Versions of freedom
Music synthesizers at the Grainger Museum

David Chesworth

What is a music synthesizer? Put simply, it is a device where a sound can be fed into a series of modules that alter the sound by adding something or taking something away. Many synthesizers have no musical keyboards; instead sounds are triggered by internal voltages that rise and fall. The modules in each synthesizer, on receiving a sound via a connected wire or plug, apply electrical voltages to alter the sound. The modules allow the user to sculpt the initial sound, changing its character, sometimes with novel and surprising results. This can be done to many sounds at once, and can occur in myriad ways.

The emergence of the synthesizer in the 1950s and 1960s gave artists a new kind of freedom. Synthesizers allowed them to create music that was not tied down to existing compositional ideas and formal performance arrangements. Synthesizers allow the user to make and discover sounds that do not conform to existing musical models, giving rise to new expressive possibilities. They are freedom machines.

The exhibition *Synthesizers: Sound of the future*, presented by the Grainger Museum and Melbourne Electronic Sound Studio and curated by Heather Gaunt, tells the story of a forgotten period in the history of the Grainger Museum. In the 1960s and early 1970s, the museum was at the heart of electronic music experimentation in Melbourne. Under the leadership of composer Keith Humble (1927–1995), the building became an electronic experimentation studio for students and composers.

The synthesizer and its freedoms can be compared to Percy Grainger's idea of Free Music. From a very young age, Grainger was interested in the freedom he observed in the random movements of waves in the sea, and in the unregulated forms of the undulating mountains he viewed from a moving train. Decades later, he designed machines that would transform these free movements into music. Working with collaborators, Grainger built original machines, some of which are preserved in the Grainger Museum's collection.[1] Other machines have been carefully reconstructed and realised more recently.[2]

However, the music produced on Grainger's machines is not totally free. Rather, his machines are translation devices that mechanically trace physically modelled and contoured templates that the composer has constructed beforehand. In this way, the natural environment, which Grainger experienced as a space containing movements, is first rendered by the artist as a physical tracing, which is then translated into durational sound.

Following Grainger, Melbourne-based composers in the 1970s, such as Peter Tahourdin, Keith Humble and Ian Bonighton, used synthesizers similarly: to produce sounds that were firstly notated on graphic scores, which they then referenced. Their version of freedom was that they could make and control new kinds of sounds that behaved differently from those produced by conventional instruments, thus extending the composer's sonic palette. I remember coming to the University of Melbourne as a very young student to hear a new work by Tahourdin. The performance took place in a large, dark concert hall. The huge loudspeakers, the size of Daleks, had an unnerving minimalist presence, made even more striking by the absence of any humans on stage.

At this time, synthesizers were expensive—affordable only by university music departments or by institutions such as the BBC Radiophonic Workshop. The music performed in these university-based concerts imparted both an institutional and scientific credibility to the new technology. From my point of view, as a young concert

EMS (Electronic Music Studios Ltd, London, est. 1969), Synthi 100, c. 1973. Photographed by Kristoffer Paulsen at its current home at the Victorian College of the Arts, Southbank campus, University of Melbourne, in 2018. Photograph courtesy Kristoffer Paulsen.

attendee, electronic music composers seemed to enjoy great privilege and esteem, although—according to Agnes Dodds, who was a student with Humble at the time—there was a great deal of antagonism from many people in the Conservatorium towards new music composition, especially electronic music.[3]

Whereas Grainger attempted to express in sound the movements of the natural environment, these modernist composers were interested in developing interior musical forms that had less direct connection with nature; they were more concerned with structuring our existential experiences through sonic gesture and texture.[4] One of the synthesizers that these 1970s composers used was the EMS Synthi 100, which had been purchased by the Melbourne Conservatorium and set up by Tristram Cary, and which was housed in the electronic music studio, situated in the Grainger Museum, deliberately not in the Conservatorium. The Synthi 100 (pictured opposite) is a huge machine. Powerful in its day, its capabilities now seem very limited. Nonetheless, it still sounds great. It has recently been restored by Les Craythorn, who previously was the senior technician at the Conservatorium. Due to its size, it is hard to transport, and is

currently set up in the Brian Brown Studio at the Victorian College of the Arts on the University of Melbourne's Southbank campus, but occasionally it makes a concert appearance in Melbourne.

