Reviews

[Editor’s note: Selected reviews are posted on the Web at mitpress2.mit.edu/e-journals/Computer-Music-Journal/Documents/reviews/index.html. In some cases, they are either unpublished in the Journal itself or published in an abbreviated form in the Journal.]

Events

Art | 40 | Basel: Media Art with Music
Messe Basel, Messeplatz, Basel, Switzerland, 10–14 June 2009.

Reviewed by Joyce Shintani
Karlsruhe, Germany

In 1999, the New York Times called Art Basel the “Olympics of the Art World” (J. Dobrzynski, 17 June 1999, www.nytimes.com), and ever since, superlatives about it have buzzed across the Atlantic. This year, from 10–14 June 2009, the art world met in Basel, Switzerland for the 40th time [Co-Directors: Annette Schönholzer and Marc Spiegler, artbasel-online.com] and demonstrated a slower, more deliberate pace of transactions, but no reduction of volume.

Music at the world’s largest art trade show—is this a topic that makes sense for a scholarly journal on computer music? In view of the unbroken burgeoning of art commerce and the collapse of the music industry, it would seem to make at least economic sense to cast a look at music’s place in the growing world of media art. With unbroken growth in all manner of crossover media works and a lagging theoretical evaluation to accompany this phenomenon, the matter merits our attention, at least so far as to discern the contours of what is taking place. Whether we are finally interested in the goings-on, and what value we ascribe to them, are secondary questions.

Today, many of us welcome a multidisciplinary orientation toward works of art and their study. But what credentials might a computer-music junkie such as myself have to weigh in on such art-heavy matters? At the height of the technology bubble, when I was working in what some called Germany’s Silicon Valley [Munich], a media art gallery in my neighborhood piqued my interest. After a long stay at the underground Institut de Recherche et Coordination Acoustique/Musique [IRCAM] in Paris, what was I to make of this above-ground, converted store-front gallery with its darkened rooms, computers, projectors, joy-sticks, rudimentary sound systems, and quirky, interactive moving images? Those first timid steps into the world of media art whetted my appetite for more, and soon I was doing the circuit: Art Basel yearly, the Venice Biennial, the quinquennial “documenta” in Kassel, as many lectures as my free time permitted, and I even wielded a paint brush.

During these activities, I divided my concentration between becoming acquainted with a new world of art and trying to understand how music was perceived and practiced within it, for it was soon obvious that the rules I had learned as a musician did not adhere. I have written—and sometimes complained—in these pages about what I saw, and recently I completed a dissertation presenting my view of emerging technologies and aesthetics. I have found, however, that the theory surrounding this kind of art is still pretty ephemeral stuff, so writing a music review of an art show is terra incognita for me today.

But I was reassured; it was evident that this year Art Basel was working on similar questions concerning mixed media art. Art Basel’s brochure promised that “the most spectacular event” of the year would be Il Tempo del Postino, a “group exhibition that would occupy time rather than space” (“wie die Zeit doch vergeht”). The work, first given at the Manchester International Festival in 2007, “was to be presented sequentially on stage . . . just as in a play or opera” [R. Dorment, 17 July 2007, www.telegraph.co.uk; c.f., J. Griffin, September 2007, www.frieze.com]. Moreover, the entire second half was given over to "one of the most influential artists in the world today, Matthew Barney” [whose phenomenal Cremaster Cycle is arguably a contemporary Gesamtkunstwerk comparable in scope to Richard Wagner’s Ring cycle].

After I had registered, fought my way through the long lines of visitors [a record-breaking 61,000] to the press entrance, and unpacked my 750-page glossy catalog, and after being sent from one sales point to another, from Hall 1 to Hall 2 and back, I was sadly confounded to discover that this spectacular event was being offered off-venue, it was entirely sold out, and no standing room was available. Not even YouTube can offer us solace, so I can only quote S. Douglas’s review: “There was so much hype surrounding Il Tempo del Postino . . . that one felt inclined to dislike it, even though disliking it, given all that favorable advance hype, would seem tantamount to a crime against humanity. Luckily for everyone, then, the thing was spectacularly good in some parts, just plain good in others” [S. Douglass, 15 June 2009, www.artinfo.com/news/story/31736/the-postman-rings-twice]. The thing, it seems, ended with Mozart. With the disappointment of knowing I had already missed the highlight before I’d begun, I headed into the swarm of visitors in the cavernous Basel convention center.

Art Basel was founded by a small group of gallerists in 1970. Over the years, satellite events have accrued—shops, statements, conversations,
films, public art projects, etc. Further, there are book and media sales, refreshments, a childcare center, and a VIP lounge. Yet other spaces are reserved for discussions and presentations, disparate themes such as performance, magnetic tape, and legal questions find their places here. This year some 20 different events made up Art Basel. (The sister exhibit, Art Basel Miami Beach, has made similar presentations in Florida since 2002.)

But the principal participants remain the galleries, and from a record number of more than 1,100 applicants this year, some 500 were selected to exhibit their works in some 40,000 square meters. Scratching on my notepad I figured out the geographical breakdown of the galleries selected—Europe 204, North America 77, Asia 13, Latin America 7, Near East [Turkey and Israel] 2, Russia 1, Africa 1—and reflected on what these numbers reveal about the concentration of cultural wealth today.

Doubtless, not only the common music critic feels daunted by the fleet of black Mercedes with matching coat-and-tie-and-sun-glass chauffeurs, an indication of the masses of collectors present. (Was that really Brad Pitt over there?) But Art Basel’s organization pulses with the tick of Swiss precision, the visitor is swept along and is soon strolling among the gallery booths. A few short minutes after opening time, it became difficult to advance through the lanes, sooner or later you turned around and noticed a Picasso, Serra, Warhol, Kandinsky, Hirst, Sherman, Goldin, Pollock, or a you-name-it, and it is the abundance of such art works that continues to give Art Basel its cachet. All but the most jaded habitués stand in awe before the plethora of great classics and dazzling new art. This mix of awestruck visitors, hard-dealing gallery owners, and collectors with a few young suffering artists sprinkled among them characterizes the fair. But thrill factor aside, does (electronic) music have a place here? What role might it play at this venue?

Some galleries concentrate on particular artists, art movements, art types, or art from geographical zones or epochs. My main object of interest this year were the 27 “Art Statements,” works by emerging artists, and “Art Unlimited” [curator: Simon Lamunière], innovative and large-scale works and performances that do not fit into standard display booths. These were all exhibited on the floor of the gaping Hall 1 (12,000 square meters), and the gallery works were displayed in a labyrinthine layout of booths on the two floors of Hall 2. Fortunately, there was some method to the maziness, making a stroll through neoclassic, Asian, London contemporary art, etc., possible.

I began with the two floors of Hall 2. My tactic for coping with this daunting embarras de richesse was to make concentric circles and figure-eights through the galleries, always checking for works with sound elements. I pressed feverishly through the mazes of Hall 2, casting my gaze to the left and to the right, mostly straining to hear above the droning gallery noise that rises and spreads like smoke to the top of the art cavern. Sometimes, with difficulty, I perceived organized sound, I identified a repetitive loop, or a roar somewhere. With the sound in my ears, my pace quickened until my feet brought me to its source. But by the time I arrived, I had already heard the fragment several times, the playback conditions were carelessly set up, the loop dispersing in the hot air, etherizing. A spark of conversation with the artist or gallery owner, a glance at the program ... perhaps it was a scrap of dialog, a movie track from an unknown Russian film, or a Western B-movie from the 1950s; perhaps an unadulterated strain, perhaps a mash-up. Who knows, who cares; it is background now. I would lose interest and lope onward.

In my pacing, I might meander through an aural cloud—smudged, threatening minor chords or shadows of dark ambient, noise, deep gloom-core. The visuals that would go with it were black-and-white, maybe tinged with filtered, gray color-shades. The media underscore each other, combining to transport their message: contemporary doomsday—dark, unfocused, oppressed emotion.

Then, it was not my ears that guided me, rather my stomach. But on the way to the corner restaurant a strange construction caught my eye. I moved closer, I circled around the booth. It sounded like soft chirps. What was I hearing? Where was it coming from? I view a roughly hewn wooden table standing on saw-horses. Crystalline Morse Code beeps and stuck-LP swipes; cables and plugs fixed with duck-tape; and small videos. What are those mini computer screens? The ambient loudness mixes with the sounds emanating from a table hastily strewn willy-nilly with compact laptops and small loudspeakers. On the video screens I could see heads, but could not make out any facial features. I saw letters, either so large I could not fathom sentences, or print so small I could not read it. The whole time, the table seemed to be sending me a message I could hear, but not really make sense of, a do-it-yourself message-in-a-bottle attempting to communicate with electronic crudeness. Transfixed by the DIY roughness in the midst of Art Basel’s polished surfaces, fascinated by the juxtaposition of attempt and failure, I stood and watched, tried to talk with the representative [Galeria
Whale (2008) took me to astonished Djurberg's Lapse of Memory exquisitely invented non-places, be it of me, and works such as Fiona Tan's The black boxes did not disappoint transport me somewhere unknown. I parted the heavy black curtain of darkness, hesitantly found a bit of allowed my eyes to adjust to the shadowy space, I saw no tap dancer, but black and white minimalist frames, wood and mirrors, and lines on the floor. In order to enter the installation, I had to transgress some of these. In the corner, the projected image of a performance by a lanky androgynous-looking woman. But no tap dancing. I stood in the installation, I walked around in it. I rested my arms on the podium in front of the projection. The projected image seemed to be a trompe l'oeil. Or a trompe l'ceil? The tap sound became clear; it is cleanly, expertly cut, but it doesn't fit exactly with the dancer. Why not?

