

Hallways  
Liner Notes

Introduction to the CD, by Jeanne Parson

Too many times in the past I've found myself groping for a clever answer to the question "So what kind of music do you make with this HMSL?". Finally, I have a response, I can hand over this CD and just say "Listen."

HMSL became part of my musical world because I wanted a computer music environment where I could grow, experiment, collaborate, work alone, improvise, and strategize. It's not the easy route, but I won't outgrow it. Producing Hallways has shown me that for every musical path I can envision, another composer has envisioned one I would never have imagined.

Jeanne Parson, Oakland, CA 1993.

17 ideas why HMSL

I have written a great deal about HMSL in the past ten years, from technical, musical, and theoretical perspectives. I have explained, crashed, rethought, demonstrated, cursed, become immersed in it. I have taught it many times, in many ways and versions. For this gathering of extraordinary pieces that use it, by some of my closest friends, I have simply listed 17 fundamental ideas concerning HMSL's inception and evolution.

experiment (in all senses)

no limits or concessions to conventional musical idea

language

co-evolution of machine/human/music

ideas (not solutions)

as difficult as it needs to be (nothing impossible, simple things hard)

do-it-yourself

tools, concepts, forms

nothing hidden (hack with our blessings and advice, at your own risk)

any notion of what music is must be avoided in the code

all notions of what music is must be supportable by the code

no distinctions: [performance/composition/theory/soft/thought]-ware

involvement

a place to meet

research is composition is music is idea is sound

software as art, software as community, community as software

finish?

Larry Polansky

Lebanon, NH 9/23/93

The World's Longest Melody: Piano Studies

#2 opening/ for anna diamond polansky

Larry Polansky

performed by the composer

The TWLM: Piano Studies are live improvisations using a stand-alone interactive application written in HMSL that creates melodies based on the probability of them doing what they just did. In other words, the probability that a “melody” having just risen or fallen, will continue to rise or fall. “Melodies” are series of durations, pitches, loudnesses, or any other quantifiable musical parameter. Using the software, the process can be applied to 16 voices, four parameters of each voice (pitch, duration, loudness, and generalized control, here applied to stereo panning). All parameters, probabilities and voices are independent of each other: different probabilities (and thus very different melodic behavior) may be used for a voice’s duration, pitch, loudness, and in these pieces, stereo panning. Other related parameters can be controlled interactively and in real-time: parametric range of each voice; individual probabilities for each voice, each of the four parameters; “stepsize” for each voice, each of the four parameters (how much the “melody” goes up or down in a given parameter); various tempi controls; the ability to “jam” a parameter to a certain value; and certain harmonic and rhythmic relationships (which I added for this version) which relate to the harmonic series and integer rhythmic ratios. Each improvisation uses a different tuning system, based on some rational system and then distorted in a different way. (For a more complete description of the software and the TWLM idea, as well as the software itself, contact Frog Peak Music).

These five studies are selected from a group of 17 improvisations recorded over the course of two nights. The recordings are of live performances with no editing. Each study’s dedication was made after the piece was completed. (LP)

Performed and recorded at the Bregman Electro-Acoustic Music Studio, Dartmouth College.

Squiggle

Phil Burk

Performed by Jeanne Parson and Phil Burk, Mills College CCM, 1992.

Squiggle is a duet for two DSP 56000-based real-time synthesis systems. The performers can use the x, y movement of a mouse to control two synthesis parameters together. The performer can make a musical gesture by drawing a squiggle that is recorded and appears in miniature on one of 16 buttons. Parameters can then be selected which can be mapped to the x or y axis for a gesture. The performer starts with blank buttons and slowly builds up a vocabulary of gestures. More than one gesture can be played at a time to create complex combinations. (PB)

Bigsounds/Smallsounds

David Fuqua

Larry Polansky, electric guitar and live electronics.

Bigsounds/Smallsounds, for electric guitar and computer-controlled digital signal processor, is an improvisatory piece based on contrasts between large and small musical gestures. The guitar is retuned with the intervals between the strings microtonally larger than in a standard tuning, giving the guitar a more noisy sound. Instead of using a specific computer program, the score gives guidelines for the performer to write software exploring different types of effects in the different sections of the piece. For this performance, Larry wrote the software in HMSL. The software is thus a part of the performer’s interpretation rather than a predefined element of the piece.

(DF)

Recorded August 8, 1993 by Tom DiMuzio. This recording was made possible by a grant from the New Hampshire State Council for the Arts.

The World's Longest Melody: Piano Studies

#11 moving/ for jody diamond

Larry Polansky

Silent Theater (1992)

John Bischoff

performed by the composer

The composition of Silent Theater followed a course of step-by-step development. The primary sound generating instrument is a Yamaha TX81Z synthesizer controlled by my Amiga 500 computer running HMSL.

