

Pan, Sinking: for steelpan and nine instruments

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Music

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Abstract

Pan, Sinking: for steelpan and nine instruments

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The steelpan, native to Trinidad and Tobago and appearing in the early-mid 19th century, is an instrument produced through an especially slow, laborious process. In the first stage, called “sinking,” the flat surface of one end of an oil drum is crudely hammered in to create the concave bowl shape of the instrument. Next, the areas that will correspond to individual notes are marked on the surface of the bowl, and smaller hammers are then used to raise each of these circular patches of metal away from the surface, creating distinct, individual tones. As each note is fine-tuned, the first, second, and third harmonics must be tuned separately, and in such a way that tuning the second and third harmonics does not detune the fundamental; if the tuner’s careful hammering properly tunes the higher harmonics but shifts the fundamental from its correct frequency, the note must be hammered down again and the process must start over.

The resonance, modes of attack, and unique timbre of the steelpan provide much of the musical material of *Pan, Sinking*. In addition, the process of the instrument’s construction—specifically the ideas of carefully applying a single process (“hammering”), and of bringing sonic material into alignment (“tuning”)—is treated as a metaphor that guides the work’s structural organization. In *Pan, Sinking*, the incorporation of this metaphor produces a linear, directional form that takes the acoustic resonance of the tenor pan’s F6 (the highest and least-characteristic note on the instrument) as its initial material, and then submits this musical object to one continuous process of distortion and dilation, arriving at a point where the distinct roles of the steelpan, piano, and ensemble are slowly brought towards rhythmic, gestural, and harmonic alignment.

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INSTRUMENTATION

Flute

Alto Saxophone

Horn (with straight mute)

Trombone (with practice mute, straight mute)

Steelpan (one player):

This piece requires one tenor pan (with a range extending to F6), two guitar pans, and one member of the six bass set (the member containing F2-C3). In addition to the normal steelpan beaters, the part involves the use of a medium-sized glass marble, and a pitcher with 30 ounces of water (to be poured into the guitar pans in the central section of the piece).

Piano (with preparation)

Violin I

Violin II

Viola

Violoncello

Duration: ca. 10 minutes

1
Pan, Sinking

Jeffrey Bowen
(2015)

♩ = 42

Flute ■ (embouchure closed) *ppp*

Alto Saxophone teeth on reed air *ppp*

Horn in F

Trombone

Steel Drums w/ wooden beater *f poss.*

Piano

Violin 1 *ppp* (∞) *sim.* IV

Violin 2 *ppp* (∞) *sim.* II

Viola *ppp* (∞) *sim.* II

Violoncello

2

7 ■ flz. → ord.

Fl. *pp* *ppp*

Hn.

Tbn.

S.D. *f poss.* *mp* *f poss.*

Pno. *f* *mf* (l.v.) (l.v.)

Cl. *sempre*

Vln. 1 *ppp* *ppp*

Vln. 2 *ppp*

Vla. *ppp* *sim.* *ppp*

Vc.

13

Fl. *ppp* *ppp* 3

Alto Sax. *ppp*

Hn.

Tbn. w/ practice mute

S.D. *f poss.* *mp* *f poss.* *f poss.*

Pno. *f*

Vln. 1 *ppp* *pp* I

Vln. 2 *p* III

Vla. *ppp* II

Vc. *pp* *p poss.* II I

Detailed description: This page of a musical score, numbered 3, contains staves for Flute (Fl.), Alto Saxophone (Alto Sax.), Horn (Hn.), Trombone (Tbn.), Saxophone (S.D.), Piano (Pno.), Violin 1 (Vln. 1), Violin 2 (Vln. 2), Viola (Vla.), and Violoncello (Vc.). The score is in 2/4 time and features various dynamics and performance instructions. The Flute part starts at measure 13 and includes *ppp* markings and a triplet of eighth notes. The Alto Saxophone part has a *ppp* marking. The Trombone part is marked 'w/ practice mute'. The Saxophone (S.D.) part includes *f poss.* and *mp* markings, along with circular diagrams and arrows indicating techniques. The Piano part has a *f* marking. The Violin 1 part includes *ppp* and *pp* markings, and fingering numbers 7 and I. The Violin 2 part has a *p* marking and fingering III. The Viola part has a *ppp* marking and fingering II. The Violoncello part has *pp* and *p poss.* markings, and fingering II and I. The score is written in treble clef for Flute, Alto Saxophone, Horn, Violin 1, Violin 2, and Viola, and bass clef for Trombone and Violoncello. The Piano part is in grand staff notation.

