Sustainable Fashion: A Roadmap for the Future

An Honors Thesis (HONRS 499)

by

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Abstract

When I was first learning to sew an easy way to practice was to take old clothes, cut them up, and sew them into a new garment. This was good because I didn’t have to spend money on fabric, and I could make new and unique garments to wear. As I got older, developed my sewing skills, and eventually decided to major in Apparel Design, I continued making clothing in this way.

When it came time to decide what I wanted to design for my senior studio line, which I named Urban Bohemian, I decided to make a line completely from repurposed clothing; not using anything new, even for fastenings and trim. I made this choice not only because it would save me money on fabric and other notions, but also to challenge myself to design great garments with clothing I already had. As I created my new line of clothing, I also researched sustainability in the fashion industry.

In the following pages I focus mainly on the material side of sustainable fashion; how designers and consumers can cut down on the fabric waste that ends up in landfills every year. However, there are other ways businesses and individuals can contribute to sustainability as well, like cutting down on product miles due to shipping or educating consumers on energy saving laundering techniques.

Sustainable fashion has been a hot topic on the fringes of fashion for several years, but in order to make a difference it needs to become a mainstream practice. Fashion has become a disposable commodity, and the excess fabric waste the industry generates is not sustainable for future generations. Fashion is a massive, global industry – everyone wears clothing – and a real push towards sustainability would impact the environment and the future of the planet immensely.
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What is sustainable fashion? A well-accepted definition of sustainability is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" according to the World Commission on Environment and Development’s (the Brundtland Commission) report Our Common Future (Oxford: Oxford University Press, 1987). Using this definition, sustainable fashion may seem like an oxymoron. Sustainability is generally about longevity and conservation, while fashion is about ever-changing trends and the planned disposal of styles in a few short months (Gwilt & Rissanen; 20, 27). Because of this constant cycle of change, fashion produces a lot of waste (Hethorn & Ulasewicz; xiii, xix, xx).

Today the word sustainability is thrown around a lot in the apparel design industry, but little is actually being done to change unsustainable practices. Consumers may see a one or two page article in fashion magazines concerning “eco fashion,” but the rest of the pages will still be dedicated to conventional, wasteful, fast-fashion trends (Gwilt & Rissanen, 67). In order for sustainable fashion to really work, it needs to stop being just another trend of the year and start being the standard that companies hold themselves to (Hethorn & Ulasewicz, 85).

There have been attempts at sustainable fashion in the past, but they usually focus on constructing very plain styles using organic fibers in a limited range of natural colors; more often seen by the public as “hippie clothing.” However, sustainable fashion doesn’t have to mean only this one style of clothing, or even clothing made from only natural fibers. The fiber clothing is made from is only one small part of its environmental footprint and doesn’t take into account the care of or disposal of the garment. For example, a shirt can be made from organic cotton, but if there
is made by child laborers in a third world country, flown around the world several times on a jet plane during its construction and distribution, and later ends up in a landfill, it does not benefit the workers who constructed it or the environment (Gwilt & Rissanen, 20).

In fact natural fibers are often not any more environmentally friendly than synthetic ones. Cotton production is often very harmful to the environment (Gwilt & Rissanen, 25). Growing the cotton to make just one t-shirt uses 256 gallons of water and a pair of jeans uses almost 960 gallons (Planet Aid Inc., 2011). More than 90% of cotton production involves large amounts of chemicals, often using up to 6 pounds of pesticides per acre. Because of this, cotton takes up only 2.4% of the world's farmable land but accounts for 25% and 11% of global insecticide and pesticide use respectively (Hethorn & Ulasewicz; 39, 185). Consumers also often use more chemical cleaning products on organic cotton garments trying to keep them whiter and fresher (Gwilt & Rissanen, 111; Grew, 2011).

