

**Fashioning Sustainability:
How the Clothes we wear can support Environmental and Human Well-being**

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ABSTRACT

Attempts to promote sustainability in the clothing industry have focused on using eco-materials and more resource efficient production, however the scale of production and consumption has increased to levels where the benefits of technical improvements are reduced. Creating true sustainability in the fashion industry requires reducing the material flow of clothing, addressing both sustainable production and consumption. Clothing producers must shift the focus of their operations from exchange value to use value, which offers opportunities to increase garment quality and reduce quantity demanded through encouraging consumers to engage in fashion through wearing, not purchasing, clothes. Because the success of this approach depends on designing clothes able to satisfy both the functional and emotional values of consumers, I surveyed 18-25 year old individuals to evaluate what needs they perceive to be satisfying through shopping for and purchasing clothing, what psychological mechanisms induce increasing consumption, and what effects clothing qualities have on their clothing consumption. Respondents shopped for and purchased clothing to satisfy the needs for leisure, identity, affection, and participation, frequently went shopping out of impulse, and made purchases to experience stimulation through new clothing. They would later be dissatisfied with their clothing and mainly disposed of clothes because of quality-related problems. I provide fashion design solutions that can stimulate wearers' personal involvement in generating satisfaction, breaking the cycle of passive acquisition of clothing and creating clothing that is meaningful to the wearer over a longer period of time: clothing that can sustain both environmental and human well-being.

KEYWORDS

fast fashion, human needs satisfaction, needs based design, consumer behavior, user involvement

INTRODUCTION

Fashion is socially, economically, and environmentally significant. As a material form of expression, fashion apparel is important to our personal and social relationships, linked to how we live and see ourselves within society (Hethorn and Ulasewicz 2008). It is essential to contemporary cultural identity and can engender the satisfaction of our needs for affection, creation, participation, leisure, and freedom by the way in which it is designed, made, and worn (Fletcher 2008). Worldwide, consumers spend over \$1 trillion on clothing annually, and the apparel sector provides jobs for over 26 million people (Allwood et al. 2006). However, today's fashion system, from producers to consumers, is complicit in the current ecological crisis, compromising both environmental and human well-being (Armstrong and LeHew 2011). A critique of the business practices that have given rise to the industry's profligate conditions opens the possibility of a sustainable fashion system able to satisfy environmental and human well-being. Transforming the current fashion industry also calls for a reevaluation of peoples' relationships with fashion clothing, finding ways to tame excessive consumption and instead foster more meaningful, lasting engagements with garments.

"Fast fashion" characterizes the speed of today's clothing production and consumption: clothing is designed to be cheap, easy, and rapid to produce, and is created to be distributed, sold, and consumed in ever-increasing quantities (Clark 2008). During the last 25 years, industry development has focused on increasing the volume of material flow through mass production and on accelerating the rate of retail turnover through greater integration in the global supply chain. Textile manufacturing has moved to low-wage countries and has consolidated, with fewer and larger suppliers to taking advantage of economies of scale, resulting in reduced final product price and quality (Niinimäki and Hasser 2011). Fast fashion retailers are able to display new styles every two weeks, whereas this used to take a matter of months (Allwood et al. 2006). Fashion advertizing and marketing techniques aim to continuously stimulate new consumer desires for these regularly changing styles, encouraging consumers to go shopping to experience renewable gratification (Niinimäki 2009). With its convenience and affordability, fast fashion has devalued personal attachment to clothing, as items are more quickly disposed of and easily replaced (Reiley and DeLong 2011). The amount of clothing in circulation has grown

significantly: from 2000 to 2006, the number of garments annually bought per person increased by over one third, and the life cycle of clothing decreased by half (Allwood et al. 2006).

As consumers are more detached from their clothing, so too are they more disconnected from the environmental and social externalities of their fashion choices (Connell 2011). Producing fashion and textiles involves a long, complex, and highly exploitative industrial chain (Beard 2008). The industry is linked to a litany of labor abuses (e.g. poverty wages, excessive working hours, denial of trade union rights, child labor, etc.), and it is generally recognized as a major industrial polluter (De Brito et al 2008). The conversion of raw textile fiber to finished fabric and final products draws on labor, energy, water, and other environmental resources. Because these resources take the same amount of time to grow and regenerate regardless of the product's speed to market and disposal, the increased rate of production and consumption of fast fashion is exacerbating the clothing industry's negative impacts (Fletcher 2010). Consumers' inexhaustible desires, given succor by rapidly changing trends, have perpetuated a consumption treadmill, presenting an alarming challenge to environmental and human sustainability (Sheth et al. 2011).

Whereas environmentally and ethically conscientious consumerism has affected the food and other industries, there remains a paucity of patronage for sustainable fashion (Hustvedt and Bernard 2008). The fashion industry's influence on consumers' unsustainable clothing purchasing behavior should not be underestimated. Unsustainable consumption is a consequence of how products are designed and made to be used; fast fashion's low quality, low price design is made to be readily bought and discarded (Fletcher et al 2001). Fast fashion has conditioned consumers to meet their desires for pleasure, new experiences, status, and identity formation through buying clothes, often impulsively seeking something new to wear every week (Bianchi and Birtwistle 2011). Shopping for clothes has become a leisure activity, with engagement more through the *purchasing* than *wearing* of garments (De Brito et al. 2008). As excessive production undermines human and environmental sustainability, a new business model for the fashion industry is instrumental to social change through influencing our relationship with material consumption (Williams et al. 2009).

