

## Notes

### Threads of Mitoses (1993)

#### About the Work:

*Threads of Mitoses* is the result of several years of exploration into the sonic possibilities of the alto saxophone. The work is based on two levels of musical interaction: the level defined by the two performers, alto saxophone 1 and 2, and the level defined by the relationship between the acoustically performed saxophones and the computer music. The computer music is based on soundfiles of digitized saxophone performance. In this work, these soundfiles are arranged into musical sequences without extensive digital alteration. The computer, capable of otherwise impossible juxtapositions of musical events, offers an expanded palette of saxophone timbre. This technique can be heard after the first two minutes of the piece in a quiet, florid sequence of whisper-like tones. These whispers are produced by presenting only the final moments of an airy saxophone tone. Amplification of sounds that would normally be too soft or subtle to distinguish in normal saxophone performance, as in the rushes of air and slight unfocussing of tones, offer a subtle and compelling perspective on the instrument's sonic potential.

The computer also allows for intricate control of other aspects of the soundfiles, including spatial placement and reverberation. In performance, the musical timing of the computer music is under the control of a musician running a program developed by the composer using the MAX<sup>™</sup> environment. This allows the performance to flow musically without concern for synchronization with magnetic tape.

The saxophone soundfiles were developed from the alto saxophone performance of Tridib Pal.

#### About the Title:

*Mitoses* (plural of mitosis) is the term used to describe the key life process of cell division. The use of this word in the title reflects two important aspects of this piece: the cellular harmonic scheme and the sense of identical entities splitting, weaving, diverging, and expanding. The harmonic scheme is cellular in that all pitches are related by common genesis from a central chord which is exposed in the opening arpeggiation of the saxophones and computer. At any moment the piece the harmonic code of that chord is present allowing for growing musical variation and development. The image of splitting identities is present in the two levels of musical interaction—between the two saxophones, and between the saxophones and their computer "reflection." The term, mitosis, comes from the Greek word *mitos*, literally meaning "thread." The redundancy in the title, *Threads of Mitoses*, plays both on the idea of woven threads of cellular division and a multi-leveled interaction involving an intriguing set of relations.

#### Required Equipment:

##### Saxophonists:

The two alto saxophones should be amplified slightly using directional microphones. This amplification should be used at a low to moderate volume level to assist in the merging of the saxophones and computer music in terms of presence more than volume.

##### Computer Music:

1 Macintosh computer running MAX software

##### Mixing and amplification:

Stereo mixer with a minimum of 4 inputs (2 mics and 2 computer outputs).

Stereo power amplifier

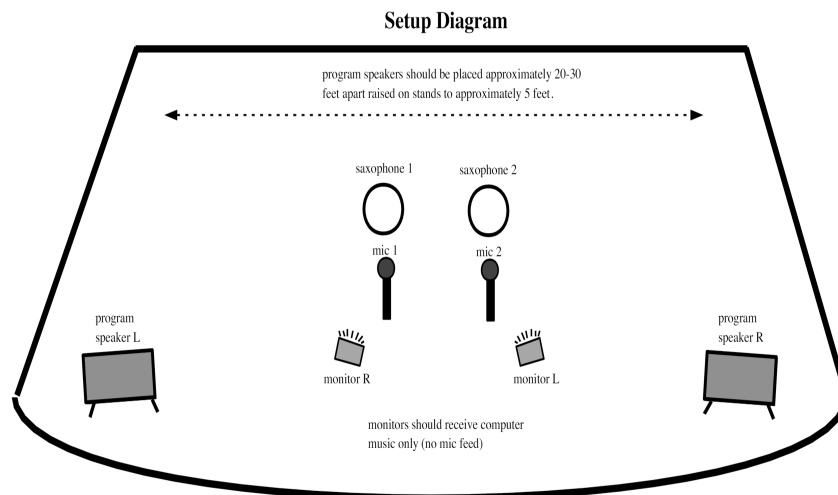
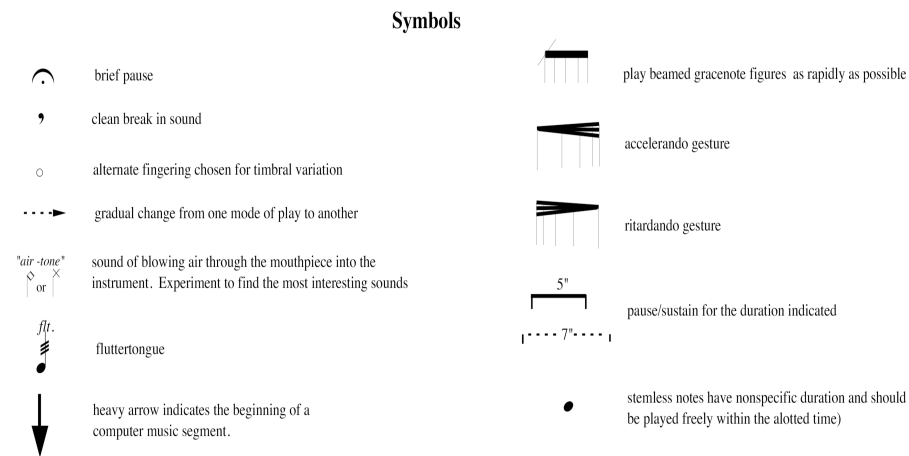
2 program speakers set on stage at the height of approximately 5 feet set approximately 20-30 feet apart

