

Introduction

120 Years Of Electronic Music, October 2014

120 Years of Electronic Music* is a project that outlines and analyses the history and development of electronic musical instruments from around 1880 onwards. This project defines 'Electronic Musical Instrument' as an instruments that generate sounds from a purely electronic source rather than electro-mechanically or electro-acoustically (However the boundaries of this definition do become blurred with, say, Tone Wheel Generators and tape manipulation of the Musique Concrète era).

The focus of this project is in exploring the main themes of electronic instrument design and development previous to 1970 (and therefore isn't intended as an exhaustive list of recent commercial synthesisers or software packages.) As well as creating a free, encyclopaedic, pedagogical resource on the History of Electronic Music (and an interesting list for Synthesiser Geeks) my main interest is to expose and explore musical, cultural and political narratives within the historical structure and to analyse the successes and failures of the electronic music 'project', for example;

Modes of interaction for performers and composers:
Atonality and just intonation as a theme in instrument design.

The ideas put forward in Ferruccio Busoni's 'Sketch of a New Aesthetic of Music' (1907) inspired a generation of composers to explore micro-tonal and varied intonation and Hermann von Helmholtz's 'On the Sensations of Tone' (1863) provided an understanding of the physics of sound suggesting the possibility of creating an unlimited palette of tones and shapes beyond the restriction of traditional instrumentation. This lead directly to the design of several new instrument; Thadeus Cahill's **Telharmonium** (1897) and Jörg Mager's **Sphäraphon** (1920s) amongst many other, that explored new forms of interaction freeing the composer and musician from the 'tyranny' of the fixed tempered Piano keyboard (which at the beginning of electronic music instrument design was a fairly recent standard). Though this experiment was ultimately doomed due to commercial pressure on instrument designers to provide simulations of existing instruments on a fixed tempered scale for popular music, the concept survived into the 1960s in 'serious' experimental music with the era of the Electronic Music Studio; **GRM**, **Milan**, **WDR**, **Columbia-Princeton Electronic Music Center** etc. and even **Moog** (in the original instruments) and **Buchla's** modular synthesisers. More recently interest in atonality and non-manual control has re-surfaced with software synthesis and audio computer languages.

New composition tools: Musician-free composition

As well as developing new physical interface models another channel of exploration was to use electronic musical instruments to free the composer from problems associated with performers and performance; removing the musician from the process of musical production allowing the composer to create pure unadulterated music concepts. When this was first proposed – first proposed in Russia in the 1930s by **Avraamov** and later Hanert's '**Electric Orchestra**' (1945), Percy Grainger's '**Free Music Machine**' (1948) and Murzin's **ANS Synthesiser**) this concept was considered extreme, utopian and unachievable and met considerably hostility from traditionalists This goal has mostly been achieved through digital software but what has been the effect on composition?

An exploration of the dichotomy between radical culture and radical social change: the role of the avant-garde in political movements

After the 1917 Bolshevik revolution in Russia an utopian avant-garde movement inspired by Futurism and Anarchistic ideas developed which included radical new music and performance. New, atonal, music was written, new types of theatre evolved and new instruments invented to bring about this utopian age; **Arseney Avraamov** conducted a huge symphony of sirens involving warships, factory hooters and artillery and proposed the destruction of all pianos to free music of fixed tonation. It was proposed that a new scientific culture replace the old archaic cultural order-brought about by new electronic instruments and scientific investigations into audio and visual perception (this period is covered in some detail in Andrei Smirnov's excellent book '**Sounds In Z**'). The Bolshevik government, traditionalists at heart and worried at their lack of control of this anarchic movement, suppressed it replacing it with a manageable propaganda based culture of uplifting, popular socialist realism; many of the former avant-garde were murdered, imprisoned or sidelined for the rest of their lives.

Similarly in the early period of Nazi Germany (1933 onwards), Hitler's government made moves to embrace Futurism and Modernism (for example; Marinetti's Berlin Futurist Exhibition of 1934, Sponsored by Goebbels and the Nazi Kdf organisation and the final Berlin Bauhaus before it's exile to the USA). Modernism was a key component of Fascism and early National Socialism; technology was promoted as a National Socialist principle; the Volkswagen ('Peoples Car'), Autobahn's, Film, Mass-entertainment (Controlled through the Kdf 'Strength through joy' organisation) and electronic music; the first every electronic music orchestra '**Das Orchester der Zukunft**' at the Nazi sponsored Berlin IFA in 1933. Again, this avant-garde movement was finally suppressed in favour of conservative fascist popular culture during the late 1930s.

'120 Years Of Electronic Music' is an ongoing web project initiated in 1995 by the author simon.crab@gmail.com . The project is completely non-commercial and self funded. The aim is to make the information available on a free/open source basis i.e. you can use content in any way as long as the content owners are credited and it would be courteous if you could acknowledge the source by linking or referring to the site.

Simon Crab, London 2014

*The name: '120 Years of Electronic Music' project was begun in 1996; considering electronic music started around 1880 this was quite an accurate title for the time. Almost twenty years later it's a bit out of date but it's become something a bit of a brand-name and hard to change