Because of this the industry must look at sustainable fashion in terms of more than just the fibers used. In 2000, the Dutch Social-Economic Planning Council Report defined sustainability as relating to three distinct categories – people, profit, and planet (Gwilt & Rissanen, 19). For sustainable fashion to work, it must not damage the planet for future generations, must not exploit people currently in the manufacturing process, and must be profitable for both manufacturers and retailers to continue selling it. Fashion is a massive, global industry spanning many sectors of industry with products selling at all economic levels; it can have a huge impact on the sustainability movement if designers and manufacturers can change several key factors in their production methodology (Hethorn & Ulasewicz; xvii, xix).
To understand how unsustainable today’s fashion industry is, one must look at the way people produced and consumed clothing in the past. In previous centuries, fabric was valued so highly that it was often used as an alternative form of currency (Gwilt & Rissanen, 22). Weaving fabric took a long time which was further increased if it included embroidery, lace, brocade, velvet, or any other special treatment. Even the upper class saved fabric, reconstructed their clothing, sold unwanted items to the secondhand market, and even went so far as to include clothing and extra cloth in their wills. The University of Rhode Island has a pair of trousers in their Historic Textile and Costume Collection that has been patched 24 times in various places (Hethorn & Ulasewicz, 8-10). However, with the industrial revolution in the 1800s, the value of textiles began to decline until wearing used clothing became associated with the lower class (Gwilt & Rissanen, 23).

The Industrial Revolution started in the textiles sector. Richard Arkwright, the inventor of the carding engine used to turn cotton into yarn, is known even today as the Father of the Industrial Revolution. By the 1820’s most fabric was being made in an industrial factory setting, and by the 1850’s so were most garments. By 1900 all textile products, including lace, velvets, and other previously expensive and time consuming items were being made by machine. Because everything was being made more quickly by machine, clothing began to be produced in ever-increasing quantities at ever-decreasing prices which allowed trends to change faster than ever before (Hethorn & Ulasewicz; 12-13, 15-16).

The modern fashion system got its start in Paris when Charles Worth opened a dressmaking shop in 1857 where customers could choose from a collection of predesigned garments and have them created in any size (Hethorn & Ulasewicz, 14). This was the start not
only of the fashion boutique and designer, but also the “cradle to grave” method of fashion consumption we use today. Instead of mending and altering clothing they already had, people could go out and buy a completely new garment made specifically for them (Gwilt & Rissanen, 57).

The boutique concept of fashion became more solidified with the standardization of sizing for menswear in the production of military uniforms for the civil war. This concept of standardized sizing was soon applied to women’s wear as well, which allowed for garments to be mass produced in a variety of sizes instead of creating each garment for a specific person using their exact measurements (Hethorn & Ulasewicz, 16). This system of mass production is how the fashion industry operates to this day and produces a large amount of waste.

In recent decades, fashion cycles have begun to turn over at faster and faster rates. Clothing began to be produced in such volume that outlet stores started to sell overstock items, and secondhand clothing stores opened as a way for people get rid of their unwanted clothing that was still in good shape (Hethorn & Ulasewicz, 23). Today fast-fashion brands like the UK's Zara can take as little as 2 to 3 weeks from the first stages of designing to the product being sold in stores. The fashion industry chooses to make their money by creating an ever expanding mass of cheap clothing instead of fewer high quality pieces. This kind of economic growth uses an ever increasing amount of resources, produces an ever increasing amount of waste, and is not sustainable in the long run (Gwilt & Rissanen; 83, 172).

*Pre-consumer Waste and the Design Process*

Waste in the fashion industry comes in two forms, pre-consumer and post-consumer waste. Pre-consumer waste is the extra material left over from the marker – the layout of pattern
pieces on the fabric that all the garments are cut from - during the cutting and production of
clothing (Gwilt & Rissanen, 35). When pattern pieces are cut from a bolt of fabric, only an
average of 85% of the fabric is used in the actual pattern pieces, the remaining 15% is never part
of any garment, but simply goes straight from the fabric bolt to the landfill. In the UK alone over
1 million tons of clothing is purchased every year. This means that around 100,000 tons of fabric
is being wasted in the patterning stage alone (Hethorn & Ulasewicz, 187).

