

Percy Grainger

Sounds, machines, freedoms

Malcolm Gillies

Percy Grainger was fascinated by machines. From his Melbourne boyhood to his old age in New York, he invented, adapted, or simply dreamed about technical ways of surmounting the musical rigidities of his own era. His youthful file 'Inventions and technical sundries' (1902–03) reveals a variety of planned machines with imaginative titles. His plot for rhythmic revolution led to his sketch of a 'Beatless-notation machine' as well as a 'Beatless music typer'. At about the same time, he started a lifelong quest to perfect a music roller, in order to make page-turning redundant for pianists and others. But Grainger's inventions were always in the service of a broader musical outlook, which he outlined with remarkable prescience before he reached his early twenties.¹

Many of Grainger's machines, whether imagined or real, related directly to his strong views about musical freedom: for the making and propagating of sounds that would transcend inherited traditions, instruments, forms or ideologies. His later machines even sought to limit, or remove altogether, the need for human intervention between creator and listener.

Grainger's concept of musical freedom, his evolving 'Free Music', developed over seven decades—

from the early 1890s to the late 1950s. Its earlier stages can be summarised as follows:

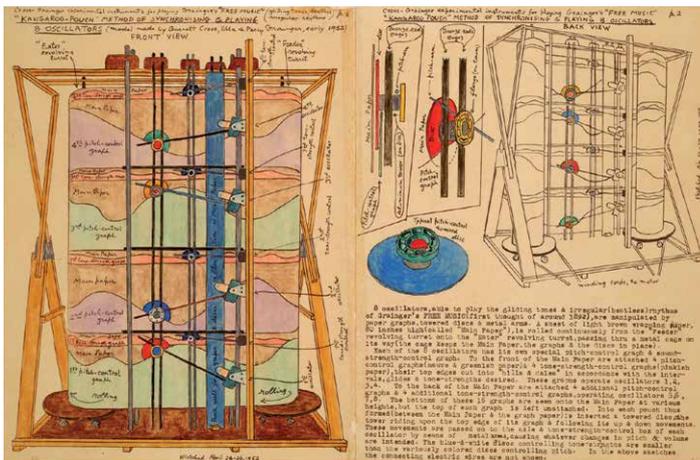
1. Emancipation of pitches and rhythms: 'STEPLESS music more like waves, or speech rhythms, with multiplicity of rhythms'. Indeed, a 'beatless music'.
2. Formal freedoms: 'to clear away all structural & formal limitations'. Grainger once likened the musical freedom he sought to visual art, where the 'pneumatic' Greeks and Romans had transcended the angular bas reliefs of the Egyptians.²
3. Textural consistency: a similarity of texture (like the 'monotonous' Australian desert) rather than deliberate textural contrasts of classic-romantic art (as found in sonata form).
4. Music as 'an expression of emotion', with real-life sensations and impressions.³

By the early 1930s, Grainger was trying to consolidate his many early experiments in musical freedom, which he now saw as a service to 'musical democracy'. In this music he sought to free up all parameters

of music at once. He now aimed for 'gliding tones' (easier to achieve on strings or voices than on other instruments); 'beatless', hence rhythmically free, music; 'free-flowing' forms; and malleable harmonies resulting from the ever-changing relationships between his multiple parts.⁴

After World War II, Grainger worked on specific Free Music machines that would meet his Free Music ideas, but increasingly eliminate all aspects of human intervention. To put it more technically, he wanted to remove the subjective mediation (we could say, interpretation) of the performer. Through electric machines, and then rudimentary electronic ones, he believed also that he could better synchronise music involving multiple voices. His 'Oscillator-playing tone-tool' (1950–51) involved an imaginative use of a morse code practice oscillator connected to a hand drill mounted on a Singer sewing machine.⁵ His 'Kangaroo-pouch tone-tool' (1952) involved eight oscillators, each with a range of three octaves, which he manipulated by graphs sewn onto a roll of paper more than two metres tall.⁶ Other machines followed, including a 'Side-ridge clothes-line-&-Scotch-tape tin oscillator player' (1953) and an

