A Designer’s Process

Emily Derr

Follow this and additional works at: https://surface.syr.edu/honors_capstone

Part of the Fashion Design Commons

Recommended Citation
https://surface.syr.edu/honors_capstone/598

This Honors Capstone Project is brought to you for free and open access by the Syracuse University Honors Program Capstone Projects at SURFACE. It has been accepted for inclusion in Syracuse University Honors Program Capstone Projects by an authorized administrator of SURFACE. For more information, please contact surface@syr.edu.
Reyen Design Studio

For the past two semesters, I have had the opportunity to work with David and Dorita Reyen of Reyen Design Studios in Baldwinsville, New York. David has worked for twenty-nine years as a metal smith and jeweler. He has also worked in art-to-wear fashion and textile design. His inspiration when designing clothing is “art, music and folklore and philosophies of the ancient world both historical and mythical…” (silkcloque.com). Dorita has always worked with fibers. She has worked for theatres, opera and film and historical society designing costumes (silkcloque.com). Dorita’s inspiration is “…the cultural revolution of the sixties, peace, love, happiness and hope…” (silkcloque.com). Both David and Dorita earned their master of arts in textile design at Syracuse University. They continue to exhibit their work at festivals in addition to conducting workshops. Their work has been featured in Threads Magazine 2003, Fiber Arts Magazine “The Sorceress” Future of Fiber Arts 2005, and FAERIE Magazine, summer 2005. The Everson Museum in Syracuse, New York has also featured Reyen Design studio pieces in the gallery in 2004.

David and Dorita created a soft fabric with “excellent draping abilities” and “non-woven sculptural abilities that can be shaped and hold a form” (silkcloque.com) known as Silk Cloqué. Cloqué is a French word that describes the texture of blistered paints. When referring to fabric, it means “…working with two disparate fabrics [two pieces of silk with wool between the two layers] in a way that makes them crinkle or bubble” (silkcloque.com). Clothing made from
Silk Cloqué has an organic look to each piece and it looks “grown rather than made.”

A similar process to Silk Cloqué was developed by Polly Stirling, a professional textile designer. She pursued leatherwork in Australia and interior design in Boston. In 1990, Stirling became interested in felt after her assistant Sachinko Kotaka developed a new felt technique, “Nuno felt” in 1994. Nuno felt manipulates a minimum amount of wool fiber through a fine base weave. The characteristics of Nuno felt differed greatly from traditional felt. The texture is less uniform, transparent, and has “great multi dimensions” (wildturkeyfeltmakers.com/pollystirling.html). Nuno felt was featured in the 1999 issue of *Threads Magazine*, “Featherweight Felt that Drapes.”

**Acid Dyeing**

For my thesis project, I designed a dress with a 5 mm 36” wide silk Habutai (also known as “China silk,” commonly used in many types of projects, sometimes spelled Habotai) bodice. The unit mm is an abbreviation for momme, a Japanese measurement of the weight of silk. One mm is about 3.6 grams per square yard. The greater the momme, the heavier the silk (dharmatrading.com). Silk Habutai is not only soft and lustrous but has a “supple, [pliable with a certain amount of strength] hand and provides a smooth surface for silk painting” (dharmatrading.com). The skirt attached to the bodice is made of two separate panels of Silk Cloqué fabric. Based on the Reyens’ process, I used Merino wool and hand-dyed 3mm silk gauze. The dyeing process was achieved using Jacquard
brand acid dyes in squeeze bottles. I mixed the dye with water and vinegar and shook the bottle. If I wanted to create a darker value I would add less water to the mixture. If I wanted a softer value I would dilute the dye with more water. The silk pieces were placed under the faucet and doused with water to disperse the dye. I squirted the gauze with the dye mixture. For this project, my color scheme was comprised of different variations of blues. When teal dye is added, results appear greener. When royal blue is added, a brighter more intense blue is achieved. Adding navy results in a darker blue.

