Code Drafting, Part 6: Point Twills

As described in previous articles [1-5], code drafting traditionally is done in overshot. Other methods are not mentioned and the implication is that code drafting can only be done in overshot.

The mechanism of code drafting simply translates a string of characters into a sequence of shaft numbers — the code sequence corresponding to the string. Any commemorative significance of the string is captured in the code sequence. This sequence can be used as a threading and treadling sequence in a variety of ways while still capturing the message of the string. While overshot tends to produce attractive patterns, there are other methods that do also. One is point twill.

The key idea of code drafting for point twill is to interpret the code sequence as values connecting straight-draw segments of a threading sequence.

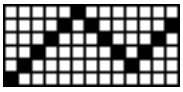
For example, the code sequence

1, 6, 2, 5

becomes the threading sequence

1, 2, 3, 4, 5, 6, 5, 4, 3, 2, 3, 4, 5

where the code-sequence values are underlined. A grid plot illustrates the point-twill threading:



If the code sequence has successive values in increasing or decreasing order, they are "absorbed" in the point-twill threading; it is successive high and low values (*inflection points*) that count. For example, the code sequence

1, 3, 6, 5, 4, 2, 3, 4, 5

produces the same point-twill sequence as the previous example:

1, 2, ~~3~~, 4, 5, 6, ~~5~~, ~~4~~, ~~3~~, 2, 3, ~~4~~, 5

where the absorbed values in the code sequence are indicated by strike-throughs.

Although overshot usually uses only four shafts, point twills work nicely with any number of shafts. For 8 shafts and just the uppercase letters, a balanced code table is

letters	*frequency*	*shaft*
TCJXQZ	0.1231	1
AD	0.1242	2
OLK	0.1230	3
IUM	0.1213	4
NWFV	0.1232	5
SH	0.1242	6
RGYP	0.1191	7
EB	0.1419	8

In terms of shaft utilization, balance is less important that whether 1 and the maximum shaft number (8 in this case) occur in the code sequence. If not, those shafts will not be not used. This can be rectified by arbitrarily including 1 as the first value and the largest (here 8) as the last.

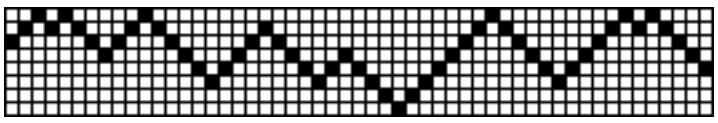
As an example, consider the string

HERE WE GO ROUND THE MULBERRY BUSH

The point-twill sequence that results is

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

Here is a grid plot:



A complete weave using this point-twill sequence for threading and treadling, reflected, and with a 2/2 twill tie-up is shown at the end of this article.

References

1. *Code Drafting, Part 1: Introduction*, Ralph E. Griswold, 2004:
http://www.cs.arizona.edu/patterns/weaving/webdocs/gre_cd1.pdf

2. *Code Drafting, Part 2: Balanced Code Tables*, Ralph E. Griswold, 2004:
http://www.cs.arizona.edu/patterns/weaving/webdocs/gre_cd2.pdf

3. *Code Drafting, Part 3: A Larger Character Set*, Ralph E. Griswold, 2004:
http://www.cs.arizona.edu/patterns/weaving/webdocs/gre_cd3.pdf

4. *Code Drafting, Part 4: Adaptive Tables*, Ralph E. Griswold, 2004:
http://www.cs.arizona.edu/patterns/weaving/webdocs/gre_cd4.pdf

5. *Code Drafting, Part 5: Message Drafting*, Ralph E. Griswold, 2004:
http://www.cs.arizona.edu/patterns/weaving/webdocs/gre_cd5.pdf

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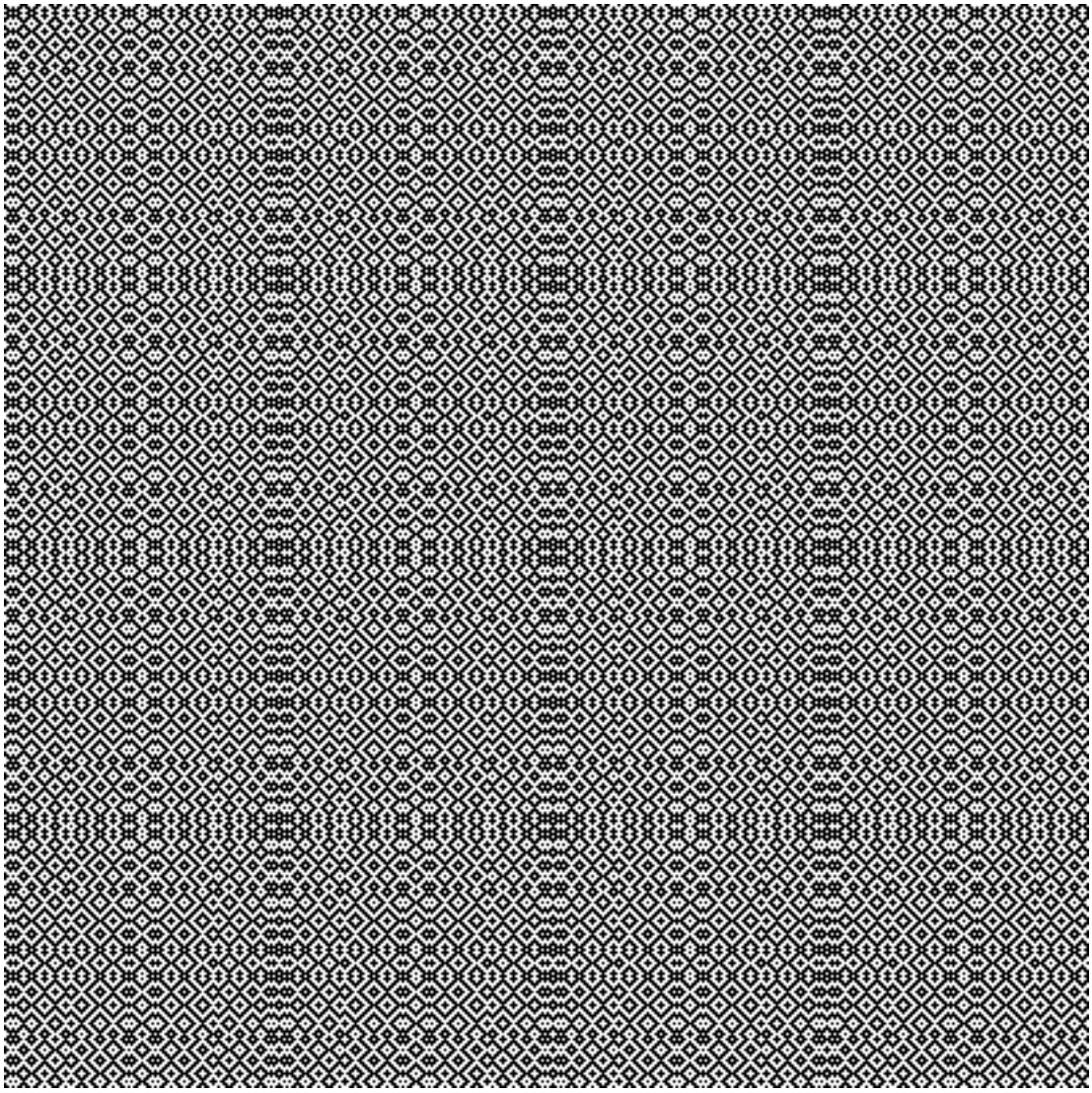

Here we go round the mulberry bush