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James Tenney: Selected Works 1961-69

<INTRODUCTION>

This is the first recorded collection of James Tenney's music of the 1960's. These pieces were composed between 1961 and 1969. Much of this work was realized at Bell Telephone Laboratories, where Tenney used Max Mathews' groundbreaking digital synthesis program, which eventually became Music IV, the model for many of the common computer music environments of the last thirty years, and the first system of its kind available to composers.

Tenney's pieces from 1961-64 probably represent the first significant and developed body of work making use of digital synthesis by an American composer. According to Mathews, Tenney was the first composer to come to Bell Labs and work directly with the program on an extended basis. Prior to Tenney's arrival, Mathews and his colleague John Pierce had each made a few musical studies with the system, and composer David Lewin had realized some short pieces by sending Mathews scores to be entered into the computer.

Tenney was a young composer when he wrote these pieces. He was working with a new medium, a new technology (one that was still being developed), and a new aesthetic as well. It perhaps easy to overlook the importance of the latter in the light of the tremendous technical and historical importance of these pieces Ñ but it is characteristic of Tenney that he would not be content to explore simply the sonic and technical capabilities of a new technology. His decision at that time remains to this day an important lesson for composers who work with new technologies: the new world of Ócomputer musicÓ needed a radically new vision of the definition of music itself.

With a few exceptions (Collage #1, For Ann (rising), and Fabric for Che«), all of the music on this CD is not only synthesized, but composed with the aid of the computer. Tenney was not the first composer to work with computer-assisted composition, although he is certainly one of the earliest and most important figures in this area. He pioneered the techniques and concepts of hierarchical organization and stochastic generation of various musical parameters in composition. Many of his most important music and theoretical ideas are just now beginning to be understood. His landmark theoretical work, Meta + Hodos (published by Frog Peak Music), was written in 1961, just prior to his arrival at Bell Labs. It establishes many of the principles of temporal and hierarchical gestalt formation that Tenney later used so effectively in pieces like Phases, Ergodos, and Dialogue.

Tenney describes his own arrival at Bell Labs as having a certain amount of "musical and intellectual baggage," including:

"numerous instrumental compositions reflecting the influence of Webern and Varese; ... two tape-pieces... employing familiar, 'concrete' sounds [one of those is Blue Suede]...; a

long paper (Meta +Hodos) in which a descriptive terminology and certain structural principles were developed borrowing heavily from gestalt psychology...; a dissatisfaction with all the purely synthetic electronic music that I had heard up to that time, particularly with respect to timbre; ideas stemming from my studies in acoustics, electronics, and — especially — information theory begun in [Lejaren] Hiller's class at the University of Illinois; and finally, a growing interest in the work and ideas of John Cage." (from Tenney's 1969 article "Computer Music Experiences")

Tenney says he left Bell Labs in 1964 with two important things:

"six tape-compositions of computer-generated sounds, of which all but the first [Noise Study] were also composed by the computer...; [and] a curious history of renunciations of one after another of the traditional attitudes about music, due primarily to a gradually more thorough assimilation of the insights of John Cage." (from "Computer Music Experiences")

The pieces on this recording have been written about in great detail elsewhere, and the curious listener is encouraged to seek out these publications for a deeper understanding of the pieces. Tenney's own early writings on his computer music includes the articles:

—"Sound Generation by means of a digital computer." *Journal of Music Theory*. 7/1. 1963.

—"Computer Study of Violin Tones." (with Mathews, Miller and Pierce). *Journal of the Acoustical Society of America*. 38/5. 1966

—"Computer Music Experiences: 1961-64." *Electronic Music Reports #1*. Institute of Sonology, Utrecht. 1969.

Complete and more detailed descriptions and analyses of all of the pieces can be found in:

Polansky, Larry. *The Early Works of James Tenney*, published in *Soundings #13*, edited by Peter Garland (available through Frog Peak Music).

Because this information is easily available (with the exception of "Computer Music Experiences...", which is quoted liberally in the *Soundings* volume), the descriptions of the pieces in these liner notes has been kept brief. Many of James Tenney's scores, recordings and writings (including Meta + Hodos) are available from Frog Peak Music (A Composers' Collective), Box A36, Hanover, NH 03755.

Collage #1 ('Blue Suede') (1961)

Collage #1 was realized at the University of Illinois at Champaign-Urbana, in the electronic music studio established by Lejaren Hiller. It is based on Elvis Presley's version of "Blue Suede Shoes," It has long been considered something of a "classic" of American musique concrete. It is released here for the first time.

Technical note: This recording is a digital remastering of the original analog master.

