

Crepe and Shape

EILEEN HALLMAN



Photo by Joe Coca

Eileen combined high-twist weft yarns with a woven structure to produce elastic fabrics. The basic structure can be achieved on either four or eight shafts. The channels run weft-wise on the four-shaft version and warp-wise on the eight-shaft version.

Spin Off
e PATTERNS

Editor's note: This fascinating article first appeared in the Fall 1999 issue of Spin Off. There was an error in the original weaving draft. The corrected weaving drafts are included below and we have also updated some of the images with new photographs. Enjoy!

It was such a thrill to have a piece in the fashion show at Convergence! I go against the grain, however, by calling the technique I used in designing the work that was selected for the show by its proper name, rather than by its popularized name. Such a hard-headed attitude brings little recognition, but as a handspinner I not only balk but downright choke before I can call my work “overspun” or “overtwisted.”

As handspinners, we need to stand up as a unit and resist the use of the terms *overtwisted* or *overspun* to mean any yarn with any energy. Any freshly spun singles yarn has energy; this energy can be used to advantage as an active force in fabric design, or can be balanced to suit your end purpose.

Industry gives names to four different degrees of twist (energy levels)—they are, in increasing order, knitting, filling or weft, warp, and crepe. Overtwist comes after crepe, is characterized by corkscrews, and is to be avoided by self-respecting spinners who intend to use their yarns for garments. After all, why make and wear designer sandpaper or barbed wire?

Knitting, weft, and warp yarns are used for the purposes indicated in their names. In these yarns, energy is not intended to be a component of the visible structure. Yarns with these levels of twist are designed to be strong enough to hold up during processing but not twisted to the extent that the twist itself affects the

appearance or behavior of the completed fabric. Unbalanced singles at these energy levels might rightly be called “lively” yarns as opposed to “over”-anything.

Crepe yarn, also known as hard twist, is used specifically for its energy. The technical spinner interested in spinning crepe-twist yarns is referred to “Spinning Crepe Yarn” in the Summer 1997 issue of *Shuttle, Spindle and Dyepot*.

Many handspinners confuse a true crepe yarn with a cabled yarn, also sometimes called crepe. This cabled yarn is actually a crepe-effect yarn. Crepe-effect yarns and crepe weaves were designed to simulate the appearance of true crepe yarns and fabrics.

Handweavers who spin have the best of all possible worlds. They can make yarn in any combination of color, fiber, and energy level. My early experiments led me to explore sett in conjunction with yarn energy. I learned that you can emphasize or obscure the energy level of the weft yarn by increasing or decreasing the spacing of warp yarns. I figured if I could halve the “normal” sett for plain weave and get a very stretchy fabric using a crepe-twist weft yarn, then I could use this basic kernel of knowledge to shape fabric.

The inspiration for this technique is credited entirely to Mary Frame and her series of articles on “overtwist” and collapse that appeared in *Spin Off* during late 1986 and early 1987. She mentions “engineering” the cloth. Here is my rendition of that concept, many years later.

My techniques differ from those used by Mary Frame in at least three regards: the fiber (she used mohair and wool; I use cotton and a 50/50 cotton/wool blend), the elastic



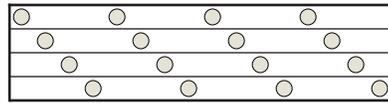
Photo by Art Guilmet, courtesy of Kay Guilmet

Crepe & Shape/Khadi Nouveau, by Elieen Hallman. This three-piece outfit was a winner in the fashion show competition at Convergence '98, the biennial textile convention sponsored by the Handweavers Guild of America. Handspun yarn produces texture, shaping, and elasticity in the garments.

