

LARRY POLANSKY
SELECTED COMPOSITIONS
1975-80
NOTES
JULY 1984, BERKELEY

PSALTERY (for Lou Harrison)

Composed 1977-8 Champaign-Urbana, Ill. Realized at the U. of Illinois Experimental Music Studios, Scott Wyatt, Director, with mixing assistance from Mark Haag and Melissa Birch. Equipment used: three four-track tape recorders, two stereo tape recorders, a Studor stereo butterfly-head deck for mastering, a 16-track mixing board, and a little equalization. 17 minutes long.

Psaltery is the first, and archetype, of a set of about 8 pieces, all of which employ the same harmonic scheme. In addition, this harmonic framework has been used, in one way or another, in almost every piece I've composed since that time. Psaltery consists of a continuous modulation between three harmonic series, all based on one fundamental. Only the first 17 harmonics of each fundamental are used, and the three fundamentals are themselves related as 1 - 5 - 3, so that the second two series are in fact part of the first were it extended. That is, the second series consists of 5,10,15,20,25, ... 85; and the third consists of 3,6,9,12,15, ..., 51; in relation to the fundamental of the first. There are several overlaps between these series: for example the 10th harmonic of the first is the second of the second, and the fifteenth of the first is common to all three (the only one that is). The structure of the piece is simple, the series on 1 builds slowly, and then modulates to the series on 5, which in turns modulates to that on 3, and then back to 1. This series then decays in exact reversal of how it appeared. The order of entrance of pitches is determined by a hierarchy of "most distant primes", in the following order (the beginning of the piece):

1,2,4,8,16,3,6,12,9,5,10,15,7,14,11,13,17

-- so that there is a progressive movement towards a more complex tonality. (However, in certain cases, these pitches are not ordered when octave equivalent, for example, 8 does not always come before 16, nor 6 before 12, and so on). Once the first series is complete, the second series begins to replace it in the reverse order of the above. In other words, the first partial to be introduced belong to the new fundamental is the most "distant", or seventeenth. Each partial from the new series replaces its closest neighbor from the old, in a modulation scheme not unlike, in conception at least, traditional rules of voice-leading. Each entrant is cross-faded with the pitch it replaces, and often this results in a "re-tuning" of a given pitch by just a few cents. For example, if we assume the 1/1 to be the pitch C, its fourteenth partial (Bb 31 cents flat of tempered) is replaced by the 11th harmonic of 5 (E), which is also a "Bb", but this time 63 cents flat, so that there is a difference of some 32 cents. (diagram on following page in C).

One important result of this harmonic modulation is the creation of ambiguities and illusions in the perception of fundamentals and tonal centers. Since at most points in the piece, a mixture of two harmonic series exists, there is a continual shifting in the total system of first order difference tones. In fact, the new fundamentals are perceived well before they actually occur, since all distant harmonics from a new series imply the fundamental and lower partials as important difference tones.

FOUR VOICE CANON #3

Composed 1975-76, Santa Cruz, California. Realized, Stanford Artificial Intelligence Laboratory, Palo Alto, 1976. Digitally synthesised using MUSIC 10, Leland Smith's SCORE Program, and SAIL. With algorithmic assistance from Andy Moorer. Additional computational and experimental work done on an Interdata Model 3 Minicomputer, with assistance from Bob Hoover, at the UCSC Electronic Music Studios.

FVC #3 is one of a set of pieces which explores the ideas of morphological transformation by a perceptually continuous function, defined as a function whose subsequent values are the "closest" (by some concept of distance in the perceptual space) to their predecessors. In the four voice canons, I made use of the set of permutations of n objects, and the partition of that set ($n!$ elements) based on movement by "2-transpositions", or the switching of two objects in the given element, thus:

ABDEC > BADEC > BDAEC

This is one way of defining "nearest-points" in a permutation group. The computer was used to construct this list by starting with a random element, finding a 2-transposition, seeing if that element had already been used, and if not, storing it in the list and using it to find the next. This process was continued until the list was exhausted. Mathematician and computer scientist/artist Scott Kim was able to prove that there are indeed cases when the computer can generate portions of the list from which there is no escape -- that is, there is no way to generate more elements by the prescribed rules, and it must begin again. Tests for this, and for overly long searches were incorporated into the SAIL and Interdata programs, and the computer was given a small facility for "backing up a little" if it had reached apparent dead-ends. Once it had completed the list, of $n!$ elements, these values were used to directly generate the piece.

