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In change ringing, a “change” on  $n$  bells is equivalent to a permutation of  $n$  objects, and allowable ringing methods amount to sequences of permutations of order 2 from the symmetric group  $S_n$ . An “extent” on  $n$  bells is a method that generates each of the  $n!$  changes on  $n$  bells, without repetition.

In this talk, we explore the notion of relaxing the definition of “extent,” by viewing change ringing patterns on  $n$  bells as sequences of individual bell ringings rather than as the usual disjoint blocks of length  $n$ . For example, the list of changes

1234

1324

would be considered instead as the sequence

12341324,

which includes not only the changes 1234 and 1324, but also 2341 and 4132. In adopting this convention, an “extent” on  $n$  bells would be a sequence of bell ringings that includes each permutation of  $\{1, 2, \dots, n\}$  exactly once.

Our objective is to construct something analogous to a *de Bruijn sequence* for change ringing. In particular, we wish to find a method for ringing  $n$  bells that generates a *sequence* of ringings, within which each permutation of  $n$  bells occurs exactly once, preferably without repetition. (Received September 25, 2018)