

Duo for Tenor Steel Pan & Computer

by Cort Lippe

2011

Written for Kenyon Williams

Commissioned by Kenyon Williams with a grant from the Minnesota State Arts Board.

Kenyon Williams was a fiscal year 2010 recipient of an Artist Initiative Grant from the Minnesota State Arts Board. This composition was funded, in part, by the Minnesota Arts and Cultural Heritage Fund as appropriated by the Minnesota State Legislature with funds from the vote of the people of Minnesota on November 4, 2008.

Performance Notes

Tempo

There are no *accelerandi* or *ritardandi* markings in the score. Performers may speed up and slow down phrases *ad libitum*, as a function of their expressive interpretation of the score, but any changes in tempo should not cause excessive de-synchronization between the performer and the computer. (Particularly, if the performer is using the auto-advance function in the software.) Computer events move along at a regular rate of every 20 seconds (one event per every 10 measures). Synchronization between the performer and the computer is necessary, but the performer can be a beat or two ahead of or behind the event markers in the score since precise synchronization is not absolutely necessary.



(event marker)

Tremolo

The 3-lined tremolo sign found over notes is an *ad libitum interpretive* sign. A performer may choose to *either play or not play* a tremolo where the sign is found. If the performer decides to play a tremolo, the *duration* of the tremolo is *ad libitum* during the duration of the note and the rest(s) that follow the note. (So the performer is invited to continue the tremolo through the rests if desired.) In addition, the player may (1) alter dynamics (*crescendi* and *decrescendi*) *ad libitum* during the tremolo, (2) stop and start the tremolo, (3) strike the note, let it sustain, and start the tremolo later, or (4) any combination of the above. Finally, if the tremolo sign is found over a dyad, the performer can choose to play a tremolo between the two notes of the dyad, or play a tremolo using only one of the notes of the dyad. Whether or not the performer chooses to play a tremolo, the *total time* of the note duration plus the following rest(s) duration should be respected.



(tremolo sign)

Accidentals

There are no natural signs in this score. Every accidental refers *only to the note it precedes* and any note tied to that note. Accidentals *do not carry through the measure*, nor do they carry through what appear to be repeated notes (unless, of course, the repeated notes have the same accidental marking as the initial appearance of the note).

Dynamics

There are very few *crescendi* and *decrescendi* in the score. Dynamics range from *ppp* to *fff*. Notes with the dynamic of *fff* should be played as accented notes and are identical to notes with the sign >. In some fast passages, the dynamics change for almost every note, which may appear somewhat impractical. Nevertheless, an effort should be made to, at least, *approximate* the notated dynamics in these passages. In general, dynamics change abruptly and should be viewed as a kind of non-rhythmic “syncopation”.

Ad Libitum Playing

Starting during Event 21 (measure 207), *ad libitum* performance indications are introduced. The *ad libitum* directions are clearly indicated in the score. Briefly explained, a group of pitches is presented in a box to be played in the spirit of a short, bracketed example containing groups of grace notes. The energy and speed of playing should be high. While the rhythms are relatively regular, and the pitch groups are relatively small, every effort should be made to avoid too much repetitiveness in the phrases. (Unexpected dynamic changes should be the norm.) In addition to the boxed pitches, there are also circled pitches, with directions to begin avoiding the indicated pitches gradually over time.

Cort Lippe

Program Notes

Duo for Tenor Steel Pan and Computer (2011) was commissioned and premiered by the percussionist and virtuoso steel pan player Kenyon Williams, who was a fiscal year 2010 recipient of an Artist Initiative Grant from the Minnesota State Arts Board. The composition was funded, in part, by the Minnesota Arts and Cultural Heritage Fund as appropriated by the Minnesota State Legislature with funds from the vote of the people of Minnesota on November 4, 2008.

The computer part was created at the Hiller Computer Music Studios of the University at Buffalo, New York, using the software Max/MSP. The digital synthesis algorithms focus on various kinds of analysis/resynthesis, along with delay/feedback, spatialization, frequency shifting, frequency modulation synthesis, harmonization, and sample playback. Technically, the computer tracks parameters of the pan performance using Miller Puckette's *sigmund~* object, which does an analysis of the incoming pan signal and gives out information as to when the pan is struck, how loud it is struck, and the pitch and timbre of each strike (including details about relative loudness across the frequency range in 40 independent frequency bands).

