

Modern Adaptation of Ancient Technique

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Contribution to Archaeological Textile Study Group, Complex Weavers

This is a little different from a scholarly article about a new find or an attempt to recreate an ancient textile. It is an exploration of how a well documented textile technique can play a role in creating a modern wearable garment.

It is known that Northern European cultures used a combination of S- and Z-spun yarns to enhance their twill fabrics. In some examples the entire warp and/or weft were spun in opposing directions. In others there is a mix of directions in warp, weft or both creating subtle patterning. In designing, weaving and sewing a new tweed skirt, I decided to incorporate the use of opposing twist in singles yarn.

I have woven skirt and jacket fabrics off and on for decades using variations of herringbone (zig-zag) twills, in subtle stripes using both dark and light weft on a solid light or dark weft. When using handspun yarns, even worsted spun, there was a certain irregularity in the twill structure – that seemed to come from the energy left in the singles. For the project shown in this article, I wanted to see if using singles spun in opposite directions made a difference.

In my yarn collection was a large amount of a Shetland cross fleece (unfortunately spun just a tad too fluffy) in white and a dark chocolate brown CVM/Border Leicester fleece – both colors spun in either S- or Z as a medium weight single. The fluffiness of the white yarn is pretty and makes the fabric nice to wear, however it did lead to considerable warp breakage in spite of sizing.

In a previous project using handspun Shetland z-singles in a twill, I had utilized some contrasting s-spun stripes. Though the stripes were narrow, the twill structure was much more clear and visible than the sections where all yarns were z-twist. It appeared that the energy left in the singles was preventing the intersections from forming as nicely as when the twists were opposite – much the way a balanced 2-ply (as in the case of the jacket above) settled into a regular herringbone pattern.

The yarns were spun more or less because I had the wool and divided the batches into S- and Z- portions without a specific purpose. So when I began the skirt project, it was determined that the s-spun white was enough for warp and there was also adequate brown. The sett of 20 epi (8 cm) was a good match. I did size the warp threads with laundry starch to keep the fuzzy places under control. Understandably this contributed to some unevenness in the final fabric.

