LMJ21 CD Companion: Beyond Notation/Notation Beyond

Author(s): Andrew Raffo Dewar

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Beyond Notation/ Notation Beyond

Curated by Andrew Raffo Dewar
Leonardo Music Journal
CD Series Volume 21

1. JEM FINER: *SCORE FOR A HOLE IN THE GROUND*
2. GORDON MUMMA: *MEDIUM SIZE MOGRAPH 1962*
3. KATHERINE YOUNG: *INSIDE UFO 53-32*
4. JAMES FEI: *FAKTURA* (EXCERPT)
5. ALEXIS PORFIRIADIS: *DROPS* FOR ENSEMBLE
6. CHRIS MANN: *THE USE*
7. MATTHEW MARBLE: *WHORL*
8. PHILLIP SCHULZE: *CAUSE, UNFOLD, PROCEED—LEONARDO*
9. GUILLERMO GREGORIO: *COPLANAR 1+2*
10. RAJESH K. MEHTA: *IMAGINATIONAL MAP 2 (R1)*
11. RAJESH K. MEHTA: *IMAGINATIONAL MAP 2 (R3)*
12. RAJESH K. MEHTA: *IMAGINATIONAL MAP 2 (R5)*
13. PAULINE OLIVEROS: *THE WORLD WIDE TUNING MEDITATION*

The LMJ CD Series
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Beyond Notation/
Notation Beyond

How do we communicate sonic ideas to those who help us realize them and those who listen? One iconic translation/transmission process in the Western world is to write down what we yearn to hear in the inherited symbolic language of musical notation. Of course there is a panoply of approaches to realizing this goal, with the works included on the LMJ21 CD being one sampling of this diverse spectrum of compositional communication.

There have been several important books of exploratory music notation that document the visual aspects of the compositions they cover [1]. The main drawback to these resources, of course, is that they leave us with the nagging question, "What does it sound like?" We attempt to remedy that by providing both visual and aural evidence of these different approaches to "notation beyond" (see the texts and images in the accompanying CD contributors' notes, as well as at <mitpressjournals.org/toc/lmj/-/21>).

The CD begins with a recording of Jem Finer's outdoor sound installation *Score for a Hole in the Ground.* Inspired by traditional Japanese *suikinkutsu* ("water koto cave") sonic garden ornaments, Finer's "notation" consists of a construction plan for an underground instrument performed by its environment—emblematic of the abdication of compositional control that typifies many pieces that employ notation beyond traditional bounds.

The pointillist raindrop counterpoint of Finer's work modulates into the raucous ambience of ONCE Festival–goers hearing Gordon Mumma's *MEDIUM SIZE MOGRAPH 1962,* a choreographic score for two pianists, which specifies movement and articulation for the performers but not specific sounds.

One motivation for inventing notation is to communicate something for which symbols do not already exist. For example, how might one compose, in traditional notation, Pauline Oliveros's sociality of "deep listening," or Matthew Marble's "social geometry"? The living, breathing relationships between performers that characterize their works here are not interpretations of fixed symbols but real-time negotiations, ways of being with sounds and people in space, like those that crowds experience in navigating metropolitan walkways.

Another rationale for employing alternative notation is for pragmatic purposes, or "communicating the desired result to performers in the simplest way possible," as James Fei writes about his *Faktura.*

Technological innovations have revolutionized not only the sound of music but also the way it is composed and graphically represented. Of course there have been many pioneers in the notation of music for electronics, from Stockhausen to Varèse and beyond, but Chris Mann and Phillip Schulze utilize uniquely 21st-century means to notate their work. In a third-millennial update to early synthesizer patch sheets, Schulze's virtual MAX/MSP instrument *is* the score, whereas Mann's *The Use,* a text-driven, interactive web-based composition also available as a smartphone application, puts the task of orchestration in the hands of the listener. In this recording, an algorithmically generated collage of Mann's materials is presented, produced by the "randomizer" button on *The Use* web site.

The remaining works, by Guillermo Gregorio, Rajesh Mehta, Alexis Porfiriadis and Katherine Young, all incorporate invented notation in a modality that allows for a broader interpretation by the performers' imaginations, delivered in the novel authorial voices of the

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composers. Each piece has a range of control factors, whether a combination of traditional and invented notational elements, as in the case of Gregorio, Porfiriadis and Young, or in the use of instructions for the interpretation of the graphics, as in the Cartesian x-y coordinates of Mehta's *Imaginational Map*.

Each work featured on this recording provides a unique diving board for explorations of not only the craft of composition but also semiotics and approaches to musical communication.

ANDREW RAFFO DEWAR
LMJ21 CD Curator
E-mail: <adewar@ua.edu>

Andrew Raffo Dewar (b. 1975 Rosario, Argentina) is a composer, improviser, woodwind instrumentalist and ethnomusicologist. Dewar studied with saxophonist/composers Steve Lacy, Anthony Braxton and Phillip Greenlief, composer Alvin Lucier, trumpeter/composer Bill Dixon and multi-instrumentalist improviser Milo Fine. He has also had a long involvement with Indonesian traditional and experimental music, particularly the Minangkabau music of West Sumatra and Central Javanese gamelan. As a composer, his pieces have been performed by the Flux Quartet (NYC), Sekar Anu (Indonesia), the Koto Phase ensemble (USA/Japan) and the XYZ composer collective (NYC). He has received grants from Arts International, Meet The Composer and the Getty Foundation to support his work. In addition to leading his own ensembles and performing in collaborative groups with musicians from around the world, he performs with and appears on recordings by the Anthony Braxton 12+1tet and the Bill Dixon Orchestra. Dewar is Assistant Professor of Interdisciplinary Arts in New College and the School of Music at the University of Alabama.

Reference

1. See John Cage, *Notations* (New York: Something Else Press, 1969); Erhard Karkoschka, *Notation in New Music* (New York: Praeger, 1972); Theresa Sauer, *Notations 21* (New York: Mark Batty Publisher, 2009).

Beyond Notation/ Notation Beyond

CURATED BY ANDREW RAFFO DEWAR

JEM FINER: *SCORE FOR A HOLE IN THE GROUND*

Recorded by Jem Finer in Kingswood, Challock, Kent, 2 May 2008.

Contact: E-mail: <jemfiner@mac.com>. Web sites: <www.score foraholeintheground.org>; <www.stourvalleyarts.org.uk>.

Score for a Hole in the Ground is an indeterminate musical composition of unknown duration set in a permanent installation. In the heart of a forest in Kent, water dripping into a deep underground chamber strikes both tuned percussion and a pool at its bottom, the sounds rising up through a giant horn, standing 7 m above the ground (Fig. 1).

