

Interview with Harold Fortuin on

"Fresh Ears" with Richard Paske

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RP is Richard Paske

HF is Harold Fortuin

Disc 1

Track 1: Untitled #3: A Transcendental Etude for Computer-Controlled Keyboard

Track 2: discuss Untitled #3

RP: We've been listening to music by Harold Fortuin, who's presenting an evening of electronic music along with Kris Peck on Friday night October 22nd at 8:00 p.m. It's entitled a "Split key Soup: A Fest of Microtones, Rhythms, and Blues. I've got Harold Fortuin here in the studio. Welcome Harold--welcome to "Fresh Ears".

HF: Glad to be here.

RP: So what can you tell us about the piece [Untitled #3] we just heard?

HF: Well, it's my first effort in electronic music, which I created with my MIDI electronic piano. But I had no computer until I was awarded a scholarship for grad school. I bought one with money I'd earned from playing piano gigs around the Detroit area. That was back in '87, and of course the Macintosh computer had been around a little while. By that time, there was quite a bit of good musical software available.

It seemed to me like here was an opportunity, with this equipment, to create some music that could not be played by people, but to try to give it a kind of physicality that was human. As I thought about that philosophical situation that new technology brings to us, it seemed to me that it would be great to, say, take the aural image of a bouncing ball--the way that it dies down loudness, and speeds up. And I thought, "What if you had a piece of music where each line had its own kind of bouncing ball curve? And what if they were superimposed on each other? What might come of that?" So, that's what might come of it.

RP: So how did you do it? Which kind of computer did you use?

HF: Well, I used my Mac SE. And at that time, I think 1 MB was a lot of RAM!

RP: It's funny, isn't it?

HF: It's amazing. I played with different mathematical equations to find an efficient, replicable way to generate the rhythms for what I wanted to do. It turns out hyperbolas gave me a really good feeling of gravity, and the really sweeping crescendos when mapped to the loud and softness levels.

RP: OK, you actually programmed hyperbolic formulas to create the pitch trajectories of the music?

HF: Well, the rhythmic patterns.

RP: The rhythm end.

HF: Yeah. I would add a steadily changing value as a variable into the equation $xy = k$ (constant). If my x changes like 1,2,3, y might be like 100,80,40, and changing like that. Nonlinearly.

RP: Interesting. So that generated some sort of score, and then how were the sounds created?

HF: Well, I sort of cut and pasted lines I made from that. As for picking the pitches... people who really want to turn everything into serialism would say what I was doing was serialism. But I wasn't, really. I would take an atonal 4-5 note chromatic pattern, and play it after itself, but with transposition. And with the acceleration you get [*vocalizes a rapid series of pitches with several sudden changes of volume within it*], the effect is kind of like a good bebop player: he's not gonna play a scale, he's gonna play interesting line, a pattern that repeats. When it's sped up, you can't necessarily tell what the pattern was, but you can still sense the beauty underlying it.

RP: So you didn't play these in on an organ-type synthesizer?

HF: I certainly didn't.

RP: But what then created the sound?

HF: Oh, well yes, I thought I had mentioned earlier: a FM Yamaha electronic piano.

RP: Through MIDI somehow?

HF: Like a player piano roll, the computer stored all the musical performance information, which I unrolled electronically with MIDI. And this electronic piano had had only a few set sounds (and not very good ones, actually). But, in any case, if I told it play middle C at loudness 90 at measure 5 beat 2, that's what it would do.

RP: And it wouldn't argue or ask for break, right?

HF: No, but occasionally I could overload it. Even the computer and the synthesizer have their limits. So I occasionally had to reduce the density of the notes.

I wasn't programming any synthesis there. The synthesis that is happening, and changes of timbre that do happen are actually from the speed of the notes. The degree of staccato between notes had quite an effect on the timbre, especially in places where we have 50-

60 notes per second. We actually get both frequency and amplitude modulation.

RP: So, you programmed the Mac to create this score. What language did you use?

HF: I didn't know how to program at the time. I used my calculator and typed out values that I got successively from the hyperbola curves, and I would just grab those y values as I mentioned--the nonlinear values of the equation. Say I start first on beat 1, maybe the next note is on beat 2, and maybe the next note is toward the end of beat 2. Then the fourth note might start in the middle of beat 3, and so on. They gradually get closer together or vice versa.

RP: And so you use the MIDI sequencer to plunk the tune in there. Very interesting.

