

COMPLEXITY 2020: *Innovations in Weaving*

Virtual Exhibition

complexityexhibition.org

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Complexity is a biennial, international, juried exhibition of works by members of Complex Weavers.

Jurors for *Complexity 2020* were Louise Lemieux Bérubé, Louise French and Lillian Whipple.

Complexity 2020 was brought about by a team of volunteers chaired by Bettes Silver-Schack. Although our original intention to hold a physical exhibit in Knoxville, Tennessee could not be accomplished, we are grateful for all the work that went into the planning and preparation. We are very pleased to be able to bring you our first online exhibition.

Bettes Silver-Schack, *Chair*
Susan Bowman
Jette Vandermeiden
Toni Ammons
Suzi Gough
Cathie Chung
Diane Smith
Ruth MacGregor
Cally Booker

Complexity 2020 is a production of Complex Weavers, an all-volunteer membership organisation.

For additional information, visit the Complex Weavers website: complex-weavers.org



COMPLEXITY 2020:

Innovations in Weaving

The pandemic forced cancellation of *Complexity 2020* as a physical exhibition, but the show has not stopped. We are pleased to present our first online exhibition: complexityexhibition.org. Visit, and bring your friends.

The *Complexity 2020* Chair, Bettes Silver-Schack, steered the exhibition through very rough waters along with other dedicated volunteers, notably Susan Bowman.

This year's jurors were Louise Lemieux Bérubé, Louise French and Lillian Whipple. We thank them all.

Finally, thank you to the contributing artists, all members of Complex Weavers. *Complexity* is both an exhibition and a means for outreach to the public; but above all it is a tribute to excellence in complex weaving. That excellence is well-represented here.

SONDRA BOGDONOFF

Portland, Maine, USA

SURFACE DESIGN ASSOCIATION AWARD OF EXCELLENCE

EDGE OF THE WOODS

36 x 26 inches (91.5 x 66 cm)

Wall hanging – Linen

Artist's Statement

I have been working with a grid structure where colors change in each unit. In this piece I wanted to play with color and weft floats moving across the weaving, in a free, yet controlled way.

This piece was inspired by a fall scene at the edge of the woods, where weeds and flowers were changing color and providing a dense, tangled mat of color against the dark forest.

This is a plain weave with weft floats. I'm using 12 bobbins of different colors in equal segments across each row, in an eight-row sequence — so there are 96 weft bobbins in all, with two rows of plain weave in between each row. The bobbins remain on the surface, forming wavy diagonal floats. Four rows of bobbins move to the right, and four move to the left. Floats re-enter the



weaving every eight rows, in one of three angle choices, and can go under or over other lines to pull the pattern to the front where I want it to increase the effect of movement.

Technical

Yarns:

- *Warp*: 16/2 linen
- *Weft*: Alternating rows, 16/2 linen and 16/1 linen in bundles of 16 threads

SECOND PLACE

SENESCENCE

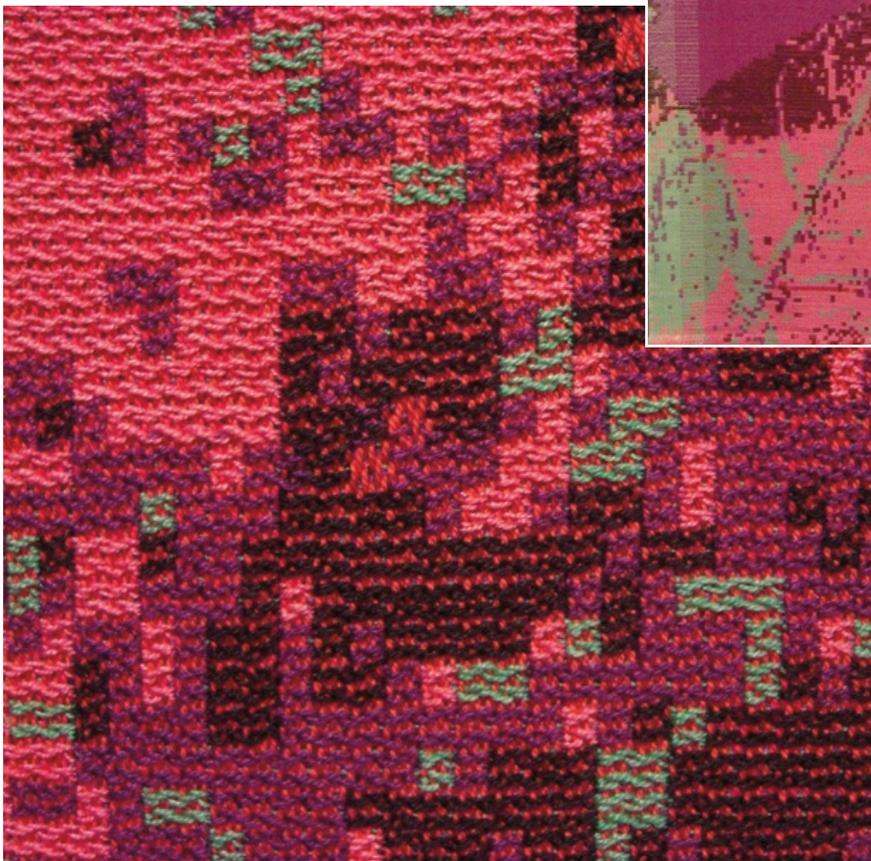
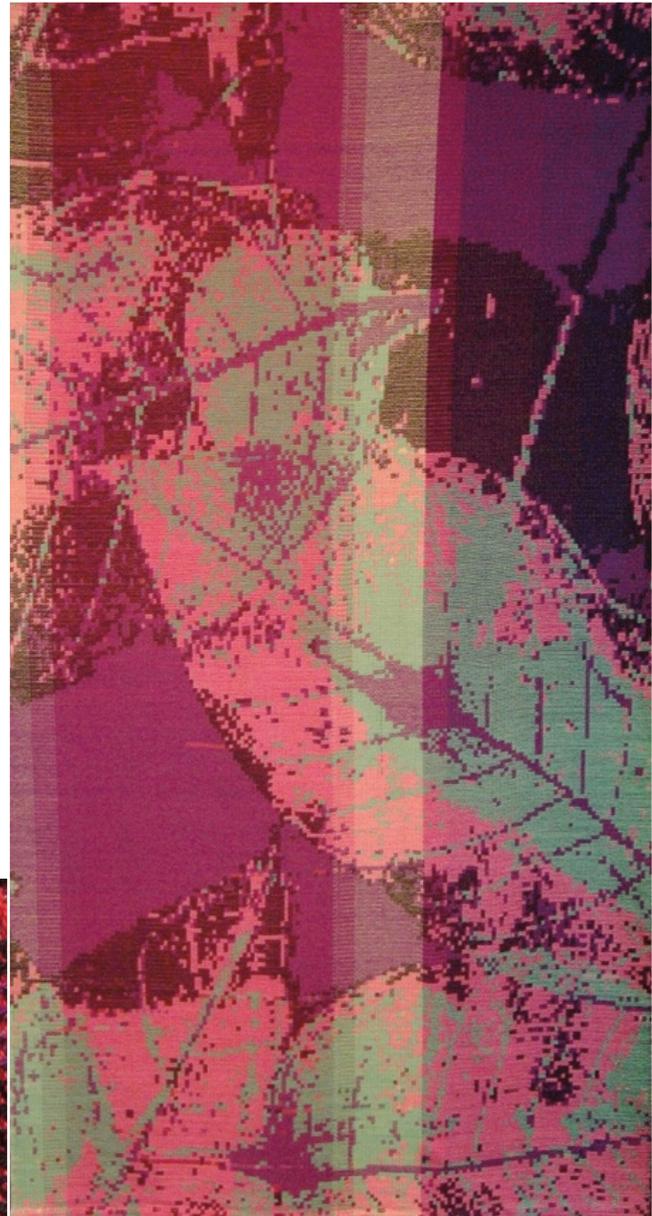
46.25 x 25.5 (117.5 x 65 cm)