A

4

Fl. *sempre legato*
ppp

Alto Sax. *sempre legato*
ppp poss.

Hn. *w/ straight mute*
flz.
p

Tbn. *flz.*
air → *tone*
pp poss.

S.D. *marble (inside rim)*

Pno. *ff*, *ff*, *f* *5 mp*

A

Vln. 1 *ppp*, *sim.*, *ppp*

Vln. 2 *ppp*, *sim.*, *ppp*

Vla. *III IV*, *ppp*, *sim.*, *ppp*

Vc. *II*, *ppp*, *sim.*, *ppp*

C

6

6 28 (legato sempre)

Fl. *pp*

Alto Sax. (legato sempre) *pp* *ppp* *pp*


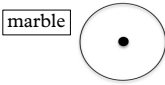
Hn. flz. *pp*

Tbn. flz. air → tone *pp poss.*

S.D. *mf*

Pno. *ff* *mf* *ff* *p* *sim.*

Ed.

C

Vln. 1 *pp*

Vln. 2 *pp*

Vla. *pp*

Vc. *pp*

31

Fl.

Alto Sax.

Hn.

Tbn.

S.D.

Pno.

Vln. 1

Vln. 2

Vla.

Vc.

7

ppp 5

ppp 5

f

f pp sim. 3 *ff p sim.* 6 *f pp sim. (mf)* 5

p 5 *ord.* *mp* *ppp* 5 *m.s.t.*

p 5 *ord.* *mp* *ppp* 5 *m.s.t.*

p 5 *ord.* *mp* *ppp* 5 *m.s.t.*

p 5 *ord.* *mp* *ppp* 5 *m.s.t.*

w/ 2 wooden beaters (wooden end)

D

8

35

Fl. *ppp* 5 5

Alto Sax. *ppp* 5 5

Hn.

Tbn.

S.D. *f* *mf* *mf* 5

Pno. *ff p sim.* *mf pp sim.* *f pp sim.* *f p sim.* *mf* 5 6 6

Lead.

D

Vln. 1 *pp* 5 5 *mp* *p* ord.

Vln. 2 *pp* 5 5 *mp* *p* ord.

Vla. *pp* 5 5 *mp* *p* ord. I II

Vc. *pp* 5 5

E

40

Fl. *pp*

Alto Sax. *pp*

Hn. flz. *p*

Tbn. flz. *p*

S.D. *f*

Pno. *ff*

PPP *p*

E

Vln. 1 m.s.t. *p*

Vln. 2 m.s.t. *p*

Vla. m.s.t. *p*

Vc. m.s.t. II *p*

mp

10

43

Fl. *pp* *p* 6 3 3 7 7 *pp* *p* 5 6 3

Alto Sax. *mp* *p* 3 3 5 6 3 3 5 3 3 5

Hn. *[Empty staff]*

Tbn. *[Empty staff]*

S.D. *[Empty staff]*

Pno. *mf* 5 3 3 5


Vln. 1 *p* 6 6 *mp* *p* 3 3 7 3 5 6 3

Vln. 2 *p* *mp* *p* 3 3 5 3 7 5 3 3 6 3

Vla. *p* *mp* *mp* *p* 6 3 7 3 5 6 3

Vc. *p* *mp* *p* 3 6 3 5 3 7 3 5 3 5

w/ 2 wooden beaters (wooden end)



F

47

Fl. *mp* *mf* *p* *mf*

Alto Sax. *mp* *p* *mf* bisb.

Hn. *pp* *p* flz.

Tbn. *mf* flz.

S.D. *mf* *p* *mp* *mf*

Pno. *fff* *p* *ff sim.* *f* *f* *p* *mf*

Vln. 1 *mp* *mf* *p* *f* *p* *f* *f* *f*

Vln. 2 *mp* *mf* *p* *f* *p* *f* *f* *f*

Vla. *mp* *mf* *p* *f* *p* *f* *f* *f*

Vc. *mp* *p* *f*

(tenor) (rubber end) guitar

ord. a.s.p. s.t.

12

51

Fl. *ppp* 6 6 *p* 5

Alto Sax. *ppp* 6 6 *p* 5

Hn.

Tbn.

