

Drafting Double Weaves for Jacquard Weave Assignments

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When designing a jacquard fabric, one assigns different weave structures to different design areas so the texture and color contrasts resulting from those different interlacements will make the design areas apparent. I was trained, as most handweavers were, to understand weave drafts primarily in terms of manipulating the threading, tie-up and treadling components in order to obtain various drawdowns.

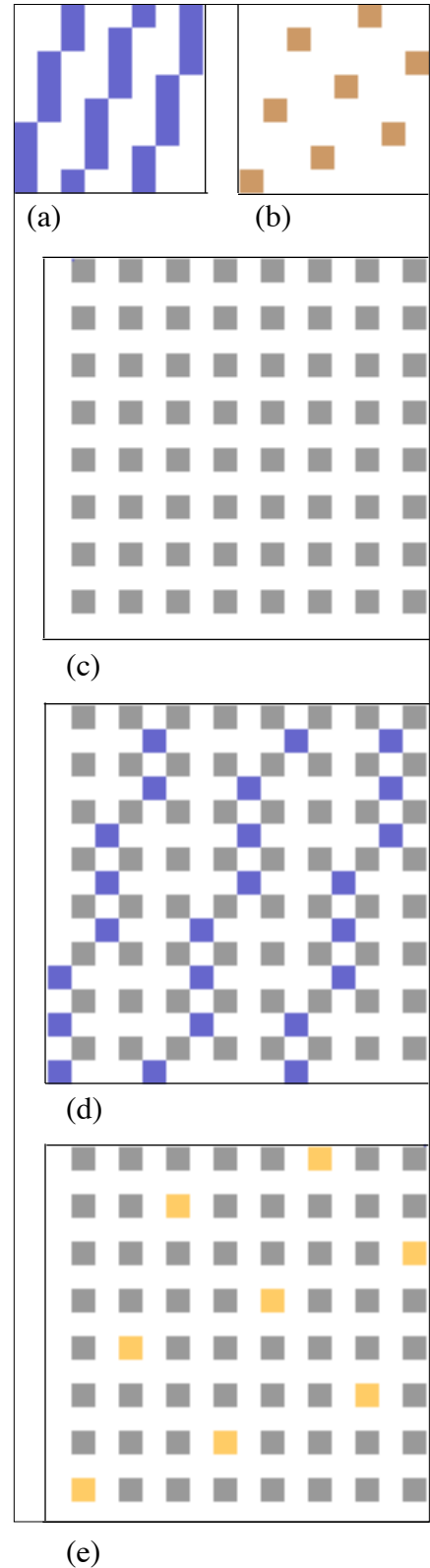
For single layer weaves, the drawdown for a single repeat of a structure is all the jacquard loom needs in order to weave that structure in a given area. For example, the 3/5 and 1/7 satins in figures (a) and (b), above, are single layer weaves shown in one repeat. However, if you want the jacquard loom to weave two layers in some design areas, it is necessary to draft two-layer structures in order to tell the loom exactly what to do with each warp thread in each area.

Faced recently with the necessity of drafting two-layer weaves, I've developed a workable approach derived from two very different sources: a few pages in Mary Elizabeth Laughlin's publication, *More Than Four*, and my own investigations last summer using Photoshop to draft single-layer weaves (available at the URL <http://www.art.acad.emich.edu/faculty/williams/williams.html>).

To begin this drafting process, open a Photoshop document that is 16x16 pixels in size and zoom in all the way, to a 1600% view, so that one pixel will fill one of the implied sixteen grid units. As in (c), fill every other "warp" and "pick" with a pixel, throughout the image area, and then save the grid file.* The vertical and horizontal lines without any gray squares indicate the top layer threads; the vertical and horizontal lines with alternating squares indicate the bottom layer threads (see pages 101-2 in *More Than Four*).

With the grid (c) open in Photoshop, open a new layer, and, as in the example, place the 3/5 satin weave intended for the top layer on the top layer threads, as in (d). Next, turn off that layer and open a new layer, still keeping the original grid visible. Place the 1/7 satin weave on the bottom layer threads, as in (e).

Then, in order to see only the structure threads for both layers at once, but not the grid, turn on the layer which has the top layer threads indicated and turn off the original grid layer. Drag that grid layer to the trash and save the structures



that remain.* (If you intend to import your eventual structure into a jacquard weave software program, it is helpful to save in a format which can be read by that program.)

For the last phase of this process, you start with the original grid, (c), but position it differently in the image square because its function will be different. Open the grid you saved originally, then copy and paste it into a new 16x16 image area, preserving transparency. Place this grid one row to the left of the position in (c), so that it looks like (g). To make it easier to remember that this grid will be used for a different purpose, change the color of the grid squares. You will then use it to indicate the top layer threads that must be lifted in order for the bottom layer structure of your two-layer fabric to be woven.

To accomplish that, open (f), then open a new layer, and copy and paste (g) into it. The result will be a weave draft of the full double layer structure, with a 3/5 satin on top and a 1/7 satin on the bottom, as in (h). Once you convert all the structure pixels to black, as in (i), your double weave structure is ready for importing into jacquard weave software. (Black is used to indicate "warp up" for an electronic jacquard loom, just as in many handweaving notation systems.)

Though this is a somewhat cumbersome process to describe, it is fairly simple to accomplish in practice. If you maintain consistency in your approach, you can develop a "library" of two-layer weave draft components from which to build different drafts. And, if your initial grid template has two spaces between each square, instead of one space as in this example, you can also draft three-layer weave structures using this process.

* In order to make a 16x16 pixel image large enough to be seen easily, resize the image before saving it. The examples in this article were resized to 2" x 2", with the "resample image" option turned off.)

written on a Macintosh computer using Pagemaker and Photoshop