Pre-consumer waste is especially troubling because so much waste is being created
before clothing is even constructed, sold, and worn. The unpredictability of pattern shapes is the
biggest obstacle in cutting down on fabric waste, much of which could be eliminated by
integrating the design and pattermaking process more closely. Before the industrial revolution,
fabric usage was at nearly 100% because fabric was so expensive and clothing was so time­
consuming to make, yet today most designers don’t think about pattern pieces when they are
sketching their design and figuring out their silhouette. In order to design clothing that utilizes
more fabric, designers must think about pattern pieces and cutting layouts during the concept and
research stage (Gwilt & Rissanen; 69, 83, 85, 192).

One way of cutting down on fabric waste is using alternate pattern shapes to create the
same general look. For example, circle skirts are very popular but create a lot of fabric waste, as
shown in the figure on the left below. An alternate way of creating the fullness of the circle skirt
without wasting any fabric is by using gores as shown in the figure on the right below. These
gores can be sewn together to create the full look of a circle skirt with zero fabric waste. If
designers thought about solutions like these as they were creating silhouettes and pattern pieces,
the industry could cut down on a lot of its pre-consumer waste. This zero waste strategy of
designing is called the jigsaw puzzle methodology because all the pattern pieces fit together like
a jigsaw puzzle with no space, or wasted fabric, in between (Gwilt & Rissanen; 185, 198). An example of a more complicated design, a sweatshirt and t-shirt, made using this method of 100% fabric usage can be seen in Appendix A.

Another way to diminish pre-consumer waste is to use the empty space on the marker to create new pattern pieces to reinforce the garment. Selvage – the finished edges on a bolt of fabric that keeps it from unraveling – is used in haute couture fashion on the inside of garments to reinforce necklines, armholes, and other areas where seams could rip more easily. This use for selvage could easily be adopted for ready-to-wear fashion. In the same way extra garment pieces, like collars and cuffs for dress shirts, could be made out of excess fabric for future repairs. Until the early 20th century it was common for shirts to come with detachable collars and cuffs for separate laundering or to easily change styles. Small scraps of fabric can also be used as stuffing for stuffed animals, pincushions, mattresses, or even pet-beds in order to keep it out of the landfill (Gwilt & Rissanen; 132, 150, 195). This would also cut down on the amount of stuffing that needs to be produced and the global footprint that stems from that production.
Producing the correct amount of a garment is also very important. Unsold inventory generates waste at every level of the fashion industry (Gwilt & Rissanen, 100). Mass customization of new clothing is one method of dealing with this problem because clothes are only produced when a consumer has already bought them. This works best with online retailers. One example is beyondclothing.com, which allows the user to create a customized jacket. The general body of the jacket is always the same, so the basic pattern pieces are already made. However, customers can choose their own color, fasteners, hood, pockets, and other elements and see a sketch of the finished product as they go (Hethorn & Ulasewicz, 106; BeyondClothing, 2012). Redbubble.com is another online clothing retailer that operates in a similar way. People submit designs for t-shirts, buttons, magnets, or other objects, and the customer can order the product in a number of sizes and colors. The products are not printed until they are ordered so there is no unsold overstock (Redbubble Pty. Ltd., 2012).

Sites like these also take advantage of digital printing – printing designs and colors on pieces of fabric that have already been cut out of a marker. This helps reduce fabric waste in several ways. First, it reduces waste caused by trying to match patterns on the seams of some garments. Second, it allows many pieces to be cut from the same fabric marker on plain white fabric, even if they will eventually end up with a different pattern printed on them (Hethorn & Ulasewicz, 111). Digital printing is also advantageous because digital inkjet printers can print a wider range of colors in much finer detail than the screen printing method the industry has been using since the 1960s. It also makes it easier for designers to print patterns they have created in Adobe Photoshop or Illustrator (Lui, 2009).

This process of production has several advantages and disadvantages. One advantage is that consumers feel a stronger connection to customized products because they had a hand in
designing the garment themselves. There is also no unsold overstock inventory because clothing is not made until it has been ordered by the consumer. However, there are disadvantages as well. Consumers cannot see or touch the product firsthand, and a customized product brings to mind several problems with returns. Other disadvantages include longer delivery time and higher price due to the unique nature of the product (Hethorn & Ulasewicz, 108).