Critical approaches and interventions

Recent attempts to mitigate the harmful impacts of fashion production have been supply-side driven, focused on product or result changes. Product focused strategies address the environmental efficiency of production processes, for example by using more sustainable materials and energy sources (Armstrong and LeHew 2011). Results focused strategies emphasize how products are marketed, distributed, or disposed (Fletcher et al. 2001). “Eco chic” design, for instance, visually engages consumers’ notions of environmental responsibility and provides a morally grounded aesthetic. It posits all natural materials as “good” against all synthetic materials as “bad,” belying the various environmental and social externalities associated with all textiles, both natural and manufactured (Fletcher 2008). Far from revolutionary, eco chic fashion emerged in the 1990s as another form of brand differentiation, an illusionary message detached from real sustainability values (Beard 2008). Results focused strategies also include textile recycling and clothing reuse options (Morgan and Birtwistle 2009); this is relevant, as clothes and shoes account for the most space of all nondurable goods in the solid waste stream (Lynch 2008).

While these strategies help manage production pollution and textile waste, they do not prevent the mass-manufacturing of clothing; business models are still linked to a large volume of production and sales which facilitate current consumer purchasing behavior and undermine the progress towards sustainable solutions (Braungart et al 2002). Although industrial development has made advances in resource efficiency, overall production as well as consumption has increased to levels where the benefits of technical improvements are reduced (Niinimäki and Hassi 2011). In fact, many retailers and manufacturers see sustainability as a marketing opportunity, a trend, or an optional added value in their products in order to further motivate clothing purchases (Horne 2009). Therefore, strategies that simply limit a product’s environmental impact address only the symptoms of the current fashion industry’s model and not the underlying problem; efficiency gains and technological advances alone will not bring fashion production and accumulation to sustainable levels (Ehrenfeld 2004). These approaches merely lessen consumers’ guilt, beguiling them to feel as if they are purchasing and practicing sustainable fashion through consumption itself, instead of confronting the rampant consumerism

that is endemic to the sector and reevaluating the basis on which they seek, desire, acquire, and use fashion in the first place (Williams et al. 2009).

Recognizing that substantial consumption behavior and lifestyle change are essential components for achieving sustainability, interventions in the clothing industry must move beyond refiguring processes on the supply side towards restructuring the business on the demand side in the form of the user experience (Thorpe 2010). Clothing producers must shift the focus of their operations from exchange value to use value, which offers new opportunities to increase garment quality and reduce quantity demanded (Laitala and Klepp 2011). Instead of garments designed and produced according to regularly changing trends at low prices to enable quick profit, the clothing industry must envision new ways of designing and manufacturing that is based on meeting consumer needs with less material intensity.

Sustainability strategies based on consumer needs provide this opportunity. A focus on consumer needs signifies a gestalt change to the doctrine of today's fast, growth based fashion sector, challenges the industry's values and economic priorities; it is about inviting a new conceptual framework that appreciates the personal and social significance of fashion while divorcing it from unbridled production and consumption (Fletcher 2008). It recognizes that fashion is a powerful tool for communicating ideas and concepts and can influence our perception and mindset: sustainable fashion is about seizing the opportunity clothing provides as a forum to participate and think about sustainability (Hethorn and Ulasewicz 2008). By exploring the relationships among consumption, fashion, well-being, and human needs, design solutions can encourage engagement in wearing, not buying, of fashion to satisfy our emotional needs; the most effective design strategies will go beyond just using more efficient production processes and eco-friendly materials to providing ways for us to reconnect with fashion in creative ways that lead to more sustainable consumption (Hamilton 2010).

Instead of the industry providing prefabricate, largely homogenous goods and prescribing trends for passive consumers to follow, a needs based approach engages consumers as active agents whose needs and values become central to fashion design and production. By focusing on consumers' needs, satisfaction is the inspiration of product design, instead of price, speed, and built in obsolescence, thereby initiating longer clothing life spans and reduced material flow (Fletcher 2010). Understanding the economic and sociologic theories of consumption and the semiotic value of commodities is therefore crucial to the development of design strategies that

promote alternative ways of experiencing fashion than the conspicuous consumption of clothes; the function of products as complex satisfiers of human needs must be distinguished before consumption of these products can be reduced (Royo 2007).

Needs, satisfiers, and economic goods

While it is undeniable that the material impacts of excess consumption are environmentally unsustainable, the relationship between consumption and human well-being is largely misconceived both economically and socially (Soron 2010). Individuals' well-being corresponds to the quality of their lives, which reflects the ways in which they experience their needs: peoples' well-being is enhanced when their needs are adequately satisfied. Conversely, individual or collective well-being is undermined when many such needs remain unsatisfied. Conventional economics asserts that increased levels of well-being are harnessed through increased economic consumption, i.e. the purchasing of material goods produced in an economy (Jackson and Marks 1999). In recent decades, governments and development agencies have commonly accepted the theory that consumption increases well-being (Royo 2007). This has diverted sustainability policies and industry practices away from reducing consumption patterns, to improvements in technological resource efficiency (Briceno and Stagl 2006).

Conventional economic theory fails to consider human needs in defining well-being, instead using the notion of preferences and suggests that consumers exhibit their preferences through their consumption behavior. Accordingly, consumers are assumed to maximize the utility, or benefit, from products by systematically reviewing their choices and acting in their best self-interest in response to price (Mont and Plepys, 2008). Because consumers are expected to make purchasing decisions with regard to the complete assessment of the benefits and costs among alternatives, economic theory contends that well-being is best safeguarded by mechanisms of consumer choice in open markets. Thus, consumer preference for increasing consumption is deemed reliable to generate beneficial results and optimal aggregate outcomes, socially and environmentally (Jackson and Marks, 1999).