S.D. *mf* 6 *f* *f* wood of stick *f sub.p* (rim) 6 *f* *f* *p* 6

Pno. *mf* 6 6 *f sub.p* 3 *f* 6 *f sub.p* 5 5 5 3

Vln. 1 *p* 6 6 5 *f* s.t. a.s.p.

Vln. 2 *p* 6 6 5 *f* s.t. a.s.p.

Vla. *p* 6 6 5 *f* s.t. a.s.p.

Vc. *p* 6 6 5 *f* s.t. a.s.p.

G

55

Fl. *mf* *flz.* *pp* 3

Alto Sax. *mf* *flz.*

Hn. *mf* *flz.*

Tbn. *p*

S.D. *mf* 5 5 5 5 5 5 *mf* 5 5 5 5 5 5 *mf* 5 5 5 5 5 5

Pno. *f* 3 *f* *mf p* 7 *fp* 6 *mf* 6

Vln. 1 *f* *jeté* *f* *ppp* *s.t.* *mf* 3 *s.p.*

Vln. 2 *f* *jeté* *f* *ppp* *s.t.* *mf* 3 *s.p.*

Vla. *f* *jeté* *f* *ppp* *s.t.* *mf* 3 *s.p.*

Vc. *f* *jeté* *f* *ppp* *s.t.* *mf* 3 *s.p.*

14

59

Fl. *p* *fp* *fp* *f*

Alto Sax. *p* *fp* *fp* *fp*

Hn. *pp* *p* *fp* *poco fp* remove mute *fp*

Tbn. *mf* *mf* *f* *fp*

S.D. *mf* *f* *f*

Pno. *f* *pp* *sim.* *ff sim. 6*

Vln. 1 *ppp* *mf* *ff* *f* *ff*

Vln. 2 *ppp* *mf* *ff* *f* *ff*

Vla. *ppp* *mf* *ff* *f* *ff*

Vc. *ppp* *mf* *ff* *f* *ff*

H In this section, the steelpan player is given rhythmic materials (enclosed in boxes) that may be freely arranged, recombined, and looped within their respective subsections (sections 1-3). In addition, the player is given a number of:
 Long Pauses □
 Medium Pauses ○
 Short Pauses ^
 With exact durations for the pauses to be determined by the player, though they must be clearly differentiated in length. These are to be inserted within their respective subsections.

Section 2 should move continuously into Section 3, with the regular 32nd-note pulse of Section 2 falling away into silence, and with the accented attacks in Section 2 continuing into Section 3 as the given rhythmic values.

♩ = 40-54

1
 Ca. 20 sec.
 □ ^

2
 Ca. 25 sec.
 ○ ^

3
 Ca. 30 sec.
 ^

Perc. (solo) ||

Bass (rim/barrel)

Guitar

Guitar

with body held against pan...and pan becoming increasingly muted

water poured into guitar pan

F#

2/4

f ————— *p* ————— *ff*

(return to tenor pan)

16

68

Fl. *pp* *f > f sim.* *flz.* *p* *mp* *pp* *f* *flz.*

Alto Sax. *ppp* *air* *p* *mp* *pp* *pp*

Hn. *w/ straight mute* *flz.* *f > f sim.* *flz.* *remove mute* *f*

Tbn. *w/ straight mute* *flz.* *f > f sim.* *flz.* *f*

S.P. *marble* *f poss.* *mf*

Pno. *ff sub. p* *f sim.*

Vln. 1 *pp* *f* *pp* *mp*

Vln. 2 *a.s.p.* *f* *pp* *mp*

Vla. *a.s.p.* *f* *pp*

Vc. *a.s.p.* *f* *pp* *s.p.* *p* *f* *a.s.p.*

72

Fl. *f* *sim.* *p* *mp* *pp* *mf* *f* *ppp*

Alto Sax *mf* *sim.* *p* *mp* *pp* *mf* *ppp*

Hn. *poco fp* *pp (poss.)* *p* *ppp* *ppp* *p* *poco fp*

Tbn. *mf* *sim.* *fp*

S.P. \emptyset

Pno. *mf (sim.)* *mf (sim.)* *f*

Vln. 1 *f* *sim.* *mp* *ppp* *mf* *sf*

Vln. 2 *f* *sim.* *mp* *ppp* *mf* *sf*

Vla. *f* *sim.* *mp* *ppp* *mf* *sf*

Vc. *f* *sim.* *pp* *mp* *ppp* *mf* *sf*

flz. ■ flz. ■ flz. ■ flz. ■ flz. ■

w/ straight mute

lontano

arco s.t.

s.p.

a.s.p.

