# Code Drafting, Part 1: Introduction

Many handweavers simply weave from the large number of drafts that are available in books and magazines about weaving. These weavers may make minor modifications, but the designs they weave are the creations of others. The measure of "real" handweavers is the desire and ability to create their own designs. But how to start?

A type of weaving known as *code drafting* often is recommended for this situation. (Code drafting also is known as name drafting, commemorative drafting, and personalized design.)

Although code drafting is naive in concept, it does provide an easy bridge between copying the work of others and creating new designs.

## Mapping Strings into Threading Sequences

The basic idea is simple: A string of characters — a word, or more often, a phrase or sentence — is coded to make a threading sequence. The string may be the name of a loved one or a famous person (hence the term name drafting), a motto, an epigram, or anything else that strikes a weaver's fancy.

The coding assigns a shaft number to each character of the selected string. Although any method of associating shafts with characters could be used, only a few appear in the literature [1-7] and weavers generally are instructed to use one of these.

Three codings commonly are used for four shafts:

| *letters* | *shaft* | |
|---|---|---|
| ABCDEFG | 1 | Table 1 |
| HIJKLMN | 2 | |
| OPQRSTU | 3 | |
| VWXYZ | 4 | |
| ABCDEF | 1 | Table 2 |
| GHIJKL | 2 | |
| MNOPQR | 3 | |
| STUVWXYZ | 4 | |
| AEIMQUY | 1 | Table 3 |
| BFJNRVZ | 2 | |
| CGKOSW | 3 | |
| DHLPTX | 4 | |

Note that in these tables, letters are assigned in order according to different paths.

Suppose the string chosen is

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and Table 1 is used. The resulting sequence is

2, 1, 1, 3, 1, 1, 2, 1, 3, 3, 1, 1, 3

If Table 2 is used, the sequence is

2, 1, 1, 3, 1, 1, 3, 2, 4, 4, 1, 1, 4

and if Table 3 is used, the sequence is

2, 1, 3, 3, 2, 1, 2, 3, 3, 4, 1, 4, 4

One problem in choosing a mapping between characters and shaft numbers is whether some shafts will be underutilized or not used at all.

In the examples above, if Table 1 is used, shaft 4 is absent in the threading sequence.

Weavers doing code drafting often try different tables for a chosen string to see which one gives the best results.

Using only coding tables specified in the literature is an example of the dominating role of rote among unsophisticated weavers.

There are strong statistical patterns in the frequency in which characters appear in written text (usually considered only in terms of letters). None of the tables above is close to being balanced for ordinary English text. A subsequent article will give some coding tables that use letter-frequency information in an attempt to balance shaft usage.

Nonetheless, any predefined mapping can be defeated by a particular string — not to mention the fact that the string chosen may not contain as many *different* characters as there are shafts. In practice, strings are chosen to work around such problems.

## Modifying Sequences for Weaving

Code drafts usually are woven in overshot. A technical requirement for overshot is that the shaft numbers alternate between odd and even, called *alternating parity*. When a sequence does not meet this requirement, it is modified by adding incidentals.

For example, in the sequence given earlier,

2, 1, 3, 3, 2, 1, 2, 3, 3, 4, 1, 4, 4

there are four places where incidentals are needed. They could be added as follows, where the incidentals are underlined:

2, 1, 2, 3, 4, 3, 2, 1, 2, 3, 4, 3, 4, 1, 4, 1, 4

Adding incidentals of course increases the length of the sequence.

There are various formulas used for adding incidentals. In this example, an incidental is one more than the preceding value, with 4 wrapping around to 1.

## Other Aspects of Code Drafting

Code drafts usually are reflected about their centers to add symmetry and increase the visual appeal of the resulting weaves. For the example above, the resulting threading sequence would be

2, 1, 2, 3, 4, 3, 2, 1, 2, 3, 4, 3, 4, 1, 4, 1, 4,
1, 4, 4, 4, 3, 4, 3, 2, 1, 2, 3, 4, 3, 2, 1, 2

Note that the last term in the original sequence is not included in the reflection; that would violate the alternating parity requirement.

In overshot weaves, the tie-up usually is a twill. Different tie-ups often have a dramatic effect on the weave. Again, it is a matter of experimentation.

Examples of drafts based on the sequence above are given at the end of this article.

## Code Drafting in Perspective

Certainly code drafting is an *ad hoc* mechanism for producing threading sequences. It is telling that only letters are considered and that upper- and lowercase letters always are taken to be equivalent. This is akin to the problem of a person who is not familiar with computing and has trouble with the fact that a blank is just a much of a character as X.

To weavers, however, code drafting is can serve a real purpose, which is indicated by the alternative term "commemorative drafting". The string chosen may have a meaning that is personal to the weaver, resulting in a weave embodying this meaning.

This aspect of code drafting is sometimes forgotten, however. A recent article on code drafting [6] described the author's attempts to find a string that produced an attractive weave, finally settling on "The Random House Dictionary" as the result of glancing at a nearby bookshelf. The resulting weave was attractive, but it hardly carried a special meaning, as the author admitted.

## Another Method of Obtaining Alternating Parity

Alternating parity can be obtained by associating odd-even shaft pairs with the rows in a code table. For Table 3, it might look like this:

| | | |
|---|---|---|
| AEIMQUY | 1,2 | Table 3 |
| BFJNRVZ | 2,3 | |
| CGKOSW | 3,4 | |
| DHLPTX | 4,1 | |

Then the appropriate shaft can be chosen as the threading sequence develops. For our example, the result is

2, 1, 4, 3, 2, 1, 2, 3, 4, 1, 2, 1, 4

With this method, the length of the sequence is just the number of letters in the string used.