The first step consisted of designing a sound "finder". I defined a "sound" as a particular subset of TX81Z parameters and then created mechanisms for randomizing the parameter values, sending them to the TX81Z, listening to the resulting sound, and saving the values if I liked them. In this way, I compiled 4 tables of 20 sounds each for a total of 80 sound definitions. The second step involved creating a simple method for making gradual transformations from one sound to another. This was done by incrementing or decrementing the parameter values in the TX81Z over time until the target values of the new sound were reached. The third step in the development of the piece made extensive use of concurrently running processes which are possible in HMSL. I defined 8 different reiterative processes which served to "play" the 80 sounds in a random sequence while modulating the rates of transition between sounds and the reverberation characteristics provided by a Lexicon LXP-1.

These concurrent processes allowed the unfolding of sonic materials to occur automatically and unpredictably. The final compositional step incorporated a performer. By triggering keys on a MIDI keyboard, a performer can stop and restart the concurrent processes, thereby slowing down or stopping sonic transformations. This allows the performer to dwell in a given sonic area for awhile during the course of a performance. In addition, other keys trigger static tones on a Peavey DPM-V3 synthesizer which the performer can use to enhance the current sonic terrain. The title Silent Theater is a reference to my experience of performing the piece: I feel as if projected into a dark movie house as a theater organist who must accompany a strange silent film which he has never seen. (JB)

Recorded May 8, 1993 in Berkeley, California.

The World's Longest Melody: Piano Studies

#1 calming / for daniel goode and ann snitow

Composer: Larry Polansky

Extended Trio: Sampler (1992)

David Rosenboom

Collaborative Performance by: David Rosenboom, Yamaha MIDI Grand Piano,

Disklavier & computer music systems; Charlie Haden, String Bass; and Trichy

Sankaran, South Indian Mrdangam & Kanjira

Central to my original inspiration for creating HMSL and several of its software and hardware predecessors, dating back to the mid-1960's, was the potential for the computer to create intelligent, interactive musical environments for the purpose of extending

spontaneous music making. These excerpts are from a concert, entitled Extended Trio, in which each musician's instrument was interfaced to a computer system programmed to recognize musical features. The programs are based on partial models of musical perception — mimicking ways in which the brain extracts and categorizes phrases, textures and rhythmic patterns. These structural elements are stored, recalled and transformed in response to features detected in further performance. In this way, the computer responds to aspects of musical style and gives the composer/performer new ways to construct forms that evolve naturally in response to the way a particular musician plays. With such interactivity, the concept of formal artifact becomes superseded by the structure of continuous imaginative dialog. The programs were written by Rosenboom with HMSL and include HFG (Hierarchical Form Generator) and Layagnanam (Knowledge of Time). All the sounds produced by the responding computers were created by applying digital signal processing algorithms to samples taken from the original instruments, with the exception of the responding Disklavier. (DR)

Recorded live in concert at the Pacific Design Center, Green Theater, West Hollywood, California, April 7, 1992 by Bob O'Neill, edited by David Rosenboom. Developed and produced at the Center for Experiments in Art, Information and Technology, California Institute for the Arts, with support from the AT&T Foundation, the Peter and Eileen Norton Family Foundation and Yamaha Foundation of America.

RelNet

Composer: Phil Burk

Performed by Jeanne Parson and Phil Burk, Mills College CCM, 1992.

The sounds in RelNet are created by real-time software synthesis. The pitches are derived using relative (as opposed to absolute) just intonation. In absolute tuning, pitches are whole number ratios of a fundamental pitch. In relative tuning, new pitches are defined as whole number ratios of previous pitches. In RelNet, a series of whole number pitch ratios can be specified using the on-screen computer interface, and the performer can choose between relative and absolute intonation, as well as specify ratios for note duration (based on relative or absolute duration). FM synthesis is used for creating the timbres. The performers control the carrier/modulator ratios and amplitude envelopes. This piece is performed using two or more host computers linked together in a MIDI ring network. Each computer has its own DSP system. Note event "tokens" are passed around the network. Each token contains the frequency of the previous note and its duration. When a host computer receives a token it calculates a new pitch, plays it, then passes a token to its neighbor. The performer can also control the creation of new tokens, or "eat" incoming tokens. (PB)

Technical Note: Both Squiggle and RelNet use a real-time HMSL DSP library written by Phil Burk.

The World's Longest Melody: Piano Studies

#4 resolving / for sydelle polansky

Larry Polansky

Meat

Nick Didkovsky

Nick Didkovsky, electric guitar and software

Meat was create with electric guitar and a software instrument written in HMSL entitled

IMPv2.0, which I designed specifically for live improvisation. The electric guitar and the computer are in no technological way linked to each other. The only conduit between them is the performer.

