesses in bales. Domestic garment production in the U.S. could be revitalized by the

emergence of new redesign businesses. Large retailers could offer small lines of

redesigned clothing made in the U.S. on their websites, and exclusive seasonal lines in

stores. Small, local redesign businesses could rely on plentiful supplies of raw materials

to sustain their operations. Redesigners in developing countries such as the Philippines

could also use excess supplies they receive to re-create Western clothing to have a

culturally appropriate flair, thereby celebrating the local culture while solving the

problem of excess. Redesigned clothing could be fairly traded, where artists in

developing countries participate in co-ops or have their own cottage industries to produce

redesigned clothing for retailers. Western fair trade retailers could target high-end

socially and ecologically conscious customers and charge premium prices to support

living wages for the makers.

Another public policy change could be the inclusion of textiles in curbside

recycling programs. Previous researchers observed that the primary reason participants

did not recycle textiles was because they were not included in the curbside program, and

the secondary reason was that people did not have enough storage space to collect used

textiles in their homes (Domina & Koch, 2002). Other researchers noted the main

motivations for consumers to drop off clothing at charity shop collection bins were not to

feel socially responsible, but for convenience and the desire to be free of unwanted

possessions (Ha-Brookshire & Hodges, 2009). Perhaps municipalities could partner with

charity organizations to collect textile waste in curbside recycling programs to be

delivered to the organizations' warehouses. Redesign businesses could pay part of the

warehouse rent for the right to select bales of textile waste, or could purchase bales

directly from the charity organizations.

<div align="center">Limitations</div>

As with any research study, there were several limitations that must be considered

in interpreting the results. First, the number of participants interviewed totaled 30. The

statistics reported were meant only to be descriptive, to show central tendencies and

frequencies to add another dimension to the qualitative results. Questionnaire items and

interview questions were constructed based on the literature reviewed and relevant

theory. However, no existing measurement tools were employed in the present study,

with known reliability scores, that may have situated the results in a larger context. The

reason for this limitation was that existing measurement tools were not available for most

of the concepts of interest, or the tools were too general to apply to redesign. Thus, many

of the findings may not be generalizable to larger groups outside the study sample.

Another limitation was the homogeneity of the participant characteristics. A wide

variety of ages were represented, with participants' ages ranging from 19-83, and a mean

age of 43.75 years. However, the majority of participants (n = 26, 86.67%) were

Caucasian, with one participant black, one Asian, and two of other ethnic background. It

remains unclear how the conceptual model would work with Americans of diverse ethnic

background or people from other countries.

The majority of participants were relatively affluent. No participant fell into the

$0-25,000 range, while 28.57% (n = 8) had an income of between $26,000-50,000. Only

two participants were in the $51,000-75,000 range, but 25% (n = 7) made between

$76,000 and $100,000. The largest percentage of participants 39.29% (n = 11) had annual

family income of more than $100,000 per year. Redesign might play an important role in

the wardrobes of families whose annual incomes are below $25,000. When money is

scarce, resourcefulness and determination to make ends meet arise. Although it might be

difficult to gain access to individuals in lower income brackets, it seems important to do

so to gain a comprehensive understanding of redesign.

Bias could have inadvertently been introduced by the behavior of the primary

investigator. Although the interview schedule was followed closely with as few

deviations as possible, participants likely inferred through the types of questions that

were asked that the PI was concerned about the environment and interested in redesign. Indeed, the PI has been a clothing redesigner for more than 15 years and even freelanced two years for a small firm redesigning bridesmaid dresses into less formal cocktail dresses.

Participants may have had social desirability tendencies, responding more positively than if another researcher had conducted questionnaires and interviews. Likewise, the self-reporting nature of the questionnaires and interviews may have impacted the accuracy of the responses. For example, participants were asked to estimate how long they had kept their clothing in general. It seemed as though participants struggled recalling how long they had their redesigned clothing and had even more issues trying to estimate clothing retention across their entire wardrobes. Some of the self-reported responses may have been educated guesses.

Another limitation was that all participants were self-selected volunteers. It remains unclear whether or not area redesigners who did not volunteer to participate might vary systematically in their viewpoints and behaviors from the individuals who did volunteer. Also, the response rate from the 2011 study was lower than desired (45% would have been preferred), at only 22% of original study participants. Aside from four years having passed since the previous study, it is unclear why more participants did not come forward for the present study.

