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Defining a New Design Paradigm for the Product Lifecycle: Young Adult Millennial Clothing and Furniture Use

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Abstract: The primary products that young adult consumers spend discretionary income on, when in the process of defining their extended selves, are furniture and clothing. This study compares use, disposal, and redesign practices of these products by young adult Millennials. This age cohort is in the process of defining a new lifecycle model of product use. A convenience sample of 238 university students in San Francisco, California responded to Likert scale and ranking statements regarding perceptions and practices with clothing and furniture consumption, use, reuse and redesign. Perceptions regarding use and waste were similar for clothing and furniture products, highlighting the cross-disciplinary view of these categories. Preferences for purchase of both clothing and furniture were based on the ability of product reuse or redesign. Dominant preferences for product disposal were to donate and give away. In lieu of disposal, subjects practiced updating and redesigning clothing and furniture, extending the product lifecycle. The extension of product life through redesign and reuse of disposed items contributes to the category of post-use, thereby further defining the Millenial view. Anticipated to be the largest age cohort and market segment in history, understanding Millennials' preferences for purchase of reusable and redesignable products is essential, as they are anticipated to have a continued impact on economic and societal trends. Their ability to reuse or redesign clothing and furniture has significant ramifications for the design industries. Their sensitivity to the extended life of products is critical to marketing for the future. A new model of extended product life, critical for product design, marketing and retailing, was developed based on the research findings. The model illustrates an understanding and awareness of actions that lead to new product lifecycles.

Keywords: Product Lifecycle, Reuse, Redesign, Cross-disciplinary Design, Millennial

INTRODUCTION AND PURPOSE

The practice of using and reusing or redesigning, rather than disposing of products, is on the rise. As such, disposal methods are leading to a new cycle of post consumer use (Young, Jirousek, & Ashdown, 2004). The social and environmental meaning of products, how they are designed, what they are made of, and where they are produced and sold is gaining momentum (Binkley, 2010). The practices of buying new, using, and throwing away do not necessarily work for today's young adults, who make up a significant portion of the *Millennial* cohort. Penman and McNeill (2008) note that young adults are highly engaged in the consumption of goods. As the largest generational cohort in history (Rickes, 2009), Millennials have the potential to reorient the product lifecycle (Fien, Neil, & Bentley, 2008). Building a 'social identity' is considered very important for this age cohort (Euro RSCG Worldwide, 2011). Living away from home and engaging in the process of defining their exten-

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ded selves, two essential product classifications that young adult Millennials spend discretionary income on are clothing and furniture which are considered among the most basic of human needs (Maslow, 1968). The cross-disciplinary aspects of these product categories together help define one's lifestyle. How this generation chooses to use, redesign, and ultimately dispose of clothing and furniture products, is based on the social context in which they live.

Generational Theory and Millennials

Generations are comprised of events around which people develop common beliefs and behaviors (Moore, 2007), leading to product preferences and behaviors (Wuest, Welkey, Mogab & Nicols, 2008). Generational theory places individuals into cohorts, based on birth year, while providing a foundation for understanding shared traits and attributes (Moore, 2007). The associations made for generations are aimed at an assessment which draws from the societal, political, and otherwise contemporary phenomena which are said to help frame one's values, associations, and behaviors (Solomon & Rabolt, 2009). Generations that undergo similar social situations develop similar values that lead to shared perceptions and practices. Those who belong within the same generation or age cohort share similar modes of thoughts and experiences (Mannheim, 1952). The experiences which cohort members undergo during formative years lead to impacts on values within a generation (Pendergast, 2009). These understandings lead to the development of core values (Pew Research Center b, 2010) which remain throughout an individual's lifetime and which "begin to reveal themselves when the oldest members move into their teens and twenties" (Keeter & Taylor, 2009, p. 1).

They have been called Generation Y (Bracy, Bevill & Roach, 2010, Payment, 2008, DiGilio, Lynn-Nelson & Reis, 2004, Jones, 2008, Norum, 2003) yet the "moniker of choice to the next generation of consumers is none other than the "Millennials"" (DiGilio, Lynn-Nelson & Reis, 2004, p. 15). Millennials, born after 1982 (Howe & Strauss, 2003), are the first generation to come of age in the new millennium (Pew Research Center a, 2010). They are expected to have a significant impact on the economy (currently spending approximately $172 billion dollars annually (Kleber & Associates, 2009)), and on societal trends as their core values are quite different than the preceding generational cohort, Generation X (Tooker, 2006). According to a report by Jones, Lang & LaSalle (2002), young adults born between 1976 and 1994 are going to make up 34% of the U.S. population by 2015 and are anticipated to be the largest market segment in the United States. Though extensive research exists on Millennial civic mindedness and support of socially responsible companies (Cui, Trent, Sullivan & Matiru, 2003, Hyllegard, Ogle, Yan & Attman, 2010, Cone Inc. 2006), there is a dearth in the literature that specifically examines how the young adult portion of this cohort views and uses clothing and furniture products.

