

Morton Subotnick likes to talk about his student days in the composition seminar of the formidable Darius Milhaud at Mills College in the San Francisco Bay Area. "He told me once that my work was fine, but that it lacked fresh air," Subotnick remembers. "He told me I had to open some windows."

So Subotnick opened some windows, and in came butterflies, amphibians, hummingbirds, a wild bull, and an axolotl or two. No, it wasn't that he was trying to outdo Saint-Saëns's *Carnival of the Animals* or Prokofiev's *Peter and the Wolf*. It's more that he began to recognize that the ability to create magic was an art that extended beyond human limitations. I hear his music, and always have, as a series of fulfilled quests for magic and then more magic.

Part of these quests has been a constant need to define and then redefine the nature of music itself. In the late 1950s Subotnick joined forces with Pauline Oliveros and Ramon Sender, young composers at the San Francisco Conservatory (in the days when *conservatory* and *conservative* were taken as closely related terms) who, following the example of John Cage and Lou Harrison in a previous generation, were collecting noisemaking apparatus from junkyards—trolley-car springs, brake drums and the like—to use in a series of "noise concerts" that brought down the wrath of some faculty members and earned the enthusiastic support of others. But by then tape music was already on the horizon, and a millennium of producing musical sounds by singing and by instruments of all shapes and sizes suddenly seemed like the minuscule tip of a very large iceberg.

In 1961 Subotnick and a group of fellow renegades—Oliveros and Sender, along with several dancers, filmmakers, and Beat poets—founded the San Francisco Tape Music Center, a fabulous workshop for no-holds-barred experimentation where no boundaries (as between music and painting, say) were recognized, which became the ancestor of such later ventures as Pierre Boulez's IRCAM in Paris. Public events at the Tape Music Center's cramped quarters in the Tenderloin district became hot-ticket items in no time. "We had to swear people to secrecy," Subotnick remembers, "so that the police would never know our address. We were sure they suspected us of doing drugs—which, by the way, we weren't." Eventually, prosperity intruded; part of the terms of a handsome foundation grant required that the Center attach itself to a "reputable" institution. It was welcomed back at Mills College; and Milhaud seemed fascinated by the music's vast new horizons.

Subotnick moved to New York in 1966, taught at NYU, and explored the ever-widening potential of music that was being electronically produced and manipulated. For Nonesuch Records he created a series of large-scale tape works of which two, *Silver Apples of the Moon* and *The Wild Bull*, were hugely popular. "Creating electronic music that ends up as a recording," he once told me, "implies a whole new definition of what music is, and what a record is. Pick up a three-buck LP of one of my pieces. What you've got isn't a recording of someone's performance; it's the work itself, unadulterated, untouched by human hands until you tear off the wrapper."

The years since the Nonesuch works (and since the time when a disc sold for three bucks) have been for Subotnick—and for all composers obsessed with exploring music's outer edges—a time of constant redefinition. Computers, once room-filling million-dollar mainframes, are now affordable Macs on the corner of a desk. The synthesizer, which Bell Labs housed in its own building on

Manhattan's west side, has now shrunk to a keyboard you can hold on your lap. In 1969 Subotnick moved back to his native California to teach electronic composition at the new free-form Disney-endowed (!) California Institute of the Arts. Disney's dream was for a school without boundaries, where the separate arts could interact and create undreamed-of hybrids—film, music, dance, theater—stirred into the same magical stewpot. CalArts' role models were invariably the rebels of the time, whose own creativity was in a state of constant pollution from the other arts. John Cage and Morton Feldman were frequent guests, as were visitors from abroad: Toru Takemitsu, Vinko Globokar, Iannis Xenakis.