Wall hanging – Cotton, silk

Artist's Statement

During the autumn of last year I witnessed the slow, systematic deterioration of an aging parent. This *Senescence* was mirrored in nature in the graceful, but fatal, turning of the leaves. Defined as “biological aging; the collective process of gradual deterioration of functional characteristics leading to the aging and death of organisms,” *senescence* accurately describes the parallel processes that were unfolding in my life.

This inspired me to create a piece that demonstrates both the positive and negative aspects of Senescence, which has such far-reaching effects on all of us. Through imagery and color I intended to evoke the seemingly random fading faculties of an aging body and mind, contrasted with areas still healthy and untouched. This gives rise to a sense of the gradual, but inevitable, dissolution of a once-vibrant life.

**Technical**

Yarns:

- *Warp*: 16/2 cotton – yellow, orange, red, purple, blue and black
- *Weft*: 60/2 silk – fuchsia, bright green, purple and black – hand dyed by artist

Four-color polychrome satin woven on drawloom using 178 single units

DIANE FABECK AWARD—BEST IN SHOW

TWISTS AND TURNS

75 x 12.5 inches (190.5 x 32 cm)

Scarf – Cotton

Artist's Statement

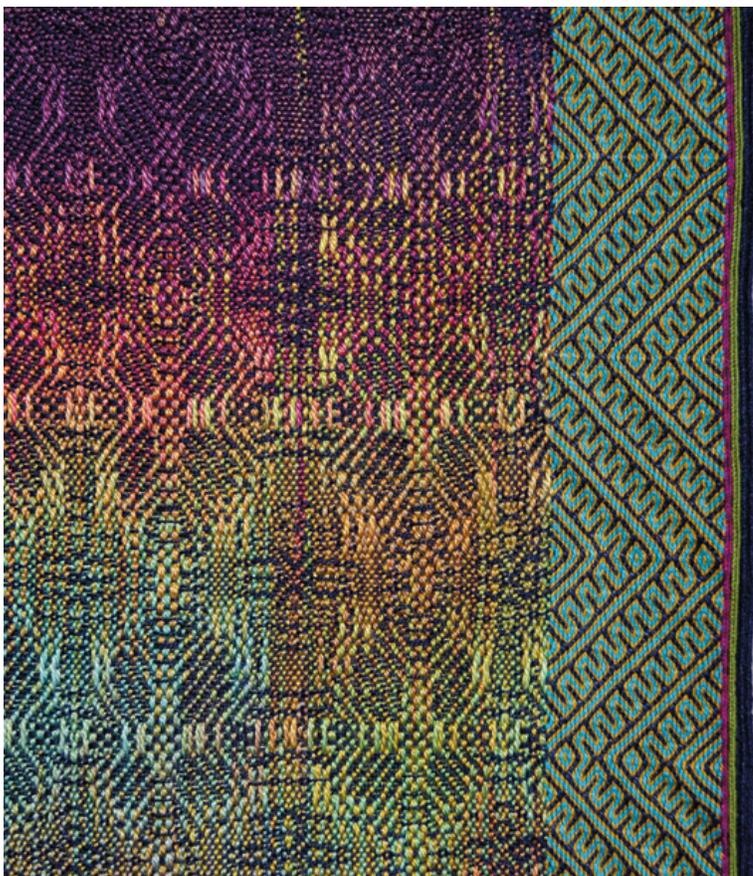
I call this piece *Twists and Turns*, partly because of the weave structure and tablet weave structure I have used, and partly because of the way my life has twisted and turned the last year. I have been dealing with a family member's major health problems and coming to realize that life is very precious. It does have its twists and turns, and we have to be ready for them whenever they come and where they take us.

