

Richard Barrett

membrane

2017-19

trombone and electronics

performance score

membrane

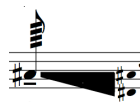
(2017-19) for trombone and electronics

commissioned by ELISION for Benjamin Marks

duration: approximately 30 minutes

Membrane consists of five parts which play continuously and have durations of approximately 4, 5, 6, 7 and 8 minutes.

Legato phrase-marks indicate that there should be no audible articulation between pitches.

 = gradual emergence of split tone (multiphonic on adjacent partials) from single pitch

 = glissando with rapid iterated double- or triple-tonguing

 = simultaneous glissando from 2nd to 7th slide position and from 4th to 9th partial

Other non-standard notations are explained where they first occur.

The player's voice is extensively used in part II, with the International Phonetic Alphabet used to indicate consonants (articulation) and vowels (tongue position).

The principal material of part III involves movements which are as smooth as possible not only between slide positions but also between different partials and between the F valve being off and on. The often rapid movements in all of these dimensions should first be practised slowly, concentrating on the required smoothness, and then brought up to speed. Breaths should only be taken where there is a notated break in the music. (Circular breathing is not intended.) In this part, slide positions are notated on a separate staff with seven lines (notes between the lines imply half-positions for quartertones). When the F valve is on, this is indicated above the staff. (Glissandi between slide positions are sometimes "broken" at the transitions between the valve being on and off, as for example when moving from 5th position without the valve to 5th position with the valve, since this requires the slide to move but the two positions occupy the same line on the staff. Of course what is intended is the usual smooth movement between one position and the other.) Where this staff is not shown, the pitches on the lower staff may be produced by any convenient method. The number of the required partial is given between the slide-position staff and the staff for the resultant pitches. A dashed arrow between partial numbers indicates a "glissando" between them. Seventh, eleventh and thirteenth partials are notated as quartertone inflections, and in general pitches are rounded to the nearest quartertone, although it should always be borne in mind that the notated values of pitches and glissandi are approximations to the *precisely* notated slide movements and partials. For clarity, not all the endpoints of glissandi are notated.

The trombonist plays from four different positions, as shown in the score. Position 1 is behind the audience or outside the performance space. Position 4 is on the stage (the "normal" playing position). Positions 2 and 3 are somewhere between these two, preferably not in a straight line but so that the space and its acoustics are used as fully as possible. In smaller spaces the movements might be omitted and position 4 used throughout.

The electronic component of *membrane* consists of a sequence of 8-channel fixed-media soundfiles labelled MEsf01, 02, 03 etc., which are actuated (sometimes two simultaneously) by the numbered cues shown in the score and summarised in the table below. Playback is affected in different ways by the sounds of the trombone, using a Max patch constructed by Patrick Delges of the Centre Henri Pousseur in Liège (related to the patches used in *life-form*, *world-line* and *entoptic*). Loudspeakers are placed in a circle around the audience (fixed media track 1 = front left, track 2 = front right, track 3 = rear left, track 4 = rear right, track 5 = front centre, track 6 = rear centre, track 7 = side left, track 8 = side right).

The trombonist requires a radio microphone attached to the instrument; the computer used for the electronic part takes a single input from this microphone (via the front-of-house mixer). This microphone should pick up as little sound as possible from outside the trombone, so that the fixed-media material doesn't bleed into the computer's input. Therefore a contact microphone would probably be best for this purpose. At positions 1-4 there may also be an air microphone for amplification if this turns out to be necessary.

Each of the five parts embodies a different relationship between trombone and electronics, as described below:

I gate

The trombonist and electronic sounds begin together (electronic cue 1), although at this point the trombonist is playing from position 1, behind the audience or outside the performance space altogether. These continuous electronic sounds are produced by playerA (a component of the patch) and should be set to a relatively low level. During the 50 seconds of bar 7, the same electronic sounds continue but an extra layer is added (activated by cue 2), consisting of sound-fragments of random duration, pitch-level and spatial position, separated by random silent durations and produced by playerB, at a level comparable to that of the trombone. The trombonist improvises in response to this unpredictable material while moving slowly from position 1 to position 2. Then the random sounds end again (cue 3) as the trombonist plays bars 8-19 from position 2. During the 40 seconds of bar 20 the trombonist again responds improvisationally to the random sounds (activated by cue 4) while moving to position 3, where (after the random sounds are stopped by cue 5) bars 21-38 are played. Finally cue 6 brings back the random sounds for the 30 seconds of bar 39 while the trombonist improvises and moves towards position 4 at centre stage, where most of the rest of *membrane* is played. Somewhere in this last bar the plunger mute is put down. The only stipulation for the improvisational activity is that at least some of the time it should be audibly responsive to the electronic sounds, perhaps playing in the direction that the sound has come from, or starting, stopping or changing in response to the beginning or end of an electronic sound-event. These become more varied in pitch-level, and the durations of both sounds and silences also become more varied, in the progression from cue 2 to cue 4 to cue 6.