The passion for the artistic mix flourished at CalArts, with Subotnick himself and his students. The works on this disk exemplify the mix. The extra-musical guiding spirit is the indefinable Max Ernst (1891-1976)—writer, painter, collagist, sculptor, advocate of the irrational, originator of Surrealism's Automatist movement. From Ernst's "collage novels"—collections of illustrations from old French magazines linked to fragmentary wisps of text meant to evoke powerful images now erotic, now brutal, always exotic—Subotnick has gleaned scenarios for three "imaginary ballets": *The Key to Songs* (1985) and the two more recent works on this disk. All three pieces work small instrumental groups (strings, winds, sampled human voices, tuned percussion, and keyboards) into a complex and shifting relationship with a computer. In the "Phantom Dance" from *And the Butterflies Begin to Sing* (1988), for example, the keyboard player controls the computer which, in turn, regulates the amplification and modification of the strings.

In the 1991 *All My Hummingbirds Have Alibis* the computer's role is, if anything, even more complex. The computer "listens" to the piano and the mallet instruments (both MIDI-controlled); it transforms the sounds, regulates the mixer and the amplification, and "performs" the three sampled voices (Subotnick, vocal performance artist Joan La Barbara, and Gene Youngblood). The vocal text is from Ernst's *A Young Girl Dreams of Taking the Veil*, which has no real story but deals symbolically with masculine-feminine relationships.

These three works, composed from 1985 to 1991, tell different stories through different moods, yet they share enough musical language to enable us to identify the earmarks of Subotnick's style: above all the relentless, pounding motoric energy that merges, sometimes with startling suddenness, into a dreamlike texture that seems to float, the continual sense of something magical occurring, often produced with no more paraphernalia than a desktop computer. "I think of myself as the Wizard of Oz," Subotnick told me once. "You're lost in all this glorious, colorful detail; then you pull the curtain back and there I am, alone at the Mac."

Although Subotnick speaks of the works as *imaginary* ballets, both *The Key to Songs* and *Hummingbirds* have actually been danced—the first by London's Rambert Dance Company, the second by the National Ballet of Canada. *Hummingbirds* has also taken on another life as a CD-ROM on the Voyager label, with the viewer controlling the order of the sections as well as the screen imagery.

—Alan Rich

Alan Rich is music critic for L.A. Weekly and author of several books and interactive CD-ROM programs on music.

And the Butterflies Begin to Sing (1988)

for string quartet, bass, MIDI keyboard, and computer

And the Butterflies Begin to Sing, commissioned by the Santa Fe Chamber Music Festival and conceived as music for an imaginary ballet, is based on *The Hundred Headless Women*, a surreal novel by Max Ernst. The images in the book were grouped together and viewed as "stills" from a ballet, and the music was intended to express the scenes from which these stills would have been taken. However, even though the pictures inspired the music, the music was written to be experienced without extra-musical information.

Part I, *Crime or Miracle*, alternates between exotic violence (crime) and poignant quietness (miracle). In the novel, the phrase *crime or miracle* refers to the life of Jesus. In my work, it suggests the ambiguities and two-sidedness that seem to plague us every time we step out far enough to be labeled *criminal* or *hero*. It is often only with hindsight that we perceive the difference. The music of Part I is dominated by the keyboard.

Part II, *Phantoms Dancing*, is a series of cadenza-like sections where the amplification and the modification of the strings are controlled by the performance of the keyboard player. These phantom cadenzas are alternated with keyboard/computer interludes. Part II acts as a development of the materials of Part I.

Part III, *And the butterflies begin to sing*, is an introspective, quiet, and slow movement. The music expresses a sense of aloneness, perhaps the feeling of the hero/criminal referred to in Part I.

Part IV, *And images will descend to the ground*, is a coda to the whole work. It refers back to several sections of the work including the Volcanic Canons. The main image here is that of the *Gigantic Wheel* riding the *bitter waves*.

All My Hummingbirds Have Alibis (1991)

for flute, cello, MIDI keyboard, MIDI mallets, and computer

All My Hummingbirds Have Alibis was commissioned jointly by the National Endowment for the Arts and the Santa Fe Chamber Music Festival. It has two large sections, each containing two parts—the first slow, the second a huge multifaceted ritual dance, almost like a ballet, containing complex individual words and rhythms, divided into tiny sections. Part I begins with an evocation, which establishes the male character; Part II ends with an epilogue, a bit like the evocation, but without the male voice.