For FVC #3, I constructed a rather simple FM Chowning-style instrument, but with several levels of modulation. For some time I had been practicing in a room adjacent to the gamelan at Santa Cruz, and though not particularly interested in the gongs and metallophones, the sound of the gambang, the Javanese "xylophone" intrigued me, and I chose amplitude and spectral envelopes that reminded me of a tuned wood-block sound, with the hope that the attack and decay characteristics would change in a difficult to predict "non-linear" fashion when the fundamental frequencies changed. I was pleased with the result. Five values were chosen for each of the sonic parameters available, including: pitch; several levels of FM amplitude and frequency (index); modulating waveform; attack, decay and steady state transient envelopes; duration; stereo location; etc. I was interested, ironically, after the elaborate permutation algorithm, in making these parameter value sets quite homogeneous (except, perhaps, in the pitch domain), so that perceptual differences between events would be very subtle for the most part. This was not so much an attempt to evolve the listener's perception to extremes of sensitivity (an interesting idea nonetheless), but rather out of an intuition that this

piece represented a kind of closed world, one in which mathematical/perceptual processes were simply activated for their own sake. By making the distinctions between sonic events difficult to perceive, I felt I was giving the music, in some sense, the privacy it needed.

Once these values and the event list were decided upon, the piece was completely determined. The entire work, some three and a half minutes long (which took over a year to produce), is a four voice mensuration canon by the golden mean, or approximately 1.618033 ... Each voice produces the list precisely, but the second through fourth voices have their durations scaled to their predecessors by this ratio (the limit of the successive ratios of the Fibonacci sequence). Each voice, in turn, starts at a time proportional to its quickened tempo, so that they all end precisely together, and the net effect is of an exponentially increasing temporal and timbral density. (I admit to a little cheating, however. In the final few seconds, I inserted a very slight accelerando and crescendo over all the voices, just for the "big finish").

FOUR VOICE CANON #4 for 1-4 marimbas

Written Toronto, 1977, revised, Champaign, 1978. Dedicated to William Winant, who premiered the work in both forms.

Recording: William Winant (all four marimbas), engineered by Richard Povall and Larry Polansky at the Center for Contemporary Music, 1982.

FVC #4, an orchestration of FVC #3 (and #2 before it), was written originally in collaboration with choreographer Andrea Smith, in Toronto, Canada. This larger piece was entitled Christopher Columbus/Cristobal Colon, and involved several dancers, two musicians (including myself), and some other theatre apparatus. There was a "voice" part, a text of randomly mixed Spanish and English concerning a sailor under Columbus' command who conjectured that the apparently sad fate of their voyage was due largely to the fact that their captain was a "Jewish devil". The marimba part had always been intended, however, to be a piece on its own.

FVC #4 uses the same computer generated permutation list as does #3 (but with only four values), but here the process is only applied to pitch. Each voice, starting from the first, uses 4 pitches derived from the harmonic series on C:

Voice 1: C1 - C2 - G2 - C3

Voice 2: E3 - G3 - Bb3 - C4

Voice 3: D4 - E4 - F#4 - G4

Voice 4: Ab4 - Bb4 - B4 - C5

— and in an "ideal" version, these would be played on a marimba tuned to the harmonic series on C. The durations in each voice are constant, and are scaled to each other in a manner similar to #3, but in this case the ratios are simple number approximations of the golden mean: 2 - 3 - 5 - 8; and their entry times are inversely proportional to the scale ratio, so that once again each voice plays the entire list at successively higher "tempi", but they all finish precisely together. In this way it is also an interesting challenge for the percussionist, who must play rather precise grupetti throughout, creating a complex polyphonic rhythmic resultant. The "romanticism" of #3 is significantly extended in this version — the entire piece is a continual crescendo and accelerando (beginning at about MM. = 45 and ending at about MM. = 120 for the first voice "pulse"). This means that the percussionist needs to superimpose these complex grupetti over a continually accelerating tempo. Another factor which makes this piece a rather difficult exercise is that all accents are based on the beginning of each 4-note group in all voices, so that the five and three grupetti are in a kind of constant hemiola.

Though this piece is marked for "1 - 4 marimbists", it is probably next to impossible for one player, and even difficult for two — but quite playable for three or four.