II veil

Cue 7 begins the electronic background for the first of two sections of part II, which begins together with the trombone part immediately after the end of part I, and which does not interact with the trombone sounds. These electronic sounds should be louder than playerA in the previous section but should not be dominant. After this, cue 8 after bar 15 triggers the second section, where two distinct layers of sounds are played, and at the beginning of which the trombonist starts a stopwatch. Both playerA and playerB should be set at a volume level somewhat louder than the trombone, especially at the start, so that the trombone is deeply embedded in the sound-textures. When the trombone doesn't play, only the layer from playerA is heard. As the dynamic level of the trombone increases, the software crossfades between the two layers. At a played dynamic of *mf* they are heard with equal loudness; at a dynamic of *fff* only the layer from playerB is heard. This requires careful balancing on the part of the sound projectionist, although there will always be a certain amount of unpredictability in this process. Each trombone entry may be begun at a freely chosen point between two time-limits, so that the relationships between trombone and the two electronic layers can be different in each performance. The electronic sounds end at 3'30" according to the stopwatch, at which point part III begins immediately.

III mask

This part may also be performed alone, with or without its electronic part. It begins as soon as the electronic sounds of part II come to an end, and its first half contains no electronic sounds. Cue 9 begins playback exactly at bar 51 of the score. The electronic part consists of an almost unchanging drone and is not affected by the live trombone. It should be clearly present but not dominant.

IV song

Cue 10 is actuated as soon as the trombonist has completed part III and effects a crossfade with the 4-minute electronic 'solo' that begins part IV. This should be quite loud. During this time the stage should be darkened if possible, and the trombonist takes a harmon mute. At the end of the "solo" cue 11 is activated. The trombone part alternates between two registers, which trigger two distinct electronic textures while the trombone plays (and whose volume and pitch follow those of the instrument, not always in a completely stable way). Nothing is heard during the rests in the trombone part.

V mind

After the rest that concludes part IV, cue 12 activates the next electronic part which is only heard when the trombone is *not* playing, and cuts off abruptly when the trombone plays. Part V, like the entire composition, is divided into five expanding sections each of which proposes a different kind of confrontation between trombone and electronics. Cue 13 sets in motion a situation where one soundfile plays continuously and another is triggered by the trombone but with a lowpass filter controlled by the trombone's dynamic level so that the trombone "opens up" a harmonic spectrum the louder it plays. The parameters of this part of the patch need to be carefully adjusted so that the process is clear and stable. Cue 14 activates a rhythmically pulsing sound texture which, when the trombone plays, is abruptly replaced by an irregularly pulsing version of the same texture so that the trombone appears to disrupt the pulsation by playing. Cues 15-17 activate sound textures unaffected by the trombone which are manually faded out, in and out, and in, respectively. Cue 18 abruptly replaces the previous texture by a series of four bursts with which the trombone plays in rhythmical unison. The following sequence of cues (18-29) activate brief soundfiles whose coordination with the trombone is indicated in the score. Cue 30 activates a sequence of random sound-fragments related to those of cues 2, 4 and 6 in part I, with which the trombonist improvises as he/she gradually moves back towards position 1, over a duration of 56 seconds, while the electronic sounds undergo a long *diminuendo* – whether the trombonist follows this dynamic profile is of course up to him/her. Finally cue 31 activates a soundfile with a duration of 64 seconds, while the random sounds continue. The trombonist continues the previous activity with a *diminuendo* to silence over 8.5 seconds as the random sounds are manually faded out, and remains silent from then until the end.

The electronic part may be summarised as follows.

	<u>cue no.</u>	<u>playerA</u>	<u>playerB</u>
part I	1	begins MEsf01	<i>tacet</i>
	2	continues	plays back fragments of MEsf02 against which trombonist improvises
	3	continues	<i>tacet</i>
	4	continues	plays back fragments of MEsf02 against which trombonist improvises
	5	continues	<i>tacet</i>
	6	continues	plays back fragments of MEsf02 against which trombonist improvises
part II	7	begins MEsf03	<i>tacet</i>
	8	begins MEsf04, at maximum level when trombone is silent	begins MEsf05, at maximum level when trombone plays <i>fff</i>
part III	MEsf04 and MEsf05 are allowed to play to their end at 3'30"; no electronic sounds play for first 3' (approximately) of part III		
	9	begins MEsf06	<i>tacet</i>
part IV	10	crossfades MEsf06 with MEsf07	<i>tacet</i>
	11	begins MEsf08, heard when trombone plays in upper range	begins MEsf09, heard when trombone plays in lower range
part V	12	begins MEsf10, heard only when trombone is silent	<i>tacet</i>
	13	begins MEsf11	begins MEsf12, heard only when trombone plays and with a lowpass filter controlled by trombone dynamic, completely open at dynamic of <i>mf</i>
	14	begins MEsf13, heard only when trombone is silent	begins MEsf14, heard only when trombone plays above <i>p</i>
	15	MEsf13 fades out automatically over 10 seconds	begins MEsf15, then manual fade-out
	16	begins MEsf16, manual fade-in and out	<i>tacet</i>
	17	begins MEsf 17, manual fade-in	<i>tacet</i>
	18-29	begin MEsf18-29	<i>tacet</i>
	30	<i>tacet</i>	plays back fragments of MEsfX30 against which trombonist improvises manual fade to <i>pp</i> over 56 seconds
	31	begins MEsf31 (plays to end, trombone <i>tacet</i>)	MEsf30 continues but is manually faded to silence over 8.5 seconds

programme note

membrane for trombone and 8-channel electronics forms part of the extended composition *PSYCHE*. Foremost among the thoughts that condensed into *membrane* concern the origins of human artistic expression in the cave paintings of the Palaeolithic period, as well as of the ways in which these paintings might have been intended, understood and experienced in their own time, being as they are for the most part hidden in quite inaccessible recesses of cave systems, so that viewing them might well have been an element in a shamanistic spiritual journey, associated once more with altered states of consciousness.

