

Music for Alto Saxophone & Computer

by Cort Lippe

1997

for Stephen Duke

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Performance Notes

There are four classes of multiphonics in section III. The performer should choose appropriate multiphonic fingerings based on the class of multiphonic and the indicated pitch. The indicated pitch should be either the *most prominent* pitch or a *very prominent pitch* in the multiphonic. The following descriptions of the multiphonic classes are subjective:

- 1.) **mult-pure** should not be “dissonant” sounding
- 2.) **mult-pure-dense** should be “dissonant” sounding
- 3.) **mult-dense** should be very “dissonant” and somewhat “rough” sounding.
- 4.) **mult-raspy** should be as “dissonant” and “rough” sounding as possible.

The note in the score to “continuously vary amplitude and spectral envelope” of the multiphonics indicates that the sound of the multiphonics should not remain “stable” for any length of time. This variation can be achieved mainly through *a combination of breath and lip pressure which constantly changes*. To achieve rich variations of timbre, breath and lip pressure *should not change synchronously*. The speed with which the variations in the multiphonics’ timbres take place should be loosely based on the durations of the notes (longer durations mean slower variations). In addition, the speed of variation should *not* be regular.

Errata

- 1) On page 2, measure **140** should be a 3/8 measure (and measure **141** is a 4/8 measure).
- 2) On page 10, measure **904** is a 4/8 measure that is missing an eighth-note rest at the end of the measure.

Ossia

On page 13, measures **1181** to **1183** have a very difficult passage. The four very high notes with four ledger lines above the staff (notated g, a-flat, g, a-flat) can be played an octave lower to facilitate playing this passage at tempo.

On page 11, measure **1122** shows 6 bars of rest. These 6 bars are there mainly for the page turn. If the page turn is not needed, the 6 bars of rest can be omitted entirely. If the page turn is needed, the 6 bars of rest can instead be moved to between measures **1018** and **1019** if the performer prefers.

Cort Lippe

Program Notes

Music for Alto Saxophone and Computer (1997) was commissioned by the American saxophonist Stephen Duke, and premiered by him at the 25th Annual Experimental Music Festival in Bourges, France in June of 1997. The electronic part was created at the Hiller Computer Music Studios of the University at Buffalo, New York, using the IRCAM Signal Processing Workstation (a real-time digital signal processor) and the program “Max” which was developed by Miller Puckette and whose technical support made this piece possible.

The piece is in one movement and makes use of regular/irregular rhythmic and pitch relationships. Metaphorically, I have tried to exploit our rather complicated and intertwined conceptions of humans and machines. We spend a great deal of time trying to discipline ourselves to perform like machines: our ideal of technical “perfection” is something akin to our idea of a “perfectly working machine”. Yet, we also have another entirely negative viewpoint towards anything human which is too machine-like. Furthermore, we seem to have a complicated “love/hate” relationship with machines in general, which is exacerbated by the accelerating replacement of humans by machines in more and more tasks. I am not interested in using the computer to replace musicians, or acoustic instruments. The computer seems best suited to creating new, yet unheard sounds and musical relationships through the exploitation of compositional algorithms in real-time. Finally, it seems that in the future, as our machines continue to become more complicated and sophisticated, we will only become more confused about their roles in our lives unless we make an effort to keep our human relationships as non-mechanistic as possible.

Technically the computer tracks parameters of the saxophone, such as pitch, amplitude, spectrum, density, rests, articulation, tempi, etc., and uses this information to trigger specific electronic events, and to continuously control all the computer sound output by directly controlling the digital synthesis algorithms. Thus the performer is expected to “interact” with the computer, triggering and continuously shaping all of the computer output. Some of the sounds in the electronic part come directly from the composed saxophone part, so that, certain aspects of the musical and sound material of the instrumental and electronic parts are one and the same. Sound material other than the saxophone is also manipulated via time-stretching and granular sampling. FFT-based cross synthesis and analysis/resynthesis using an oscillator bank, as well as other more standard signal processing such as harmonizing, frequency shifting, phasing, spatialization, etc. are all employed. The instrument/machine relationship moves constantly on a continuum between the poles of an “extended” solo and a duo. Musically, the computer part is, at times, not separate from the saxophone part, but serves rather to “amplify” the saxophone in many dimensions and directions; while at the other extreme of the continuum, the computer part has its own independent “voice”.
Duration: 14 minutes.