All this information, from larger scale rhythmic and phrase tracking of pitches and attacks, down to micro-level frequency band information, is used to continuously influence and manipulate the computer sound output by directly affecting digital synthesis and compositional algorithms in real-time, giving the performer an active role in shaping all of the computer output. The intent is to create a certain degree of intimacy and interactivity between the performer and the computer, in which the performer has the potential to influence the computer output based on aspects of the musical expressivity of his/her interpretation of the score. The instrument/computer relationship moves on a continuum between the poles of an extended solo and a duo. Musically, the computer part is at times not separate from the pan part, and serves to amplify the pan in multiple dimensions and directions; while at the other extreme of the continuum, the computer part has its own independent musical voice. These solo/duo relationships exist simultaneously; yet have a certain level of musical and technical ambiguity. Much like chamber music playing, in which individual expressivity sometimes is meant to serve the whole and at other times has a fundamental individual influence on the entire ensemble; the musical relationships between the performer and computer are fundamental to the musical results.

Duo for Tenor Steel Pan and Computer is recorded by Kenyon Williams on his 2013 CD *Homage*, made possible as part of his 2010 Artist Initiative Grant.

1 *Allegro* ♩ = 120

(Db-Eb)

tr ~~~~~

Musical staff 1: Treble clef, 4/4 time signature. The first three measures contain whole rests. The fourth measure contains a half note with a trill (tr) and a forte (fff) dynamic marking.

rallentando poco a poco trill smoothly to ----- ♩

Musical staff 2: Treble clef. The first measure contains a trill (tr) with a wavy line above it. The second and third measures contain whole notes with a slur underneath.

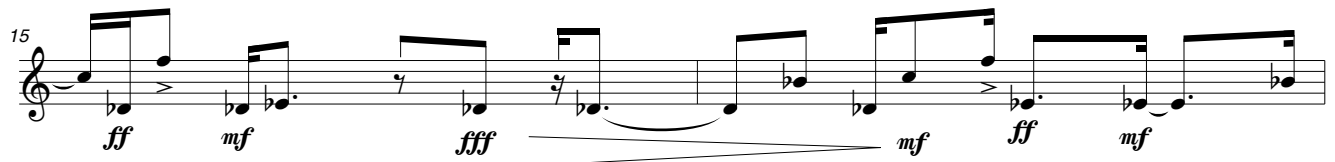
Musical staff 3: Treble clef, starting at measure 7. The staff contains eighth notes with a slur underneath. A forte (fff) dynamic marking is at the beginning. A hairpin crescendo is shown below the staff.

Musical staff 4: Treble clef, starting at measure 9. The staff contains eighth notes with a slur underneath. A forte (ff) dynamic marking is at the beginning. A hairpin crescendo is shown below the staff.

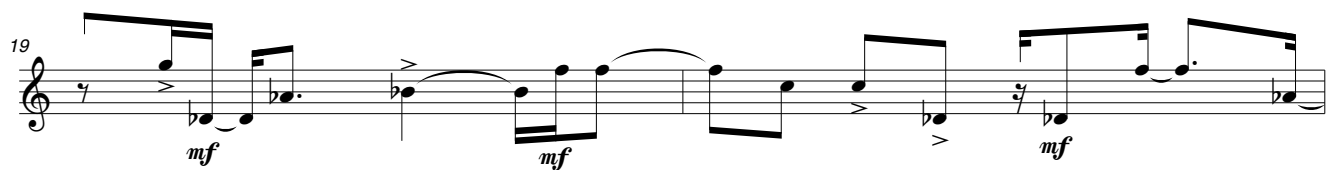
2

Musical staff 5: Treble clef, starting at measure 11. The staff contains eighth notes with a slur underneath. Dynamic markings of mezzo-forte (mf) and forte (ff) are present.

