

Loom-Controlled 3D Shaping for Garments — An Interview with Sally Eyring

Stacey Harvey-Brown, Online Guild



Commode One
Warp of fine wool and gold lacquered copper wire, various colours copper wire weft



Ruff One
Warp of fine wool and red lacquered copper wire, copper wire weft
16in high, 10in wide



Sunburst Jacket (and detail inset)
Cotton, linen, rayon



Ruff Two
Warp of fine wool and gold-lacquered copper wire, copper wire weft, double weave with leno on the top layer. Springs of heavy copper wire hold each cell open
21in high, 16in wide

All photos: Sally Eyring

Today I would like to introduce you to the wonderful world of Sally Eyring. Sally lives in the Greater Boston area of the USA and weaves in metals and regular fibres to create shaped pieces that are woven into shape on the loom.

Stacey Harvey-Brown I first saw your headpieces several years ago and I was immediately drawn to the drama and the sheer exuberance of them, and obviously the technical expertise and the imagination of them as well. What drew you to creating them in the first place?

Sally Eyring Well, I worked in hi-tech for thirty years and I got frustrated with it. I had been doing crafts at home after work to stay sane. Finally, I quit and I went back to school to get an MFA (Master of Fine Arts), and while I was doing that, I took a couple of weaving classes at Massachusetts College of Art and Design. One day my teacher said to me that 'When you weave, you always get a rectangle'. I was a 3D major and I thought I would either have to change my major (but I really liked weaving) or I would have to figure out how to weave things that aren't just rectangles. And so I started experimenting and testing some ideas. For example, I put an area of warp on that's twice the sett of the regular area. I call the area with the regular sett the 'normal area' and I call the one that's got the double sett the 'dense area'. They are warped right next to each other and woven at the same time.

I open the dense area shed and leave it open while weaving somewhere between thirty and fifty picks changing sheds on each pick in the normal area, and weaving across the whole warp

width. As each dense area shed is changed, I scrunch the dense area bundle of threads together on the previous dense area, which causes gathers in the normal area. In this way the shape is created while the warp is being woven. The shape is created during the weaving, not after it's off the loom, and that is the most difficult thing for people to understand. Of course this causes vastly different length selvages while the weaving is progressing, but that's just another tension problem to solve.

The theory's pretty easy. The difficulty comes in controlling the tension and figuring out how to weave a given shape. The tension must be handled on the warp threads, but also on the already woven cloth. I had to create a whole group of tension control tools, because once I start weaving dense areas, the cloth beam is no longer useful since the cloth take-up is variable across the width of the weaving. Some of the tools provide tension at the back of the loom, on the warp. Other tools provide tension at the front of the loom, on the cloth.

Anyway, at the same time I needed an MFA thesis. I brought in one of my 3D weaving pieces, the first neck ruff that I had woven. That was the first real piece that I did and they liked it! After that I created a series of headdresses. My MFA thesis was about the immigrant experience and each of those headdresses has an immigration story behind it, mostly from my family. So that's how I got started creating them.

The headdresses are all woven with a fine woollen warp that includes dense area warp bands of copper wire. All of the weft is copper wire. The copper doesn't just lay there nicely like yarn

does. At every single turn of the pick, you have to take a needle and make a little crimp at the edge. I have two rubber thimbles that I put on my index fingers and I have a small weaving needle that sticks out of each one and I weave like that, using my fingers to crimp the edges. You just have to be careful not to scratch your face! I have lots of little techniques that I've developed and I had to develop specialized equipment to make it possible, and easier.

'Commode' is a reference to the wire framework of the fancy headdresses worn in the early eighteenth century in France and England. This was the first headdress that I wove using my 3D dense area weaving technique. In all I've woven about 13 such headdresses, six of which were exhibited for my MFA graduate project and thesis at Leslie University.

SHB You've also worked on garments, making shaped garments on the loom, adjusting and altering your tools and your loom to help you achieve your ideas. Have you always had this kind of approach to creativity?

SE What I enjoy the most is the problem solving. That's how I approach it. I did the headdresses first and then at some point I thought I should really try to do this without any copper because if you always work with copper, a lot of people will say 'Oh well, that's cool, but I would never do that'. Usually you weave a flat rectangle and then you cut it to shape a body. I realized that because I can weave shapes, I can weave body shapes. So I started looking at a female body and at my dress form. I thought about

all the different shapes that there are on the body and I started combining weaving shapes with sewing because I've always sewed a lot.

SHB So are you developing asymmetric designing for garments?

SE Yes, I work with asymmetry a lot. Women like it and men say... 'You know, that's not straight' as if I hadn't already noticed or if it was done by mistake! The three-part ruffle on the vest was woven all at once, using my 3D dense area technique. Each part of the ruffle uses a different huck pattern with the two layers on the shoulder woven as doubleweave. Once the ruffle was woven and taken off the loom, I re-threaded and re-sleyed the top layer of ruffles in order to spread the three huck patterns out so that I could weave the body of the vest. So the body of the vest consists of the same three huck patterns that are in the ruffle. The ruffle is attached to the vest with large snaps to make laundering and ironing easier.

