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Order and Complexity in My Woven Work

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INTRODUCTION

My art practice revolves around an interest in abstract systems and digital design in combination with the mechanical, mathematical, and material aspects of weaving. The process of weaving conjures images of the sequential mapping of linear time along the length of the warp, while designing on the computer implies flexibility and layering as in circular time. These two concepts are integrated in the construction and visual interpretation of my woven work.

Using the generative capabilities of the computer, sharply defined and regular patterns of shapes are integrated with more organic and seemingly random systems. Their interplay seeks a balance that emerges from both logic and imagination. The construction of the weaving requires the use of two warp systems to adequately represent these multiple networks. Each is hand painted with one of the patterns from the design and then threaded onto the loom. Other compositional motifs will be programmed into the loom and revealed through the weaving process as warp and weft are united into a single planar cloth.

The intersection of structural and visual systems creates a topography of overlaid patterns of different scale and clarity. Achieving this quality of complexity requires concentrated skill and disciplined work in harmony with the process of weaving. The finished object reveals its poetic essence through sustained viewing as the layers of information slowly distinguish themselves as rhythms of the whole.

Figure 1. *Weaving #396*

EVOLUTION OF A WEAVING

My creative ideas evolve from stream of consciousness connections that occur while thinking, writing or making sketches – often in relation to the viewing and evaluation of a recently completed work and in considering where my explorations will take me next. These ideas are loosely articulated first with pencil on paper, then I move to the virtual world of the computer to develop and refine my designs. Beyond inspiring new ways to consider elements within the design, - through consistent effort, experimentation, or even serendipity - I can use the computer to simulate the relationships that will appear in the actual woven piece. This extremely flexible environment also facilitates the sequential thinking that is necessary to realistically plan the construction of the weaving.

Using my extensive experience with weaving I am able to create a virtual design that captures all of the visual and physical aspects of the proposed piece. This design will serve as my blueprint for manipulating materials and constructing in real time and space. The specificity of the design also helps me to retain my vision and focus through the long process of making.

A recently completed weaving, #396 (Fig. 1), will serve as the model of my method. As with all of my work created over the past decade, the circle within the square informs the foundation for the generation of networks of patterns.