**Post-Consumer Waste and Recycling**

The second type of waste, post-consumer waste, is made up of fabric that has been made into clothing, worn for a period of time, and then thrown away (Gwilt & Rissanen, 35). Each year the US alone produces over 545 million tons of solid waste, 5% of which is textile waste (Planet Aid Inc., 2011). According to the Fiber Economics Bureau, the average American buys 83.9 pounds of new clothing every year, while discarding over 40 pounds of their old clothing. The US Textile Recycling Industry only manages to recycle about 10 pounds of that (Hethorn & Ulasewicz, 211). Textiles are nearly 100% recyclable but over 12 million tons of US consumer's clothing still ends up in landfills every year (Gwilt & Rissanen, 144). Recycling textiles can be difficult for a number of reasons, one of which is getting the clothes from the consumer. Textiles cannot really be collected at the curb like other recyclable products because of mold and mildew problems if they get damp. After the clothing has been collected, separating the fibers of garments made from blended fibers or using chemical finishes is equally complicated (Hethorn & Ulasewicz; 215, 347).

In recent years several companies have started programs where people can return gently used clothing to the store to postpone throwing it away. Several stores in the UK such as Top Shop sell second hand clothes along with their main merchandise, and TJ Maxx offers an in-store
clothing take-back system so customers can donate old clothes as they buy new ones (Gwilt & Rissanen, 21). Planet Aid has clothing collection bins in over 13,000 locations across the US and helps keep over 2.5 billion pounds of clothing waste out of landfills each year. They also help set up many locally-based recycling systems for secondhand clothing (Hethorn & Ulasewicz, 37; Planet Aid Inc., 2011). Another organization called Textiles Recycling for Aid and Development (TRAID) is a similar UK-based clothing recycling organization that has over 900 textile collection bins and recycles 94% of the textiles they collect every year. They resell good quality clothing in their stores, and damaged clothing is taken apart and reconstructed to be sold as a new garment (Hethorn & Ulasewicz, 403; TRAID).

Despite the help it provides, reselling secondhand garments alone is not the solution. The majority of large secondhand clothing stores like Goodwill and Salvation Army can only keep and sell about 25% of clothing that is donated to their stores. The rest is sold to rag dealers or shipped overseas, where it not only stifles local economies, but will eventually end up being thrown away anyway (Gwilt & Rissanen, 147). For sustainable fashion to really work, designers must also use other methods, like making new garments out of secondhand clothing.

**Refashion and Repurposing Clothing**

Buying secondhand clothing alone is not a viable option for sustainable fashion. It doesn’t provide consumers with new styles and it doesn’t provide apparel industry professionals with the jobs they need. An Apparel Design professor who buys only secondhand clothing comments, "I am cognizant of the fact that if everyone consumed clothing the way I do, most of the students I help educate would not get a job, I would possibly not have job, and the industry responsible for many things I truly admire would not be in existence." She is right; fashion is a
massive global industry. There are 30 million people who work in the apparel industry in China alone. In Europe there are over 2.5 million people employed by Small and Medium Enterprises alone, not counting the millions more that work for large designer firms (Gwilt & Rissanen; 24, 86).

One of the biggest problems with “refashion” – constructing new garments out of old clothing – is that it is hard to adapt for mass production. Supplies of used garments are of irregular sizes and the available quantities are unpredictable. There are issues with creating repeatable patterns constructed from different garments. Disassembly, usable piece size, and condition of the secondhand garment all make mass production of a style difficult. One garment that some designers have already found easier to deconstruct are men’s dress pants. They are made from large pieces of fabric, are generally the same shape, are available in large quantities, and are generally in good condition (Gwilt & Rissanen; 27, 28, 35).