EMS (Electronic Music Studios), the English manufacturer of the Synthi 100, also developed simpler desktop synthesizers. These smaller, more affordable and accessible machines—the VCS3 and the more portable Synthi A, which can be seen in the exhibition—were immediately embraced by both the commercial and avant-garde music worlds: Brian Eno was a famous early user, while Melbourne composer Felix Werder also used one. In 1974 EMS released a video synthesizer called the Spectron. Only 15 were produced, one of which was purchased by the La Trobe University Music Department in 1975. This was mainly used by Warren Burt and occasionally by me, and can be seen in operation in the exhibition.

Synthesizers could create new sounds that were often mysterious and unrecognisable to the listener, for they were without any apparent source or cause, and could not be linked to any familiar instrument or musical style (although synthesizers could also crudely mimic existing musical instruments). Some of these

novel sounds became over-used in popular music and films and became clichés. The unworldly sounds generated by early synthesizers like the Theremin, for instance, became associated with the future and were often employed in science fiction film soundtracks, perhaps most famously in *The day the Earth stood still* (1951). Many of these early synthesizer sounds have become dated, as we have come to think, 'This is what the future used to sound like'.

In the 1970s, synthesizers were becoming increasingly sophisticated, to the point where they could be set up to compose music by themselves, rather than just realise pre-written ideas or generate single sounds. One significant figure in Australia at this time was the experimental composer and teacher Warren Burt. Based at San Diego University, Burt was invited to Australia by Keith Humble, who had left the Conservatorium to become founding professor of music at La Trobe University. Burt, who now resides here, brought with him new, complex, modular synthesizers that used compact circuitry originally developed for the US space program. It was Warren who taught me how to work with synthesizers during my time as a music student at La Trobe in the late 1970s.

David Chesworth, *50 synthesizer greats*, Melbourne: David Chesworth, 1979, album cover designed by Philip Brophy; screen-printed by Kevin Brophy and Maria Kozic. Courtesy David Chesworth.

David Chesworth was aged 21 when he composed and recorded this album in his parents' lounge room, on an Akai 4000 DS reel-to-reel tape machine, using a monophonic Mini Korg 700 synthesizer.

At the same time as I was learning about electronic music, modernism was reigning supreme, in the form of avant-garde serialism and commercially driven pop music. However, there was a developing sense among some of us that modernism was becoming an exhausted paradigm. Modernist compositional ideals and their structures seemed too earnest and insular. Modernism's constant teleological drive was no longer relevant to what we wanted to express and the way we wanted to express it.

As young composer-artists performing at new alternative venues like the Clifton Hill Community Music Centre (CHCMC), we started to arrange modernism's sonic and performative tropes differently.[5] We didn't invent anything new; rather, we played with modernism's clichés, putting them to entirely different uses in our own music. This act was ironic and cynical—and also great fun—and opened up fresh ways of working with sound. It was at places like CHCMC that postmodernism arrived on Melbourne's cultural scene. Additionally, audiences were becoming better informed and more sophisticated. They were open to combining different modes of understanding and relating to the world, and were looking for artworks

that expressed this multiplicity. These postmodern works deconstructed and re-orchestrated the components of modernist music-making, where the quoted clichés were read as 'texts', in the parlance of postmodernist theory. Composers became more aware of how music was listened to and received, and how it was framed performatively. Sometimes, a sound (such as a cliché) was put to new uses by the composer, who relocated it in a new musical context, creating new meanings. Thus context became a tool of orchestration.

During this time I made and self-released a solo album called *50 synthesizer greats*, which appears in the exhibition (pictured above). While it is now easy to understand its playfulness and irony, back when it was released and went on the alternative radio station 3RRR's charts—cowering next to David Bowie and The Clash—its questionable competency, together with its referencing of certain popular music clichés and its rejection of others, was not always received as ironic, and caused a bit of a stir. The music on *50 synthesizer greats* had a carefree touch and rough production values—not a desirable combination in either 'high art' or 'low art' back then. But this was beginning to change.

Percy Grainger had the jump on all of this. It is interesting to compare the simultaneous investigation of

both popular and avant-garde art beginning to take place at CHCMC around 1980 to Grainger's own oscillation between the popular and avant-garde: *Country garden* on the one hand, and his Free Music machines on the other. In both instances, Grainger's music attempts to give sonic representation to worldly experiences: as culture in the form of a country garden, and as nature by translating experiences of the ocean and mountains. Each applied very different methods and codings of sonic information, which gave rise to vastly different musical results. Grainger's method of working artistically with the world in many different ways was prescient. His eclectic practice would be very familiar to today's artists, who often have a multi-faceted artistic life.