In the furthest part (known as the “horse’s tail”) of the cave system of Altamira in northern Spain are natural rock formations resembling faces, whose features were emphasised by painting for example a circle in one of the “eyes” (see photo below). Several of these “masks” seem to peer from the rock face at a visitor who has undertaken the difficult task of reaching the end of the last and narrowest of the Altamira chambers and who then turns around to begin their return to the outside. “The figures are not merely painted onto the surface; they become part of the cave itself, of the nether realm. (...) It is as if the rock were a living membrane between those who ventured in and one of the lowest levels of the tiered cosmos; behind the membrane lay a realm inhabited by spirit animals and spirits themselves, and the passage and chambers of the caves penetrated deep into that realm.” (David Lewis-Williams, *The Mind in the Cave*) The form of *membrane* has its origins in a contemplation of such a journey into the heart of the cave system (and, by extension, into the deepest parts of the self...) through a sequence of interactions between the trombone and its electronic environment, a sequence of 8-channel fixed-media sound-forms, variously transformed in real time by an analysis of the articulation, dynamic and/or pitch of the trombone. The global structure of the composition consists of five parts (subtitled *gate*, *veil*, *mask*, *song* and *mind*), each longer than the previous one, with the fifth also divided into five sections in the same proportions, the fifth of which sections is also so divided, and so on, in a recursive *mise-en-abyme* which accelerates at the very end towards sounds of infinitesimal duration.

The electronic sounds are mostly synthetic in origin, although “concrete” sounds also appear in the fourth and fifth parts, most prominently vocal material derived from Georg Trakl’s poem “De Profundis”, spoken, whispered and sung by Siân Wassermann. Both concrete and synthetic sounds formed the departure point for numerous further processes of fragmentation and transformation which are analogous to the processes by which the trombone and its player “process” the original (pitch- and duration-) material of the composition into rich and complex sound-forms. *membrane* shares its basic pitch-material with other components of *PSYCHE* - a colouration of frequency-space consisting of a cycle of perfect fourths extending upwards from the open strings of the contrabass (which appears as a solo instrument in one of the conglomerate composition’s other components) – each of its five parts centring to a greater or lesser degree on a different pair of pitches from the first ten in the cycle. The trombone part emerges also from a long and evolving collaboration with Ben Marks on both notated and improvisational music.

membrane was commissioned by ELISION and completed in March 2019. Programming for the live electronic part, as with *entoptic*, was carried out by Patrick Delges at the Centre Henri Pousseur.



position 1 (behind audience or outside the space)

I. gate

Richard Barrett
2017-18

♩=108

with plunger mute

6 8

trb (plu)

cue 1

3

trb (plu)

5

trb (plu)

IV^{1/2} III^{1/2} II^{1/2} I^{1/2}
4 6 8 10

VII 1
6 2

5:6 4:3 5:4 3:2

f *fff* *mf* *ff* *f* *fff* *pp* *f*

fff *p* *f* *mf* *mp* *p* *mf* *f* *ff*

50" improvise together with electronic sounds while moving between positions 1 and 2. Stop along the way if necessary but don't arrive at position 2 too early. Use the plunger, and perhaps also point the bell in different directions to explore the acoustics of the performing space.

trb (plu)

cue 2

♩=108

6 8

trb (plu)

cue 3

10

trb (plu)

12

trb (plu)

14

trb (plu)

VII 1
4 7 9 5 2

III^{1/2} V III^{1/2}
4 5 6 7 8 9 3

VII 1
6 10

FV^{1/2} 8/9
7:6

VII 2 7:5 2 7 9 (V)

6:4 8:7 VII

6:5 4:3 (6/7) 5:4 7:8 4:3

9:6 6:5 9:8 8:7

9:7 3:2 (slide vibr.) 3:2 6:4 4:3

f *fff* *pp* *mf* *p* *mp* *f* *ff* *pp* *fff* *ff* *ppp* *p* *ff*

fff *mf* *pp* *f* *fff* *ff* *ppp* *p* *ff*

f *fff* *mf* *p* *mp* *f* *ff* *pp* *fff* *ff* *f* *mp*

f *fff* *mf* *p* *ff* *mp* *ppp* *f* *p* *mf* *pp* *fff* *p*

2

16

trb (plu)

IV I

3:2

7:6

6:5

VI IV $\frac{1}{2}$ III $\frac{1}{2}$

6:5

4:3

4:3

f fff mp pp mf p f ppp ff mf f mp fff

18

trb (plu)