FRANCISCO RUIZ DE INFANTE

“Home Cinema no.1: Devolver” serie LABORATORIO DE FICCIONES
2009
Dispositivo Audiovisual (3 canales de imagen, 6 canales de sonido).
Dimensiones Variables.

I left my calling card, thanked the gallerist, and finally moved on to eat.

I had by now traversed the hundreds of gallery booths, I had taken sustenance, and at last I stumbled from the brightly lit Hall 2 to the gaping dimness of Hall 1, to the “Art Statements” of the young artists and to “Art Unlimited.” I spied the black boxes, the shut-off rooms that signal to “Art Unlimited.” I spied the black boxes, the shut-off rooms that signal to “Art Unlimited.” I spied the black boxes, the shut-off rooms that signal to “Art Unlimited.” I spied the black boxes, the shut-off rooms that signal to “Art Unlimited.” I spied the black boxes, the shut-off rooms that signal to “Art Unlimited.” I spied the black boxes, the shut-off rooms that signal to “Art Unlimited.” Each lent to the other its poetic power. Surrounded by the suggestiveness of both, I ambled through the small installation, questioning and mirroring the questions that its few, simple objects posed [Gallery Dépendance, Belgium].

It was getting late, and after the “Art Statements,” there were only about 40 or so exhibits of “Art Unlimited” left to visit. I gathered my energy and begin a sinuous path among patterns, carpets, trees, and other objects displayed on the floor and around various buildings, bridges, and ships constructed in the hall. I visited Willem Boshoff in his residence as the Big Druid in His Cubicle (2009), with his idiosyncratic messages of Christian love scribbled amid an endless historic collection of early wood-working instruments. And I tarried in the room filled with the fragile beauty of Sigmur Polke’s pastel apricot wall installation, Cloud Paintings (1992), not wanting to leave the presence of its delicate celestial radiance. My energy waning, I drew near the end of the hall where there were a few more black boxes. Hoping for a resting place, I approached.

A rather large black box, somewhat crowded, a very dark projection,
objects in the room. My eyes gradually adjusted to the darkness, and on the somber projected video I could just make out the shine on the forehead of a young black boy with a pale, disembodied ivory child’s hand placed diagonally across his breast. The boy is seated beside a window with alternating hues behind its panes. My ears gradually blended out the sounds from beyond the heavy velvet entry curtain. Concentrating on the audio track I heard something like bongo slaps, arrhythmic, paced far from each other. The illuminated “room” in front of me became lighter, colors behind the window changed, and a colored wall appeared. Gradually, the crowd left, exposing directly opposite me a real ivory ceramic statue of a diminutive girl extending her hand. The room had by now almost emptied—ah, against the wall, two chairs under a faint spotlight. On the projected window, unfocused scenes take place between black-outs. What was happening below the window? If I sat on the installed chair, would I be accessory to it? The bongo slaps became louder and faster, an occasional something reminding of a distant, filtered lion’s roar instrument added. Seated, I could now look around and suddenly perceive what had been there all along: directly opposite me a real window, high on the wall, with colors painted on the closed wall behind it. The window, too, was spotlighted, as was I on my seat. I must remain outside the window, I can enter neither the wall window in front of me nor the film window to my left. To my right, the dimly lit girl. I could only depend on the acoustic signals and changing colors to orient myself in the goings-on of this space.

Faster and more rhythmically, the drum was hit, struck, punched; very loud and almost rhythmic, on the edge of violence. No, that is no longer a lion’s roar, and it’s so soft—that’s a child’s whimpering, isn’t it? The hitting stopped, the whimpering took on a whining animal tone. Then the images behind the window expanded beyond the boundaries of the window, taking up the whole projection space of the wall. Buildings in blue, exploding clouds, then the slow bongo slaps resume. A man’s head without eyeballs, it is quiet. The projected window disappears, the boy disappears. We were left in darkness.

With its continually changing colors, sounds, and lighting, Andro Wekua’s installation By the Window [8 min 30 sec, 2008, Gladstone Gallery] uses varying media to direct my attention, my perception, and to evoke emotions. Through the masterful and exigent use of them, he transports the notions evoked from the relationship between the individual sitting on the chair and the projected individual, toward inclusion of the outsider of another color standing in the room. The closed window on the wall heightens consciousness of being enclosed, closed off, in the room, while through the sequence of sound and enlargement of the images a larger community and its doom were brought to mind. In Mr. Wekua’s piece, I initially analyzed the sounds, their nature, their potential meaning. But, through the density of the combined medial input [not the density of the sound, for with the exception of the “apotheosis,” it remained minimal], I was overwhelmed by multiple narratives, none of which was conclusive. The sound and image design were reminiscent of David Lynch. At times, the music narrative dominated, at times visual, at times they were in tandem, at times the room was black or silent. By conjuring its narratives without the use of spoken or graphic words, the work managed to keep the narratives in a non-verbal part of the brain, together with the emotional reactions to the non-verbal [atavistic] audio and video inputs, all of which maintained a precarious balance between their forces. The over-activation of input and inconclusive narratives caused me to shudder at the end. It was not a shudder of catharsis; I was shaken.

Not surprisingly, I noted this year a dearth of works that were joyful, playfully interactive, or exquisitely breathtaking. 2009 has been a year of gloom. But here it hardly matters, for I have been rubbing elbows with art: with Henri Matisse, Joan Miró, and Joan Mitchell; with Paul Klee, Yves Klein, and Gustav Klimt; and with the new acquaintances Francisco Ruiz de Infante, Hanna Schwarz, and Andro Wekua. I missed Brad Pitt, but there’s nothing for the music critic to complain about this year. Art is finding a complex way to marry music as its equal partner, and I’m happy to dance at all their weddings—the squeaky, the silent, and the somber.

Mathematics and Computation in Music 2009: John Clough Memorial Conference

Yale University, New Haven, Connecticut, USA, 19–22 June 2009.

Reviewed by Jonathan Bragg and Cheng-Zhi Anna Huang
Cambridge, Massachusetts, USA

The Second International Conference on Mathematics and Computation in Music (MCM) met in conjunction with the John Clough Memorial Conference 19–22 June 2009 at Yale University in New Haven, Connecticut, USA. MCM is the biennial meeting of the Society for Mathematics and Computation in Music (SMCM), and the John Clough Memorial Conference meets every four years to commemorate the mathematical music theory pioneer. The joining of
the two conferences builds on a relationship that began in 2007. The very first volume of the SMCM’s flagship publication, Journal of Mathematics and Music, which was published in that year, featured a special issue dedicated to “The legacy of John Clough in mathematical music theory.” These two conferences are naturally linked by the traditionally strong affinity between mathematics and music theory. David Cohen highlighted this continuing tradition in his keynote lecture. The conference welcome and the keynote lecture were held at the Beinecke Rare Book and Manuscript Library at Yale University, where a special collection of historic musical and mathematical materials were on display and complemented the lecture.

The four-day conference included 26 paper presentations, grouped into six sessions: “Composition, Voice-leading, Atonality,” “Geometry,” “Scale,” “Perception,” “Time,” and “New Interdisciplinary Approaches.” In accordance with the conference title, “Mathematics and Computation in Music,” the talks fell into two categories. The first three sessions centered on topics that are more naturally approached using the concepts and analytical tools in mathematics, and the latter three sessions introduced approaches that are more computational and sometimes involving human subjects. In this way, the conference followed a trajectory that nicely parallels the increasing interaction of mathematical music research with applied and empirical research in other fields such as computing, signal processing, and psychology. We feel that more frequent use of audible musical examples would have enriched some of the presentations, especially in the first half of the conference. The titles and abstracts of all the papers can be found at the conference Web site [www.mcm2009.info/papers.html]. The proceedings of this conference are also readily available both online (www.springerlink.com/content/u10p34) and in print from Springer.

Although the title “Mathematics and Computation in Music” implies a primarily scientific approach to music, the tutorials and a panel session at the conference showed how scientific and aesthetic approaches can inspire each other. For example, one of the tutorials introduced OpenMusic, a graphical computer-aided composition environment developed at the Institute de Recherche et Coordination Acoustique/Musique (IRCAM), in which composers can prototype their compositions by leveraging the implemented algorithms to generate musical material that would otherwise be difficult to do by hand. In addition, the panel session featured a screening of a dance performance choreographed in such a way as to embody Fourier’s mathematical formula. In the future, we look forward to the conference having a call for scores and performances to further explore how research can enable new stylistic and personal expression.

Forming personal connections is important to the progress of, and one’s progress in, any field; it is especially important in the interdisciplinary fields represented at this conference. Researchers at these intersections are sparse and spread across the world, and few institutions exist to bring them together. Even universities are typically partitioned into departments with little intercommunication. In the absence of many central sources of information, personal collaboration and communication enable researchers to build on past and current efforts.

The conference provided an excellent opportunity for networking and for the building of these foundational relationships. The size of the conference was intimate, with enough attendees to modestly fill a small lecture hall, enabling one to get to know a good portion of the attendees. Attendees ranged from professors and leading researchers to graduate students and even a few undergraduate students. The atmosphere was collegiate and friendly, with an emphasis on learning about the material being presented. There was also a poster session for students to present their work in progress and to receive feedback. An overall feeling of equality and a de-emphasis on seniority made possible a host of interactions, not only among professors and among students, but also between professors and students. At local restaurants and in between paper sessions, groups of professors and students would socialize and discuss ideas as fellow researchers.

Unique to this conference among similarly themed conferences was the opportunity for students early in their careers and students from a variety of backgrounds—ranging from music performance and composition to music theory and musicology, and from cognitive science and computer science to statistics and mathematics—to learn about the field and about attending this type of conference. It is important to encourage and enable young interested researchers like ourselves to participate in current research, and for this reason, we applaud the conference committee’s decision to cover expenses.

