JOHN CHOWNING
Thur. May 23 @8PM
experimental theater

UC SAN DIEGO
DIVISION OF ARTS AND HUMANITIES
DEPARTMENT OF MUSIC

presents

John Chowning

Turenas (1972)

Phoné (1981)

- short break -

Stria (1977)

Voices (2011)

JOHN CHOWNING
Composer

John M. Chowning was born in Salem, New Jersey in 1934. Following military service and studies at Wittenberg University, he studied composition in Paris for three years with Nadia Boulanger. In 1964, with the help of Max Mathews then at Bell Telephone Laboratories and David Poole of Stanford, he set up a computer music program using the computer system of Stanford University's Artificial Intelligence Laboratory. Beginning the same year he began the research leading to the first generalized sound localization algorithm implemented in a quad format in 1966. He received the doctorate in composition from Stanford University in 1966, where he studied with Leland Smith. The following year he discovered the frequency modulation synthesis (FM) algorithm, licensed to Yamaha, that led to the most successful synthesis engines in the history of electronic instruments.

His three early pieces, *Turenas* (1972), *Stria* (1977) and *Phoné* (1981), make use of his localization/spatialization and FM synthesis algorithms in uniquely different ways. *The Computer Music Journal*, 31(3), 2007 published four papers about *Stria* including analyses, its history and reconstruction. After more than twenty years of hearing problems, Chowning was finally able to compose again beginning in 2004, when he began work on *Voices*, for solo soprano and interactive computer using MaxMSP.

Chowning was elected to the American Academy of Arts and Sciences in 1988. He was awarded the Honorary Doctor of Music by Wittenberg University in 1990. The French Ministre de la Culture awarded him the Diplôme d'Officier dans l'Ordre des Arts et Lettres in 1995 and he was given the Doctorat Honoris Causa in 2002 by the Université de la Méditerranée and by Queen's University in 2010. He taught computer-sound synthesis and composition at Stanford University's Department of Music and was the founding director of the Center for Computer Research in Music and Acoustics (CCRMA), one of the leading centers for computer music and related research.

MAUREEN CHOWNING
Soprano

Coloratura soprano Maureen Chowning studied at the Boston Conservatory of Music before moving to the San Francisco area. She has since appeared on the Public Broadcasting System's NOVA series and Smithsonian World with Max Mathews, demonstrating his Radio Baton and conductor program. She has also performed at concerts in Canada, Poland, and Japan and at the International Electronic Music Festival at Bourges, France, where in 1990 she gave the world premiere of *Solemn Songs for Evening* by Richard Boulanger and in 1997 she gave the premiere of *Sea Songs* by Dexter Morrill. She was invited to perform *Sea Songs* in celebration of Max Mathews and the 50 premiere of Joanne Carey's *Three Spanish Songs*, she and the composer presented the work in Poland, Hong Kong, Vancouver and Mexico.

In March 2005 she gave the world premiere of *Voices (version 1)* for interactive computer and solo soprano at the Maison de Radio in Paris, commissioned by GRM and composed for her by John Chowning. In March 2006 she performed the US premiere of *Voices (version 2)* the as part of the Berkeley Symphony Concert series. Then in September 2006 she performed *Voices* and Jean-Claude Risset's *Oscura* for soprano and computer in Buenos Aires and Montevideo followed by performances at U. of Florida, and the San Francisco Electronic Music Festival. *Voices (version 3)* was performed at the University of Washington in April 2011 and since at MIT, Brown, Eastman Rochester, and Yale Universities, in Beijing and Taipei.

She is noted for her ability to sing comfortably in alternative tunings, such as the Pierce scale. Her repertoire ranges from Handel oratorios, operatic roles such as the "Queen of the Night" from Mozart's *The Magic Flute*, to contemporary music including works of Schoenberg, Babbitt, Qui Dong, Servio Marin, and Atau Tanaka.