Track 3: introduce Branchings

RP: So let's listen to another piece and talk a little bit more about what you're going to be doing on Friday the 22nd. So what we have queued up next?

HF: This is an excerpt from Branchings for computer-controlled synthesizer. It really follows up from the the thinking that led to the piece from the beginning of the program {Untitled #3}. In addition to that kind of rhythm, I do similar pitch patterns, and I also by that time had learned how to program.

I wrote a program that would generate phrases like I used to do with my calculator. But I added the capability, with rhythm or pitch, to start in unison with the central line, and gradually spread out.

Rhythmically some notes start a little bit ahead of the central line's notes, and some start a little behind. With pitch some will go a little bit higher or little bit lower, by a few cents at a time. So, I've got a passage here that illustrates that.

RP: OK, so the name of the piece is?

HF: Branchings

[play Branchings from about 11:30 on]

Track 5: Discuss Branchings

RP: Harold, before we talk about what going on at that particular gig, would you tell us a bit about the piece we just listen to?

HF: That was Branchings for computer-controlled synthesizer. By this time [1993], I'd saved a little more money, & got myself a Kurzweil synthesizer. In the meantime, I learned to write code that could create a MIDI sequencer file, a file that a sequencer can play back. In addition to using techniques of acceleration deceleration as I did in Untitled #3 at the beginning of the program, I added what I call "branching".

Say you have a group of players--virtual players in this case-- and you have a central line. You can decide that, say in this passage of 20 notes, reach the maximum difference at say 10 Notes, and come back together on the 20th note.

And, you can make that difference in rhythm or pitch, or both. So, in rhythm for example, some of the notes get farther and farther ahead by very small amounts-- for example, the second tone is three ticks off, the third tone is six ticks off, and the 10th tone is 15 ticks off.

RP: And by tick, you mean something much smaller than a quarter note.

HF: Yeah, I mean like a hundredth of a quarter note, or a five hundredth of a quarter note.

RP: Tiny little note value.

HF: Microseconds.

RP: Right.

HF: Milliseconds, I should say.

RP: You probably couldn't hear the microseconds.

HF: You can hear a few milliseconds difference, though. I was actually editing the stuff pretty heavily. I would take the dump from a program that generated the curves, and I would get in there more or less like a sculptor in move things around, Sometimes by very small amounts. There are places in there, where to really get the right kind of power on a chord, I would have to have the drums 2 milliseconds ahead of the rest of the ensemble to give it a realistic feel.

RP: Interesting.

HF: As with regularly performed music, if you map it to MIDI, and if you put everything exactly to the quarter note, it sounds very stiff. Similarly, with what I was doing, I had to kind of "humanify" it, in a number of places and ways, as needed. If the parameters that entered into my program didn't work so well, I would to tweak that too.

RP: Were you using K2000 to make the sounds?

HF: Yes.

RP: This is an interesting point. I have a K2000 myself. I don't want to do a commercial for Kurzweil, but it is a fantastic instrument. However, it's latency, and other words the time it takes to respond to incoming MIDI data, is considered to be kind of poor. I wonder if you felt inconsistencies in the way it responds to your scores.

HF : There may have been one or two places where I did notice that too, although its response is light-years ahead of the 1987 Yamaha keyboard that I did the other piece with--where had to cut out lots of material and try to cover it in a certain way. With any ensemble, electronic or acoustic, you have limits. In fact, those who think you can do anything with these devices, no, you can literally do anything. Everything has its limits

in some way, and if you decide you're going to try to push them, well, you're going to have to expect to be bitten back occasionally by the device.

Track 6: Harold Fortuin autobiography

RP: Now this brings up an interesting point about your own trajectories as a musician, and as a computer programmer. So talk a bit about where you came from, as a child of growing up. Did you take lessons, and that kind of thing, as a musician?

HF: I had quite a traditional training in piano, from the age of eight. And I'm certainly no child prodigy,. But unlike most kids taking piano I liked it. Not only that, but I would take time after practicing the piece I had to prepare for the next week and, a bit on my own. Fairly early on as I was doing that, I tried to write down what I did. And I was coming up the tunes. Later I looked at the first things I tried to write down when I was 8 or 9, and I didn't know what I was writing- I didn't know how to do that. But I did learn how to do it--on my own, really. At least it was not discouraged, if I wasn't particularly encouraged. I got an insider's view of harmony,. By the time was 10, I'd figured out full chords, IV-V-I and that kind of thing. In my teens I had a piano teacher that taught me a lot of theory,. I grew up near Detroit. So I was near Canada, where there was a sort of conservatory (more like a prep school like Juilliard prep) where you could take exams, and advance toward a diploma. By the time I was 18, I certainly had two to three years' worth of college music theory already in my brain already.