In order to make refashion work on a large scale, designers must learn new skill sets that allow them to access the condition of the materials they are using and efficiently deconstruct the garment. Most designers see this process as a hassle when they could simply use a large, new piece of fabric, but the flaws present in secondhand clothing can often be the inspiration for new and exciting design ideas. It forces the designer to constantly reevaluate their design and make changes according to the materials they have. Because garments made from repurposed clothing are generally more labor-intensive to make, prices are slightly higher than typical fast fashion purchases. However, if refashion became mainstream the higher price would not be much of a problem. People would buy fewer high quality pieces and would have a personal connection to their clothing, justifying the higher price (Gwilt & Rissanen; 35, 150, 153).
One model of sustainable design is called “Five Lives of a Piece of Cloth.” In this system an uncut piece of cloth is first sold as a wrap, then cut and sewn into the first cut-and-sewn design. It is then made into another garment and next a small accessory. The final step is degrading the fiber to make a new piece of cloth so the process can start all over again (Gwilt & Rissanen, 114). This system is a great idea because it purposefully guides the piece of cloth through several stages, with the workable pieces getting smaller each time. The first garment constructed can be anything because it is being taken from such a large piece of fabric. The next garment will use slightly smaller pieces, perhaps making a princess seam dress out of a long skirt. The last item can be something small like a purse, scarf, or headband. Thinking about the future incarnations of the garment as it is being constructed will help solve the problems of small, irregular fabric pieces in refashion. This method of production is called cradle-to-cradle because the garment never becomes waste and would replace the current cradle-to-grave system that places so much waste in landfills (Hethorn & Ulasewicz, 155).

Designers can also help this process by designing new garments with future alterability in mind. For example, garments can be made with detachable parts, such as the jacket and skirt shown in Appendix B. This particular garment has detachable sleeves so it can be worn in both summer and winter. The waistband piece can be attached to either a pants or skirt bottom so the customer can get two garments in one and can wash only the parts that are dirty (Gwilt & Rissanen, 113).

Designers can also learn a lot from tailors in this area. Tailors use wider seams to allow for future alterability and reinforce high-stress areas of the garment with extra fabric. Clients are also very loyal to tailors and return to have their garments altered years after their purchase. Focusing on alterations helps cut down on fabric waste while also keeping jobs open in the
fashion industry. Furthermore, the lifecycle of the garment can be greatly extended by selling the consumer not only the garment, but also a future repair service (Gwilt & Rissanen; 75, 128). A system where customers can bring garments in for repair will help the designer as well as the consumer. If designers can see firsthand how and when things break, they can then use this information to make their future designs more durable and effective (Hethorn & Ulasewicz, 74).

Refashion challenges the idea of a standardized garment or collection of garments (Gwilt & Rissanen, 35). Look Again is a line of clothing made by students at Cazenovia College in New York in one of their classes. They repurpose clothing and sell it on a rack at a local thrift shop. This teaches students creative solutions for production as well as small business operations. Their rack contains the same style of garment made from different but similar fabrics for each size. The look of the line is cohesive but each garment is one of a kind (Hethorn & Ulasewicz, 127). This strategy can help with the mass production issue of refashion.

There are many companies that have taken the idea of Look Again and applied it to their whole selling strategy, including the previously mentioned TRAID. Another UK-based company called Junky Styling was founded in 1997 and also sells garments created from secondhand clothing. They have a ready-to-wear line, make garments for special occasions, and even have a “wardrobe surgery” service where they will repurpose clothing the customer brings in (Gwilt & Rissanen, 130; Junky Styling, 2012). From Somewhere, also based in the UK and founded in 1997, even goes so far as to include pre-consumer waste scraps in their designs to keep them out of landfills (From Somewhere).

Canadian company Harricana, founded in 1993, focuses on repurposing more high-end clothing. According to their website, by reusing old furs they have saved more than 600,000 animals over the life of the company and have also extended the life of over 60,000 high-end
coats, scarves, and wedding dresses that would otherwise have never been worn more than a few times (Harricana). Del Forte Denim not only makes all of their jeans with organic cotton, but also try to educate consumers about cotton production and clothing recycling. Their Project Rejeaneration allows customers to bring used jeans back to the company after they are done wearing them. The customer receives 10% off of their next purchase and Del Forte recycles the fibers to make more jeans (Gwilt & Rissanen, 49; Grist, 2006).

