

THE BEAUTY OF HIGH-TECH

Michael Weisser, 1985/1989

Micro-electronics has entered into every sphere of human activity, whether visible or not, and has become an inevitable and permanent part of our lives. The quality of our place of work or of our household, of our leisure time or transportation, of all human communication, has been fundamentally affected by electronic data processing and the regulating principles of cybernetics. If we look closely, only the realm of fine arts has been by-passed, that realm where "true art", the supposedly last refuge of true humanity, is defended.

Technology is criticised as being inhuman, in spite of its being a human creation in every respect, and being conceived, developed, employed and daily improved by humankind.

Technology, as a result of human thought and action, has become an essential part of human life in the industrial nations. A symbiotic relationship exists which can only be dissolved at the price of self-destruction.

The prejudice obstinately persists that an aesthetic, relying on technology, cannot meet the requirements of true art, since in such cases intrinsic human creativity has had to give way to vacuous patterning and regulation, and because technology itself lacks a soul, and is thus inhuman.

But aren't those highly intricate micro-electronics the complex result of human accomplishment, and hasn't an essential aspect of the human soul thus been infused into this achievement?

Can we seriously divide our lives so simplistically into artificial and natural situations?

It is at all possible for us to have an existence without technology?

Doesn't this type of polarized thought and argumentation ignore the fact that our technology was basically developed to alleviate the dangers of nature to mankind, and to make human life more tolerable?

The longing for an idyllic relationship between mankind and nature is legitimate, but it cannot be used as an argument against those very means mankind has created to compensate for his deficiencies and which enable him to survive. Mankind survived with the help of

technology, until now certain consequences of technology itself threaten mankind in this "new, man-made nature".

The invocations of nature as an idyll is an illusion, for if nature had ever been an idyll there would never have been a reason to interfere and thus change this idyll!

The abuses of the potentials of technology, which are becoming more pronounced in our time, should not cause the undisputed advantages of technology to be suppressed in this controversy.

In addition to its utility, technology possesses inherent aesthetic dimensions, which expand in the free play of possibilities, but which have hardly found recognition on the medium market.

Within the graphic and plastic arts, an aesthetic which relies on technical impulses has been successfully ignored, excluded and denounced, while at the same time microelectronics has begun to celebrate its success in the field of popular music.

However, the enormous boom that the so called synthesizer, sequencer, and wave-terminals are experiencing, is limited almost exclusively to popular music. This is because pop music thrives on spur-of-the-moment developments, and that in this metier a performer can go within weeks from being a nothing to being a star, a millionaire, world famous. In this field, any appropriate effect that can create a new sound is in demand.

The uniqueness of electronically produced and processed music compared to traditional instrumental music, lies in the fact that the composer is simultaneously the performer, or, more precisely, that the musician experimenting on the electronic instrument during a live performance is at the same time the composer.

Electronically produced music can neither be recorded nor transmitted by traditional musical notation, and in this way it forsakes any conventional reproduction and remains the unique and original creation of its performer.

Even though precisely performing electronic systems are used, the musical work cannot be comprehended by any conventional musical notation and it stays dependent on its initial data storage. It is not even possible for the composer and musician to repeat his or her work live. A musician working with electronic systems has an immense frequency spectrum of 16000 cycles per second at his or her disposal. Instead of

just a few, clearly defined volumes being available, the musician may choose among innumerable differentiations and where there is a definite limit to the ability of traditional instruments to maintain a note, electronic instruments have no limits on note duration.

Early experimentation with electronically produced tones and composition began under the initiative of H. Eimert, who founded the WDR studio for electronic music in 1951.

Until 1963, when Karl-Heinz Stockhausen took over the direction of the studios, 33 electronic works had originated here from composers like Kagel, Ligeti and Stockhausen. These avant-garde compositions, however, remained within the very restricted circle of any experimentally oriented and specialized public.

Actually it was pop musicians who paved the way to the general public, who either as soloists or groups concentrated on electronically produced music, cultivating it over the years until it has become a part of their own unique style.