There is, however, an essential distinction between preferences, which are only subjectively felt and when satisfied leads to momentary pleasure, and fundamental needs, which are rooted in human nature and whose realization is conducive to human growth and well-being. Manfred Max-Neef has identified these fundamental human needs according to the axiological

categories of subsistence, protection, affection, understanding, participation, leisure, creation, identity and freedom which are intersected according to the existential categories of being, having, doing, and interacting (Max-Neef 1992). The resulting “matrix of needs” reflects how different experiential modes are required in the fulfillment of fundamental needs. Because the satisfaction of many needs is immaterial and non-monetary, the failure of commodities to satisfy these needs renders material gains insufficient as a means of improving human well-being (Shove and Warde 2002). In fact, recent empirical research frustrates the presumed equation between consumption and well-being. The “Easterlin Paradox,” a seminal theory in the economics of happiness, originally posited in 1974 that economic consumption does not necessarily lead to more satisfaction. The theory was corroborated in 2010 with data from 37 countries, affirming that income is not positively associated with greater life satisfaction and objective well-being (Easterlin et al. 2010). These results provide evidence supporting a “threshold hypothesis” suggesting that economic consumption delivers improved quality of life up to a certain point, but beyond that threshold, the environmental and social costs of increased consumption negatively impact environmental and human well-being (Max-Neef 1992).

While fundamental needs are identified as “finite, few, and classifiable,” the ways in which the needs are satisfied changes over time and across cultures (Max-Neef 1992); the underlying needs remain the same but the satisfiers, i.e. different forms of being, having, doing, and interacting, in which cultures engage can vary greatly (Jackson and Marks 1999). Needs are met through internal and external means, however only two of the needs – subsistence and protection - require material input (Max-Neef 1992). All other needs are non-material, and these emotional needs are not easily satisfied—and can even be inhibited—by consumption alone. Satisfiers for these non-material needs may include, among other things, types of behavior, values, participation, and work. Yet increasingly our society relies solely on consuming materials to meet our non-material, emotional needs. Marketing techniques link products with desirable outcomes, for example beauty, success, identity and social status, which draw emotional needs into the market place (Shove and Warde 2002). By seeking satisfaction from sources outside ourselves, i.e. in material form, less attention is placed on internal means such as personal growth; our society has overseen a transition away from ‘being’ towards ‘having’.

All of this underlines how complex and non-linear the interaction between consumption and satisfaction of needs can be (Jackson and Marks, 1999). When people buy products to meet

emotional needs, consuming those goods does not stem from their preference for more material goods but from an attempt at satisfying their needs. The overlay of emotional need on physical goods affects how and what we buy, with the purchase of each new item providing a novel experience (Fletcher 2008). This cycle leaves us disempowered, as physical goods can never truly satisfy our emotional needs (Soron 2010). In fact, Max-Neef recognizes that not all attempts at satisfying needs are equally successful; his framework implies that material consumption at best can offer pseudo-satisfaction of non-material needs, i.e. generate false sensations of satisfaction while making it harder to satisfy the needs they are aimed at.

Distinguishing satisfiers in terms of varying degrees of success, therefore, provides the opportunity to examine the cultural practices that inhibit or stimulate needs-satisfaction, which is the cornerstone of human well-being (Max-Neef 1992). Part of cultural change is the consequence of dropping accustomed satisfiers and adopting new or different ones; substituting our fixation on material goods for participating in other forms of satisfaction presents the course for transitioning to a sustainable society. This shift marks the distinction between a culture defined by material consumption and one inspired by teaming material and non-material satisfiers to help engage with, connect with, and better understand oneself, each other, and the world (Fletcher 2008). Instead of being driven by blind consumption, consumers can be guided through thoughtful consideration, resulting in less material input, reduced environmental externalities, and enhanced actualization of human well-being.

Fashion, needs, and satisfaction

Understanding needs helps us recognize how fashion and clothing contribute to human well-being both functionally and emotionally. While clothing addresses our need for protection, fashion connects with our emotional expression and links us to a distinct time and space. Clothing is material; fashion is symbolic, taking form either as an object (noun) or instance of creation (verb). Where fashion and clothing coincide, emotional needs are expressed as garments (Hethorn and Ulasewicz 2008). Fashion clothes can foster our needs for affection, identity, participation, leisure, creation, and freedom. However, as these emotional and psychological needs are satisfied through the interaction of internal and external means, clothing consumption alone cannot adequately fulfill them (Fletcher 2008). Yet the proliferation of fast fashion and material obsession of our society has generated the illusion that to be fashionable is to be

excessive, and to be satisfied is to keep pace with rapidly changing trends. Being designed without the consumers' well-beings in mind, fashion clothes as we experience them today are inhibiting actualizing our emotional needs by being sold as end-result, largely homogenized products developed to fit target markets, barring opportunity for authentic self-expression (Van Koppen and Vaughan 2008).

The challenge now is to find ways to celebrate fashion as a significant part of our culture while divorcing it from rampant material consumption. Truly sustainable fashion must address the emotional, expressive, and physical qualities clothing provides to sustain both environmental and human well-being (Fletcher 2008). As fashion moves away from incessant production and consumption towards enhancing social and environmental well-being, understanding the utility, value, and emotional significance fashion brings to consumers becomes vital leverage for envisioning a system in which quantity is superseded by quality (Williams et al. 2009). From this emerges clothing that is more resilient in both style and lifespan, providing powerful alternatives to fast retail turnover and more sustainable ways of being fashionable (Laitala and Boks 2012).

I address this potential for fashion to influence consumer behavior and to support more sustainable consumption patterns through needs based design strategies. Research in the field of sustainable fashion consumption has not focused on needs-based strategies, does not take a design perspective, and lacks empirical data (Niinimäki and Hassi 2011). By teaming a focus on the needs of individuals with the power of design to influence our perception and interaction with fashion, garment qualities can be manipulated to impact the relationship between clothing and well-being (Hethorn and Ulasewicz 2008). A needs based fashion design process consists of improving the physical robustness of garments in addition to addressing the emotional qualities clothing can provide for consumers, thus enabling designers to engage with 'material' problems, e.g. resource efficiency and clothing quality, while being aware of other needs and devising appropriate non-material satisfiers (Williams et al. 2009). The efficacy of these strategies to decrease consumption and the environmental impact of the fashion industry relies on their ability to deepen garment attachment and extend clothing life span, which hinges on satisfying both the functional and symbolic values of fashion clothes (Laitala and Boks 2012). Therefore, in order to determine what role fashion design can play in promoting more sustainable patterns of consumption, I empirically evaluate what needs clothing consumers perceive to be satisfying

through shopping for and purchasing clothing, what psychological mechanisms induce increasing consumption, and what effects clothing qualities have on consumers' clothing consumption. Answering these questions will provide an understanding of the emotional, psychological, and material-quality factors that influence current clothing consumption behavior, informing what factors fashion design must address in order to prolong the lifespan of clothing and in order to enliven satisfaction through wearing and using- not purchasing- of fashion.