Key questions asked in this research are the extent to which young adult Millennials share similar modes of thought related to both clothing and furniture use, redesign, and disposal and if they are in the process of defining a new lifecycle approach to product use. As such, the purpose of this research was to explore young adult Millennials' current perceptions, preferences and practices with clothing and furniture use, redesign, waste and disposal.

Review of Literature

The Millennial Generation

A greater sense of the characteristics of the Millennial generation contributes to understanding their attitudes and behaviors toward lifestyle products. Categorized as confident, self expressive, open to change and as a group that gets along well with others (Pew Research Center b, 2010), they also are positive, caring and concerned about problems faced by society (Tippett & Roubanis, 2006). Of the seven core Millennial traits defined by Howe & Strauss (2003, 2007),

three are particularly relevant to this study as they effectively illustrate generational attributes which we believe are beginning to redefine product understanding for this cohort:

Special–This generation feels that their problems are the nation's problems and they want others to value the importance of their actions. Acknowledging the importance of their own personal choices is essential to them.

Confident–They believe they will make a difference in society and the goal of making a contribution to the world in which they live is valued.

Team Orientation–Their need for interconnectedness is supported by the use of technology to broadcast the attributes of products and companies to friends and family.

Values and Behaviors

The experiences that members of cohorts undergo during formative years lead to impacts on values within a generation (Pendergast, 2009). Opinions, attitudes, and beliefs are transient, where the values an individual holds change on a timescale of generations rather than months or years (Leinweber, 2001). Egri and Ralston (2004) note that "Generation is one type of national subculture that reflects the value priorities emphasized during a country's particular historical period" (p. 210). Millennials, born between 1982 and 2003 (Howe & Strauss, 2000, 2003, 2007), many of whom are moving into adulthood at the beginning of a new millennium, will share formative experiences that will stay with them throughout their lives and shape their values, beliefs and practices.

Kluckhohn's (1951) definition of values points toward thoughts that are associated with means and ends to behaviors. Values, though generally limited, can be arranged so as to develop hierarchies in which values are weighed in pairs against each other throughout life using a cognitive approach, rather than through individual value assessments (Rokeach and Ball-Rokeach, 1989). A cognitive approach to value based behaviors brings to light the context through which values are developed given an individual's place within history. Fien, Neil & Bently (2008) describe how youth in developed countries pick up emerging ideas and are more open to less conventional practices than previous generations. Lyons, Duxbury, and Higgins (2005) describe the emergence of social values as a process which includes learning within a social framework during one's seminal years. One's formative years and the context of learning associated with them draw attention to the notion that each generation may bring with it a series of commonly held beliefs. Past behavior, together with other attitudes and norms, can lead to deliberate actions (Carrus, Passafaro, & Bonnes, 2008).

The means through which clothing and furniture items are valued relate to two very different behaviors found in product use. Birtwistle and Moore (2007) found that [fast fashion] "encouraged a "throwaway culture" where products and fashion lost intrinsic value, encouraging consumers to replace and dispose of products before their real life cycle had ended" (p. 214). An emerging behavior, termed slow fashion (Clark, 2008), supports the extension of product life through redesign and reuse of disposed of items, thus contributing to the category of post-consumer use. Young adult Millennial values held toward the use, reuse and redesign of clothing and home furnishings will have significant ramifications on the future of these industries.

Product Use, Reuse and Redesign

The disposal of textile products from clothing and home furnishings is a concern, as the U.S. Environmental Protection Agency (2008) estimates the generation of clothing and other textiles totaled 4.7% (11.9 million tons) of all municipal solid waste in 2007. An additional estimate

of 2.2% (5.63 million tons) was determined for the generation of wood products, which includes furniture. Overconsumption supports the concept of change that creates the demand for purchasing something new, ultimately resulting in the creation of waste (Hawley 2009). According to Verbeek and Kockelkoren (1998), this means of consumption does not integrate what they refer to as 'psychological lifespan.' Essentially, their term refers to the purchase of products that are seen and valued as an investment. One basic implication found in product investment is the value associated with longevity of product–lifetime extension through reuse and redesign, rather than replacement (Brouillat, 2009). Value orientations have been found to correlate to proenvironmental behaviors (Hansla, Gamble, Juliusson, & Garling, 2008).

