Reviews

[Editor's note: Selected reviews are posted on the Web at http://www.computermusicjournal.org (click on the Reviews tab). In some cases, they are either unpublished in the *Journal* itself or published in an abbreviated form in the *Journal*.]

Events

Larry Austin at Eighty: A Fifty-Year Retrospective, Part I

Issue Project Room, The Old American Can Factory, Third Floor, 232 Third Street, Brooklyn, New York, USA, 11 June 2011; www.issueprojectroom.org/2011/04/18/composer-larry-austin-at-eighty-a-fifty-year-retrospective-part-i/.

Reviewed by Elainie Lillios
Bowling Green, Ohio, USA

In celebration of composer Larry Austin's 80th birthday, The Darmstadt Festival and the Issue Project Room collaborated to present a program of his works. The concert featured Austin's computer music compositions dating from 1982–2006, including virtuoso performances by double bassist Robert Black, saxophonist Steve Duke, tárogató performer Esther Lamneck, and flautist Jacqueline Martelle. The Issue Project Room's nontraditional setting, fusing the industrial with the intimate, provided an ideal venue for Austin's music. Eight loudspeakers surrounding the audience created a sonically immersive environment, and the space's configuration allowed for detailed listening while maintaining an appropriate balance between the live instruments and the octophonic sounds. In addition to the outstanding concert, audiences visiting the foyer could view a newly released copy of Austin's *Source: Music of the Avant-Garde, 1966–1973*. Co-edited with Douglas Kahn, the text collects *Source Magazine*'s original, provocative issues into a single repository. It was fitting that this new compilation received its first public viewing at Austin's concert, as he was instrumental in *Source Magazine*'s development and evolution, and so much of his music reflects the experimentalism present within the book.

The program's first piece, *¡Tárogató!* (1998) for tárogató and octophonic computer music, was brilliantly performed by its commissioner, Esther Lamneck, whose compelling presence and flawless performance captivated the audience, setting the stage for the rest of the concert. The tárogató, a 19th-century Hungarian folk instrument (similar to a clarinet), was used primarily for dance and for rallying troops in battle. Austin's *¡Tárogató!* unifies these diverse worlds, blending the mystical and militaristic into an enveloping, evolving soundscape. Lamneck's florid, melismatic tárogató lines soared through the Issue Project Room, evoking a sense of strength and conviction while revealing an underlying delicacy and fragility. The accompanying octophonic computer music bathed the audience in undulating, layered drones, always soothing even as the tárogató's lines evolved into declamatory fanfares.

The boisterous climax of *¡Tárogató!* found its foil in the ensuing piece, *art is self-alteration is Cage is...* (1982) for double bass and recorded bass ensemble. Austin describes this highly improvisational, aleatoric piece as a "uni-word omniostic, where all possible arrangements of the letters of one word (C A G E) appear adjacently, allowing one to spell the word, continually in sequence, following

Photo: Eric Somers.

appropriate horizontal, vertical, and diagonal paths through the array of the word's letters." Bassist Robert Black's meditative performance masterfully illustrated Austin's homage to John Cage as he quietly and reflectively traced through the score, changing pitches intuitively when the directions instructed. Black's contrabass harmonics blended perfectly with the tape, the two forces merging into a single entity wherein one was unable to distinguish the live contrabass from its virtual counterparts. On occasion, Black's perfectly flowing, floating lines emerged from the texture as self-alterations, only to submerge again into the reflective sonic continuum.

Les Flûtes de Pan: Hommage à Debussy (2006) for flute/piccolo and octophonic computer music shifted the concert's focus from internal alteration and singularity to external alteration and imitation, illustrating Austin's historical proclivity along with interests in appropriation and transformation. *Les Flûtes de Pan* employs, as its source, sequences derived from Claude Debussy's solo flute piece, *Syrinx* (1913). Austin quotes from and recomposes Debussy's original materials to create florid, fluttering flute passages that float above an octophonic montage created by convolved versions of the same material. Commissioner Jacqueline

Martelle's ardent performance conjured images of the water nymph Syrinx fleeing from the clutches of Pan, with the octophonic material's densely layered drones serving as a virtual "Greek Chorus," abstractly foreshadowing and plaintively commenting on Syrinx's ultimate demise. The piece's middle section presented a stark contrast to the surrounding sections' densely pitched, chromatic sound world, featuring dripping water sounds combined with key clicks and jet whistles. The listener might imagine a respite from Pan's pursuit, with Syrinx hiding in a secret oasis. As the composition ended, a direct quotation from *Syrinx* appeared as a final homage to Debussy's work.

