

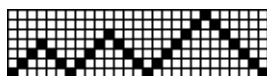
T-Sequences, Part 7: Collation

Many t-sequences consist of the *collation* (interleaving of terms) of other t-sequences. A common example of this is when a binding sequence is collated with a pattern sequence.

Consider the sequence

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

which represented graphically is



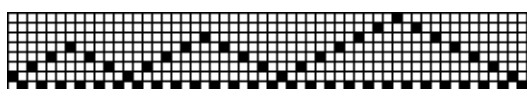
If this sequence is collated with the constant sequence

1, 1, 1, ...

the result is

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

which represented graphically is



In this example, the terms from the two sequences are put on disjoint t-sets [1] so that they do not interfere with each other. This is accomplished by offsetting one sequence by the bound of the other. This is called *stacked collation*. Stacked collation of two sequences, S and T , is denoted by

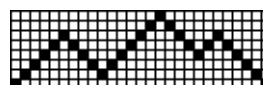
$$S \sim T$$

The first sequence, S , is the one that is offset.

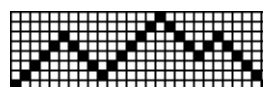
A form of collation that occurs less frequently in practice is *flat collation* in which the terms of two sequences are interleaved without offset. This form of collation is denoted by

$$S \sim_0 T$$

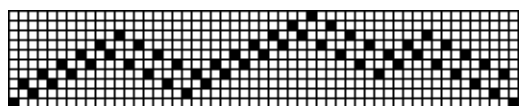
The flat collation of



and



is



In general, the offset of the second sequence can be specified by an integer subscript to the collation operation:

$$S \sim_i T$$

Note that stacked collation is shorthand for

$$S \sim_{\gamma(S)} T$$

Summary

| | |
|--------------|-------------------|
| $S \sim_i T$ | general collation |
| $S \sim T$ | stacked collation |
| $S \sim_0 T$ | flat collation |

Reference

1. Ralph E. Griswold, "T-Sequences, Part 1: Introduction", 2004:
http://www.cs.arizona.edu/patterns/weaving/webdocs/gre_ts01.pdf

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