IV VI II

5 8 4

10:7

3:2

4:3

8:7

p ff pp mf fff f p mp mf ppp p f ff pp

20 40" improvise together with electronic sounds while moving between positions 2 and 3, as in bar 7

trb (plu)

cue 4

21

trb (plu)

6/8 $\text{♩} = 108$

11:8

5:6

4:3

3:2

7:6

3:2

mf f mp p fff pp ff p f mf ppp fff f ff

23

trb

IV VII VI IV

8 11 5 7

6:7

3:2

3:2

FV

3:2

6:5

7:6

f fff mp mf fff ff f f mp fff mf pp ff p f

25

trb

III $\frac{1}{2}$ II I $\frac{1}{2}$

8 9 10

7:5

3:2

3:2

4:3

mf mp p f pp ff p

26

trb

V III II VI

6 7 8 7 8 9 5 6

10:8

5:4

3:2

fff ppp f ff mf ff fff mp

27

trb

VI VII V III $\frac{1}{2}$

10 9 5 7

3:2

3:2

5:6

pp mf ff

28 trb

Interval markings: 4:3, 3:2, 9:8, 1:9, 7:5, 3:2

Dynamics: *f*, *mp*, *fff*, *mf*, *p*, *f*, *pp*, *ff*, *mp*, *mf*, *p*, *f*, *pp*, *mp*, *p*

30 trb

Interval markings: $V\frac{1}{2}$, IV, 5, 7, 9, 3, $\frac{6:5}{3:2}$, FIII, $IV\frac{1}{2}$, 4:3, 3:2, VII, II, $VII\frac{1}{2}$, 12, 7, 9, 5:4, 6:7

Dynamics: *ppp*, *mf*, *fff*, *f*, *fff*, *ppp*, *p*, *pp*, *f*, *fff*, *mf*

32 trb

Interval markings: II, 7, 3:2, FVI, 7:6, I, 3:2, 3:2, 3:2, II, VII, 12, V, 1

Dynamics: *ff*, *p*, *mp*, *p*, *ff*, *mf*, *pp*, *f*, *mp*, *p*

34 trb

Interval markings: $FIII\frac{1}{2}$, FI, FIV, 2, 11, 8, 5, 3, 8:7, 5:4, III, II, VII, 6, (6), 10, FIV, FI, FIII, 2, (2), 5, 7, VII, 11, $VI\frac{1}{2}$, FI, 7, 2, 7:5

Dynamics: *ff*, *fff*, *mf*, *ff*, *ppp*, *mp*, *p*, *f*, *mp*, *pp*, *mf*, *ff*, *mp*, *fff*

36 trb

Interval markings: IV, 11, 14, 5:4, II, V, 8, 5, 7, 9, 11, 10, 7:6, $III\frac{1}{2}$, III, $I\frac{1}{2}$, 7

Dynamics: *p*, *f*, *fff*, *mf*, *pp*, *mp*

37 trb

Interval markings: II, VII, I, VI, VII, III, 10, 11, 6, 7, 4, 5, 6, 3, 2, 3, 4, 1, 3, 5, 7, 9, 10, 11, 9, 10, 8/9, 4:5, 5:4, 4:3, tr

Dynamics: *ff*, *fff*, *pp*, *ff*, *f*, *mf*

38 trb (plu)

Interval markings: VII, I, I, F1, I, F1, 10, 11, 7/8, 10/11, 8/9, 11/12, 6:7, 30"

Dynamics: *mp*, *f*, *ff*, *p*, *mf*

30" improvise together with electronic sounds while moving between positions 3 and 4, as in bar 7. At some point put down the plunger mute.

cue 6

II. veil

♩=90

1

v
trb

ta e i a ea i a

(vibr)
(gradual transition between tongue positions)
(hold tongue position)
F tr 7/8

cue 7 FIII 8 III 6 V½ 6 V 7

ppp sempre

2

v
trb

ti a i a i a e a i e a te i* a/e i e i

(ppp)

* rapid trill-like alternation between two tongue positions

FIII 8 FV FIII III 6 V½ 7 6 7

3

v
trb

te i e ti a i a ti te a ta e te

(ppp)

FV FV VI FV FV 9 10 11 10 9

4

v
trb

ti a i/e a/e ki e e i e e i e

pp dim...

FV FIII

5

v
trb

ta i e a ika ea i a ta e a ika i e i e

(dim...) (vibr!)

F 9/10

6

v
te/i ki a te a ka ta ki e ti a ki ti ka

trb

(dim...) IV FIII $\frac{1}{2}$ FIV $\frac{1}{2}$ V $\frac{1}{2}$ FV FV V $\frac{1}{2}$...ppp

7

v
te a e i e ke i e a ka i e a te a e a i ki e i e i e i a

trb

p dim... V III $\frac{1}{2}$ FIII FIII III $\frac{1}{2}$ VI $\frac{1}{2}$ FV $\frac{1}{2}$ VI $\frac{1}{2}$ I $\frac{1}{2}$ FI $\frac{1}{2}$ FV FIII $\frac{1}{2}$ FVV