The Sunburst Jacket was woven using my 3D dense area technique. The selvages of the sunburst are 11 inches and 54 inches. The colour changes are created by changing the weft while weaving.

SHB Do you have anything that you're working towards at the moment, or a project that's really inspiring you at the moment, other than the tools?

SE There are actually three different techniques that I use. One I call 'expanded areas', where you can add a lot of picks using

Longdraw Spinning for Knitted Garments

Freyalyn Close-Hainsworth

I love longdraw spinning. I love the yarn it produces. I teach this technique and can get extremely enthusiastic about introducing others to it (some might think I'm a little over enthusiastic, but I deny everything).

It can be a faster way of spinning yarn. I would argue it's better for the spinner physically, as you can sit back from your wheel, keep your shoulders low and relaxed, and your upper body moving. And it's usually a better yarn for knitting (in my opinion, of course).

Just a quick definition for those of us who aren't quite sure of the difference between woollen and worsted spinning: woollen yarn is produced by spinning longdraw with a carded fibre preparation. The twist is allowed to enter the fibre as it is being drawn out, and the resultant yarn is airy and elastic. Worsted yarn is spun short draw from a combed fibre preparation: the fibres are drawn out to the final thickness and held parallel between your hands before twist is allowed to run into it, and this yarn is smooth, dense, and less elastic or even non-elastic. These are the two extremes of 'traditional' yarn production, and there's a whole range of yarns and spinning styles running from one to the other.

Woollen yarns are traditionally made from shorter, bouncier wools – Shetland, the Down breeds, ones with shorter staples and usually little or no shine.

A woollen spun yarn should be light and airy, and will use less wool for the yardage than a dense worsted yarn. Because of the air trapped within the fibre, anything made with it will be warmer, and this yarn works particularly well for traditional Fair Isle colourwork knitting. It can usually be spun quicker, though you may have to take more time over the wool preparation. On the other hand, woollen spun yarn is more prone to pilling in a garment, it may not be very drapey, cables can disappear, any shine in the wool won't really show, and it may not be quite as hardwearing as a smooth worsted yarn (though this can be negated by how you knit it).

Woollen spun yarn will shrink or full much more than worsted spun yarn too – all that space between the fibres will disappear very quickly with the application of friction and temperature changes. It makes for quick fulling/felting if that's what you want. If not, be careful with the washing!

I love to spin from rolags hand-carded from a well cleaned fleece with a staple between 2in and 4in. Anything longer can be a little awkward to handle on hand-cards. You can use very short staple fibre for longdraw spinning – this is how cotton is spun.

Rolags are really handy for splitting a certain amount of fibre in two to make equal bobbins for plying. Once you get into the rhythm of whatever wool you're using, you can get surprisingly consistent in the amount of fibre in each rolag quite easily. Then dividing the heap of rolags into equal piles will give you a more-or-less equal length on each bobbin.

I decided to make a hat for this article, as a hat is one of the things that really benefits from being made from a light and warm fabric. I picked a very soft, but also rather short, Corriedale shearling fleece in lovely shades of cream to moorit. It took me two hours to turn 100g of fleece into 82 rolags, which I then spun longdraw on my Majacraft Suzi Pro. Woollen spun yarn can take



Original Corriedale fleece



Rolags from Corriedale fleece



Two bobbins of spun yarn gave different shades

All photos: Freyalyn Close-Hainsworth



Three Ruffle Vest (and detail inset)
Linen



Butterfly Vest front and left



only a certain area of the warp width to create little bubbles that rise out of the surface of the cloth. These are small areas of discontinuous wefts that are clasped with the wefts next to them but consist of more picks.

The second one, which I've explained already and use the most, I call dense area weaving. The third technique I call 'infinite tension' weaving, is my newest technique. It lets you control the tension individually on every single thread in the warp, which means you can weave almost any shape you want. Since every thread has its own tension, every thread can also be a different length to any of the other warp threads. And with each warp thread being its own length, well, you see that the shaping possibilities are endless.

My challenge at the moment is to perfect the third technique and get some more experience with it. After that I want to start

combining the techniques on a single warp. If I can do that, I can truly weave any shape I can imagine. As I've said, the theory is really easy. Controlling the tension is the challenge, and that is what the special tools are for.

I use ordinary looms for these processes, but with special tools that I invented to control the tension. My favourite 3D loom is a Louet 24-shaft dobby. All of my sculptural pieces and headdresses were woven on a Leclerc Dorothy table loom, except for Ruff Two, which was woven on the Louet. You must have at least four shafts, but other than that, any loom works.

About Sally Eyring: Sally's work can be seen on her website at www.sallyeyring.com

She is currently working on a book that describes her techniques, which will be available from Schiffer Publishing sometime in 2020.