Percy Grainger, 'Kangaroo-pouch' method of synchronising & playing 8 oscillators, 1952, various media on paper, 28.0 x 43.5 cm. Grainger Museum, University of Melbourne.



incomplete 'Electric-eye tone-tool' employing light beams, photocells and transistors. In Grainger's own words, these Free Music machines were designed to achieve:

1. Accurately controlled gliding tones, both between 'set' (fixed) notes & between continually changing intervals.
2. Close intervals, up to 4 pitch divisions of the half-tone, thus opening up more delicate shades of discordance in harmony, more intervallic choices in melody.
3. Complete rhythmic independence of each part (tone-strand) as desired, the various parts not having to have any beat impulses in common, or any beat impulses at all, for that matter.
4. Complete absence of rhythm (beats, meter of any kind), when desired, [despite] its accurate control of note duration.⁷

These cheaply made, amateur machines came to achieve the malleable musical mix that Grainger once likened to William Hogarth's 'Curve of Beauty'.⁸ They were

experimental composing machines for which Grainger created graphs of passages not just of his own music but also of the music of others, such as Wagner, Grieg and Skryabin. But they never became actual performing instruments, of commercial application. While Grainger (and his assistant, Burnett Cross) were busy with their home-made 'experiments in musical freedom', others—such as Harry F. Olson and Herbert Belar—had pioneered the Radio Corporation of America's sound synthesisers, which were unveiled in the mid-1950s.⁹

Grainger died in 1961. In his last years he was pleased to have found a way, through his experimental machines, of re-creating the Free Music he had heard in his head since the 1890s. Undoubtedly, however, he was frustrated at never managing to write a major piece of original Free Music. 'I strive to tally the irregularities, the formlessness & the unforeknowableness of nature, as it is revealed to us', wrote Grainger in the early 1950s in explanation of his Free Music.¹⁰ He went to the grave still striving.

Professor Malcolm Gillies AM is a London-based musicologist, former vice-chancellor of City University London and London Metropolitan University, and editor of several documentary studies of Percy Grainger.

- 1 Percy Grainger, 'My musical outlook', 1902–04, reproduced in Malcolm Gillies and Bruce Clunies Ross (eds), *Grainger on music*, Oxford University Press, 1999, pp. 13–28, and 'Beatless-notation machine', pp. 29–34.
- 2 Explained in Percy Grainger, 'Free Music', 6 December 1938, typescript museum legend, reproduced in *Grainger on music*, pp. 293–4.
- 3 An early integration of these first four stages is Grainger's *Sea-song* (1907), originally intended as a 'Sketch for the style of "Grettir the Strong" Overture'.
- 4 An example of these 'Free Music' consolidations of the 1930s is Grainger's experimental *Free Music no. 1* (1934–35), for string quartet, also developed for four theremins (early electronic instruments) in 1935–36.
- 5 See more detail in Rainer Linz, 'The Free Music machines of Percy Grainger', *Experimental Music Instruments*, vol. 12, no. 4, 1997, pp. 10–12.
- 6 See Malcolm Gillies, 'Percy Grainger', in Larry Sitsky (ed.), *Music of the twentieth-century avant-garde*, Westport, Connecticut: Greenwood Press, 2002, pp. 177–82 (180–81). Listeners can now eavesdrop on Grainger's experiments, such as manipulations of his Kangaroo-pouch tone-tool recorded on 1 December 1952, preserved in the 'Grainger at Home', and 'Percy Grainger's Compositions in Rehearsal and Performance' taped collections now held in the Grainger Museum (www.grainger.unimelb.edu.au/discover/collection).
- 7 Percy Grainger, letter to Vladimir Ussachevsky, 7 October 1956. Grainger Museum, University of Melbourne.
- 8 Percy Grainger, 'Questionnaire', 1955, reproduced in *Grainger on music*, pp. 373–6 (375).
- 9 See 'The story of the RCA synthesizer', video, http://ethw.org/RCA_Mark_I_and_Mark_II_Synthesizers.
- 10 Grainger, 'Questionnaire', p. 375.