Austin's Bourges Magistère prize-winning composition, *BluesAx* (1995) for saxophonist (soprano/alto) and computer music, reveals and explores the breadth of his musical interests. Whereas *Les Flûtes de Pan* features quotation and transformation, *BluesAx* explores reminiscence and recombination. The through-composed, seven-movement *BluesAx* features four interpretive portraits of jazz saxophone greats Sidney Bechet, John Coltrane, Johnny Hodges, and Charlie Parker, framed by three blues "choruses." Expertly performed by saxophonist Steve Duke (whose amazing versatility allowed him to play the jazz-inspired *BluesAx* followed by the classically influenced *Tableaux*), *BluesAx* traverses through and reveals the excitement, virtuosity, and passionate character of jazz. Duke's powerful, inspired improvisations made the piece sing, as he flowed effortlessly through this challenging, virtuosic, stylistically varied work, conjuring the jazz legends through his instrument. Duke's spontaneous lines, imbued with historical retrospection and colored by modern invention, blended with the accompanying computer music, which at times provided a background montage and at other times served as an ensemble accompaniment for his solos.

Austin's more recent *Tableaux: Convolutions on a Theme* (2003), for alto saxophone, octophonic music, and video, presents an earlier perspective on imitation and cross synthesis. Although related to *Les Flûtes de Pan* in its use of quotation, appropriation, and convolution, *Tableaux: Convolutions on a Theme* makes its own unique contribution to Austin's historical nostalgia, this time using the music of Modest Mussorgsky. Although through-composed, *Tableaux: Convolutions on a Theme* appears to be cast as a theme and variations in retrograde, where convolutions, improvisations, and remixes serve as variations hinting at the possible "reward" that is the theme. As the piece unfolded, high, clear bell tones resonated from Duke's instrument, floating over a wash of layered octophonic drones. Short gestures gradually evolved, hinting at the theme, with Duke's masterful performance maintaining suspense about whether the original theme would ever emerge. In a crowning, exultant climax, the theme finally appeared with a sense of triumph and pride, cast in a brighter, more vibrant and celebratory light than Mussorgsky's original version. Accompanying the piece was a video by Kevin Evansen, whose slowly evolving skyscape created an evocative visual accompaniment to this kaleidoscopic work.

The concert's final piece in many ways encapsulates Austin's explorative musical life, revealing his multi-faceted career as a historian, restorer, preserver, arranger, and composer. In *Williams [re]Mix[ed]* (1997–2001), Austin shares John Cage's unique voice with us, adding his own creative and sonic interests to the mix. Presented in octophonic surround sound, the piece opened with Cage's *Williams Mix* (1951–1953), originally for eight magnetic tapes, but digitized and re-mastered by Austin, who purposely retained a portion of the piece's noisy artifacts, thus maintaining its authenticity and charm. Following the re-mastered original were six new variations composed by Austin that explored individual sound categories defined by Cage for *Williams Mix*: "A–city sounds," "B–country sounds," "C–electronic sounds," "D–manual sounds," "E–wind sounds," and "F–small sounds." The category distinguished itself from the others with its delicate, eerie quality that enticed the listener to lean forward in their seat to hear tiny, intimate sonic details as they dispersed through the space, bringing the audience full circle from *¡Tárogató!*'s initial, inviting calls. The final *Williams [re]Mix[ed]* track, "The Nth Realization," incorporated sounds from all six categories in a collage that truly paid homage to Cage's affirmation that all sound is musical sound.

In the concert program notes, Austin reflected on his music by sharing the following anecdote:

> In a dinner conversation John [Cage] and I were enjoying in his New York apartment in 1981, I asked him: 'John, what kind of composer are you?' He replied, 'I'm an experimental composer, Larry.' I am, too. I mix genres (*BluesAx*); I convolute sources (*Tableaux*); I appropriate and transform (*¡Tárogató!* and *Pan*); I invent, improvise and concoct (*art is...*); and I restore, remake, and rearrange (*Williams [re]Mix[ed]*). I ask my performers to experiment as well, melding their musics with mine to produce stronger, ever more vital, hybrid musics.