The aim is to illuminate design strategies for garments that are meaningful to the wearer over a longer period of time and are not as easily disposed of nor replaced: clothing that can sustain both environmental and human well-being.

METHODS

I surveyed 150 18-25 year old individuals to document consumers' clothing shopping, purchasing, use, and disposal behavior and how garment qualities, social and psychological mechanisms, and forms of needs-satisfaction affect these practices. I chose for my study population individuals 18 to 25 years old, based upon unanimous research findings that young consumers tend to be the most fashion savvy and aware of new trends (Deutsch and Theodorou 2010). I distributed the link to the online survey through Facebook, targeting college students and group affiliations with diverse interests and backgrounds.

The first section of the survey examined respondents' rates of clothing use, disposal, and purchases of various garment types. I used this data to provide a numerical profile of the speed and scale of the participants' fashion consumption. I had them distinguish between the amount of each garment type they own versus the amount they have worn in the past six months, allowing me to calculate how much clothing is personally wasted, i.e. the difference between what is owned and what is used. I also asked how frequently they shop for clothing in general and at which stores they shop most frequently to determine the extent to which they were habituated to fast fashion.

In the following sections, I employed Likert scale questions to ascertain how clothing qualities, the satisfaction of emotional needs, and psychological mechanisms influence the respondents to shop for, purchase, and dispose of clothing. The clothing qualities I associated with shopping for or disposing of clothes related to clothing being damaged, no longer

functioning or suitable for its purpose, and changes in body size. I also asked how important the qualities of durability, longevity, function, aesthetic, low price, and environmental impact are when the respondents purchase clothing.

To evince the emotional needs respondents' attempt to satisfy through clothing consumption, I had respondents rate their concern for the emotional needs of affection, identity, participation, leisure, and creation. To distinguish the consideration of affection, I asked how often they purchase something because it makes them feel attractive; to distinguish the consideration of identity, I asked if their clothes are important to how they present themselves in public; to distinguish the consideration of participation, I asked if they like to own a variety of styles for different settings or looks; to identify their consideration of leisure, I asked how often they go shopping for recreation; and to distinguish the consideration of creation, I asked how often they purchase something because it is different. In order to identify the influence of social and psychological mechanisms on increasing consumption, I asked questions related to the desire for and stimulation through novelty, impulsive purchasing, and the perceived cultural normalcy of purchasing clothes without a specific need to.

Lastly, I asked respondents whether certain changes in clothing quality and psychological mechanisms would influence them to use their clothes longer and/or buy less clothing. Changes in clothing quality included if clothes were made of better quality in general, if clothes did not change their shape in wash, if clothes were more resistant to color changes, and if clothes fit better. Changes in psychological factors included if clothes were more expensive, if the respondents had less desire for something new, and if what is "in style" did not change so often.

RESULTS

Survey Population

Although I distributed the survey to about as many males as females, 82% of the 150 respondents were female, which coincides with our norm of women being more interested in and receptive of fashion affairs (Connell 2011). The respondents came from diverse economic statuses; my report of aggregate survey responses is not biased by any one income level (Table 1). They also represent many ethnicities, although most were Caucasian.

Table 1. Demographics of survey respondents

| Background Variable | Sample % | Background Variable | Sample % |
|------------------------|----------|---------------------|----------|
| Gender | | Ethnicity | |
| Male | 18% | Pacific Islander | 2% |
| Female | 82% | Jewish | 2% |
| Age | | African American | 4% |
| 18-20 | 25% | Middle Eastern | 6% |
| 21-23 | 70% | Hispanic, Latino | 7% |
| 24-25 | 5% | Asian | 20% |
| Annual Parents' Income | | Caucasian | 59% |
| <\$50,000 | 28% | | |
| \$50,000 - \$100,000 | 27% | | |
| \$100,000-\$250,000 | 32% | | |
| >\$250,000 | 13% | | |

Speed, scale, and waste of clothing

While the specific amounts of garments owned, used in the last six months, and disposed of and purchased each year varied across garment type (Table 2) and among respondents, I distinguished trends evident throughout garment types and consistent within the respondents' accounts: respondents used about 50% of the clothing they owned in the prior six months, their annual clothing purchases corresponded to a 25% increase in the clothing they already owned, and they disposed of their clothing at 25% to 50% of the rate at which they purchased clothing. Thus, respondents wasted half of their clothes and continuously accumulated clothing.

Table 2. Average speed, scale, and waste of respondents' clothing by garment type

| | Summer shirts | Winter shirts | Dress shirts | Casual pants | Dress pants | Shorts | Dresses | Skirts | Sweaters; light outerwear | Jackets; thick outerwear |
|--------------------------------|---------------|---------------|--------------|--------------|-------------|--------|---------|--------|---------------------------|--------------------------|
| Garments owned | 30 | 20 | 10 | 12 | 6 | 8 | 13 | 9 | 13 | 7 |
| Garments used in last 6 months | 16 | 12 | 5 | 7 | 3 | 4 | 7 | 5 | 8 | 4 |
| Garments disposed of per year | 3 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 |
| Garments bought per year | 7 | 4 | 3 | 3 | 2 | 2 | 3 | 3 | 4 | 2 |

Shopping behavior

Respondents were motivated to shop for clothes for recreational and entertainment reasons (Fig. 1); they related to shopping as an existential category of “doing” to satisfy the need for leisure (e.g. as an outing with friends and during free time) and turned to shopping for stimulation through novelty (e.g. for something new or different). The most frequent reason for why respondents go shopping was out of impulse (e.g. something caught their attention or there was a sale). Furthermore, 75% of the respondents go shopping for clothes at least once a month, and 68% shop at fast fashion stores most often.