Acid dyes are used for dyeing silk, wool and nylon. The dye is in powder form and is “intended for vat-dyeing fabric yardage, yarns or clothing” (dharmatrading.com). When experimenting with silk gauze fabric dye samples for my final project, I used a stove top to prepare the dye bath. However a washing machine can be used. In addition to dye and water, one must add white vinegar which behaves as “the acid.” The benefits of acid dyes are that they are relatively inexpensive (approx. $4.49 for ½ ounce jar on dharmatrading.com), they react quickly and they are very permanent. One drawback is that the dyeing must be done when the mixture is hot. The pot must be heated to a simmer according to the directions on the label. The recommended procedure from Dharma Trading is listed below:

**Stove Top Method:**
1. Add dye powder to one quart of very hot water and stir until completely dissolved.
2. Fill a metal pot with enough hot water for the fabric to swim freely.
3. Add dye and 1/4 cup of white vinegar. Turn on the heat and add clean, wet fabric.
4. Raise the temperature to 180 degrees to 195 degrees, maintaining temperature and stirring occasionally for 30 minutes. Water boils at 212 degrees.
5. Wash in warm to hot water and Synthrapol to remove excess dye.
6. The final color depends on the time in the dye bath, concentration of dye bath and temperature.

**Washing Machine Method:**
1. Set the washing machine to gentle cycle, hot wash/cool rinse and fill to the lowest level appropriate for the amount of fabric being dyed.
2. Add dye powder and agitate until dissolved.
3. Some dye colors are more dense than others, so use 1/2 jar for one pound of fabric, 1/4 jar for 1/2 pound fabric, etc.

A decision was made that the washing machine method might be too harsh for the silk gauze. So I used the stove top method. For a multi-colored marbleized effect, on the silk Habutai (for the bodice) I used squeeze bottles combining navy and teal in one bottle, and royal and navy in the other. I added ¼ cup of vinegar (which serves as the acid that causes the silk to immediately absorb and retain the dye), and a tablespoon of dye and filled the bottle with water. I wet the silk and randomly squirted the dye mixtures on to the fabric. After dyeing I rinsed the fabric. I placed the fabric into a plastic bag and put the bag in the microwave for eight minutes.

Many people who have observed the various stages of my dyeing process ask: “How do you know what the color mixtures will look like and how do you know that the color schemes won’t clash?” I did not know the answer. So, realizing that I needed to experiment to control the outcomes, I took some silk gauze and cut it into 6”x 6” squares and randomly mixed vinegar, water, and different combinations of the teal, navy and royal dyes. If I wanted a lighter softer color I added more water, and less dye and vinegar. As I have stated before, if I wanted a bold color, I used more vinegar, more dye, and less water. To obtain greener results I added teal. I added navy for darker results or to achieve a
brighter, blue hue I added royal. I tried to write down the exact combinations for each sample but I found it difficult to keep track. In addition, I could not use the exact ratios of dye to water to vinegar because the samples were significantly smaller than my final piece. It was hard to recreate the bright royal blue with a hint of teal on my final project because I had to recalculate the measurements and ratios. David Reyen once told me that dyeing is the hardest part because one must use very precise measurements and ratios. I found this to be true.