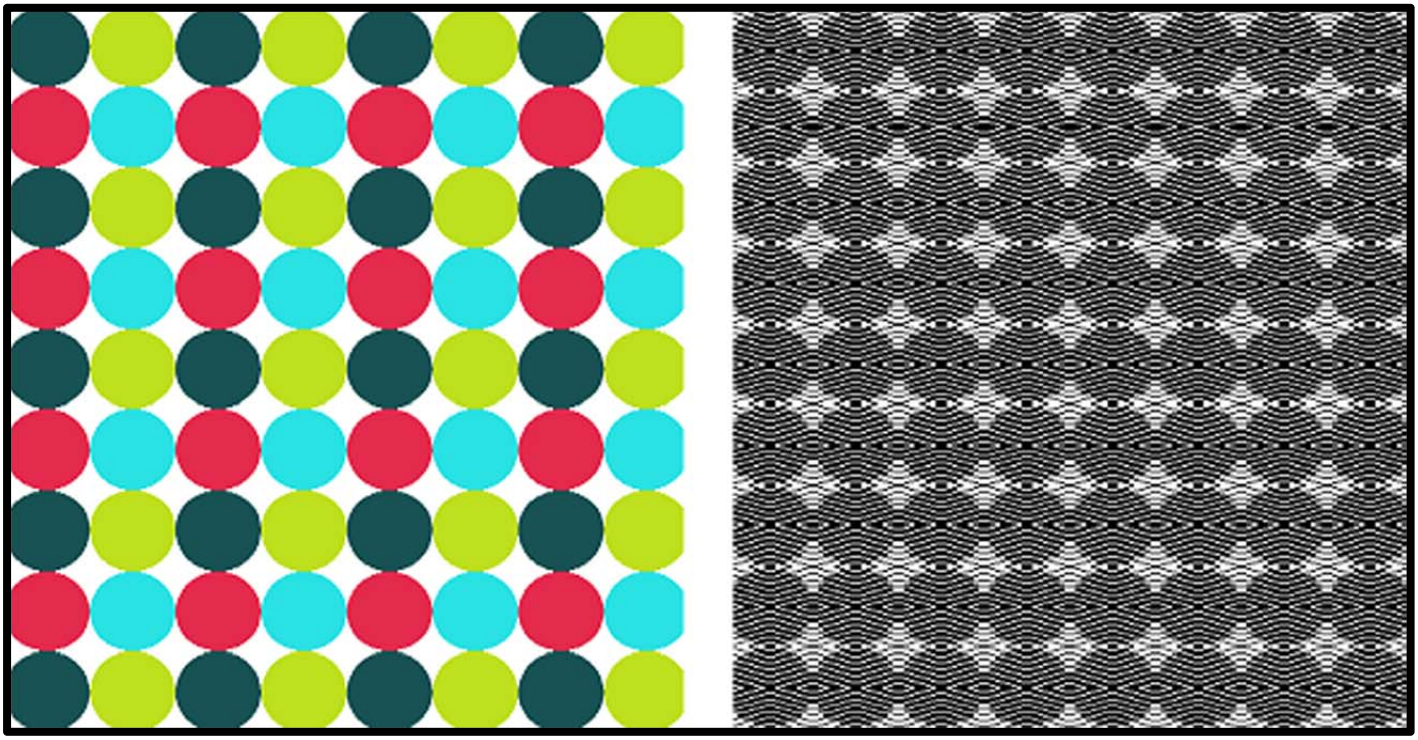

Figure 2. *Circle template, on the left was used to compose the profile draft of diagonal lines.*

Using the Photoshop® software, I work with numerous layers, each representing a different system that will be united in my weaving. The first step is to create a template of circles. The circles will be filled with a graphic simulation of a "profile draft" of the weave structure that will unite my two warp systems. (Fig. 2)

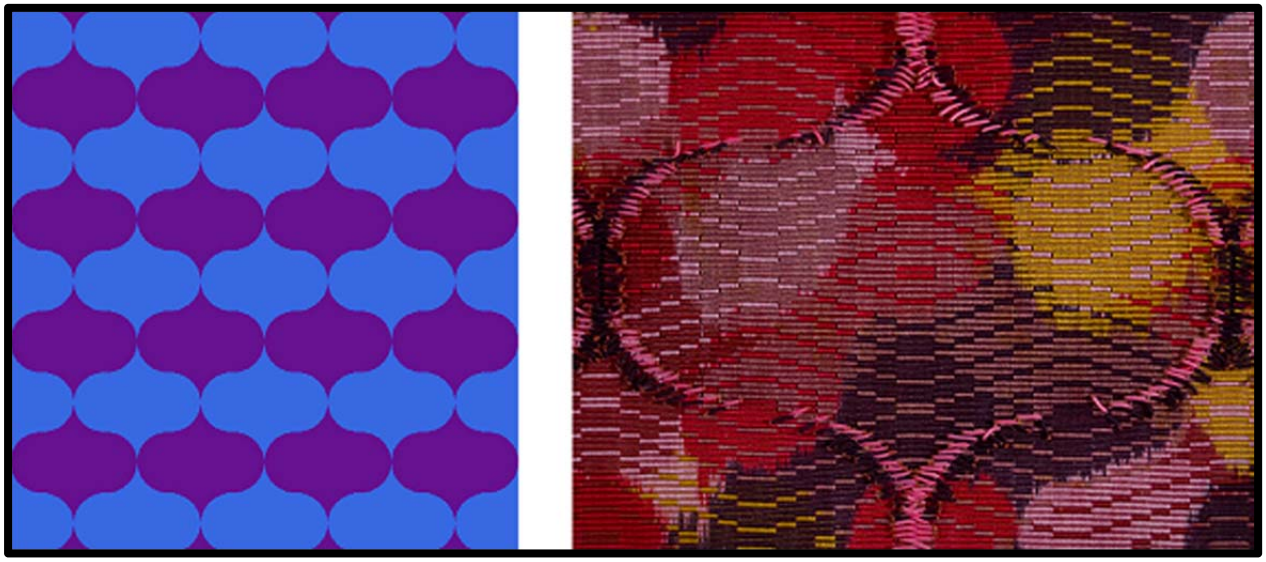

Figure 3. *Template of ogee shapes was used to measure the short discontinuous wefts as pictured on the right.*