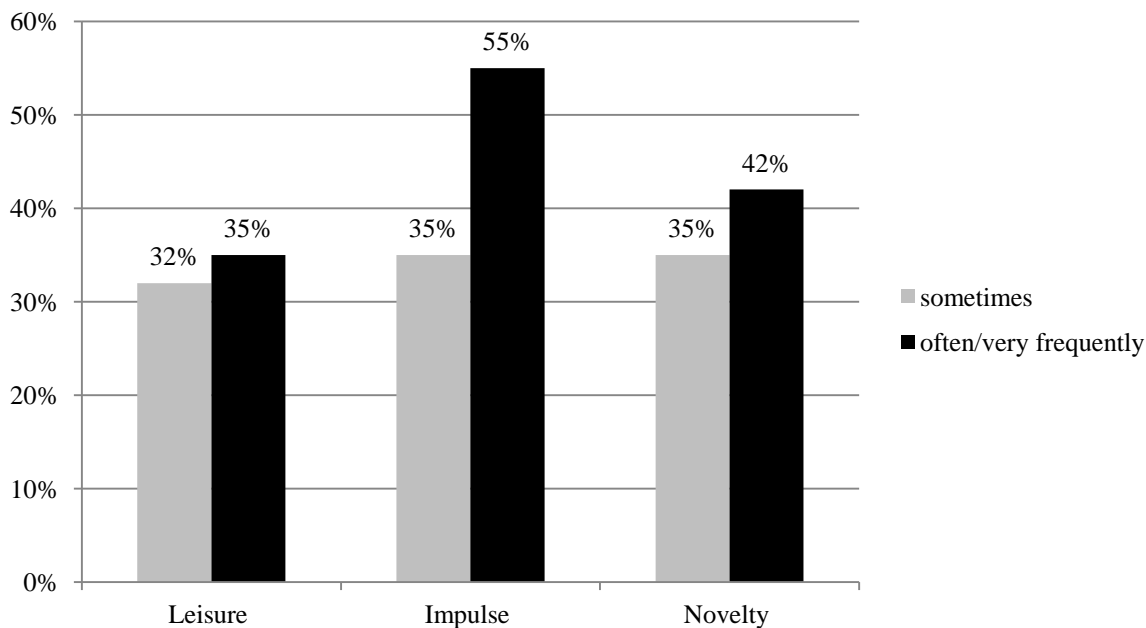


Figure 1. Clothes shopping frequency for leisure, impulse, and novelty motives

Purchasing behavior

Respondents most frequently purchased clothing to satisfy the need for affection (e.g. because it made them feel attractive). The survey also indicated that respondents view clothing as a medium to satisfy the needs for participation (“I like to own a variety of styles for different settings or occasions”) and identity (“My clothes are important to my identity”). Nonetheless, 60% of the respondents were sometimes, often, or very frequently disappointed in the clothing they bought soon after purchase, 41% were sometimes, often, or very frequently unaware why they bought clothing in the first place, and 50% agreed that new clothes lose their appeal later after purchase. In addition, 91% of respondents viewed low price as important in the clothes they buy; 60% of respondents agreed that there is a social normalcy of buying clothes without a specific need to (another 20% of respondents neither agreed nor disagreed); and 92% of respondents agreed that our society is too materialistic (Fig. 2).

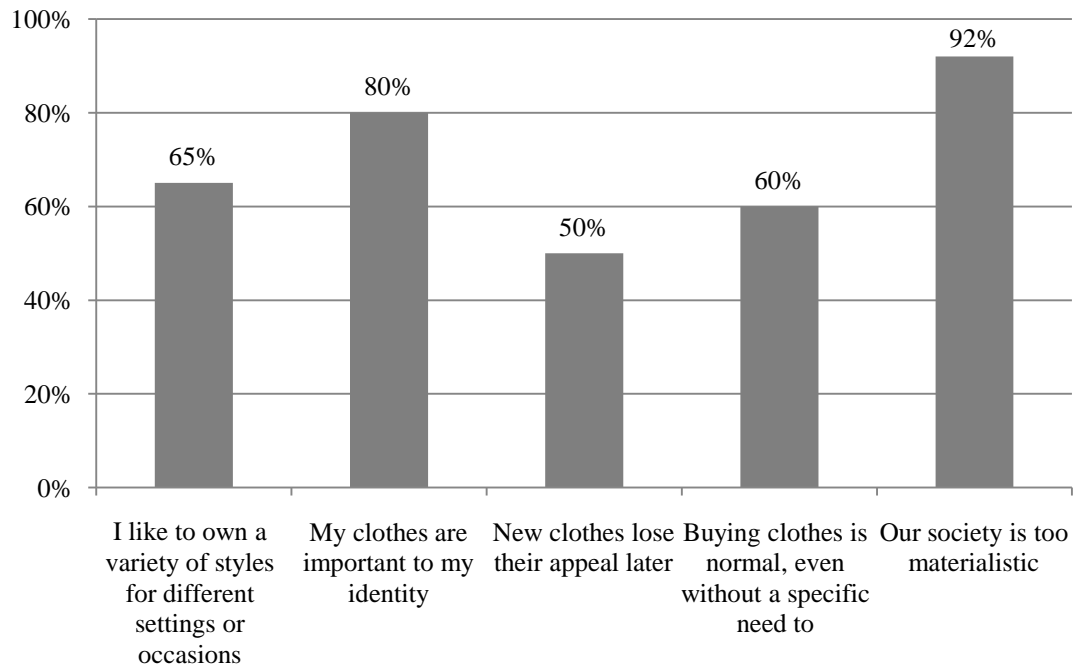


Figure 2. Percentage of respondents who agree with the given statements

Disposal Behavior

Respondents disposed of or no longer used clothes primarily due to technical or quality related problems (Table 3). Respondents also no longer used their clothes for psychological reasons (e.g. tired of the clothing style) and some respondents disposed of clothes that they bought on impulse and had never worn at all. Other important reasons for respondents disposing of clothing included clothes no longer fitting and in order to replace their clothing with (what they perceived as) better products or styles that had become available.