Future Research

Having more information about redesign poses more questions and ample opportunities for future research. Future research could be designed to experiment with

various business models and the array of services with pricing structures identified in this study. Now that three groups of redesigners are identified, it will be necessary to conduct more research with REs and RPs, since 2011 study focused mainly on RCs in a collaborative redesign scenario. A study querying more RPs with the same questions as those that were used in this study could be interesting, especially if the professionals were able to help recruit their clients. Pairing responses of RPs and their clients would form insight into RCs level of satisfaction with the service. It should also yield more information about the extent of redesign to garments, level of involvement, and amount of client effort, showing how both RCs and RPs prefer to work with redesigning clothing. Also, redesign can be challenging and labor intensive, so it would be interesting to find out what motivates REs to keep redesigning. Future research with RPs could highlight how they built their skills and their business.

Although data on potential pricing structures of a variety of collaboratively redesigned clothing and co-design services were collected in the present study, participants were not asked questions about their price perceptions of ready-to-wear redesigned clothing. Ready-to-wear redesigned clothing would not be designed with a specific client in mind, and the outcome garments would not be tailored to fit an individual's body measurements and aesthetic taste. It is unclear how willingness to pay for ready-to-wear redesign would compare to collaboratively redesigned clothing. It is expected that consumers would have price perceptions of ready-to-wear redesigned clothing similar to new clothing, based on aesthetic evaluation and functional attributes such as fiber type. It is possible that consumers would not consider craftsmanship and

labor of redesigned ready-to-wear clothing into perceived price as much as they would

for collaboratively redesigned clothing. In future research, a line of ready-to-wear

redesigned clothing could be made to gauge participants' price perceptions.

In the present study, a basic conceptual model was developed to explain how

redesign behavior might be structured. The antecedents such as general ecological

concern and sustainable fashion behavior focused on sustainability, but there may be a

wide variety of more salient attitudes not included in the model that impact redesign

intention more powerfully. The marketing aspect of redesign was purposefully omitted

from the research model in order to narrow the focus of the study. Additional research is

needed to gather information on how redesign should be marketed. Also, there is no

guarantee how the conceptual model will function with other samples. In the future,

survey design might be utilized to extend the findings to a larger number of individuals,

provided larger numbers of redesigners can be found. Before and after images of the

redesigns generated in the present study and the 2011 study could be used as stimuli for

an online image questionnaire. Subjects could rate the overall aesthetic success of the

pictured redesigns. Many of the questions in the current study were written intending

flexibility to be used in future quantitative studies and subsequent statistical analysis.

In this research, the importance of the topic of sustainability in the fashion

industry has been reinforced, and one of many potential solutions to the problem has been

discussed. Findings from my previous research (Janigo, 2011) provided a starting point in

determining antecedents toward construction of a conceptual model that might be further

explored in future research. The primary aim of this mixed methods study was to explore

the viability of a service or business involving consumers in redesigning their used

garments as a sustainable alternative to disposal. Through in-depth interviews, visual

analysis of consumers' clothing, and questionnaires with closed-ended items,

recommendations were made as to the conditions under which collaborative redesign of

used clothes might be most successful. There were practical implications for

entrepreneurs, who might weigh the pros and cons of starting a new redesign business

venture based on these results.

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APPENDIX A: CONSENT FORM

<u>A Profitable and Sustainable Fashion Business Opportunity? Predicting Redesigned Clothing Purchase
Intent and Willingness to Pay with the Theory of Planned Behavior</u>

You are invited to participate in a study about redesigned clothing, a sustainable fashion solution. This
study is being conducted by Kristy Janigo, graduate student in the Apparel Studies Graduate Program
located in the College of Design at the University of Minnesota. This research fulfills a degree requirement
for the doctoral dissertation. Please read this form and ask any questions you may have before agreeing to
be in the study.

Background Information:
The purpose of this study is to understand consumers' interest in redesigning used items from their
wardrobes, as an alternative to discarding used clothing. A schedule of open-ended and closed-ended
questions will query your opinions about various topics central to the goal of the research.

Procedures:
If you agree to participate, I will ask you to complete an in-person interview with me in your home. The
interview will take approximately one hour to complete. You will be asked to locate your redesigned
garment from the 2011 study. You will be asked to set aside the outfit before the interview and arrange
your hair/makeup as you would when wearing the redesigned garment ensemble. You will be asked to
show me any other clothing you have had redesigned since the original study, either on your own or with a
professional. You will be asked to bring out clothing you would like to redesign in the future and to draw
sketches, make collages, or write descriptions of your ideas. You will be asked permission to be
photographed in your redesigned clothing.

Risks and Benefits of Being in the Study:
There are no risks to you from participating in this research project. There are no benefits to participating in
this study.