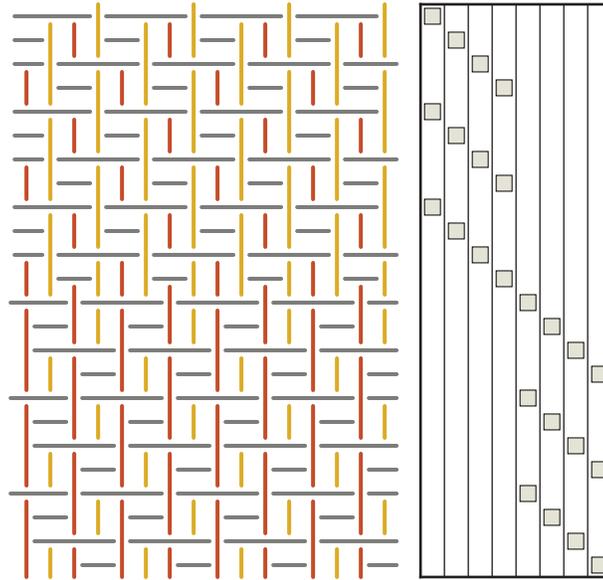
component (she worked mostly with warp; I use only weft), and the weave structure (she used plain weave; I vary the weave structure to assist in the shaping).

In my garments, the warp is commercial 20/2 rayon, sett at 32 ends per inch (2.5 cm). The body weft is commercial 10/1 cotton. The ribbing weft is handspun cotton/wool, made from “Scythian Lamb” (a 50/50 blend of organic cotton and Merino wool). This yarn has a 50-degree angle of twist and measures 56 wraps per inch (2.5 cm).

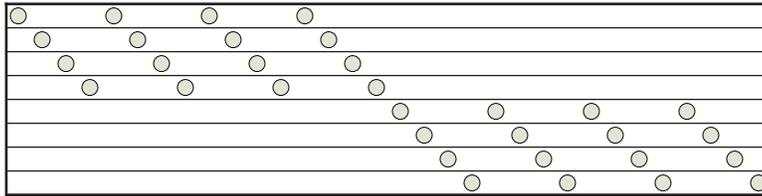
Four-shaft draft which produces weft-wise channels.



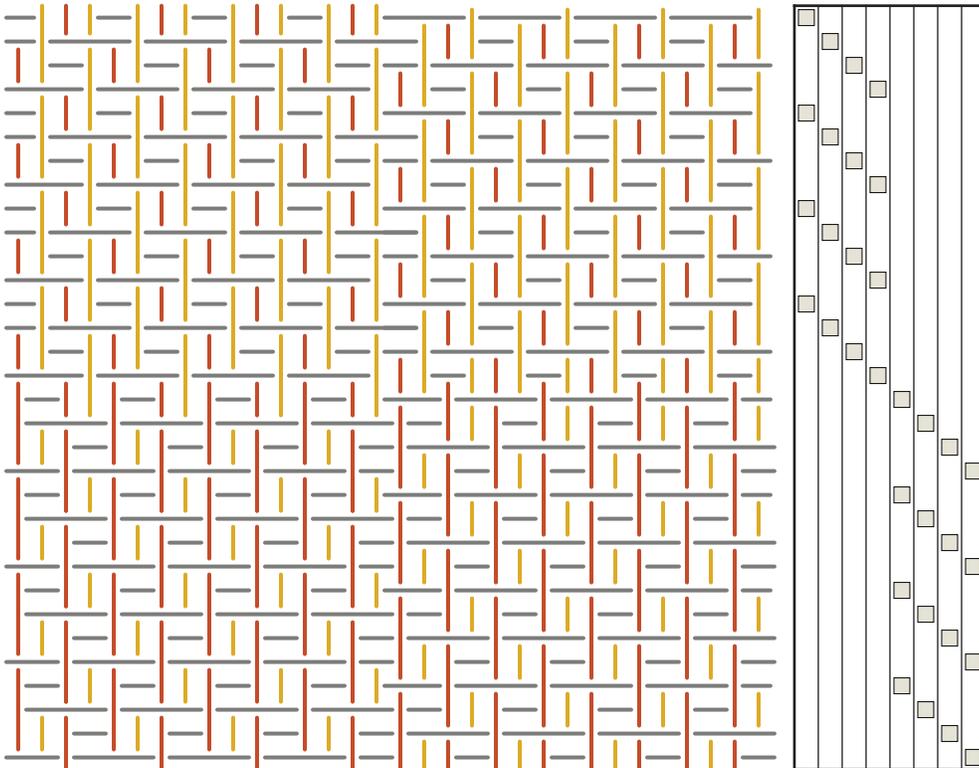
	1	2	3	4	5	6	7	8
				4		4	4	4
		3	3	3				3
		2			2	2		2
	1	1		1		1		



Eight-shaft draft which produces warp-wise channels.



