5-1-1979

A Personal Exploration

Laurie Dill

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Fred,

Just found your note and then was lucky and found Laurie and she has signed the requested sheet in the thesis.

Thanks again and I am sorry that I did not catch the error.
Rochester Institute of Technology

Office Memo

May 25, 1979

Dear Max,

Miss Dill must sign and date the library permission statement.

[Signature]

6/4/79
To: Professor Fred Meyer  
From: Max L. Lenderman  
Date: May 25, 1979  
Subject: Laurie Dill Thesis

Professor Meyer:

The committee has made final approval of the thesis for Laurie A. Dill. Please note that the corrections indicated by Professor Jim Thomas and Professor David Dickinson have been corrected.

Sincerely,
I have read the thesis report of Laurie Dill and offer the following comments:

**PAGE IV**

- **THROUGHOUT**
- **LINE 14** GAUGE
- **LINE 3** EXECUTED
- **LINE 18** DEFINITE

THE WRITTEN CONCLUSION IN THIS THESIS WAS VERY HELPFUL IN UNDERSTANDING THE MINIMAL ATTENTION GIVEN TO AESTHETIC DISCOURSE THROUGHOUT THIS BODY OF WORK.

I recommend its acceptance ✔

I recommend its revision ❌

James Thomas
Signature of Advisor

5/22/79 Date
I have read the thesis report of Laurie Dill and offer the following comments:

I recommend its acceptance [ ]
I recommend its revision [ ]

David Dickinson
Signature of Advisor

May 21st, 14
Date
Revision of Thesis Committee Associate Advisors

College of Fine and Applied Arts
Rochester Institute of Technology

Submitted by; Laurie A. Dill Date: December 7, 1978

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2.
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Approval, Graduate Representative of Academic Council:
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Thesis Proposal for the Master of Fine Arts Degree

College of Fine and Applied Arts
Rochester Institute of Technology

Title: A Personal Exploration

Submitted by: Laurie A. Dill Date: May 1979

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Date:

Final Committee Decision:
Date:
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

A PERSONAL EXPLORATION

By

Laurie A. Dill

May 1979
APPROVALS

Advisor: Max Lenderman
Date: May 25, 1979

Graduate Academic Council Representative: ______________________________ __
Date: ______________________________

Dean, College of Fine & Applied Arts: ______________________________
Date: Dr. Robert H. Johnston Ph.D.

I, Laurie A. Dill, hereby grant permission to the Wallace Memorial Library, of R.I.T., to reproduce my thesis in whole or in part. Any reproduction will not be for commercial use or profit.

Date: Laurie Dill May 26, 1979
My thesis will incorporate the technique of warp faced weaving as a sculptural medium. The sculpturing of the woven forms will be done during the weaving or finishing process. My research may lead into exploration of other weaving techniques in striving towards other fiber forms.
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ACKNOWLEDGEMENTS

I would like to acknowledge all of the assistance and advice of my thesis advisors, Max Lenderman, David Dickinson, and Jim Thomas. I would like to express my thanks to all of my family and friends for without their guidance and support this thesis would not have been possible.

I would like to take this opportunity to express my deep and sincere appreciation to my major professor Max Lenderman. His guidance has helped my artistic style mature throughout my years as a graduate student.
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INTRODUCTION

Warp faced weaving is an ancient technique delegated to several different types and origins of weaving. Warp faced weaving is a weave where the warp threads are so compact that the binding thread is completely hidden, except at the selvage or edge of the fabric. This technique has been revived today for its artistic possibilities, strength and wearing qualities.
Chapter One

BASIC WARP FACED FABRICS

The intent of this thesis is to construct a basic fabric that has the capacity to be manipulated as an artist can manipulate metal, paint, or any other material. Warp faced weaving has all of these qualities. It also has the resiliency to resist many of the problems that the artist would normally find with any other construction. A firm fabric is necessary to hold many of the forms and sculptural effects that can be created. After finding the basis for this fabric, many properties discovered were relevant to warp faced fabrics. One of the basic properties of warp faced fabric is its varying degrees of strength. The strength of a unit of fabric will influence how long the fabric will hold up under heavy use. This is especially important in sculptural fiber pieces where each unit is an important and integral part of the structural support of the entire piece. The strength of warp faced fabric is found in two aspects: tensile strength, which keeps a fiber from tearing under stress, and abrasion resistance, which keeps it from wearing away by rubbing.

