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Ann M. Gordon

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Date 4/25/81

Rochester Institute of Technology

A Thesis Submitted to the Faculty of
The College of Fine and Applied Arts
in Candidacy for the Degree of
MASTER OF FINE ARTS

Handwoven Fabrics
for Outerwear

By
Ann Mason Gordon

November 1980
This thesis is dedicated to my foremothers and fathers who wove out of necessity as well as love.

More directly the work presented here owes a debt to my immediate ancestors, many of them artistic women, who have served as role models in their independence and creativity.
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Thesis Proposal for the Master of Fine Arts Degree

College of Fine and Applied Arts
Rochester Institute of Technology

Title: Outerwear Fabrics

Submitted by: Ann Mason Gordon Date: December 14, 1979

Thesis Committee:

Chief Advisor: Donald Bujnowski

Associate Advisors: 1. Max Lenderman

2. Robert Heischman

Departmental Approval:

Date: 12/1/79

Approval, Graduate Representative of Academic Council:

Date: 12/21/79

Final Committee Decision:

Date: 12/21/79
I intend to create a group of fabrics suitable for use in outerwear. I will explore various historical weaves and patterns and present them in a contemporary context using a variety of textures, colors, and fibers.
Missing Page
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At this time of endings and beginnings I would like to thank the following people without whom this thesis would not be possible.

My Mother for her continual support and love.

All my friends who encouraged my return to school.

Mr. Donald Bujnowski and Mr. Max Lenderman for over two years of creative guidance, support and encouragement.

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A special thanks goes to Doug Anderson for being there.
INTRODUCTION

The years of men are the looms of God, let
down from the place of the sun
Wherein we are weaving alway, til the mystic
web is done--
Weaving blindly, but weaving surely each for
himself his fate.
We may not see how the right side looks: we
can only weave and wait.

Anton Chester
"The Tapestry Weavers"

Although I did not personally discover weaving until
my Senior year of undergraduate studies in 1970, I had long
had an interest in cloth and clothing and was already an
experienced seamstress, often visiting museums and his-
torical sites and being enthralled by the spinning and
weaving demonstrations. The opportunity to try these or
to be exposed to other arts was never available to me until
nearing completion of a degree in the relatively unrelated
field of Library Science. Elective courses in metals and
textiles opened a new vista for me and my involvement with
both media continued through the years with personal ex-
perimentation and workshops. Many techniques were tried
but I always returned to functional forms and most often
to wearables. My decision in 1978 to return to school for
my MFA allowed explorations and discoveries in many arts
as well as textiles and metals. Invariably, however, in
my textile work function reigns.
The visual and tactile beauty of a well executed piece of fabric holds great excitement for me. It is the energy of this excitement and the love of the history and tradition of functional weavers that have led me to the topic and works of this thesis.

We are all products of our environment to some extent. To me having always lived in the Northeast the term outerwear brings to mind warm wooly overcoats and capes to brave the long cold winters. While technology has brought us from animal skins to light weight windproof synthetics the warm look and feel of real wool still beckons me. The names of traditional fabrics used years ago such as "linsey-woolsey," "thicksett," "forest cloth," "everlastings," and "fearnought" also have charm for me. While my fabrics do not technically fit into any of these categories the similar fibers of wool with the occasional addition of linen were used and I like to think of them as contemporary versions of the old fabrics with their "everlasting" qualities.

Personal experience taught me that the fabric in an outerwear garment should be of a design and colors which will continue to please the eye over an extended period. A "good" coat was meant to be worn more than one year and with such long winters one could become very tired of a magenta plaid. Taken as a whole the colors used in this thesis are warm and muted or greyed. Some have been likened to Scottish or Irish heathers. While my selections of
color have sometimes been accidental the final selection of samples was purely personal and perhaps my Scottish/Irish heritage made itself evident at that point. The resulting patterns, both woven and from color and weave effect, are generally small in scale and would work well on any size person. Many have no definite directional line but rather cause the eye to move over the surface randomly which would also lend their use to any size garment.

In my research for this thesis I read of the Shaker opinion that "The world is so little to be relied on, so fickle and fluctuating in their colors and fashions of cloth."¹ I share that opinion and have produced a group of fabrics which stand apart from fickle fashion.

CHAPTER I
DESIGNING

The structure of this thesis was first imagined to be such that each piece of yardage included would be based on a single idea and would therefore have great personal meaning for me. Each would truly be a "master-piece". Subsequent discussions with Mr. Bujnowski and Mr. Lenderman concerning goals and time factors broadened the base of my proposal and allowed for more experimentation and production in the sample area. This in turn generated more critiques and ultimately a greater understanding of color and design. My thesis became a testing ground to see if weaving production yardages was a direction I would like to pursue. Consequently the pieces included in my thesis were arrived at through a variety of channels; some were planned in detail, some grew from color experimentation and some are happy accidents. While each one does not have a personal tie each one is a good representative of quality yardage suitable for outerwear and has been included in this thesis for merits to be discussed below.