Through the Interactor software I developed with Mark Coniglio, the computer listens to the piano and mallets (both MIDI instruments), following them and playing its role at the correct time. The computer transforms all the instrumental sounds, controls the mixer and the amplification, and performs the vocal and other computer-generated sounds. Throughout, the text is literally played by the mallet and keyboard players.

The vocal text is from Max Ernst's *A Young Girl Dreams of Taking the Veil*, which has no story, but deals surrealistically with the relationship between feminine and masculine forces. The voice begins with the words, "Rise. Follow me, dear child." He continues, "I will you my head, and my arms that

have touched thunder." Here he is transferring power—perhaps sinister, perhaps malignant—to her. The woman says, "Ah. My hand has touched the clouds." Here the power of thunder is juxtaposed with the beauty and tenderness of clouds. He rebukes her: "Your hand is twisting fires, war, disease." It is as if we are brought into a battle of power and anger versus beauty and tenderness, with something of a happy ending. Her last utterances are, "The sky is falling into my heart" and "The earth is soft and warm," followed by a slow instrumental epilogue.

All My Hummingbirds Have Alibis was presented as a ballet by the National Ballet of Canada, with choreography by John Alleyne.

—Morton Subotnick

Morton Subotnick is one of the world's foremost composers of electronic music and an innovator in works involving instruments and other media, including interactive computer music systems. His *Silver Apples of the Moon*, written in 1967 using the Buchla modular synthesizer, was commissioned by Nonesuch Records, marking the first time an original large-scale composition had been created specifically for the disc medium. The record became a best-seller in the classical music category. Subotnick's other compositions realized on the Buchla synthesizer include *The Wild Bull*, *Touch*, *Sidewinder*, and *Four Butterflies*.

In 1975, Subotnick composed *Until Spring*, a work for solo synthesizer. The next step in his use of control voltages was the development of the "ghost box." *Two Life Histories* (1977), the first piece involving an electronic ghost score, was followed by *Liquid Strata* (piano), *Parallel Lines* (piccolo accompanied by nine players), *The Wild Beasts* (trombone and piano), *Axolotl* (solo cello), *The Last Dream of the Beast* (solo voice), and *The Fluttering of Wings* (string quartet). Subotnick's 1981 work *Ascent Into Air*, written for the 4C computer at IRCAM, involved many of the techniques he had developed in his ghost scores. Perhaps the most significant aspect of this work is its use of live performers to control the computer music.

Since 1985 Subotnick has been using commercially available MIDI gear in works such as *The Key to Songs*, *Return*, and *All My Hummingbirds Have Alibis*. In addition to music in the electronic medium, Subotnick has written for symphony orchestra, chamber ensembles, and theater and multimedia productions. His staged tone poem *The Double Life of Amphibians*, which utilized live interaction between singers, instrumentalists, and computer, was premiered at the 1984 Olympics Arts Festival in Los Angeles.

Jacob's Room, a multimedia opera, received its premiere in Philadelphia in April 1993 under the auspices of the American Music Theater Festival. *The Key to Songs*, for chamber orchestra and computer, was premiered at the 1985 Aspen Music Festival. *Return* was commissioned to celebrate the return of Halley's Comet, and was presented with an accompanying sky show in the planetarium of Griffith Observatory in Los Angeles in 1986. Most of Subotnick's recent works—among them *Jacob's Room*, *The Key to Songs*, *Hungers*, *In Two Worlds*, *And the Butterflies Begin to Sing*, and *A Desert Flowers*—utilize computerized sound generation, the specially designed Interactor software, and "intelligent" computer controls that allow the performers to interact with the computer technology.

Subotnick currently co-directs both the composition program and the Center for Experiments in Art, Information and Technology (CEAIT) at the California Institute of the Arts and tours

extensively throughout the United States and Europe as a lecturer and composer-performer.

The Amernet String Quartet—Kyoko Kashiwagi and Marcia Littlely de Arias, violins; Malcolm Johnston, viola; Javier Arias-Flores, cello—won Grand Prize in the 1993 Fischhoff Chamber Music Competition and first prizes in the 1992 Tokyo International Music Competition and the 1992 Yellow Springs Chamber Music Competition. Formed at The Juilliard School under the guidance of the legendary violinist Joseph Fuchs, the quartet is ensemble-in-residence at the University of Cincinnati College Conservatory of Music.