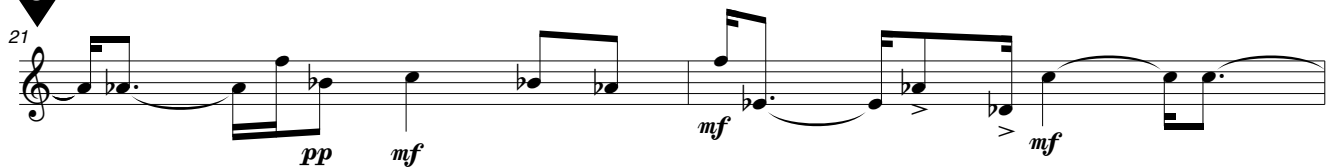
Musical staff 6: Treble clef, starting at measure 13. The staff contains eighth notes with a slur underneath. Dynamic markings of forte (ff) and mezzo-forte (mf) are present.

15 

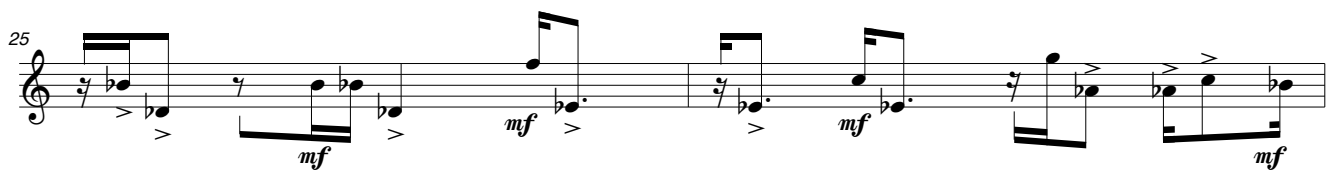
17 

19 

3

21 

23 

25 

5

41 *pp* *pp* *f* *mf* *mf* *pp* *mf*

Musical staff 41-43: Treble clef, 4/4 time. Staff 41: quarter note G4, quarter note A4, quarter note B4, quarter note C5. Staff 42: quarter note B4, quarter note A4, quarter note G4, quarter note F4. Staff 43: quarter note E4, quarter note D4, quarter note C4, quarter note B3.

44 *mf* *pp* *mf* *pp* *mf* *mf* *f* *mf* *pp* *mf*

Musical staff 44-45: Treble clef, 4/4 time. Staff 44: quarter note B3, quarter note A3, quarter note G3, quarter note F3. Staff 45: quarter note E3, quarter note D3, quarter note C3, quarter note B2.

46 *pp* *f* *mf* *mf* *pp* *f* *mf*

Musical staff 46-47: Treble clef, 4/4 time. Staff 46: quarter note B2, quarter note A2, quarter note G2, quarter note F2. Staff 47: quarter note E2, quarter note D2, quarter note C2, quarter note B1.

48 *f* *pp* *f* *mf* *f* *pp* *pp* *f* *mf* *f* *pp*

Musical staff 48-50: Treble clef, 4/4 time. Staff 48: quarter note B1, quarter note A1, quarter note G1, quarter note F1. Staff 49: quarter note E1, quarter note D1, quarter note C1, quarter note B0. Staff 50: quarter note A0, quarter note G0, quarter note F0, quarter note E0.

6

51 *f* *pp* *f* *mf* *f* *pp*

Musical staff 51-54: Treble clef, 4/4 time. Staff 51: quarter note B0, quarter note A0, quarter note G0, quarter note F0. Staff 52: quarter note E0, quarter note D0, quarter note C0, quarter note B-1. Staff 53: quarter note A-1, quarter note G-1, quarter note F-1, quarter note E-1. Staff 54: quarter note D-1, quarter note C-1, quarter note B-1, quarter note A-1.

55 *f* *pp* *f* *pp* *mf* *pp* *f* *pp* *mf* *pp*

Musical staff 55-58: Treble clef, 4/4 time. Staff 55: quarter note B-1, quarter note A-1, quarter note G-1, quarter note F-1. Staff 56: quarter note E-1, quarter note D-1, quarter note C-1, quarter note B-1. Staff 57: quarter note A-1, quarter note G-1, quarter note F-1, quarter note E-1. Staff 58: quarter note D-1, quarter note C-1, quarter note B-1, quarter note A-1.