This method for obtaining alternating parity will be used in subsequent articles.

## Subsequent Articles

In subsequent articles, we'll consider code table design, extending the characters allowed beyond the uppercase letters, and some more

radical ideas.

## References


1 *A Handweaver's Notebook*, Helen G. Thorpe, Collier Books, 1956, pp. 153-156.

2. *Master Weaver Library*, S. A. Zielinski, Leclerc, 1979, Vol. 17, pp. 65-67.

3. *The Weaving Book: Patterns and Ideas*, Helene Bress, Scribners, 1981, pp. 227-228, 282, 307, 310.

4. "A New HGA Name Draft", Ena Marston, *Shuttle, Spindle and Dyepot*, Number 47, Summer 1981, pp. 43-45.

5. "Commemorate with a Name Draft", Norma Smayda, *Shuttle, Spindle and Dyepot*, Number 91, Summer 1992, pp. 43-45.

6. "How to Weave Name Drafts", Christina Hammel, *Handwoven*, November/December 1997, pp. 35-37.

7. *ABCDraft: A Manual for Drafting and Weaving*, Peter Mitchell, Chesebro-Mitchell Associates, 1992.



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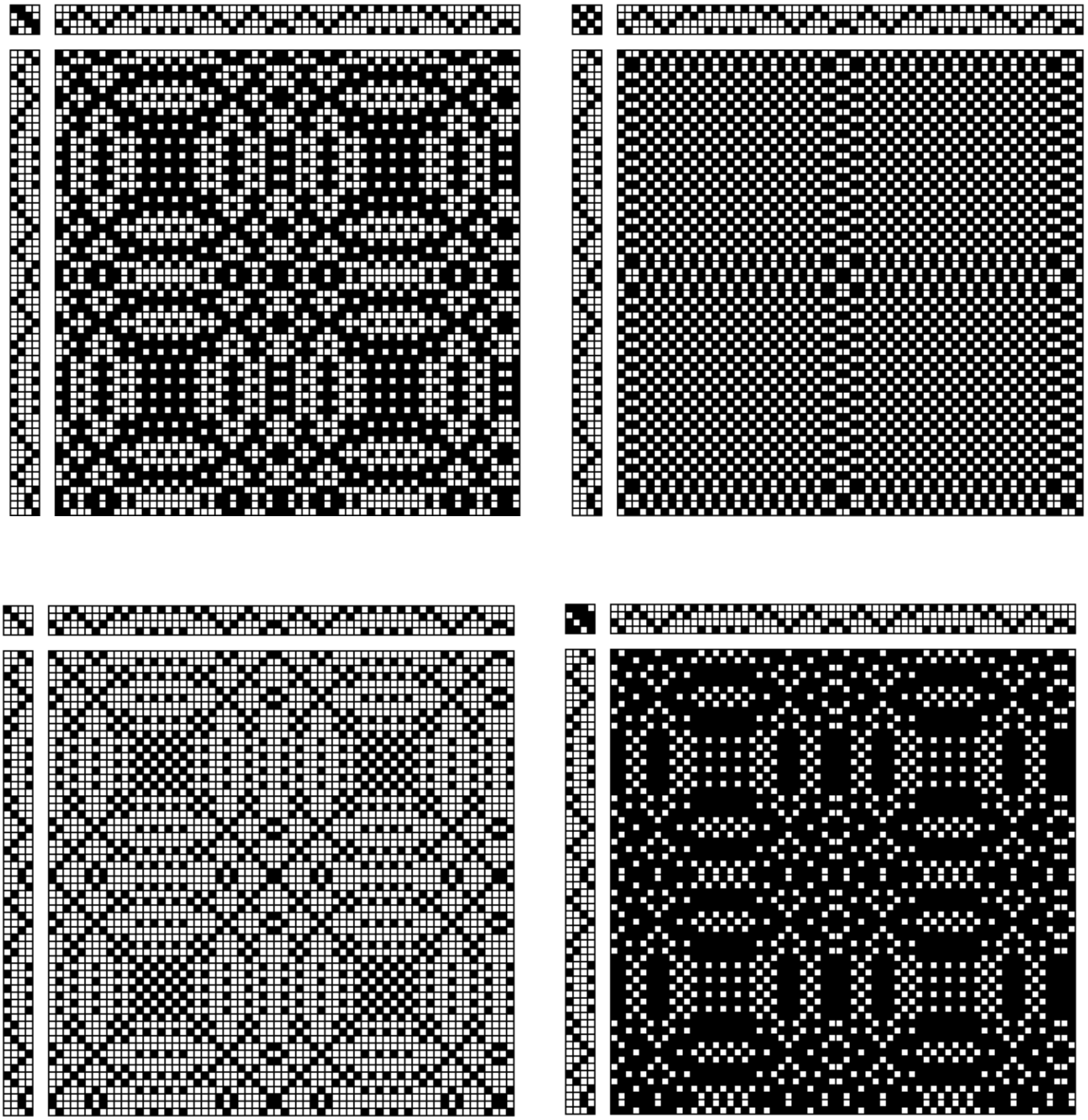

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