Technical

Yarns:

- 30/2 silk
- 20/2 mercerized cotton
- 10/2 mercerized cotton

32-shaft twill and Kivrim tablet weaving technique; hand-dyed yarns



ISLE OF SKYE

67.75 x 8.75 inches (172 x 22 cm)

Scarf – Tencel, silk

Artist's Statement

During a trip to Scotland, I saw hundreds of tartans, but only the one from the Isle of Skye captured my full attention. I purchased a small change purse made from this tartan, and, after returning home, studied it closely while researching the thread count, sett and colors. Not really a fan of plaids, I used the proportions of the Isle of Skye thread count to align warp stripes in the tartan's colors. The double two-tie threading of a turned extended summer and winter draft allowed me to design fluid vertical waves reminiscent of the tartan's origin. A small ball of 60/2 silk I dyed years ago served as the perfect weft.

Technical

Yarns:

- *Warp:* 8/2 Tencel, 30/2 silk
- *Weft:* Hand-dyed 60/2 silk

Handwoven in turned extended summer & winter (a.k.a., tied beiderwand), 3:1 ratio pattern picks to ground picks

Hemmed



OPPOSITES

72 x 8.75 inches (183 x 22 cm)

Fringe, 9 inches (30 cm)

Scarf – Cotton

Artist's Statement

I love working with double weave. I find it to be very geometric, so I try to use many colors, especially at least one variegated yarn. My loom has only eight shafts, but I love making the two sides to be different colors.

Technical

Yarns:

- 20/2 cotton
- Mercerized cotton sewing thread

Double weave, two-block



SPRING PROMISES

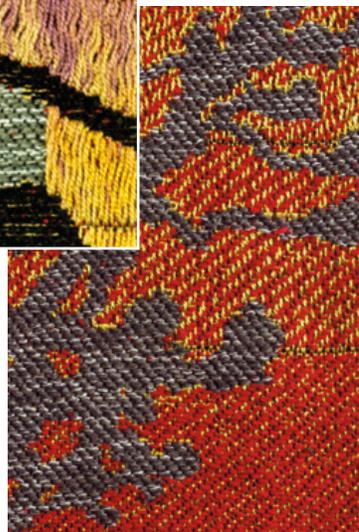
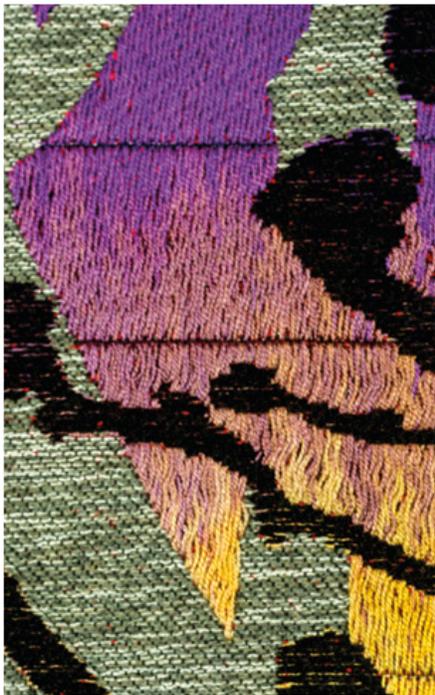
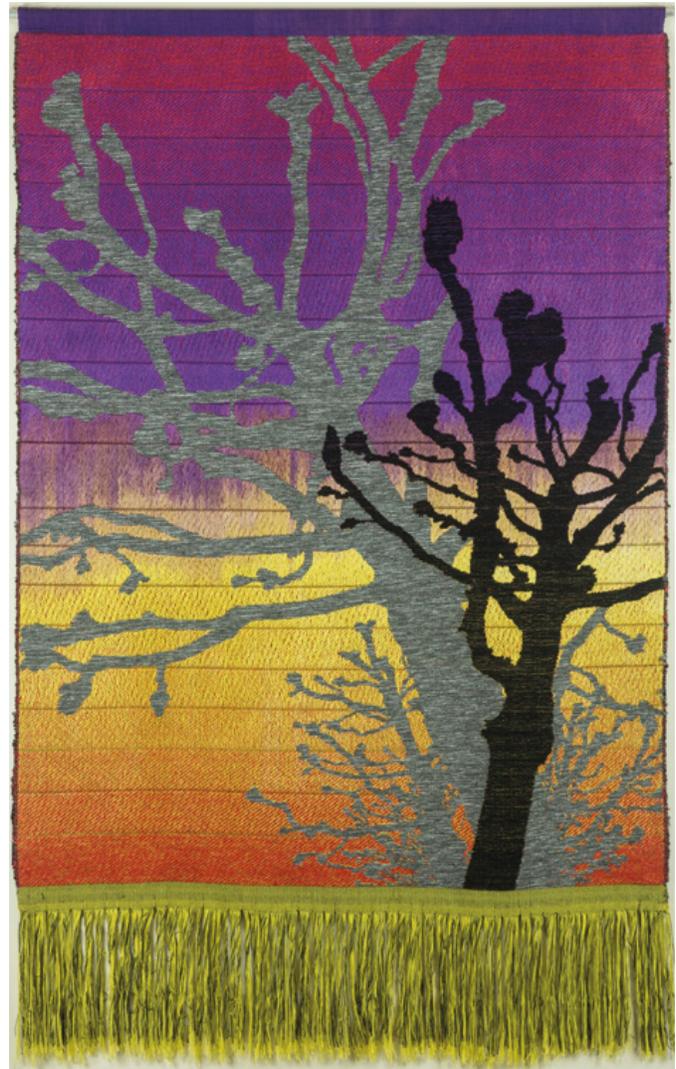
28.4 x 45.3 inches (72 cm x 115 cm)