Confidentiality:
The records of this study will be kept private. In any sort of report that might be published or presented, we
will not include any information that will make it possible to identify you as an individual participant. Your
name will not be connected with your responses. Research records will be kept in a locked file; only the
researcher will have access to the records.

Voluntary Nature of the Study:
Your decision to participate is completely voluntary. Whether or not you participate will not affect your
current or future relations with the University of Minnesota or myself. You may choose not to answer any
of the questions contained in the questionnaire for any reason.

Contacts and Questions:
The lead researcher conducting this study is Kristy Janigo (simmo289@umn.edu) under the direction of Dr.
Juanjuan Wu (jjwu@umn.edu). If you have questions you may contact them using email or the following
telephone numbers respectively 612-708-9029, 612-626-1254. If you have any questions or concerns
regarding the study and would like to talk to someone other than the researcher(s), contact Research
Subjects' Advocate line, D528 Mayo, 420 Delaware Street S.E., Minneapolis, Minnesota 55455; telephone
(612) 625-1650. Please keep this copy of this consent form for your records.

APPENDIX B: QUESTIONNAIRES

SECTION I - PARTICIPANT PROFILE:

Participant number_____ (researcher will fill in)

Age_____

Ethnic Background (circle one)

Caucasian   Black   Asian   Hispanic   Other

Major or Occupation_____

Family Income (circle one; use parents' income if you are still in college)

$0-25,000 $26-50,000 $51-75,000 $76-100,000 $100,000+

SECTION II - GENERAL ECOLOGICAL CONCERN QUESTIONS:

1. Are you concerned about the environment? Yes_____ No_____

2. Do you ever think about ecological issues? Yes_____ No_____

   If you said yes, check the below issues you think about:

   2.1. Global warming?_____

   2.2. Toxic emissions from autos? _____

   2.3. Toxic emissions from industry? _____

   2.4. Other types of contamination of air/water? _____

   2.5. Natural resource depletion? _____

   2.6. Deforestation? _____

   2.7. Depletion of biodiversity? _____

3. Have you ever done your own research about ecological issues? Yes_____
   No_____

If yes, check the type of sources you consulted:

3.1. Books?_____

3.2. Newspaper articles? _____

3.3. Magazines? _____

3.4. TV news? _____

3.5. Non-fiction video documentaries? _____

3.6. Youtube videos? _____

3.7. Social media articles/posts? _____

3.8. Other?_____

4. Have you modified your general behavior to minimize the impact on the environment?

Yes_____ No_____

4.1. Do you buy products with less packaging?   Yes _____ No _____

4.2. Do you buy organic food?   Yes _____ No _____

4.3. Do you buy fair trade food?   Yes _____ No _____

4.4. Do you recycle aluminum and glass?   Yes _____ No _____

4.5. Do you compost food and yard waste?   Yes _____ No _____

4.6. Do you bike to work or use public transportation? Yes _____ No _____

4.7. Do you purchase renewable energy (ex: wind) for your home?
                                                       Yes _____No _____

4.8. Do you donate money to environmental special interest groups or nonprofits?
                                                       Yes _____ No _____

4.9. Do you volunteer your time to assist environmental organizations?
                                                       Yes _____ No _____

SECTION III - SOCIAL PRESSURE / NORMS QUESTIONS:

5. Are your close family/friends concerned about the environment?
    Yes_____No_____

6. Do your close friends and family talk with you about ecological issues?

    Yes_____No_____

    If yes, check the issues that your and your close friends and family talk about:

    6.1. Global warming?_____

    6.2. Toxic emissions from autos? _____

    6.3. Toxic emissions from industry? _____

    6.4. Other types of contamination of air/water? _____

    6.5. Natural resource depletion? _____

    6.6. Deforestation? _____

    6.7. Depletion of biodiversity? _____

7. Have your close family or friends done their own research about ecological issues?

    Yes_____ No_____

    If yes, check the type of sources they might have consulted:

    7.1. Books?_____

    7.2. Newspaper articles? _____

    7.3. Magazines? _____

    7.4. TV news? _____

    7.5. Non-fiction video documentaries? _____

7.6. Youtube videos? _____

7.7. Social media articles/posts? _____

7.8. Other?_____

8. Have your close family or friends modified their general behavior to minimize their impact on the environment?

Yes_____ No_____

8.1. Do they buy products with less packaging?   Yes _____ No _____

8.2. Do they buy organic or fair trade food?   Yes _____ No _____

8.3. Do they recycle aluminum and glass?   Yes _____ No _____

8.4. Do they compost food and yard waste?   Yes _____ No _____

8.5. Do they bike to work or use public transportation? Yes _____ No _____

8.6. Do they purchase renewable energy (ex: wind) for their homes?

Yes _____ No _____

8.7. Do they donate money to environmental special interest groups or nonprofits?

Yes _____ No _____

8.8 Do they volunteer your time to assist environmental organizations?

Yes _____ No _____

SECTION IV - ECOLOGICAL CLOTHING BEHAVIOR QUESTIONS:

9. Which of the following types of clothing and fashion items do you buy?

    9.1. Do you buy organic clothing? Yes _____ No _____

    9.2. Do you buy fair trade clothing? Yes _____ No _____

    9.3. Do you buy vintage clothing? Yes _____ No _____

10. Considering your whole wardrobe, on average, how long would you guess that you keep your clothing? (Circle one)

< 6 months   6 months-1 year   1-3 years   3+ years

11. Do you buy clothes from brands known to have social responsibility policies and/or social compliance personnel?

                                                Yes _____ No _____

12. Do you buy luxury or high-end clothing (more than $150 for one garment, accessory, or pair of shoes)?

                                                Yes _____ No _____

13. Do you sometimes avoid buying clothing from fast fashion clothing stores?
Definition: stores that sell inexpensive, trendy items and stock new items frequently.

                                                Yes _____ No _____

14. Do you buy clothing from stores that feature only local designers and brands?

                                                Yes _____ No _____

15. Do you buy clothing that is completely Made in the USA? Yes _____ No _____

16. Do you employ tailors or cobblers to repair clothes / shoes? Yes _____ No _____

17. Have you bought or used any other sustainable clothing than what was listed above?

Yes _____   No _____

18. Do you repair your own clothing?   Yes _____   No _____

19. Do you make or design your own clothing?   Yes _____   No _____

20. Do you buy and wear used clothing?   Yes _____   No _____

21. Are you worried about soil, bacteria, or germs from wearing used clothing?

Yes _____   No _____

22. In the past, some associated wearing used clothing with poverty or low socioeconomic status. Are you worried that others will judge you negatively if you wear used clothing?

Yes _____   No _____

SECTION V - REDESIGNED GARMENT WEARING/USE QUESTIONS:

23. Do you still have the garment that you had redesigned with me in the first study? *If YES, continue with the next question. If NO, skip to question 26.*

Yes_____

No_____

24. Since spring/summer 2011 when you participated in the clothing redesign with me, how many times do you think you have worn the garment?

Please check one:

24.1.   Weekly?_____

24.2.   Monthly?_____

24.3.   Every six months?_____

24.4.   Yearly?_____

25. If you still own the redesigned garment but have not worn it (or wear it infrequently), what was the reason?

Check all that apply:

25.1.   Problems with the design/details (ex: not in fashion)? _____

25.2.   Problems with the fit (ex: did your body change)?   _____

25.3.   Problems with the functionality or performance issues
   (ex: did the function of fabric, trims, and/or seams fail)?   _____

25.4.   You no longer like it?
   (ex: you changed jobs, graduated college, got older, or it
   does not suit your personality any more)?   _____

26. Are you likely to get rid of it in the near future? Yes _____ No _____

27. If you said yes, please explain how will you get rid of it?

Please check one:

27.1.1.1.   Give to a friend/family member_____

27.1.1.2.   Take it to a clothing swap _____

27.1.1.3.   Sell at a garage sale_____

27.1.1.4.   Sell at a consignment shop (such as Plato's closet) _____

27.1.1.5.   Drop off at a charity shop_____

27.1.1.6.   Throw it in the trash _____

SKIP SECTION VI IF YOU STILL HAVE THE GARMENT.

SECTION VI - REDESIGNED GARMENT DIVESTMENT QUESTIONS:

28. Approximately how long did you have the redesigned garment before you got rid of it?

Please check one:

28.1.   A few weeks?_____

28.2.   A few months?_____

28.3.   A year?_____

28.4.   More than a year?_____

29. Why did you get rid of your redesigned garment?

Check all that apply:

29.1.   Problems with the design/details (ex: is it out of fashion)? _____

29.2.   Problems with the fit (ex: did your body change)?   _____

29.3.   Problems with the functionality or performance issues
        (ex: did the function of fabric, trims, and/or seams fail)?
                             _____

29.4.   You no longer like it?
        (ex: you changed jobs, graduated college, got older, or it
        does not suit your personality any more)?   _____

SECTION VII - GARMENT REDESIGN BETWEEN 2011 AND NOW:

30. Have you had anything else redesigned since the 2011 study?

30.1.   Yes_____

30.2.   No_____

31. If yes, how many times do you think you have worn the garment(s)?

31.1.   Weekly?_____

31.2.   Monthly?_____

31.3.   Every six months?_____

31.4.   Yearly?_____

32. How much did you pay for the garment redesign? (Circle one).

$0-25 $26-50 $51-75 $76-100   More than $100

33. If you still own the redesigned garment(s) but have not worn it (or wear it infrequently), why?

Check all that apply:

33.1.   Problems with the design/details (ex: not in fashion)? _____

33.2.   Problems with the fit (ex: did your body change)?   _____

33.3.   Problems with the functionality or performance issues
(ex: did the function of fabric, trims, and/or seams fail)?   _____

33.4.   You no longer like it?
(ex: you changed jobs, graduated college, got older, or it
does not suit your personality any more)?   _____

34. Are you likely to get rid of the garment(s) in the near future?

Yes_____No_____

35. If you said yes, please explain how will you get rid of it?

Please check one:

35.1.1.1. Give to a friend/family member_____

35.1.1.2. Take it to a clothing swap _____

35.1.1.3. Sell at a garage sale_____

35.1.1.4.   Sell at a consignment shop (such as Plato's closet) _____

35.1.1.5.   Drop off at a charity shop_____

35.1.1.6.   Throw it in the trash _____

SECTION VIII - FUTURE GARMENT REDESIGN INTENTION QUESTIONS:

36. What would cause you to be interested in redesigning your used clothing in the future?

Check all that apply:

36.1.   Getting more use out of the garment_____

36.2.   Adjusting the fit of the garment to flatter your body type_____

36.3.   Updating the styling of the garment to match the current trends_____

36.4.   Experiencing something new by participating in the design process_____

36.5.   Saving time by not having to complete the redesign yourself_____

36.6.   Holding on to a garment you are emotionally attached to_____

37. Do you intend to redesign any of your used clothing in the future?

37.1.   Yes_____

37.2.   No_____

38. If you said yes, which would you redesign?

Check all that apply:

38.1.   Would you remake clothing from a significant event, such as a wedding dress or baptismal gown?

Yes _____ No _____

38.2.   Would you remake clothing to remember life events, such as making a t-shirt quilt?

Yes _____ No _____

38.3.   Would you redesign your used clothing that has little to no emotional connection to you?

Yes _____ No _____

38.4.   Would you buy used clothing inexpensively to redesign?

Yes _____ No _____

39. Do you have an emotional connection to any of your clothing?Yes_____No_____

40. Would you consider redesigning a treasured garment(s), which you are emotionally connected to, into something else?

40.1.   Yes_____

40.2.   No_____

41. What kind of re-design help would you need?

Check all that apply:

41.1.1.1.   Coming up with a functional idea?   _____

41.1.1.2.   Sketching the idea out?   _____

41.1.1.3.   Patterning, cutting, and sewing?   _____

41.1.1.4.   Fitting the garment to your body?   _____

42. What kind of facilities should the master designer offer to help you with this redesign?

Check all that apply:

42.1.1.1.   paper, pencils, art supplies, magazines?   _____

42.1.1.2.   Fashion design and sewing equipment?   _____

42.1.1.3.   Mannequins?   _____

42.1.1.4.   A website or software to visualize designs?   _____

43. What kind of experience should the re-design process offer to you?

Check all that apply:

43.1.1.1.   Music or other entertainment?   _____

43.1.1.2.   Ability to watch the process?   _____

43.1.1.3.   A fitting or check-in progress meeting?   _____

43.1.1.4.   Ability to participate with friends/family?   _____

SECTION IX – PERCEIVED BEHAVIORAL CONTROL QUESTIONS:

44. When considering redesigning one of your used garments, do you worry that the garment would not turn out as you expected?

Yes _____   No _____

45. When considering redesigning one of your used garments, do you worry that the garment would not fit?

Yes _____   No _____

46. When considering redesigning one of your used garments, do you worry that you would not like the design?

Yes _____   No _____

47. When considering redesigning one of your used garments, do you worry that it would not be durable or well-constructed?

Yes _____   No _____

48. How far would you travel to get to a business to redesign your used clothing? (Circle one)

Less than 5 miles   5 to 10 miles   10 to 30 miles   30+ miles

49. How long would you wait to have your used clothing redesigned? (Circle one)

1 week   1 month   1-3 months   3+ months

50. How much time would you personally invest in the redesign process? (Circle one)

30 minutes   1 hour   5 hours   10 hours

51. Do you expect to pay less than the original retail price of your garment to have it
    redesigned?

                                                    Yes _____ No _____

52. How much would you be willing to pay for the redesigned of one of your used
    garments? (circle one)

$0-25 $26-50 $51-75 $76-100 $100+

APPENDIX C: INTERVIEW SCHEDULES

INTERVIEW PREP:

Interviews should be held in the participants' homes (ideally near closets or wardrobes) in order to access their clothing wardrobes. Ask them to arrange daycare ahead of time. Ask if the interview can take place in a separate room from spouses or other family members to avoid distractions that might threaten the quality of data collection.