The joint nature of the Second International Conference on Mathematics and Computation in Music and the John Clough Memorial Conference brought together groups of specialists in many interdisciplinary research areas, demonstrating impressive
breadth and depth. The conference provided a platform for researchers to speak to a broad audience with a shared passion for music research. We came away from the conference with a feeling of community, and we foresee exciting collaborations resulting from the new professional friendships that were initiated at this conference.

**Publications**

David Temperley: 
**Music and Probability**

Hardcover, 2007, ISBN 13-978-0-262-20166-7, 256 pages, US$ 40.00/£ 29.95, illustrated, notes, references; The MIT Press, 55 Hayward Street, Cambridge, Massachusetts 02142, USA; telephone (+1) 800-356-0343; electronic mail special_sales@mit.edu; Web mitpress.mit.edu/.

Reviewed by Ian Whalley
Hamilton, New Zealand

In 2003, I reviewed David Temperley’s previous book, *The Cognition of Basic Music Structures* (The MIT Press, 2001) for this journal (*CMJ* 27:2, pp. 113–115). Primary concerns expressed in that review were over limitations in the computational approach used to represent music, the experimental assumptions made about music cognition based on the author’s intuitions about how music is received, and the way these two elements were related to illustrate the core of the argument. Mr. Temperley’s current book takes substantial steps toward addressing some of these issues by linking cognitive experience represented in notation to directly test models of how the perceptual process of music might work.

Although the book has the title “Music and Probability,” a more accurate one, given the substantial focus of the book, might be “Probability in Western Tonal Music Meter and Key.” Intended for a general audience, the writing is clear, concise, and accessible, although it does require readers to have a basic knowledge of Western music notation and mathematics. Given the density and focus of the text, it will also engage a wide range of specialists in the fields that it covers.

The introductory chapter starts with a quote by Leonard B. Meyer who indicated “the fundamental link between musical style, perception and probability” [p. 2] over 50 years ago, reflecting Mr. Temperley’s sense of the essence of musical communication. The goal of the book, then, is to work toward an understanding of “how probabilities shape music perception, and indeed music itself” [p. 2]. The promise is one of combining the fields of music cognition/perception and musicology/music theory.

Anyone who has had to learn a second language will sense familiarity with the initial assumptions set out in the opening pages about perception being “an inferential, multileveled, uncertain process,” knowledge of probabilities coming largely from regularities in the environment, and “producers of communication [that] are sensitive to, and affected by, its probabilistic nature” [p. 3]. In his new book, Mr. Temperley takes a step forward in extending his previous work on preference rule models by drawing on recent work in cognitive science, toward exploring the logical inferences that can be made, given certain assumptions, about the relationship between musical surfaces and musical structures.

Concepts of probability that are needed to understand the author’s arguments are introduced in the second chapter, which assumes no prior knowledge, starting from Bayes’s Rule, a theory that relates the probability of specific events taking place to the probability that events that are conditional upon them have occurred. Applied to music perception, when one hears a note pattern and wants to know the background/structure it relates to, Bayes’s Rule can be used to decipher this, given prior knowledge of structures. The second main concept used comes from information theory, that of cross-entropy, which illustrates quantitatively the degree to which a model can predict a body of data. The chapter is well set out and examples lead the non-specialist reader through the topic comfortably.

Chapter 3, “Melody 1: The Rhythm Model,” covers rhythmic understanding of melody from a listener’s perspective, the notion being that people understand rhythm by imposing a complex hierarchical structure on it. The task is then to put forward a computational model to simulate the process. The argument is that one can discern the metrical grid or metrical structure from the surface [melody] based on the likelihood of it being one thing above another based on previous experience, which Mr. Temperley’s model attempts to simulate. The discussion begins from a survey of prior literature, then develops a new probabilistic model following a Bayesian approach, which leads to a generative model of rhythm that creates a three-leveled metrical
grid to look at how listeners might guess at meter.

Multiple probabilistic parameters are involved in the process of making the generative model, these being estimated either from the Essen Folk Song Collection (EFSC) or assigned reasonable values by Mr. Temperley, who then goes on to implement a dynamic programming approach used in his first book, to address the choice of grids. The model is then tested using his performance of 65 melodies from the EFSC, using monophonic input. The results, compared against the Melisma model developed by the author in 2001, sees the new Baysian-based model perform best at the first level of the model, and better overall from the previous Melisma model.

“Melody II: The Pitch Model,” is the title of the next chapter, where a probabilistic model of the perception of key is put forward that also incorporates concepts of pitch proximity and range. Again, monophonic input is used to infer key. The chapter begins from an extensive look at prior work in the field. The model again starts from the initial assumption of the relationship between generative surfaces from musical structures, and is implemented using much the same approach as the previous chapter in employing parameters estimated from the EFSC and a generative process. The resulting model of key finding is tested against the 65 melodies from the EFSC previously used, and the 48 fugue subjects of J. S. Bach's *Das Wohltemperierte Klavier*. Results were very successful, but considering prior literature in the text, are similar in success rate to other approaches.

Chapter 5 expands a main thesis of the book that musical surface, described as patterns of onset of pitch, can glean insights in music cognition. Here, the focus is on expectation and error detection. Again, a good overview of recent work is presented, and the rhythm model is once more used to test the approach against the same EFSC 65 melodies previously used. In the results, the model allocates undistorted folk melody a higher probability than distorted versions in 82 percent of cases. The modeling of rhythmic expectation is also covered as an area of potential application of the rhythmic model.

Attention turns to “A Polyphonic Key-Finding Model” in chapter 6, in which a probabilistic model for finding the key in polyphonic music is proposed. The approach used varies from that of the pitch and rhythm models introduced so far, in that rather than dealing with sequential information, it deals with unordered note instances of scale degrees in relation to the key of the music. A generative model is developed and dynamic programming used to find the key of a sequence based on probability. Tests of the model when compared to previous work/algorithms developed in the field suggest that Mr. Temperley's Baysian-based approach is on par, so we are once again left to ponder the relative merits of this approach.

Chapter 7, “Applications of the Polyphonic Key-Finding Model,” looks at the implications of the keyfinding model proposed beyond its initial use. The focus of work shifts in the text here to a music theory perspective, drawing on literature in the field to discuss three main issues (p. 99): the relationship [similarity and closeness] between keys; the extent that segments of music show characteristics of the language of common-practice tonality; and finally, the notion of ambiguity or the extent that a segment is equivocal or clear in its implied tonality.

Most of the material presented to this point relates directly to findings from the application of Mr. Temperley's research work. The remaining chapters explore further issues related to music and probability, drawing together and synthesizing a diverse range of theoretical perspectives toward a cohesive approach.

Chapter 8 involves a survey of work on the topic of music and probability applied to a range of areas in music perception and cognition, specifically: transcription, perception of phrase structure, harmonic analysis, and improvisation.

In chapter 9, a more speculative bent attempts to use probabilistic models to describe pieces of music and conjecture about cognitive aspects of the composition process that lead to them. The Baysian model is also put forward as a means to compare different models of the musical surface, and an example using Schenkerian analysis is explored. The argument loses some of its punch here given the evaluation, because the Bayesian model and Schenkerian analysis do not seem to focus on quite the same things—so both approaches may co-exist quite happily.

The final chapter, “Communicative Pressure,” is focused on more cognitive issues, and begins from the idea that music functions to convey particular structures from the mind of the producer[s] to the perceiver. The argument is that to communicate there must be constraints within musical languages, and communicative success relies on shared knowledge about styles on one hand, but it also depends on the style itself allowing the listener being about to recover intended structures from the surface. The use of steady tempo to play off syncopation is explored as an example. The argument becomes less convincing here, partly due to the view of what music is, as well as what musical communication might include.

Although I appreciate the specialist nature of the text, there are questions...
that a generalist reader with a broader view of music might raise. Beginning from the last chapter, and in line with those raised in my review of Mr. Temperley’s previous book, these include: the idea of roughly equating musical notation with music, equating music and language, and equating sender and receiver through this language as musical communication.

The idea of music as a language is highly contentious in the literature. Moreover, the notion that musical experience can be represented primarily in Western notation severely limits what is or can be communicated, as many musical nuances cannot be reduced to pitch/duration paradigms.

Mr. Temperley’s approach also seems to assume little division between the act of production and reception, but as any composer is aware, this process is often far more arbitrary than what is proposed, and reception far more diverse. Perhaps a better way to model perception is to ask several people who actually did the receiving, rather than rely on score analysis to approximate this process.

More specifically from a purely methodological perspective, there are issues about the experimental approach used here that are apparent. The models all seem to be arrived at based on a small range of musical data, and it might be worthwhile to explore how far the models can be generalized using larger data sets. Secondly, it is not clear that the results, given the wide range of tools that are now available in machine learning, give clear support to the superiority the methods proposed to the extent the promise of the book holds out.

These things aside, the book is such an ambitious undertaking that it is bound to come up short on one hand, but be a trailblazing work on the other. The text points to the need for a book on music and probability, and despite the limitation mentioned, this is an excellent overview and starting point for a range of researchers interested in the field, particularly in aspects of Western tonal music. The substantial contribution is its grand scope in attempting to unite such diverse fields that can be enriched by each others’ input, and the signpost it sets for a significant amount of work that is likely follow as a consequence, requiring academics to come out of their respective corners and learn something of each others’ theoretical and methodological tools. Intuitively, the initial premises set out in the book, when considered in broader terms, seem well worth pursuing, and may provide a lesson that many acousmatic music composers might well also consider.