Wall hanging – Silk, wool, polyester

Artist's Statement

Whilst walking at Switzerland's Lake Geneva one March, I was confronted with the strange sight of silhouettes of trees with strange bulbous protuberances. I couldn't understand what was happening. Of course I eventually worked out that the trees were getting ready for spring. In the subtropics where I live, we mostly don't have this phenomena. But the colours of spring and summer are the same wherever you live.

The bright yellow/red/orange represents the sun but also represents the ferocious bush fires that devastated Australia this summer. The energy of new growth is emphasized by the different twill directions in the weft pattern tie-downs. My world is framed by louvres as represented by the rows of tabby.

**Technical****Warps:**

- *Background warp:* 40/2 silk, hand-dyed in two colours
- *Tie-down warp:* 60/2 silk, black

Wefts:

- *Background weft:* 10/1 singles noil silk, red
- *Pattern weft 1:* 2/14 wool, black
- *Pattern weft 2:* plied: 60/2 wool, grey; 30/2 wool, grey; polyester, grey

Structure: lampas

- Proportion of warps is 1:2 (tie-down:background)
- Background warp is 11-shaft satin (bespoke structure) in z direction
- Tie-down warp is 1/2 twill: s direction for grey and z direction for black
- Two pattern wefts

ABUNDANCE

72 x 10.5 inches (183 x 26.7 cm)

Scarf – Tencel, silk

Artist's Statement

A woman can never have too many diamonds or be too colorful.

Technical

Yarns:

- 50% silk, 50% Tencel lyocell
- 120/2 silk, 60/2 silk, and 20/2 silk
- 10/2 and 8/2 Tencel lyocell

Three layers of warp in parallel threading with interval changes

Single shuttle with three strands of silk, woven as twill with points



PAGODA**61 x 18 inches (155 x 45.8 cm), plus fringe****Scarf – Reeled silk****Artist's Statement**

Used to hold relics and sacred items, the pagoda is an icon of Chinese architecture. This scarf – with its brilliant hues, silk yarns, and a motif reflecting the cascading tiles of a pagoda roof – brings to mind the elegance and aesthetic of ancient China. I began working on it after I bought some undegummed reeled silk at a guild sale. Not knowing what to do with it, the yarn sat in my stash for a while. Finally, I asked a friend to help me with the process of degumming the silk, never having done this before. The resulting yarn was so lustrous that I decided to use it to dye two warps in different colorways and combine them into a single warp, a technique I often use.

The design was an echo pattern for 12 shafts with an interval of 6 that I created some years ago and had always wanted to weave.

After dyeing the warps, I felt that the colors were too similar, so I purchased another skein of degummed reeled silk, wound a third warp, and dyed this in a third palette. This allowed me to shift my echo threading among three colorways, A, B and C – that is, A-B-A-B for 1/4 of the warp, B-C-B-C for the middle half of the warp, and A-B-A-B for the remaining 1/4.

*Photos by Jack Poeller*

Having never before dyed and woven with reeled silk, I was pleased by the results and grateful to the Chinese for introducing silk to the world.

Technical

Yarns:

- 60/2 reeled and degummed silk
- 120/2 spun silk
- WashFast Acid Dyes

12-shaft echo design with an interval of 6

Three hand-painted warps sett at 75 epi, hand-plied fringe, silk degumming process

UNITY**12.75 x 9.75 inches (32.5 x 25 cm)****Wall hanging – Cotton****Artist's Statement**

The impetus for this piece came from studies concerning weave structure and color. As I became more familiar with limits and potentialities these shapes emerged. I found them both pleasing and pensive.