The performer can control IMP to varying degrees. At times the software will make its own choices while at other times the performer may elect to control the computer performance in real time. None of the melodies, rhythms and samples heard during an IMP performance have been predetermined or preselected.

I have performed solo with IMP at the Kitchen and Experimental Intermedia Foundation and in duet with improvisers Anne LaBerge, Marc Wagnon, and Fred Frith. The Amiga audio samples used by IMP were taken from recordings of improvisations with guitarist CW Vrtacek.

IMP is in a constant state of change and growth; new features are added, existing features are altered or removed. The process of coding the software is itself akin to improvisation, in that it is essentially interactive and mutable.

Meat was recorded live to DAT during a very hot New York City summer afternoon, with windows closed so as not to disturb the neighbors, and cooling fans shut off to lower the noise floor. An uncomfortable and fertile creative environment. (ND)

Lattice (3327)

Carter Scholz

performed by the composer

Lattice is based on the multidimensional just tuning theories of Johnston, Tenney, and others, in which a pitch is represented as a point in a discrete n-space. The origin of the space is some tonic (1/1). Each dimension of the space corresponds to a prime limit: 2, 3, 5, 7, 11, 13, 17...

This realization uses a 7-dimensional (17-limit) tuning space. An HMSL object `ob.lattice`, tracks the pitches in the space. `ob.lattice` has methods for measuring the overall harmonic complexity of the lattice, and for moving individual tones toward or away from consonance. Some of these harmonic metrics are historical (from Euler, Tenney, Wilson, Barlow) and some original.

The performer controls which dimensions pitches may move along, upper and lower pitch limits, and speed of movement. This performance is in 7 sections. In each, a chord of 6 tones moves from a unison to some degree of harmonic complexity and back to unison. Each section but the last adds a degree of freedom: the first restricts movement to the 3-limit; the sixth includes all primes to the 17-limit; the last moves only on the 7's axis. The highest frequency in this performance is 3327 Hz. (CS)

The World's Longest Melody: Piano Studies

#5 ringing / for susan mcclary

Larry Polansky

Hymn Tunes

Jeanne Parson

performed by the composer

Sunday morning ... church, seated next to grandma. This piece is a reflection on years of such moments, jumbled together in a sort of ordered-free association. Four familiar Christian hymns are used as melodic source material, with harmony derived from the juxtaposition of the four tunes against one another and the performer's improvisation with that evolution. The performer has for a score only the melodies. As the piece

progresses, each melody is dissected into smaller fragments which are ““patched” together into a musical quilt. The HMSL program holds the hymn tunes and a set of Markov chains which control the order in which the fragments appear. The HMSL ensemble in this performance is a Casio VZ-10M synthesizer. The performer can influence (but never control) the stochastic processes, and can start and stop each of the four hymns in real-time. A MIDI keyboard is used for this, located as conveniently close as possible to the acoustic piano, which is controlled by the same set of ten fingers and many years of fond memories. (JP)

Study for Lurch

Robert Marsanyi

performed by the composer

There are two things that strike me about working with a new instrument: a homemade digital signal processor. One is the direct correspondence of computer code and sound; with this instrument, you're not manipulating parameters of some sound-making device any more, you're dealing directly with the sound itself. Parameters like pitch, amplitude, or location become emergent properties. The other is the nature of a behavior built around audio interrupts. It's like writing an orchestral piece where the conductor gives the ensemble five minutes to figure out what they're going to play next, then gives a downbeat and gets a sound, and does this for the duration of the piece.

Study for Lurch uses a population of small kernels of self-modifying DSP code and two sources: an internally-generated sine wave, and one channel of FM or AM radio. The performer plays a MIDI controller reflecting how (s)he feels about the sound of the piece at any given moment. (RM)

The World's Longest Melody: Piano Studies

#9 following / for sonic youth

Larry Polansky

Biographies

John Bischoff has been creating electronic music both for solo performer and in experimental computer bands since 1973. His works explore new aspects of musicality found within the electronic medium by direct play and investigation. He has performed extensively in the Bay Area, at New Music America festivals in 1981 and 1989, the Autumn Festival in Paris, and Fylkingen in Stockholm. He is a founding member of the legendary League of Automatic Music Composers, the first computer network band, and co-authored an article on the League's music that appears in ““Foundations of Computer Music”, MIT Press (1985). Mr. Bischoff currently works as Studios Coordinator at the Center for Contemporary Music, Mills College.

