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MUSIC

MUSIC; Electronic Music, Always Current

By KYLE GANN

IT takes maybe 15 minutes to input the first page of Stravinsky's "Sacre du Printemps" into music notation software on my computer. I press the space bar, and it plays back instantly, with simulations of the original woodwind tones. Compare that process with the dozens of hours it took pioneers like Milton Babbitt to get just a single tone out of a synthesizer 40 years ago -- or even with the hundreds of IBM cards I tediously punched in a computer music class only 20 years ago, with three notes to show for it -- and it is clear that the very meaning of the term "electronic music" has changed. In fact, as the millennium turns over, it is appropriate to ask whether the term still means anything at all.

Does an orchestral film score made on a computer with sampled acoustic instruments count as "electronic music"? How about a piece for amplified string quartet? Do recordings of regular string quartets become electronic music when a D.J. fuses them in a turntable collage? Is a computerized score still electronic music when it is realized on an acoustic Disklavier piano? The boundary seems infinitely permeable.

The Electronic Evolution series, beginning Wednesday at Alice Tully Hall as part of the Lincoln Center Festival, seems conceived and programmed specifically to drive such ambiguities home. It is surely not the program of performerless tape pieces one might expect; audiences will not sit in the dark listening to loudspeakers, although the program Friday at Columbia University features some early classics of tape music, including Stockhausen's "Gesang der Junglinge" and Varese's "Poeme Electronique."

Instead, the festival is dominated by the role of electronic instruments in performance. This is not the repertory the term "electronic music" brings to mind. In fact, it seems calculated to assuage the fear most widely associated with electronic music: that live performers will be replaced by machines. This electronic festival revolves around the live musician, not the stationary, unemotive tape recorder or computer.

Nor does Electronic Evolution try to summarize the history of the medium or redefine it; ours is not a point in history in which summarization or redefinition is possible. From 1948 to 1983, the term "electronic music" meant something very specific, which it probably never will again. Since 1983 we have inhabited a wildly transitional period, in which the impact of electronics on music seems to grow more powerful by the month, but in directions impossible to predict. I pick those dates because in 1948 Pierre Schaeffer made the first piece for electronic tape, and in 1983 technicians from Roland, Oberheim and Sequential Circuits developed a universal interface for electronic instruments known as MIDI (Musical Instrument Digital Interface), bringing the clear-cut era of electronic music to an end.

DURING most of those 35 years, "electronic composers" were people who worked in large studios with large equipment. It was often a collaborative activity: Otto Luening and Vladimir Ussachevsky produced

some of the first tape music together; Schaeffer and Pierre Henry; Mr. Babbitt and Mario Davidovsky. Electronic music in this age was divided into two kinds, depending on the sound sources. "Musique concrete" consisted of "natural," acoustic sounds captured on tape and modified, generally painstakingly spliced together with razor blades and tape. Early classics of musique concrete include "Poeme Electronique," Iannis Xenakis's "Bohor" (also included in the festival), Luening's "Fantasy in Space" and Luc Ferrari's "Presque Rien" No. 1.

Today, the ubiquity of samplers, which record natural sounds and play them back at the touch of a keyboard, renders "musique concrete" a quaint and outmoded term. "Poeme Electronique" sounded like music from Mars when I first heard the old Columbia recording in 1972, but students today giggle when they hear it: its spooky "ooooo gaaah" voice samples seem camp in comparison with the sampling experiments of any ambitious high school computer jockey.

The other, later type of electronic music was made of electronically generated tones, starting in 1959 with the appearance of the RCA Mark II Electronic Music Synthesizer, which filled most of a room and was driven by a strip of paper with holes punched in it. Mr. Babbitt's "Philomel" took advantage of the synthesizer's capacity for extreme accuracy of rhythm and pitch. Morton Subotnick's "Silver Apples of the Moon" of 1967 could be called synthesized music's first underground hit, and Wendy Carlos's famous "Switched-On Bach" recording of 1968 appropriated some classical turf for the electronic world. The achievement of Ms. Carlos (then Walter Carlos) represented months of hard work; today one could scan Bach's music into notation software and replicate the feat in a few hours.