Analog #1: Noise Study (December, 1961)

Noise Study, Tenney's first piece at Bell Labs, was inspired by the daily journey between New Jersey and Manhattan, through the Holland Tunnel and heavy New York traffic. In this piece Tenney began to make use of the formal processes outlined in *Meta + Hodos*, using the computer to make stochastic decisions regarding the given statistics of musical parameters for various sections of the piece.

Technical note: Noise Study was originally released on Decca DL9103, *Music from Mathematics*. This version is digitally reconstructed and remastered from the original analog tapes.

Dialogue (1963)

Dialogue grew out of programs Tenney wrote for a set of pieces called *Four Stochastic Studies*, which, along with some studies in timbre, occupied his time at Bell Labs from 1961-1963. Dialogue uses stochastic control over timbral, durational and pitch parameters, and was the first piece to make use of the computer in determining hierarchical features. The software is responsible for larger level formal decisions as well as small level event values, specifying the mean and range of musical parameters over long sections. The piece is a "dialogue" between noise and pure tones. By stochastically specifying the statistical trajectories of these two types of sounds, Tenney creates a constant shifting of emphasis between them.

Technical notes: The version on this CD was digitally remixed and remastered from the original analog tapes.

Phases (for Edgard Varese) (December, 1963)

Between the completion of Dialogue and Phases, Tenney realized another piece, *Ergodos I* (1963; the later *Ergodos II* is included on this CD), in which he experimented with the use of statistical formal process to create an ergodic, or static musical environment, one in which the statistics and probabilities of given parameters were similar for long period of time. With Phases, Tenney returned to the use of trajectories for means and ranges of parametric values, including note duration, amplitude, amplitude modulation rate and filter bandwidth, and the upper limit of frequency spectra. The shape of change for each parameter is sinusoidal, but the sinusoids are of different frequencies and phases, so that a kind of formal counterpoint is heard between the salient musical parameters of the work. Phases also incorporates some significant timbral and formal extensions to Tenney's own compositional software. By using a more continuous range of modulation values, the distinction between noise and pitch (used so effectively in Dialogue) is blurred. In Phases, the computer makes statistical decisions at three levels: the clang level, (groups of lowest level events), the sequence level (groups of clangs), and the segment level (groups of sequences). This means that a very high degree of formal sophistication is being used by the computer to structure the work. In *The Early Works of James Tenney*, I said that "Phases is the most beautiful and interesting of the works of this period. It is impossible to describe the ungainly, almost other-worldly effect that it has, but it often seems as if it were not composed by either man or machine, but by some goblin-hybrid of the two. It remains as well, one of the strangest and least accessible of Tenney's compositions, as it seems to exist for its own purposes entirely." It now seems to me that much of Tenney's extraordinary recent instrument music (*Bridge*, *Changes*, *Rune*, and other works) has a great deal in common, aesthetically and formally with this important

early work, especially in the uncompromising sonorities and almost mystical adherence to simple formal principles that generate complex and surprising musics.

Technical notes: This version was digitally remastered from the original analog tapes.

Music for Player Piano (1964)

Even though Tenney is known for being one of the first composers to actively champion Conlon Nancarrow, and indeed, wrote the first extended critical study of Nancarrow's work, I believe that *Music for Player Piano* preceeded any real knowledge of Nancarrow's ideas. In this piece, which is actually one short piece realized in four "orientations," Tenney made use of the same types of computer generated stochastic decision-making processes that were used in pieces like *Dialogue*, *Phases*, and so on. However, in the *Music for Player Piano*, the computer only specifies values for pitch, duration, and event density. He then punched the result of the computer's compositional process onto a piano roll, to be played in four orientations: forward, backward (retrograde), upside-down (inversion), and upside-down and backward (retrograde inversion). The order on this recording is: original, retrograde inversion, inversion, retrograde, so that the piece is a palindrome, or mirror image of itself.

Technical notes: This recording was made by John Oswald and Marvin Green in the early 1980's, in Toronto, using PCM digital recording technology. We are grateful to these two composers for allowing us to use their fine recordings.

Ergodos II (for John Cage) (1963-64) "*Ergodos II* was Tenney's last work at Bell Labs, and it is a fitting, zen-like conclusion to the nature of his formal and aesthetic investigations." (from Polansky, *The Early Works ...*). The piece is indeterminate in form. It consists of one tape, 18 minutes long, that may be played in either direction (that is, all the sounds could be heard :backwards"). Or, the tape "might be subdivided into two or more segments of approximately equal length, and these segments played simultaneously (over one to N pair of loudspeakers, for the N segments)" (from Tenney, "*Computer Music Experiences...*"). This was the first piece Tenney did at Bell Labs that employed the stereo capability Mathews had just added to *Music IV*. "The instruments [that is, the computer designed software instruments] and algorithms are almost identical to *Phases*, and *Ergodos II* has the same rich and beautiful quality, but there is finally complete ergodicity. There is, in any way that we might reasonably define it, no form." (from Polansky, *The Early Works...*) The arrangement on this recording is the 18 minute form. Listeners are encouraged to make their own performance versions.