Before the interview, ask the participant to find their redesigned garment, if they still have it. Ask them to set aside the outfit before the interview. Ask them to do their hair/makeup as they would when wearing their redesigned garment ensemble. Also ask them to bring out any other clothing they've redesigned since the original study, either on their own or with a professional. Ask them to bring out clothing they would like to redesign in the future and encourage them to draw sketches, make collages, or write descriptions of their ideas.

GIVE PARTICIPANTS CONSENT FORM AND MODEL RELEASE FORM TO SIGN ONE COPY GOES TO THE PARTICIPANT, ONE TO PRIMARY INVESTIGATOR.

SECTION I – DEMOGRAPHICS – SEE QUESTIONNAIRE FOR THIS DATA.

SECTION II - GENERAL ECOLOGICAL CONCERN QUESTIONS:

1. Are you concerned about the environment? Why or why not?

    _____

    _____

    _____

    _____

2. Do you ever think about ecological issues? Why or why not?

    _____

    _____

    _____

3. Have you ever done your own research about ecological issues? If yes, what did you learn?

_____

_____

_____

_____

4. Have you modified your general behavior to minimize the impact on the environment? If yes, in what ways?

_____

_____

_____

_____

SECTION III - SOCIAL PRESSURE / NORMS QUESTIONS:

5. Are your close family/friends concerned about the environment? Why or why not?

_____

_____

_____

_____

6. Do your close friends and family talk with you about ecological issues? If yes, which issues?

_____

_____

_____

7. Have your close family or friends done their own research about ecological issues? If yes, what types of sources have they consulted? What did they learn?

_____

_____

_____

_____

8. Have your close family or friends modified their general behavior to minimize their impact on the environment? If yes, in what ways?

_____

_____

_____

SECTION IV - ECOLOGICAL CLOTHING BEHAVIOR QUESTIONS:

9. What sustainable clothing types or services can you think of that are available for purchase?

_____

_____

_____

_____

10. Which sustainable clothing types or services do you buy?

_____

_____

_____

11. Do you keep certain kinds of clothing longer than others? Which ones and why?

_____

_____

_____

_____

12. Do you patronize brands known to have social responsibility policies and/or social compliance personnel? If yes, which brands?

_____

_____

13. Do you buy luxury or high-end clothing (more than $150 for one garment, accessory, or pair of shoes)? If yes, which luxury brands and which types of items have you bought?

_____

_____

14. Do you avoid fast fashion clothing stores? If you said yes, which brands do you NOT purchase clothing from? Why?
    Definition: stores that sell inexpensive, trendy items and stock new items frequently.

_____

_____

_____

_____

15. Do you buy clothing from stores that feature only local designers and brands? If you said yes, which local stores / designers / brands do you buy from?

_____

_____

16. Do you buy clothing that is completely made in the USA? If you said yes, which stores / designers / brands do you buy from?

_____

_____

17. Do you employ tailors or cobblers to repair shoes? If yes, what did you have repaired?

_____

_____

18. Have you bought or used any other sustainable clothing that what was listed above? If yes, please state what items you purchased, and why they would be considered sustainable.

_____

_____

_____

_____

19. Do you repair your own clothing? If yes, what types of repairs do you do?

_____

_____

_____

20. Do you make or design your own clothing? If yes, what types of clothing have you made?

_____

_____

_____

_____

21. How do you feel about buying/wearing used clothing?

_____

_____

_____

_____

SECTION V - REDESIGNED GARMENT WEARING/USE QUESTIONS:

22. If you still have the garment that you had redesigned with me in the first study, please describe a typical outfit that you might wear with the redesigned garment, including shoes, accessories, and hairstyle. Please show me the ensemble.

_____

_____

_____

_____

_____

_____

23. Are you comfortable having your photo in the final paper, which could be published in academic journals or databases, both inside and outside the college?

   Yes_____ *If yes, get a signed model release form.*

   No_____*If no, ask question 15.*

24. If you are NOT comfortable with sharing your photo, could it be shared with the facial features blurred?

   Yes_____

   No_____

      *If the answer is NO to the previous prompt, **DO NOT** take any photos of the participant.*

      OK. Instead, I will photograph the ensemble flat on the floor or on my portable mannequin.