Today, electronic music is as strong as ever and remains an important tool for many artists. New modular synthesizers keep appearing in many forms that give contemporary artists a very personal interface with music-making. Where once a piece of electronic music had to be slowly assembled sound by sound, now a concert can be performed live, with the artist working directly with the synthesizer and simultaneously interacting
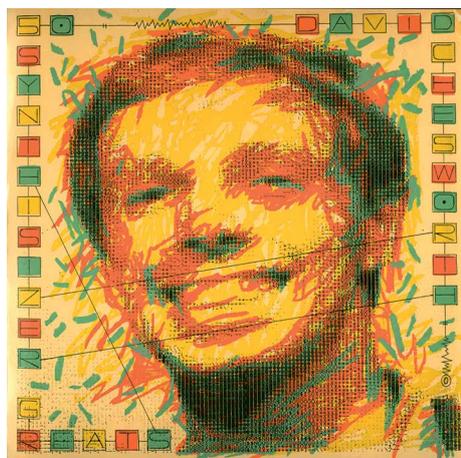
Les Craythorn working in the Grainger Museum in 1976, realising Percy Grainger's *Free Music 1* on the EMS Synthi 100. Photographic slide, 35 mm. 99.600.1, Grainger Museum, University of Melbourne.

In 1976 University of Melbourne technician Les Craythorn realised Grainger's graphic score *Free Music 1* on the EMS Synthi 100 synthesizer. This complex project occupied Craythorn for 16 hours a day for three days. He made a sync track on the 8-track tape recorder, and used the tape sync to control the sequencer. Syncing and data entry were very accurate but tedious. Craythorn recalled: 'I was experimenting with the [Synthi 100's] extensive sonic capabilities, microtonal tuning and seamless glissandos that you hear demonstrated in Percy Grainger's *Free Music*'. His realisation of *Free Music 1* was performed at the 1976 Percy Grainger Lecture.

with the audience. Artist Robin Fox is a composer who operates in this nexus. He and sound designer Byron Scullin established Melbourne Electronic Sound Studio (MESS) to serve the busy electronic music community. Liquid Architecture is another organisation that often deploys conceptual curatorial agendas to electronic music-making. Today, women enjoy a strong presence in this scene, including such diverse artists as Emma Fox, Lucreccia Quintanilla, Chiara Costanza (Chiara Kickdrum) and Lauren Squire (the latter performing with Matthew Wilson as OK EG at the exhibition opening). MESS has generously loaned the synthesizers on display in the exhibition.

The synthesizer is a great model in a world in which there are many kinds of structures we need to negotiate, and where we need to find our own ways of speaking through them. Each synthesizer has its own particular structure that gives the user a certain range of creative freedom. Thus each synthesizer offers its own version of freedom. It is in each of these architectures that the user finds new ways to express their ideas through sound. Each synthesizer's technical limitations allow the artist to work *with* and *against* the freedoms and restrictions imposed by the machine.
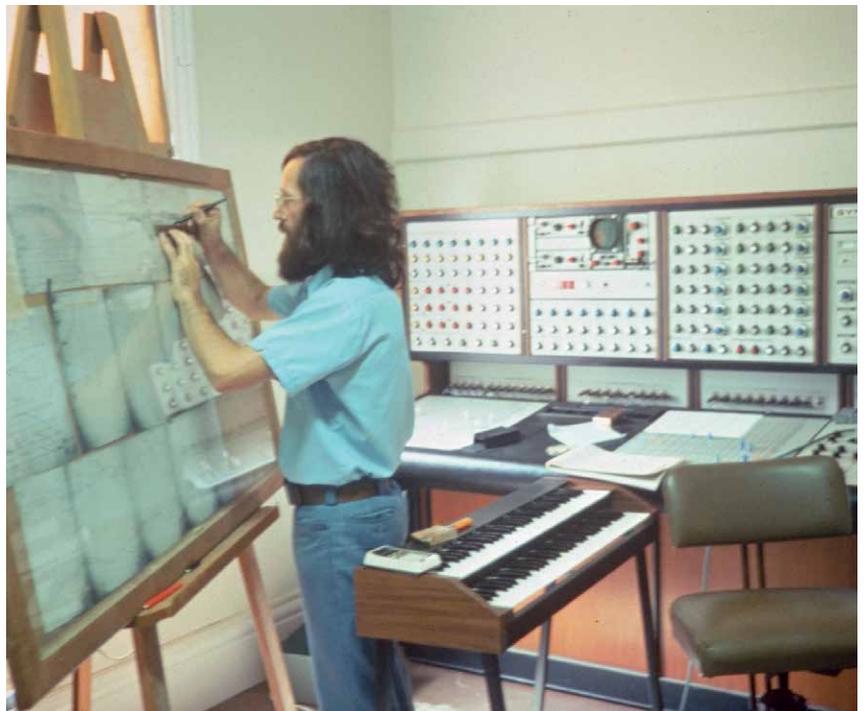
In this way the synthesizer serves as a positive model for encountering the world at large, for it provides artists with a means to say and do things in new ways and with great effect.