Although it's true that Austin is an experimental composer, his abilities and influence extend significantly beyond those that are proposed by that label. He is an electronic music pioneer, innovator, inventor, restorer, promoter, and above all, a consummate composer, who in his 80th year is certainly a composer worth celebrating and recognizing. Congratulations to the Issue Project Room, Larry Austin, and his outstanding performers, who presented a remarkable evening of creative exploration, musical innovation, and sonic immersion that merged live instruments with technology, reworked history, and provided a comprehensive view of an important composer's varied and distinguished career.

Publications

Dmitri Tymoczko: A Geometry of Music: Harmony and Counterpoint in the Extended Common Practice

Hardcover, 2011, ISBN 978-0-19-533667-2, 450 pages, illustrated, with index, bibliographic references, and online examples, US$ 39.95; available from Oxford University Press, 198 Madison Avenue, New York, New York 10016, USA; telephone (+1) 212-726-6000; http://www.oup.com; online examples and supporting material: http://www.oup.com/us/companion. websites/9780195336672/examples/?view=usa/.

Reviewed by Michael Gogins
New York, New York, USA

I believe *A Geometry of Music* (hereinafter AGM) is a ground-breaking book in music theory. According to Dmitri Tymoczko, "While my stated audience consists of composers and music theorists, I have tried to write in a way that is accessible to students and dedicated amateurs," p. xviii, in the Introduction. If my own experience is any guide, AGM will be especially useful to composers who, like myself, use computers in composition. Indeed, this review is written mainly from the viewpoint of an algorithmic composer. But, as much as my informal education in music theory permits, I will also attempt to give the book some historical and theoretical context.

AGM synthesizes about 15 years of work by the author (and some other theorists) towards developing a geometric understanding of many phenomena in voice leading, chord structure, chord progression, scale theory, and modulation. The starting point is to define each chord as a single point in a continuous Euclidean "chord space" with as many dimensions of pitch as the chord has voices. This simple idea turns out to be tremendously fruitful. Tymoczko convincingly argues that all commonly used measures of voice-leading distance agree with the length of the distance from one chord point to another chord point in chord space.

AGM proposes that music that is tonal in the broadest meaning of the term, from the beginnings of Western polyphony through the extended tonality of today, and across many different classical and popular styles, features conjunct melodic motion, acoustic consonance, harmonic consistency, limited macroharmony (the notion of scale, more or less), and centricity (having a tonal center in the standard sense). I suspect that for academic theorists, the main interest of AGM will be its use of the geometric definition of voice-leading distance to develop a deeper understanding of these phenomena.

According to Tymoczko's theory, a chord is a point, and voice-leading is movement from one point to another point. Of course, music theorists use many different levels of abstraction in thinking about chords and scales. Theorists almost always abstract from the order of the voices, they usually ignore the particular octave of a pitch, and sometimes even ignore the particular inversion of a chord. And they generally ignore voice doublings. AGM shows that each of these levels of abstraction exactly corresponds to what mathematicians call an "equivalence class" in chord space. For example, the standard definition of a "pitch-class set" corresponds to combining the equivalence classes for octave ("O"), order of voices ("P" for permutation), and number of voices ("C" for cardinality): OPC. Other equivalence classes are "T" (for translational equivalence, i.e., OPTC equivalent chords are the same chord type) and "I" (for inversional equivalence).

When an equivalence class, or combination of classes, is imposed upon a space, then all points that are the same with respect to the equivalence class become "glued together." The space thus becomes a "quotient space" or "orbifold." For example, the chord space for trichords under OPC equivalence becomes a tilted prism whose equilateral faces are glued together modulo a one-third twist. (See Figure 1.) The chord points in twelve-tone equal temperament are colored balls. The lines connecting the chords are the semitone voice-leadings. The four augmented triads run up the center of this prism; the twelve major and twelve minor triads surround the augmented triads in six alternating columns of four chords, each glued together to form a twisted torus. The two-pitch trichords are on the sides of the prism, and the one-pitch or unison trichords are on the edges of the prism. Transposition equates to moving a chord in parallel