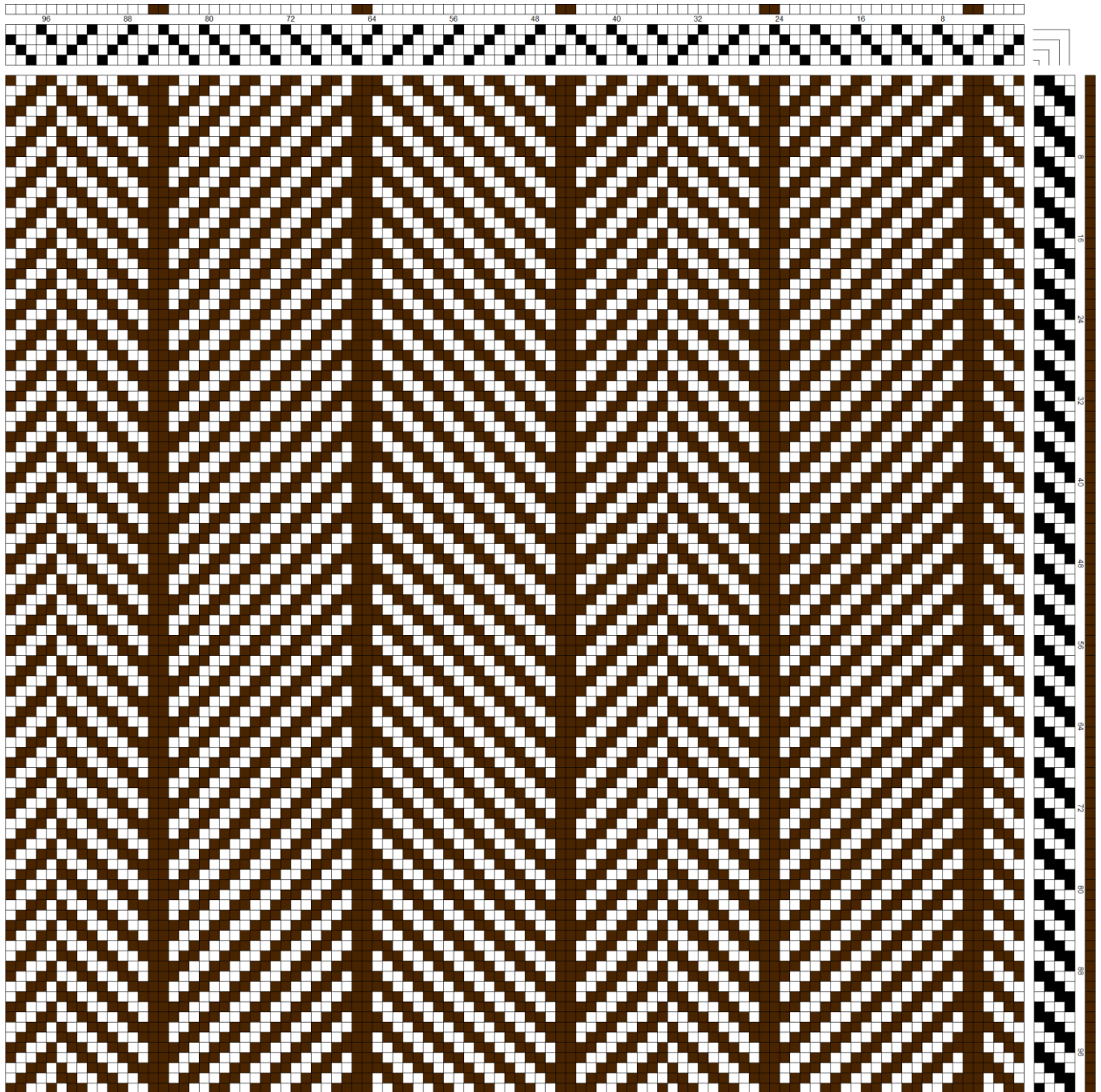
The warp was put on my Cranbrook rug loom – straight up countershed 4-shaft dornik twill – where I did add one stripe with split directions to make it a bit less boring. Because I did not know at that time just which pattern I'd like to sew, I used all the yarn I had, about 32" wide, and wove just over 5 yards of fabric. The last half yard was woven with s-spun weft (the same spin direction as the warp) as a contrast.

Now that the skirt has been sewn and worn, I can honestly say that using the directional change when weaving fabric does produce a noticeable difference in both the appearance and the hand of the fabric, worth going the extra mile to make two different yarns for a garment. The hand of the fabric, which cannot be demonstrated on paper, is the surprise – the texture of the fabric is much smoother than the sample woven with warp and weft in the same direction. By using 20 epi instead of the 24 in the skirt from the 80's, the fabric is lighter, thinner and more like commercial would be.

I can't say that there will be more skirts in the near future, but spinning yarn in both directions (properly labeled) has now become more attractive.

For a smaller project, I might even consider mixing twists in either warp or weft to see what patterning might result. Certainly the old weavers who pioneered using opposing twist did it consciously for good reason.

Draft for the project pictured below:



The following pages are illustrated with the projects and results over the last decades leading up to the new twill skirt.

Sample 1: commercial yarn – early 1980's



This is an early piece that was made into a jacket for my husband – the yarn a Shetland weight 2—ply knitting wool. Fabric had nice weight for a jacket and the yarn allowed for handknit cuffs, collar and waistband.

Note that the twill lines are very straight and regular due to the very uniform nature of the commercial 2-ply yarn.



Sample 2: mis 1980's



First skirt fabric entirely of handspun wool. Wool spun from our herd of East Frisian milk sheep, single, hand combed, worsted spun. Sett 24 epi. All S-spun.

Sett is a little dense, the twill lines are not as straight as the jacket fabric out of commercial yarn.



The skirt looked like this:

Sample 3: Around 2015



Shetland wool handspun singles, 20 epi – blue threads are Z-spun, Gray S-spun. I noted that the grey stripes show a more regular twill line. Using the grey as weft, the effect was more pronounced.