In the US the National Association of Resale and Thrift Shops (NARTS) is a Chicago-based organization with over 1000 member-stores. NARTS offers advice for members, holds seminars for training and networking, and helps spread the word about the refashion industry nationwide (NARTS, 2012; Gwilt & Rissanen, 149). Similarly, the Seattle-based Sustainable Style Foundation seeks to educate consumers on how to be sustainable in every area of their life, not just fashion. They have members internationally and strive to keep sustainability in the media eye as well as promote cross-industry cooperation to make sustainability a reality (SSF, 2012).

Refashion and the Consumer

People must be the driving force behind sustainable fashion. Consumers have the power to support with their purchases and must demand more sustainable action from the brands they buy. According to a 2007 report from the US National Marketing Institute, 52% of consumers said that they feel more loyal to companies that are socially responsible and 38% said they would be willing to pay more for socially responsible products (Hethorn & Ulasewicz; 5, 41). Similarly, a 2004 Cone Corporate Citizenship Study showed that 74% of consumers are more likely to pay attention to a company’s message when they see that company is deeply committed to a specific cause, 69% said they consider a company’s environmental stance when deciding where to shop,
and 83% said they would trust a company more if they are more environmentally responsible. Several steps must be taken for sustainable fashion to work. Customers must change their behavior; research companies, and question their marketing campaigns. They must also care for and dispose of their garments in a sustainable way (Hethorn & Ulasewicz; 45-46, 50; Cone Communications, 2004).

Refashion can help create a deeper bond between clothing and the wearer, especially if the consumer commissions a new garment made from existing clothing they already own. Everyone has certain pieces of clothing that they feel an emotional connection to and struggle to get rid of when they become stained or no longer fit. Refashion can help give these garments a new life instead of sitting in a closet or a landfill and can also help the consumer feel confident in a new garment they look and feel great in (Gwilt & Rissanen, 119).
Methodology: Urban Bohemian Line

When I design a new ensemble from old garments, I usually start by looking at what I have. I look through my fabric scraps and old clothes and plan what I want to make around what I already have. I let the fabric inspire the design. This process is the opposite of how designers usually work, which is to sketch a design, draft a pattern, and then select fabric. Instead, I decide what fabric I would like to use, sketch a design based on the fabric, and sometimes alter the design depending on how much fabric I actually have to work with. In this section I will explain my methodology for each ensemble in my Urban Bohemian line of clothing.
**Ensemble 1:**

This outfit consists of a vest and a dress. The dress is made from two button-up long-sleeve t-shirts. The vest is made from a floor-length knit dress, Chuck Taylor Converse shoes, and lace trim from an old skirt. This outfit was inspired first by the Converse. I had the tops of the Converse and thought they would look good as part of a vest. After that I looked through the rest of my fabric and found a purple knit I thought would drape nicely and be light enough for a vest. I finished it with some lace from an old skirt. Working in this way allowed me to design a whole outfit around one small detail.
Ensemble 2:

This dress is made from a 3-tiered strapless knee-length dress and a 3-tiered floor-length skirt. The shape for this dress was inspired by the shape of the top tier of the dress, which was a tube with a v-shape in the front where it fed into the bust of the dress. Because the fabric was exactly the right width, I decided to make the dress off-the-shoulder with the v-shape in the front. I made the rest of the dress with vertically striped panels because the tiers of both the skirt and the dress gave me a lot of narrow pieces of fabric to work with. The dress was a little bit too short when I finished so I added a ruffle at the bottom using the last tier of the skirt. Working in this way allowed me to change the design of the garment as I went to fit the fabric I was using.
**Ensemble 3:**