Overdyed Persian

This piece developed from a quarter's work with Cushing dyes and a Fall fashion forecast. The quarter prior to beginning my thesis was spent producing a tradi-
tional dye notebook showing Cushings dyes on silk, cotton and wool as well as a group of wool samples showing the effect of overdyeing yarns of the primary, secondary, and tertiary colors with a selection of Cushings dyes. Many exciting colors resulted from the overdyeing process and I was anxious to use some of them in a project. While reading American Fashions and Fabrics Winter 1980 the phrase "stained glass colors" caught my eye and a design for a piece of fabric which would have a stained glass effect consisting of rich colors and a sense of receding and advancing planes was born. Teal blue was selected to act as the "lead" of the "window" and a simple 4/4 houndstooth was chosen for the weave pattern. Houndstooth automatically creates a feeling of depth unless the two colors used are very close in value. The four colors used as the background or "glass" were chosen out of personal preference and because their changing values enhanced the sense of depth. Skeins of the original yarns, Scott's Persian in maize, were dyed to make a sampler. The sampler was woven as planned and worked very well. The desired effect was achieved. The sample warp was long enough to allow experimentation and when various sequences of weft colors and treadlings were tested a variation of the original houndstooth pattern was created. By throwing four shots of each weft yarn instead of one shot in the same color sequence a horizontal striped effect broken by lines of
teal houndstooth developed. The end result was much more exciting and showed off the multiple colors to a greater advantage while still maintaining a sense of depth. Although the original piece was good the variation was chosen to be woven as yardage and it is this piece which has been included in the thesis. When washed the Persian yarns create a heavier blanket weight fabric which would make an excellent cape or poncho. (Sample A, p. 7.)

**Color Windings**

While preparing the yarns for the overdyed piece numerous color windings of various yarn weights were done and several small samplers were put on the loom in rapid succession. This helped to improve my color and design sense. I learned slowly that you cannot merely take a group of colors that you like and put them all together successfully. Often my least favorite colors became the ones that most successfully pulled a group together. The three pieces from the Fort Crailo 2-ply warp of olive drab, rose, cranberry and rust are a good example of this. (Samples B, C, D, pp. 7-8.) Previously I would not have thought to put these colors together but they do create an unusual and pleasing fabric when well balanced. The addition of another color, light greyish-brown in this case, creates a totally different and exciting look by reflecting the light rather than absorbing it. (Sample D, p. 8.) Another piece from this period of intensive experimentation is the
Fort Crailo 2-ply warp of wine, olive drab, and rust. (Samples E, F, p. 9.) Again the olive drab which I personally do not care for by itself serves as a balancing influence for the bold wine and rust accents. It is used both alone (Sample E) and with alternating shots of wine and rust in the weft (Sample F) which creates a weave within a weave effect.

While most of my sampling was done in wools a few included linen and rayon and one very successful piece of this type is shown here (Sample G, p. 11). Traditional log cabin pattern was used and striping was introduced in the warp at one inch intervals. The complementary colors of orange and blue with tan create a bold exciting piece and the fiber combination results in a fabric of good weight for a Spring or Fall blazer or jacket with a sporty look.

For these samples the loom was consistently threaded in an eight harness straight draw and from that worked with simple weaves: 2/2 twills, plain weave, or four or eight harness crepe weaves. Crepe weaves offer exciting possibilities because of the overall textured effect achieved and the unusual displacement of colors which occurs. Several of the pieces included here are four harness crepe weaves. After reading Twills and Twill Derivatives by Lucille Landis I designed an eight harness crepe weave which gave me a more complex interlacement and further
Sample G
color displacement. (Sample E, p. 9.)

A further variation in texture resulted from the combination in warp and weft of two ply yarns from two different companies -- Fort Crailo and Novitex. The spin and type of wool in each yarn were different and in the fulling or finishing process variations in shrinkage occurred causing additional loops and nubs throughout the weave. Examples of this effect can be seen in the pieces from the rust, olive drab, green gold, rust and celery warp. (Samples H, I, J, K, L, pp. 13-15.) Linen was introduced in Sample K producing a fabric of lighter weight and a totally different visual effect. A heavier weight Persian yarn was used for every fifth shot of the weft in Sample L producing yet another textural effect during the fulling process.