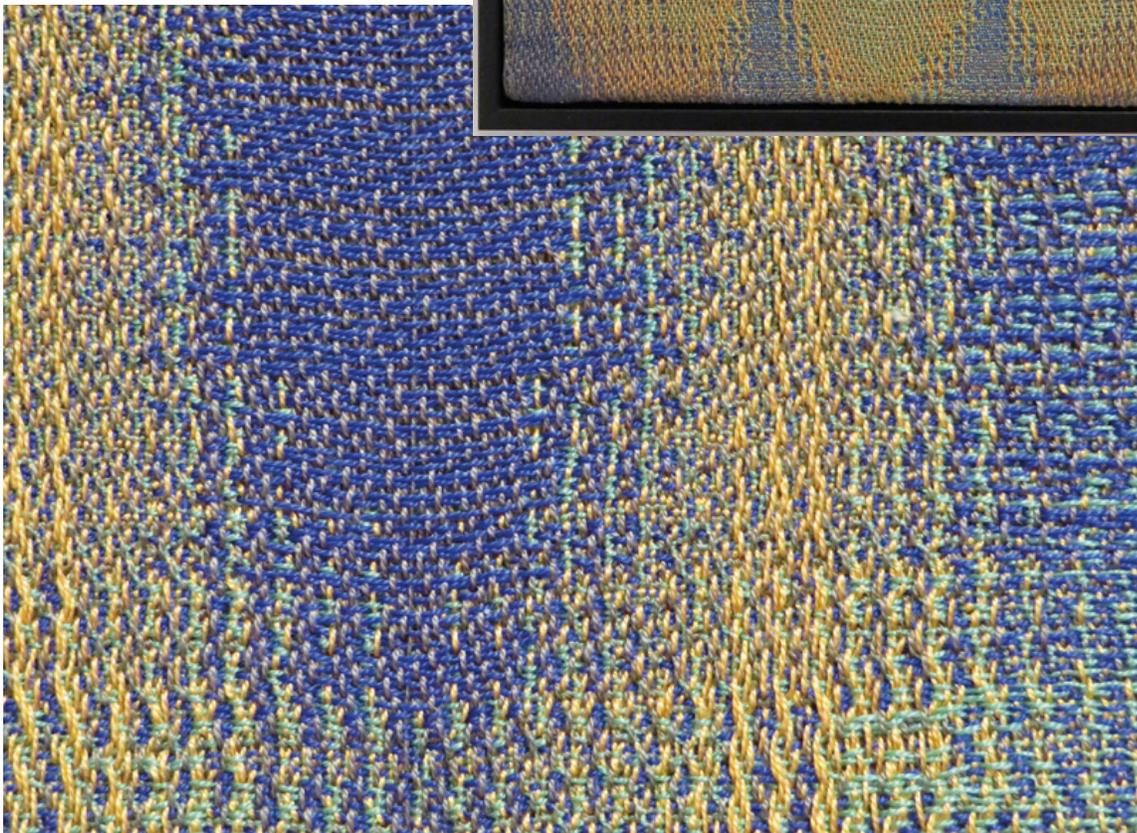
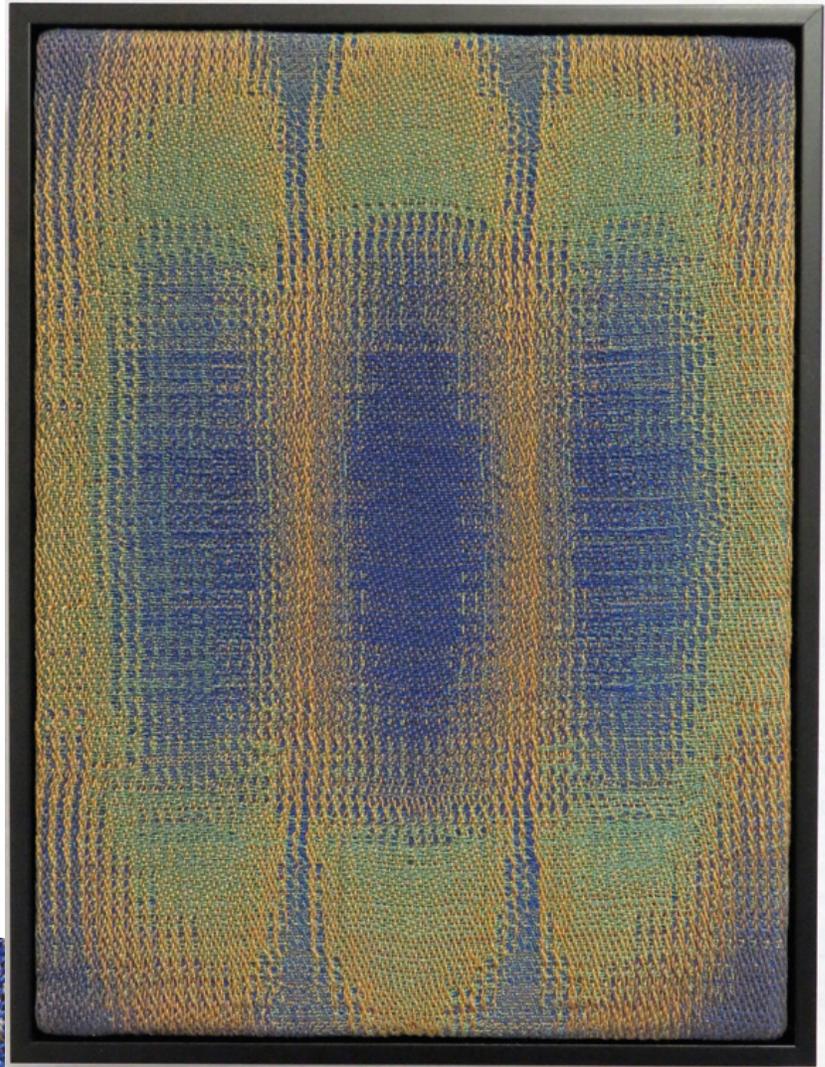
The forming of one shape from three seemed a concept that could be interpreted by both myself and the viewer.

Technical

Yarn: 20/2 cotton

Four-color double weave using satin weave structures

Treadling and interleaved threading on network



HANDWEAVERS GUILD OF AMERICA AWARD

ROLLING THUNDER**32.5 x 17.5 inches (82.5 x 44.5 cm)****Wall hanging – Cotton****Artist's Statement**

In the summer monsoon season in New Mexico, the days often start out warm and sunny. By mid-afternoon clouds start rolling in and filling in the sky. By late afternoon the clouds and the sky grow dark and a rolling, rumbling thunder fills the air. A sudden dramatic rainstorm comes down hard and fast, then passes on, leaving the air fresh and clean with an afternote of sagebrush.

Technical

Yarn: 20/2 cotton

Seven-block double weave in an eight-color rotation

*Photo by Nelson Bonner*

TWO-WAY FURROWS**122 x 19.5 inches (310 x 49.5 cm)****Yardage – Silk, merino****Artist's Statement**

In the 2015 Paris exhibition of Japanese textile art Fiber Futures, a piece by Hideho Tanaka spoke out to me. Composed of fabric strips apparently interlaced but actually roughly pieced as patchwork, alternating blocks of vertical and horizontal indigo stripes formed a whole – which was simultaneously ordered yet organic, regular yet subtly irregular, calming yet intriguing. How wonderful if I could create something comparable in weave! But conventional wisdom is that for vertical structural furrows to form, the weft needs to be at least half the diameter of the warp, while for horizontal furrows it needs to be at least twice the diameter.