The white represents one layer of warp, the black represents the other. Another template, derived from the circles will provide the pattern contour for the insertion of the short discontinuous wefts. (Fig. 3)

Figure 4. *A template of small circles is used to simulate the painted warp pattern on the computer (in process on the left). The image on the right shows the actual painting of the warp underway, clearly referencing the virtual plan.*

A template with smaller circles is then used to create an illustration of the warp painting. Making shapes/patterns that respond to the underlying matrix allows for improvisation within a given structure. (Fig 4)

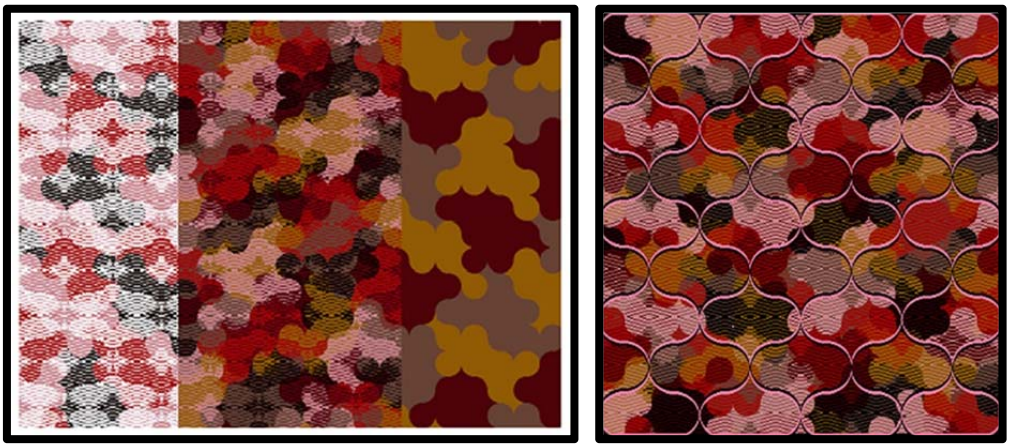

Figure 5, left. *This image depicts a simulation of the interaction of the two painted warp systems. The painted layer that was composed virtually and pictured in Fig. 4 is cut (along the contour of the profile weave draft) and superimposed on top of the second painted warp layer.*

Figure 6, right. *The pink and black outlines of the ogee shapes simulate the edges of the short discontinuous wefts that will interact with and unite the two painted warp systems. This design will serve as the diagram for the creation of the actual weaving.*

Another warp system of a different color and pattern is also simulated. To see how the patterns will interact with each other, one of the painted systems is "cut" along the lines of the pattern of the "profile" weave drawdown. (Fig. 5) The final composite simulation includes the linear contour of the ogee pattern. This design is printed as a concrete reference to be used during the process of creation. (Fig 6)

Figure 7. *These images show the painting of the warp in progress. The pattern, based on the template of circles that was placed under the warp threads before the painting began, is being filled with thickened dye. The image on the right shows the finished painting. The edge of the circle template (used to create the pattern) is seen very subtly along the left edge of the image on the right.*

After the designing is complete, the making of the textile begins. The loom is threaded with white silk yarn and woven very loosely, like gauze, in two separate layers - or two warp systems. The warp is then carefully removed from the loom and hung on the wall to be painted with dye in response to a template of circles that is laid under the warp threads. (Fig. 7)

Figure 8. *After one layer is painted, it is covered with the template of circles drawn on a sheet of plastic with permanent marker. This will provide protection for the first layer when the second layer of warp is unrolled on top of it to be painted next.*

After one layer/system is completely painted, the other layer is unrolled on top of that layer and protected from receiving more dye by a sheet of plastic - which contains the template of circles. (Fig 8)

Figure 9. *Images of the second warp layer in different stages of completion.*

Warp layer/system two is painted with another palette of color - remember that these colors correspond to those that were selected during the digital design process. (Fig. 9)

Figure 10. *After the front surface of the warp is painted, it is turned over so that any areas that did not receive the dye may be filled.*

Determining that the painting covers the entire surface, the warps are turned over to assure that the dye has penetrated the yarns. If the surface is not visibly saturated with color, additional dye is painted on this, the reverse side. (Fig. 10)

