

JAMES TENNEY
BASS WORKS
DARIO CALDERONE

JAMES TENNEY: GLIDING THROUGH THE HARMONIC SPECTRUM

American composer and music theorist James Tenney (1934–2006) occupies a central position in the history of American experimental music.

Dedicated to expanding the dimensions of aural perception, he sought innovative ways to reconcile such conventional dualities as sound/noise, consonance/dissonance, and harmony/timbre—all of which are artificial constructs of language that tend to impede the fluidity and rich variability of the listening experience. Just as Tenney was fascinated by the perceptual intersection of musical dichotomies, so did he believe there was no meaningful distinction between his theoretical research and his compositional explorations. He wrote extensively on the perception of musical form from a phenomenological perspective, and he composed numerous works that highlight the elegant and complex relationship among natural acoustic phenomena.

After studying at the Juilliard School and Bennington College, Tenney pursued graduate studies from 1959 to 1961 at the University of Illinois, where he undertook a rigorous investigation of psychoacoustics and phenomenology, areas of research that would occupy him for the rest of his life. Between 1961 and 1964, he became one of the first composers to work with digital synthesis at Bell Laboratories, and he composed several tape pieces based on computer-generated stochastic systems. He continued his psychoacoustic experiments at Yale University and the Brooklyn

Polytechnic Institute, and in 1969 he composed what he regarded as his breakthrough work: *For Ann (rising)*. An austere electronic study comprised of a series of rising glissandi that overlap in perpetual canon, *For Ann (rising)* was a stylistic departure from the elaborate forms and complex structures that governed his earlier music, and signaled a new direction in his artistic focus. Tenney posited that by eliminating as many distractions as possible within the large-scale structure, the listener could focus on the unfolding formal process and the subtle changes to the microacoustic qualities of the sound. The resulting emphasis on the physical properties of the vibrations tends to induce meditative states in both the performer and listener—“it’s sound,” Tenney explains, “for the sake of perceptual insight.”¹

Tenney points out that most of his pieces following *For Ann (rising)* feature at least one of the following characteristics: simple, predictable forms that are devoid of rhetorical drama; the structural use of canon, especially in the gradual accumulation of texture; and increased attention to the harmonic series as a pitch resource for compositions. His novel approach to harmony presents an especially intriguing development in his work. “Somehow, I managed to survive all my music schooling with an arrogant disdain for traditional harmony—doing just as little of it as I could get by with,” Tenney admits, “and as a result it is an area of weakness in

my musical awareness. My recent interest in it has arisen from a compositional involvement with the 'harmonic series' (thus acoustics, my old 'home ground,' and timbre—my oldest obsession)."¹² In order to achieve formal continuity and access an expanded cross-section of the frequency continuum, or what he called the "diapason of all sound,"¹³

Tenney frequently employed glissandi and just tuning systems, which pervade much of his music in the 1970s and 1980s.

In 1970 Tenney left New York City to teach at the newly formed California Institute of the Arts, where he published a set of compositions dedicated to several friends and colleagues. Known collectively as the "Postal Pieces," these aphoristic works appear on ten postcards (or, as Tenney called them, "score-cards") that are suitable for mailing. The Postal Pieces represent a distillation of ideas regarding the morphology and perception of musical form that occupied the composer in the previous decade.

Beast (1971), one of the Postal Pieces, was written for bassist Buell Neidlinger, his colleague at CalArts.

The work explores the rhythmic beats resulting from differences in frequency (i.e., combination tones) between the open A string and the stopped (and retuned) Eb string as they are bowed together. The score indicates the number of beats per second that should emanate from the sounding dyad as the stopped string undulates in structural accordance with the Fibonacci series. "The key word is continuity," Tenney explains, "as though the whole piece were one single sound, and it often is just that."¹⁴

Perhaps the most enigmatic of the Postal Pieces is (*night*) (1971), which he dedicated to the composer Harold Budd, Tenney's close friend who also taught at CalArts. The score consists only of vague verbal instructions ("very soft," "very long," and "nearly white") to be freely interpreted by the performer on any instrument. For this recording, Dario Calderone offers two realizations of (*night*). The first is a quiet rendition of long duration that features the amplification of subtle noise components (or "white noise") that emanate as the bow traverses different nodes of the string. For the second version, Calderone interprets the score as relative instructions, and he presents continuous movement from loud to soft dynamics, short to long bowings, and tone to noise production over the course of the entire structure.