Phil Burk is one of the co-creators of HMSL. In the mid 70's, he became obsessed with making weird noises. Since he couldn't afford to buy a synthesizer, he decided to build one. He was soon building cheesy oscillators into shoe boxes, and hacking a Z80 single board computer to make music. In 1981, he began hanging around the Mills Center for Contemporary Music with Larry Polansky. Together, they developed Forth code to control a Buchla 400 digital oscillator, and later, Phil became part of the HMSL team. Phil also co-authored JForth for the Amiga with Mike Haas. The promise of real-time synthesis enticed Phil into developing a 56000 toolbox for HMSL. In 1992, he began to work with 3DO to develop their DSP synthesis and music tools, and he has rarely been seen since. Nick Didkovsky is a guitarist, composer and computer music programmer who composes

for his band Doctor Nerve and other ensembles such as the Fred Frith Guitar Quartet, of which he is a member. Nick resides in New York City, where he is chairman of computer sciences at a private high school. He has been using HMSL since Version 2.0.

David Fuqua is a composer/performer, whose compositions for acoustic and electronic media have been performed in the Northeast and Midwest, as well as in St. Petersburg, Russia. He has been using HMSL since 1991 for live interactive works and computer assisted composition. He currently lives in Hanover, New Hampshire, where he is the administrative director for Frog Peak Music (A Composers' Collective) and the American Gamelan Institute.

Charlie Haden was a founder of the CalArts Jazz Program and has been an integral part of avant-garde jazz. His early recordings with the Ornette Coleman Quartet Ñ Shape of Jazz to Come, Change of the Century, Art of the Improviser and This is Our Music Ñ are considered milestones. Moving easily between experimental and traditional music, he began playing jazz in 1956 and has recorded over 300 albums with a wide range of artists, including Pee Wee Russell, Henry Red Allen, John Coltrane, Gato Barbieri, John McLaughlin, John Scofield, Keith Jarrett, Pat Metheny, Joe Henderson and Michael Brecker. His album with the Liberation Orchestra, Dream Keeper, was chosen as best jazz album of the year in 1991 by the Down Beat magazine readers' poll. He has also been chosen for the last eleven years as the number one bassist by the Down Beat readers' and interational critics' polls. He has received a Guggenheim Fellowship and four NEA grants in music composition.

Jeanne Parson composes and performs music in a variety of styles, from jazz and pop to video games and new music. She received her B.A. in Music Performance from Fresno State and her M.F.A in Electronic Music and the Recording Media from Mills College. While at Mills, Jeanne focussed her studies on HMSL, working closely with Phil Burk and studying composition with Larry Polansky and David Rosenboom. You may have seen her playing in a Nevada casino, or heard her on a TV commercial. Some know her as a college teacher, while others know her as a sound designer. Her friends know her as someone who is always trying to do too much, if there is such a thing.

Larry Polansky is one of the co-creators of HMSL. He is an active composer, performer, theorist, writer, programmer, teacher, editor and publisher. He is the director and co-founder of Frog Peak Music, and for ten years was on the faculty and staff at the Mills College Center for Contemporary Music. He currently teaches at Dartmouth College in New Hampshire.

David Rosenboom, one of the co-creators of HMSL, has been active as a composer, performer, and interdisciplinary artist, in electro-acoustic and computer music, composition for instruments, improvisation, performance art, research in extended musical interface with the human nervous system, multi-media and electronic music systems design, and as author, and educator since the 1960s. He is currently Dean of the School of Music at the California Institute of the Arts. His work has appeared regularly on major festivals and conferences and he has been widely acclaimed as a pioneer in American experimental music.

Trichy Sankaran is reknowned for his mastery of the South Indian classical drum, the mrdangam. He studied with Sri P.A Venkataraman and Sri Palani Subramania Pillai, has performed with the leading musicians of South India and recorded and concertized in India, Southeast Asia, Europe and North America. He has also performed with jazz,



10) Meat (Didkovsky)	4:13
11) Lattice (Scholz)	7:10
12) TWLM: Piano Study #5 (Polansky)	2:16
13) Hymn Tunes (Parson)	5:54
14) Study for Lurch (Marsanyi)	9:10
15) TWLM: Piano Study #9 (Polansky)	1:30

Extended Trio: Sampler, David Rosenboom Publishing, 1993. The World's Longest Melody Piano Studies, Frog Peak Music, 1993. Works by John Bischoff, Nick Didkovsky, David Fuqua, Larry Polansky, David Rosenboom and Carter Scholz: (C) (p) BMI. All works copyright (C) the composers, and the entire recording copyright (C) (p) Frog Peak Music.

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Frog Peak Music (A Composers' Collective). Box 5036, Hanover, NH 03755.

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[Notes: These notes rescued from wordprocessor mangling upgrade issues, 8/17/15)  
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