Figure 11. *Both of the painted warps are rolled together, removed from the wall and laid in a large sink to be rinsed of extra dye and dye thickener. The image in the middle above shows the layers still connected, but separated to facilitate drying. Once dry the layers are re-rolled for reinstallation on the loom.*

Then the warp is ready to be washed and rinsed in my large sink. This is necessary to remove excess dye and the thickener that was used to assure that the painted dye shapes could be satisfactorily controlled. The warp is laid on the floor of my studio to dry and then is re-rolled in preparation for rethreading the loom. (Fig. 11)

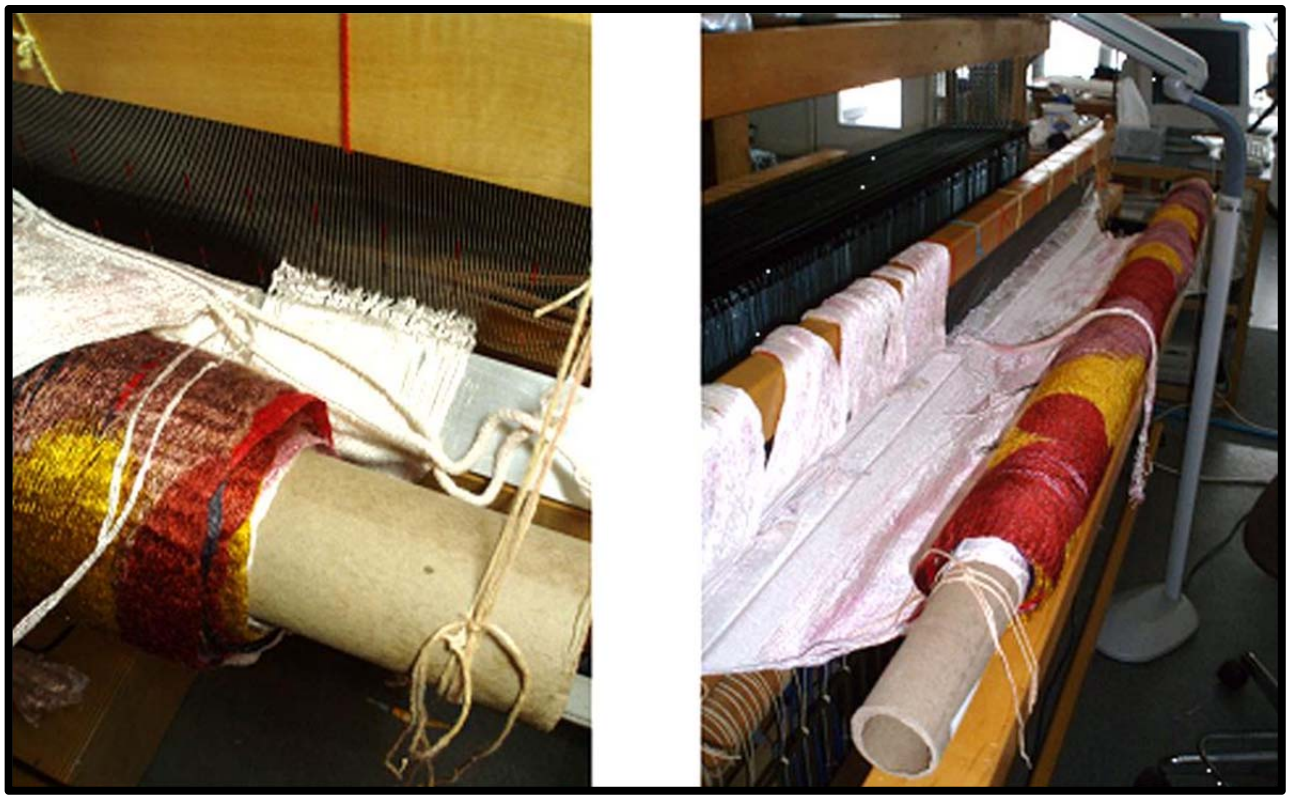

Figure 12. *The roll of warps is secured on the front beam of the loom so the reed may be rethreaded.*