Redesign is a term relating to the practice of reusing and changing an article of clothing or furniture piece through updating, also referred to as upcycling. Redesign practices extend the life of product and may lead to a value association with product investment. In industries that traditionally rely on swift rates of consumer spending, the notion of reuse or repurposing of clothing and home furnishings appears incongruous. Jelsma (2003) suggests a re-moralization, or product redesign that involves the end-user in the actual design process. "They like to design their own products and personalize their purchases" (Kleber & Associates, 2009, p. 13). Young, Jirousek, & Ashdown (2004) found that subjects would value clothing redesigned from second-hand garments (post-consumer recycled) if the original materials used were from friends or family.

Current concepts of redesign and/or repurposing are coming of age at the same time as young adult Millennials, whose views and practices will have an impact on their direction. Hethorn and Ulasewicz (2008) note the interconnectivity of people, processes, and the environment; people, their beliefs, values, and practices are the change makers. Young consumers may modify their acquisition, use and disposal behaviors when educated on the connections to the environment (Birtwistle & Morgan, 2009). Findings of Belleau, Summers, Xu & Pinel (2007) support the notion that the more information given this cohort group regarding product characteristics, the greater their tendency to form a positive opinion regarding product attributes.

Tapping into the thoughts of a sample of young adult Millennials provides insight into how this portion of the cohort sees and relates to clothing and furniture and their projected habits. Within this context, the following research questions were explored:

1. Is there a correlation between *perceptions* of use and waste in clothing compared to furniture products?
2. Is there a correlation between *preferences* for purchase of clothing compared to furniture based on extended product life?
3. Is there a difference in preferential rankings for clothing compared with furniture disposal?
4. Are there similarities between the *practices* of redesigning clothing and furniture rather than replacement?

Methodology

Data Collection and Sample

Data were collected at an urban university in the San Francisco Bay Area, California, with student participants representing a variety of majors. Students were given the opportunity to participate in the study immediately following classes on a volunteer basis. Given the broad age range of Millennials, as defined in the literature, it is clear that there exist older members who may be assumed to have perceptions which are distinguishable from those of the younger members (Cui, Trent, Sullivan, & Matiru, 2003). The sample in this study is comprised of young adults who are representative of Millennials that are independent and who have funds for clothing and furniture items. The original sample size consisted of 238 students; however,

there were 31 surveys for students who did not fall into the range of birth years used in the study. The final sample consisted of 207 young adult Millennial respondents born between the years 1982 and 1992.

Instrumentation and Analysis

The survey used to acquire data was designed by the researchers based on findings from a prior study (Ulasewicz & Vouchilas, 2008) and included eight statements related to perceptions of clothing and furniture product use and disposal with five response rankings (Likert scale with Strongly Agree to Strongly Disagree). Statements examined attitudes toward product consumption and disposal, as well as product redesign and reusability. The survey also asked subjects to rank their top three priorities for practices with furniture and clothing when there is no longer a use for the items (Options were to Keep, Dispose of, Donate, Sell, Give away, and Find a new use). To check for current redesign practices, subjects were asked whether or not they had updated clothing and/or furniture products. Demographic information included birth year.

Pearson Correlation Coefficient was used to determine cross-disciplinary correlations between perceptions, and preferences of clothing as compared to furniture purchase, use and disposal. Individual rankings were provided for top three priorities for the disposal of clothing and furniture items that are no longer used. Descriptive statistics illustrate clothing as compared to furniture redesign through updating, rather than replacing, and perceptions of waste in purchasing new.

Results

A Pearson Correlation Coefficient was applied to measure the relationship between *use* and *waste perceptions* of clothing compared to furniture products for the sample (Research question 1). Alpha coefficients for respondents' sense of wastefulness in discarding clothing and furniture survey items was .69, and .81 for items corresponding to respondents finding waste in simply keeping furniture and clothing which is no longer used items (see Table 1). A total of 86.4% of the sample agreed or strongly agreed that simply discarding of clothing items is wasteful while 80.2% agreed or strongly agreed for furniture items. A significant correlation was determined for the variables of clothing compared with furniture perceptions illustrating the Millennial lifestyle product understanding. Young adult Millennials valued both clothing and furniture and do not see the sense of disposing without considering reuse or redesign, if not individual, then by others.