Tensile strength is of major importance to a
fabric construction, as a large fiber structure will need tensile strength. In considering the fiber chosen, fabric strength is only one of many avenues that deem consideration. Other considerations include the amount of yarn used, drape, firmness, fringe, difficulty in warping and weaving, and the ability to maintain its original appearance.

Warp faced weave, consumes more fiber than any other weaving technique. As the amount of yarn used is of such great quantity, the cost of yarn must also come into question. Cotton in this respect seemed the best choice as it affords necessary strength and low cost.

The tensile strength of this type of fabric becomes an ambiguous question when its relationship to the weave is taken into consideration. The warp faced weave is woven so dense that the tensil strength of each thread is not as important as how these threads combine to form the whole.

The combination of these threads, even the finest thread, has the strength of rope when woven in a densely packed warp faced unit. This unit can therefore be considered to be stronger then a piece of rope. When rope wears in relation to a densely packed warp faced unit, the unit shows greater abrasion resistance. The rope is made of several single plied threads that combine to form the whole. In relation to this the warp
faced fabric, is made up of not less than 2 ply threads interlocked by weft threads. If a series of threads deteriorate in the rope, the rope is weakened, but if the same number of threads are broken in the warp faced fabric it does not weaken the entire fabric.

Although tensile strength is not as important in so resilient a weave a constructionist should put the following quote to memory.

For tensile strength, fiberglass, nylon and polyester rate very high. Silk is the strongest natural fiber, though it is weaker when it is wet. Linen is very strong, and gets stronger when it is wet. Cotton is quite strong, and it too gets stronger when it is wet, an increase of as much as 30%.

Mercerizing makes it even stronger, though still not as strong as silk or linen of the same size. Rayon is weaker than cotton when dry and loses 40% to 70% of its strength when wet. Wool has the lowest tensile strength of the natural fibers, and is even weaker when wet.

Strength is not the only consideration, malleability and drape are also important in sculpturing fiber. Drape, an integral part in fiber sculptures, is variable depending upon how the fabric is manipulated.

Wool and silk are the most satisfying natural fibers to use where drape is important. Some rayons, generally the ones with long filaments, do a fine job of imitating silk in their draping qualities. Shorter filament rayons, or thick rayon yarns, are too stiff, even when finely spun. Cotton goes to the other extreme. It is so soft that handwoven cottons have little body. This makes them appropriate where soft folds are called for and a limp fabric is

1Barbara Liebler, "In the Beginning...Which Fiber?", Interweave 4 (Winter 1978-79):49.
needed. Among the synthetic fibers, orlon, acetate, and some nylons have the best draping qualities. Handwoven polyester fabrics are not very satisfying in their drapeability.²

The sculptor must be sure the fiber, density of weave, and structure of the fabric is adaptable to the concept that he or she is trying to achieve. The final fabric decided upon is important as it is the primary structure of the piece. Although cotton is not known for its body, the density of the weave in warp faced weaving eliminates the problem.

Warp faced fabric is the element of my constructions. The type of weave is narrowed down to plain weave. This limitation of weave was chosen so as to focus the exploration in a limited direction.

The variation in plain weave warp faced fabric comes from the number of ends per inch, thickness of fiber, and the element woven with. Any technical difficulties arising, density of weave and problems developing from the sculptural applications will be discussed in the next chapter.

²Barbara Liebler, "In the Beginning...Which Fiber?", Interweave 4 (Winter 1978-79):48.
Chapter Two

TECHNICAL SOLUTIONS

One might say that making the warp is designing the piece. Any color introduced into the warp becomes an integral part of the finished sculpture. The warp stripe will run the entire length of the warp and can only be modified by the structure of the weave. Care must be taken in the selection of the warp and the weft.

As a general rule knots should be avoided in the warp as they will not only pose problems in the beaming stage but also in the weaving itself. Due to the shear bulk, the warp presents problems in the beaming stage. In warping front to back, the warp tends to spread and jam up in the heddles. This can be alleviated by driving two large headless nails into the beam, by securing a ratchet to the back beam, or by clamping blocks to the back beam at the edges of the warp to prevent the spreading. By winding the fiber onto the beam, back to front, many of the previous problems do not arise.

There are two disadvantages with warping back to front. The main disadvantage arises during warping. If the warp is put on back to front without the use of a tension box, the warp has a greater chance of uneven
tension. The second disadvantage with this method is cost. Most of the warps vary from 80 to 240 ends per inch. If the warp is put directly onto the sectional back beam, it is necessary for the weaver to purchase double the ends per inch, as two inch sections are warped at one time. Although the initial cost is greater, the artist must weigh this against the value of his or her time.