Table 3. Reasons for disposing of or no longer using clothes

| Type of obsolescence | Sometimes | Often | Very Frequently |
|---|-----------|-------|-----------------|
| Technical or quality related (e.g. it is worn out or damaged) | 20% | 50% | 25% |
| Psychological (e.g. tired of the garment or style) | 25% | 43% | 12% |
| Fit (i.e. change in body size) | 25% | 36% | 14% |
| Never worn (e.g. bought on impulse or received as present) | 28% | 32% | 11% |
| Functional (e.g. better products or styles available) | 26% | 22% | 12% |

Influences to use clothing longer and buy less clothing

Factors influencing respondents to use clothing longer and buy less clothing are related to both the quality of the clothing and to social and psychological mechanisms (Table 4). Significantly, the respondents would be more likely to use their clothes longer due to improvements in the quality of clothing, while they would be more likely to buy less clothing due to a decrease in their psychological desire for something new, if clothing was more expensive, and if they were better at repairing or making clothes.

Table 4. Factors that would influence change in clothing consumption behavior

| Factor | Use longer | Buy less |
|--|------------|----------|
| Clothes were made of better quality in general | 100% | 50% |
| Clothes wouldn't change their shape in wash | 83% | 30% |
| Clothes were more resistant to color changes | 80% | 25% |
| Clothes fit better and/or size was adjustable | 70% | 40% |
| Clothes were more expensive | 20% | 90% |
| I had less desire for something new | 22% | 70% |
| I was better at repairing or making clothes | 60% | 70% |

DISCUSSION

My study contributes to an understanding of today's unsustainable levels of clothing production and consumption, which is grounded in the severed connection between people and their clothing and the fashion industry's disinterest in consumer well-being. Respondents most frequently went shopping out of impulse and made purchases in order to experience stimulation through new clothing, but would later be dissatisfied and ended up wasting half their clothes: clothes that were designed from the beginning to be sold, not worn. A sustainable fashion industry is more about making new relationships between producers and consumers and between consumers and clothing than about making new products. Yet the fashion industry's approaches to sustainability have focused on producing new garments more efficiently and from eco-materials, rather than confronting the heightened production and rampant consumerism that is endemic to today's industry. Creating true sustainability in the fashion sector requires

fundamental changes in the way the industry designs clothing and in how people connect with garments. This means moving beyond a narrow focus on product and result improvements to a system-wide view of sustainability that recognizes how industrial, behavioral, and cultural practices are mutually involved in making transformative change in the fashion industry.

Consumer-Clothing Relationships

Consumers' current relationship with clothes is largely passive and at times even disappointing, which is apparent in respondents' habit of shopping and purchasing clothing to experience satisfaction of their needs for leisure, identity, affection, and participation. They depended on material consumption to fulfill non-material needs: needs that require internal involvement to be effectively met. In fact, past the point acquisition, clothing lost its appeal to respondents, and they believed the panacea for this disappointment and dissatisfaction was through shopping for and purchasing more clothing. When people rely on forms of satisfaction that do not meet their needs, they lapse into a perpetual state of unfulfilled desire, breeding addiction and insatiable cravings (Mont and Plepys 2008). The most frequent reason for respondents shopping was out of impulse, the telltale sign of addiction. Moreover, respondents rated low price as an important factor when purchasing clothing. Low priced clothing gives consumers greater purchasing power, allowing them to continuously buy into a fashion system that feeds their addiction and reinforces their dependence on material consumption. Along with low price comes lower quality, which was the main reason for respondents disposing of clothes: this is evidence of the behavior that contributes to the shortened life span of today's clothing.

Respondents also went shopping and purchased clothing to be stimulated through novelty, which sociologists have found to be a key driver of increasing consumption (Shove and Warde 2002). The clothes offered by different fast fashion stores, however, are virtually indistinguishable from each other, selling the same choice of products at all locations at any given time, thereby stifling alternative options and limiting consumers' creativity. While these stores full of mass-produced and low-priced apparel provide consumers with a greater quantity of products to choose from, these choices are more restricted and lack distinctiveness, eroding individuality and dulling the imagination (Deutsch and Theodorou 2010). The fast fashion system has stymied consumers' expectations of anything different; clothing consumption is a formulaic experience conditioned and supported by the formulaic design of fast fashion clothing.

Current Designer-Consumer Relationships

The design of fast fashion is a standardized and strategic practice focused on creating clothing that is easy to manufacture and easy to sell. Designers derive garment styles from reports of consumers' past purchasing and projected future buying behavior, thus propelling iterative cycles of fast fashion (Hethorn and Ulasewicz 2008). Designers consider people abstractly according to market stereotypes in pursuit of enhancing garments' exchange value, i.e. its potential to be purchased, instead of considering people directly in pursuit of enhancing garments' use value, i.e. its potential to be worn. Furthermore, designers use sizing models in pattern development that are conformed to represent these market stereotypes, generating problems with garment fit from the start (Van Kopplen and Vaughan 2008). Indicatively, a common reason why respondents disposed of clothing was due to sizing problems, and respondents indicated they would use their clothing longer and buy less clothing if clothes fit better.