Turenas (l972) 10m

Ivan Tcherepnine, who was present at the premiere in Dinkelspiel Auditorium, Stanford University on May 1972, wrote the following notes in 1973 for a concert at Harvard University. Leland Smith's program Score was used to create the input data for the composer's spatial and synthesis algorithms. In 2009 Bill Schottstaedt (CCRMA) created a program that allowed this version of *Turenas* to be recomputed to meet current audio standards.

> "This computer generated tape composition makes extensive use of two major developments in computer music pioneered and developed by John Chowning, working at Stanford's Artificial Intelligence Lab. The first involves the synthesis of moving sound sources in a 360-degree sound space, which takes into account the effects of the Doppler shift. The second was a breakthrough in the synthesis of "natural" (as well as almost "supernatural") timbres in a simple but elegant way, using accurately controlled frequency modulation. This is the technical background, but the piece is not about that background.
>
> The title "Turenas" is an anagram of "Natures," evoking the way sounds "tour" through the space, transparent and pure, produced by the most technologically sophisticated means yet tending to sound perfectly natural, as if a dream could come true."

- Ivan Tcherepnine (1943-1998)

Phoné (1981) 12m

The sounds in *Phoné* (from the Greek, meaning "sound" or "voice") were produced using a special configuration of the frequency modulation (FM) synthesis technique that allows the composer to simulate a wide range of timbres including the singing voice and other strongly resonant sounds. The synthesis programs are designed to permit exploration of and control over the ambiguities that can arise in the perception and identification of sound sources. The interpolation between timbres and extension of "real" vocal timbres into registers that could not exist in the real world — such as a basso "profundissimo" — and the micro-structural control of sound that determines the perceptual fusion and segregation of spectral components are important points in this composition.

The composer developed this technique of FM synthesis of the singing voice at IRCAM, Paris in 1979 using a DEC PDP-10 and realized the piece at CCRMA in 1980 – 81, using the "Samson Box," a real-time digital synthesizer designed by Peter Samson. The work was premiered at IRCAM in Paris in February 1981.

Stria (1977) 16m

Chowning received one of IRCAM's first commissions from Luciano Berio for the institute's first major concert series presented by Pierre Boulez, Perspectives of the 20th Century, given in Paris in 1977. *Stria* was conceived beginning in 1973 and realized during the summer-autumn of 1977 at Stanford University's Center for Computer Research in Music and Acoustics (CCRMA) and premiered October 13, 1977.

The work is based on the unique possibilities in computer synthesis of precise control over the spectral components or partials of a sound. Most of the music we hear is composed of sounds whose partials are harmonic or in the harmonic series. In *Stria*, a nontonal division of the frequency space is based on a ratio that is also used to create spectra whose partials are inharmonic. The ratio is that of the Golden Section (or Golden Ratio) from antiquity, 1.618, which in this unusual application yields a certain transparency and order in what would normally be considered "clangorous" sounds. The composition of the work was dependent upon computer program procedures, specially structured to realize the complementary relationship between pitch space (approximately 13 notes/octave) and spectral space (timbre). In addition, these procedures are at times recursive allowing musical events that they describe to include themselves in miniature form as in the fractal geometries of Mandelbrot.

Voices for Soprano and Interactive Computer v.3 (2011) 17-18m
Maureen Chowning, Soprano

Voices is a play of imagination evoking the Pythia of Delphi and the mystifying effects of her oracular utterances in reverberant spaces. A single soprano engages a computer-simulated cavern with her voice. The computer allows us to project sounds at distances beyond the walls of the actual space in which we listen – to create an illusory space. Her utterances launch synthesized sounds within this space, sounds that conjure up bronze cauldrons, voices, and their animate inhabitants, sounds of the world of the Pythia modulated by our technology and fantasies but rooted in a past even more distant than her own—the Pythia's voice becomes the voice of Apollo, but she speaks first of Mother Earth, Gaia.