Once the warping procedure is finished the problems encountered with shedding this thick warp arise. Special difficulties are discovered if the yarn has tough, protruding fibers and for this reason alone the beginning artist should stick to smoother, stronger filaments. Shedding is also more easily facilitated depending upon the ratio of ends per inch to number of harnesses; the greater the number of harnesses the easier it is to achieve a shed. Spreading the fiber over a larger number of harnesses not only facilitates shedding but cuts down the amount of friction on the fiber.

Once the friction problem has been cut down in the harnesses, the friction in the reed must also be addressed. In order to clear a shed and cut down friction the warp is sleyed in a number 10 to a number 4 dent reed depending on the size of fiber and ends per inch. With the size of the reed chosen, the reed is then sleyed. Using a larger reed cuts down friction on the
fiber as the fiber easily slips past itself making a
clearer shed. The larger dent also helps facilitate an
easier swinging batton. The smaller the dent, the harder
it is to move the batton and achieve a clear shed, thus
one must make sure to sley the selvage as the rest of
the warp. With the extreme thickness of some of the
fabrics woven, the warp is tied onto the front beam in
as small a group as possible. This helps ease the problem
of sticking and facilitates easier tensioning.

The fabric is woven with a different set of rules
than those applying to weft faced or 50/50 weaves. A
greater quantity of warp is being taken up in the weaving
as it is going over or under the weft thread. The weft
thread remains straight, thus producing a ribbed effect.
The ribbed effect can be changed by the number of ends
per inch and by the number of threads per weft pick.

There is a relatively small chance for a warp faced
fabric to shrink in width, but it is easy to have the
fabric spread. This spreading problem increases as the
number of ends per inch increases. To correct this
spreading problem the weft is laid in horizontally to the
warp. The shuttle should be thrown from left to right
with a large loop left on the left hand side, then beat
to open the shed. If the shed does not clear easily,
a tapestry sword may be needed—reposition the weft
thread to remove the loop at the right by holding the
small edge loop as you adjust the tension and the placement of the weft thread. Follow by beating the same shed a second time and proceed onto the next shed. If the shed sticks anywhere move the batton back and forth while pressing up and down on the same treadle. If this does not clear the shed then remove the problem with your hands. Weft joints are made by means of a tapered overlap.

Once weaving is in progress occasionally examine the back of the fabric to check for saging warp threads or floats. The density of the fabric seems to eliminate any sign of a fault in the fabric from the front side. If the warp becomes slack in any area you can retension the warp by inserting a small stick in either the front or back of the loom and twisting the fiber around the stick until sufficient tension is applied. If the fabric is tensioned from the back the fabric is not damaged. If the warp is retensioned from the web or woven area the loop can be needled into the fabric and hidden completely.

Once the fabric is created the artist must decide if, and how to introduce the color. The two basic ways are through chemical dyeing and screen printing. These procedures will be discussed in the following chapters.
Chapter Three

CHEMICAL DYEING PROCEDURES

Before dyeing either unwoven or woven fiber the filament must be thoroughly washed to remove any finishes such as sizing, crease-resistant, or water repellant finishes; these finishes resist the penetration of the dye into the fabric. After washing, the units are soaked in a solution of water and soap overnight; this helps to aid the dye in penetrating the fiber by opening the pores of the fabric. The units are then removed from the water and soap mixture, rinsed, and immersed into the dyebath. The dyebath is made up of dyestuff that is ground in a crucible with a small amount of water. All of my dyes are stored in a liquid state. The dye is put into liquid form by the following formula.

1 ounce dyestuff
100 cc. water

One tablespoon of Plurisol is added as a leveling agent with the introduction of liquid into the dyebath. This chemical soap helps the dye to strike the fabric evenly producing an even color without variations. The dye is stirred for about 20 to 40 minutes or until the desired color is achieved. After the desired color is obtained
the fabric is then immersed into a clean stainless steel pot containing a sufficient amount of Glauber Salt to set the dye.

Glauber Salt = 20% of the weight of the goods. By separating the dyebath and the saltbath the artist does not contaminate the dyebath. More dye can then be added to the bath in order to facilitate a smooth flow of color. The fiber is then air dried and rewashed.