In a sense this piece can be viewed as the flip side to an earlier composition, *Longplayer*, and while both engage with time over long durations, *Score for a Hole in the Ground* seeks to exist independently of any human upkeep, depending on neither the longevity of any energy source nor technology, only on the ongoing existence of the planet and its weather systems. In contrast *Longplayer*, a 1,000-year-long composition that started its life as a computer program, demands attention in terms of energy and maintenance and, in seeking out forms for its survival, outside of the digital domain.

In the forest, among the trees, the horn's shape resembles the trumpet of an old gramophone or a giant lily, oxidized autumnal orange brown. The upright pipe is indistinguishable, from a distance, from the trunks of the surrounding beech trees. The sounds too blend with the forest, until the ear discerns something out of place and the eye resolves the horn as the sonic source. Weather changes the music. In a torrential

Fig. 1. Jem Finer, *Score for a Hole in the Ground*. Location: Kingswood, Challock, Kent, England. (© Jem Finer)

downpour it reaches a crescendo, while drought renders it silent, save for the effects of the breeze gently brushing the instruments as it eddies around the chamber. It becomes one with the climatic forces of the forest.

The chaotic nature of dripping water gives rise to complex variations in the composition, ranging from near silence to intricate shifting patterns running in and out of phase. This recording was made on 2 May 2008, in the rain, and one hears both sounds rising up from under the ground and the drumming of rain drops on the steel cover.

Score for a Hole in the Ground was the recipient of the P.R.S.F. New Music Award in 2005 and was made in collaboration with Stour Valley Arts. It is located in Kingswood, near Challock, Kent, England.

Jem Finer is a U.K.-based artist, musician and composer. Since studying computer science in the 1970s, he has worked in a variety of fields, including photography, film, experimental and popular music and installation. Between 2003 and 2005 he was artist in residence in the astrophysics department of Oxford University, making a number of works including two sculptural observatories, Landscope and The Centre of the Universe. He is currently working on a number of new projects continuing his interest in long-term sustainability and the reconfiguring of older technologies.

GORDON MUMMA: *MEDIUM SIZE MOGRAPH 1962*

Composed by Gordon Mumma, 1962. Performed by Gordon Mumma and Robert Ashley, pianists. Recorded by George Cacioppo for WUOM-FM broadcasting.

Contact: Gordon Mumma, e-mail: <gordonmumma@gmail. com>. Web site: <www.brainwashed.com/mumma>.

The *MEDIUM SIZE MOGRAPH 1962* is one of a series of *MOGRAPHS*—compositions for piano solo or various combinations of pianos. The first two title words indicate the length or size of the composition. The title is a pun on the word "seismograph" and includes the year of the composition. The structure of each *MOGRAPH* was derived from the P-wave and S-wave patterns of earthquakes and underground nuclear explosions during the early 1960s. The time-travel patterns of the P- and S-waves are different, but have similarities to the complex sound-reflection characteristics of musical performance spaces. These seismic patterns were the basis of the time articulations for all the *MOGRAPHS*.

The complete score of *MEDIUM SIZE MOGRAPH 1962* is on five pages plus a page of instructions (Fig. 2). This choreographic notation is a map of the physical movement of the pianist's actions at the keyboard and is read vertically. Specific pitches are not indicated—only the general areas where the
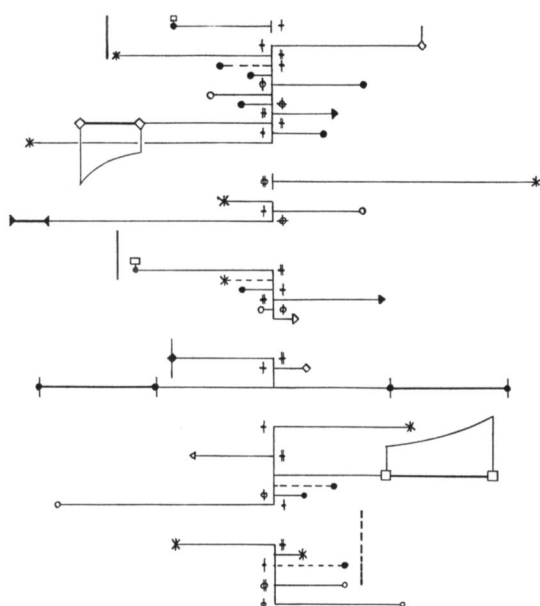
Fig. 2. Gordon Mumma, One of the five pages of *MEDIUM SIZE MOGRAPH 1962*. (© Gordon Mumma)

pianist articulates the keys of the piano keyboard or external sound sources are shown. The central vertical line defines the left and right sides of the pianist's body. Each page has groups of separate vertical gestures, as indicated by breaks in the central vertical line. When a group of gestures is performed briskly, the resulting pitch and dynamic material may be notably influenced by chance.

Since the score notation is vertically symmetrical, the pages can also be performed upside down, thus resulting in 10 pages of different choreographic instructions. All the notation symbols of the articulation details, such as the dynamic markings, appear the same when upside down.

The pianist(s) may choose fewer than the five notated pages, as practical, to accommodate the performance time.

This use of a "choreographic" notation for music has other precedents. Developed in Holland, *Klavarskribo* is an efficient alternative for learning keyboard music, within the Euro-American traditions of pitch, duration and articulation. *Klavarskribo* is also read vertically from the top to the bottom of the page. Among other forms of choreographic notation, the most inclusive and widely used is *Labanotation* for ballet and modern dance, also read vertically but from the bottom to the top of the page. Many of my compositions for traditional instruments use the more common five-line staff notation. That is generally a practical matter for music publishers and many classically trained performers.

The premiere of *MEDIUM SIZE MOGRAPH 1962* was with two pianos, performed independently but simultaneously by Robert Ashley and me in February 1963 at a ONCE Festival concert in Ann Arbor, Michigan. Each used just three pages, with only one the same for both pianists. The recording of the premiere also includes the audience sounds.

Subsequent performances were on the Ashley/Mumma touring concert series "New Music for Pianos" in the later 1960s. The piano solo premiere was performed by me in March 1968 at a performance with the Merce Cunningham Dance Co. during a dual residency at the State College and the State University in Buffalo, New York.