David W. Bernstein, Ed.: The San Francisco Tape Music Center: 1960s Counterculture and the Avant-Garde


Reviewed by Jeffrey Treviño

Berlin, Germany

This book tells the story of the influential group of creative artists—Pauline Oliveros, Morton Subotnick, Ramon Sender, William Maginnis, and Tony Martin—who connected music to technology during a legendary era in California’s cultural history. An integral part of the robust San Francisco scene, the San Francisco Tape Music Center [SFTMC] developed new art forms through collaborations with Terry Riley, Steve Reich, David Tudor, Ken Dewey, Lee Breuer, the San Francisco Actors’ Workshop, the San Francisco Mime Troupe, the Ann Halprin Dancers’ Workshop, Canyon Cinema, and others. Told through vivid personal accounts, interviews, and retrospective essays by leading scholars and artists, this work, capturing the heady experimental milieu of the 1960s, is the first comprehensive history of the San Francisco Tape Music Center. Editor David W. Bernstein gathered the materials, undertook the interviews, and placed the disparate contributions into context.

To read this book is not to drink from, but to plunge into, the wellspring of the American experimentalist tradition. The amount of technical description, detailed in interviews with tech gurus Don Buchla, Michael Callahan, and William Maginnis; historical context, to be found in carefully placed interludes by cultural experts; aesthetic reflection, both thoroughly and personally unfolded in conversational interviews regarding
artistic practice and encapsulated as offered impressions of “the scene”; visual documentation, including full-page psychedelic posters and concert programs, color photo stills from Tony Martin’s performances, captioned studio photos and diagrams, and even a pull-out poster reproduction of the map/score that guided an event/happening/piece that traveled through the entire city of San Francisco, *City Scale* (1963)—all this is sufficient to induce exactly what such a historical artistic collection should: a profound appreciation, and a desire, abetted by intimate technological and aesthetic familiarities, to explore the kind of personal creative engagement that the former demands. This is deeply inspiring, lovingly presented non-fiction.

Well away from the heavy nostalgic wax that threatens to suffocate any attempt to meaningfully recollect the past, the interviews and essays here bid a considered, tender, and variegated reflection. In addition to his capacity as principal interviewer, Mr. Bernstein provides a suitable frame at the outset with his summary essay, “Emerging Art Forms and the American Counterculture, 1961–1966,” and a handful of illuminating mini-essays, set within the primary source documents and interviews. This work of his betrays a justly guarded wish to situate the reader for the historically ostensible reason that the San Francisco Conservatory of Music was expelled the center’s strange sounds from its attic in the summer of 1962, requiring Mr. Sender and Mr. Subotnik to move the center’s equipment into an old Victorian mansion on Russian Hill (which they later accidentally burnt down), but with the Olympian pronouncement that “there is growing awareness on the part of the young composers all over the country that they are not going to find the answers they are looking for in the analysis and composition seminars of the academies” (p. 43). Mr. Sender’s prose affect dwells exactly in that pulse-quickening, manifesto-advertisement nexus characteristic of so much mid-century artistic writing: straw men aflame, one cannot help but feel both patronized and moved to action.

These writings are judiciously tempered via newly written contributions from Ms. Oliveros and Mr. Subotnik which, taken with the multiplicity of other specialties and backgrounds elsewhere, reveal the absurdity—outside the inevitable economic necessity to prop up unity in front of diversity—of gathering together such a teeming cultural landscape into the narrations of Mr. Sender’s “we.” Mr. Subotnik’s summary of the center’s activities foils well with those by Mr. Bernstein and Mr. Sender, as well as proposes an interesting comparison with “studio art” [p. 112]. Ms. Oliveros’s recollections supply the crucial, timely perspective of an alienated woman in a technological patriarchy:

Though well meaning, the “boys” were not necessarily helpful. The tech-oriented attitude put me off more often than not—mostly because of lack of vocabulary and knowledge on my part. Men have a way of bonding around technology. There seemed to be an invisible barrier tied to a way of treating women as helpless or hapless beings [p. 88].

If such an elaborate show-and-tell manages only to tantalize the ear, there is still the appendix list of archival recordings, and the included DVD, containing 14 filmed performances from the 2004 SFTMC reunion festival, *Wow and Flutter* (October 2004, Rensselaer Polytechnic Institute). Recorded performances include Circuitry (Oliveros/Martin), Silent Light (Martin), *Tropical Fish Opera* (Sender), Mandolin (Subotnik), *Kore* (Sender), *Apple Box Double* (Oliveros), Desert Ambulance (Sender/Martin), *Release* (Subotnik), *Pauline’s Solo* (Oliveros), as well as two performances of Mr. Martin’s *Silent Light* and two group Improvisations. They confirm what the whimsy
and rigor of earlier projects’ descriptions suggest: long and productive careers that have left practitioners willing and able to design beautiful experiences, and to have a good time together, many years later.

Although the benefits of a freely conversational interview style are on display in full force—there is palpable authenticity to be found in the proximity of phrases like, “I used tape delay when I was doing my tape stuff on the East Coast to cause phase effects, so you could make a sound go through a person’s head by going in and out of phase, driving from one side of their head to the other like a freight train” [p. 244], and, “I continued to do nitrous oxide on and off for a few years after that, but that was pretty much it” [p. 250]—the priority of presenting multiple improvised, potentially conflicting accounts of the same events and institutions, complemented appropriately by a terminal chronology, lapses at least once into an irresponsibility regarding basic fact-checking. Mr. Bernstein mentions in an interview that Nam June Paik composed a series of pieces called Danger Music, and it remains in print [Dick Higgins composed the Danger Music series; one forgives and expects the error, as Mr. Paik’s single contribution to the series, Danger Music No. 5, has become one of the most widely repeated, evocatively improbable instruction scores ever written: “Crawl into the vagina of a living whale”]. That this error is the reviewer’s chief complaint speaks volumes about the quality of this collection.

Finally, there is a vital style communicated here, a style that inhabits and dances with the city where it lives, a style best described by “who,” “when,” and “where” rather than “what.” It is a “what” not easily documented, because it is complicated. It is complicated because it embraces the potential messiness and incoherence that acts as the restorative force when people create things spontaneously, in social feedback with attention to one another. It is a style that agrees to include, consider, negotiate, and feel everything in the world, knowing that the alternative can be nothing more than the frightened evasion of pollution (often in the guise of transcendence—see Anna Halprin’s interviewed critique of John Cage’s ideas, pp. 232–233). It is a style that—contrary to the counterproductive ossifications of so many creative centers, including even one founded by one of the grandfathers of both the SFTMC and free improvisation, Robert Erickson—places the social predictions of improvisation on the same ground as more autocratically predictive content technologies. And it is a style that flourished as the sum of several curious university students’ engagement with their community, as well as the relished novelty of an interested and risk-taking public.

Évelyne Gayou, Editor: Polychrome Portraits 14: Pierre Schaeffer


Reviewed by Thom Blum
San Francisco, California, USA

This book has it all: a fertile and fantastic time in history, a protagonist who is enigmatic and paradoxical yet is a powerhouse thinker–doer of the time. He is gifted, having heightened organizational skills and showing artistic talents at a young age. He enlists and attracts scores of people from diverse walks of life, and they participate in his many plans. Some of these same participants are the narrators of the story, each one revealing another piece of the jigsaw puzzle until the big picture, our central character, emerges. The chapters reveal remarkable results [and tolls] that are achieved, despite the bureaucratic elephants our hero must coax up the hill.

As a natural observer and scientist, the central character puts forth hypotheses, and he does the research required to prove them true or false. He takes it hard when he is convinced that an hypothesis has failed—however, this only adds a certain mythic quality to the character. And he never stops striving for the next goal.
The ways in which the authors of this episodic biography relate their experiences of Pierre Schaeffer—his personality, his plans and actions, his organizations, and the influences he had and continues to have—make this compact collection of 23 previously unpublished essays an engrossing and thoroughly enjoyable read.

The essays can be divided into two, sometimes overlapping, groups: those that describe various aspects of the man (e.g., his youth, his observations, missions or goals, activities, relationships), and those that focus on his effects (e.g., his influence on the chapter’s author or the author’s organization, and/or on music research, communications, or current technologies). Each of the essays expresses a warm and personal point of view. Two chapters are most notable in this respect, the mementos by his daughter and his wife. And perhaps most valuable, especially to those who do not read the French language, this collection is published in English, thanks to the Institut national de l’audiovisuel [INA]; editor-in-chief Evelyne Gayou, who also served as interviewer for four of the essays; and expert English translations provided by François Couture.

Space does not permit synopses of many of the 23 essays, so details drawn from representative chapters will have to suffice. The diversity of the essays attests to the man’s diversity. Indeed, his plurality—his complex personality, interests, and experiences—is a prominent theme of the collection.

The memento, “My Father . . . With His Smile So Sweet,” written by his daughter Marie-Claire Schaeffer, is a sentimental and tender survey of her father’s paradoxical interests, careers, and approach to life. The chapter begins with some simple facts, for example, that he was born in Nancy, France, on 14 August 1910, to two music teachers. He died on 19 August 1995. His mother’s deep faith in God and his father’s probing and skeptical nature forged in him a moral code that spurred him to seek truth, beauty, and goodness. She then describes his contradictory life through a series of questions and answers:

Was he a spiritual man or simply an “honest man”? A man of reflection or a man of action? A paradoxical man if there ever was one, a man that beckoned analysis as much as synthesis, weirdly specialized and of general interest all in one. Visionary, moralist, occasionally anarchist, provoking at times, traditional at others, depending on his efficiency. A talent scout, an inventor of new institutions that would beat the elephanteine administrations at their own game, at best serving as the pilot fish. . . . A-political and a Resistance fighter. Enfant terrible or choirboy? A revolted man or a senior clerk of the State? The extraordinary thing is that he was simultaneously this and that [p. 142].