8

v
te/i ke/i ke ta i ki ka e ti a ke i ki a ta i ki ka ta ke

trb

(dim...) V VI V $\frac{1}{2}$ FIV $\frac{1}{2}$ FI $\frac{1}{2}$ I $\frac{1}{2}$ III FI FIV FV I $\frac{1}{2}$ VI V $\frac{1}{2}$...ppp

9

v
i e ki e a/e ki e ki e e ka ke a ke

trb

pp sempre FIV V $\frac{1}{2}$ (FV) V FV

10

v
ki ka i ka e ka i ka i ka ki a ke ka ki ke ka

trb

(pp) I FI FIII $\frac{1}{2}$ I $\frac{1}{2}$ V $\frac{1}{2}$ FV

11

v

trb

6:5

6:7

10:8

11:12

ka i ke ka eke a ki eke aki ka

FII FIV FI FV III 1/2 FIII IV FIV 1/2 VI

ppp cresc...

12

v

trb

7:6

4:5

9:8

6:4

8:10

ki a ka e ke i ka ke ke ke ka ki ke ka e a ka i ke a

V 1/2 FIV FII III VI I 1/2 FIV 1/2 III 1/2 FI 1/2 FII 7 V FVI FV

p *pp* sempre

13

v

trb

13:9

4:3

5:4

10:7

7:5

ka e a ka i a ka e i ke ka ki ki ke ka

VII 1/2 VII V FIV 1/2 V 1/2 FV FIV FII 1/2 III IV IV 1/2 7

pp

14

v

trb

11:9

10:12

6:4

5:6

3:2

ka e ke ki ka ke kike

VI VII 1/2 V 1/2 IV 1/2 FIV FVI FI 1/2 FI II 1/2 FII III V VI V 1/2

p dim... *ppp*

15

v

trb

12:8

11:12

5:6

ke i i ke

VII VI 1/2 V 1/2 I 1/2 FIV FIII 1/2 FV IV V III II 1/2 I FI FII III

13 9 1 5 9 2 5 3 10 7 1 2 5 6

p *pp* *p*

8

1'32" ↔ 1'44"

31
32

21

5:4 9:11 10:7

ta ta ta ti a

f ff mf fff mf

22

36
32

6:5 11:12 7:6 3:2

ta ke ti ke ke ka ta ti ke ka ta ke ki ti ke

ff mp f fff mf p

23

41
32

9:6

ta i

fff ppp f ff mp < fff > mp < fff > mp < f

2'02" ↔ 2'14"

24

45
32

6:5 9:7 13:12 9:7 9:11

i e a

p ff mp ff mf ff f ff ff

25

51
32

7:8 12:11 9:6 4:3 4:5 16:11

ta te te ti te a ta i

mf ff mf fff f

2'30" ↔ 2'42" 2'44" ↔ 2'56"

3
8

26

11:12

fff

6
8

27

ta e a e a e a e

5:6 12:8

VII FVI (etc.)

mf

3'00" ↔ 3'12"

10
8

9:10 8:6

ta ----- i

4:5

mf *f* *mp* *f*

30

8
8

5:6 7:6 5:4

ti ----- a

9:7

ff *p* *ff* *fff* *pp* *fff*

(ends at 3'30")

begin part III as soon as electronic sounds end

III. mask

$\text{♩} = 75$

legatissimo, as fluid as possible

5 8 11 16 9 16

(F valve)
tr (slide vibr. between III and III½)

(holding pitch as close as possible to Eb)

p

3 9 16 11 16

(F valve)
tr

ppp *p*

4 11 16 7 16

(F valve)
tr

p

5 7 16 1 16 11 16

(F valve)
tr

p *mp* *f*

7 11 16 5 8

mf *pp*

8

5/8

3:2 5:6 4:3 4:3 4:3

trb

ppp *mp*

9

9/16 11/16 8/9

4:5 3:2 5:4 8:9

trb

mp *p* *p* *mp*

11

4:3 5:4 3:2 3:2

trb

p *mp*

12

5/8 4:3 6:7 6:4 4/8

trb

mf *p* *mp*

13

4/8 9:8 6/8 3:2 4:5 3:2 3:2 4:3 3:2 11/16

trb

mp *ppp*

15

11 16

3:2 3:2 5:4 8:7 7:6 5 8

trb

ppp *p*

16

5 8

10:7 5:4 7 16

trb

p *mf* *mp*

17

7 16

6:7 4:3 3 16 3:2 3:2 3:2 9 16

trb

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

19

9 16

3:2 4:3 5:4 6:5 11:9

trb

ff *mf*

20

7 16

7:8 5:6 4:3 10:7 11 16

trb

mf *pp* *ff* *mp*

22

11 16

8:6 4:5 4:3 5 8

trb

mp *mf* *p*

23 $\frac{5}{8}$ $\frac{4}{8}$ $\frac{6:4}{5:4}$ 11 16

trb $\frac{5}{6}$ p f mp $mf > p$

25 $\frac{11}{16}$ $\frac{6:5}{6:5}$ $\frac{5:6}{3:2}$ 5 8

trb $\frac{5}{5}$ mp p mf f

26 $\frac{5}{8}$ $\frac{5:4}{9:8}$ $\frac{5:4}$ 9 16

trb $\frac{4}{4}$ p f mp mf

27 $\frac{9}{16}$ $\frac{5}{8}$ $\frac{8:6}{4:3}$ $\frac{5:6}$ 9 16

trb $\frac{4:3}{7:9}$ $\frac{4:3}$ mf ppp

29 $\frac{9}{16}$ $\frac{8:9}{9:7}$ $\frac{5}{16}$ $\frac{7:5}$ 4 8

trb $\frac{5}{5}$ mp pp pp f

31 $\frac{4}{8}$ $\frac{7:6}{6:5}$ $\frac{5}{8}$ $\frac{3:2}{3:2}$ $\frac{3:2}{5:6}$