2 monitor speakers placed facing the performers on stage for the monitoring of the computer music.

**General Notation and Performance Guidelines:**

Accidentals apply to all like pitches of the same octave within the measure.

The computer operator should be off stage but can be on stage if space permits and an assistant is present at the mixer for proper balance control.



# THREADS OF MITOSES

SCORE IN E $\flat$

for two alto saxophones and computer music

William Kleinsasser  
(1993)

Computer cues

1: Arpeggiations

2: Click-bursts

Freely

ca. 15 sec.

ca. 15 sec.

Alto saxophone 1  
(in E $\flat$ )

Alto saxophone 2  
(in E $\flat$ )

Play single grace note so that it  
lasts as long as the multiple grace  
note figure in the other part.

ca. 15 sec.

ca. 3 sec

Sax 1

Sax 2

ca. 10 sec.

3: Multiphonic  
(alt. fing. timbral tr)

4: Air music

In tempo

$\bullet = 80$

Sax 1

Sax 2

(alt. fing. timbral tr)

Sax 1

Sax 2

Sax 1

Sax 2

13

Sax 1

Sax 2

*ff*

*ff*

*f*

15

Sax 1

Sax 2

*f*

17

Sax 1

Sax 2

*f*

19

Sax 1

Sax 2

*f*

21

Sax 1

Sax 2

*ff*

*f*

*ff*

23

Sax 1

Sax 2

25

Sax 1

Sax 2

28

Sax 1

Sax 2

29

Sax 1

Sax 2

31

Sax 1

Sax 2

32

Sax 1

Sax 2

34

Sax 1

Sax 2

36

Sax 1

Sax 2

*ff*

*f*

*f*

ca. 4 sec.

ca. 4 sec.

41

Sax 1

Sax 2

*ff*

*p*

*ff*

*p*

ca. 4 sec.

fl.t.

"air-tone"

45

Sax 1

Sax 2

*ff*

*ff*

*pp*

*mp*

ca. 4 sec.

Wait for silence from computer music.

5: Flutter-line

"air-tone"

"air-tone"

49

Sax 1

Sax 2

*mp*

53

Sax 1

Sax 2

Opt. 8vb.

57

Sax 1

Sax 2

\* Measures 47-89 are a simplification of the electro-acoustic music line. Expressively interact and match pitches with electro-acoustic music. Freely modulate tones with timbral trills, alternate fingerings, and flutter-tongue. All this should be played in a calm and reflective manner.

64

Sax 1

Sax 2

70

Sax 1

Sax 2

76

Sax 1

Sax 2

82

Sax 1

Sax 2

88

Sax 1

Sax 2

ca. 10 sec.

"air-tone"

6: Flutter-collage

ca. 8 sec.