58 **7** *f* *f*

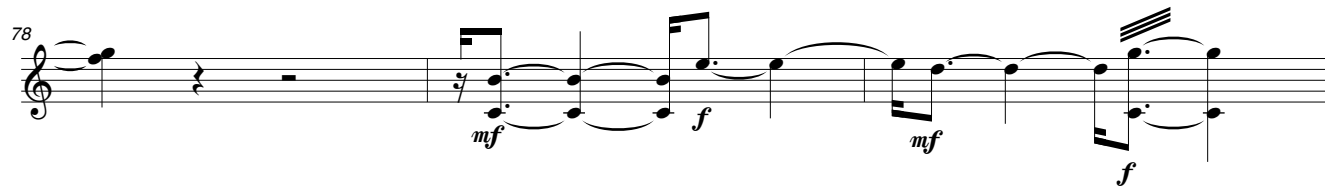
62 *mf* *f* *fff*

65 *mf* *fff* *f* *fff*

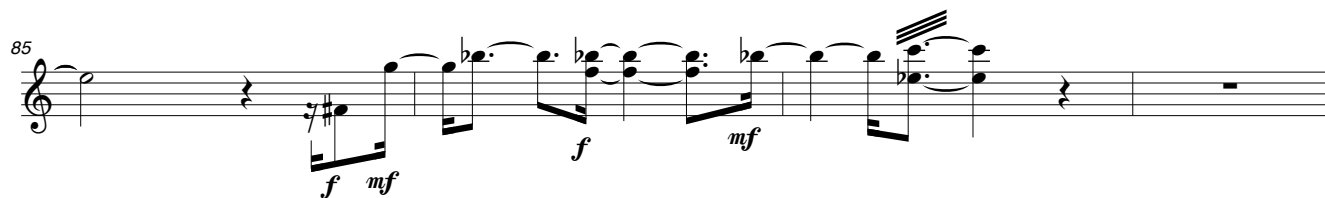
68 *mf* *pp* *f* *fff*

8 71 *mf* *mf* *pp*

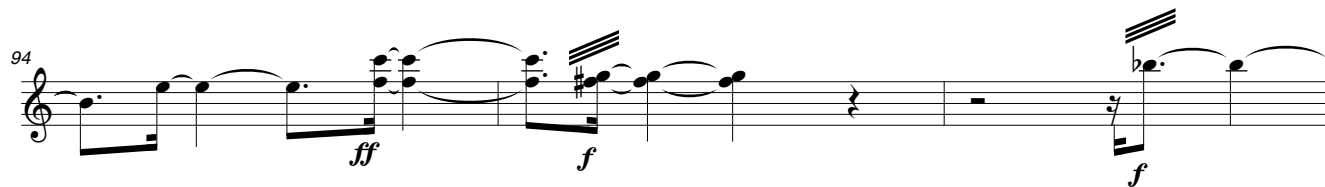
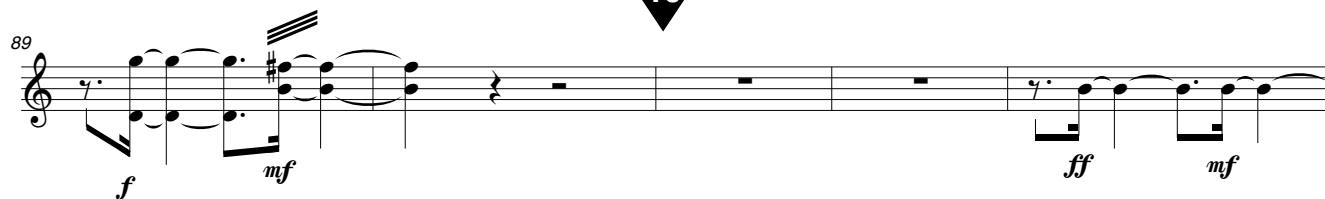
75 *fff* *f* *f* *mf*



9



10



11



102

ff

105

ff

12

109

mf *f*

113

mf *ff*

116

mf *f* *mf*

13

119

ff *ff* *mf* *f*

124

mf ff mf

This staff contains measures 124 through 127. It begins with a whole rest in measure 124. In measure 125, there is a half note chord with a sharp sign above it, marked *mf*. In measure 126, there is a half note chord with a flat sign above it, marked *ff*. In measure 127, there is a half note chord with a sharp sign above it, marked *mf*.