Gordon Mumma was born in 1935 in Framingham, Massachusetts. His diverse instrumental performances include piano, horn, musical saw, cornet, percussion, bandoneon and live electronics. From the mid-1950s onward he performed with Robert Ashley, David Behrman, Anthony Braxton, John Cage, Merce Cunningham, Alvin Lucier, Pauline Oliveros, David Tudor, Christian Wolff and others. Besides music for acoustical instruments, his creative work has also involved designing electronic equipment for his live-electronic and studio compositions. From 1975 to 1994 Mumma was Professor of Music at the University of California and received the 2000 Biennial Award of the New York Foundation for Contemporary Arts.

KATHERINE YOUNG: *INSIDE UFO 53-32*

Composed by Katherine Young, 2007. Performed by the Flux Quartet: Tom Chiu, Conrad Harris, Max Mandel and Felix Fan. Recorded by Nik Chinboukas at Spin Studios, 2009.

Contact: Katherine Young: e-mail: <katherine.a.young@gmail.com>. Web site: <katherineyoung.info>.

Composed in 2007, *Inside UFO 53-32* takes its title from the classic *Choose Your Own Adventure* book by Edward Packard and was premiered by the formidable and adventurous Flux string quartet.

The score (Fig. 3) comprises two layers: graphics notated on strips of transparent paper and music notated on paper. The transparency strips are moveable and may be rearranged for each performance. While mostly notated using metered notes, rhythms and extended techniques, the fixed paper score also contains colorful graphics. The graphic and staved notations enhance, elaborate and enliven each other through their layering and juxtaposition.

With a few guidelines in mind, the performers decide where within the score to add the graphic strips, the most important stipulation being that the performers must play the composite music created by the overlay. One layer does not overwrite the other; rather the challenge for the performers is to find a way to interpret both as a unified gesture, sound or phrase. Although an explicit one-to-one relationship does not exist between the graphic and staved notation, I composed them in close relationship to one another—the sounds of the piece are ones that I could notate on the staff *and* find a striking

graphic representation for. Thus, the staved materials should be kept in mind when interpreting the graphic notations and vice versa.

The piece represents a benchmark in my work with graphic notation: It achieves an energetic sonic unification between poetic and precision notation while making the most of the musical potential for each notational strategy. Since finishing this piece I have worked less with graphic notation, although I continually investigate creative score-design techniques, and a visual sense still infuses my conception of sound.

Katherine Young creates acoustic and electroacoustic music that uses curious timbres, expressive noises and kinetic structures to explore suspended time, things noir and sci-fi, the communication of ensemble energies, and the tension between the familiar and the strange. Recent projects include composing for dance, a new work for TimeTable percussion with Issue Project Room's Emerging Artists Commission, and a commission for the String Orchestra of Brooklyn. As a bassoonist, Katherine works as an improviser and chamber musician, soloist and bandleader. She has documented her work on numerous recordings, including a 2009 solo release. Current projects also include: Architeuthis Walks on Land, Pretty Monsters, the Fancy, and Till by Turning.

JAMES FEI: *FAKTURA*

Faktura (excerpt): For Two Alto Saxophones and Idling Electronics. Composed by James Fei in 2002; revised in 2009. Performed by James Fei (electronics), Jacob Zimmerman and Aram Shelton (alto saxophones). Recorded by James Fei at Mills College, Oakland, CA, in 2009.

Contact: E-mail: <jfei@mills.edu>. Web site: <www.jamesfei.com>.

Faktura, for idling electronics and two alto saxophones, is from a series of works utilizing solely those elements usually considered undesirable in sound production. These dirty bits, like dust in a room, are usually masked and overcome with "proper" instrumental technique, but remain present underneath the surface nonetheless. The electronic setup in *Faktura* is limited to a mixer and filters with nothing plugged in, their idling hiss and switch noises manipulated with the existing

faders and buttons. Likewise, the two saxophones are played with a range of restricted airflow without ever fully sounding, their conical bores articulated as acoustic filters.

The severity of the material used in *Faktura* reflects my desire to work with electronics as an instrument in a chamber setting, rather than merely as an extension or support of the instruments. I wanted the two mediums to be similar in scale as well as function. The approach taken here is perhaps a regression from much of the recent development in electronic music—the acoustic and electronic are similarly performative and limited to a shared set of residual noise. The saxophones in *Faktura* therefore remain acoustic in performance, with the electronic musician onstage in the center and with a single speaker directly behind the performer rather than being projected from a P.A. system. This also allows the three musicians to work with the temporal and dynamic fluidity of a chamber unit, capable of executing complex rhythmic coordination and gestural exchanges rather than being tied to a click-track or score-following program cues.

Fig. 4. James Fei, page 2 from the score of *Faktura*.
(© James Fei/BMI).

The notation for *Faktura* (Fig. 4) is a somewhat idiosyncratic mixture of proportional, graphic and conventional metric notation. I wanted an efficient way to convey the limited parameters available to the performers, which for the saxophones includes relative register (absolute pitch is not essential or consistently perceivable), inhaling and exhaling, and the tightness of the embouchure. For the electronics, it is largely limited to dynamic envelopes and the assignment of the four faders. Since there are varying degrees of asynchrony, indeterminacy and metered passages in the piece, the notation also varies from page to page, with an eye toward communicating the desired result to the performers in the simplest way possible.

Faktura was first performed at Roulette, New York, in 2002, and significantly revised in 2009. The recording included in the present volume is an excerpt from the complete work, which is approximately 15 minutes.

James Fei composes works for traditional ensembles as well as circuits and sound installations. Pieces by Fei have been performed by the Bang on a Can All-Stars, Orchestra of the S.E.M. Ensemble, MATA Micro Orchestra, Noord-Hollands Philharmonisch Orkest and his own Alto Quartet. Recordings can be found on Leo Records, Improvised Music from Japan, CRI, Krabbesholm and Organized Sound. Fei is Assistant Professor of Electronic Arts at Mills College in Oakland, CA. See <www.jamesfei.com>.

ALEXIS PORFIRIADIS: *DROPS* FOR ENSEMBLE

Composed by Alexis Porfiriadis, 2008/2009. Excerpt from a 20-minute performance. Performers: Georgia Koumara, Sapfo Pantzaki, Olga Papakonstantinou, Antonis Rouvelas, Stelios Tsairidis, Vassilis Chatzimakris. Recorded at KNOT Gallery, Athens, 16 May 2010.

Contact: E-mail: <alexisporfiriadis@gmail.com>. Web site: <alexisporfiriadis.blogspot.com>.