The start of pop-electronics in the Federal Republic of Germany can be traced back to Tangerine Dream, the group whose spiritual head was Edgar Froese. He describes this time of beginnings in 1967 as a phase of political and cultural rebellion, time of hallucinogens, sensitivities, and experimentally eager minds in an intellectually trained population.

The lack of a blues, rock or pop tradition suggested an "insight into our own musical inadequacy", so that non-conformity itself became a form of expression.

Electronic measuring instruments were employed in making music as well as adapted guitar pick-ups or modified electronic components, and in live improvisations the sounds were created, manipulated, and emphasizes.

In 1970 on the basis of their success in British radio, Tangerine Dream produced their first long play, double album "Electronic Meditation". This title indicates two important movements of that time, namely the confrontation with the potentials of the future on the one hand, and the reconsideration of one's own ego today on the other.

Towards the close of the '60's other groups besides Tangerine Dream appeared, Kraftwerk, Cluster, and Ashra Temple, in which Klaus Schulze developed as a soloist. Out of that "wild and provocative experimental

phase”, based on homemade electronics, the professional instruments, like the wellknown synthesizer and sequencer grew.

The source of these specialized instruments can be traced to the Telharmonium, the first electronic musical instrument, developed by Thaddeus Cahill at the turn of the century. Sound generation was based on the principal that a varying voltage fed into a loudspeaker produces a tone whose pitch is determined by the number of oscillations per second.

The musical computer was eventually made possible by the development of the thermionic valve in 1907, its subsequent replacement in 1947 by the transistor, and eventually by their ultimate reduction to integrated circuits in 1959, and to microprocessors in 1970.

Whereas the giant Telharmonium required an entire room the so-called “Telharmonic Hall”, in order to produce its scratchy sound, the American engineer Robert Moog was able to complete a functioning music synthesizer in 1964 out of voltage controlled electronic parts.

The single, pluggable modules could influence the wave form output by the oscillators and modify these tones with respect to pitch, intensity and timbre.

The “Big Moog”, an improved. third version about three square meters, was used by Walter Carlos in 1968 for the performance of his famous work "Switched-on-Bach”.

“Switched-on—Bach” combines most excellently the two possibilities computer generated sound has, namely the analysis and the synthesis of Bach's principles of composition The result is a kind of reconstruction of Bach's unique tonality estranged by the sound of the “Moog”,

An easily manipulated version of the “Big Moog”, the so-called “Mini-Moog”, was the first mass-produced series of its kind. and it was used not just by the electronic specialists of the music world (Walter Carlos, Isao Tomita, Kraftwerk. Klaus Schulze, Jean Michel Jarre and Tangerine Dream) but also by well known popular musicians like the Beatles, the Rolling Stones, and jazz stars like Herbie Hancock.

The history of computer music has depended on a very close relationship between the creative musicians and their ever expanding technical equipment at any given time. within the range of micro-electronic instruments, very specific and unique sound characteristics and tone possibilities are produced, and these become an essential element in the musicians signature.

Next to the "Moog", the most well known synthesizer and music computer system is the PPG-series. built in 1975 as a synthesizer by I Wolfgang Palm in Hamburg, and since 1978, developed further into a multi-voiced wave computer The "Fairlight", developed by CMI around 1980 in Australia, and the "Emulab" should also be mentioned.

The potential and the risk inherent in all human activity that will change the world, these potentials and these risks are found on a large as well as small scale in the technology of information processing, the world wide data network or in the single music computer.

Completely new dimensions of personal expression have been opened up for the artist within the realm of computer music. But it may also be that a charlatan hides behind the electronic effects and merely sets the modules in motion with a random number generator, instead of bringing his or her own emotions and will, his or her own personal history into the creation of a musical impression and expression of himself or herself.

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This article has been also published in the German Newspaper „Süddeutsche Zeitung“ 1985 at a time when electronic-creativity has been discussed very controversial in Germany. SOFTWARE (the language of tomorrow) was created as an electronic-music-project by the German multimedia artist Michael Weisser in 1982 when he came together with the musician Peter Mergener. In 1984 SOFTWARE-Music appears at the Label IC (Innovative Communication) with the album „Chip-Meditation“ featuring the first colorful fractal-pictures (the Mandelbrot-Set) created at the University in Bremen.

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