128

ff f mf ff f ff f ff

14

This staff contains measures 128 through 131. Measure 128 starts with a double bar line and a *ff* dynamic. Measure 129 has a half note chord marked *f*. Measure 130 has a half note chord marked *mf*. Measure 131 has a half note chord marked *ff*. A downward-pointing arrow with the number 14 is positioned above measure 131. The staff continues with measures 132-131, which are shown in the next block.

132

mf f ff f ff mf ff

This staff contains measures 132 through 135. Measure 132 has a half note chord marked *mf*. Measure 133 has a half note chord marked *f*. Measure 134 has a half note chord marked *ff*. Measure 135 has a half note chord marked *f*. The staff continues with measures 136-135, which are shown in the next block.

135

f mf f ff mf ff mf f mf

This staff contains measures 135 through 138. Measure 135 has a half note chord marked *f*. Measure 136 has a half note chord marked *mf*. Measure 137 has a half note chord marked *f*. Measure 138 has a half note chord marked *ff*. The staff continues with measures 139-138, which are shown in the next block.

138

f mf ff f ff mf ff f ff f ff

This staff contains measures 138 through 141. Measure 138 has a half note chord marked *f*. Measure 139 has a half note chord marked *mf*. Measure 140 has a half note chord marked *ff*. Measure 141 has a half note chord marked *f*. The staff continues with measures 142-141, which are shown in the next block.

141

mf f ff f mf f mf ff mf

15

This staff contains measures 141 through 144. Measure 141 has a half note chord marked *mf*. Measure 142 has a half note chord marked *f*. Measure 143 has a half note chord marked *ff*. Measure 144 has a half note chord marked *f*. A downward-pointing arrow with the number 15 is positioned above measure 141. The staff continues with measures 145-144, which are shown in the next block.

144

ff *f* *mf* *ff* *mf* *ff* *f*

147

mf *f* *mf* *ff*

149

f *mf* *f* *mf* *ff* *ff* *f*

16

152

mf *f* *ff* *f* *ff* *mf* *ff* *f*

154

mf *f* *ff* *f* *mf* *f* *mf*

156

f *ff* *f* *mf* *f* *mf* *ff* *f*

159 *ff* *mf* *f* *ff* *mf* *f* *mf*

162 *mp* *mf* *ff* *mf* *f* *mf*

164 *ff* *mf* *ff* *mf*

166 *f* *mf* *mp* *f* *mf*

168 *mp* *ff* *ff* *mp*

170 *mp* *ff* *mf* *mf* *mp*

17

18

Detailed description: This page of a musical score contains six staves of music, numbered 159 to 170. The music is written in treble clef and consists of chords and melodic lines. Dynamics are indicated by *ff* (fortissimo), *f* (forte), *mf* (mezzo-forte), *fz* (forzando), *mp* (mezzo-piano), and *mpz* (mezzo-pianissimo). There are several accents (>) and slurs. Two specific measures are highlighted with downward-pointing arrows and the numbers 17 and 18. Measure 17 is the first measure of the fifth staff, and measure 18 is the first measure of the sixth staff. The notation includes various articulations such as slurs, accents, and slanted lines above notes.

172

f *ff* *mf*

174

ff *mp* *ff* *mp* *mp* *mp* *ff*

177

f *mp* *mp* *ff* *mf* *mp* *mf* *mp* *mf*

179

mf *mp* *mp*

182

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

185

mf *mp* *mf*

187

187

mp *mf* *mp*

Musical staff 187: Treble clef, 4/4 time signature. Measures 187-190. Dynamics: *mp*, *mf*, *mp*. Includes accents and slurs.