18

77

Fl.

A.Sax

Hn.

Tbn.

Steel D.

Pno.

Vln. 1

Vln. 2

Vla.

Vc.

77

78

79

80

p

f

ff (*sub. mp*)

mf *p* *mf*

mf *p* *mf*

mf

mf

s.t.

s.p.

s.t.

s.p.

s.t.

s.p.

s.t.

s.p.

80

Fl.

Alto Sax

Hn.

Tbn.

Steel D.

Pno.

Vln. 1

Vln. 2

Vla.

Vc.

80

81

82

83

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

mp *p*

pp *mf* *pp* *mp*

mp

f

ff (*sub. p*)

p *f* *p* *pp*

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

mf *p* *f* *p*

f *p* *mf*

s.t. → s.p.

s.t. → s.p.

s.t. → s.p.

s.t. → s.p.

7

7

7

5

5

5

7

l.v.

87 (air) *p* *p* *flz.* *pp* *mp* *mf* *bisb.* *mf*

Alto Sax *flz.* *pp* *mp* *mf* *bisb.* *mf*

Hn. *flz.* *pp (poss.)* *p* *lontano*

Tbn. *flz.* *pp* *p*

Pno. *mf (sim.)* *mf (sim.)* *f (sim.)*

Vln. 1 *s.t.* *a.s.p.* *f* *pp* *mp* *f* *p*

Vln. 2 *s.t.* *a.s.p.* *f* *pp* *mp* *f* *p*

Vla. *s.t.* *a.s.p.* *f* *pp* *mp* *f* *p*

Vc. *a.s.p.* *f* *mp* *f* *p*

22

92

Fl. *pp* *f* *pp* *mf* bisb. B.T.

Alto Sax *pp* *f* *p* *mf* *p* flz. bisb.

Hn. *pp* *sfp* *pp* *mf* flz.

Tbn. *pp* *f* *p* flz.

Steel D. *mf* *p* *mf*

Pno. *ff (sim.)*

Vln. 1 *pp* *mf* *p* *f* *pp* *p* s.t. s.p.

Vln. 2 *pp* *mf* *f* *p* s.t. s.p.

Vla. *mf* *p* *f* s.t. s.p.

Vc. *pp* *mf* *p* *f* *pp* *p* s.t. III ord.

Fl. *sempre legato* *mf* *poco* *mf* *p* *mp*

Alto Sax *sempre legato* *mf*

Hn. *p* *sf* *p* *pp* *mf* *pp poss.* *mp*

Tbn. *p* *mf* *p* *mp*

Steel D. *f*

Pno. *ff p ff p ff* *sost.*

Vln. 1 *ord.* *pp* *mf* *pp*

Vln. 2 *ord.* *pp* *mf* *pp*

Vla. *ord.* *pp* *mf* *pp*

Vc. *sempre legato* *pp* *mf*

99

Fl.

Alto Sax

Hn.

Tbn.

Steel D.

on frame

mf

mp

sost.

Vln. 1

Vln. 2

Vla.

a.s.p.