In addition, I did a lot of listening myself. I gave myself listening assignments you might say, moving my own taste first from the classical repertoire that my parents were playing to Prokofiev or Stravinsky. It isn't that I liked them right away necessarily, but there was something there that kept me listening. I kept moving forward in that music, up through George Crumb in the 70's. I was very fortunate in the suburb I grew up in--there was a fairly unusual music librarian that felt it important to have more Bartok string quartets than Beethoven in his collection.

RP: I love those Bartok pieces.

HF: They're fantastic. There so rich, we could talk an hour just about those. But I'd pull out George Crumb thinking "hmm, what's this?", and just bring it home and listen. My ears were just blown wide open.

Also during this time I started to do jazz in the school music program. I learned trumpet, played the regular band stuff, and get tired of that pretty fast--because when you've heard one Sousa you've heard 'em all! I went to music camp [for symphonic band] in the summer--Blue Lake camp [near Muskegon, Mich.]. I heard a [student] jazz band and I thought, "Hmm, they're doing something a little nicer than that 'oompah' stuff." . (Fortunately, most of the directors gave us music a bit better than that "oompah" stuff.) So, I learned jazz on trumpet there first. At first, when I was sight reading, I was the hitting all the notes on the beats. However, I picked it up pretty fast. (I'm very blessed with the ears I have.) So, before long I was the featured soloist. I transferred these skills

to piano, and playing with the high school jazz band. But I've more of a grounding in classical [music]. Still, in my own creative life, I think it's important compose out what I'm doing. At least, if I'm going to present it in front of people. Casually, I might improvise, and people enjoying my Improv. But, I'm more interested in what I might do when I really work out something in a detailed way.

RP: Then college came along.

HF: Yes.

RP: 'Cause so far we haven't heard anything about computers and formulas.

HF: Well I didn't get to that until grad school. I did four years of mainly piano performance, but I also got my degree in composition. I did simultaneous senior projects: one was my piano recital--I got good enough to do Prokofiev's 5th Piano Sonata. I also wrote... I even wrote some classical pieces in my teens, even a fugue which I'll still play today. It's kind of like William Schuman or Ruth Crawford Seeger. People were kind of surprised to hear an 18 year-old doing that, and that's fine--they needed to be surprised I guess. When I got to grad school I felt "geez, I've been wanting to do electronics", but I'd never had the chance to get to the equipment [before].

RP: Where did you go to grad school?

HF: Michigan State University. They gave me a substantial bribe--I had very good marks, so I agreed to grace my presence on their campus, and they agreed to pay me enough to do that for almost nothing out of my pocket. So it was a great opportunity. Instead of flipping burgers to pay for school, I could (especially my first year) sit down and think, "What to a want to do musically? What am I here for?"and I was unusually serious as a student perhaps too serious. That's when I came up with Untitled #3 that we heard at the beginning of the program, and that's when I started moving rapidly into MIDI electronic music and its capabilities. I also learned software synthesis along the way, learning musique concrete a la 1990 or so, with the newer technologies for manipulating sound on computer to make sound compositions.

RP: So that draw you into computer programming, correct?

HF: Yes.

RP: Into contact with the computer: wanting to do things that perhaps the software wouldn't let you do?

HF: Yes, absolutely. It was pretty tedious typing numbers into the machine. Once I wrote the code to do this, it sped up the process tremendously. I'd get this chunk that would be pretty good already, since some of my own thought and aesthetics went into what the code did. Then it was like cutting and pasting into a word processor, sculpting the musical lines together both vertically [harmonically] in time and over longer spans to hopefully make something that speaks to us.

Track 7: Discuss microtones and the Clavette microtonal keyboard

RP: All right. Let's listen to some more music.

HF: Something completely different, I'll add.

RP: OK. So how is the next one going to be different?

HF: Well, later, at the very end of my graduate studies I had the very good fortune to have a microtonal keyboard built for me while I was studying at the Institute of Sonology, which is in the Royal Conservatory in The Hague in Holland. They have a very unique program: if a student comes up with an idea for MIDI controller (that is, a device like a piano without the strings, or similar devices for other instruments), they'd build it for you. (But they usually liked to keep 'em.)