189

189

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

Musical staff 189: Treble clef, 4/4 time signature. Measures 189-192. Dynamics: *mp*, *mf*, *mp*, *mp*, *mf*. Includes accents and slurs.

20

191

191

mp *mp* *mf*

Musical staff 191: Treble clef, 4/4 time signature. Measures 191-194. Dynamics: *mp*, *mp*, *mf*. Includes accents and slurs.

193

193

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

Musical staff 193: Treble clef, 4/4 time signature. Measures 193-196. Dynamics: *mp*, *mf*, *mp*, *mf*, *mp*, *mf*. Includes accents and slurs.

195

195

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

Musical staff 195: Treble clef, 4/4 time signature. Measures 195-200. Dynamics: *mp*, *mf*, *mp*, *mf*, *mp*, *mf*, *mp*. Includes accents and slurs.

197

197

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

Musical staff 197: Treble clef, 4/4 time signature. Measures 197-202. Dynamics: *mf*, *mp*, *mp*, *mf*, *mp*, *mf*, *mp*, *mf*, *mp*. Includes accents and slurs.

199

mf mp mf mp mf mp mf mp

21

201

mf mp mf f mf

203

mf mp mf mp mf mp mf

205

mf f mp mf f mf f mf

(ad libitum using boxed pitches in the spirit of the example in brackets)

207

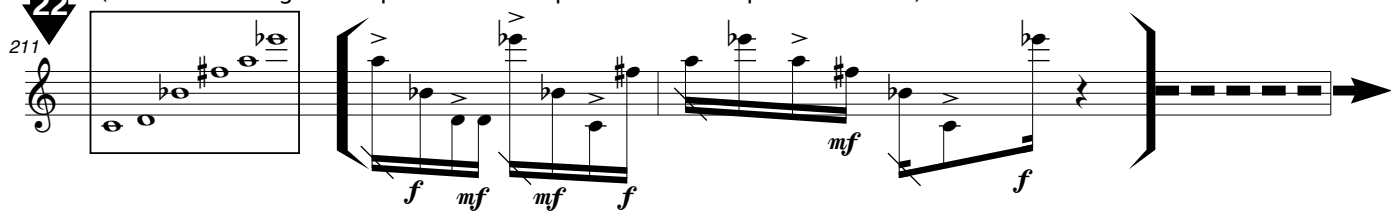
mp f mp f mp mf f mf

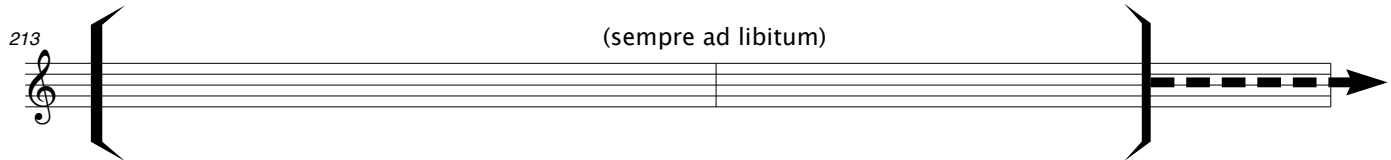
(ad libitum still using boxed pitches above, rhythmically faster, in the spirit of the example in brackets)