trb $\frac{9}{b}$ mp mf f p mf

14
33

9
16

trb

mf *pp*

35

7
16

5
8

trb

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

37

5
8

9
16

4
8

trb

ff *ppp* *ff* *mp* *mf* *p*

39

4
8

5
8

9
16

trb

f *fff* *ff* *pp*

41

9
16

7
9

trb

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

43

5
6

8
6

6
5

3
2

3
2

5
6

4
5

6
5

trb

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

45

trb

mp *ff*

8 → 11 → 8 → 11 → 8 → 11 → 8 → 11 → 8 → 11 → 8 → 11 → 8

(pitch-fluctuations increase then decrease...)

47

trb

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

49

trb

ppp *mf* *ppp* *fff* *p* *mf* *fff* *ppp*

pick up straight mute

place mute in bell rapidly! (sord.)

cue 9

52

(str)

trb (str)

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

(F valve)

54

(str)

trb (str)

p *fff*

55

trb (str)

f *mp* *ff*

16
56

trb (str)

f mf fff p mp ppp pp

58

trb (str)

ppp p pp ff pp ff mf

(F valve)
tr (slide vibr. V-IV $\frac{1}{2}$)
tr sim.

(holding pitch as close as possible to F#)

60

trb (str)

p mp pp p mf

62

trb (str)

mp ppp fff f p

63

trb (str)

ff mp pp f

64

trb (str)

mp p

66 17

$\frac{3}{8}$ $\frac{5:6}$ $\frac{4:3}$ $\frac{3:2}$ $\frac{3:2}$ $\frac{5:4}$ $\frac{3:2}$ $\frac{6:7}$ 9

(str)

trb (str)

f *fff* *pp* *f* 16

68 11

$\frac{9}{16}$ $\frac{7:9}$ $\frac{6:7}$ $\frac{7}{16}$ $\frac{4:5}$ $\frac{9:8}$ 16

trb (str)

p *ff* *ff* *fff* *p* *f* *ppp*

70 8

$\frac{11}{16}$ $\frac{4:3}$ $\frac{9:8}$ 8

trb (str)

mf *pp*

71 5

$\frac{8}{8}$ $\frac{6:7}$ $\frac{4:5}$ $\frac{5:6}$ 16

trb (str)

ff *ppp* *ppp* *pp*

72 5

$\frac{5}{16}$ $\frac{7:6}$ $\frac{3:2}$ $\frac{3:2}$ $\frac{4:3}$ $\frac{5:4}$ 8

trb (str)

p *ppp* *ff* *pp* *f* *mp* *mf*

75 10

$\frac{5}{8}$ $\frac{7:8}$ $\frac{3:2}$ $\frac{2}{8}$ $\frac{6:4}$ $\frac{11:10}$ 8

trb (str)

p *ff* *mp* *fff*

(F valve)

77

10 8

8:7 4:5 5:4

13 16

trb (str)

mf *f* *pp*

78

13 16

11:9 9:7 6:5 3:2

4 8

trb (str)

ff *ppp*

79

4 8

5:6 5:6 3:2 3:2

3 8

trb (str)

fff *ppp* *pp* *f*

81

9 16

3:2 8:9 6:5 2 8

14 8

trb (str)

p *mp* *ppp* *mf* *pp*

83

14 8

7:9 4:5 7:5 6:4 8:7 5:6 4:5 3:2

7 8

trb (str)

fff *pp*

84

7 8

6:7 5:6 5:4 3:2 3:2

1 8

trb (str)

p *mf* *ppp* *mp* *pp*

85

1 3 10 19

8 8 8 8

trb (str)

ppp *pp* *ff* *fff* *f* *p* *fff* *mf* *ff* *mp* *f* *pp* *ppp*

10 7

8 8

trb (str)

ff *ppp* *fff*

92

7 16

trb (str)

ppp

93

1 25 20

16 16 8

trb (str)

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

95

20

8

trb (str)

fff

trb (str)

(fff) *ppp* *fff*

senza sord!

IV. song

4'00"

11
16
take harmon mute

trb

cue 10 (electronic "solo") - if possible darken the stage

11 16

mp *ff* *pp* *p*

cue 11

* Three fingers are placed over the aperture of the harmon mute's stalk so that raising them one by one emphasises a series of "harmonics". The four lines of the upper staff, in ascending order, indicate first all three fingers down, then one raised, then two and finally all three.