Out of respect for her father—and some fears that her memory would fail her—the body of her essay consists of scores of quotes from her father’s notebooks, diary, interviews, and lectures, carefully translated into English. Ms. Schaeffer hand-picked these samples and wrote the connective paragraphs to illuminate her father’s rich, multifaceted, multidimensional character. A few examples, drawn from the shorter quotes, whet the appetite:

Notebook question: At the Service de la Recherche, we are making the same programs as our friends working in other departments, except that we are trying to turn these shows into analytic material and to analyze our own actions as we produce them. So we are trying to dispel the mystery of communication [p. 144].

Perspective: Research is not about getting there, as people often urge me to, but about starting off [p. 144].

[Interdisciplinary] point of view: What this society needs the most is people with a double culture, not what I call hemispheric people who know only half the world: science or humanities, as we say [p. 144].

Politics and television: Viewers must be seen from the start as responsible and intelligent people. Yet, the whole world is doing the opposite. Once and for all, it has been decided that the viewer is trite and that he must be distracted to be neutralized. That is the American technique of the rating. Big numbers rule. The more receivers you have, the more you want to talk to everyone at once. However, the truth lies in the opposite: the more receivers you have, the more you need to diversify audience types. Your goal can’t be to anesthetize them all [p. 148]!

What’s left: I believe in science insofar as it allows many to measure the scope of his ignorance. So I say I believe in everything we don’t know. This is not esoterism. I am simply convinced that the man of today—much more than his predecessors—has the certitude of the enormous scale of his ignorance. Acknowledged ignorance leads to imagination. And imagination is what takes you back to the passionate exploration of What’s Left [p. 152].

Some of the authors of this collection worked closely with Schaeffer. Others worked under his direction.
within one of his research and production programs. Some of the authors, such as Jean-Claude Risset, Francis Coupigny, or Jean-Michel Jarre, worked with him at the Groupe de Recherches Musicales [GRM], in music creation and music research programs. Others, like Claude Guisard, worked with Schaeffer at the Service de la Recherche (within the ORTF), in content and presentation renewal programs for radio or television. Other authors who are included, such as John Dack and Réjean Beaucage, are currently working in universities and other institutions where Schaeffer left his mark, and where his methods and research models are practised today.

In his essay, “A 20th Century Silex,” François Bayle writes poetically of his mentor, catalyst, benefactor, and fatherly friend. The final sentence of his brief memento reads, “He should be studied from every possible angle” (p. 85). Mr. Bayle chooses the metaphor of silex to represent the propellant-like nature of Schaeffer, with whom he and other musician-researchers, such as Luc Ferrari, Ivo Malec, Bernard Parmegiani, and Guy Reibel, studied, conducted, researched, proposed new tools, and created works in the late 1950s. He frames the early days at the Service de la Recherche as follows:

I suddenly remember these groups, the smoky and feverish sessions of which Schaeffer was the center of interest, Schaeffer who, in his pathetic-sounding voice, had us, all individual idiots, bowling over under blows of his agile “quadrumanous” reasoning, swinging from branch to branch, like those gibbons whose efficient acrobatics he admired like a form of rhetorics (p. 84).

Later in the essay he describes Pierre Schaeffer, the iconoclast: “Like few others [Cage, Xenakis], Schaeffer enters the Temple [cracks can be seen on its walls, the works of the bombs and explosions of Technology] baggage-less, like a burglar, and he finds the Great Priests unarmd and disoriented” (p. 85).

Most who read this collection will know at least some essentials about Pierre Schaeffer, the composer, inventor of musique concrète, music theorist, and author of the Traité des Objets Musicaux. What readers of this collection will learn is that the fuel powering Pierre Schaeffer was his passion to understand human communication and the devices that enable it, or what he preferred to call “communication machines.” The communication machine, by Schaeffer’s definition, very much includes the human within the circuit. Terms such as “media” or “communication device” do not. Because he was first and foremost an ethicist, his theoretical and applied research into communication placed Man at the center of the communication circuit.

In the essay “Plural and Singular,” by Jocelyne Tourne-Lamamer, we learn something of Pierre Schaeffer’s earlier (1956) pioneering steps into publicly owned, operated, and programmed radio. In this case, his explorations resulted in the first successful radio communication system in Africa. Jocelyne Tourne-Lamamer writes:

He was convinced of the political and cultural roles of radio, and that is why he started working on the implementation of a true communications network in Africa. This time, he was determined to create a radio that would be close to the people, made by the people, and attuned to the people’s issues. . . . Thus, Sorafo was born. For Pierre Schaeffer, this adventure lasted four years. For the people he brought in with him, it went on for many more (p. 160).

As early as the mid 1950s Schaeffer was already writing that the survival of the human race depended on communication machines that would enable cooperative, many-to-many networks. In his essay “Pierre Schaeffer: Current Ideas About the Media,” Jacques Perriault, professor of Information and Communication at Université de Paris X, explains that Schaeffer was more interested in what he called “specific networks of social communication,” mechanisms that would permit n-way communication and cooperation between individuals or groups having shared interests and needs—in other words, the democratization of the media. Through Mr. Perriault’s essay, as well as the testimonials by Marie-Claire Schaeffer and Roger Cochini, we see that Schaeffer presaged not only the Internet but also the popular vehicles of communication currently referred to as “social networks” [FaceBook, MySpace, etc.].

Pierre Schaeffer’s entire career and, in fact, musique concrète itself, was born in the 1940s and 1950s, from his insistence that radio be renewed and reshaped into a thought-provoking, versus thought-numbing, forum. Mr. Perriault also explains that throughout the 1970s and 1980s, after Schaeffer had essentially rejected as invalid his hypotheses leading to musique concrète, his focus returned to research and programming for radio and television.

This same essay describes another of Schaeffer’s experiments in n-way social networking. Antelima, a successful project that he established in the 1970s, was a radio-based communication machine permitting group exchanges between sailors at sea and their wives.
In “Pierre Schaeffer’s Legacy and the Atelier de Création Radiophonique,” author Philippe Langlois surveys the trail of media-related organizations whose missions and paths were crafted and shepherded by Schaeffer. These include his first and formative Groupe Jeune France, followed by the Office de Radiodiffusion Télévision Française (ORTF), Service de la Recherche, Studio d’Essai, and the Groupe de Recherches Musique Concrète (GRMC), which was renamed Groupe de Recherches Musicales (GRM). He describes his own position, since 2002, as co-producer/coordinator of France Culture’s Atelier de Création Radiophonique (ACR). Here they continue and advance Schaeffer’s interdisciplinary approach to radio research and experimental productions, working with authors and poets, sound artists and sound engineers, and visual artists (i.e., set designers, painters, filmmakers, actors, directors, and so on) who want to better understand or create radiophonic pieces. Following the model established by Schaeffer, the author works with a team. They produce and present 40 unique programs a year. The essay’s punchline, however, is that in 1969, Schaeffer had teamed up with Alain Trutat, radio director, and Jean Tardieu, writer, to create experimental theater and opera specific to radio through the same ACR and France Culture. And we learn that this was where Schaeffer mounted La coquille et planètes, for which he wrote the libretto, with music by Claude Arrieu. Mr. Langlois’s essay paints fervent times, past and present, and the reader learns of one more organization, established by Pierre Schaeffer, that took root and is still evolving.

As soon as I received this Polychrome Portrait of Pierre Schaeffer I was excited by the prospect of getting the authors’ summaries of Schaeffer’s seminal, and still untranslated, music theoretical works, Traité des objets musicales and Solfège de l’objet sonore. I had attempted some 25 years ago to study these works but found it impossible to interpret, even with a tutor supplementing my second-year knowledge of French. The tutor, a graduate student in French literature, struggled with Schaeffer’s writing, saying it was fraught with obscure idioms and was nearly impenetrable. Fortunately, the essay “Music Theory by Sonic Objects,” by Rolf Inge Godøy, does indeed provide a very brief but excellent synopsis of crucial concepts from the Traité. Schaeffer’s perceptual and experiential approach to analyzing (“reduced listening”), describing, and then classifying sounds into his taxonomy of “typomorphologies” is explained with examples, giving the reader a quick but direct feel for the driving concepts behind musique concrète. Several other essays in the collection, including those by François Delalande and the more personal, entertaining, and revealing one by Beatriz Ferreyra, also delve into the theory, research practices, and terminology of musique concrète. These will provide the reader with a key that unlocks at least a few of the treasures that are obscured by the language of the original texts.

In his brief but essential essay, “Inheriting the GRM,” Daniel Teruggi sketches his early musical experiences in his birthplace, Argentina. Mr. Teruggi’s hometown music teacher was Enrique Gerardi, who had been an intern at the GRM in the early 1960s. The author was inspired by the examples of musique concrète that his teacher played for him, and he was determined to make his way to the GRM someday. In 1978, at the advice of Guy Reibel, Mr. Teruggi applied and was accepted into a two-year study program hosted by the GRM.

After completing the course and reluctantly deciding he must return to his native Argentina, François Bayle offered him an assistant teaching position. Thus began his career within the GRM, which culminated 17 years later with the inheritance, from Mr. Bayle, of the Groupe’s directorship. The second half of his essay describes the missions and philosophies of the GRM. Mr. Teruggi subtly addresses a criticism lodged by some that the Groupe has veered too far from its original purposes. He says:

Pierre Schaeffer is the reason the GRM exists and the father of the first ideas that drove it. . . . These ideas were not immutable. They changed even during Pierre Schaeffer’s time, and they have been considerably enriched since then, through the multiple contributions of other thinkers and researchers who have worked in this new experimental field. Pierre Schaeffer stamped his “style” on the GRM, and every director after him has done the same [p. 138].

This brings us to another recurring theme of the collection: the question, “How will Pierre Schaeffer’s legacy survive and persist?” Several essays stress that this survival depends on the continued discovery and archiving of Schaeffer’s works, as well as the teaching of his methodologies. There is also a repeated call for translations of his writings and recorded lectures.