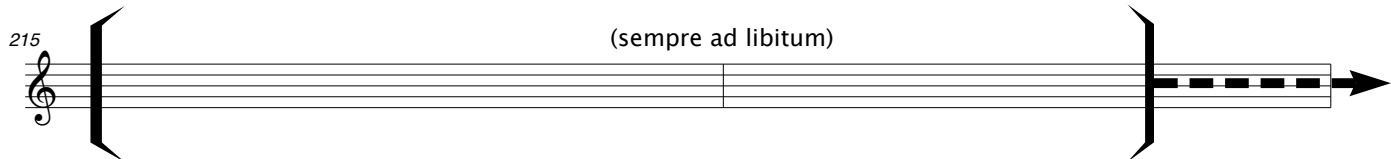
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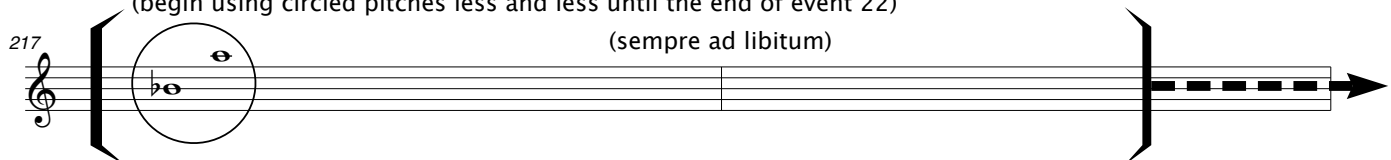
f mf f mf mf f

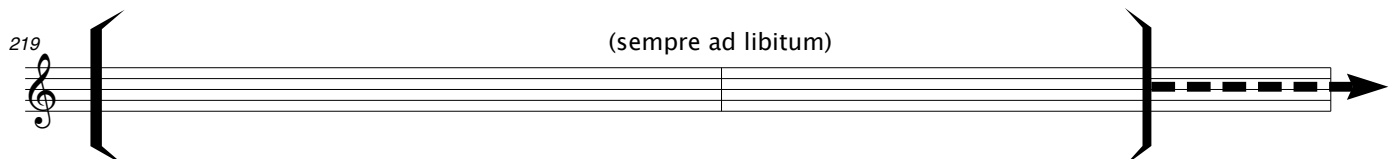
22 (ad libitum using boxed pitches in the spirit of the example in brackets)

211 

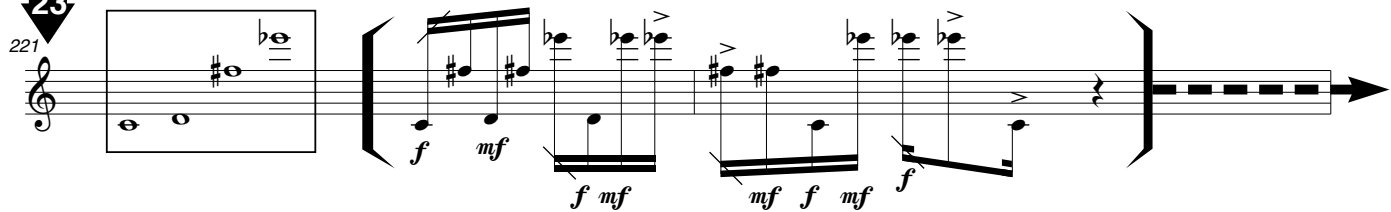
213 (sempre ad libitum) 

215 (sempre ad libitum) 

217 (begin using circled pitches less and less until the end of event 22)
(sempre ad libitum) 

219 (sempre ad libitum) 

23 (ad libitum using boxed pitches in the spirit of the example in brackets)

221 

223 (sempre ad libitum)

225 (sempre ad libitum)

(little by little, rests between fast passages can become more frequent--but not longer--until the end of event 23)

227 (sempre ad libitum)

229 (sempre ad libitum)

24
231 (sempre ad libitum)

(little by little, fast passages become shorter and shorter, while rests stay the same length, until the end of event 24)

233 (sempre ad libitum)

235 (sempre ad libitum)

(sempre fast passages become shorter and shorter, while rests stay the same length, until the end of event 24)

237 (sempre ad libitum)

239 (sempre ad libitum)

25
241 (sempre ad libitum)

(little by little rests become longer and longer, while keeping fast passages short, until the end of event 25)

243 (sempre ad libitum)

245 (sempre ad libitum)

247 (sempre ad libitum)

(sempre little by little rests become longer and longer, while keeping fast passages short, until the end of event 25)

249 (sempre ad libitum)