This dress was made from a two-tiered floor length skirt with a ruffle at the bottom. I used the top tier for the bodice of the dress and the bottom tier for the skirt. I used the same ruffle from the bottom of the original skirt as the ruffle on the new dress as well as a zipper from an old purse. The belt was made from an old leather skirt. I used the outside of the skirt for the surface of the belt and the lining of the skirt for the inside. I used hook and eye closures from old bras to fasten the belt. The leggings were made from a floor length knit dress. I added elastic from an old skirt to the waistband. This outfit is a good example of how you can use small details and notions on garments and not just the fabric itself. In this way you can recycle things even from garments that don't have a lot of fabric, like bras.
**Ensemble 4:**
The skirt in this ensemble is the bottom portion of a stretchy knit dress. I used the rest of the dress made from this fabric in ensemble 7. The tank top is made from a t-shirt and uses a zipper from an old sweatshirt for the straps and lace from an old skirt for trim. The jacket is made from an old pair of pajamas; a matching long sleeved t-shirt and pants. The jacket in particular is a good example of how something that was previously not wearable outside the house – like pajamas – can be turned into something that is both functional and fashionable.
Ensemble 5:
The leggings for this outfit are made from two pairs of identical leggings in gray and black which I cut up the middle and sewed back together to make two new pairs of two-toned leggings. The flower panels in the dress come from a dress I had in the same style that I cut apart to use as pattern pieces. I made new panels out of old t-shirts and made two similar dresses by alternating between the t-shirt and flower-print panels. The front of the jacket came from an old motorcycle jacket with a large hole. Besides the hole it was a nice, new leather jacket so I used a pair of white capris for part of the sleeves and an old jean skirt for the back panel to make a new jacket. Working in this way shows how you can take a garment with a large flaw and work around it to make a new garment and how you can use a simple garment like a princess seam dress as a pattern to make many similar dresses.
Ensemble 6:
The skirt for this ensemble was made from two skirts – a pleather pencil skirt and a pleated lace skirt. I turned the lace sideways so the pleats could work as ruffles on the side panels of the new skirt. The top is made from the lining of the dress I took the vest material from in ensemble 1. The neck is lined with a snakeskin knit I also use in ensemble 7. The jacket is made from a floor-length dress with accents and lining in the same brown snakeskin knit and buttons from an old dress. This outfit is a good example of how you can use design details like pleats and incorporate them into the new garment in a different way. It also shows how you can use small scraps of leftover fabric, like the snakeskin knit, as accent pieces on a garment and help tie it in with another piece in the line at the same time.
**Ensemble 7:**

The vest in this ensemble is made from a floor-length knit dress. Both the outer material and the lining of the dress were used in alternating panels. I used the lining of another dress to line the hood and used buttons from an old coat for the fastenings. The dress is made from two knit dresses and a knit shirt. I was inspired by different pleating techniques, but decided to do panels instead of pleats to get a similar look. The back of the dress is the sold brown snakeskin fabric which was used in ensemble 6 and the front is made from alternating panels of brown and black snakeskin knits and a gold knit. Working in this way shows how you can use even small scraps of old fabric to make a great design.
Summary & Conclusions

The growth of sustainable fashion is a very important part of the future of the fashion industry. The practices of the current fashion industry are outdated and wasteful, and the planet will not be able to sustain such behavior for long. In order for sustainable fashion to become a reality, both industry professionals and consumers alike must be educated about better ways to design, manufacture, buy, and dispose of clothing.

Completing this project has helped me take my hobby of repurposing clothing and learn how to integrate it into refashion in the apparel design industry. I have learned new techniques concerning the reuse and recycling of fabric as well as new practices that will help me buy clothing as a consumer. Sustainable fashion is not just “hippie clothing,” it is clothing that every true individual in the fashion industry should embrace and feel great wearing.
Appendix A

Jigsaw Puzzle Methodology – Sweatshirt and T-shirt (Gwilt & Rissanen, 94)
Appendix B
Garment made with detachable parts (Gwilt & Rissanen, 113)
Appendix C
Urban Bohemian Illustrations

[Sketches of various urban bohemian outfits]
Appendix D
Urban Bohemian Inspiration & Colorway/Fabric Swatches
References