So along the way I had an idea for a kind of grid keyboard, good for not only the usual 12 notes per octave, but also for other systems like 22 notes, 19 notes, or 31 notes, or even unequally divided octaves. I'd thought about what would be the best layout. I came up with an idea, but later found out other people had been thinking along similar lines. Unfortunately, most of the never had a chance to have anything built. I was very fortunate to have the services of Bert Bongers at Sonology and help from STEIM in Amsterdam, the builders of the generic MIDI converter box. With their help and my tweaking, we came up with this keyboard. It has a 124 keys in the space of roughly a legal-size sheet of paper, and it's flat. I would have loved velocity-responsive keys like on a modern synthesizer or piano, but that was not economically feasible. So it came up with the foot pedals-- in fact, they're 3-D foot pedals. They can move in each direction that your ankle can move, but I've not yet found performing with axes per foot to be very practical yet.

RP: Or even comfortable.

HF: Right. But there is a piece I'll be playing on the concert (which, unfortunately, you won't hear it tonight) which does use two axes per foot. You'll see my feet doing some pretty strange things during the concert. My fingers aren't doing very much in that one.

Track 8: Introduction to The Liberation of Gabrovo

RP: So what we're going to listen to now is one of your earlier pieces?

HF: Yes. It's one of the first microtonal pieces that I did in a 31-tone equally divided octave. The first piece is The Liberation of Gabrovo. It was inspired by visit I took to Bulgaria a few years earlier, where people told me about a town called Gabrovo where they're well known for their sense of humor.

There's a little little bit of Bulgarian rhythm in the piece. Also...but what excites me about these other divisions of the octave are the new qualities of intervals and chords. For example, we have major thirds and minor thirds, and in Blues they kind of slide

between them. But you can have the neutral third [in 31-ET], and it has its own quality [not known from 12-ET]. At the end of the opening phrase you can hear the major, minor, and neutral third in immediate succession. And that phrase comes back frequently later in the piece. I'm also trying to write the piece in such a way that you can hear the differences between the 31-ET system and the 12-ET system, although you can hide it entirely if you want, if you know what you're doing. Or you could make it too obvious, maybe.

RP: OK, let's give it a spin. In the name of the piece again is?

HF: The Liberation of Gabrovo, followed by Remembrance.

Disc 2

Track 1: How Harold met Kris Peck

RP: Harold, tell us a bit about the event itself. , on Friday night Oct. 22nd [1999].

HF: It'll have quite a number of elements that qualify it for "experimental" and "intermedia", even beyond the music you've heard, which most of you would agree would at least fall into "experimental ". In part for the practical reasons of seeing what I do on the Clavette microtonal keyboard, we're going to have live video projection with four cameras, spread around the performance space. We'll have two large video monitors along the sides, so that you can really get a look at what I'm doing on both the keyboard and the 3D pedals, and so you can also see what my collaborator Kris Peck will be doing on the 20 and 22-tone guitar which he built to himself.

RP: Interesting. So how did you hook up with Kris Peck?

HF: Well, even though we were living in the same metro area here, we hooked up via the Internet. We were both on the e-mail list for alternate tuning, which fortunately has one of the best signal-to-noise ratios (in terms of intelligent discussion) amongst all the mailing lists I've ever been on. (Some of it's way over my head, in fact.) I told the list about a demonstration of the Clavette that I was doing a few years ago, and asked anyone reading it from the area to come by. He contacted me by e-mail, and said a little about himself and suggested that we meet. He'd already built his 20-tone just intonation electric guitar completely from scratch, even carving the wood. Since he's an electronic engineer, he built his own circuitry for tone control, and really did a beautiful job on all of it.

RP: Explain for listeners what just intonation is.

HF: OK. What you call standard intonation or standard tuning in the Western world (especially on the piano) is based on 12 equal temperament. We divide the octave, the 2:1 frequency relation, into 12 equal parts, which actually involves logarithms, and thus irrational relationships between individual tones. But they're close enough to the pure

ratio relationships that our ears seem to gravitate toward, that certain of these equal divisions of the octave work pretty well.

RP: It sounds in tune to us, because we're so ingrained with it.

HF: Yeah, and because our ears have a tendency to bend things to the nearest perfect interval. Since octaves rise exponentially, very low frequency octaves are separated by only a few Hertz, while way at the top of our hearing the octaves can be 8000 Hz apart.