The quest to find a weave structure, yarns, and sett combination to achieve interchangeable blocks of vertical and horizontal furrows in a single-layer cloth on a shaft loom was an absorbing challenge, especially with the additional self-imposed requirement for the finished fabric to be practical and comfortable for apparel. It was a quest which gave many, many learning opportunities along the way.

As Tanaka said in his artist's statement: "The idea of creating a well-planned work arising from the accidental is a challenge that intrigues me. I love the uncertainty, the intellectual challenge, and the feeling of creative



determination which I experience in the face of complexities which I fully anticipate but do not know."

Technical

Yarns:

- *Warp*: 60/2 silk warp
- *Weft*: 14.5 nm merino
- *Hem weft*: 100/2 silk

Handwoven on a computer-dobby loom

The structure is essentially twill blocks



BUTTERFLIES

52 x 28 inches (132 x 71 cm)

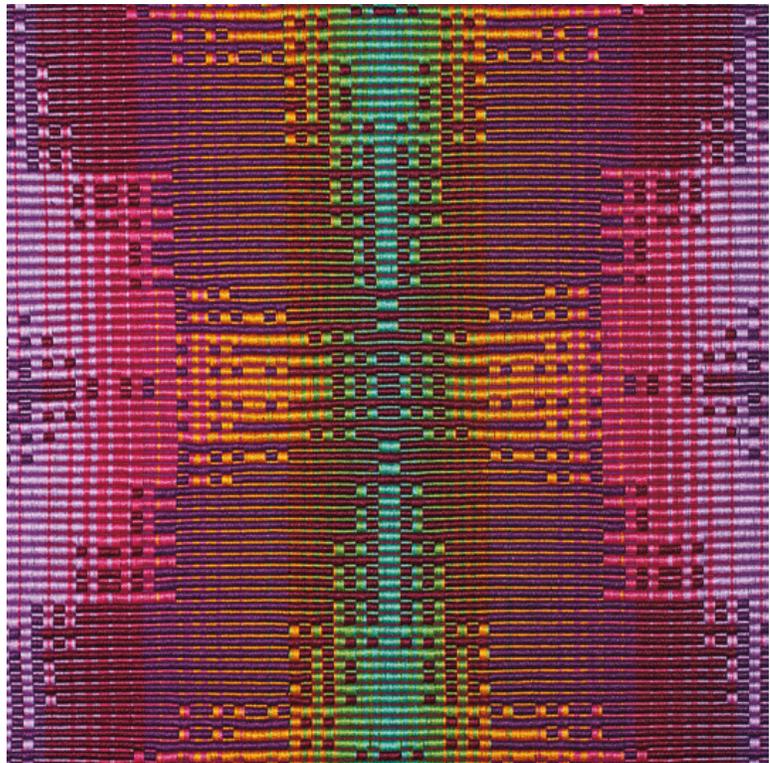
Wall hanging – Cotton

Artist's Statement

Butterflies was inspired by the musical composition “The Butterfly Zone” by my son Duncan Neilson III. During his PhD studies at Columbia University, he visited the Bronx Zoo’s butterfly enclosure with its brightly colored collection of winged insects appearing and disappearing in the surrounding foliage.

Since he and I have always had discussions about the connection between weaving and music, I wanted to create a weaving that reflected the different piano compositions of “The Butterfly Zone”.

The wall hanging shows two stylized butterflies, one woven in the background color of purple, and the other woven in the colors of butterfly wings. The positive butterfly in pattern colors represents the original musical composition, while the negative butterfly in background colors is the inversion form of the composition. Each shows a distinctive shape with two-part symmetry along the vertical and horizontal axes.