Table 1: Correlations for Comparison of Perceptions of Clothing to Furniture Use and Waste

Survey Item	*N*	*M*	*SD*	*r*
Sensed wastefulness in discarding clothing	206	4.43	.810	
Sensed wastefulness in discarding furniture	206	4.23	.852	.527**
Sensed wastefulness in keeping clothing no longer used	205	3.54	1.14	
Sensed wastefulness in keeping furniture no longer used	205	3.53	1.08	.678**
** Significant at .01 (2 tailed)				

Subjects also felt a degree of wastefulness in keeping, yet not using, furniture (53.3% agree or strongly agree) and clothing (55.5% agree or strongly agree), illustrating their understanding of the useful life of products. Subjects did not sense wastefulness in purchasing new clothing or furniture. A total of 68.6% of the sample either disagreed or strongly disagreed that it is

wasteful to purchase new clothing while 65.2% felt the same toward purchasing new furniture items. It should be noted that Millennials' definition of the term 'new' may extend to clothing and furniture purchased at what are considered 2nd hand or resale stores. (Alpha coefficient of .83 for survey items, See Table 2).

Table 2: Mean Scores for Comparison of Clothing to Furniture Waste Perceptions and Reuse/Redesign

Survey Item	*N*	*M*	*SD*
Sensed wastefulness in buying new clothing	205	2.04	.977
Sensed wastefulness in buying new furniture	205	2.19	1.01
Have redesigned clothing rather than replace	207	1.20	.403
Have redesigned furniture rather than replace	207	1.34	.476

Subjects had experience with redesigning or repurposing (Research Question 4) both furniture (65.7% of sample) as well as clothing products (79.7% of sample) in lieu of disposing of them (See Table 2). Products redesigned to create new looks and forms in both furniture and apparel were valued.

A Pearson Correlation Coefficient was used (see Table 3) to compare clothing and furniture preferences for purchase of products on their perceived ability to be reused (Research question 2). The Alpha coefficient for the survey items was .80.

Table 3: Correlation for Comparison of Perceptions of Clothing to Furniture Purchases for Reusability

Survey Item	*N*	*M*	*SD*	*r*
Prefer purchasing clothing based on product reusability	204	3.56	1.00	
Prefer purchasing furniture based on product reusability	205	3.58	.950	.661**
** Significant at .01 (2-tailed)				

A significant correlation was determined for subject preferences for both furniture and clothing product purchases. Subjects showed some level of concern for extended product life within both genres. For the sample, 52.6% either preferred or strongly preferred to purchase clothing based on reusability of the product while 50.7% felt the same toward furniture purchases. Given today's overabundance of product promotion and pressure to purchase, this finding supports the notion that even under these conditions, quality and versatility are apparent to young adult Millennials and translate into extended product life.

Subjects were asked to rank, by priority, their first, second and third choice of preference for clothing and furniture when they no longer had use for the items (Research question 3). Options were to throw the item away, keep it, find a new use for it, donate it, sell it, or give it away. Rankings for subject personal choice showed dominant preferences of 'donating' and 'giving away' among subjects, again noting this cohort's civic mindedness (See Table 4).

Table 4: 1st 2nd, 3rd Choice Preferences when Clothing and Furniture Items are no Longer Used

Survey Item				
Clothing Choice	**1 st**	**2 nd**	**3 rd**	(**Total**)
Donate	56	62	46	(164)
Give	51	76	34	(161)
New Use	35	16	33	(84)
Sell	34	24	24	(82)
Keep	19	8	22	(49)
Throw	2	3	32	(37)
Furniture Choice				
Give	73	54	38	(165)
Donate	31	67	48	(146)
Sell	40	32	21	(93)
New Use	34	14	26	(74)
Throw	2	12	41	(55)
Keep	13	10	14	(37)

Discussion and Implications

In the introduction of this paper we postulated that young adult Millennials, when in the process of defining their extended selves, are actually defining a new paradigm for the product lifecycle. The findings indicate that they share similar modes of thought related to clothing and furniture use, reuse, redesign and disposal. A strong similarity emerged among subject responses for both clothing and furniture, illustrating the cross-disciplinary understanding of these product categories to the Millennial lifestyle. The generational traits for this cohort of being *special, confident and team oriented* (Howe & Strauss, 2003, 2007) are supported by the respondents' preferences. They are confident in their choices of reuse and redesign. Our sample exhibited support for extended product use as they have specifically chosen to redesign clothing and furniture items rather than to replace them. Dissanayake (1992) describes this behavior as one that involves making something 'special' from those things that are important to us. Clothing and furniture redesign, with the focus on extending the life of products, is an example of how this sample extends their relationship with these products and the meaning that they bring to them. Tapscott (2009) reinforces these characteristics and his findings further acknowledge that innovation and the need to customize products is part of the Millennial lifestyle. He uses the term "prosumers" to describe the Millennial expectation to "co-innovate" with established products and designers. Young adult Millennials found the choice to purchase new product acceptable, preferring to purchase products that offer an extended life through reuse and redesign capability.