The Reyens primarily use squeeze bottles to apply dye. I prefer preparing a dye bath for my samples in a small container and then preparing another color in a different container. I would then tie the fabric into knots and dip into the dye baths before I placed the sample in a plastic bag in the microwave. This process is called steaming and the heat is necessary for the dye to stay on the fabric. When dyed silk is washed for the first time, even after steaming, a small amount of color will bleed into the water. The silk is not extremely "colorfast" at first (a fabric that is colorfast retains the dye during washing). Another dyeing process I discovered while making samples was the application of dry powder dye directly onto the wet fabric dyed in a dye bath. This technique creates a watery, "hazy" version of bound resist dye. The main difference is that the pattern is more random and the fabric does not need to be knotted or twisted. For my original design, I was going to create a "bubble skirt" out of a silk dupioni fabric which is crisp, strong and not quite as smooth or lustrous as the silk Habutai. I wet the fabric, twisted it into a long "rope," and tied it into knots. I placed the four yard piece into a hot dye bath of turquoise dye and left it there to soak for three hours. I
removed the piece, rinsed it and un-knotted the fabric. The results were a lot of negative white space so I poured some old coffee that was still hot into a mixing bowl and soaked the fabric overnight. After removing it from the bowl and placing the piece into the dryer, it turned a beautiful blue-green. The white negative space was replaced by a beautiful subdued brown-gold hue.

Unfortunately, the color scheme was too green and after many attempts to try to counteract the green with a rich navy dye bath, the fabric retained the gold-blue green tone. Due to this, I decided not to use this yardage for my project.

**Felting**

Felt can be described most simply as “matted wool.” Wool becomes felt when it is exposed to moisture, heat, pressure and agitation. The hot soapy water causes the wool to become “slippery” and the microscopic scales on the wool fibers open up. Abrasion is the “primary mechanism” of felt (fuzzygalore.biz). The scales catch each other when rubbed together. Then the wool shrinks. This process is irreversible and the wool fibers can no longer be separated.

Felting is one of the earliest known forms of textile processing. According to The Felt Crafts Company, “the oldest archaeological finds containing evidence of the use of felt are in Turkey. Wall paintings that date from 6500 to 3000 B.C. have been found which have the motif of felt appliqué” (feltcrafts.com). Around 1206 A.D., during the reign of Genghis Kahn, Asian nomadic tribes used felt. Felt could “…withstand the most horrible weather conditions.” Wool is also a renewable resource which regrows quickly after a sheep or a goat is shorn. When felt is thick enough, it has a windproof quality and it is relatively water-resistant.
The nomads used felt to make tents because it is light enough to be transported easily. In addition, felt is fire resistant. When made into garments, a lighter version of felt is used which protects from extreme temperatures and from precipitation. The Asian nomads used to make felt by placing the fleece under the saddle and riding on it all day (FeltCrafts.com).

**Felting Processes**

There are two felting processes: manual (“by hand”) and machine felting. First, I made a couple of samples using the manual approach because my piece was too small for the machine. For my final project, a felting machine was used. There are many different sizes of felting machines on the market today. In fact, there is an entire site devoted entirely to felting machines: feltingmachines.com. The felting machine consists of rollers (Usually, the machine has about three rollers). Each type of machine has a different capacity for a maximum width of fabric. On feltingmachines.com, the Princess or table top model can do yardage of about 24” wide. The Empress model has the capability to felt a piece up to 60” wide. The width of my silk gauze was approximately about 36” and 11 yards long. For machine felting Cloqué, one must lay out the first layer of silk gauze and then arrange the felt pieces (depending on how much transparency or opaqueness is desired) on a pool cover that resembles bubble wrap. The raised areas on the pool cover facilitate the agitation portion of the felting process. The other layer of silk gauze is placed on top. The piece is doused with hot, soapy water and it is rolled up. The piece is placed in between the two front rollers of
the machine. After half an hour of machine action, the piece is removed from the machine and re-rolled from the other direction. It is then placed back into the machine for the final agitation process.

The felt machine does a lot of the work but the manual process is still needed. I still had to roll the piece by hand to cause the silk and wool to bind together. After the piece is removed from the machine, the piece is unrolled and hot water is doused onto the piece on a table or other flat surface. The hot water causes the scales of the wool to open and bond to other scales of wool and the silk pieces.