Glissade (1982) was written for viola, cello, and bass with a tape-delay system that reinforces the lines of each instrument. Tenney conceived each of the five movements as an organic texture that expands to encompass a robust harmonic spectrum, enveloping the listener in a multidimensional sonic space. The first movement, "Shimmer," features a static drone that gradually blossoms into a kaleidoscopic canon of whistling harmonics. "Array (a'rising)," a canon of ascending glissandi, is an acoustic rendering of his famous tape piece *For Ann (rising)*, but here the natural complexity of the acoustic instruments yields a more animated harmonic profile, while the delay system gives the impression of more instruments. "Bessel functions

of the first kind,” which refers to mathematical differential equations, features a polyphony of swelling waves that decrease from large sweeps to gentle pulsations. Modeled after curves within a cylinder, the texture collapses in microtonal gradations until subtle shifts in timbre are virtually indistinguishable among the three instruments. The fourth movement, “Trias Harmonica,” is comprised of a methodical expansion of a unison to an octave and a fifth. The bass sustains a D while the cello descends an octave and the violist ascends a fifth at carefully measured rates so that specific ratios resound in perpetually new harmonic configurations, all in continuous glissando. The final movement, “Stochastic-canonic Variations,” begins with an aggressive tremolo that canonically ascends and descends in microtonal increments. The tremolo figures rhythmically deconstruct into *col legno battuto* and pizzicato passages that yield complex counterpoint reminiscent of Ligeti’s brand of micropolyphony. A hauntingly lyrical segment follows, and the last musical gestures dissolve into sustained tones of the harmonic series, a majestic but unceremonious return to the elemental source.

The same month he completed *Glissade*, Tenney began writing “John Cage and the Theory of Harmony” (1983), an article in which he outlines his theory of the harmonic series as a compositional resource. He defines harmony as “*that aspect of musical perception which depends on harmonic relations between pitches*” and poses the primary inquiry, “why is it that a compound tone consisting

of many harmonic partials is normally and immediately perceived as a *single tone*, rather than as a ‘chord’?”⁵ Although a satisfactory response to this psychoacoustic mystery eluded him, he believed that the most significant clues reside in the anatomy of the listener; “the nature of harmonic perception in the auditory system.” In theory and in practice, Tenney set out to affirm the listener’s process of attention as an integral part of the musical experience—“here,” Tenney offers, “the music is *in you*.”⁶

Eric Smigel, August 2015

- 1 James Tenney, “Gayle Young Interviews James Tenney,” *Only Paper Today* 5:5 (1978): 4.
- 2 Letter from James Tenney to Philip Corner, 9 August 1974. Private collection of Philip Corner.
- 3 Douglas Kahn, “Interview with James Tenney,” *Leonardo Electronic Almanac* 8:11 (February 2001).
- 4 Letter from James Tenney to Carolee Schneemann, 16 November 1971. See Kristine Stiles, ed. *Correspondence Course: An Epistolary History of Carolee Schneemann and Her Circle* (Durham, NC: Duke University Press, 2010), 183.
- 5 James Tenney, “John Cage and the Theory of Harmony (1983),” *Writings about John Cage*, ed. Richard Kostelanetz (Ann Arbor: University of Michigan Press, 1996), 150.
- 6 James Tenney, “In Retrospect (1978),” unpublished essay in James Tenney Collection, Valencia, California.

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Werner X. Uehlinger

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JAMES TENNEY (1924–2006)

BASS WORKS

DARIO CALDERONE

Compositions for solo doublebass:

1	(Beast) (1971) ISRC CH 130.1600743	7:48	Glissade, for viola, cello, doublebass and tape delay system (1982) William Lane, viola; Francesco Dillon, Cello and Dario Calderone, doublebass.	
2	(night) (1971) ISRC CH 130.1600744	14:39	4 Shimmer ISRC CH 130.1600746	8:10
3	(night) (1971) ISRC CH 130.1600744	9:00	5 Array (a'sysing) ISRC CH 130.1600747	5:40
			6 Bessel functions of the first kind ISRC CH 130.1600748	2:48
			7 Trias Harmonica ISRC CH 130.1600749	7:06
			8 Stochastic-canonical variations ISRC CH 130.1600750	11:46

Total Time DDD ²⁴Bit 67:03

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