Figure 1. An "orbifold" chord space in Dmitri Tymoczko's music theory.
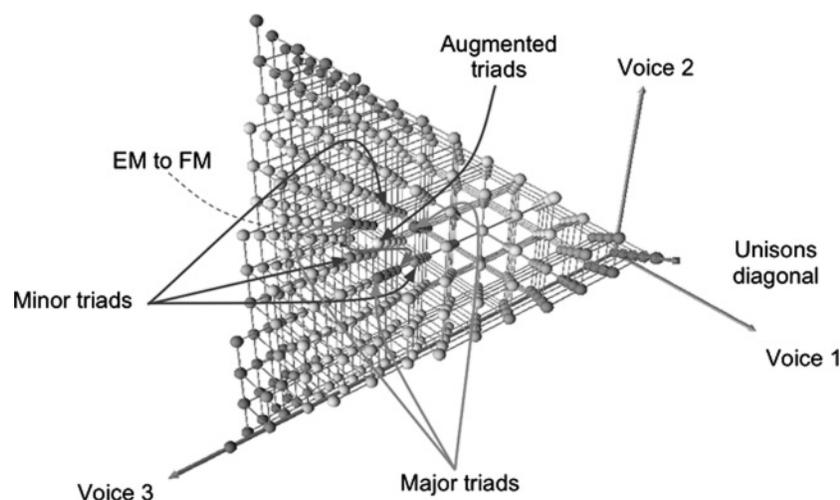
with the diagonal of unisons in chord space. When a chord reaches the end face of this orbifold it reappears with a one-third twist on the opposite end face (in Figure 1, this is shown in the movement from E major to F major). Inversion equates to reflecting across the middle of the prism. Change of chord type equates to moving along the plane, perpendicular to the diagonal of unisons. Chords that move in this fashion reflect off the sides of the prism. And so on. Furthermore, these concepts, based as they are on a continuous manifold, generalize to tuning systems other than twelve-tone equal temperament, and to chords of any number of voices.

Tymoczko shows that the various chord spaces derived from each equivalence class, or combination of equivalence classes, inherit a "metric" or measure of distance from their parent, in purely Euclidean chord space. This is the signal fact that enables the concept of voice-leading distance to be used in more or less the same way with respect to pitch-class sets (OPC equivalence), chord types (OPTC equivalence), and set-classes (OPTIC equivalence). AGM further demonstrates that

the concept of voice-leading, and of minimal voice-leading operations, applies not only to chords and chord progressions but, just as well, to scales and modulations. Indeed, Tymoczko argues, the use of the same measure of voice-leading distance for both chord progression and modulation provides a geometric foundation for understanding something many musicians feel intuitively: that there is a kind of self-similarity between chord progressions in the small scale and modulations in the medium-to-large scale.

AGM goes on to discuss atonal music, chromatic harmony, the structure of typical and normative chord progressions, modern and contemporary uses of variant scales, and many other matters using the underlying geometry of chord space with its measure of voice-leading distance as the unifying principle. Additionally, AGM draws on examples beginning with the two-voice counterpoint of the Middle Ages and ending with the extended tonality of Dmitri Shostakovitch, Bill Evans, and Steve Reich. Audio clips of these examples are accessible to the public on the Web site accompanying the book (provided above). These

online recordings and score excerpts greatly increase the usefulness of the book. Readers with keyboard skills would benefit from playing through the examples. Readers without such skills would benefit from careful listening to the online audio clips while following the score excerpts.

This book is a further step along the path that began when Pythagoras identified musical intervals with numerical ratios, has passed through stages of increasing mathematical sophistication with the *Tonnetz* of Leonhard Euler and Arthur von Oettingen and the voice-leading operations of Hugo Riemann, and is now leading to something of an efflorescence of atonal set theory, group theory, neo-Riemannian theory, and geometry. Where set theorists such as Milton Babbitt ("Some Aspects of Twelve-Tone Composition," *The Score* and *IMA Magazine* 12, 1955), Allen Forte (*The Structure of Atonal Music*, Yale University Press, 1973) and their school focus on combinatorics and group theory applied to a discrete representation of pitch, Tymoczko (like some contemporary transformational or neo-Riemannian theorists; see the subsequent discussion) takes a mathematical step back to use a wider range of abstract algebra and geometry applied to a continuous representation of pitch. Furthermore, AGM demonstrates that some of the central phenomena of tonality, such as the "faithfulness" of the circle of fifths in reflecting relationships that obtain in higher-dimensional chord spaces, cannot be adequately understood without a continuous representation of pitch. I believe this alone suffices to establish the theoretical importance of the book.