I began at one end of the fabric yardage and rubbed the fabric aggressively over the “bubbles” of the spa covers. I made sure that they were moved as “a unit.” This is important because a piece can turn out lopsided because the silk and wool shifted improperly during the rubbing process. Then I started from the opposite end. I flipped the piece over and repeated the process. After the rubbing, I folded the piece onto itself so that the piece is about 12” x 24.” I poured hot water onto the piece (This part should be done in a sink or bathtub). Immediately after, I wrapped a towel tightly around the piece and rolled the piece back and forth 42 times. Then I unrolled the fabric and loosely gathered the fabric into a ball. I wrapped a towel around the “ball.” I then took the towel and threw it onto the floor of the bathtub. I threw my piece about ten or fifteen times. Throwing rids the fabric of excess water and facilitates the felting process. The piece was placed in the washing machine on the gentle cycle and I added a small amount of detergent. The water in the machine must be hot during this step. I let the cycle
run for about ten minutes. The piece was removed and hung up to dry. Due to the hot water temperature, the amount of agitation and pressure, the piece was about 40% narrower and shorter than before.

If one were going to use the manual approach for the entire felting process, after the fabric has been set up, doused with hot soapy water etc., it needs to be rolled back and forth on the floor 150 + times. Then the piece needs to be unrolled and re-rolled from the other end. The process is then repeated. It is unrolled and the piece is flipped over and as before, the process is repeated from both ends.

The sample scarf that I made was successful because there was ample amount of space and I had access all of the proper materials. When I attempted to make a smaller second sample piece about 18” x 11,” only half of the piece was felted! For the sample piece, I used regular post office bubble wrap which fell apart and I used a plastic cup to roll the fabric around which broke when pressure was applied. It is imperative that one use the proper materials, even when creating a small sample piece because inadequate materials result in unsuccessful felting.

**The Design Process**

My original inspiration was lingerie. The fifteen original sketches were very complicated and detailed. Of the fifteen sketches, six were chosen for the collection, and I selected one to produce. The ensemble consisted of a top and skirt. Both the skirt and top combined were comprised of twelve pattern pieces. The pattern pieces were drafted by hand and the top portion of the bodice, both
front and back were draped on a dress form. All of the pattern pieces were input into a CAD program, Gerber PDS 2000, using a stylus to connect the points on the sewing lines of the pattern. The bottom front and the two bottom back pieces of the top were drafted from a rectangle using CAD. I created curved lines within the rectangle and reorganized the points. I used the same process to draft the hanging piece that attaches to bottom of the bodice. The original skirt design consisted of five pieces: a front and back, waistband and a front and back yoke. The yoke allowed the skirt to be self-lined because the bottom hem is gathered into the yoke to create a “bubble” effect. The yoke is attached to the waistband. I was going to use the silk dupioni fabric I tie-dyed for the skirt. However, due to the below-the-waist length of the top, the skirt would not be flattering because of the proportions. The circumference of the hem or “sweep” of the top would fit too tightly over the bubble skirt that sits at natural waistline. So I eventually eliminated the skirt from my design.

I am still including an original garment specification sheet for both the bottom and top of my old design, as well as my new design because I feel that the reader must see the design process evolve. A specification sheet includes the hours and cost of labor to produce the outfit, the measurements of the waist, bust, sweep, sleeve length, waistband. It also includes yardage and cost of fabric, trim, zippers, etc. Each garment is on a separate sheet. Instead of an illustration, a flat is used. A flat drawing shows the front and back of the garment including all style lines, zippers, etc. It is hard to produce a garment from a loosely drawn sketch (My drawing style is rather “loose” according to my professors). The original flats
were drawn using Corel Designer and then the files were imported into Microsoft Excel. I hand-drew the final flats on white vellum and copied them onto blue paper. The illustrations were also hand-drawn, and placed on a background created from a photograph.

The reason I chose to change my entire design is because my original design was too rigid. One cannot expect to have total control over the fabric when working with Silk Cloqué especially when there is so much shrinkage and so many irregularities in the dyeing process. When performing the Silk Cloqué Process, one cannot expect the same results as commercially produced fabric. The fabric was not wide enough to accommodate my design and there was very little consistency in the color. It also had a unique shape that I did not want to “butcher” because fabric design was the main objective of my thesis. The primary focus of this project is the fabric not the design of the garments.