It would be a grave oversight not to mention the recent English translation, by John Dack and Christine North, of Michel Chion’s Guide to Sound Objects. Pierre Schaeffer and Musical Research, which has recently been made available, free of charge, through the ElectroAcoustic Resource Site (EARS) [www.ears.dmu.ac.uk].
“Schaeffer@Köl.de,” by Marcus Erbe and Jan Simon Grinshch, recalls the chasm that formed in the 1950s between the perceptual-based composition approach of Pierre Schaeffer’s musique concrète and the rule-based, serialist approach of his German counterparts. The former rejected electronically generated sound in favor of electronically captured acoustic or “natural” sound, whereas the latter embraced the “pure” sounds of function generators. This divide between Schaeffer and the Cologne New Music going public became unavoidable when Orfée 53, an opera by Pierre Henri and Schaeffer, was performed in 1953, and Herbert Eimert wrote his cold response to musique concrète, as well as what he believed were Schaeffer’s “undefined theories that could neither be demonstrated musically nor analytically” [p. 26]. It was shortly after that response was published that Schaeffer stopped composing and practically renounced his music theories. But as this essay informs us, it is water under bridge since the 2002 writing and endorsement of the accord and agreement—of-cooperation by Christopher von Blumröder and Daniel Teruggi, University of Cologne’s Department for Contemporary Music and the Groupe de Recherches Musicales, respectively. The resolution of past differences has resulted in concerts, lectures, and classes in Cologne, focusing on musique concrète and the underlying theories developed by Pierre Schaeffer.

Like other essays in the collection, this one stresses the impossibility of understanding Schaeffer if his writings are left untranslated. We learn how the two groups are now overcoming the hurdle of studying Schaeffer’s Traité by using English translations that accompany GRM’s three-CD release of the Solfège de l’objet sonore. Armed with the sound examples and accompanying notes, in English, groups of University of Cologne students study and discuss this material over an entire term. As the authors point out, today the Solfège is practically the only way for non-Francophones to get a handle on Schaeffer’s thoughts.

Curiously the most comprehensive review of Pierre Schaeffer’s evolution appears in the final essay, “Plural and Singular,” written by Jocelyne Tournet-Lammer. Ms. Tournet-Lammer was chief of research projects, first at the ORTF’s Service de la Recherche then at the INA. After the demise of the ORTF in 1974, she followed Pierre Schaeffer through his various audiovisual programs and projects. Her chapter takes us on an entertaining, albeit brief, tour through the twists and turns of Schaeffer’s artistic youth, in which he authored plays, poems, and songs. She describes his natural organizational talents, which were revealed early on, recalling the Rover Scouting Crew and its newsletter, L’Étoile filante, that he established when he was only 20. She walks us through his initial professional career, when he quickly ascended from a technician for France’s national Post, Telegraph, and Telephone company to director of Jeune France, a pro-youth popular culture movement. At this stage of his development, his mid-twenties, he was already showing his interdisciplinary inclinations, founding the Studio d’Essai and drawing on the varied talents of ex-Jeune France members, whom he recruited to work on new research in broadcasting. Their mission was to reveal the power of the microphone and recording resources. This resulted in the production of high-quality, experimental, and alternative radio programming.

The body of Jocelyne Tournet-Lammer’s essay traces Pierre Schaeffer’s later organizational posts, associations, and projects he conducted with various artists working in numerous media, his driving philosophies, and his vision. It is an inspiring adventure, to say the least. But the most remarkable section of her essay is its ending, in which she describes and invites the reader to explore Schaeffer’s continuous relevance to each of the fields in which he participated, including music research, communications theory and practice, artistic creation and production, and education. She outlines a curriculum consisting of 40 specific papers and audio-visual presentations by or about Pierre Schaeffer. These, she maintains, will enable readers to further explore and carry forward his accomplishments and the questions that he raised. Like some other authors in this collection, she points out that “the ‘resurrection’ of Schaeffer’s work must also take place outside France” (p. 163). And, therefore, it is crucial that his writings and verbal documents be collected and translated into as many languages as possible but, at the very least, into English, German, and Spanish.

Taken as a whole, this collection of essays describes the work Pierre Schaeffer did during his lifetime. For the most part, they are non-technical. Although the collection gives the reader access to some specifics about Schaeffer’s Solfège, for example, the information is conveyed in the context of the man’s life experience. In other words, musique concrète is only one of many stops along this tour. Surprises abound. For many of us, these unique vignettes provide the clearest picture yet of their multifaceted subject and his times. And, they also connect us to our own time: the way things have evolved, and what’s ahead. The collection is both reflective and projective. It is
without question a polychromatic portrait.

[Editor's Note: The French version of Pierre Schaeffer: Portraits Polychromes (No. 13) comes with a four-CD set of recordings that document Schaeffer’s career. The recordings are primarily spoken-word: lectures, radio broadcasts. They cover much of his career, from underground radio on the eve of the liberation of Paris in 1944 to a radio program featuring Schaeffer from 1978. All of the recordings are in French.]

**Recordings**

**Amnon Wolman: The Marilyn Series**


Reviewed by Michael Boyd
Pittsburgh, Pennsylvania, USA

Amnon Wolman (b. 1955) is a composer and sound artist who is currently a professor of composition at the Graduate Center of the City University of New York (CUNY) and Brooklyn College, and directs the Center for Computer Music at the latter institution. Regarding Mr. Wolman’s more general compositional concerns, his CUNY Graduate Center Web site biography states that his work is “grounded in an essential interest in experimentation and a belief that music as an art form expresses many dissimilar ideas of beauty. His interest in technology and in issues of time guided him, in recent years, towards electroacoustic pieces that are based on their own original audio materials and towards gallery sound installations that place an evolving sound with complementary visuals, in a small space where the listener decides on the length of the interaction. In his performance pieces he emphasizes the interaction between live performers, the technology, and the composer as collaboration with equal partners.”

The recording under consideration features three works from Mr. Wolman’s Marilyn Series: Reflections on Pedestals (1989), The Many Faces of Marilyn, V.2 (1991), and Marilyn93/inCage (1993). This series, composed between 1986 and 1996 for computer-processed tape and live performers, contains two other works, M and PU-Marilyns96/LP, as well as an earlier version of The Many Faces of Marilyn. Commenting on the series in his liner notes, the composer writes: “The Marilyn Series of pieces did not start as such. Originally, sometime in the early eighties, I thought it would be a great idea to use excerpts from Marilyn Monroe’s voice and manipulate those as part of a piece. . . . I had some sounds in mind: the sounds Marilyn makes in the song “I Wanna be Loved by You” from the movie Some Like it Hot. To a gay man, the movie [was] . . . loaded with energy symbolizing the gay world. . . . Composing within a clear context has always been of interest to me, but this was the first time I actively put it to work. Knowing that when I say the words ‘Marilyn Monroe’ whole worlds of associations and expectations are presented to the audience in which the piece of music will now operate.”

Reflections on Pedestals, the second work of this series, was composed for orchestra and computer-generated sound in 1989 at the MacDowell Colony in New Hampshire, although it was not premiered until 2001 by the Northwestern University Symphony Orchestra with conductor Victor Yampolsky. These performers are featured on this recording and perform commendably well, interacting and integrating with the electroacoustic sound with great sensitivity. Commenting on this work, the composer writes, “I looked at the score for M [the first work in the Marilyn Series] and decided to create a new piece, using some of the previous orchestral ideas and a similar tape part. . . . New elements were incorporated into these older ones, an important one is an angry gesture full of modulated screaming clusters of brass sounds. Another is an attempt to deconstruct not only Marilyn’s voice but also Debussy’s Fête from the Nocturnes, which I love.” The com­ mingling and juxtaposition of these elements—manipulated excerpts of Monroe’s voice, Debussy-derived material, and more abstract motivic gestures such as the aforementioned brass clusters—create many striking moments throughout the work. The piece begins and ends with a focus on Monroe’s voice, with the orchestra gradually rising to prominence during roughly the first half of the work and maintaining that position for much of its remaining duration. The electroacoustic portion of Reflections on Pedestals largely focuses
on a few related samples of Monroe’s voice such that the disappearance and reemergence of these sounds creates a thread of continuity heard throughout that parallels the coming and going of Debussy-related moments in an interesting manner. One of the work’s highlights occurs near the end of minute 17 when the orchestral/electroacoustic juxtapositions, as well as the internal distinctions within the orchestra’s part, are found in close proximity, bringing these contrasts to the composition’s foreground.

The Many Faces of Marilyn was originally composed in 1990 for First Avenue, an improvisation trio, as a requiem for victims of the AIDS virus. The version heard on this recording is an adaptation of the original created for Walleye, an improvisation ensemble at the University of Illinois, Urbana-Champaign, that was originally performed at the 1991 Society for Electro-Acoustic Music of the United States (SEAMUS) Conference. To echo his larger programmatic intent for this work, Mr. Wolman’s approach to Monroe’s voice was “to convey the requiems I intended to be in the music . . . [and thus] a sense of stop-ness, a sense of final-ness.” He wanted listeners “to know that Marilyn was dead and Marilyns were dying.” The primary alteration that distinguishes the second version of The Many Faces of Marilyn is a new approach to the ensemble’s instructions that encourages the inclusion of some amount of rock and roll feel, to capture “the popular culture aspects of Marilyn.” This feel is present in a general manner through a sense of spontaneity interjected by the work’s improvisatory nature, particularly noticeable in the violin/piano exchanges that begin at minute 6, and specifically through regular, rock-like drum patterns that are woven throughout. In concord with the composer’s programmatic intentions, the electroacoustic sound and accompanying instrumental textures are generally subdued and austere. An unsettling relationship results between these gestures and the seemingly oppositional active drum and soloistic instrumental material, thereby further buttressing the work’s conceptual background, the drum break heard near the end of minute 13 is particularly notable in this regard. The Amnon Wolman Ensemble, an eight-member group that includes the composer, is featured on this recording. They play with great skill and subtly, fluidly performing this stylistically challenging work.