The main contemporary scholars who have written books proposing a unifying mathematical framework for music theory are Tymoczko (using

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geometry) and Guerino Mazzola (using category theory in *The Topos of Music*, Birkhaüser, 2002). Perhaps Fred Lerdahl (*Tonal Pitch Space*, Oxford University Press, 2001) should also be mentioned. And there are others. My background in music theory does not allow me to comprehensively compare these authors, or to render a final judgment on how important AGM is, or how it stacks up against, or fits together, with competing approaches. The fact that Tymoczko analyzes many of the same well-known excerpts (such as the prelude from Wagner's *Tristan und Isolde*) as do other theorists should make this kind of comparison easier. But it is perhaps worth noting that almost all of the articles on music theory as such that have been published to date in *Science* magazine present the basic ideas of geometric music theory (overview by Julian Hook, "Exploring Musical Space," *Science* 313, 2006; "The Geometry of Musical Chords," Dmitri Tymoczko, *Science* 313, 2006; overview by Rachel Wells Hall, "Geometrical Music Theory," *Science* 320, 2008; Clifton Callender, Ian Quinn, and Dmitri Tymoczko, "Generalized Voice-Leading Spaces," *Science* 320, 2008).

One of the things AGM is trying to do is to provide a simpler view of music theory, based on principles rather than lists of rules and exceptions. The book certainly does this for me. Matters I formerly found more or less opaque, such as how those German and French sixths really work, or why some key changes are more common than others, or how tritone substitutions fit in, are now far clearer. So for me, the unification Tymoczko is attempting has in some part been achieved.

Another thing that distinguishes AGM from much writing on music theory I have seen is its ambition towards, and occasional achievement

of, empiricism: comparison with data, in this case analyses of all the Mozart piano sonatas and some 70 Bach chorales. I do not think music theory must be empirical to be interesting or valid, but I do think more experimentation in music theory can bring about innovation.

AGM certainly has gaps. Perhaps it is better to say the book has a certain thinness of context. For example, AGM presents two simple graphs that concisely encapsulate the rules for well-formed chord progressions in functional harmony (and tests these graphs against the aforementioned works by Bach and Mozart). Yet I don't find a convincing explanation of why a "harmonic cycle" goes from the tonic up a fifth to the dominant and down a fifth to the tonic again, instead of down a fifth to the subdominant and up a fifth to the tonic again. Such an explanation could be constructed from the simple fact that the perfect fifth is more consonant than the perfect fourth. More likely, perhaps, AGM just takes this for granted. But, I wonder if this specific directedness of chord progressions should be a sixth major feature of tonality. In his discussion of functional harmony, Tymoczko does provide some context by engaging in something of a polemic against the more radical members of the school of Heinrich Schenker, arguing that the attempt to generate all well-formed chord progressions, and only them, from purely contrapuntal or voice-leading considerations does not succeed. But then there is a curious lack of discussion of the transformational or neo-Riemannian approach to music theory originating with David Lewin (*Generalized Musical Intervals and Transformations*, Yale University Press, 1987) and carried on today by such theorists as Adrian Childs ("Moving Beyond Neo-Riemannian Triads: Exploring a Transformational Model for Seventh

Chords," *Journal of Music Theory* 42, 1998), Thomas Fiore and Ramon Satyendra ("Generalized Contextual Groups," *Music Theory Online* 11, 2005), and others. This, in spite of the fact that the transformational approach is intimately related to and even overlaps with Tymozcko's more overtly geometric approach. And although AGM has a great deal to say about voice-leading, and has the word "counterpoint" in its subtitle, it has little to say about counterpoint as such or about imitative forms, even though such forms obviously are generated by geometric operations (though, of course, not upon chords, but upon sequences; viewing such sequences through the prism of chord space might be a fruitful topic for future research).

In his conclusion, Tymoczko writes "my initial goal in writing this book was to explore basic theoretical and compositional issues," but as his writing progressed, he found that the "five features could also provide a helpful framework for understanding the development of Western music." Despite the gaps and spotty context, I definitely agree.

For composers, I think what is most salient about AGM is that the "moves" we commonly use to get from one chord to another show up as short, typical movements in chord space with clear motivations that take one chord, usually not far from the central axis of augmented chords, to another. The same is true of the "moves" we use to get from one key to another, or to mutate one scale into another.