To alter and simplify the design, I decided to cut the one piece of fabric in half and create panels that were attached to the silk Habutai bodice. To make the bodice, I dyed the silk with the “squeeze bottle method” mentioned earlier and then I took a pattern for a v-neck dress, closed up the darts on the pattern and transformed the v-neckline into a halter neckline. Instead of a zipper, I used six grommets, three on each side. About two inches in from center back, I used a light Pellon interfacing to reinforce the silk so that it does not pull away from the tension when the back is laced up. The bodice is self-lined with silk Habutai. Because I used a fit-model size six dress form it would not fit the Wolfe size eight
dress forms in the studio. It does in fact, fit me. The dress can be worn over a skirt or jeans and the waistline of the dress is the natural waistline.

A decision was made to fit a living model instead of a size eight dress form because it will be more affective to present the actual outfit on a human. The silk drapes nicely on a human body. For demonstration purposes, I displayed the garment on my dress form in addition to the presenting the dress on a live model in the photographs included in the Appendices. I really love the way the neckline gapes and I pulled on the neckline to stretch it and achieve a fluid, loose look. The fluidity of the neckline contributes to the “mood” or “essence” of the garment. After I constructed the dress, I realized I had a left over piece of silk cloque which I used as a wrap for the dress. I was very impressed by the way the blue and blue/green color schemes of the fabrics complimented each other. During the felting process I arranged the multi-color wool (navy blue, white, dark green, teal, orange, red and fuschia) so that it formed a repeating “X” pattern which made the piece more interesting.

One lesson I learned from this project is that you have to relinquish control during both the dyeing and construction process. I also could not make extremely detailed and cumbersome designs that involved cutting the Silk Cloqué fabric. When the fabric is cut in to too many pieces, the essence of the fabric and the pattern formed by the felted wool is lost. Although my original designs would not work well with the Silk Cloqué fabric, the original design boards were very successful due to the background created using filters in PhotoShop.
As the design process evolved, I realized that Silk Cloqué was not ideal for garments comprised of many pieces. Silk Cloqué has a lot of “energy.” Too many seams are distracting and detract from the fabric design. My original design involved zippers and lining which are superfluous because silk cloque does not need to be lined.

Because of my experience with primarily woven fabrics, I have limited amount of experience working with non-wovens. The fabric must be the focal point of the garment and the design should be kept simple. Based on trend forecasting publications from summer 2005 such as Women’s Wear Daily, the color trends are moving away from the pastel or jewel tones and are becoming darker. I darkened my palette and decided to use dyes in the blue and blue-green range. I redrew my illustrations with new designs and a darker color palette.

This design process was an invaluable learning experience. Not only did I learn more about the science of dyeing and creating fabrics, I also learned to conquer my fear of simplifying designs. Simplicity can be beautiful. My original loose and carefree illustrations are fun to draw but sometimes virtually impossible and impractical to produce. This project would not have been possible with out the assistance and support of Dorita and David Reyen, Professor Wright, my thesis advisor, and my parents Carol and Frank Derr.
Sources Cited and Consulted


Sample Scarf

Sample scarf from workshop: close-up (top), full-scarf (bottom)
Dye Samples

Royal/Navy

Royal

Royal with navy dry dye

Royal/teal with navy dry dye
Dye Samples: Part II

Diluted royal

Diluted royal/navy

Diluted navy/teal

Diluted royal/teal
Omitted Coffee-Tie-Dye Silk Dupioni

Close-up view of fabric after being tied in knots while damp to achieve a “crinkle” effect
On the Dress Form
On the Dress Form with Wrap

Wrap close-up
On Live Model
Live model in dress: juxtaposed with blue mailbox in foreground and green house in background