My participation in a number of improvisation ensembles (6daEXIt improvisation ensemble, Improvisation trio *Seul à 3*) has prompted me to re-evaluate the importance of togetherness in music-making. Togetherness, in improvisation, is an experience of unity, a completeness in-the-making. It would be difficu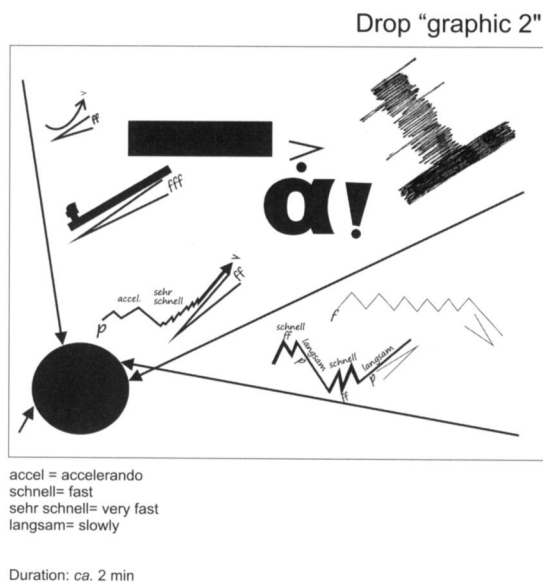lt to imagine improvised music without this sense of vibration brought collectively into play. As a result, my compositional mindset began to revolve around the cultivation of togetherness and collective responsibility regarding the end result of a performance. Through the usage of verbal and graphic notation I aspire to investigate the compositional options opened up by a close consideration of performers as physical and psychological agents that have the ability, both individually and collectively, to explore and dynamically shape a performance space. This consideration, and its implications, can occasionally enrich the identity of a musical composition toward spheres that extend beyond the strictly musical.

The 42 pages of the verbal and graphic score *Drops* for ensemble (2008/2009) (Fig. 5) give the performers the opportunity to make a group realization of an open-form composition, through a selection of pre-existing material. The resultant realization should be the product of a conversation between the performers, without the involvement of any third party (conductor, composer, etc.) and it should by no means be decided by one single person. The minimum duration is 15 minutes. The performers may be situated onstage, in the concert area or in a combination of the above, depending on the *Drops* that have been chosen. *Drops* may be combined in any manner (performers' choice), so that a *Drop* can continue while another starts, more than one *Drop* can be performed simultaneously, etc.

The ensemble should comprise at least six persons. Piano, percussion, a wind instrument and a string instrument are necessary. These instruments can be doubled, and more instruments other than these may be added ad libitum. Where there are no specific instructions regarding the number of the performers, the way a *Drop* should be performed (e.g. repeats, order of events, ways of performing given actions) and the dynamics, the performers may decide without any limitations.

Alexis Porfiriadis is a composer and improviser currently based in Thessaloniki and Athens, Greece. He studied composition with Gerd Kühr (MA, 2002) and Beat Furrer (postgraduate, 2003) at the University of Music and Performing Arts in Graz/Austria. As an improviser, he has worked with a number of artists in cross-media collaborations in Greece, Austria and Serbia, and in 2007 he co-founded the large-scale, mixed-media improvisation ensemble 6daEXIt. His compositions have been performed in Europe, in Canada and the U.S.A. He is currently working toward a Ph.D. focusing exclusively on composition for improvisers, supervised by James Saunders.

Drop "graphic 2"

accel = accelerando
schnell = fast
sehr schnell = very fast
langsam = slowly

Duration: *ca.* 2 min

Fig. 5. Alexis Porfiriadis, *Drops* (© Alexis Porfiriadis)

CHRIS MANN: *THE USE*

Contact: E-mail: <c@theuse.info>. Web site: <theuse.info>.

given,
language is the mechanism whereby you understand what i'm thinking better than i do (where i is defined by those changes for which i is required),
and
given,
229 sound files, 18 texts, 123729 words and 4 vids all pausable and scrubbable so they can start anywhere within the file, arranged such that any number can play simultaneously (1 always plays centre, 2 plays left, 3 right),
and
given,
there's a button (upper right) that plays a random set, this is a test of that button (Fig. 6).

Chris Mann is a composer working in compositional linguistics. His work is mainly concerned with the technology and philosophy of speech.

Fig. 6. Chris Mann, *The Use*. (© Chris Mann)

He has been a performer (voice) since 1989 with Machine for Making Sense and, most recently, Chris Mann and the Impediments. In 1999, he was an artist in residence with Harvestworks and Rensselaer Polytechnic Institute. His commissions include Astra Choir, John Cage, Paris Autumn Festival, Australian Biennale, Radio France, Ars Electronica, Radio Telefis Eirann, Australian Broadcasting Corporation, National Public Radio, Australian Network for Art and Technology, Goethe Institut, Perth Institute for Contemporary Art, Sprach Ton Art, Brisbane Biennial, BBC, ORF and many others. Mann currently teaches in the Media Studies Graduate program at the New School in New York City.

MATTHEW MARBLE: *WHORL*

Composed by Matthew Marble, 2008. Instrumentation: bass clarinet: Jonathan Sielaff; accordion: Luke Wyland; violin: Tom Thorson; amplifed acoustic guitar: Jean-Paul Jenkins; synthesizer 1 (JUNO): Matt Carlson; synthesizer 2 (Yamaha): Matt Marble; drums 1: Andrew Wilshusen; drums 2: Asa Gervich; reeds/percussion 1: Bethany Ides; reeds/percussion 2: Michael Bunsen; reeds/percussion 3: N/A. (Reeds/percussion include individuated organ reeds, single-tone harmonicas, gravel pestled in a mortar and sheep bells dropped upon the floor or shaken.) Recorded at Gallery Homeland, Portland, OR, 18 March 2008.

Contact: E-mail: <memarble@gmail.com>.

Faces of Sound (Fig. 7): With each person responding to the nearest neighbor (in the direction of the arrows), performers play one sound at a time in a continuous hocket or call-and-response. The sounds they use are chosen from a set of pitches or instructions described in the full score. Tempo is defaulted to a calm heart rate (around 60 bpm) and "drums 1" (center) is instructed to alter the tempo at various times, occasionally settling in a regular tempo; the piece also ends (5–20 min in duration) when "drums 1" ceases to make sound (all others falling successively silent in response). The image to the right is one I would use to theorize different groupings of sounds. It is not a logical tool, but an intuitive one; it is how I "heard" the piece in my mind, which guided its composition.