And what is salient for computer composers is that these movements are easily implemented in code. An algorithm that works in the orbifold for trichords will also work, simply by increasing the number of dimensions, in the higher-dimensional orbifolds for seventh chords, ninth chords,

and so on, up to various complete scales. An algorithm that works for one equivalence class will also work for another equivalence class, simply by changing the function that glues equivalent points together.

It is very nice, as a composer, to find a new perspective from which to view the landscape of music. But, as an algorithmic composer, it is stunning to be presented with a toolkit that brings efficient voice-leading, Riemannian and neo-Riemannian transformations, scale theory, and more, so transparently into the engine room of algorithmic composition. Most importantly, the geometric approach makes it easy to turn analytical operations into generative ones because the mathematics is simple. Once the notions of equivalence class and quotient space have been assimilated, the rest is no more difficult than high-school algebra and basic group theory. And, operations implemented geometrically can be highly efficient. For example, automatically finding a counterpoint for a *cantus firmus* using the rules of *Gradus ad Parnassum* requires pages of code and exponential time, whereas doing it by looking up the nearest (by Euclidean distance) voicings of a series of two-voice consonant chords in a dictionary of such voicings requires a few dozen lines of code and logarithmic time.

Tymoczko hopes the geometric approach will help composers to further extend tonality. I, for one, am trying to do that, in the sense that I am using generative procedures based on neo-Riemannian moves in chord spaces to create sequences that are difficult to imagine and yet harmonically and contrapuntally well-formed. I advise other composers to investigate the potential of AGM for their own purposes.

Tymoczko further hopes that understanding tonality from deeper principles will help composers, inside or outside the academy, to achieve formal originality while remaining broadly listenable. This is an extremely ambitious goal, and the outcome, in the last analysis, is up to audiences. But I am very happy to see Tymoczko focusing on this issue, which I agree is central to the future of music. And for me, AGM really does help.
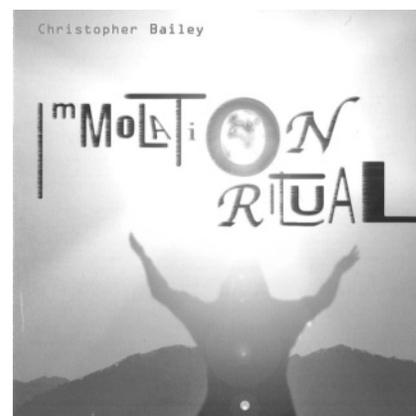
Recordings

Christopher Bailey: Immolation Ritual

Compact disc, 2010, Innova 695; Innova Recordings, 332 Minnesota Street E-145, St. Paul, Minnesota 55101, USA; www.innova.mu; www.emcollective.org.

Reviewed by Ross Feller
Gambier, Ohio, USA

When I first sat down to listen to this CD, I was instantly impressed by the composer's raw, idiosyncratic approach. The provocative title, suggesting sacrifice perhaps as a form of protest, seemed to come alive in sonic materials that the playwright Berthold Brecht might have described as *das plumpe denken*, or crude, unpolished thoughts. The One-Sheet text on the Innova site for this CD states that Christopher Bailey's *Immolation Ritual* "features an evocative mix of virtuoso soloists and electronic soundworlds . . . at once alien and strangely familiar." For me, the music is evocative largely because of uncomfortable and unresolved relationships between formal structures and materials, and between the live instruments and electroacoustic sounds.

The works on this CD span Bailey's career. The earliest piece is from 1994, while the most recent work was composed in 2007. Each work reflects or refracts various compositional concerns that the composer has ostensibly employed throughout his career. These include the focus on microtonality and the use of familiar tonal accoutrements that are hidden, juxtaposed, or elided. The CD also includes some fine instrumental and vocal performances by a variety of performers well known in their respective areas.

The first piece from this collection, entitled *Mergurs Ehd Ffleweh Bq Nsolst* (2005), opens with jarring, chant-like sounds that are mixed with precise, microtonal materials. Bailey describes this piece as "ecstatic death chants from the planet Mercury." The text for this piece, ably performed by the vocalist known as Sukato (who fashions herself as a female Tiny Tim for the avant-garde underworld), is from an imagined language used by the citizens of the hot planet. In case you are not conversant in this language Bailey includes an English translation in the CD booklet. The title itself resembles language that might be found in James Joyce's *Finnegan's Wake*, or perhaps from a short story by Italo Calvino. Sukato's vocalizations cover a hybrid territory between shouting and singing. They are "accompanied" by a cimbalonesque, microtonal guitar part that

effectively offsets and punctuates the vocals. The electronics involved suggest an ethereal, folk element that is quite powerful when struck just right. For some of the sounds one is reminded of the raw, additive sign waves that were used by composers back when Fortran programming was popular.