Working with synthesizers, I plug in cables and pins and turn knobs to change electrical voltages that act on this sound-world. The structure can be simple or can become increasingly complex as I make decisions and new connections between modules. Sometimes I feel as though my brain

is inside the synthesizer that sits in front of me, and as I patch wires that connect the modules, it is as though I am connecting synapses. It is more tactile and much less abstract than working on computers. It is a pleasurable activity in which time disappears.

The synthesizer provides a portal into temporal experience that is both controlled by me and also evolves before me. Unexpected sonic experiences are *felt* as they occur

Visitors in the exhibition *Synthesizers: Sound of the future*, at the Grainger Museum. Photograph by Peter Casamento.

in the moment. Perhaps the music made on these devices is best thought of as a dialogue between composer and machine—one that introduces a temporal freedom that takes us beyond our visually and spatially saturated lives.

Dr David Chesworth is an artist, composer and researcher whose works often explore the gaps between artistic modes and genres. His recent doctorate investigates sonic and durational framings of minimalist artworks at Dia:Beacon in NewYork State. He teaches at Monash University and is an associate investigator at the ARC Centre of Excellence for Australian Biodiversity and Heritage. His video and sound artwork *Zaum tractor*, made with Sonia Leber, featured in the 2015 Biennale of Venice. A major survey of Leber and Chesworth's art will be presented at the Centre for Contemporary Photography in Melbourne (27 July – 9 September 2018).

The exhibition *Synthesizers: Sound of the future*, presented by the Grainger Museum and the Melbourne Electronic Sound Studio, is at the Grainger Museum from 20 April to 9 September 2018. For further information, see grainger.unimelb.edu.au/whats-on/ synthesizers-sound-of-the-future.

1 See for instance Malcolm Gillies, 'Percy Grainger: Sounds, machines, freedoms', *University of Melbourne Collections*, issue 20, June 2017, pp. 15–16.
2 See Rosalind Hall and Michael Candy's three 2016 recreations of Grainger's ideas, including the Kangaroo pouch tone-tool, Reed-box tone-tool and Electric-eye tone-tool, in Grainger Museum, '*Experiments in freedom: Grainger's Free Music*, Introduction: Experiments in freedom', University of Melbourne, omeka.cloud.unimelb.edu.au/ grainger/exhibits/show/experiments-in-freedom/experiments_in_freedom_intro.
3 See *Noise was what we were interested in*, interview with Agnes Dodds (video), Grainger Museum, '*Synthesizers: Sound of the future*: The Grainger Electronic Studio', University of Melbourne, omeka.cloud.unimelb.edu.au/ grainger/exhibits/show/synthesizers-sound-future/grainger-electronic-studio. In 1975, composer Barry Conyngham joined the faculty as a young lecturer, and championed contemporary music. But his interest in electronic music was directed towards computer music, which was just beginning to emerge in the late 1970s, as computer technologies were becoming more accessible.
4 For example, Ian Bonighton's *Music for sleep* (1969), written for electronic tape and choir, focuses on textures and colours, rather than on melody or harmony, blending electronic, siren-like sounds with choral glissandi to communicate the 'feel' of night.
5 Younger artists at CHCMC who were also doing this include Philip Brophy, Maria Kozic, Robert Goodge, Adrian Martin, Jayne Stevenson, Ralph Traviato, Ian Cox and Paul Fletcher.