Here is an example of the scored instructions for a single instrument, the amplified guitar:

> You are responding to "Drums 1." Your reaction time should vary from as-fast-as-possible up to a 2-second delay, and you may occasionally refrain from playing for 1 or more responses (silencing off the people responding to you and altering the ensemble texture).
> Play the following pitches (F#, G, G#, A, B — at any octave) individually or as octaves, and any neighbor tones may be played

consecutively within a single sounding response. You are encouraged to alter the volume of attacks and decays (via volume pedal). You may also sustain a given tone by strumming. Blend your volume level into the overall ensemble sound, but feel free to foreground yourself at times.

Set-up: The acoustic guitar should be run through a volume pedal and into an amplifier. Any objects may be used to "prepare" or play the instrument, however pitch should be clearly audible throughout.

My earliest relationship with notation was in using it as a guide for improvisation. I would eagerly leave behind staff paper to play from a picture in *National Geographic*. There is something magical about moving between these two worlds (the visual and the auditory), as if one were the hither side, the mysterious subconscious, of the other. And so I often use music to dream vision, vision to dream music. Working on the computer, the visual interface of audio-editing software literally altered how I saw and worked with sound. The ability to "magnify" time fascinated me: Rhythm could become elastic; tone, deconstructed. I discovered a passion for this temporal range, making countless consecutive incisions somewhere between 10–20 Hz—between rhythm and tone. I began experimenting with these ideas on my own and in collaboration with Seth Nehil (*Ecllipsis, And/Oar*). And while the software interface was inspiring my mind's ear, I was itching to play this music with others somehow.

Fig. 7. Matthew Marble, *Whorl* notation: (top) Reaction Map; (bottom) Hologram, 2008. (© Matt Marble)
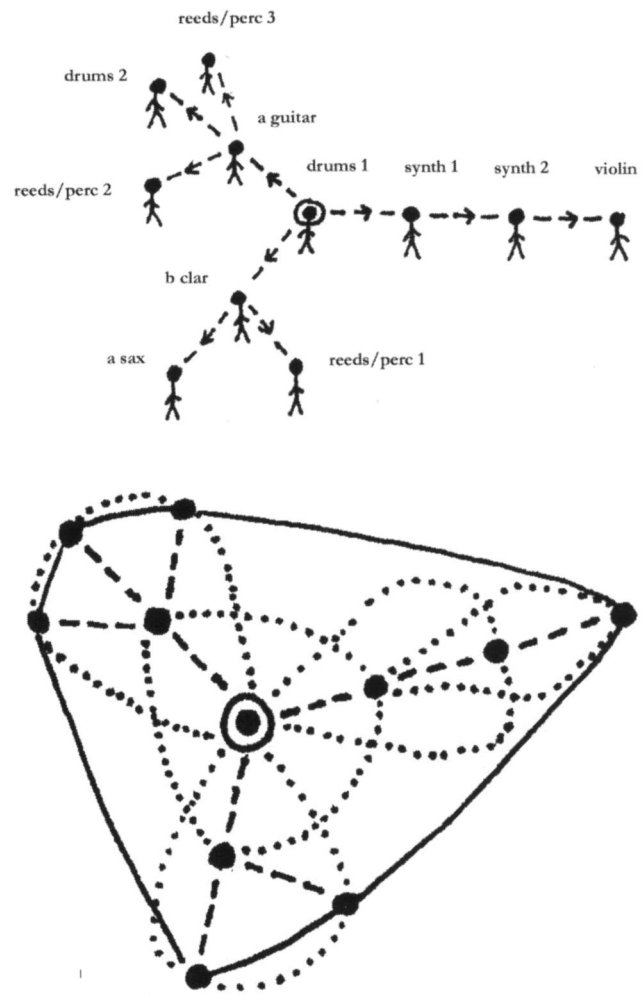
Ensemble playing marked a return to the score for me, but not to a traditional one. Notating at such a micro-level is surely possible in modern notation but it never satisfied me. I was interested in the human variabilities of reaction time and the experience of social space, feeling sounds moving through the ensemble, like blood through the body. This led me to drawing—not notes or squiggly lines, but people in space. Through this *social geometry*, musicians freely choose from sounds described or openly notated in a full score. The players initiate a kind of chain reaction, one player responding to another, one sound at a time, from which the overlapping of their sounds and varying *reaction times* create the "holographic" textures that fascinate me.

Whorl (2008) is a piece, one of five pieces now, that has been particularly inspired by plant life, through my intuitive study of botany. The related images I found in the botanical realm seemed viscerally connected to how I was imagining ensemble composition at the time, so I began superimposing the visual language onto my musical one through the interface of the score. After experimenting with circular forms, I found that botanical arrangements, such as the whorl, offered me a new way of hearing these works (a "whorl" is an arrangement of leaves, all attached to the same point, wrapping around the stem, sometimes branching out further). In *whorl*, a percussionist is the center point, with three lines of performers stemming off of him. Sound continuously moves from the percussionist outward, on a loop. The ensemble—made up of some of Portland's best musicians—was further enhanced by the rich reverberation of the performance space. The recording presented on the LMJ21 CD is made from the second of two performances, each with slightly different instrumentation. This recording is a series of vignettes, synthetically sewn together, from the original 20-min performance.

Matthew Marble (b. 1979, MS) is a composer, visual artist, and writer living in Brooklyn, NY. His solo and ensemble work sing through biological processes, transcendental intentionality, ekphrasis, and/or the ephemeral technology of dreams. His scores/drawings have been presented at the MACBA in Barcelona (SP) and the Jersey City Museum (US). Marble is currently a 3rd year Ph.D. candidate in music composition at Princeton University and is completing his dissertation on the creative process of the late Arthur Russell. For more information, visit: <www.mattmarble.com>.

PHILLIP SCHULZE: *CAUSE, UNFOLD, PROCEED—LEONARDO*

© Phillip Schulze

Composed and performed by Phillip Schulze, February 2011. Recorded live by Phillip Schulze at the Fürstenwall, Düsseldorf, Germany. Program: Digitale Pumpe.

Contact: E-mail: <mail_at_phillip-schulze_dot_de>. Web site: <www.phillip-schulze.de>.

Influenced by musique concrète and the idea of sound-objects, I have been interested in designing an instrument on a software basis, one that would allow similar musical processes as those based on concrete sonic material, but in real time. My intention for this instrument was to open up the possibilities for making music based on concrete material in an improvisatory setting. The act of using concrete material in real time contrasts with the traditional practice of musique concrète, in which the process of recording and its performative presentation were separate.

In the course of deeper performative investigations in more recent years, I became more and more detached from the relationship of utilizing sonic material from preexisting sources. Instead, I began to incorporate and shape musical events from only the available material from the immediate environs.