Other versions of the "four voice canon" exist. #2, from 1975, is a tape work for Interdata Model 3 Minicomputer and Moog realized at the UCSC Electronic Music Studios. Piano Study #4 (Et Morphogenese), a kind of abstract realization for unspecified instrumental ensemble or any number of pianists, any number of pianos, has been performed several times, most recently by the Mills College Contemporary Music Ensemble. In addition, Four Voice Canon #4 is currently in the repertoire of New York choreographer Ann Rodiger, who has choreographed a solo dance to it entitled Larry's #4.

PIANO STUDY #5 (FOR JPR) FOR FENDER RHODES IN JUST INTONATION

Composed in 1975, Santa Cruz, California.

Larry Polansky, Fender Rhodes; Paul Sparrow and Larry Tyrell, electronic drones.

Piano Study #5 is a highly structured improvisation for solo pianist and drone. The current version of the four octave tuning is:

C	Db	D	Eb	E	F	F#	G	Ab	A	Bb	B
1/1	21/20	9/8	6/5	5/4	4/3	7/5	3/2	8/5	5/3	7/4	15/8

(same for second octave)

33/32					21/16	11/8			13/8		
21/20		7/6			4/3				27/16		

-- where each octave (except for the first and second) is slightly different, but all are based on the idea of 1 - 3 - 5 tonalities with prime number fundamentals. Since each octave is slightly different, the entire keyboard has many more "wolves" than would a uniform just intonation, and the pianist need be intimately aware of the vertical implications of the various possible chord voicings. This tuning grew out of a series of experimental tunings done for trumpet player Jon Hassell in Toronto, where I tried to approximate the microtonal scales Jon used, based on his studies of Indian singing techniques. Another intonational interest of mine was to use an extended set of prime tonalities, with a very limited set of harmonies based on these primes - thus relating the tuning conception more closely to the harmonic series of a given fundamental. For example, there exists just the simple perfect fifth on the 11th (11/8 - 33/32), the same on the 7th, but with an added perfect fourth (7/4 - 21/16 - 7/6), and no harmonies built on the thirteenth, forcing the harmonic improviser to consider these ratios' implications in the harmonic systems of smaller primes (for example, a dominant eleventh chord with the 11th partial). In particular I was, and still am, tremendously interested in the more sophisticated use of seventh partial relationships, believing them for many reasons to be a kind of source, or psalter, for the world's ear. In this respect the 7/4, 21/16 and 7/6 can be used in their isolated harmonic context or in a variety of minor third and perfect fourth relationships to lower prime tonalities in this tuning.

The structure of Piano Study #5 is simple, the score consists of the tuning and a few paragraphs of performance directions. The pianist should take a simple melody or traditional song of his own choosing, and use that as a basis for improvisation. Harmonically he should start in tonalities based on lower primes, and gradually incorporate higher primes until all pitches are in use. The tonality

should then decay in the reverse of the beginning. A drone may or may not be used. I always use the Civil War tune "'Rally 'Round the Flag", for a variety of intonational, musical, and socio-political reasons.

To this date, I am the only pianist who has performed the piece, and have performed it only four times. The premiere was on a concert of American Music organized by pianist Steve Key in February of 1975, in Santa Cruz, and the second performance took place about a month later again in Santa Cruz. Both of these performances were assisted by Paul Sparrow (who lent me his piano and provided the drone), Larry Tyrell (drone), and Lou Harrison and Bill Colvig who lent me their monochord (#11) to tune with. The third performance was at Roulette in NYC in December of 1980, on a concert I did with bassist Richard Myron, on Dick Higgins' piano (lent to me by Phil Corner). The fourth performance, using a slightly different tuning, was done at Mills College in April of 1982, with Carrie Starr playing tambour.

The recording is taken from the second performance. Piano Study #5 is published in XenHarmonikon #5.

WILL YOU MISS ME

for flute, bass, 17-string Harrison-Colvig transfer harp in just intonation, and untrained male voice.

Based on a song by Sara Carter. Composed in 1977-79, in Urbana and NYC. Current version orchestrated from the original for solo harp and untrained male voice.

Performed by the New Kanon New Music Ensemble. Patricia Mundy, flute; Daniel Thomas, bass; Larry Polansky, harp; and Gary Schmidt, voice.