	1	2	3	4	5	6	7	8
				8		8	8	8
		7	7	7				7
		6			6			6
		5	5	5	5			
				4		4	4	4
		3	3	3				3
		2			2	2		2
	1	1		1		1		



The Shaping Technique

All pieces were woven on the same warp. The shaped areas developed as a result of one change in weft yarn and one change in treadling. There are three distinct areas: body, transition, and ribbing. The body is woven with a commercial yarn in any plain or twill weave. The transition area is woven with handspun crepe yarn in the same weave as the body. The ribbing is woven in double-weave channels with handspun crepe yarn.

I'm a weaver who plans everything in advance, so I start with commercial warp and weft yarns, the weave structure, and my sett for those yarns. All of this planning is based on the body portion of the weave. I like working with twill, and usually use an eight-shaft loom, although this technique will work on four shafts. Thread a straight draw on four shafts or a two-block twill on eight.

The only significant difference between eight- and four-shaft versions occurs in the ribbing section. The block twill on the eight-shaft loom will allow for vertical channels in the ribbing; with a four-shaft loom the channels must be horizontal. See the drafts for how this works.

Here's how the ribbing gets its effect—which amounts to a contraction of up to 65 percent of the warp width. The layers in the double cloth are woven in plain weave. Switching from the body weave to double-weave layers halves the number of ends per inch in each layer. Using the crepe yarn in this section gangs up two layers of energetic yarns on widely spaced warps.



Photo by Joe Coca

All three of Eileen's garments are constructed entirely of square and rectangular pieces. This was hard for us to believe as we discovered it while photographing the pieces. They are impossible to lay flat, and they drape and move beautifully on the body. Twist and relatively simple weave structure manipulations create an astounding diversity of effects. Here are some of the fabric textures and assembly juxtapositions.



Photo by Matt Graves

The ensemble

The three-piece ensemble featured in the Convergence '98 fashion show embodies the crepe-and-shape concept in a new presentation of handspun, handwoven fabric, called khadi in Hindi. The crepe yarns were spun on a charkha and woven directly from the spindle, using a shuttle designed to hold the spindle. The crepe yarns are not conditioned prior to weaving; I find that if the yarn diameter remains even, the yarn behaves well during weaving.

The pants are a variation on African pants found in Jean Wilson and Jan Burthen's *Weaving You Can Wear*, although the original pants do not have any shaping at all. The tube top is made entirely with the ribbing technique. The cocoon has ribbing at the cuffs, in the entire collar/band, and at the top of the center back panel to help give the hem a little more flare.

The only cutting required was across the warp, to separate the pieces from each other. There was also very little sewing. The finishing of the ribbed cuffs was the trickiest part. Turning the edge under produces a very bulky edge. I solved this problem at the waist by weaving extra fabric to use as a turn-over section, then leaving unwoven warp to be used as fringe. The waist portion can be folded anywhere; this allows people of different heights to wear the pants.

The ensemble shows the technique in a variety of different uses. I have since made a strapless jumpsuit and a second pair of pants, which uses black-and-white shadow weave in the body. Many other garments are in the planning stages. Experiment with the technique, and add your own imagination!



Photos by Matt Graves

Resources

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- . "Save the Twist: Warping and Weaving with Overtwist." *Spin Off* 11, no. 2 (Summer 1987): 43–48.
- Hallman, Eileen. "Spinning Crepe Yarn." *Shuttle Spindle, and Dyeplot* 28, no. 3 (Issue 111, Summer 1997): 57–59.
- . "The Whole Truth about Sett." *Weaver's* 10, no. 4 (Issue 40, Summer 1998): 18.
- Wilson, Jean, with Jan Burhen. *Weaving You Can Wear*. New York: Van Nostrand Reinhold, 1973.

Eileen Hallman, of New World Textiles, engineers more than cloth in Black Mountain, North Carolina. The blend of organic cotton and Merino wool in the handspun yarn she used for the garments shown here is produced for her company. She designs cotton sliver and yarn, as well as spinning and weaving tools related to the book *charkha*. She also teaches cotton spinning and weaving techniques, and she writes. Her "Single-shuttle Plaid" fabric and the spindle shuttle she mentions in this article were shown in *Spin Off* 20, no. 3 (Fall 1996), on page 75.



Photo by Matt Graves