25. If you are willing, please put the outfit on, so that I can take a photo. *(ONLY if participant consented)*.

26. If you still own the redesigned garment but have not worn it (or wear it infrequently), please explain why.

_____

_____

_____

_____

27. If you intend to get rid of it soon, please explain how will you get rid of it.

_____

_____

_____

_____

SKIP NEXT SECTION VI IF PARTICIPANT KEPT GARMENT.

SECTION VI - REDESIGNED GARMENT DIVESTMENT QUESTIONS:

28. Approximately how long did you have the redesigned garment before you got rid of it?

_____

_____

29. Why did you get rid of your redesigned garment?

_____

_____

_____

SECTION VII - GARMENT REDESIGN BETWEEN 2011 AND NOW:

30. Have you had anything else redesigned since the 2011 study? If yes, what was the garment in its original form? What was it redesigned into?

_____

_____

_____

_____

31. How much input did you have in the design direction of the garment redesign?

_____

_____

_____

32. Who completed the construction part of the garment redesign?

_____

_____

_____

_____

33. How much involvement did you have in the redesign process?

_____

_____

_____

_____

34. How much time did you invest in the redesign process?

_____

_____

35. Please describe a typical outfit that you might wear with the redesigned garment(s), including shoes, accessories, and hairstyle. Please show me the ensemble.

_____

_____

_____

_____

_____

36. Are you comfortable having your photo in the final paper, which could be published in academic journals or databases, both inside and outside the college?

    Yes_____ *If yes, get a signed model release form.*

    No_____*If no, ask question 15.*

37. If you are NOT comfortable with sharing your photo, could it be shared with the facial features blurred?

    Yes_____

    No_____

        *If the answer is NO to the previous prompt, **DO NOT** take any photos of the participant.*

        OK. Instead, I will photograph the ensemble flat on the floor or on my portable mannequin.

38. If you are willing, please put the outfit(s) on, so that I can take a photo. *(ONLY if participant consented)*.

39. If you still own the redesigned garment(s) but have not worn it (or wear it infrequently), please explain why.

_____

_____

_____

_____

40. Are you likely to get rid of the garment(s) in the near future? If you said yes, please explain how will you get rid of it?

_____

_____

_____

SECTION VIII - FUTURE GARMENT REDESIGN INTENTION QUESTIONS:

41. Why might you be interested in using a service to redesign your used clothing?

_____

_____

_____

_____

42. Do you intend to redesign any of your used clothing in the future? Why, or why not?

_____

_____

_____

_____

43. If you said yes, what kinds of things do you want to redesign in the future?

_____

_____

_____

_____

44. Can you tell me the story about a garment or two that you have a strong emotional connection to, and show it to me?

_____

_____

_____

_____

45. Would you consider redesigning this treasured garment(s) into something else? If you said yes, indicating you would redesign this garment, what could it become (whether another piece of clothing, a home décor item, or something else)?

_____

_____

_____

46. How involved would you want to be in the re-design process, considering the emotional connection you have to this garment(s)?

Prompt: If they cannot answer, suggest levels of involvement:
Low: work with redesigner on idea, give body measurements, review/approve a sketch, then receive finished garment;
Medium: Same process, but add 1 round of multiple sketch options + 1 midpoint fitting
High: Same process, but add 2+ rounds of sketch options and 2+ fittings

_____

_____

_____

47. Where in the process would you like to be involved?

   Prompt: If they cannot answer, suggest ideation, sketching, choosing supplemental trims/fabrics, patternmaking, sewing, fitting, etc.

   _____

   _____

   _____

   _____

48. What kind of re-design help would you need?

   _____

   _____

   _____

   _____

49. What kind of facilities should the master designer offer to help you with this redesign?

   _____

   _____

   _____

   _____

50. What kind of experience should the re-design process offer to you?

   _____

   _____

   _____

   _____

51. What would be your desired outcome of this redesign – both the final garment or product and the experience? Please describe, draw, or collage your idea for me.

_____

_____

_____

_____

SECTION IX – PERCEIVED BEHAVIORAL CONTROL QUESTIONS:

52. What worries you about with the redesign process? What risks are you thinking about?

_____

_____

_____

_____

53. Describe what would make a redesign service convenient for you.
    Prompt: If they cannot answer, ask about distance traveled and time, etc.

_____

_____

_____

_____

54. What sorts of efforts would you be willing to undergo to have your used clothing redesigned?

    Prompt: If they cannot answer, suggest co-designer effort in different levels of redesign involvement, etc.
    54.1.   Low involvement: work with redesigner on the initial idea, give body measurements, review/approve a sketch, then receive finished garment.