Bleda Elibal, double bass, was born in Istanbul, Turkey, was graduated with highest honors from the Vienna Academy of Music, and received honorary Austrian citizenship in recognition of his outstanding musical gifts. He has performed with the Vienna Philharmonic, the Vienna State Opera, and the Aspen and Waterloo festivals, and has served as principal bassist for the Vienna Bach soloists, the Israel Sinfonietta of Beer Sheva, and the Richmond and Roanoke symphony orchestras.

James Tocco, piano, is artist-in-residence at the University of Cincinnati College Conservatory of Music, professor of piano at the Musikhochschule in Lübeck, Germany, and artistic director of the Great Lakes Chamber Music Festival. He appears regularly as a recitalist and chamber musician, and has appeared as a soloist with the world's foremost orchestras, among them the Chicago Symphony, the Pittsburgh Symphony, the Cleveland Orchestra, the Berlin Philharmonic, and the London Philharmonic. Mr. Tocco's discography includes the complete Chopin Preludes, the complete piano music of Charles Tomlinson Griffes, the world premiere recording of Leonard Bernstein's complete solo piano music, and the complete Bach-Liszt organ transcriptions.

The **California EAR Unit**—Gloria Cheng, Erika Duke, Amy Knoles, and Dorothy Stone—was founded in Los Angeles in 1981 and is dedicated to the creation and performance of contemporary music. The ensemble has appeared at festivals and concert halls throughout the United States and Europe, including the Olympic Arts Festival, New Music America, the Los Angeles Festival, the Walker Arts Center, the Aspen Festival, the Composers' Forum Series in New York, the Ars Musica Festival in Brussels, and the Holland Festival, to name just a few.

Gloria Cheng, keyboard, has appeared as a soloist with the Los Angeles Philharmonic New Music Group, the Aspen Music Festival, and Opus Novum of Honolulu. She is a founding member of the chamber ensemble Xtet and principal keyboardist of the Long Beach Symphony. Ms. Cheng won first prize in the National Association of Composers USA Competition in 1983.

Erika Duke, cello, has performed world and local premieres of solo and chamber works at the Holland Festival, the Computer Music Festival in Zurich, the Olympic Arts Festival, and New Music America. A member of the cello faculty at the California Institute of the Arts, Ms. Duke has toured and recorded with Morton Subotnick and Joan La Barbara since 1985.

Amy Knoles, percussion, has toured extensively with a program of solo percussion and electronics using computer, an array of samplers and synthesizers, electronic drums, and the K.A.T. (MIDI mallet instrument). She has created electronic musical environments for art galleries and sound scores for video and dance, and has worked closely with many composers, including Morton

Subotnick, Pierre Boulez, John Cage, and Morton Feldman.

Dorothy Stone, flute, has been a soloist in the San Francisco Symphony's "New and Unusual" series, the North American New Music Festival, the Ars Electronica Festival in Linz, and the Ijsbreaker in Amsterdam. *Wizard Ball*, her composition for solo flute, received prizes from the National League of Women Composers, the Freeman Composition Context, and the Ars Electronica Festival.

Joan La Barbara is an acknowledged pioneer in the field of contemporary classical music and sound art. Her career as a composer and singer has been devoted to exploring the human voice as a multifaceted instrument and creating works for multiple voices, chamber ensembles, music theater, orchestra, and interactive technology. La Barbara has premiered landmark compositions written for her by such composers as Robert Ashley, John Cage, Rhys Chatham, Charles Dodge, Morton Feldman, Philip Glass, Mel Powell, Steve Reich, Morton Subotnick, and James Tenney. Her discography includes *Three Voices for Joan La Barbara* by Morton Feldman, *Joan La Barbara Singing Through John Cage* (both from New Albion), and *Joan La Barbara/Sound Paintings* (Lovely Music).