Meanwhile, the first computer-generated music appeared in 1957: a 19-second melody, "In the Silver Scale," by the acoustician Newman Guttman. Computer music, an offshoot of electronic music, first reached a mass public in 1968, when HAL the computer sang "Bicycle Built for Two" in the film "2001" in a version synthesized by that towering figure of early music software, Max V. Mathews.

The repertories embraced by these streams of electronic music produced fascinating and groundbreaking work, much of it well worth revival. Yet readers under 30 can hardly imagine the dismal future that most early electronic music seemed at the time to be opening up. Those of us who were interested spent much of the 1970's sitting in darkened halls listening to loudspeakers with only the occasional acoustic soloist. The majority of the musical materials belonged to categories universally referred to as "bloops" and "bleeps."

It was only partly the technology's fault. Tape music, synthesizer music and computer music all entered a world possessed by Schoenberg's 12-tone technique and the serialist innovations of Pierre Boulez and Mr. Babbitt. Composers thought about music atomistically in those days, not only in terms of individual notes but also in terms of breaking those notes up into aspects of duration, pitch and timbre. And with thought-provoking synchronicity, an atomistic technology arrived to fuse with an atomistic compositional style. The 12-tone music inspired by Anton Webern was "bloop-bleep" acoustic music, and it happened to be exactly the music that tape-splicing was born to replicate.

This is the fascinating thing about the history of electronic music: the technology contains within itself the seeds of its own transcendence. The aesthetics and the technology can each be detailed independently in logical sequence, yet they always arrive at the same place, and it is impossible to say whether the aesthetics were leading the development of technology or vice versa. There is certainly anecdotal evidence

that new technologies were leading composers' ears in certain directions, a notable instance being the kinds of sustained chords and terraced delays Mr. Boulez wrote into his Third Piano Sonata in imitation of electronic music whose effects he envied but was technologically unable to create himself.

Whatever the case, tape splicing led to the tape loop and tape delay in the early works of Terry Riley ("Mescaline Mix" and "Music for the Gift," both recently released for the first time on a Cortical CD), during the very years La Monte Young was turning 12-tone music into Minimalist music simply by slowing it down. The tape loop and Minimalism went hand in hand the way the tape splice and serialism had.

Later, in the 1980's, the sample -- a recorded "natural" sound stored digitally to be manipulated by, perhaps, playing it backward or stretching time -- led music away from atomism toward a more holistic approach. Composers who use samplers, like Paul Lansky (featured on Friday at Lincoln Center), Henry Gwiazda, Noah Creshevsky and Carl Stone, begin not from the single tone but from the total sound complex, like the D.J.'s who have since begun performing on turntables with found recordings.

BUT this is to get ahead of our story, for in the early 80's the world changed, and electronic music in any specific sense virtually ceased to exist. Centuries from now, the years 1980 to 1985 may well appear one of the most significant watershed periods in the history of music if not, indeed, of culture at large. In those years, the advent of the personal computer, the affordable sampler, MIDI and music notation and sequencing software transformed electronic music from a collective, social activity into a private, personalized one. By 1986, it was possible for middle-class teenagers to have, in their bedrooms, music-producing equipment that put to shame the great electronic studios of a mere 10 years before.

Soon a completely different set of rules began to develop. It used to be an article of faith, for example, that there was no artistic reason to simulate in electronics what could be done by instruments; electronic music needed to develop its own aesthetic, based in timbres not reminiscent of ordinary musical instruments. Nowadays, with the tremendous increase in sampling fidelity, simulation of acoustic instruments is commonplace, and the differences between acoustic and synthesized orchestras (in movie scores, for example) are not always noticeable to nonprofessionals.