# Intensely propelling

91

♩ = 120

Sax 1 *f* (vary alt. fingerings) *p* *f*

Sax 2 *f* *p* *f*

95

Sax 1 *f* (vary alt. fingerings) *p*

Sax 2 *p* *f*

98

Sax 1 *f* *p* *f*

Sax 2 *p* *f*

101

Sax 1 *f*

Sax 2 *p* *f*

104

Sax 1 *p* *f* *f*

Sax 2 *p*



107

Sax 1

Sax 2

*p* *f*

*f* *p* *f*

110

Sax 1

Sax 2

*p* *f*

*f* *p*

113

Sax 1

Sax 2

*p* *f* *p*

*f* *p* *f* *p*

116

Sax 1

Sax 2

*f*

*f* *p*

118

Sax 1

Sax 2

*f* *p*

*f* *p*

120

Sax 1

Sax 2

*f* *p*

*p* *f*

122

Sax 1

Sax 2

*f* *p*

125

Sax 1

Sax 2

*f* *p*

128

Sax 1

Sax 2

*f*

130

Sax 1

Sax 2

*f* *p* *f*

132

Sax 1

Sax 2

*f* *p* *f*

135

Sax 1

Sax 2

*f* *p*

138

Sax 1

Sax 2

*p*

*f*

141

Sax 1

Sax 2

*f*

*f*

*p*

*f*

144

Sax 1

Sax 2

*f*

*p*

147

Sax 1

Sax 2

*p*

*f*

7: Final-chords

150

Sax 1

Sax 2

*f*

*p*

*f*

*p*

153

Sax 1

Sax 2

*p*

*f*

*p*

156

Sax 1

Sax 2

*p* *f* *p*

*f* *p* *mf* *f*

Detailed description: This image shows a musical score for two saxophones, Sax 1 and Sax 2, covering measures 156 to 159. The score is written on two staves. Sax 1 is in the upper staff, and Sax 2 is in the lower staff. The key signature has one flat (B-flat), and the time signature is 4/4. Measure 156 starts with a treble clef and a key signature change to one flat. Sax 1 begins with a triplet of eighth notes (B-flat, A, G) followed by a quarter rest, then a half note (F), and a quarter note (E). Sax 2 begins with a half note (B-flat), a quarter note (A), and a quarter note (G). Measure 157 continues the melodic lines. Sax 1 has a half note (D) and a quarter note (C), followed by a half note (B-flat) and a quarter note (A). Sax 2 has a half note (F), a quarter note (E), and a quarter note (D). Measure 158 features a half note (C) and a quarter note (B-flat) for Sax 1, and a half note (A) and a quarter note (G) for Sax 2. Measure 159 concludes the phrase with a half note (F) and a quarter note (E) for Sax 1, and a half note (D) and a quarter note (C) for Sax 2. Dynamic markings include *p* (piano), *f* (forte), *mf* (mezzo-forte), and *f* (forte) throughout the measures.

159

Sax 1

Sax 2

The musical score for measures 159-164 features two staves. Saxophone 1 (Sax 1) plays a melodic line with slurs and accents, while Saxophone 2 (Sax 2) plays a rhythmic accompaniment with triplets and slurs. Dynamics include *f* and *p*.

[illegible]

165

Sax 1

Sax 2

This musical score for two saxophones, Sax 1 and Sax 2, covers measures 165 to 170. The key signature has one flat (B-flat), and the time signature changes from 4/4 to 3/4 at measure 168 and back to 4/4 at measure 170. Sax 1 begins with a half note B-flat, followed by eighth notes A and G, then a quarter note F-sharp. It continues with a triplet of eighth notes (E, D, C) marked with a piano (*p*) dynamic, followed by a series of eighth and sixteenth notes. Sax 2 starts with a half note B-flat, followed by eighth notes A and G, then a quarter note F-sharp. It features a triplet of eighth notes (E, D, C) marked with a forte (*f*) dynamic, followed by a series of eighth and sixteenth notes. Both parts conclude with a half note B-flat in measure 170.

[illegible]

170

Sax 1

*p* *f*

Sax 2

*f* *p*

172

Sax 1

Sax 2

*mf*

*ff*

174

Sax 1

*ff* *mf*

Sax 2

*mf* *ff*

The image shows a musical score for two saxophones, Sax 1 and Sax 2, spanning measures 174 and 175. The key signature is one flat (B-flat major or D minor), and the time signature is 4/4. Sax 1's part begins in measure 174 with a forte (*ff*) dynamic, featuring a triplet of eighth notes. In measure 175, the dynamic shifts to mezzo-forte (*mf*). Sax 2's part also begins in measure 174 with a mezzo-forte (*mf*) dynamic. In measure 175, it features a forte (*ff*) dynamic. Both parts consist of eighth and sixteenth notes, with various accidentals (flats and sharps) and slurs. The score ends with a 3/4 time signature change in measure 175.

176

Sax 1

Sax 2

*ff*

*mf*

179

Sax 1

Sax 2

*ff*

*ff*

181

Sax 1

Sax 2

183

Sax 1

Sax 2

8: Ending Multiphonic  
fl.t.

185

Sax 1

Sax 2

*fff*

*fff*

*fl.t.*

"overblown with flutter" -----> "air-tone"

"overblown with flutter" -----> "air-tone"

Freely, without  
synchronization

188 (normal tone)

Sax 1

Sax 2

*p*

(normal tone)

*p*

(• = pp)

ca 5 sec.

Slowly, emerging from  
electro-acoustic music  
As if in slow motion

match trill speed to  
end of prev. gesture  
(alt. fing. timbral tr) Grad. stop trilling

189

Sax 1

Sax 2

*mp*

*p*

*n.*

*n.*