In order to dye fabric it must be able to breathe. Warp faced fabrics are woven so tight that the dye particles have little chance to enter the fabric. Thus when the fabric moves or shifts it exposes the undyed strands.
Chapter Four

PRINTING PROCEDURES

Dyeing the warp or the finished fabric is not the only means by which color could be introduced into a warp faced fabric. To achieve a different linear quality, other than anything introduced in the warp, itself, I decided to work with the silk screen printing process.

At this point it was important for me to create photographic and profilm screens, to see which process would more easily produce the best quality of line. After completing several screens in both processes I found that the film screens are easier and faster to produce and hold up longer under use. The film screens can also be used to screen a bleach (discharge) paste which is used to remove color. The bleach substance would break down the photographic screens. Of the many types of film stencils available I chose profilm.

To use the stencil film, place the film layer of the stencil film paper containing the cut-out design next to the screen on the front outside surface. It is important that the design is parallel to or at right angles with the sides of the frame. Tape the cut-out design to the screen. Turn the screen over so that the
film and the screen are flat on the table. Start adhering the film to the screen. The adhering liquid for the screen is applied from the inside of the frame. There are different types of adhering fluids for different types of films. For lacquer-soluble films a lacquer thinner may be used alone, however it is usually recommended that the strength of the lacquer thinner be reduced with a small amount of alcohol to prevent burning out the stencil image.

To adhere the film, use a small, clean cotton cloth dampened with fluid; starting at one corner, press the dampened cloth against the screen until the film is adhered. Never rub the screen as this may tend to dissolve the film and cause fine areas of the stencil to disappear. Always work from one side to the other to prevent any air bubbles. When the screen is entirely adhered, carefully remove the backing paper. Should any loss occur in the design the artist may make the needed corrections with a small amount of film dissolved in lacquer thinner. Mask any open areas and all borders of the screen with masking tape. The screen is now ready for printing.

To produce a photographic screen you must first make a positive image on clear film. This may be achieved in several ways. The two ways in which the positive images were achieved were by the use of black
construction paper and black ink on clear acetate. Once the image is created it must be fixed to the screen.

The screen must now be coated with a light-sensitive emulsion. A potassium bichromate solution is made by mixing six tablespoons of potassium bichromate with six fluid ounces of lukewarm water. Once this mixture is made it is combined in a ratio of:

\[
\frac{1}{7} \text{part potassium bichromate} \\
7 \text{parts emulsion (Advance, Direct Photo)}
\]

This light-sensitive emulsion is applied to the screen. The screen must be perfectly clean before coating, as any dirt or grease marks prevent the emulsion from adhering to the screen. To coat the screen, it should be placed upright in a vertical position tilting slightly backwards. The screen is coated with the light-sensitive mixture with a two inch painters brush or a squeege type structure. Overlapping the strokes, the emulsion is covered evenly on both sides of the screen. The screen must at this time be checked for bubbles, as these will later develop into pinholes. The sensitizing solution must be applied in a semi-dark place or in a darkened room lit only by a 60 watt lamp covered by a yellow filter. Set the coated screen in a darkened ventilated room to dry. The screen must not be disturbed until dry as any finger prints or marks will make holes in the emulsion. When the screen is dry the image can
be exposed in a variety of ways.

The exposure of the sensitized screen can be carried out in a variety of ways. The table below suggests light sources, times, and distances that can be used to expose the screen:

<table>
<thead>
<tr>
<th>Light Source</th>
<th>Distance from Light Source</th>
<th>Time of Exposure Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>strong sunlight</td>
<td>----</td>
<td>5 minutes</td>
</tr>
<tr>
<td>bright daylight</td>
<td>----</td>
<td>10 minutes</td>
</tr>
<tr>
<td>dull daylight</td>
<td>----</td>
<td>up to 2 hours</td>
</tr>
<tr>
<td>mercury vapour lamp (450 mm)</td>
<td>15 minutes</td>
<td></td>
</tr>
<tr>
<td>150 w. lamp (450 mm)</td>
<td>3 hours</td>
<td></td>
</tr>
<tr>
<td>300 w. lamp (600 mm)</td>
<td>up to 2 hours</td>
<td></td>
</tr>
<tr>
<td>carbon arc lamp (10 feet)</td>
<td>3 minutes</td>
<td></td>
</tr>
</tbody>
</table>

The positive image is laid flat on the exposure table and secured to the table by means of transparent adhesive tape; this procedure must also be done under the same semi-dark conditions. Place the sensitized screen, well side up, directly on the positive image making sure that it is square on the frame. It is then secured tightly to the image by means of a vacuum; as any shadow on the screen would cause a distortion. The image is then hardened by the use of a carbon arc lamp.