Technical notes: The version on this CD was digitally remastered from the original analog

Fabric for Che (1967)

Fabric for Che was realized after Tenney left Bell Labs, on a computer music synthesis system he installed at the Brooklyn Polytechnic Institute. It was to a great extent influenced by the political and social upheaval of the time, and I have often heard the piece as an angry, beautiful shout. Tenney has said it was "an attempt to create a continuous sonic event with no beginning and no end. Like much of his other music, he describes the whole piece conceived as consisting of but a single sound, more or less complexly modulated" (from *The Early Works...*). It is surprising to hear it today, with

its many faceted sonic relationships to the music of Xenakis, to works of composers using techniques like granular synthesis, and even more appropriate perhaps, to industrial noise music of the 70's and 80's. The piece is, like Music for Player Piano, a palindrome (like some of the music of Carl Ruggles, which has been so influential for Tenney): the second half is simply the reverse of the first.

Technical note: This recording was digitally remastered and reconstructed from the original analog master.

For Ann (rising) (1969)

For Ann (rising) was the last electronic work Tenney wrote before leaving New York City permanently for California, and subsequently Toronto (where he now lives). In fact, to this date, it is his last electronic piece (with the exception of some works involving live performers and delay system, and a very recent text piece, edited and created with the help of a computer music editing workstation). Many people associate Tenney most closely with this work, for it seems to embody the most essential aspects of his aesthetic: clear, predictable formal procedures; lack of any kind of narrative structure; deep interest in acoustical phenomenon and their musical and formal manifestations; a sense of humor. For Ann (rising) is simply a "continuously rising tone," sometimes called a Shepard- or Risset-tone (after the great experimental psychologist Roger Shepard or the early computer music composer, Jean Claude Risset, who was the next composer after Tenney at Bell Labs). The illusion is simple. A series of glissandi, separated by some fixed time interval, fade in from their lowest note, and fade out as they near the top of their range. It is nearly impossible to follow, aurally, the path of any given glissando, so the effect is that the individual tones are never ascending. For Ann (rising) has at various times been called a classic of American minimalism, process music, or conceptual music. Whatever it is, it clearly represents a landmark in Tenney's own compositional output, which like the piece, has continued to develop (rise), seemingly without any conceptual end in sight. Technical note: This recording was regenerated using Barry Vercoe's CSound composition and synthesis language, according to Tenney's specifications. The original analog recording of For Ann (rising) was remastered by Tom Erbe, and appeared on Ear Magazine's Absolut Music CD.

(Larry Polansky, Lebanon, New Hampshire, 1991)

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Engineered and digitally remastered by Tom Erbe, from original analog tapes, at the Mills College Center for Contemporary Music, under the supervision of James Tenney. Produced by Larry Polansky, for Frog Peak Music (A Composers' Collective) and Artifact Recordings.

Lauren Pratt, assistant producer.

Michael Sumner, cover and CD design.

Thanks to the Mills College Center for Contemporary Music.

All works on this CD published Smith Publications, 2617 Gwyndale Avenue, Baltimore, MD 21207, who have graciously given permission for the release of the pieces on this CD.

All works BMI.

A co-production of Frog Peak Music (A Composers' Collective) and Artifact Recordings.

<Pieces>

- 1) Collage #1 ('Blue Suede') 3:22
- 2) Analog #1 (Noise Study) 4:23
- 3) Dialogue 4:08
- 4) Phases (for Edgard Var_se) 12:20
- 5) Studies for Player Piano) 5:48
- 6) Ergodos II (for John Cage) 18:24
- 7) Fabric for Che' 9:50
- 8) For Ann (rising) 11:47

For a more detailed discussion of these pieces see the following:

Polansky, Larry. The Early Works of James Tenney (chapters III and IV), in Soundings 13 (available from Frog Peak Music)

Tenney, James. "Computer Music Experiences: 1961-64." Electronic Music Reports #1. Institute of Sonology, Utrecht. 1969.

note to michael

* Meta + Hodos has a slightly unusual typographical problem.... the plus sign should actually be an M-dash with a diagonal vertical line through it, a divide sign. Tenney originally used a typewriter to do it, thus the strikeover, and it's been driving us crazy at Frog Peak ever since! Any ideas?

* the album number should be FP 001 and Art 006? What is the Artifact number? In any case it should have TWO numbers, the FP and the appropriate artifact number.

* we need to add the circle p and circle c

Note: This document was rescued from a wordprocessor upgrade mangle, 8/17/15, LP