Cause, Unfold, Proceed is a series of electronic improvisations framed by abstract compositional, technical and physical restrictions. The title is an abstract description of the overall compositional structure, envelope or arc of the piece. Furthermore it describes the general procedure of how to execute the instrument, a procedure imposed by its inherent design.

The word *Cause* symbolizes the starting point of the piece; the site, physical elements and actions, along with my own physical interventions. These alone, together or in any combination with feedback networks, become a starting point for electronic manipulations.

With the unfolding of feedback systems through the computer, the program and the site where everything is situated, we enter the second phase, called *Unfold*. This is generally the most fragile and risk-filled phase of the performance, yet something has to be created out of the unknown, and the material routed through feedback networks is naturally extremely responsive to all kinds of happenstances. The feedback operations bring out hidden elements within the acoustic and electronic equipment that is inherently responsive to happenstances and interventions. Feedback exposes and reflects the site and its properties as it is created by these same properties. The emerging material is gathered, prepared, layered, structured and filtered in various ways.

Proceed implies the more creative, artistic phases; everything is ready for execution, for the artist to conduct—a phase of intuitive investigation. Of course, this order of procedure is only hypothetical. That is, all three stages may interweave in a lively exchange, taking turns or existing in simultaneity, in accordance with more general contrapuntal dicta. But the balance of each investigation is different.

All sounds emerge from the same origin. The sounds, freely unfolding or proceeding under some restriction, describe a sonic evolution into the unknown.

To summarize, the sound material originates from causal elements found within the site itself (Fig. 8) (the computer hardware and software) and with feedback. This amalgamated construct unfolds and proceeds musically due to regulatory measures and interventions carried out by the

Fig. 8. Phillip Schulze, *Cause, Unfold, Proceed—Leonardo*, 2011. (© Phillip Schulze)
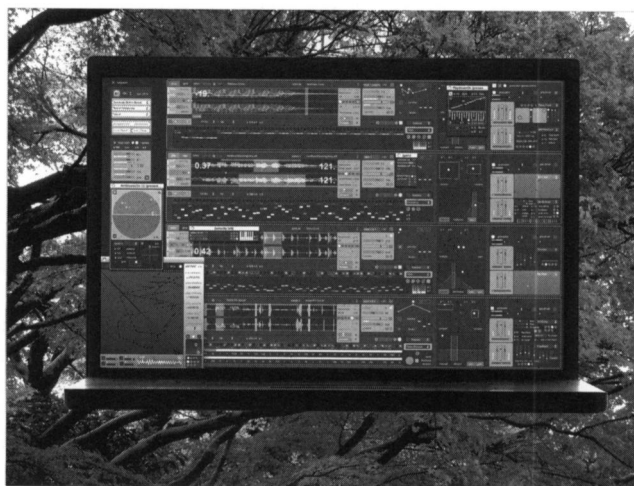
performer's hand. Concrete material evolves and devolves into alternations between raw, abstract and granular sound generations.

Phillip Schulze works in the field of composition and media time-based art and is currently living in Düsseldorf, Germany. His work oscillates between different artistic forms of expression: On the one hand, he focuses on compositions for classical instruments, electroacoustic music via synthesizers and self-constructed software instruments. On the other hand, he develops much of his work in a visual art context. He develops sound, light and video environments, installations, performances and extended concert situations with an aim at finding intersection points between visual and auditory experience, as well as relations among participants, objects and sites. In December 2010 Schulze released the Vinyl/CD Edition Cause Unfold Proceed I, II, III, IV & V. *In 2011 the University of Music Düsseldorf appointed him as Visiting Professor of Music Informatics at the Institute for Music and Media.*

GUILLERMO GREGORIO: *COPLANAR 1+2*

Composed by Guillermo Gregorio, 2001.

Contact: E-mail: <gregoriog@ameritech.net>.

Coplanar 1+2 (2001) was originally written for oboe, clarinet, viola, violoncello, contrabass and electronics. It consists of two different types of notation performed simultaneously, one in a relatively conventional fashion, and another that is a purely graphic score. The former is intended for melodic instruments, and the other for live electronics. Both scores are formed by isolated musical episodes connected by straight lines of variable length (Fig. 9). The connecting lines should be read as silences, with measures indicating duration. The performers may start anywhere and create their own itineraries through the episodes containing different melodic fragments (in the case of the notated circuit) and fragments of undetermined sonic events (in the case of the graphic circuit) in any direction, by following the possible circuits, performing the given material and observing the lines of silence. Each melodic episode, while different from any other in the score, is related to the others in some respect in order to give consistency and identity to the work even though the piece changes every time it is performed. It is easy to understand that in this kind of piece, the "density" of sound will depend on the number of instruments used. In the original version for five instruments the music sounds pointillistic, almost "Webernesque." In the present version for 12 instruments the resulting sound is rather "textural."

In an artistic sense, the word "coplanar" refers to a certain object (or kind of object) developed in a more-or-less independent way by two Argentinian avant-garde art movements (Asociación Arte Concreto-Invención and Movimiento Madi) during the mid-1940s. The coplanar was a product of years of research by members of these movements to formulate a non-idealistic, non-metaphysical aesthetic and, accordingly, to propose a new kind of artistic object. In the view of these avant-gardists, a painting should not only not represent objects foreign to the identity of the painting as an object in itself, it should not contain any trace of the representation of time, space or depth in an *illusionistic* way. They wanted to achieve a genuinely *realistic* painting directly engaged with the time and space of our actual experience. They believed they solved the problem by reconfiguring the previously square or rectangular "window" of the picture plane into various separated flat shapes subtly connected by metal rods or equivalent devices.
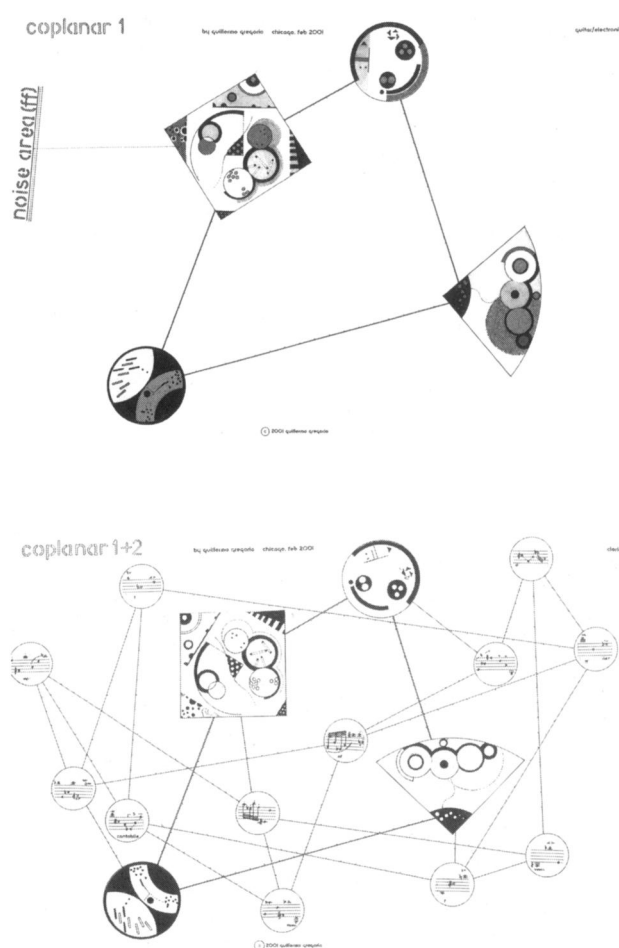