Same loom warp – with Z-spun blue and S-spun grey where the more regular twill line is in the blue stripes where the weft with opposite direction of twist.

Intrigued by the apparent ordering of the twill line resulting from the use of Z- and S-twist yarns in warp and weft, I wished to try another twill skirt, less dense than the first one, and with the ancient technique of using the opposite twist of the yarn as a design element.

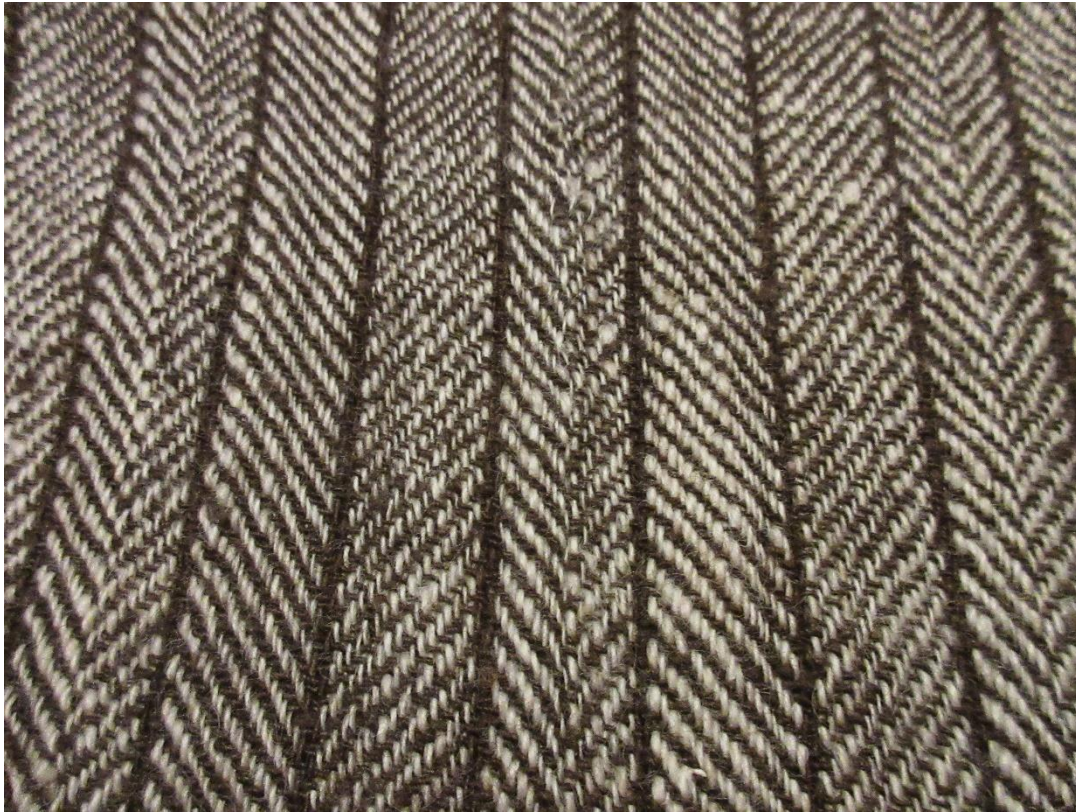
S and Z Skirt Project - 2019

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For this project, I chose Z-spun white and brown as warp and S-spun white as weft, the choice based on the available quantities.





Above: the fabric with opposing directions of yarn, note the rather straight twill lines despite the irregularity of handspun singles.



Below: both yarns spun in the same direction. While there is not a lot of contrast, the increased irregularity of the twill lines does make a good case for taking the time to spin yarns for such fabrics in different directions when the quality of the resulting fabric was important.

The 30+ years later, I have another herringbone skirt of handspun wool, this time in a different technique testing the old finds of singles being spun in opposing directions – and displaying my pretty conservative and consistent sense of fashion. This time there are no pleats – just a simple A-line to accommodate the spread that comes with aging.