Another question we asked was whether young adult Millennials are in the process of defining a new lifecycle model of product use; it would appear they are. Noble, Haytko, and Phillips (2009) found Millennial college students sought out value in products, where quality as well as purchasing as an investment were the goals. Their preferences may support the concept of pro-environmental behavior or an attitude toward frugality (Fujii, 2006). Knowing that they understand the valuable life cycle of product is important for the design industry.

Our findings led us to the development of a new conceptual model of continued use which identifies a closed-loop cycle for products (See Figure 1). This model provides a visual

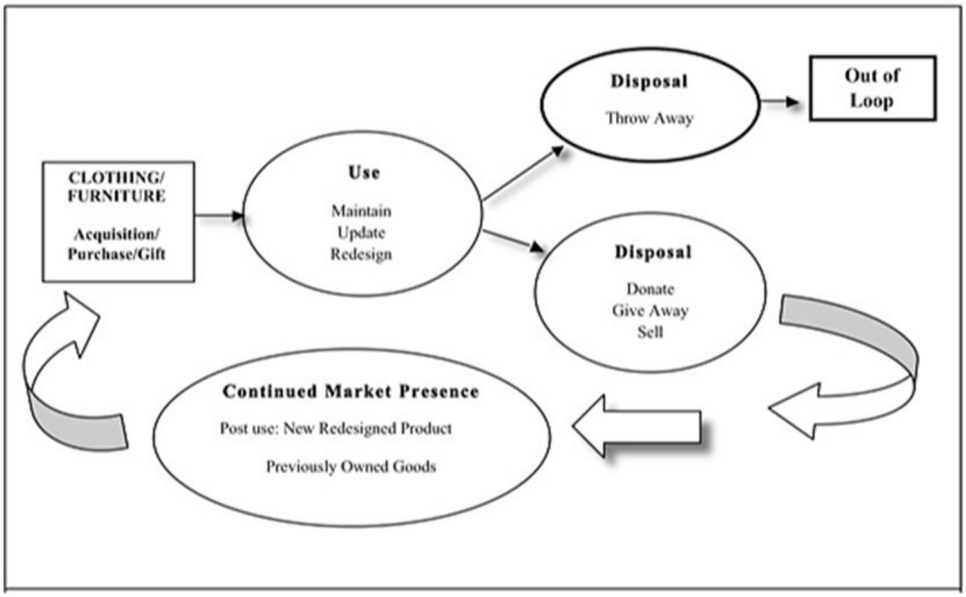

Figure 1: Conceptual Model: Clothing and Furniture Re-design for Extended Product

representation that illustrates the approach young adult Millennials are engaging in which extends product life. As represented in the model, the traditional approach to the product lifecycle was to purchase or acquire, maintain and possibly update or redesign, and then throw away or donate. For this Millennial cohort, products are purchased or acquired with the knowledge that they may be made of new materials, made new through redesign, or are new for the young consumer but had a previous owner. The terms "new" and "used" or post-use are beginning to be interchangeable for this cohort. Whether an acquisition is of new or post-use clothing and furniture products, maintenance, updating and redesign are all considered possibilities, over disposal. The proposed conceptual model (Figure 1) illustrates an understanding and awareness of actions that lead to new product lifecycles. The behavioral intent found in continued reuse and redesign of products is a practice that is found to relate to one's beliefs, by alleviating the need to replace or by making purchases based on the ability to reuse. The findings from this research provide a basis for understanding young adult Millennial perceptions of use, reuse and redesign by extending the product life for clothing and furniture products. Continued study of this age cohort is essential as they mature and become known as a "generation supporting and producing positive societal change" (Geraci, 2005, p. 27) and their profound impact on the future of product design.

Limitations and Recommendations for Future Study

Although the findings of this study may not be generalized to the entire Millennial cohort population, they provide a platform for further study. Employing a mixed methodology would provide a means for understanding more completely how the sample would redesign clothing and furniture products and how they make consumer decisions about product reusability. Research on the Millennial use, understanding, and definition of the term 'new' are essential to understanding how to correctly design, market and retail products to them.

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