Gene Youngblood is a writer, lecturer, and teacher in the field of multimedia art and technology, and author of *Expanded Cinema* (E. P. Dutton, 1970), the first book about video as an art medium. Youngblood speaks frequently at conferences, colleges, and universities worldwide and has taught at the California Institute of the Arts, the California Institute of Technology, Columbia University, UCLA, and the School of the Art Institute of Chicago. He has been a consultant to the Library of Congress, the National Endowment for the Arts, the Metropolitan Museum of Art, and the Academy of Media Arts in Cologne, Germany, and presently is scholar-in-residence in the Department of Moving Image Arts at the College of Santa Fe.

SELECTED DISCOGRAPHY

In Two Worlds. John Sampan, saxophone; Marilyn Shrude, piano. Neuma 450-80.

Jacob's Room. Joan La Barbara, soprano; Erica Duke, cello. Wergo 282014-2.

The Key to Songs. California EAR Unit; Rand Steiger, conductor. New Albion NA 012.

Liquid Strata. Ralph Grierson, piano. Town Hall THCD 24.

Return. Rand Steiger, computer. New Albion NA 012.

Silver Apples of the Moon. Wergo 282035-2.

Touch. Wergo 282014-2.

Trembling. Robert Davidovici, violin; A. Wodnicki, piano; Joan La Barbara, recorded voice; Larry Austin, "ghost" electronics. Centaur CRC 2170.

The Wild Bull. Wergo 282035-2.

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Perkins, J. M. "Morton Subotnick, Serenade No. 1." *Perspectives of New Music*, ii/2 (1964), p. 100.

Whipple, H. W. "Beasts and Butterflies: Morton Subotnick's Ghost Scores." *Musical Quarterly*, lxix (1983), p. 425.

And the Butterflies Begin to Sing

Producers: Michael Hoenig and Morton Subotnick
Recording engineer: Tom Haines
Production technicians: Terry Pender and Kristine Burns
Production coordinator: Baron Lobstein
Recorded at Corbett Studios, Cincinnati, Ohio
Mixed by Michael Hoenig at Metamusic Productions, Los Angeles

All My Hummingbirds Have Alibis

Producer: Michael Hoenig
Recording engineer: Pamela Neal
Recorded at Ocean Way, Los Angeles
Postproduction: Michael Hoenig and Bradford Ellis
Mixed by Michael Hoenig at Metamusic Productions, Los Angeles
Additional audio recording: David Dunn

CD mastering: George Blood Professional Audio Services, Philadelphia
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**MORTON SUBOTNICK 80514-2
AND THE BUTTERFLIES BEGIN TO SING**

AND THE BUTTERFLIES BEGIN TO SING for string quartet, bass, MIDI keyboard, and computer (1988) (publ. by European American Music Corp.)

Part I CRIME OR MIRACLE

- 1 Crime or miracle 3:24
- 2 The volcanic blacksmith canons 2:28
- 3 Crime or miracle 0:46

4 The beautiful gardener 4:56

Part II PHANTOMS DANCING

5 Sometimes naked 5:45

6 Sometimes dressed in thin jets of fire 3:51

7 They cause the geysers to spurt with the probability of the vanity of the dead 1:42

Part III AND THE BUTTERFLIES BEGIN TO SING

8 And the butterflies begin to sing 6:38

Part IV IMAGES WILL DESCEND TO THE GROUND

9 The waves are bitter 0:39

10 Truth will remain simple, and gigantic wheels will ride the bitter waves 1:13

11 And images will descend to the ground 1:52

The Amernet String Quartet: Kyoko Kashiwagi, Marcia Littlely de Arias, violins; Malcolm Johnston, viola; Javier Arias-Flores, cello

ALL MY HUMMINGBIRDS HAVE ALIBIS for flute, cello, MIDI keyboard, MIDI mallets, and computer (1991) (publ. by European American Music Corp.)

12 All my hummingbirds have alibis 10:27

13 All my joys have alibis 18:19

California EAR Unit: Gloria Cheng, keyboard; Erika Duke, cello; Amy Knoles, percussion; Dorothy Stone, flute; voices: Joan La Barbara, Gene Youngblood, Morton Subotnick

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