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Section I

Alto Saxophone

♩ = 360

1 *sempre un poco staccato et senza vibrato*

f *mf* *dynamics simile*

7

13

19

26 9 2

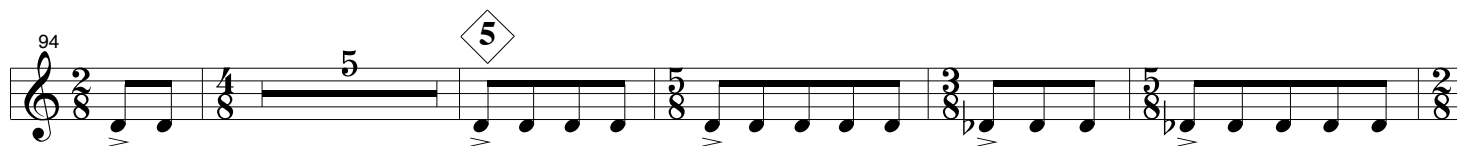
41

47 6

58 3

65

71 6 4



158

9

4

168

176

10

2

184

11

2

192

199

12

205

13

212

14

218

15

16

226

17

232

18

19

20

237

21

22

244

23

251

24

25

257

26

262

267

273

281

6

27

293

28

303

Section II

1

318

2

327

3

339

4

352

362

5

370

6

382

392 7

401 8

411 9

422 10 11

431 12

441

450 13

460 14

469 15

478

488

488

513

521

Example 10

541

mp *mf* *mp* *mf* *mp* *mf* *mp*

561

mf *mp* *mf* *mp* *mf* *mp*

7

mf *f* dynamics simile *mp*

573 *mf* *mf* *mp* 2 2

584 *mf* 3 *mp* < *f* > 3

597 < > < > *dynamics simile* 4

611 4 2 < > *sim.*

625 *mp* 18 2 2 < > *sim.* < > *sim.*

636 < > *sim.* 2

648 2

659 [continuously vary pitch and timbre slowly] 2 < > *sim.*

670 19 [continuously vary pitch and timbre slowly] 2 3 *mp* < > *sim.*

1

[continuously vary amplitude and spectral envelopes of all multiphonics]

2

3

Mult-pure

4

4

Mult-pure

6

2

-pure

4

Mult-pure-dense

Multi-pure-dense

1

Multi-pure-dense

Mult-pure-dense

822 13 **Multi-pure-dense**

mp

840 14 **Multi-pure-dense**

mp

860

874 15 16 **Multi-pure-dense**

mp

889 17

902 18 19 **Multi-pure-dense**

mf

915 20 *accel. poco a poco*
Multi-dense

928

943 21 22 **Multi-dense**

f *mf*

956 23 *sempre accel. poco a poco*

f

968 **Mult-dense** *mf* **24** **Mult-dense** *f* **25** *mf* *sempre accel. poco a poco*

981 **26** *f* **27**

991 **Mult-dense** **28** **29** *sempre accel. poco a poco* **30** **Mult-dense**

1004 **Mult-dense** **31** **32** **6**

1015

1028 **33** Mult-dense **34** Mult-dense

Musical staff 1028-1038. Treble clef, key signature of one flat. The staff contains a series of eighth and sixteenth notes, some beamed together. A diamond-shaped box containing the number 33 is placed above the staff at measure 1032. Another diamond-shaped box containing the number 34 is placed above the staff at measure 1036. The label 'Mult-dense' appears above the staff at measures 1032 and 1036. A slur is placed under the notes from measure 1034 to 1038.

1039 **35** Mult-dense Mult-dense

Musical staff 1039-1048. Treble clef, key signature of one flat. The staff contains a series of eighth and sixteenth notes, some beamed together. A diamond-shaped box containing the number 35 is placed above the staff at measure 1042. The label 'Mult-dense' appears above the staff at measures 1039 and 1042. A slur is placed under the notes from measure 1042 to 1048.

1048 **36** Mult-dense Mult-dense Mult-dense

Musical staff 1048-1058. Treble clef, key signature of one flat. The staff contains a series of eighth and sixteenth notes, some beamed together. A diamond-shaped box containing the number 36 is placed above the staff at measure 1052. The label 'Mult-dense' appears above the staff at measures 1048, 1052, and 1056. A slur is placed under the notes from measure 1052 to 1058.