RP: Because our perception of pitch is not linear.

HF: Yes, it certainly isn't. Although there's a somewhat more linear side to our pitch perception, which is connected with the overtone series--the series of numbers 1,2,3,4,5,6, etc. When we have a relationship between two tones that's pulled straight off of that series, especially a ratio derived from 1-7, it is quite euphonious. In the 12 system we're only accurately matching ratios which come out of factors 2,3 and 5. As we go to finer equal divisions, systems I use much of the time, we find that 7 is quite well matched. Some of harmony you've already heard (and will hear) in pieces such as the one coming up, points out the differences between chords which use the factor 7 versus those that don't. But Kris was interested in trying to match these overtone relationships precisely, using 20 of these in his octave.

Using the Clavette and K2000 Synthesizer, I worked out a way to play with him, but not only in the key where he set up as 20 tones. Normally it's hard to modulate in such a system, because the ratios are only accurate above C, if you've built 'em on C.

RP: And by modulate you mean change key?

HF: Right. In any case, it is possible to modulate when your instrument is not limited to those 20 ratios--

With my instruments, I can change things underneath if he is in a different key area.

It was a lot of work for me to create the harmonic path of this piece, more so than in a lot of other things you'll hear tonight.

Track 3: Intro to Endangered Species

RP: Do we have any of you two together tonight?

HF: Yes, in fact the next cut is called Endangered Species. It features Kris as soloist, and I play accompaniment on Clavette.

Track 5: discuss Endangered Species

RP: Which does bring up a point here, Harold. A lot of people would listen to that piece and say it's out of tune.

HF: I mean, is Blues out of tune? Are they out of tune when they're in between those notes?

RP: Interesting point.

HF: Or even in classical music, where everyone presumes they're right on pitch all the time. Well, violinists and cellists are told to play sharper going up the scale, and to play flatter going down. And in fact choirs even do that naturally.

RP: You know, in the Blues there's a resolution, usually, to more of what we're ingrained to here as being in tune. They will bend pitches, up or down, but usually end "in tune". Whereas in your music, or music by Harry Partch or LaMonte Young for instance, it doesn't resolve. Given the background you talked about earlier--coming up with through the classical tradition, and playing jazz--what draws you to the sounds?

HF: Now putting on my classical hat for a minute, if you like, but it's the same situation for jazz: Early in the 20th century, there were still a few new chords to be found in the 12 tone system. And very rapidly, people found them. Not that that's the only way to be original in music--I even think that there's been too much emphasis on harmonic originality. In contrast, rhythmic creativity for example, is almost entirely ignored in theory, and even in practice.

And in general, for the past 30 years, there has been little innovation in classical or jazz music, and similarly for pop music for at least a decade. I don't think I've heard anything different, and I'd love to. As a culture, there is something wrong if that's not happening. More than likely, we're not hearing it because it doesn't [instantly] make a billion dollars.

Listeners have to get used to something if it's new, and if you just repackage the Beatles or 70's pop and call it alternative, well, then you've got your market built-in.

RP: Or if go back to punk. The real punk players couldn't tune their instruments. They'd never played before--really, many of them had never played before and really literally did not know how to tune their instruments. And so the music came out sounding completely out of tune because it was completely out of tune.

HF: But perhaps some of them...like what I heard from a fellow who played with some Motown people back in college in Detroit. He was at his first gig with with those Motown guys in the studio. He was tuning up but they said "No, don't be that in tune."--they told them to be flat!

And in fact, they were right. Listen to say the theme from MASH [a '70s sitcom] Listen to the horns--they are flat. And that's the sound.

RP: Interesting. And Jackie McLean, the alto player, is always sharp.

HF: Yes. But in what we've heard so far, in this last piece certainly, I'm on a harmonic grid. In fact, it's basically euphonious music.

There are dissonances, as you have in 19th Century music, or hymns: dissonances or a few chords further off base than the II-V-I progression (for those you who know music theory).

Track 6: Discuss the Overtone 7th

HF: There was some controversy historically in music theory circles about whether the seventh tone of the overtone series was in tune or not. Well, that tone is pretty far off the 12 tone grid. But maybe that's a defect of the 12 tone grid. Maybe we could should have a grid [on which it does appear], or consider the possibility of lining up with it.

And I think I provide in these pieces and others in during the concert, musical justification for hearing that tone as a consonance.