During exposure, the temperature of the glass must

---

not exceed $30^\circ\text{C} \left(85^\circ\text{F}\right)$. After the screen has been exposed it is immediately taken and rinsed off with cold water, to remove the unexposed gelatin from the screen. This is continued until the artist can define all of the parts of the image. The exposed part of the screen now becomes the stencil. The screen is then held up to the light to check for any blockage and if necessary may be washed again. The screen can now be dried and minor repairs made. Repairs can be made by applying gelatin with a small brush to the distressed area. A coat of potassium bichromate is painted over the dry screen and left to dry in a dark, well ventilated area. After the screen is sufficently dry it is again exposed under the carbon arc lamp for a duration of three minutes. It is not necessary to apply a positive image this time. The screen is again washed out. This second coat of straight potassium bichromate helps to secure the image onto the screen and prevents breakdown of the screen through heavy use.

Any problems in the exposing or printing of the screens can be a result of the following:

1. Possible sources of trouble in screen making
   (a) Pin holes (porous places) in the gelatin or PVA/dichromate film

   Cause:
   (i) Frothing of the sensitizing solution
   (ii) The sensitizing solution applied unevenly
(iii) Very humid atmospheric conditions during application of the sensitizing solution
(iv) The sensitizing solution incompletely mixed
(v) Dust on the screen before coating.

(b) Exposed gelatine film is partly or completely washed out

Cause:
(i) Under exposed
(ii) Very humid atmospheric conditions during application of sensitizing solution
(iii) Sensitizing solution heated to too high a temperature, causing decomposition.

(c) Gelatine or PVA/dichromate coating not completely removed from unexposed places

Cause:
(i) Over exposed
(ii) Temperature too high during exposure
(iii) Screens kept too long at a high temperature before exposure
(iv) The positive not completely opaque.

(d) The designs have poor edges and the lines have closed up in places

Cause:
(i) The screen has not been in perfect contact with the positive
(ii) The coating is too thick.

(e) Completely absence of coating in certain places of the screen

Cause:
(i) Impurities or grease on the screen before coating. 4

After the desired image is adhered to the screen some precautions should be taken with the application of either dye (Inmont), or a discharge paste solution.

To apply my images I first decided to remove color from the already dyed fabric. Before the introduction

of the paste to the fabric, the fabric must be adhered to the printing table. The fabric is stretched, pinned down and ready to be printed.

**Formula for Discharge Paste**

<table>
<thead>
<tr>
<th>Parts</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>parts household bleach (chlorox)</td>
</tr>
<tr>
<td>50</td>
<td>parts glycerine</td>
</tr>
<tr>
<td>200</td>
<td>parts zinc oxide</td>
</tr>
<tr>
<td>200</td>
<td>parts gum tragacanth</td>
</tr>
<tr>
<td>350</td>
<td>parts water</td>
</tr>
</tbody>
</table>

To 350 parts of water, add 200 parts gum tragacanth thickener. While stirring add 200 parts household bleach, add 200 parts zinc oxide, and later add 50 parts glycerine. Stir the mixture very well. The paste is now ready to be used. In the preparation of the discharge paste you should control the strength as this would destroy the fiber and the design.  

The above formula, can in no way pass through a screen. The mixture is too dry and forms a dry dough like mixture. Even with the addition of a completely wet-out screen the mixture still will not go through the screen. To this mixture I added 100 parts water and 300 parts bleach. This will create a fluid discharge paste and remove the coloring from the fabric faster.

The discharge paste is beaten until smooth before applying it to the fabric.

The screen is placed in position on the fabric. The paste is then deposited onto the heavy rib like fabric by the use of a squeege. The squeege is pulled

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across the screen rapidly and firmly 6 to 8 times at a 45° angle. The discharge paste is forced through the screen onto the fabric. The major problem discovered with the discharge paste is that while it works efficiently on thin smooth fabric, when faced with a heavy ribbed canvas like cloth it has little effect. Only by flooding the screen can a solid line of discharge paste get into the wells of the rib. When the screen is not flooded the image screened is an interesting broken line image. The back of the screen is cleaned off after each print, to prevent any dripping or smearing of the discharge paste as this causes a disturbance in the flow of line. After the printing procedure is completed the drying process can be accelerated by ironing the fabric while damp until it dries. At this point the ground color should begin to appear. When the fabric is washed out, a faint cast is the only vestige of the once exciting criss-cross of lines.