1058 **37** Mult-raspy Mult-raspy Mult-raspy dynamics simile

Musical staff 1058-1068. Treble clef, key signature of one flat. The staff contains a series of eighth and sixteenth notes, some beamed together. A diamond-shaped box containing the number 37 is placed above the staff at measure 1062. The label 'Mult-raspy' appears above the staff at measures 1058, 1062, and 1066. Dynamics markings *f*, *ff*, *f*, *ff*, *f* are placed below the staff at measures 1058, 1060, 1062, 1064, and 1066 respectively. The label 'dynamics simile' is placed below the staff at measure 1068. A slur is placed under the notes from measure 1062 to 1068.

1068 **38** Mult-raspy Mult-raspy

Musical staff 1068-1077. Treble clef, key signature of one flat. The staff contains a series of eighth and sixteenth notes, some beamed together. A diamond-shaped box containing the number 38 is placed above the staff at measure 1072. The label 'Mult-raspy' appears above the staff at measures 1068 and 1072. A slur is placed under the notes from measure 1072 to 1077.

1077 **39** Mult-raspy Mult-raspy Mult-raspy

Musical staff 1077-1086. Treble clef, key signature of one flat. The staff contains a series of eighth and sixteenth notes, some beamed together. A diamond-shaped box containing the number 39 is placed above the staff at measure 1082. The label 'Mult-raspy' appears above the staff at measures 1077, 1082, and 1086. A slur is placed under the notes from measure 1082 to 1086.

1086 **40** Mult-raspy Mult-raspy

Musical staff 1086-1095. Treble clef, key signature of one flat. The staff contains a series of eighth and sixteenth notes, some beamed together. A diamond-shaped box containing the number 40 is placed above the staff at measure 1090. The label 'Mult-raspy' appears above the staff at measures 1086 and 1090. A slur is placed under the notes from measure 1090 to 1095.

1095 **41** Mult-raspy Mult-raspy

Musical staff 1095-1103. Treble clef, key signature of one flat. The staff contains a series of eighth and sixteenth notes, some beamed together. A diamond-shaped box containing the number 41 is placed above the staff at measure 1100. The label 'Mult-raspy' appears above the staff at measures 1095 and 1100. A slur is placed under the notes from measure 1100 to 1103.

1103 **42** Mult-raspy Mult-raspy Mult-raspy dynamics simile

Musical staff 1103-1112. Treble clef, key signature of one flat. The staff contains a series of eighth and sixteenth notes, some beamed together. A diamond-shaped box containing the number 42 is placed above the staff at measure 1108. The label 'Mult-raspy' appears above the staff at measures 1103, 1108, and 1112. The label 'dynamics simile' is placed below the staff at measure 1112. A slur is placed under the notes from measure 1108 to 1112.

1112 **43** Mult-raspy Mult-raspy Mult-raspy

Musical staff 1112-1121. Treble clef, key signature of one flat. The staff contains a series of eighth and sixteenth notes, some beamed together. A diamond-shaped box containing the number 43 is placed above the staff at measure 1117. The label 'Mult-raspy' appears above the staff at measures 1112, 1117, and 1121. A slur is placed under the notes from measure 1117 to 1121.