These design practices result in clothing that is complete or "closed": ready-made garments that give consumers the illusion to be something better than they can make themselves. Closed products involve one-way information flows from designer to consumer, placing consumers at the end of a linear fiber-to-garment model, whereby people 'follow' the trends prescribed by the fashion industry and become increasingly distanced from the creative practices surrounding their clothes (Fletcher 2008). Just a generation or two ago, textiles and garments were regularly made and maintained by those who wore and used them, yet few people have those same skills today (von Busch 2005). Survey respondents admitted that they would use their clothes longer and buy less clothing if they were better at sewing and mending. As deskilled individuals, consumers play into the hands of consumerist fashion, supporting the system's current power structure that resists input from the outside (Van Kopplen and Vaughan 2008). The fact that consumers cannot make clothing themselves and are barred from entry into the design process perpetuates the industry's monopoly on designing and making clothes and reinforces the myth of the industry's ability to produce inviolable garments that must be bought in order to experience fashion.

Thus, fashion involvement has become purely an instance of consumption. For consumers, engaging in fashion means shopping and purchasing clothing. For designers, engaging in fashion means creating marketable garments. Collectively, this has resulted in

passive and deskilled consumers that are confined to a fashion system that impairs the authentic, lasting satisfaction that fashion clothing can provide.

New Relationships: Design as an Impetus for Change

Fashion design focused on consumer needs provides an opportunity to dismantle the power structures associated with today's fashion industry and shift individuals from passive consumers to active participants in the fashion system (Williams et al. 2009). This new approach is implicit in a shift from quantity to quality and explicit in mobilizing sustainable relationships. It challenges the current division between producers and consumers through encouraging a more active and skilled role for the users of clothing and by creating system of production that is more decentralized; unlike the respondents' fixation on the act of purchase, the act of using garments provides a conspicuous attempt to disrupt the fashion system and transfer potency to the individual (Hethorn and Ulasewicz 2008). People are recast in roles other than simply that of consumers; they are competent individuals who are potential producers of their clothes, or suppliers of skills and resources enabling them to develop satisfying engagements with fashion through the wearing – not purchasing – of clothes.

This process begins by designers shifting their attention from the garment to the wearer; the garment is not the end goal but the medium through which to enhance the well-being of the wearer (Niinimäki 2009). Instead of design based on abstractions, design is based on visualizing individual people interacting with clothing in healthy, meaningful ways; instead of creating stereotypes and generalized styles, creating clothing that fits real people and represents who they are (Hethorn and Ulasewicz 2008). Truly sustainable fashion, therefore, must address the emotional, expressive, and physical qualities that garments can provide for people. The success of this new design paradigm, however, is contingent on its ability to stimulate wearers' personal involvement in generating satisfaction: garments that empower wearers' forms of being, having, doing, and interacting to meet their needs.

For fashion to be responsive to and reflect people's diverse, individual forms of satisfying needs, designers must reject abstraction and homogenization in favor of distinction and heterogeneity. This can be achieved through smaller, local stores with flexible production capabilities that create garments that are personal and specific (Spangenberg et al 2010). Designers and wearers will be in close rapport so that wearers are the inspiration for garment

design; garments designed and made *with* rather than *for* people. Designing together can foster a more connected and active engagement with fashion and clothing (Fletcher et al. 2001). Wearers will have affinities with garments that enliven their senses of self and renew satisfaction of identity, affection, participation, leisure, and creation. Importantly, these new engagements in fashion are not led or monopolized by megabrands or retailers: fashion can provide opportunities to satisfy freedom.

Wearers can become involved not only in the design but in the creation of their clothing as well. Developing knowledge and skills through experience over time, learning to make or modify clothing allows people to acquire and contribute to a type of “cultural capital”: a keen understanding and confidence about the practice of fashion that can garner more satisfying and sustainable clothing interactions (Leadbetter and Miller 2004). Wearers can be encouraged to invoke their imagination and add personal touches to garments that come unfinished. In addition, “updatable” clothing provides the opportunity of garments that evolve with us: instead of experiencing novelty through buying something new, the garment already owned can be altered and transformed into something different (Fletcher 2008). These forms of consumption support internal means of meeting needs, such that satisfaction is not sought through the purchase of clothing but rather through our unique contributions to it.

Limitations

The survey population of my study included many of my peers in the College of Natural Resources at UC Berkeley who are educated in environmental and sustainability issues, although I do not know what proportion of the respondents they represented. Therefore, the results of my survey may be biased by individuals who engage in more sustainable consumption behavior than other individuals without this educational background. In addition, my study results may not be reflective of clothing consumption behavior in other cultural contexts. However, clothing consumption patterns as well as the development of the fashion industry in the United States is comparable with the situation in other OCED countries. Hence, my study results and conclusions provide insight into general clothing consumption behavior of 18-25 year olds.

Future Directions

While my study addresses the unsustainable practices of current fashion production and consumption and provides design strategies that support a new industry model, the potential of these strategies to impact sustainable fashion consumption remains largely theoretical. There are many industrial impediments that will take time to overcome, given the global span of the fast fashion supply chain and the structure of our capitalistic society. Therefore, it will take a concerted effort among all those involved in the fashion system, from designers and manufacturers to retailers and consumers, to slowly overcome the challenge of reducing the material flow of clothing and increasing the awareness of our abilities to find lasting satisfaction through a life of action, not consumption.

Conclusion

Buying clothing has now become a social norm, supported and legitimized by a fashion system that encourages shopping for clothing in order to satisfy needs- needs that are more emotional than material. A sustainable model of fashion design relates less to design as a creator of clothing and more to design as a promoter of social change through influencing greater attachment to the wearing of garments while breaking the bond of fashion to consumerism: clothing designed to support conscious choice and personal involvement rather than to induce blind consumption. Importantly, it is not a trend: it is a different paradigm interested in transformative actions that award us with skills, products, relationships, and experiences that satisfy environmental and human well-being.