After repeated screenings and washings I decided to revert to printing the quality of line that I wanted to achieve with Inmont paste. For the Inmont printing the same procedure is used as in printing discharge paste. The Inmont paste is a screened pigment that lays on the surface of the fabric. This, as with the discharge paste, collected in heavy amounts in the wells of the rib. After printing, the Inmont is ironed to set it
into the fabric. The fabric is then washed and dried. The pigment does not wash out of the wells evenly. In varying spots the pigment solidified and hardened into the fabric. The use of the Inmont pigment gives a very plastic effect to the fabric. This is a very undesirable visual effect. Although the fabric was excessively cleaned, the excess pigment could not be removed.

To strip this plastic like coating from the fabric the following stripping agents should be considered:

The chief stripping agents are - (1) sodium hydrosulphite; (2) condensation compounds of formalddehyde with sulphurous acid, such as "decorelein" and "formosul"; (3) titanoos chloride; (4) dilute solutions of bleaching powder; (5) potassium bichromate and sulphuric acid.

Whatever stripping agent is employed, the goods must be very thoroughly washed before redyeing. The last traces of acid must be neutralised by means of a bath of dilute ammonia or sodium carbonate. If this is not done the goods will have an abnormal affinity for acid dyestuffs act differently with stripping agents. Small patterns of the material are tested and the method found to be most satisfactory is applied to the bulk.

After considering all of the previous stripping agents, I mixed a solution of bleach and water and immersed my fabric. This sufficiently removed any of the previous processes from the fabric leaving it an all over base color.

As I found that neither the Inmont or discharge paste are successful, I feel that more exploration into the realm of screening fiber reactive dyes onto the fabric is the next logical progression for future study.
throughout my work. In considering the connection of line, space, and form, one might say that a line is made up of a series of points, and a plane made up of a mass of lines. When these lines form planes they can then be manipulated to shape a linear form, or split at the edges of the plane to state the relationship of the singular to the whole.

In reinforcing these linear qualities I will discuss each sculpture noting any technical procedures.
After weaving a four yard long strip, I divided it into seven modular units. These units were then dyed and manipulated into a ripple like form by connecting the center of each unit to the center of the next unit. The edges were finished with a machine stitch with the ends needled back into the fabric.

In creating a flowing ripple form I moved the edge of the fabric to emphasize the movement of line in a form. The pure statement of the rippling line emphasizes how the edge can be used to state how the line and plane can be used to create depth. In this sense the two elements of plane and line combine to create the total effect.
Convoluting Arborvatae

Plate 1
Dedication to Nature
(Plates 2,3)

Plates 2 and 3 are an outgrowth of Plate 1. The 20/2's warp was dented 240 ends per inch and sleyed through a 10 dent reed. The thickness of the warp resulted in many sticking problems.

A tapestry sword was inserted into the open shed from the harnesses to the batton or beater bar. The shed was then cleared and the batton moved forward. The problem continued with the weaving. The fell line also had trouble clearing and this was alleviated by beating the area from the front of the batton to the web with a sword. The fiber was then placed in the open shed and beaten into place. Although this was a laborious process, a straight fell line could not be achieved using any other process. This warp was also sectioned into units but the units were decided upon during the weaving process. Peruvian weft twining proceeded and ended each ten inch unit. Cardboard units were then placed in the warp for fourteen inches to create an unwoven element on the edges of the first and second woven unit. The next section was then begun with weft twining. Twenty three units were woven on the twenty
yard fabric. From these twenty three units two units were removed to explore the sculptural possibilities of the single element. After several different possibilities were explored the two sculptures presented were chosen. A wrapped section was inserted into the third plate form and this was attached into the unit by means of monofilament thread.

At this point the installation of this sculpture became important. Placed against a white wall the white sculpture almost completely disappears. The environment in which the sculpture might be placed was unpredictable. This problem was alleviated by choosing a suitable background of bronze plexiglass, to point up the best qualities of the sculptures. The plexiglass was drilled and the fiber sculptures stitched on to the plexiglass and the ends secured back into the sculpture. The sculptures can then be easily removed to be cleaned and restitched onto the plexiglass.

After using the edge of the fabric to create line and form I decided to create line in the plane by manipulating the form. The fringe now also had to be taken into account because of its mass and its draping qualities.