26

251

f mf ff mf f ff mf f mf f mf

254

f mf ff mf f ff f ff f mf f

258

mf f mf f mf ff f mf

27

261

f mf ff mf f mf f ff mf ff mf f

263

f mf ff f f mf ff mf

266

f f ff f mf f ff mf f f

269

mf ff f mf ff mf ff mf mf f mf

28

271

f mf f f mp mf f mf mp f

274

f mf mp mf f mf mp f mf f

276

f mf f mf mf mp ff mf ff mf mp ff mp

278 *mf mp mf* *f mp* *f* *ff mp* *mf mp mf* *f* *mf mp* >

29

280 *mp mf* > *mf* *ff mf* *mp* *f ff mf* *f mp* *ff mp ff*

282 *f mp* *mf* *mp* *mp ff mp* *mp* *mf mp* *f mp* *f mf ff* > *ff*

284 > *mp* *mf mp* *ff mp* *mp* *f mp* *mf mp* *mf mp mf*

286 *ff mp* *f mf* *mp mp* *mf* *mp ff mp* *mp ff mp mf*

288 *ff mp* *f* *mp* *mf* *ff* *mf mp* *mf* *mp ff mp* *mf*

30

290

ff mf mp ff mf ff mp

Musical staff 290: Treble clef, starting with a key signature of two flats. The staff contains a sequence of eighth and sixteenth notes with various dynamics: *ff*, *mf*, *mp*, *ff*, *mf*, *ff*, and *mp*. There are rests in the second and fourth measures.

292

mf f > mp > mf mp f

Musical staff 292: Treble clef. The staff contains eighth and sixteenth notes with dynamics: *mf*, *f*, *mp*, *mf*, *mp*, and *f*. There are rests in the second, fourth, and sixth measures. Accents (>) are placed over the first, third, and fifth notes.

294

mp f mp f ff mf mp mp

Musical staff 294: Treble clef. The staff contains eighth and sixteenth notes with dynamics: *mp*, *f*, *mp*, *f*, *ff*, *mf*, *mp*, and *mp*. There are rests in the second, fourth, and sixth measures. Accents (>) are placed over the first, third, and seventh notes.

296

mf f ff mp f mf f mf

Musical staff 296: Treble clef. The staff contains eighth and sixteenth notes with dynamics: *mf*, *f*, *ff*, *mp*, *f*, *mf*, *f*, *mf*, and *f*. There are rests in the second, fourth, and sixth measures. Accents (>) are placed over the first, third, fifth, seventh, and ninth notes.

298

mp ff mp ff mp mp ff

Musical staff 298: Treble clef. The staff contains eighth and sixteenth notes with dynamics: *mp*, *ff*, *mp*, *ff*, *mp*, *mp*, *mp*, and *ff*. There are rests in the second, fourth, and sixth measures. Accents (>) are placed over the first, third, fifth, seventh, and ninth notes.

31

300

mp mf ff mp ff mf

Musical staff 300: Treble clef. The staff contains eighth and sixteenth notes with dynamics: *mp*, *mf*, *ff*, *mp*, *ff*, and *mf*. There are rests in the second, fourth, and sixth measures. Accents (>) are placed over the first, third, and fifth notes.

303 *mp mf f mf mp mf mp mp*

305 *ff mp mf mp mf ff*

307 *mp mf mp mf mp mf mp ff mp mp*

309 *mf mp ff mf f mf mp mf*

32

311 *ff mp f ff mf mp f mp mp*

313 *f mp f mf mf mp f mp pp mp*

316

mf mp *mf* *mp* *ff mf mf* *mf* *mp mf*

319

mp *pp mf mp* *pp mf* *pp mp ff mp pp* *mp mf mp*

33

321

ff *mp mf mp* *mf* *pp mp mf pp mp* *pp f pp mp*

323

f pp mp pp *mp mf mp* *mp pp mf pp* *mf pp* *mp pp*

325

mp mf pp *f* *pp mp* *pp mp* *mf f*

327

pp *mp pp mp* *pp f* *mp mf pp* *mp pp* *mp mf pp*

329 *mp* *pp* *pp* *mp* *pp*

331 *mp* *pp* *p* *pp*

34

333 *p* *mp* *pp*

335 *mp* *pp* *p* *pp*

337 *p* *pp* *p*

340 *pp*

35