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REFERENCES

- Allwood J., S. Laursen, C. Malvido de Rodriguez, and N. Bocken. 2006. Well Dressed? The present and future sustainability of clothing and textiles in the United Kingdom. University of Cambridge Institute for Manufacturing, Cambridge, UK.
- Armstrong C. M., M. L. A. LeHew. 2011. Sustainable apparel product development: in search of a new dominant social paradigm for the field using sustainable approaches. *Fashion Practice: The Journal of Design, Creative Process & Fashion* 3:29-62.
- Beard N. D. 2008. The branding of ethical fashion and the consumer: a luxury niche or mass-market reality? *Fashion Theory: The Journal of Dress, Body & Culture* 12:447-468.
- Bianchi C., G. Birtwistle. 2011. Consumer clothing disposal behavior: a comparative study. *International Journal of Consumer Studies* 36:335-341.
- Braungart M., W. McDonough, and A. Bollinger. 2007. Cradle-to-cradle design: creating healthy emissions—a strategy for eco-effective product and system design. *Journal of Cleaner Production* 15:1337-1348.
- Briceno T., S. Stagl. 2006. The role of social processes for sustainable consumption. *Journal of Cleaner Production* 14:1541-1551.
- Clark H. 2008. Slow Fashion: an oxymoron or a promise for the future? *Fashion Theory: The Journal of Dress, Body & Culture* 12:427-446.
- Connell K. Y. 2011. Exploring consumers' perceptions of eco-conscious apparel acquisition behaviors. *Social Responsibility Journal* 7:61-73.
- De Brito M. P., V. Carbone, and C. M. Blanquart. 2008. Towards a sustainable fashion retail supply chain in Europe: Organization and performance. *International Journal of Production Economics* 114:534-553.
- Deutsch N. L., E. Theodorou. 2010. Aspiring, consuming, becoming: youth identity in a culture of consumption. *Youth & Society* 42:229.
- Easterlin R. A., L. A. McVey, M. Switek, O. Swangfa, and J. S. Zweig. 2010. The happiness-income paradox revisited. *Proceedings of the National Academy of Sciences of the United States of America* 107:22463-22468.
- Ehrenfeld J. R. 2004. Searching for sustainability: no quick fix. *Reflections: The SoL Journal* 5:1-13.
- Fletcher K. 2008. *Sustainable fashion and textiles: design journeys*. Earthscan, London.

- Fletcher K. 2010. Slow fashion: an invitation for systems change. *Fashion Practice: The Journal of Design, Creative Process & Fashion* 2:259-266.
- Fletcher K., E. Dewberry, and P. Goggin. 2001. *Sustainable consumption by design*. Pergamon: Elsevier Science, Oxford.
- Hamilton C. 2010. Consumerism, self-creation and prospects for a new ecological consciousness. *Journal of Cleaner Production* 18:571-575.
- Hethorn J., Ulasewicz, C. 2008. *Sustainable fashion: why now?* Fairchild, New York.
- Horne R. E. 2009. Limits to labels: The role of eco - labels in the assessment of product sustainability and routes to sustainable consumption. *International Journal of Consumer Studies* 33:175-182.
- Hustvedt G., J. C. Bernard. 2008. Consumer willingness to pay for sustainable apparel: the influence of labeling for fiber origin and production methods. *International Journal of Consumer Studies* 32:491-498.
- Jackson T., N. Marks. 1999. Consumption, sustainable welfare and human needs—with reference to UK expenditure patterns between 1954 and 1994. *Ecological Economics* 28:421-441.
- Laitala K., C. Boks. 2012. Sustainable clothing design: use matters. *Journal of Design Research* 10:121-139.
- Laitala K., I. G. Klepp. 2011. Environmental improvement by prolonging clothing use period. *Towards sustainability in the textile and fashion industry* 26:4-20.
- Leadbetter C., P. Miller. 2004. *The pro-am revolution*. Demos, London.
- Lynch M. 2008. *The power of conscience consumption*.
<<http://library.drexel.edu/publications/dsmr/lynch.pdf>>
- Max-Neef M. 1992. *Development and human needs*. Routledge, London.
- Mont O., A. Plepys. 2008. Sustainable consumption progress: should we be proud or alarmed? *Journal of Cleaner Production* 16:531-537.
- Morgan L. R., G. Birtwistle. 2009. An investigation of young fashion consumers' disposal habits. *International Journal of Consumer Studies* 33:190-198.
- Niinimäki K. 2009. Consumer values and eco-fashion in the future. *FFRC eBOOK* :125-134.
- Niinimäki K. 2010. Eco - clothing, consumer identity and ideology. *Sustainable Development* 18:150-162.

- Niinimäki K., L. Hassi. 2011. Emerging design strategies in sustainable production and consumption of textiles and clothing. *Journal of Cleaner Production* 19:1876-1883.
- Reiley K., M. DeLong. 2011. A consumer vision for sustainable fashion practice. *Fashion Practice: The Journal of Design, Creative Process & Fashion* 3:63-84.
- Royo M. G. 2007. Well-being and consumption: towards a theoretical approach based on human needs satisfaction. *Handbook on the Economics of Happiness*: 151-169.
- Sheth J. N., N. K. Sethia, and S. Srinivas. 2011. Mindful consumption: a customer-centric approach to sustainability. *Journal of the Academy of Marketing Science* 10:1-19.
- Shove E., A. Warde. 2002. Inconspicuous consumption: the sociology of consumption, lifestyles, and the environment. *Sociological Theory and the Environment* 12:230-251.
- Soron D. 2010. Sustainability, self-identity and the sociology of consumption. *Sustainable Development* 18:172-181.
- Spangenberg J. H., A. Fuad-Luke, and K. Blincoe. 2010. Design for sustainability: the interface of sustainable production and consumption. *Journal of Cleaner Production* 18:1485-1493.
- Thorpe A. 2010. Design's role in sustainable consumption. *Design Issues* 26:3-16.
- von Busch O. 2005. Re-forming appearance: subversive strategies in the fashion system.
< <http://www.selfpassage.org>>
- Van Kopplen A., L. Vaughan. 2008. Engaging in fashion.
<<http://www.margaritabenitez.com/readings/VaughanKopplen.pdf>>
- Williams D., N. Baldwin, and K. Fletcher. 2009. Center for sustainable fashion: tactics for change. <<http://ualresearchonline.arts.ac.uk/2751/>>