White on White

Working with all white yarns in a variety of weights and textures was another direction pursued. Many satisfactory samples resulted with heavily textured effects but none especially excited me. An attempt was next made to produce a seersucker without using two warp beams and slack tension weaving as in true seersucker. It was hoped that by using wools with dissimilar shrinkage rates in a controlled order a puckered stripe alternating with a flat stripe would result. Several combinations of white wool weights and textures were woven without extreme success as
Sample J

Sample K
Sample L
Sample M
the shrinkage variations were not great enough to produce a real seersucker look. Next additional fibers of silk and polyester in white or off white shades were introduced with not greatly improved results. One piece (Sample M, p. 15) combining silk noil, wool bouclé and a linen rayon combination does have a slight seersucker pucker, however, and is a very beautiful piece of Spring weight yardage so has been included in this thesis.

3/12

The final series of samples produced were executed in a lighter weight wool, a 3/12, and are in the more neutral colors of beige, browns and wine. (Samples N, O, P, Q.) Both plain weave with one and two color wefts (Samples N, O, p. 17) and a four harness crepe weave (Samples P, Q, p. 18) were used to produce a lighter weight woolen with overall and vertical patterns good for both Fall and Winter outerwear.

The design potential available with the colors and fibers used in this thesis alone are nearly endless. The fabrics produced for this thesis are the best of 120 samples executed during Spring quarter 1980. This experience in color and design experimentation has resulted in my better understanding fabric and the myriad possibilities open to me as a fabric designer. It is by no means an ending; the best is yet to come.
Sample P
Sample Q
CHAPTER II
PROCESS

Warping and Weaving

"The noise of the loom was considerable...the clicking of the shuttle, the beating of the reeds against the web, the shifting of the treadles and the heddles would all begin when other work about the house was done. It might last an hour or all day, or perhaps well into the night."\(^2\)

This quote exemplifies the weaving of my thesis yardages with the exception that most of the time the "other work about the house" was ignored. The romantic flavor of the quote also expresses some of my feelings about the actual process of weaving. The rhythm of the weaving motions and the endurance needed to weave long yardages are both aspects of weaving which make me feel more in control of my life and closer to a real understanding of past history. When I sit and weave creating a functional piece of fabric I feel a direct link to people of the past who had to weave their own cloth and I feel a great satisfaction at being able to do the same in this world of mass produced consumer goods.

\(^2\)Kate Milner Rabb, Indiana Coverlets and Coverlet Weavers (Indianapolis, Ind.: Indiana Historical Society, 1928), p. 405.
Many hours went into the warping and weaving of the seventeen pieces of fabric which comprise this thesis. They are the products of seven different warps totaling 66 yards in length. Because of the multiple colored striping in most of the fabrics a warping paddle was used to shorten the time involved in warp measuring and to keep the color sequences in order. For ease a warping reel rather than a board was used and a cross tied at both ends of the warp enabled me to remove the lease sticks and to not place undue stress on the long warps by passing them through the lease sticks. Most of my warping methods are the result of a speed warping workshop given by Janet Nyquist to whom I am eternally grateful. Even so, the measuring and warping of the loom generally took the better part of two 6-hour days.

The weaving process itself was pleasurable and uneventful but as every weaver knows there are always some problems on some days. Threading errors occasionally added additional time to the process, as did repairing a mistaken treadling sequence. No tension problems resulted in any of my 10 to 17 yard warps. Weaving times varied from 1 to 2 hours per yard and when my rhythm was found "noise of the loom was considerable."³

³Ibid.
Finishing

In the 1830's in Ohio the finishing process was reason for a "bee" or neighborhood get-together in which the "amateur fullers sat in a circle kicking the soapy cloth around from one to another with their bare feet."\(^4\) To properly full a piece of textiles takes a great deal of experience.

In my sampling and experimentation the washer and dryer were used as my fulling machine. All samples were put through a normal cycle for 9-12 minutes, washed in hot water, rinsed in warm water without soap and put into the dryer set at regular heat for 30-45 minutes. It was my intention to have the actual yardages measuring in length from 2-7\(\frac{1}{2}\) yards professionally finished. To that end a dozen letters of inquiry were sent out to Northeastern United States and Canadian finishers listed in Davis's Textile Blue Book. Of those who replied most could not accommodate me. One company, Florence Textile Finishing Co. in Rhode Island, would have been happy to process my fabrics free of charge but they have a 60 inch minimum width requirement which I could not meet as my fabrics were all threaded at 48 inches. A positive lead through a Canadian textile professor evaporated when I learned that the company in question closed in March 1980. They

did lead me to Atlas Sponging, also of Toronto, who operate a decating machine which can accommodate any width fabric over five yards in length. Minimal shrinkage occurs in this process, however, so it was not a complete answer. The fabrics would have had to be washed by me and then taken to Canada for a final steaming.