RP: Uh-huh.

Track 7: Listen for what in this music

RP: And so when people listen to your music, do you want them to be listening for your justification there? Or what kind of experience do you intend for them to have?

HF: I don't expect them all to be able to verbalize umpteen years of music theory. But there's an aural experience. Even for people who don't know how to put such things into words, or don't have all the theoretical understanding, there is a kind of understanding that we have growing up in a culture, hearing music--there's a lot more that's shared there and understood than we can even talk about.

If you have reasonably open ears, and even if you don't, come and see if this might open them. Come and experience, and be open to something that is in many ways based what you already know about harmony--especially this last piece, and what we'll hear next.

RP: I want to go back to something that you suggested, or that was suggested to me as we were talking earlier about hearing "out of tuneness" as being acceptable, or as fitting within an aesthetic.

And I think about hip-hop. A lot of the DJ's, because the fact that they're taking those turntables and slowing them down and speeding them up--of course there are going to be parts that are "out of tune". But the idea of resolution--the bass line and harmonic underpinnings--stay solid. On top of that you got this kind of bent thing happening. But it still makes it kind of palatable. It's not so different that it would alienate the majority of people, right?

But what you're doing...but you don't really care about alienating the majority of people, by just hanging those chords in the air.

HF: But they are not really in the air. With these other equal divisions, you're also pretty close, or even closer in many cases, to these overtone relationships which, through at least factors 1 through 6, are implicit in the 12 tone system. And, if you compare the major third in the 12 system with that in the 22 system, if you put them side-by-side, you hear that the 22 equal tempered version of the major third is much cleaner. And that's one of the things I like about 22. It also has a very good match for the overtone 7th--that supposedly out of tune tone. If you play a dominant seventh chord, which is a frequency relationship of 4:5:6:7 in precise ratio terms...

RP: And it is a chord of the Blues. And it is what blues bands play.

HF: Yes! If you put that in a 22 system, or play it in ratios, it's much cleaner--you don't hear beats. Which is strange feeling because in 12 it has beats-- it really does. It's an amazing and beautiful experience, frankly.

And, in fact, I don't have the cut here with me, but we'll hear it in the concert: Kris will be playing a 22 tone blues that I wrote initially for a little video experiment called Mocha Madness. In it, as a poor businessman is dying from coffee addiction in the streets, you hear a really great 22-tone Blues. In the 22-tone system is a more narrow minor third, a more painful minor third if you like, and a similar seventh that goes with that. I play around with chords that put a whole new dimension on Blues.

RP: And pain.

HF: Yes!

(both laugh)

Track 8: Intro to A Pre-Modern Romantic Composer

RP: OK. We have queued up here track 9--what's that?

HF: That's A Pre-Modern Romantic Composer Imagines the Music of The Future. It's a...for those of you... OK, I'll just give it away: I imagined if the opera composer Wagner, who was one of the great late 19th century composers and quite a harmonic innovator, if he had a dream with a 22-tone instrument in it, while kind of harmonies might he come up with?

Starting off this track in fact is the 22-tone equivalent of a dominant seventh chord moving to a minor minor seventh cord. See if sounds dissonant you, Richard!

RP: OK -- here it goes.

(played A Pre-Modern, Romantic Composer, immediately followed by Nicola Vicentino's Soav'e dolc'ardore)

Track 11: Discuss Soav'e dolc'ardore

RP: That particular piece was not composed by Harold Fortuin. Harold, who was that composed by?

HF: That was composed by the 16th century Italian Nicola Vicentino, one of the more radical composers of the time, though Gesualdo, for those of you who studied music history, is a similar character.

RP: Well, Gesualdo's the one who killed his wife and her lover.

HF: Yeah. I think he was more colorful. But I think Vicentino was more radical in a musical sense. He came up with a tuning which was almost the same as 31 equal, working from the principles of theory at the time. And he built a harpsichord in that system, and apparently had his choir in Rome sing in that system.

RP: That's amazing. So he built a harpsichord that had 31 tones per octave?

HF: Yes.

RP: How many octaves did the instrument have?

HF: I'm not sure, probably 4, which was standard for the time. It was called the "archicembalo" in Italian.

RP: And they actually got gigs?

HF: He was the court composer, kind of like Haydn in Hungary generations later. He could more or less do what he wanted, I suppose. His benefactor must of been a laid-back guy who gave him money and said, "do you want".