Fig. 9. Guillermo Gregorio, *Coplanar 1+2*, 2001. (© Guillermo Gregorio)

In that way, real space penetrated the painting, acquiring an equal importance to the painting itself. The coplanar was thus a *real* object interacting in *real space* at a *real time* within a universe of ordinary objects. The subsequent experiences of Fluxus, "happenings," environmental installations, certain kinds of conceptual art, and improvised and "real time" electronic music accustomed us to look at "real space" and "real time"—in an aesthetic sense—in unprecedented ways during the last decades of the 20th century. Nevertheless, the coplanars themselves always exerted a strong influence on me, and for that reason I felt compelled to make this series of pieces as an homage to those old masters. I have long been interested in music as a concrete, sonic event engaged with real space. Moreover, some years later, while looking for a practical way to connect notated parts of a composition through "segments" of variable durations of silence, I noticed that the resulting figure in the score resembled the shape of a coplanar! I imagined the silence as the interpenetrating space, and the segments as the supporting rods.

Born in Buenos Aires, Argentina, in 1941, American composer Guillermo Gregorio has lived variously in Europe and the United States since 1986. Since 1996 he has resided in Chicago. With his Chicago-based trio and other ensembles, Gregorio has performed his own compositions in Europe and the United States and recorded them on numerous CDs issued by the hatART, New World Records, Atavistic and Nuscope labels, among others. As a clarinetist/ alto saxophonist he has also worked and recorded with other New

Music and experimental ensembles. In his compositions, both conventionally notated and graphic, Gregorio—a visual artist himself—has frequently explored the intersection of visual and aural experience.

RAJESH K. MEHTA: *IMAGINATIONAL MAP 2* (R1,R3,R5)

Composed by Rajesh K. Mehta, 2001. Recorded at Mehta Studios, Berlin, Fall 2002. Mixed and Mastered by Christian Pfleger, Berlin, Fall 2002.

Instruments and Performers: hybrid, slide trumpets and extensions: Rajesh K. Mehta; voice: Barbara Friederichsen-Mehta; cello: Rohan de Saram; and percussion (UDU drum, Caixx-ixxi, shakers, bells, wood and plastic blocks): Ray Kaczynski. Sound-processing program: Cross Sound, a custom-designed sound-object creation program by Christian Niemitz-Rossant, Berlin.

Contact: Rajesh K. Mehta, e-mail: <orka.muse@gmail.com>. Web site: <www.orka-m.com>.

My work with intercultural and interdisciplinary music projects has led me to analyze and deconstruct existing notions and practices relating to notation and ultimately to reinvent a new approach to compositional practice. International collaborations as an instrumentalist with modern dance, Indian classical and devotional music traditions, contemporary architecture and my experience with engineering acoustics inspired me to create the "hybrid trumpet"—connecting multiple trumpets with tubing and sound transforming devices—and also to include a microtonal slide trumpet into my performances. These new instruments extended the sonic and spatialized music possibilities of the conventional trumpet, offering a new range of expression. Subsequently, my search for a notational framework resulted in the creation of a series of graphical

drawings called "imaginational maps," a process that I began in 2001 while living in Berlin.

The graphical drawing *Imaginational Map 2* (Fig. 10) provides a meta-notational framework that allows for manifold compositional manifestations and musical interpretations. It allows the participation of musicians from any world music tradition and contains navigational information for moving musicians, choreographic material for dancers and film projection material.

The musical composition is derived from the natural measurability and scalability of being drawn on a Cartesian grid. The x-axis is used for temporal scaling and the y-axis for pitch and a superimposed pitch and time-scaling measurement is employed for vertical objects. The drawings contain four basic graphical object types: "Ornamental Objects" (O-objects), "Pointillistic Objects" (P-objects), "Trajectory Objects" (T-objects) and "Relational Objects" (R-objects). The "Ornamental Objects," through their DNA-like twisting shapes, represent lyrical and microtonal forms and have, through various forms of shading, additional interpretive instructions for a specific type of sound transformation. The "Pointillistic Objects" are represented through "percussive clouds" and are sonically rendered by a custom-designed graphical sound-object creation computer program in addition to being interpreted by acoustic instruments. The "Trajectory Objects"—the vectors within the drawing—are interpreted as glissandi. Finally the "Relational Objects" (the dotted lines) are gluing devices that interconnect all graphical objects that are crossed on their paths and are used methodically to generate musical pieces that are then scored through a macro-timing diagram.