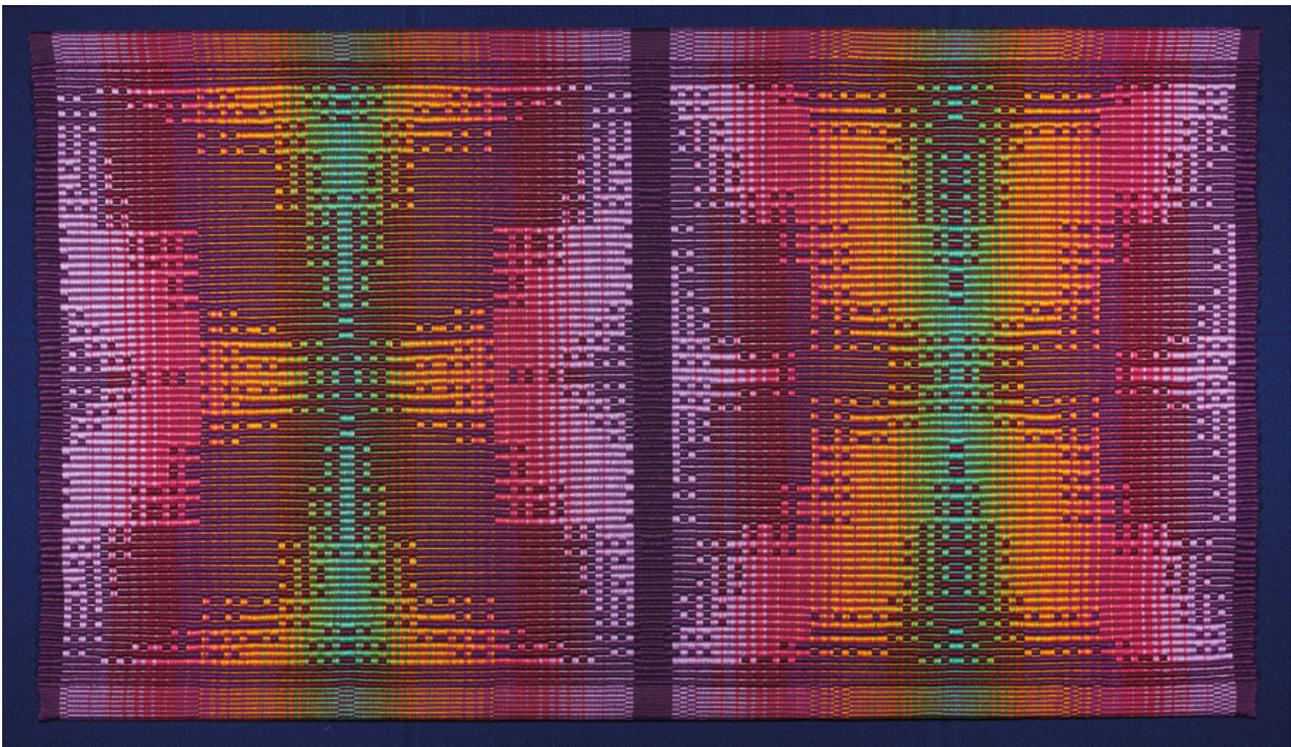
Photos by Duncan Neilson

Technical

Yarns:

- 3/2 cotton weft
- Mop cotton weft

Warp-faced rep on 16 shafts

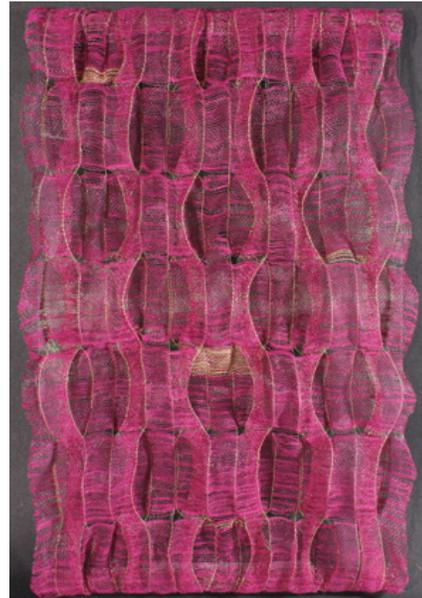


HEXAGONAL CELLULAR SYMMETRY**11.4 x 7.0 inches (29 x 18 cm)****Wall hanging – Nylon monofilament, stainless steel****Artist's Statement**

The inspiration for this piece came from years of curiously looking through a microscope at thin slivers of plant cells. I noticed the well-packed arrangement of cells that seamlessly tessellate in a not-quite-perfect arrangement. Researching these patterns, and those of other cell-packing structures, I discovered that the shapes are predominately hexagonal, even though at first they often appear brick-like.

Taking this inspiration through to my weaving, I have been investigating how to create three-dimensional structures in multi-layered flat woven cloth. The design of these cloths has involved research in mathematical areas of topology, symmetry, 3D packing and, particularly related to programming with a single weft, the 'Bridges of Königsberg' problem.

This piece explores a hexagonal tessellation in different planes of the cloth. The weft follows the outline of multiple stacked hexagons, as seen from a cross-section of the height and width of the fabric. As the arrangement continues along the length of the cloth, the outline is offset horizontally, resulting in the creation of new 'cells', this time in the face of the fabric. As your eye follows the layers of fabric, it can be appeased by the symmetry, but its curiosity is piqued by the distortion of threads created by the off-set. By choosing transparent, slippery and fine threads to create an 'organic' gauze, I have enabled your eye to discover new perspectives of repetitions and



shapes within the object as you move around the piece.

Technical

Yarns:

- *Warp*: ~45-Tex hand-dyed nylon monofilament
- *Weft*: 1/20 silk stainless steel

The nylon monofilament warp was hand-dyed before weaving. The work is multilayered handwoven cloth, using a 24-shaft computer-controlled loom. Each pick of weft involves 13 lifts, though in places it appears to be three layers. Some areas contain inlaid supplementary weft. A full selvedge was intentionally omitted to avoid placing too much visual emphasis on the edge of the work. After weaving, the cloth was relaxed, and the stainless steel enabled more control of the shape.



SUNRISE OVER THE FLATS**35 x 25.5 inches (89 x 65 cm)****Frame, 3 inches (7.6 cm)****Wall hanging — Cotton and wool****Artist's Statement**

My father was a metallurgical engineer and worked at a large steel mill for over twenty-five years. He worked long hours and was usually gone before I woke in the morning. Because of the nature of his work environment, I was never allowed to visit him at the factory.