The linear design qualities of the pieces form curvilinear lines delving back into the form. This circle
delves from the circle of nature. The total balance of nature demands total balance in the nature forms. Where the curved edge of the form absorbs light the folds of the form convey linear depth. In plate 3 this linear depth is accentuated by the dark linear center structure. This creates a negative/positive area in not only the wrapped areas but the shadows and non shadow areas of both sculptures.
Dedication to Nature I

Plate 2
Dedication to Nature II

Plate 3
Transitional Configurations

(Plate 4)

At this time the basic material was changed with the introduction of a more textured softer warp woven with a heavier core. This presented many problems since the warping of the material had to be put on back to front because of its extreme texture. If woven with the same element as the other sculptures were, the fabric would be too limp to work with. To solve this problem, I decided to weave this warp with a medium size rope. The woven strip was then cut apart and manipulated. The ends of the rope were wrapped and connected back into the form. As with the proceeding sculptures, Plate 4 was placed in a singular unchanging environment.

In creating this stiff fabric sculpture I not only created a visual contrast between the tactile and the visual but set up a transitional module. The concept of the changing module is an infinite concept. In this sense the limitations are set by the artist. With this knowledge at hand I worked to create a form that had a definite beginning and an end. The growth shown in the form emanates from life in the sense that it conveys the growth of a natural form.
The linear movement of the selvage of the natural form was critical as this is where the sense of movement emanates from. The open module form was pronounced by the wrapped core emerging from the unit and delving back in, which completes the total visual effect.
Transitional Configurations

Plate 4
Dimensional Delineations
(Plate 5)

The remaining woven sections discussed in Plates 2 and 3 were cut apart leaving ten inch woven sections with 2 seven inch fringes. The fringes were then braided to avoid the problem of the fringe sticking together. The length of the braids posed another problem as the length of the braids negated most of the vertical modular structure of the units. In structuring the units horizontally I decided to interlace the modular units with the contrasting element of bronze plexiglass. The plexiglass units needed to be tall enough to balance the length of the fringe. Once the height of the fringe was addressed the movement of the piece was critical. The singular modular unit now stitched to the plexiglass, was laced together in an accordian effect. The sculpture can now be manipulated in a limited direction. The braids work within the contrasts of this sculpture.

In contrasting the soft fiber form with the clean hard edge of the bronze plexiglass I emphasized the linear qualities of both elements. The modular units create an undulating form. By being able to manipulate the basic accordian structure pulls the braided structures
into a mass and counters it on the other side by splitting it into separate units. By forming the sculpture in two concave formations I created a sculptural effect of a moving domino.
Dimensional Delineations

Plate 5
Cotton Braided Pouch
(Plate 6)

The same fabric structures were used in Plates 6, 5, 2 and 3. The bag like structure was achieved by folding the fabric and securing it with hidden stitches. The fringe was then braided in groups of ten threads per braid. This eliminated the clumping of the threads but kept the thickness desired. The braids were then taken in groups of four and wrapped together in a color sequence range. The wrapping of the edges of the bag were repeated through the fabric by removing the warp in a small section leaving the weft exposed. The weft was then wrapped. The end of the wrapping was then needled back into the fiber about one inch and hidden. The next weft core was then wrapped and the procedure continued.

The pouch was derived from trying to achieve an aesthetic effect in a traditional functional form. The color manipulation defines the linear differences between the braids and woven areas. The braids also accentuate the subtle airy movement of the piece.
Cotton Braided Pouch
Plate 6
Eddy
(Plate 7)

The second major variation that I made in the warp was the introduction of color stripes. The weaving of this warp was done in three sections. The total effect of color stripes running the full length of the warp is almost overpowering. To break down the effect of the warp stripes a vertical movement was instituted to counter the horizontal warp stripes. This could not be achieved by stitching directly through the fabric and lining up two of the ribs to make an insert for a piece of wire. To add wire to the structure of the warps I placed a machine running stitch five rows apart. On the reverse side of the yardage I took two stitched lines and laced them together. This left a small opening in which the plastic coated wire was inserted. Both ends were then stitched shut sealing the wire in the fabric. This was then taken, folded, and stitched onto a piece of plexiglass.