13 16

mp *mf* *p* *f*

III-VII
9-13
mp *mf*

9 16

f *ff* *pp* *mf*

25 16

II $\frac{1}{2}$ 10 IV $\frac{1}{2}$ 11
IV $\frac{1}{2}$ 10
VI $\frac{1}{2}$ 12 II 8
II 8 VII 11
VII 11 14
II 10 II 9
mp *mf* *p* *f* *mp* *ff* *pp* *mf*

10 (hmn) 3/16 15/16 4:5 6:5 3:2 7:6 8:6 5/16 7/16

trb

mf *p* *f mp* *ff*

13 (hmn) 7/16 3:2 4/8 5:4 3/16 4:3 2/8 3/16 3:2 9/16

trb

mp *mf* *mp* *mp* *p*

VII 1
12 8
ff

II III IV
9 10 11
pp *mp*

18 (hmn) 9/16 7/8 7:8 7:6 7/16 2/8

trb

p *f mp* *ff* *pp* *f*

III 3 4
II VII
4 3

21 (hmn) 2/8 3:2 4/8 6/8 6:5 9:8 5:6 5:4 5/16 17/16

trb

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

VI 12
11

25 (hmn) 17/16 3:2 6:7 6:5 19/16

trb

f *ff* *pp* *mf*

1 1/2
9 VI
10

26 (hmn) 19 16

7:8 7:6 6:4 3 15

trb 16 16

$I\frac{1}{2}$ $VI\frac{1}{2}$ $V\frac{1}{2}$ $VI\frac{1}{2}$ $V\frac{1}{2}$ I

10 13 11 12 9

p *f mp* *ff* *pp* *mp*

28 (hmn) 15 16

5:6 4:5 7:6 7 8

trb 16 8

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

30 (hmn) 8 8

11:8 3:2 6:5 5 7

trb 16 8

f *ff* $IV\frac{1}{2}$ $VI\frac{1}{2}$ III

10 10 9 8 7 8 9 10

pp *mf* *p* *mp*

32 (hmn) 7 8

3:2 4:3 3:2 5:6 3 3

trb 16 8

IV VI III b III VII $III\frac{1}{2}$ III

3 4 3 3 4 5 9 11

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

35 (hmn) 3 5 9

3:2 3:2 6:7 16

trb 16

remove harmon mute
take plunger

VII VI V IV VII VI V IV VII I

5 4 3 2 5 6 7 4 3 6

mp *mf* *p* *f*

V. mind

Measure 4: $\text{♩} = 54$. **4/8**. **1/8** (7:8). **7/16**. **2/8** (4:3, 6:5). **3/8**. Dynamics: *fff*, *mf*, *pp*. Chord symbols: VII, IV, VI, V, IV, III, I, VII.

Measure 6: **6/16** (5:4). **5/16**. **4/8** (4:3, 3:2). **5/16** (3:2). Dynamics: *mf*, *ff*, *mf*. Includes "etc. sim." and $1\frac{1}{2}$.

Measure 9: **5/16** (4:3). **5/8** (4:3). **2/8** (7:6). **6/8** (6:5). Dynamics: *mf*, *f*, *mp*, *p*, *fff*, *mf*, *ff*, *pp*, *fff*, *mf*, *fff*.

Measure 12: **6/8**. **3/16**. **7/8**. Dynamics: *f*, *mp*.

Measure 14: **7/8** (FIII $\frac{1}{2}$, 9:8). **1/8** (5:6). **8/8**. Dynamics: *mf*, *fff*, *mf*, *fff*, *mf*, *ff*.

Measure 16: **8/8** (8:6, 4:3). **4/5** (4:5, 6:4). **8/7** (8:7). **3/8** (8:6). Dynamics: *f*.

Measure 17: $\text{♩} = 63$. **3/8** (put down plunger). **6/8** (3:2). **5/8**. **6/8** (6:7, 6:5). **7/8** (3:2). Dynamics: *ppp*, *fff*, *ppp*, *ff*, *ppp*. Includes "cue 13".

24

21

7 6 9 6 11

8 8 8 8 8

trb

ppp *f ppp* *ff ppp* *fff* *p* *mf* *p* *mp* *mf* *mp* *p* *mf* *mp*

25

11 6 13

8 8 8

trb

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

27

13 6 13

8 8 8

trb

ppp *f* *ppp* *mp* *ppp*

this and each of the similar rests that follow may be varied somewhat around an average duration of 5 seconds

$\text{♪} = 75$

≈ 5"

take straight mute

29

8 8

trb

mp *p* *p* *f* *f* *p*

(slide vibrato 1 semitone wide)

cue 14

(pulsation continues throughout, with all layers synchronised when the trombone doesn't play, desynchronised when it does)

electr

30

14 14

8 8

trb (str)

ff *mp* *mf* *pp* *p* *f* *mp* *fff*

etc. sim...