As the composer, my process is akin to that of a music-architect using a design-build approach: The drawing behaves like an architectural plan leading to the construction of a musical architecture that adheres to the structural parameters inherent in the drawing. For the interpreter, however, the metaphor becomes localized into a map in which many degrees of freedom between improvisation and composition are explored
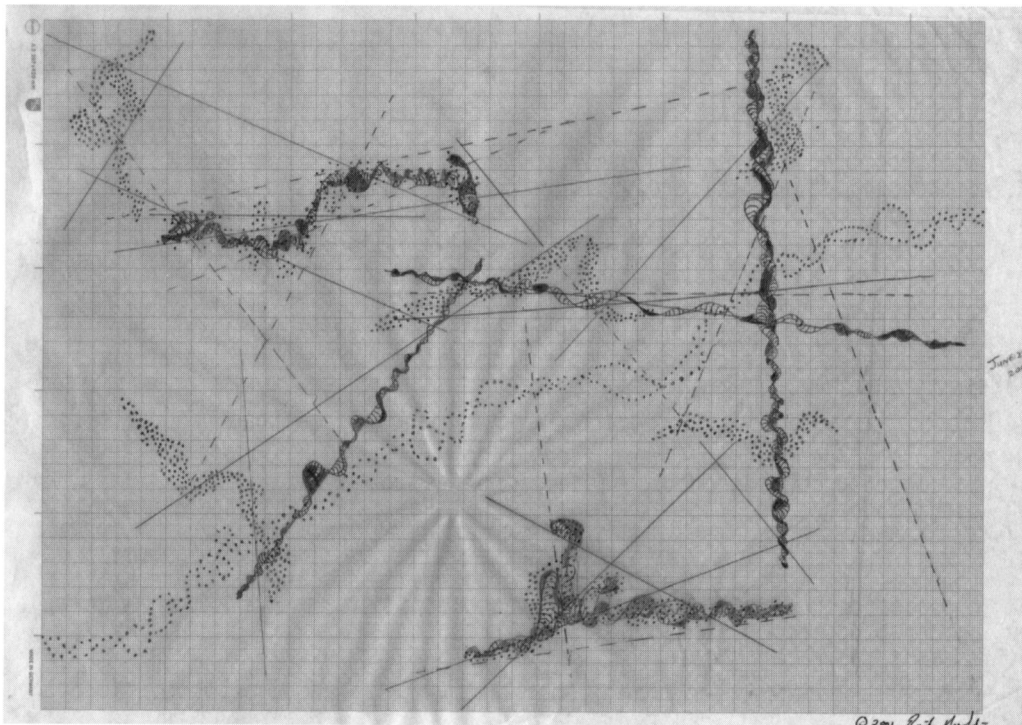
Fig. 10. Rajesh K. Mehta, *Imaginational Map 2*, 2001. (© 2001 Rajesh K. Mehta)

in real time through a landscape of shifting sonic and navigational choices.

In 2002, the *Imaginational Map 2* was the basis for my music-architecture project "sounding buildings": a musical-visual composition on DVD co-sponsored by MIT entitled "Inaugurating MIT's Simmons Hall," in collaboration with the building's architect Steven Holl. The selected audio tracks were specifically recorded for this project and are parts of the larger composition for voice (and multi-layered voices), cello, hybrid trumpets and a battery of percussion instruments.

Rajesh K. Mehta (born 1964, Calcutta, India) graduated from MIT in Humanities and Engineering in 1986. He is the founder and artistic director of ORKA-M: International Institute of Innovative Music and an internationally renowned hybrid trumpet player, composer, inventor and engineer. Mehta worked in the San Francisco Bay Area from 1987–1991 and began his music career in 1991 in Switzerland. He was first based in Amsterdam and then had a 7-year residence in Berlin (1998–2005), with awards leading him to Cork (Ireland) and Chennai (India). He went on to establish his long-standing vision for a pioneering music institution in India/Asia: He founded ORKA-M in Mumbai in 2006 and expanded to Singapore in 2009.

PAULINE OLIVEROS: *THE WORLD WIDE TUNING MEDITATION*

Credits: © Copyright Deep Listening Publications, 2011.

Composed by Pauline Oliveros, 1991. Recorded 2007. Performers: Audience members.

The World Wide Tuning Meditation (2007)

Begin by taking a deep breath and letting it all the way out with air sound.
Listen with your mind's ear for a tone.

On the next breath using any vowel sound, sing the tone that you have silently perceived on one comfortable breath.

Listen to the whole field of sound the group is making.
Select a voice distant from you and tune as exactly as possible to the tone you are hearing from that voice.

Listen again to the whole field of sound the group is making.
Contribute by singing a new tone that no one else is singing.

Continue by listening then singing a tone of your own or tuning to the tone of another voice alternately.

Commentary:

Always keep the same tone for any single breath. Change to a new tone on another breath.
Listen for distant partners for tuning
Sound your new tone so that it may be heard distantly.

Communicate with as many difference voices as possible.

Sing warmly!

Pauline Oliveros

Fig. 11. Pauline Oliveros, *The World Wide Tuning Meditation*, 2007. (© Deep Listening Publications)

Contact: Pauline Oliveros, e-mail: <pauline.oliveros@gmail.com>. Web site: <paulineoliveros.us>.

The instructions for the *Tuning Meditation* (Fig. 11) are designed to promote heightened listening in the participants that accumulates and amplifies during the course of the piece. The instructions address the direction of attention within the capabilities of the participants in the ways described below.

There are two forms of attention: exclusive (focal) and inclusive (global). Exclusive attention is linear and directed moment by moment to detail. Inclusive attention is non-linear and is open and receptive to all input without focused detail. Both forms of attention can be used internally (addressed to the mind) or externally (addressed to the outside world or environment).

First the participant listens internally using exclusive attention to determine a pitch to sound initially. Then he or she listens externally inclusively to all the pitches that others are sounding. Exclusive attention is then addressed to a specific pitch in order to match it exactly or internally to find a pitch that is not being sounded by anyone else. Attention is continually being flexed from focal to global, internal to external throughout the duration of the piece.

The musical result is an initial chord cluster that gradually shifts as new tones are entered. There are threads of common tones running through the cluster that often becomes chordal and gravitates to the resonant frequency of the space of the performance. The piece ends by an unspoken consensus. The *Tuning Meditation* has ranged in duration from 2 minutes to more than an hour and a half. The number of performers has varied from a minimum of six to 6,000.

The *Tuning Meditation* is a metaphor for building community through a shared activity that has individual innovations and/or imitations arriving at a consensual result.

Pauline Oliveros (1932) is a composer, performer, author and philosopher. She pioneered Deep Listening, an aesthetic based upon principles of improvisation, electronic music, ritual, teaching and meditation designed to inspire both trained and untrained performers to practice the art of listening and responding to environmental conditions in solo and ensemble situations. During the mid-1960s she served as the first director of the Tape Music Center at Mills College, a.k.a. the Center for Contemporary Music, then as Professor of Music and later as Director of the Center for Music Experiment at the University of California at San Diego. Since 2001 she has served as Distinguished Research Professor of Music in the Arts department at Rensselaer Polytechnic Institute (RPI), engaged in research on a National Science Foundation CreativeIT project. She also serves as Darius Milhaud Composer in Residence at Mills College doing telepresence teaching and is president of Deep Listening Institute, Ltd. She received the 2009–2010 William Schuman Award from Columbia University. See <paulineoliveros.us>; <www.deeplistening.org/>.