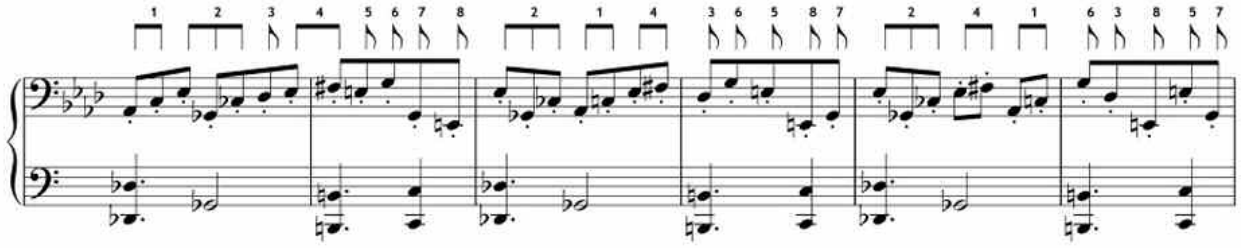

Example 1: Ruders, Piano Sonata no.2, III b.5-10

Ringing the Changes: Poul Ruders' Second Piano Sonata

The art of change-ringing is peculiar to the English, and, like most English peculiarities, unintelligible to the rest of the world. To the musical Belgian, for example, it appears that the proper thing to do with a carefully tuned ring of bells is to play a tune upon it. By the English campanologist, the playing of tunes is considered to be a childish game, only fit for foreigners; the proper use of bells is to work out mathematical permutations and combinations.
Dorothy L. Sayers, *The Nine Tailors* (1934)

Composition is about permutation and combination. Composers arrange and re-arrange notes in different patterns. That's what they do.

In the twentieth century some methods of permutation became systematized and codified. One such, serialism, became for a time the central plank of art music composition. Others have provided creative well-springs for important composers: Stravinsky's transposition-rotations, Nørgård's infinity series and Maxwell Davies' magic squares. All are organic processes of pitch-generation with an appealing mathematical rightness.

Poul Ruders found his inspiration in an unlikely place: the 1930s detective novel *The Nine Tailors*, by Dorothy L Sayers, a book with the lore of bell-ringing woven into its fabric. Ruders took the so-called 'methods' of traditional English bell-ringing and created a compositional technique which underpins much of his output.

The third movement of his Second Piano Sonata exemplifies the method particularly clearly, as well having an agitated energy characteristic of Ruders' music. It begins as a two-part toccata with a hint of Conlon Nancarrow's studies for player piano, irregularly grouped quavers skipping over a lurching boogie-woogie bass (Ex.1, above).

In change-ringing, the bells are treated Sodoku-style: in each cycle every bell appears once and only once, but in a different order each time. The progress of each bell is determined by an algorithm, and the peal is complete when the original order returns. Ex.2 shows the first six rows – Ruders' 'bells' consist of either single notes, or two- or three-note motifs, and their path can be clearly traced.

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

Example 2: changes, rows 1-6

As the music develops the instability inherent in the opening is worked out: the lines cross over, the accompanying octaves are suddenly a melody, then fill out to become triumphant Ab major chords. The final bars hurtle through a dizzying ascent – before smashing against the monumental, ossified finale.

Ruders' method, whilst dictating the pitch-order, does not predict the sound of the music. But there is something about the obsessive working-through of the process which translates into the music's irresistible drive. Above all, this movement celebrates the giddy joy of the resounding of bells, as a coolly logical process is animated by a musical imagination into music in praise of music itself.

The bells gave tongue: rioting and exulting high up in the dark tower, wide mouths rising and falling, huge wheels turning to the dance of the leaping ropes... Every bell in her place striking tuneably, hunting up, hunting down, dodging, snapping, laying her blows behind, making her thirds and fourths, working down to lead the dance again.

Bernard Hughes

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