The roll of clean, dry painted warps is secured on the front beam to facilitate easy insertion of the threads through the dents of the reed. (Fig. 12)

Figure 13. *The warp is unrolled at the front of the loom in preparation for rolling back. But first, the weft threads that were used to hold the warps in position for the painting must be cut and removed. The image on the right shows the back of the loom with the two warp systems installed and ready to be woven.*

After threading the heddles the painted warp is unfurled at the front of the loom. The wefts that were loosely woven into the warp must be cut and removed before the warp can be rolled back. (Fig. 13)

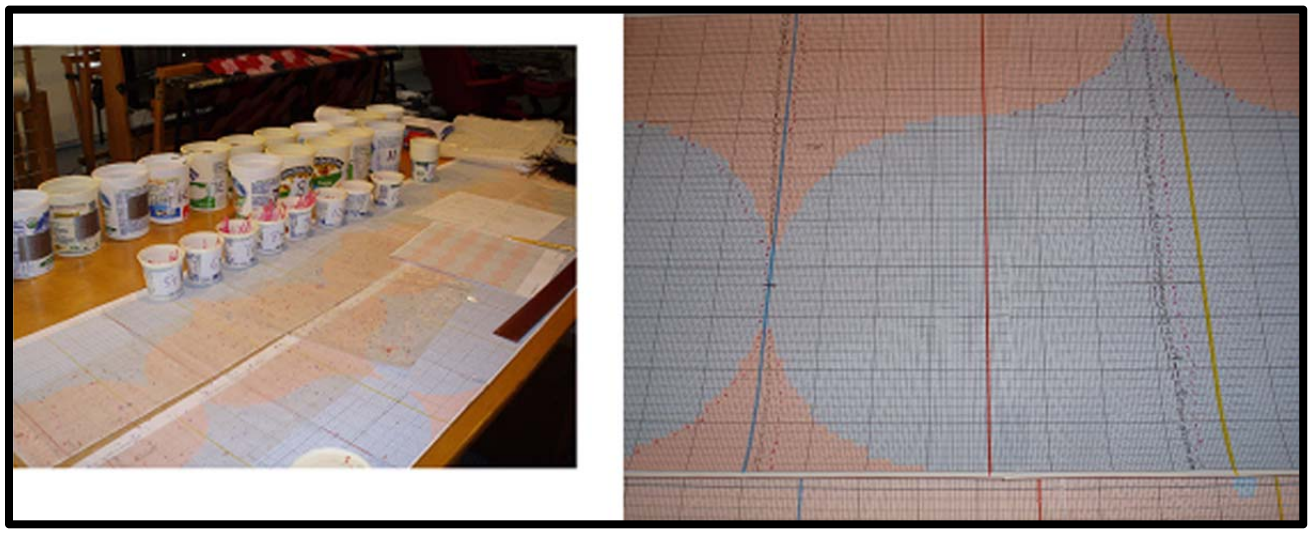

Figure 14. *Short lengths of nylon rope are cut according to the ogee template on the right. The pieces are organized in small numbered containers.*

The final step before beginning the weaving is to prepare the short discontinuous wefts of dyed nylon rope. Individual pieces are cut to the appropriate length following the measurements of the ogee template. After the ropes are cut they are organized in containers that are numbered according to the length. (Fig. 14)

Figure 15. *On the left is an image of the weaving under construction. A computer in the right side of the photo is connected to the loom and controls the sequence of the pattern. A digital print of the template of ogees maps the position of the insertion of the short discontinuous wefts. Those wefts are inlaid by hand according to the diagram.*

Then the construction proceeds, combining digital technology with weaver controlled hand work. Warp threads are lifted according to the design programmed with the Weavemaker® software on my Compu Dobby Macomber® loom. But the wefts are inserted by hand according to the diagram, which is clearly displayed at the front of the loom. (Fig. 15)

Figure 16. *After the weaving was removed from the loom, it was laid flat on the table in my studio for final stitching.*

When the weaving was removed from the loom and evaluated, additional threads were knotted and stitched on the surface for an unanticipated resolution of the composition. (Fig. 16) After several months of work the weaving is completed. The resultant object is intended to reveal a visually engaging complexity orchestrated from multiple systems of order. (Fig. 17)

Figure 16. *Weaving #396*