Likewise, of all the promises electronic music made over the years, the most often touted was that any sound would become available for musical use. The 1970's and 80's offered an explosion of noises, climaxing, perhaps, in Annea Lockwood's impressive tape piece "Sinopah" (recorded on the XI label), which used recordings of volcanoes and earthquakes. But the very variety exhausted the ears. Many pop performers, especially rappers, took more delight in sampling, say, a particular cymbal crash from a James Brown disc for their own use, and even classical composers found simulations of acoustic instruments more flexible to work with than raspy electronic tones. In either case, what one did with the sounds became more important than what the sounds were.

Far more significant has been the computer's capacity for making composers self-sufficient. Trent Reznor has most notably employed a computer to help replicate a rock band for his Nine Inch Nails discs, but dozens of more classically trained musicians have quietly followed the same track. Mikel Rouse has used software to create an entire opera he can perform himself, "Failing Kansas," and is now producing a Gesamtkunstwerk of music and film, "Funding" (named for something he had to do without). Paul Dolden of Canada creates overwhelmingly dense works for orchestras of more than 200 instruments playing

individual lines, all from his computer on sampled instruments.

Many composers now create sophisticated MIDI versions of their acoustic works before hearing them live; given the increasing economic hurdles of ensemble performance, the temptation to transfer those MIDI versions direct to CD becomes ever stronger. As CD burners have gone down in price, it has become common for college students to manufacture their own CD's single-handed, from sequencing the drum track down to pressing labels onto the discs. The tremendous sacrifices that such earlier American composers as Charles Ives and Conlon Nancarrow paid to become self-sufficient are no longer necessary, thanks to the computer.

Equally pervasive and less noted is the influence of computer-music thinking on composition. Composers now in their 40's like Michael Gordon, Rhys Chatham and Art Jarvinen compose instrumental works in layers, a conception that shows the unmistakable influence of multitracking. The nonsynchronized loops that run through Mr. Jarvinen's music require live musicians to duplicate the effortless feats of a computer sequencing program. Even so well-established a figure as John Adams admits that he works out his orchestral pieces in a sequencing program, transforming passages in ways that would have been difficult for an old-style pencil composer but are quite easy on the computer.

This is why, as Electronic Evolution will document, the world of live performance has nothing to fear from electronics. Composers will not lose interest in music as a publicly entertaining art form; they merely harness electronics to do more with fewer resources. More and more classically trained musicians, like the electric violist Martha Mooke and the electric cellist Jeffrey Krieger, have gone high-tech in their solo performing careers.

Nor is there much discernible diminishing of interest in acoustic sound. In fact, the most exciting developments in the entire field may be the machines of the German-American engineer Trimpin of Seattle, who has invented devices by which any acoustic instrument of the orchestra can be played, acoustically, by a computer using MIDI. Trimpin's machines expand the range of what acoustic instruments can achieve: he has created continuous timpani tones with mallets that rapidly rub the drum surface, and bass clarinets with hundreds of keys, played by computerized fingers, for densely microtonal scales.

In 50 years, electronics have altered every aspect of musical life, from mere amplification to basic compositional technique. It is becoming clear, at this millennial juncture, that we have lost nothing in the process. What is still up in the air is how much we have left to gain.

Photos: Edgard Varese, left, and an assistant working on ''Poeme Electronique.'' (Courtesy of Philips Technical Review)(pg. 24); Vladimir Ussachevsky with the Buchla 100 series synthesizer at the Columbia-Princeton Electronic Music Center in 1968.; Above, the X-ecutioners (Rob Swift, left, Mista Sinista, Roc Raida and Total Eclipse); right, Lydia Kavina, the grand-niece of Leon Theremin, playing his invention in her apartment in Moscow. (Karen Miller (top); James Hill for The New York Times (center); Emmanuel Brazil//Columbia University Computer Music Center)(pg. 21)