RP: He was Italian, but he was in Hungary?

HF: No, no, he was working in Rome for a bishop--as a court composer.

RP: I see. Interesting. That was a really wild time.

HF: Yes. The time of El Greco, amongst other things.

RP: Yes. El Greco's paintings. Very odd, very bent. Strange.

HF: The art of that era gives me a sense of "modernism before modernism".

RP: Definitely. Though large, large El Grecos with those elongated figures, way before Giacometti.

HF: That's right. Very twisted. Certainly nearly surreal in many cases.

RP: So the piece we just heard was composed in the 16th century and presumably performed...

HF: It's called Soav'e dolc'ardore. It's from a treatise he wrote expounding his theories, and why he came up with this tuning and so forth. One of these days, either with myself or other singers, I'll work in the studio to make a rendition that actually has the words. But that was arranged for an instrument they would have had at the time, a trombone.

Track 12: Musical Influences on Harold Fortuin

RP: Now, other composers who been influential on you. I mentioned earlier Harry Partch and LaMonte Young. Have you studied them or read them?

HF: In the more theoretical sense, you might say. I've heard a number of pieces of Partch. A more obvious antecedent to my approach with microtones would be Easley Blackwood. There's an album off the Cedille label from Chicago (which is a re-release of an album from 1980) where he wrote etudes in the 13-tone to 24-tone equal tempered systems. He also used a mapping to standard harmony. However he's not interested in the overtone seventh and neutral third, unlike me. But his music doesn't sound that different.

But it really works. Especially the first etude on that album in 16-tone, which is actually out of tune to the purist's sense. He really made a beautiful piece with that.

RP: Is he still alive?

HF: He is. Apparently he's not very vital, but he's retired there in Chicago.

RP: And he got a MacArthur fellowship at one point?

HF: Possibly.

RP: I believe he did. I'm pretty sure.

HF: I haven't met him personally, but I know someone who met him. And Nancarrow is an obvious antecedent to my computer music, in thinking of the computer as performer.

RP: That's Conlon Nancarrow?

HF: Yes. Really an amazing and wonderful composer. The U.S. was foolish not to let him come back into U.S. after he fought in the Spanish Civil war against the fascists.

RP: Right. And he lived in Mexico City the rest of his life?

HF: Yes he did. Mexico can be proud to have had him there, to let his creativity blossom.

RP: Absolutely. And so Partch and LaMonte Young, you've read, but...

HF: And I've heard. But philosophically I'm not that close, certainly not to LaMonte Young. Partch had his own very particular system, and was out to reinvent and revitalize music via the Greeks--which is what they were out to do in the Renaissance, and in various periods in history. And in some way I'm sure what I'm doing relates to whatever the Greeks were up to, just like anything we do in Western society does, but I'm not really that interested in that. I'm more interested in more recent cultural influences. But also in taking them in another direction.

Track 13: The value of the atypical musical influences

HF: I think it's important today...we're saturated with stuff that's so much the same...whether you want to follow what I'm doing, I don't really give a squat. But please, any creative musicians out there, try something else!

I'd love to learn Indian classical drumming. It's something I might take up at some point 'cause it's really a different concept: it's quite danceable in a way, but it's a very different concept and I don't know quite what it is, and I'm sure it would be wonderful to learn that.

They're all kinds of possible ways of approaching music we already have. Why not play Mozart sonatas, and improvise the ornaments the second time through the exposition, even if you're not really supposed to do that according to various authorities. Or why not compose jazz for oboe? And maybe not let them improvise, other than ornament.

There so many things that might be done. For example, in this town we have the Hmong and Somali communities. Hopefully some of them, as they encounter American culture, might start to think of what might happen when they [native and American musics] combine.

A lot of most interesting developments in music over time have come when peoples, formerly very separated, came together. That's what makes almost everything you hear in a radio--that's the European and African combined.

RP: Hmm. Interesting.

Track 14: Intro to Untitled #4: The Adventures of Smiley the Bullfrog

RP: You could go to Yahoo [the internet search site], do a search on " Harold Fortuin", and get to your Web site?

HF: I'm at www.geocities.com/Vienna/Studio/7358

RP: OK. Well, Harold, we have about two and a half minutes, about exactly the right time for the next piece. Which one is this now?

HF: Untitled #4: The Adventures of Smiley the Bullfrog

RP: Thanks for being my guest tonight.

HF: My pleasure.

RP: And we'll see you again.