The folding of the piece to create the eddy effect served to combine the visual vibration of the color with the physical ripple. This compliments each other by making neither dominant. The visual movement is
softened by the interplay of the negative and positive areas. By balancing the visual and the physical, the important effect of the piece becomes the movement of the negative (shadow) areas of the ripples and the placement of their intensity.
Eddy
Plate 7
Perceptions of Perfection
(Plate 8)

In this piece I constructed a series of ten units finished on each end by wrapped elements. These ten units were then interlaced or rewoven to create a large plaited diamond. The free edges of the flaps of the reverse side were blind stitched down creating a firm structure to hold the unit together. This left the flaps on the face side open. The open flaps were then pulled in a rippling motion to achieve a wrinkled paper effect. It was interesting to see how fabric could be changed by the addition of a third dimension coupled with the importance of shadow.
Perceptions of Perfection
Plate 8
Linear Diffusion  
(Plate 9)

At this point I decided to explore other ways of introducing color into the plain woven strips. I introduced the color into this piece by means of machine stitching. This still achieves the movement of line that I was working for in other pieces. By stitching in between the ribs I created a wash of color without changing the base color. This cast effect of color was a base to work from. At this time I decided to reweave the strips to give a block effect. The linear quality of the work would then have a hatching effect and the movement of the lines would compliment each other. This movement was then more pronounced by the introduction of a satin stitch into the piece. This at first was difficult to achieve, but regulation of the stitch gauge gave the final necessary quality of line. The introduction of the satin stitch line increased the criss-cross effect of the piece.

So resilient was this material that removal of any of the stitches did not show. One could then add and remove lines at will never having to worry about leaving small pin holes in the fabric.

After several constructions I felt a need to be
able to work in a more two dimensional format. The necessity of being able to "paint in" (machine stitch) color gave me the freedom of expression and change that I wanted. The subtle color washes, criss-cross elements, and other experimental works are just a starting point. Being able to manipulate form, color and line are wide open areas of exploration. Being able to combine this last two dimensional effect with my previous three dimensional work will be what I ultimately hope for.
Linear Diffusion

Plate 9
CONCLUSION

In reflecting back upon my thesis work, several questions that may never be able to be answered keep surfacing...

...when does a work of art or concept begin and when does it end...is it ever or is it merely abandoned...are sketches, studies and notes works of art because they are connected with the formulation of a work of art?

My work seems to be in a stage of continuation. Everything you have, you are and you experience effect your work. In this sense the artist is the total summation of his or her work. The artist can also be affected by the viewers concepts. For this reason I feel that the artist should not vocally delve extensively into the concepts behind a piece and the viewers response to it. In this vein of thought, I did not discuss my personal concepts as these will remain private. This does not say that I am not sensitive to the viewers response to my work. I feel that the statement of the work will stand on its own, devoid of any explanation. It is important that an iconic form of art, in its formative stages is not tampered with until the concept of the artist is concluded.

The future of fiber lays in the application of
technology. In this respect the fiber artist must lay aside some of the lengthy hand processes that can be executed faster by machine. This releases the artist from the tediousness of this art form. With this release fiber art can advance at a much faster rate.

In respect to my work I feel that the knowledge of the mechanics of a power loom would decrease the length of time necessary in completing a piece. This would further releases the artist, already perfected in technique, to the exploration of the aesthetics of a fiber form.

In my thesis work I leaned toward perfecting the technique. I do not feel that time was available to fully pursue the realm possible with this technique. The door has now been opened for numerous other works to be created. I hope that at some time in the near future I will be able to pursue my interest in power weaving fiber art work.

The result of this division will be the definite separation of crafts and fine art fiber. No longer will the Sunday fiber craftsman be considered at the same level with the fine artist.
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GLOSSARY OF TEXTILE TERMS

Back beam, Beam or bar above the warp beam.

Batten, The frame of the reed.

Beam, End bars of loom, which hold the warp in the back of the loom and the cloth in front.

Dent, The space between the teeth of the reed.

Heddle, String loops or strips of metal, bone, or wood containing an eyelet through which the warp threads are strung. The threading of the heddles controls the pattern of the fabric.

Reed, A frame containing finely spaced metal partitions separated by slits or dents through which the warp fabers pass and which, when battened against the newly thrown weft, firms the fabric.

Sectional warpbeam, A warp beam, ideally one yard around, sectioned by pegs usually 2 inches apart from centers.

Selvage, Reinforced side edges of fabric.

Sett, Number of dents to an inch in a reed.

Shed, A space in the warp formed by raising up a heddle harness. The space through which a shuttle is thrown.

Sword, Battening stick.

Web, The finished weaving, the cloth.

Weft, The crosswise filling yarns; woof; pick.