31

14 14

8 8

trb (str)

mp *mf* *pp* *f* *mf* *ff* *f* *mf* *fff* *ppp*

trb
(str)

≈5"
♩

32

trb (str)

ff mp ff f pfff mf mp p

trb
(str)

≈5"
♩

33

trb (str)

p f mp ff mf p ff fff mf mp ff

trb
(str)

≈5"
♩

34

trb (str)

f ff mp p fff

trb
(str)

≈5"
♩

35

trb (str)

mf mp ff p

36

≈5"
♩

26

37

4/8

trb (str)

mf

f

fff

p

7:6

3:2

1/2

2

3

2

remove straight mute
take practice mute

cue 15

≈5"

≈20"

13

8

38

13

8

(pra)

trb

p

ppp

Notes on the lower line indicate that the aperture of the practice mute is closed by a finger; notes on the upper line indicate that the aperture is open

4:5

7:8

tr*

tr

III 8

IV 7

V 6

VI 7

VII 8

VII 9

III 8

VII 9

IV 7

I 6

I 7

5

IV 6

when trombone enters, start to fade out the electronic sounds

* in the first ("normal") trill, the aperture is rapidly opened and closed by placing the finger over it, as before; in the second ("double") trill, the finger is placed against the mute and slid rapidly back and forth over the aperture, effectively producing a trill at twice the rate.

11

8

39

11

8

(pra)

trb

electr

p

ppp

(keep level at zero)

3:2

9:10

(non tr.)

5:4

6:5

tr

V 7

VII 8

III 7

II 6

I 5

III 6

V 7

VI 8

9

V 7

VI 8

11

8

40

9

8

(pra)

trb

p

ppp

13:10

tr

IV 7

IV 8

7

V 8

VI 7

VII 9

III 6

7

I 6

11

8

41

7

8

(pra)

trb

electr

p

ppp

p

ppp

cue 16

4:3

9:6

tr

tr

III 7

III 6

IV 7

9

VI 8

VII 9

VI 8

VI 9

VII 8

9

V 8

10

remove mouthpiece

≈16"

7

8

The following passage is to be played with lip-buzzing on the instrument without mouthpiece. Therefore no pitches are specified, only dynamics, articulation and manipulation of the practice mute. The position of the slide is only relevant when tongue-ram articulations are being used as indicated. Otherwise, pitches/glissandi/noise-textures may be freely improvised, while keeping the notated indications clearly perceptible.

44 13

7 8

(pra) (gradually close...)

trb repeated tongue-rams varied in pitch/timbre by moving the slide

11:10

ppp f

electr

45 9

13 8

(pra) 5:4

trb tr

4:5

ppp p

electr

46 15

9 8

(pra) tr

trb tr

12:8

ppp p

47 5

15 8

(pra) tr

trb tr

3:2

13:10

9:10

ppp p

48 8

5 11

8 8

(pra) tr

trb tr

14:10

5:6

3:2

remove mute and replace mouthpiece

ppp p

ppp p

≈6"

cue 17

♩=108

51

trb

8 8

3:2 3:2 3:2 3:2 3:2 3:2

3:2 3:2 3:2 3:2 3:2 3:2

fff *ff*

electr

3:2 3:2 3:2 3:2 3:2 3:2

3:2 3:2 3:2 3:2 3:2 3:2

fff *ff*

cue 18 (for clarity, only the rhythms of the electronic part are shown)

53

trb

3:2 3:2 3:2 3:2 3:2 3:2

3:2 3:2 3:2 3:2 3:2 3:2

f *mf*

electr

3:2 3:2 3:2 3:2 3:2 3:2

3:2 3:2 3:2 3:2 3:2 3:2

f *mf*

55

trb

3:2 3:2 3:2 3:2 3:2 3:2

3:2 3:2 3:2 3:2 3:2 3:2

fff *ff*

electr

3:2 3:2 3:2 3:2 3:2 3:2

3:2 3:2 3:2 3:2 3:2 3:2

fff *ff* *f*

cue 19

cue 20

cue 21

57

trb

3:2 3:2 3:2 3:2 3:2 3:2

3:2 3:2 3:2 3:2 3:2 3:2

f *mf* *mp*

electr

3:2 3:2 3:2 3:2 3:2 3:2

3:2 3:2 3:2 3:2 3:2 3:2

f *mf*

FIV FII

cue 22

59

trb

3:2 3:2 3:2 3:2 3:2 3:2

3:2 3:2 3:2 3:2 3:2 3:2

(mp) *fff*

5 8 15 8

electr

3:2 3:2 3:2 3:2 3:2 3:2

3:2 3:2 3:2 3:2 3:2 3:2

mp *fff*

cue 23

cue 24

61

trb

15 8

16:13

9:8

ff

f

electr

3:2

27:32

11:12

fff

ff

f

cue 25

cue 26

62

trb

21 16

17:18

V VII FVI

mf

electr

28:26

mf

cue 27

63

trb

9:11

3:2

7 8

mp

p

electr

45:36

mp

cue 28

64

trb

7 8

3:2

3:2

3:2

take plunger

p

electr

12:8

12:8

p

cue 29

improvise together with electronic sounds while moving between positions 4 and 1. Stop along the way if necessary. Don't necessarily retrace your steps from part I. Use the plunger, and perhaps also point the bell in different directions to explore the acoustics of the performing space.

8.5" continue and fade to silence along with the electronic sounds

55.5" *tacet al fine*

65

trb

56"

8.5"

55.5"

pp

fff

(fade manually)

pp

(fade manually)

... allow to play to end

cue 30

cue 31