Selected pitches of the soprano's voice line are tracked by the computer running a program written by the composer in MaxMSP, that makes use of a signal processing module, "fiddle," written by Miller Puckette, to capture pitch from signal. The soprano's voice is transmitted from a small head microphone to the computer where it is spatialized, mixed with synthesized sounds and then sent to the sound system in the auditorium. As each sung "target pitch" is captured, the program advances in search of the next. The overall pace of the composition, therefore, is determined by the soprano. The pitches are from a scale division of the Golden Ratio rather than the traditional division and octaves as in *Stria*. The spectra of the synthesized sound, largely inharmonic, are 'composed' to function, again as in stria, in the domains of pitch and harmony as well as timbre, an idea first brilliantly conceived and first realized by Jean-Claude Risset in *Mutations* (1969).

V o i c e s

for Soprano and Interactive Computer v.3

Ah, Prayer to Gaia,

Stone walls sing her song.
Ah, Parnassus' shrines,
Ah, Corycian rock where Nymphs
abound.
Ah, Phoebus came.
Python fought! Python slain!

Ah, Song to Gaia!

[2] I know the number of the grains
of sand and the extent of the sea,
and understand the speech of
the dumb and hear the voiceless!

*[Asserting her prophetic abilities to
Croesus before his campaign against
Persia-Herodotus, I 47]*

Apollo, he saw from the
yawning cave,
the air was full of voices,
Ah… (improvisation)
Voices murmured from the depths.

Ah, Song to Gaia!

[2] Dark blood trickles, in prophecy
of the woe to come. But rise,
hurry from the shrine, and steep
your soul in sorrow!

*[To the Athenians facing the Persians
before the second more favorable
"Wooden Wall" oracle-Herodotus, VII 140]*

Here in this shrine,
having sipped from the spring,
laurel burned,
I wait for the spirit of Apollo.

From near and far
men come to hear
Sounds from my breast,
as when Etna boils!

[3] Pneuma, echo, voices,
in dark cavern, spacious vault

Ah, Song to Gaia!

[2] When the swallows, fleeing before
the hoopoes, shall have all flocked
together in one place, and shall
refrain them from all amorous
commerce, then will be the end of
all the ills of life; yea, and Zeus,
who doth thunder in the skies,
shall set above what was once below.

*[To the women of Athens, prophesying
the success of the withholding of their
charms-Aristophanes, Lysistrata]*

But my voice not always willing.

Ah, Song to Gaia!

[2] Men seeking oracles, let each
pass in, in order of the lot, as use
allows; for I prophesy as the god
leads …

What horror! He's just, just sitting
there, his hands, dripping, dripping
blood, and sword drawn!

*[Before and after entering the shrine
and finding blood covered Orestes and
the Furies-Aeschylus, The Eumenides]*

Ah, I wait for his spirit
Ah, Apollo!

Ah, Here in my breast, Apollo!
I follow his sign,
Ah, I follow his sign,
my words without smile or charm
that reach a thousand years.
Ah, Apollo! Ah,
Words that reach a thousand years,
by my song.

---

[1] The text is pieced together from Aeschylus, Aristophanes, Heraclitus, Herodotus, Lucan, and Plutarch, with interpolations by the composer.

[2] ipsissima verba -interjections of fragments of purported and theatrical utterances- the very words- of the Pythia. The reported states of mind of the Pythia during an utterance, ranged from matter of fact, to ecstatic, to frenzied, to glossolalic.

[3] Utterances in a state of prescient ecstasy from the intoxicating and disorientating effects of the ethylene vapors (pneuma) known to have been prese nt in the geologic formations Delphi and emanating from the chasm beneath the Temple of Apollo.

John Chowning

Thursday, May 23, 2013 - 8pm

Production:

Antonio C. Estrada, Event Manager

Issac Garcia-Muñoz and Kevin Haywood, Audio Engineers

Josef Kucera, Recording Engineer

Recording Assistants: Andromeda Bradley, Aldrin Payopay, Joel Polizzi, Michael Ricca, and Daniel Ross

Stage Crew: Thuy Dinh, Alex Fung, Daniel Kim, Peter Ko,

Box Office Crew: Sarah Schwartz, Alex Fung, Anthony Johnson, Kourosh Khoylou, Susan Park

CONTACT US

FOR INFORMATION ABOUT UPCOMING CONCERTS

Music Box Office: (858) 534-3448 • http://music.ucsd.edu/concerts