Marilyns93/inCage, composed in 1993, is viewed by the composer not “as an opportunity to remember John [Cage] but as an opportunity to continue my discussions with him.” Mr. Wolman used the I Ching chart to arrange recordings of Monroe’s speech, in this case entire words such as “alone,” “love,” “kiss,” and “desire,” resulting in a “highly rhythmical, and non-evolutionary” effect. This work can optionally involve a live performance, though this recording is for tape alone. Marilyns93/inCage consists of a bass register motive, reiterated throughout the work, over which excerpts of Monroe’s voice and orchestral accompaniment from her songs are superimposed. These samples are employed almost continuously, lending the work an active, vibrant rhythmic character. Though short, they are notably longer than any recorded excerpts heard in this disc’s other compositions, allowing the listener to comprehend the sung text and more overtly connect the piece with its source material. Generally the piece has a nonlinear feel due to the high amount of repetition and, as noted by the composer, lack of evolution, though it ends with a lengthy section of primarily piano material that leaves the listener with a strong sense of contrast to what is heard throughout the majority of the work. As a consequence of the statistical procedures used during its composition, there are interesting variations in density throughout the work that alternately provide moments of high intensity and repose.

Overall, The Marilyn Series presents a compelling overview of Mr. Wolman’s work with a specific body of source sounds with which he has found significant resonance.

Perhaps the most striking aspect of this disc is the variety of ways in which the composer engages with Monroe’s voice, creating three highly distinctive yet clearly related pieces. Reflections on Pedestals juxtaposes vocal samples with different types of orchestral material, continually placing Monroe’s voice in different musical contexts. The Many Faces of Marilyn, V.2 presents a vastly different stylistic feel, due to the incorporation of improvisation, and also weds Monroe’s voice with aspects of rock music thereby connecting the piece with the broader popular culture sphere. Finally, Marilyns93/inCage, of all three compositions, offers the clearest depiction of her voice, though in a unique, highly repetitive setting that resulted from Mr. Wolman’s use of chance procedures. The Marilyn Series, particularly because of this diversity, is quite engaging, and well worth hearing.

Barry Schrader: Fallen Sparrow
Compact disc, 2006, innova 564; American Composers Forum, 332 Minnesota Street E-145, St. Paul, Minnesota 55101, USA; telephone (+1) 651-251-2823; fax (+1) 651-291-7978; electronic mail innova@composersforum.org, Web innova.mu/.
Barry Schrader: Monkey King


Reviewed by Elainie Lillios
Bowling Green, Ohio, USA

Barry Schrader entices and challenges audiences yet again with two electroacoustic compact discs: Fallen Sparrow (2006) and Monkey King (2008). Each release uniquely addresses Mr. Schrader’s creative spark and expert technical skill, while simultaneously reflecting his penchant for extra-musical inspiration realized through meticulous attention to musical idea and development. These discs embody Mr. Schrader’s purposeful compositional intent, featuring pieces that can be listened to in many ways and studied from many different perspectives.

The earlier release, Fallen Sparrow, illustrates Mr. Schrader’s mastery in combining live performance with pre-recorded electroacoustic music. On a large scale, the composer’s carefully designed track arrangement creates a seamless, flowing sonic experience. Each composition fits within the disc’s time stream, progressing through a meta-world of sonic events. It’s clear that Mr. Schrader deliberately considers the many relationships that exist between acoustic instruments and electroacoustic sounds. He thoughtfully crafts sonic, rhythmic, motivic, harmonic, and formal materials, creating music that exhibits both freedom and reliance between instruments and electronics. Although temporally aligned with the electroacoustics due to the fixed nature of the sounds, the instrumentalist weaves seamlessly through the synthetic sound world, appearing free from time and technical constraints. The electroacoustic sounds envelop and enhance the acoustic instrument, sometimes providing a driving rhythmic accompaniment and at other times creating a lush textural background allowing the instrumentalist to float above or virtuosically traverse through. Mr. Schrader precisely addresses each compositional element to accurately balance the instrumentalist and electroacoustics, designing every moment to create a natural amalgamation between the two. This is no easy task, yet the musical result is organic and seamless.

Twenty-first-century music theorist Leonard Meyer’s ideas about embodied and designated meanings in music feature centrally in Fallen Sparrow. Embodied meaning, as Mr. Schrader explains in the liner notes, “refers to the meaning of the relationship of musical materials to each other,” whereas designative meaning “alludes to extra-musical, programmatic, or emotional ideas.” Fallen Sparrow’s compositions explore these meanings conceptually, musically, and technically. Embodied meaning features centrally in Five Arabesques (William Powell, clarinet), where all of the piece’s musical material is based on the first phrase of the clarinet part of “Arabesque 5,” and Ravel (Vicki Ray, piano), where each of the three continuous movements is based on a small amount of musical material from Maurice Ravel’s piano works.

Designative meaning features centrally in the title track composition Fallen Sparrow (2005), for violin and electronics. Mr. Schrader recounts the piece’s inspiration in the liner notes—the act of finding a dead sparrow that had created a small nest out of lint from the dryer exhaust fan. Although such an event might be overlooked by most, Mr. Schrader designs a detailed, expansive story surrounding the sparrow and its life. He imagines the sparrow’s possible thoughts during its dying moments, how it may have remembered the vitality and energy of its youth, the freedom of flying, the excitement of spring, and the vastness of night. Violinist Mark Menzies soars elegantly through a lush electronic sound world, sometimes in the first-person character of the sparrow and other times as a third-person observer. The violin mimics bird sounds at times literally through extended techniques such as glissando harmonics, and other times more abstractly through plaintive motives expressing...
solitude and reflection. The piece as a whole progresses intimately though the sparrow’s life, from youth and activity, through resolute determination to sustain itself during the frozen winter, to its dying reflections on life. Many times, the electroacoustic elements seem to reflect nature, sounding like trees, wind, other animals, and nature. Rather than depicting this literally, however, Mr. Schrader employs synthetic sounds to create abstract musical references. In many ways this approach is more satisfying than hearing actual birdsong and nature environment sounds; it creates a space where the listener is free to make his/her own interpretations and associations. The piece’s cyclic, pseudo-riornello form adds yet another layer of symbolism by reflecting the cycle of life: birth, death, rebirth. Although the sparrow’s life has ended, the listener is left with optimism that life continues onward.

Love, in Memoriam (1989) more directly expresses designative meaning in its use of poet Michael Glück’s words and ideas, which Mr. Schrader explains as the “frozen, abstracted moments from the lives, works, and feelings of Vincent van Gogh, Lewis Carroll, and Leonardo da Vinci.” Sung by the late countertenor Frank Royon Le Mée and commissioned by the Groupe de musique experimentale de Bourges (GMEB), Love, in Memoriam juxtaposes past and present literally and figuratively. The countertenor voice, usually found in medieval and renaissance music, is combined with rhythmically driving synthetic sounds, creating a provocative fusion that challenges us to listen deeper and expand our conception of time, place, and music. Love, in Memoriam is simultaneously tantalizing and disenchanted, beautiful and disturbing, complex and lucid. This composition exemplifies Barry Schrader’s craft and technical ability through its purposeful, multi-layered development, and his meticulous attention to detail in its masterful collaging of musical and programmatic elements.

Mr. Schrader’s newer electroacoustic release, Monkey King (2008), offers the listener a sonic exploration into ancient Chinese tradition and lore. The disc’s first track, Wu Xing—Cycle of Destruction (2005), is an electroacoustic work based on the concept of Wu Xing, the five elements in ancient Chinese tradition. Cast in five sections depicting metal, wood, earth, water, and fire, Wu Xing bathes the listener in a sensuous sonic landscape of metallic scrapes, wooden strikes, effusive bubbles, flowing streams, haunting wind, and rhythmic pulsations. Again, rather than literally representing sonic materials, Mr. Schrader creates a synthetic soundworld that evokes the five elements, allowing the listener imaginative freedom. The “Metal” and “Wood” sections illustrate the force and durability of these elements through driving rhythmic ostinati, low pulsating tones, and bass strikes. Lush, dense, sustained chords pervade the “Earth” section, with sweeping rotational panning reflecting the Earth’s rotation within the vastness of the universe. “Water” traverses sonically from great depths to distant shores, culminating in “Fire” with its dry, torrid wind and engulfing flames with the power to cleanse or destroy physically and spiritually.

Cast as a four-part electroacoustic epic, the title track, Monkey King (2005–2007), portrays the tale of Monkey King, a fictional character whose adventures culminate in enlightenment and designation as Buddha Victorious in Strife. The piece is based on scenes from the classic Chinese book Journey to the West written around 1550 by Wu Chen-en. Mr.

Schrader’s electroacoustic re-telling sonically allegorizes Monkey King’s birth [Part 1], his underwater voyage to obtain the Staff of the Milky Way [Part 2], his unsuccessful attempt to jump off Buddha’s palm and Monkey King’s resultant imprisonment in the Wu Xing Shan mountain [Part 3], and Monkey King’s final reward and transformation into an eternal and perfect state [Part 4]. This sonic journey through birth, growth, trial, and metamorphosis is expertly crafted by Mr. Schrader, who skillfully intertwines timbral, rhythmic, and harmonic material to create an enveloping, engaging soundworld. Layered rhythmic passages give way to dense sweeping textures as sounds expand and contract, developing, returning, and renewing. A slow tolling gong near the piece’s end signifies the convergence of the deities, and a shimmering texture signifies Monkey King’s enlightenment. Mr. Schrader’s masterful illustration of Monkey King’s story is satisfying musically, regardless of the listener’s familiarity with the work’s programmatic structure.