The second piece, *Aftermath* (2006), begins with an engine sound, spatially mixed to suggest the Doppler effect. As the sound fades out, a string drone replaces it. There are effective uses of spatialization and depth, offering the listener a visceral sense of a multi-tiered approach to foreground and background. Sweeping synthesizer gestures, often processed with fast tremolo modulation, are juxtaposed with dissonant intervals and noisy textures. The latter materials are successful complements to the more pitch-based synthesizer sounds. Both of the first two pieces seem to be constructed from concatenations of material that flow, more or less, like waves in an ocean. This effectively defeats any traditional hearing of an arch-shaped contour. It also makes the beginnings and endings sound like arbitrary points that could very well have been located elsewhere.

Abstraction 1 (1994/2004) includes more work with drones. This time they are set against a somewhat disjunct violin line that oscillates between angular and lyrical expressions. Bailey describes this piece as "a haunting series of aphoristic utterances projected by the solo violin, atop a warmly glowing, ever-changing drone-like background." But the pairing of live instrument and tape seems to be one of forced convenience. The tape part sounds unintentionally choppy at times, especially as it mostly serves to articulate and instigate sustains. One of the strengths of this piece is how the composer plays with very subtle approaches to the slowing down of time.

The fourth piece, *Abstraction 6* (2005), is described by Bailey as "a high-energy jolt." The tape part is much more emphatic than in *Abstraction 1*. The taped sounds (reminiscent of a microtonal organ) seem to crash and splash around the live saxophonist, who, for the most part, performs a static palette of atonal pitch materials. The saxophone part is superbly performed by Eliot Gattegno. Occasionally, microtonal materials from the tape clash with the saxophonist's use of equal temperament. The result is indeed charged.

Out Of (2006) for piano and electronic sound is ably performed by Marilyn Nonken, one of the finest performers of contemporary music. The sense of altered tuning (Just intonation in this case) enlivens the live instrument's part, which mostly consists of fragments having little consequence. Because the pacing of events remains static, it is difficult to remain alert while listening to this piece.

NanoSymph (2005), the sixth piece from this collection, is a short piece that successfully crams many sonic fragments into a small window of time (one minute). One is reminded of John Oswald's "plunderphonics" techniques, but here the composer is plundering himself. This miniature includes many of the composer's standard practices, but because of the time compression used it offers a delightful and challenging listening experience.

The seventh piece, *Walking Down the Hillside at Cortona, and Seeing its Towers Rise Before Me* (2007) is scored for two pianos tuned to 19-tone equal temperament. This wonderful piece includes seven scalar descents over the course of 13′ 41″. These culminate in a series of massive chords, attacked with full force, but unexpectedly sounding unsteady and volatile. The tuning and consistent employment of registral movement combine to impart the sense of an aural illusion, not unlike Shepard tones. At the end of this piece there is a mammoth 45-second decay that appropriately allows the sounds to die away.

The last work, *Abstraction 2*, is for violin, piano, and tape. The tape part plays a small role in this piece. The materials given to the instruments are well composed, with particular close attention paid to resonance. There is also a peculiar sense of harmonic rhythm, sounding at times almost arbitrary. Bailey gradually builds the piece from repeated motives, while also suddenly changing the texture from time to time. These textural shifts do not, however, have the force of a true rupture, which might utilize premature cutoffs or rhythmic displacements. On the whole, the instruments perform expressive materials in combination with quoted fragments and *Klangfarbenmelodie*. This is an intriguing work in the sense that the composer thwarts the expectations that he sets into place.

Several of the pieces from this CD offer the listener powerful, evocative, and strange yet familiar sound worlds. In other works the familiar outweighs the strange. The works for live instruments and tape underplay the standard compositional technique of creating a timbral fusion between both parties. It seems somewhat strange, given the fact that the composer describes himself as the "computer programmer guy," that he chose to work in the marginally interactive, old-school realm of tape. Nevertheless, part of the charm of this CD is the frequently uncomfortable fit between concept and realization, between various tuning systems, and between live instrumentalists and tape.

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