Will You Miss Me is one of a set of pieces based on the music of the Carter family, written soon after I did a setting of "Fifty Miles of Elbow Room" for brass ensemble and untrained male voice. The original solo version of Will You Miss Me was first performed for Ben Johnston's microtonal music class at the U. of Illinois, and later performed on other concerts there. This chamber version was written for the 1979 tour of the New Kanon New Music Ensemble, a group founded by the above mentioned performers and composer Andrew Newell. The piece was performed 10-20 times during that tour, but has not been performed since.

The tuning is common to all the instruments, including the voice, and is a seventeen note to the octave scale (tuning given in absolute octave reduced ratios to the 1/1 in the middle, and those before are actually one octave lower than the ratios suggest):

3/2 25/16 13/8 5/3 27/16 7/4 15/8 1/1 65/64 35/32 9/8 7/6 6/5 39/32 5/4 21/16
4/3 3/2

The piece is formally quite simple, a long introduction and then a "setting" of the tune itself. The introduction exploits many of the timbral possibilities of the harp, including harmonics, percussive strikings, brushing the strings, etc., and the flutist and bassist use the harp as a "canon" from which to tune. Many of the harmonic progressions make use of the extended/ambiguous tonalities possible with the varieties of ratio for any given diatonic "pitch area" -- for example there are several ways to "voice" an Ab triad (with 3/2 being G) -- 25/16 - 1/1 - 6/5; or 13/8 - 65/64 - 39/32 as just two. This interested me because though melodic differences are quite close in many cases (the few cents difference between 1/1 and 65/64 is barely perceptible melodically) in harmonic contexts these more subtle tunings are illuminating and beautiful, and seem to coincide more accurately with the kinds of intonational adjustments that I hear constantly in the the traditional musics of America and other parts of the world. The melodic aspects of these ratios are also used quite freely. Near the end, the introduction includes a brief (but sincere) homage to the music of Ben Johnston. The second part of the piece, the song itself, is a straightforward setting of the tune, with various musical interludes, often including a kind of abstract and unabashed word-painting. I intend this whole piece as a kind of "folk-music" in itself, simply another version of a traditional song.

Shema: (SH'MA): FUGING TUNE IN G

Composed in 1979, Urbana, Illinois. Dedicated to Arnold Joseph Polansky. Published in Soundings #12, Peter Garland (Ed.).

Performed 1982, Mills College. David Rosenboom, Cond.; Mary Oliver, vln., Betsy London, vla., Amy Radunskaya, 'cello, Patrice Hamilton, flute, Jane Lenoir, alto flute, Mel Graves, bass, William Winant, percussion and harmonica.

Shema: Fuging Tune in G is a set of variations on one of the melodies for the

Shema: Shema

, a central prayer of Jewish worship. The melody used here is an Ashkenazic one composed in the late 19th century, and is probably the one most familiar to Jews. The "sh'ma", translated as "Listen (--or "pay attention") Isreal, the (unnamed) is our god, the (unnamed) is one", is important in its call for unification of a people under a very simple creed, and to me has always been one of the most moving moments in the synagogue. It was said to be the last thing said by many Jews being murdered in the concentration camps, and I believe that it is a verse which assumes very little religious or institutional dogma, but even affords somewhat apostate Jews like myself a strong place in a rich and strong philosophical/spiritual tradition. The compositional techniques used are intentionally modelled after another spiritual tradition, that of American music, and I was interested in the evolution of sophisticated aesthetic ideas in the frontier -- particularly artists like William Billings, who seemed to develop his unique and visionary style out of an almost ignorance of "proper" European technique. The "fuging tune" model became important to me as a kind of free, vital, almost anarchistic response to an older dogma, and it was my intention to integrate it with my own experiments in intonation, canon, and rhythm. Each section of the piece is a different kind of imitative study, ranging from the ending unison and mensuration canon, to the deliberate telescopic and interrupted phrase studies at the beginning. The harmonic language is drawn directly from the ideas of Psaltery, and in a lesser respect from a maj/min type chord built from the harmonic series and inspired a bit by Carl Ruggles' Angels chord.

STOCHASTIC STUDY #1

Computer composed and digitally synthesised at Stanford Artificial Intelligence Laboratories, 1976, using MUSIC 10, SCORE, and SAIL.