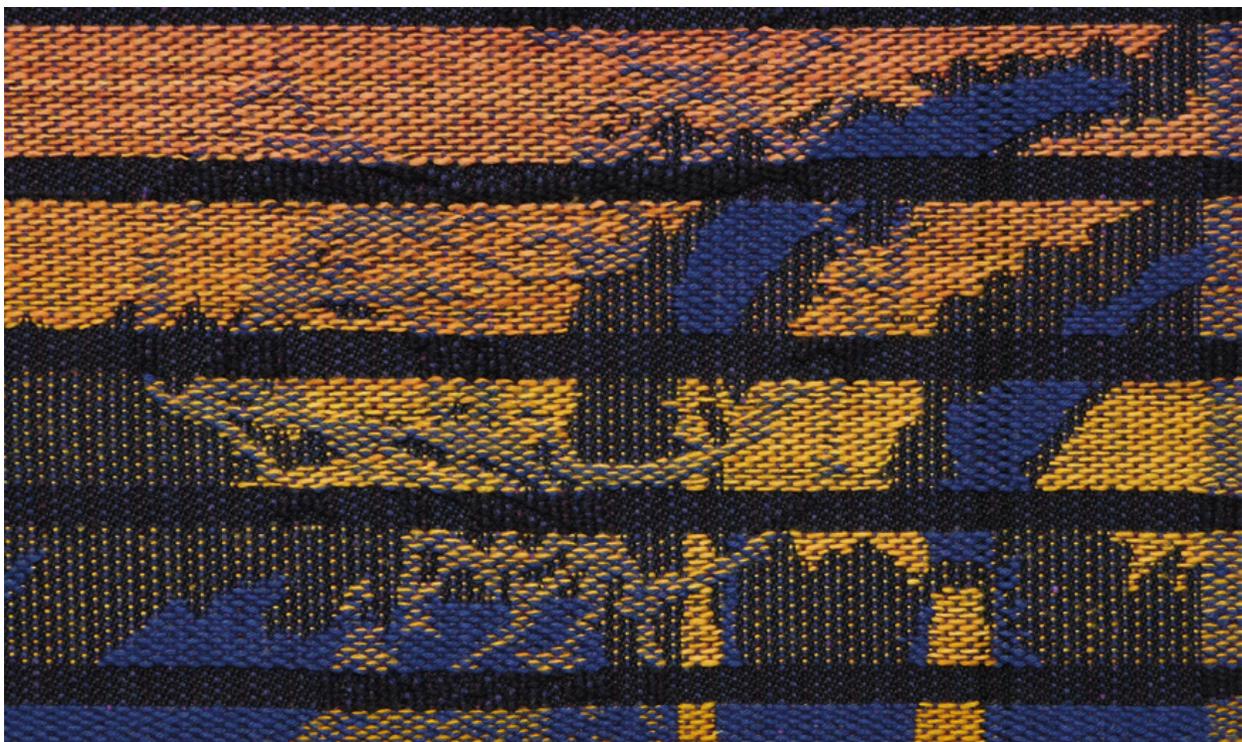
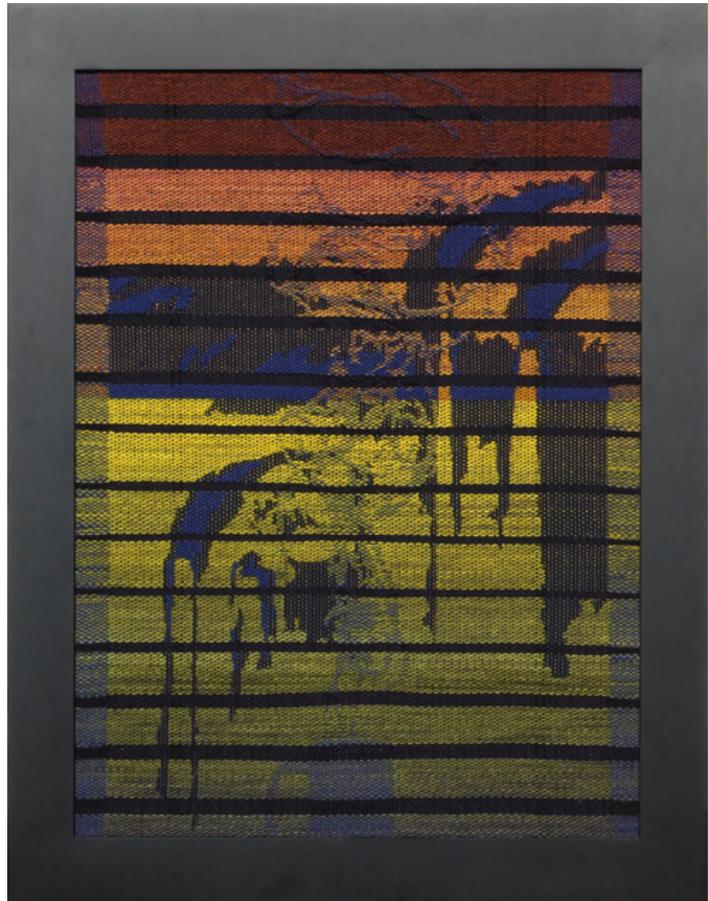
This piece illustrates the view from his office window as I imagined it, the sun rising over the Cleveland Flats, the swirling steam from his second cup of coffee mingling with the factory smog. This weaving is framed to enhance the 'window' aspect.

Technical

Yarns:

- *Warp*s: 5/2 perle cotton and 2-ply wool
- *Weft*s: 5/2 perle cotton and various wools

Split-shed reverse lampas. Note that the side of the lampas cloth normally used as the back is used for the front of the piece, illustrated by the purple binder warp and dots of yellow pattern weft showing in the black, primary cloth areas.



AT PEACE

72 x 10.5 inches (183 x 26.7 cm)

Scarf – Bambu 12, rayon ribbon

Artist's Statement

There is nothing more serene than a spring garden. I hand-painted the warp colors of blues and greens, with just a touch of chartreuse and tangerine with the intent to depict this mood of peace and relaxation. I was influenced by the colors of early spring, and the beautiful blend of delphiniums and daffodils.

Technical

Yarns:

- Bambu 12
- Rayon ribbons
- Hand-dyed warp

I wove the *At Peace* scarf on my 32-shaft AVL loom using an adapted version of one of Ralph Griswold's fancy twill tie-ups. The pattern has elements of basket-weave diamonds. The yarn is Bambu 12 with some rayon ribbons inserted.





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