1121 **Mult-raspy** **Mult-raspy** **Mult-raspy**
dynamics simile

1130 **Mult-raspy** **Mult-raspy** **Mult-raspy** **Mult-raspy**

1140 *fff* 37

1148

1157

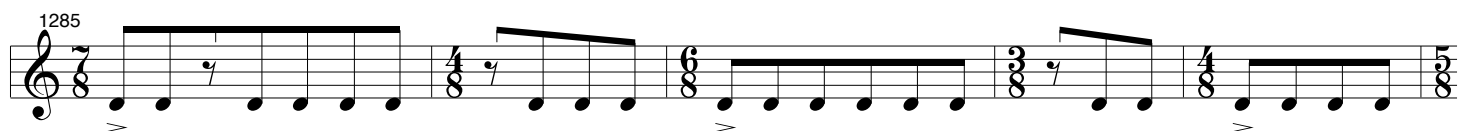
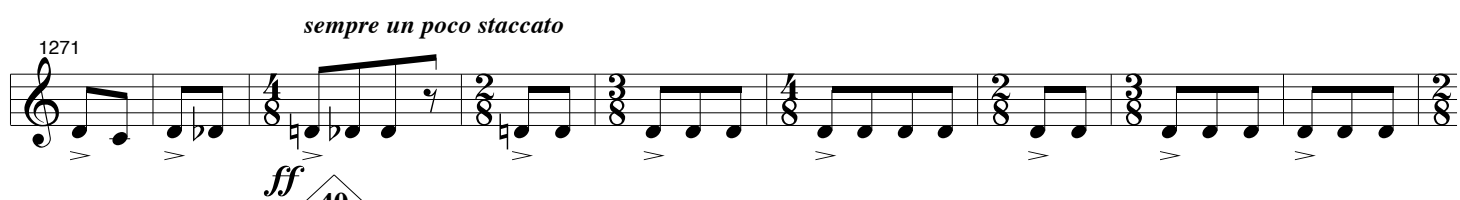
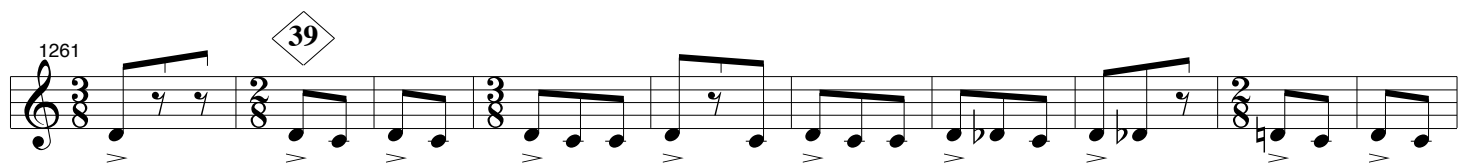
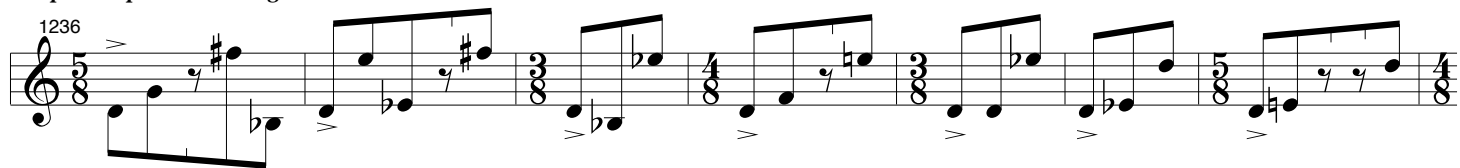
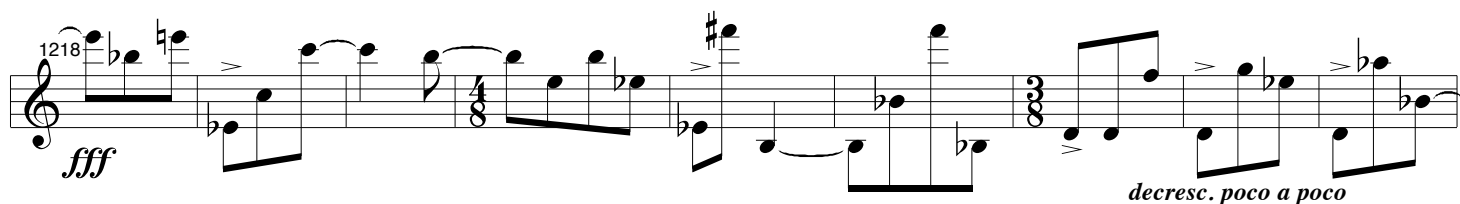
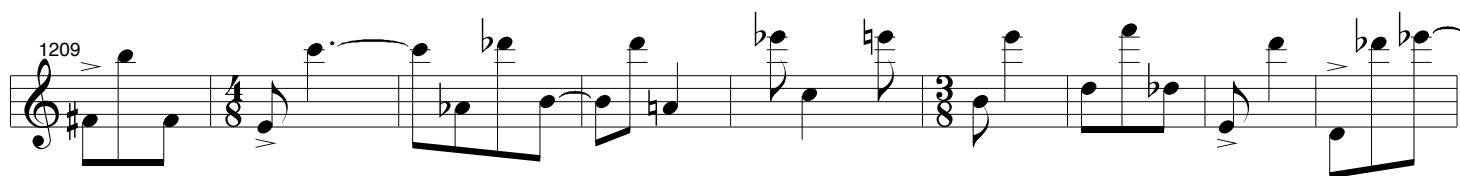
1166

1175

1183

1193

1201 38



1290

41

1295

1301

42

1310

6

5

3

1329

7

43