As the weaving process drew to a close and the time for finishing approached without a professional solution, Mr. Bujnowski assured me that the yardages could be finished to my own and everyone else's satisfaction. I was doubtful but willing to try, having little other choice. The process was not as painful as anticipated and the results were successful. While not always matching the nearly felted samples, the final fabrics are fulled to a good hand and drape well. In essence my samples were brutalized in the washer and this process could not be duplicated in the larger pieces without uneven shrinkage and severe mishaping. I was originally disappointed to find that I could not repeat the thickness of my samples but was pleased with the final results once the pieces were completely finished and pressed.

When convenient use was made of the piece dyer. This machine makes it possible to dye, or in this case full, a minimum of four continuous yards evenly and easily. Most of my fabrics were cut off the loom in 8-12 yard groups and although they would become 2-3 separate yardages they
could be fulled together. The fabric was put onto the rotating reel; the ends joined together, and rotation was started while hot water and synthropol were introduced. The fabric was in continuous motion being drawn through the hot soapy water at a steady pace. The feel of the fabric and the amount of shrinkage were checked frequently. Hot water and/or steam were introduced into the bath to increase the shrinkage and in some cases to begin felting the fabric.

As the fabric neared the desired fullness the hot water was drained and the tub refilled with cold water shocking the fibers and shrinking them further as well as rinsing out the soap. In some cases this rinse was followed by another cycle of hot steamy water without soap and a second cold rinse. All pieces were then put into the extractor to draw out excess water and were hung to dry. When dry the fabrics were pressed using the exhaust press. This machine has presser plates which clamp tightly over the fabric. Steam is then forced from the top plate through the fabric and is drawn out the bottom plate setting the weave firmly in place and giving the fabric a beautiful sheen, smoothness and resistance to wrinkles. This process is comparable to the decating process which Toronto offered.

When all of the pieces were fulled samples were cut of each and the raw edges were machine stitched to create a
1/4 inch fringe. The yardages were now ready for display and I was by this time a fairly competent and confident finisher of fine yardages. While realizing that the machinery available here at school will not be readily available to me at home, I now feel more confident about my ability to finish fabrics with careful use of the washer and working with a professional dry cleaner.
CHAPTER III
DISPLAY

The challenge here was to create a display system for my woven yardage which would make people take notice of them and not pass them by as merely bolts or rolls of cloth. The most natural answer for me was to make use of my skills in forging to produce a series of display vehicles which would show the fabrics as they might look when properly draped on the body. Many of the resulting pieces were based on previously executed small sculptures. When some of their component parts were enlarged they made convenient and unusual carriers for fabrics and enabled me to show the fabric pleated, gathered or flowing as I chose. (Photos I, II, III, pp. 26-28.) An extended towel bar (Photo IV, p. 29) was a more traditional but useful display unit and the use of the "Peoplekin" (Photo V, p. 30) allowed the draping of fabric on a relatively human form.

Because one end result of the production of hand-woven yardage might be its sale to a custom clothes designer, as well as to the average home sewer, I was very pleased when Orlando Ortiz, a local designer of my acquaintance, expressed an interest in my fabrics. He selected two in particular from my samples and arrangements were made for him to design and execute a coat for display at my thesis show.
Photo I
Photo II
Photo IV
Photo V
CONCLUSION

"...their work was promised ahead as far as three years, and...they sat at the looms for hours without sleep, except as they dropped their heads on the looms for a few minutes at a time for a nap, this in order to get their work out at the time promised." 

While this description of a production weaving studio is not particularly rosy, and the weaving of this thesis work has shown me that it is not inaccurate, it is still the direction to which I lean.

As stated earlier, this work was an experiment. As such I am well pleased with the fruits of it and even more satisfied with the unseen results. While all questions about my future goals and directions are not yet answered, many conclusions were arrived at throughout the process of producing this body of work. Much growth in color and design occurred as did a heightened confidence in my ability. Increased knowledge of my work habits and capabilities when dealing with production scale warps was invaluable as was my better understanding of what I want to create in the future. There is satisfaction for me in weaving pieces of yardage as shown here, but I now want to

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work toward a personalizing of the fabric to the body or to specific garment designs and to develop a series of finished garments as well as a more custom designed fabric which will be less like commercial fabrics than are these yardages. I feel strongly that I have learned much about myself and my weaving through this thesis and that it will serve as a springboard for my future successful career as a weaver and textile designer.
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