Stochastic Study #1 is the first of a set of three studies in the intelligent "automatic" transformation of motive. The computer begins with a limited set of timbral and motivic forms, and is given simple stochastic means with which to chose, transform, and repeat these morphologies. I also gave the computer a range for the duration of the entire piece, and constructed the computer "instruments" (predominantly FM style) which it would employ. One somewhat unusual intention in this piece was to deliberately choose range values for various timbral values, so as to ensure a considerable amount of aliasing, or "foldover" (caused by going over the Nyquist sampling frequency). This was in part a reaction to the lack of noise I was encountering in computer music -- something I sorely missed.

ANOTHER YOU (17 VARIATIONS FOR SOLO HARP IN JUST INTONATION)

Composed 1976-1980, in Urbana, ILL., Moscow, Idaho, NYC and Lennox, Mass. With contributions by Alyssa Hess, who premiered it at Carnegie Recital Hall, 1979, and played it it once more at Roulette (1980) (current recording).

Another You is a set of 17 variations on the jazz tune "There Will Never Be Another You", a standard, which like many young jazz players, I'd played literally thousands of times. The harp tuning is based directly on the harmonic series, and as a result many string harmonics are used in the piece, to multiply the intonational, harmonic and melodic possibilities by using octave, fifth and third harmonics of fundamental ratios. The highest prime used is the 17th partial, and no pedals are used (except briefly, as a sort of quote, in the last variation), so that the pedal action harp is used like a giant folk harp.

Each variation, about 1 minute long, consists of only one structural idea, and that idea is in most cases stripped down to its most primitive form. The tune itself only appears in about 5-6 of the variations, and the rest may be said to be conceptual, emanating either from the harmonic, semantic, or spiritual connotations which that particular tune had for me. Most of the variations are, simultaneously, intonational studies as well, often exploring quite complex tonalities by the use of higher string harmonics.

The piece presents some formidable performance difficulties for the harpist, both technically (reach, harmonics, tone and dynamics) and aesthetically, in the extreme use of silence, slow tempi, and at times almost inaudible sounds. New York based harpist Alyssa Hess has so far been the only one to perform it, and she was instrumental in helping me prepare various editions of the work, for which I am deeply indebted to her. We have found that it can be helpful if the harp itself is lightly miked, so that the sound can be moved closer to the audience without increasing in volume.

QUARTET IN F FOR PAULA RAVITZ for piano, clarinet in A, trombone, and viola.

Composed 1976-77, Toronto and Champaign.

The Quartet in F was first composed for a noisy and athletic dance by Toronto choreographer and dancer Paula Ravitz, and later revised (slightly) to its present form. It is part of a series of "tonal pieces", beginning with the Movement in E Major for John Cage, and progressing chromatically (currently a perfect fourth away) -- including the ... Fuging Tune in G. All of these pieces were in a rather indirect sense inspired by the tonal idiom of John Cage in pieces like the String Quartet, and in particular the Nocturne for violin and piano, which I consider to be one of the classics of this century. Each piece in my series takes a pitch as its tonal center, and uses tonal and harmonic "quotations" as vehicles for various formal and rhythmic procedures. Like the Quartet in F, these pieces tend to be slow, quiet, and characterized by long, awkward and interrupted phrases, in which the listener's expectations are deliberately avoided as often as possible. In other words, it was my intention to produce pieces whose phrases and rhythms sounded "wrong", and to investigate what that might mean, from a variety of perspectives. The choice of tying these experiments to tonal idioms had a lot to do with what I considered to be an over concern with a rather naive harmonic and tonal perspective in western music -- and so I "invented" harmonic procedures which were so general, and vague, that they could not be analysed in any significant way by the listener to produce important conclusions about his/her aural experience.

The Quartet is based on the tune of the "International", and is intended in part as a political statement, though a subtle one and one linked inextricably to the musical, formal and emotional experience of the work. In some ways, I wanted the work to be about the virtues of quietness, and so choose "alto" instruments to augment the soft dynamics and frequent use of silence. A second theme of the work is that of the obvious -- and this is expressed in the tonality, the recurring piano "motive", the direct and unadorned solos by each instrument, and the extremely simple "canons and fugues" that occur.

This performance was recorded at the U. of Illinois, with Jeffrey Gibbens (piano), Dan Sklar (trombone), Larry Sherr (clarinet), and Lauren Davis (viola).