54.2.   Medium involvement: work with redesigner on the initial idea, give body measurements, review/approve a sketch from multiple sketch options, have one mid-point fitting where changes could be made, then receive finished garment.

54.3.   High involvement: work with redesigner on the initial idea, give body measurements, review/approve from 2 or more rounds of multiple sketch options, have 2 or more mid-point fittings where changes could be made, then receive finished garment.

_____

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_____

55. What seems reasonable to charge for a redesign service, based on how much involvement you had in the redesign process?
Prompt: Use definitions from previous question – low, medium, high

Low:_____

_____

Medium:_____

_____

High:_____

_____

56. What seems reasonable to charge for a redesign service, based on the extent of the redesign (low, medium, high)?

56.1.   How much would you pay for a **restyled** redesign? This entails top applied details – the structure of the garment is not changed. Embellishments or trims are simply added to the garment. (Show an image; remind the participant this is only an example).

_____

Before   After

56.2. How much would you pay for a **tailored and restyled** redesign? This entails structural changes with top applied details – the structure of the garment is changed, and embellishments or trims are added to the garment. (Show an image; remind the participant this is only an example).

Before   After

56.3.   How much would you pay for a **full transformation redesign**? This
entails complete transformation – the structure of the garment is different, and
the end use of the garment is fundamentally altered. (Show an image; remind the
participant this is only an example).

_____

_____

_____

_____

Before   After

57. What seems reasonable to charge for a redesign service for a social event?

Prompt: People are often seeking experiential entertainment where they are involved in hands-on activities, compared to passive entertainment (e.g. a movie). Redesign could be a group event attended with one's circle of friends. Occasions for which group redesign events could be specifically planned could include birthday parties, bachelorette parties, and a girls' night out. The events could be held at the design studio or at a customer's house.

_____

_____

_____

_____

58. Redesign could also offer personalized attention in a one-on-one consultation. How much would you pay to have a one-on-one meeting with a redesigner to plan redesign of your used clothing?

_____

_____

_____

_____

APPENDIX D: REDESIGNED CLOTHING FROM 2011 STUDY

P1

BEFORE	AFTER

P2

BEFORE

AFTER

P3

BEFORE

AFTER

P4

BEFORE

AFTER

P5

BEFORE

AFTER

236

P6

BEFORE   AFTER

APPENDIX E: P3 REDESIGNS

Description: Button-down shirt P3 made from recycled fabric dyed in Uganda at the Blue House orphanage. Buttons are from P3's mother-in-law's button box. Left-over fabric has been made into scarves.

Description: P3 made the above children's summer outfit is made from recycled from scraps from a dress she had made for a trip to Africa, and her mother-in-law's striped blouse.

Description: Redesigned khaki skirt P3 made from a pleated back elastic waistband into a more fitted and basic skirt. The redesigned skirt fits P3 better and is flattering.

Description: P3 makes napkins from her husband's old button-down woven shirts to give to her adult daughter.

P3's hand-written notes on features of re-fashion on the sticky note attached to patterns she plans to use for future redesign:
- Surprise placement of seams and fasteners
- Fabric pre-softened by wear and wash
- Mystery markings from previous life gatherings, pockets, etc.

Description: A bag P3 made from multiple pairs of denim.

APPENDIX F: RECRUITING POSTER

Calling All Re-Fashionistas!!!

Have you ever owned a piece of clothing that you thought needed a change?
Have you ever taken matters into your own hands, or hired someone, to refashion your own clothing?

Before

After

If the answer is yes to these questions, I want to hear from you! You are invited to participate in a study about redesigned clothing, a sustainable fashion solution. I am looking for female participants who have refashioned their own used clothing into something else. The purpose of this study is to understand consumers' interest in redesigning used items from their wardrobes, as an alternative to discarding used clothing. A schedule of open-ended and closed-ended questions will query your opinions about various topics central to the goal of the research. Interviews will be held on a date and time convenient for you. The interview should take approximately one hour and will be held in your home, so that you can show me your refashioned creations!

Requirements:
Females between 18-65 years old who have either redesigned an item of used clothing themselves or who have had assistance to redesign clothing, beyond changes to fit or basic repairs and alterations. An example of redesign is at the right.
Contact information:
The researcher conducting this study is Kristy Janigo (simmo289@umn.edu), graduate student of the University of Minnesota. If you are interested in participating in this study or have questions you may contact me via email simmo289@umn.edu or telephone 612-708-9029.