Natasha Barrett: Trade Winds

Compact disc (SACD), 2007, Aurora ACD 5056; Aurora Norwegian Contemporary Music; electronic mail aurora@grappa.no; Web www.aurorarecords.no/.

Reviewed by Patricia L. Dirks
Kitchener, Ontario, Canada

British composer Natasha Barrett [b. 1972] enjoys creating large-scale works of “intense musical structure” which require active and attentive listening on the part of the listener, according to her Web site (www.natashabarrett.org). Her recent recording, Trade Winds (2004–2006),
is no exception to her creative interests. This work is a single composition depicting a fantastical narration of an underwater adventure of the 100-year-old Norwegian sailing ship, Dyrafjeld. *Trade Winds* was commissioned by Norwegian Network for Technology, Acoustics and Music (NoTAM) and originally created for 16 channel diffusion, remixed for this compact disc as a Super-Audio (SACD)/CD hybrid with 5.1 surround sound and stereo mixes. Ms. Barrett, now based in Oslo, Norway, wrote this composition over a two-year period, creating potential recordings of what might have occurred on a voyage of the sailing ship.

*Trade Winds* is presented in eight tracks on this compact disc. Ms. Barrett describes this work in the liner notes, from a listener’s position, as a “macrostructure consisting of two halves: the first exploring culture and fables, the second exploring nature and science.” The spoken narrative that occurs in this work is not relevant to the listening experience itself as it is used primarily for texture and not content. However, a summary of the text does give a descriptive outline of the shape of the composition itself.

The sailors left port in relatively good weather; however, they soon encountered a low pressure system and had to take an alternate route north. The weather continued for nearly two days, as the sailors waited for it to pass. When the sailors finally decided to go south for safety, it was too late and dangerous to turn the ship around. The waves continued, covering the deck until it was completely underwater where it lies as the sea cascades gently away from the shore.

In track 1, *opening* (3:04), the adventure begins on the surface of the water. The listener is aware of voices talking, sounds of people on land which fade away to waves rolling against the shore. Ms. Barrett’s use of low frequency echoes, silence, and spatial placement of sound allow the listener to experience a descent underwater. She simultaneously creates a setting that expresses both the depth and the suspense of an expansive underwater world. Track 2, *Submerged* (3:15), is appropriately titled as it signals an arrival into a new world with shimmering bell-like electronic sounds. Ms. Barrett now moves the Dyrafjeld into a place of calm and tranquility. High frequency sounds and whale calls can be heard amongst distant metallic echoes while barely audible recordings of an organ begin to emerge, alternating between foreground and background. The ambiance of this underwater sonic landscape provokes aural images which depict the adventure itself.

During track 3, *Open Ocean* (14:25), the vessel surfaces to a stormy sea and the listener emerges into a world of swirling wind and crashing waves while the spoken text floats between the audible and the incomprehensible. This section of the composition was created mainly from electronic manipulations of vocal material read by Jon Warhuus (the captain) and Ove Evensen [interview text]. Ms. Barrett uses the narration in different spatial environments for its sonic quality and to play on the degree of understanding through fragmentation and juxtaposition of the text. This technique sharpens the listener’s ears and allows one to experience a new aural adventure in electroacoustic music.

The focal point of *Trade Winds* occurs during track 4, *Mobilis In Mobili*, “moving in a moving thing,” inspired by Jules Verne’s *20,000 Leagues Under the Sea*. Throughout the entire composition, Ms. Barrett makes multiple references to Captain Nemo, when the sound of distant organ recordings occurs. In the middle of this track, the opening of J. S. Bach’s *Prelude and Fugue in C minor* is suddenly heard clearly on its own. It is the appearance of this quote that Ms. Barrett uses to signify the rescue (or capture) of the professor and his crew by Captian Nemo. The listener then returns to Ms. Barrett’s lush soundworld in tracks 5 and 6, *Deep Layer* (11:55) and *Planctonic Float* (2:19), reinforcing the fact that the music and story are now one. Time itself seems to stand still while sounds of silence, distant tinkling glass, and metallic sounds are heard. This intertwined atmosphere of *Trade Winds* results in a whirlwind of excitement and mystery for the listener.

*Migration*, track 7, focuses on vocal sounds once more, this time being used in rhythmic gestures and smooth vocal lines, featuring the vocal talents of Jane Manning, soprano. Over a background of silence, eloquent melodies can be heard floating in and out of sonic waves as the Dyrafjeld is succumbing to the violent storm around it. Signifying this defeat and the end of the vast composition itself is track 8, *Nordfjorden Shore* (1:56). The solemn rolling of the waves against the shore act as a musical allusion to death itself. The journey is over for the Dyrafjeld as it fades into silence once more beneath the sea.

In conclusion, Ms. Barrett has transformed the art of storytelling into a new listening experience of musical expression and aural comprehension. *Trade Winds* is a creative accomplishment and fantastical journey not to be overlooked.
Natasha Barrett/Tanja Orning: DR.OX

Compact disc, 2008, c74-013; Cycling '74, 730 Clementina Street, San Francisco, California 94103, USA; telephone (+1) 415-974-1818; fax (+1) 415-974-1812; electronic mail info@cycling74.com; Web www.cycling74.com/c74music/013.

Reviewed by Patricia L. Dirks Kitchener, Ontario, Canada

DR.OX has something for every listener’s musical tastes on this self-titled compact disc by duo Natasha Barrett (computer) and Tanya Orning (cello). Ms. Orning and Ms. Barrett established DR.OX in 2005 as indicated by the liner notes, as “an electroacoustic improvisation duo fusing the immediacy of real-time performance with the sonic and structural intensity of the compositional process.” Together they use real-time sampling of acoustic cello sounds combined with live computer processing based on a “hierarchy of compositional building blocks” to create real-time electroacoustic performance art. This compact disc was recorded at Norwegian Network for Technology, Acoustics and Music (NoTAM) in December 2006. DR.OX effectively captures the seamless nature of this duo’s compositions and is supported by the Fund for Performing Artists and NoTAM.

Toothrin [3:27] is the opening track of this first compact disc of DR.OX. In this composition, Ms. Orning uses her cello as a performer, improviser, composer, and interpreter. Ms. Barrett records short loops of acoustic string sounds and uses them to create driving rhythms. The sounds are then stretched like an elastic to create a range of very low tones to short pizzicato bursts of electronic sounds. Myelin [2:26] again features processed string sounds and recordings which are later manipulated and played back. While this is occurring the cello continues to complement the “live” electronic sounds with high-pitched glissandi. Polycomb [2:31] uses quick and shorter blips of sound to produce a unique composition featuring the talents of both women and their achievement of creating high quality sounds.

Anchor synthesis [8:10] is the first lengthy composition to appear on this album. Rhythmic repetition from the cello is juxtaposed with processed electronic sounds creating an electroacoustic work of suspense and wonder. A siren-like pattern of high and low pitches comes to a climax then abruptly stops only to begin again, momentarily breaking into a short melodic pizzicato phrase.

Ms. Orning is no stranger to the world of electronic music, evident from her solo album Cellotronics (2005), where she used a synthesizer and a computer as her accompanists. In the duo DR.OX, Ms. Orning can be heard playing exaggerated vibrato on only one note in Zinc Finger (3:18). This produces a composition interspersed with electronic sounds that move quickly from one spatial focus to the next.

In Motif of Myo1p [6:01], a repeating, disjointed motif reoccurs throughout the piece at various intervals. The synthesized sounds here resemble jungle life such as croaking frogs, buzzing, and fluttering sounds, which take the listener on a sonic adventure. After the adventure is completed the listener then enters into a realm of calm and relaxation with the track GFP-fusion [5:15]. This work uses high-pitch droplets of murmuring water sounds over long sustaining drones. Both sonic elements gradually evolve over time rhythmically and sonically, producing a very tranquil atmosphere.

The longest composition on this disc is Axial Budding [10:29]. Here, the listener is emerged into a whirlwind of active cello playing and electronic sounds, descending slides and evolving transformations over the course of the composition. Beta Receptor [3:21] breaks into an explosion of sounds that could resemble that of a car or motor trying to start without success, creating an accelerating activity of sound for the listener. Axial Landmark [3:26] is also an explorative composition that plays with the idea of stretching sounds. Ms. Barrett transforms Ms. Orning’s cello sounds like an elastic band, growing and changing in quality and pitch. This process continues until the music begins slipping into a deep and foreboding soundworld.

The last three compositions on this recording I found to be the most interesting. Meiotic Recombination [3:31] uses vocal-like sounds, which ebb and flow in and out of the foreground. This creates a pulse-like effect that one may find very soothing. This shorter composition keeps with this meditative quality as it ends with a solitary bell tolling, fading away to silence. Cellobiohydrolase [4:08] features the cello and electronics in a conversational realm. Barely audible sounds of moaning and muttering are created in a back and forth fashion. A melody emerges on the cello from the distorted conversation fading quietly to the opening sounds first heard, eventually ending on a single note. Homolog 1 begins with the sounds of the cello tuning, transforming into that of an electronic whistle. Double stops and overtones are played, recorded, and played back in small sections, creating unique chords and sound.
blocks. This technique forms the basis of the composition as the sounds overlap and grow, fading and emerging until all sound blocks morph together creating a pulsating wash of ambient colors. The cello and electronic sounds truly become one voice in this calming, meditative composition.

The creative accomplishments of Ms. Barrett and Ms. Orning can be truly heard on this release. Dr. OX features works that are complementary to one another when heard in the order presented, creating an overall exhilarating listening experience. More information on either composer/performer can be found on their respective Web sites (www.natashabarrett.org/ or www.myspace.com/TanjaOrning).