ppp

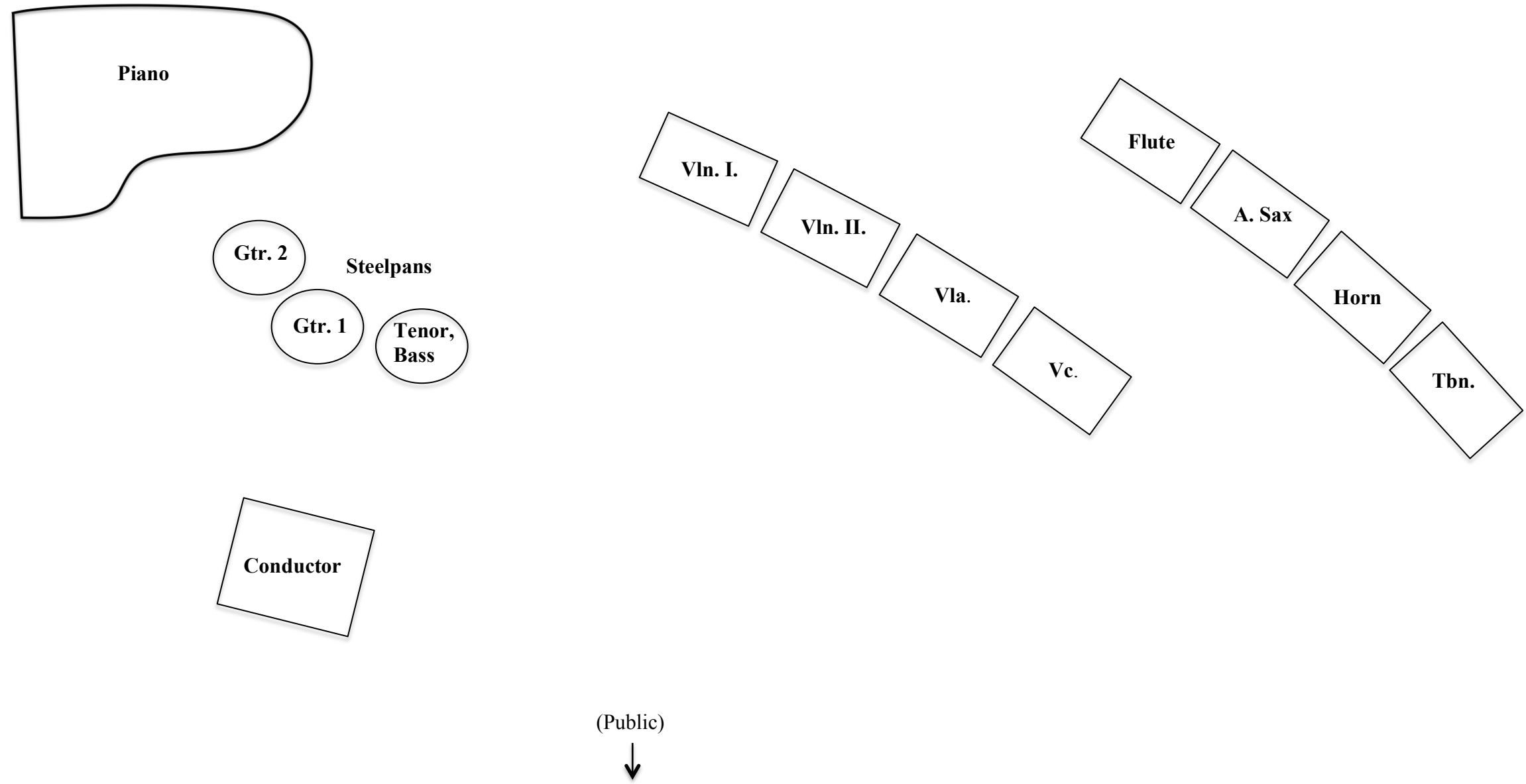
Vc.

pp

Detailed description of the musical score: The score is for page 24, starting at measure 99. It features eight staves. The woodwinds (Flute, Alto Saxophone, Horn, Trombone) are mostly silent, indicated by rests. The Steel Drum part (measures 99-104) has a melodic line with a dynamic of *mf* and includes a graphic of a steel drum. The Percussion part (measures 99-104) has a rhythmic pattern with a dynamic of *mp* and includes a graphic of a mallet hitting a frame. The strings (Violin 1, Violin 2, Viola, Violoncello) have melodic lines with various dynamics: *pp* for the cello, *ppp* for the violins, and *a.s.p.* (accelerando) for the viola. The score includes various musical notations such as slurs, ties, and articulation marks.









APPENDIX A

Arrangement of the Ensemble:



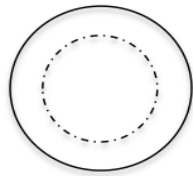
APPENDIX B

Notation Legend:

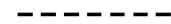
Strings	
m.s.t.	- <i>molto sul tasto</i> .
a.s.p.	- <i>alto sul ponticello</i> . (The contact point of the bow is touching the indicated string at the point where it meets the bridge.)
	-Bow on the wood of the bridge only. Pitches in parentheses are held throughout, and at duration values where note heads appear the bow is to lightly touch the string at a.s.p., creating a sound that includes some of the fingered tone as well as unpredictable high harmonics.
	-Half-pressure, producing a recognizable tone but muted and with an airy, unfocused component.
	-A form of jeté stroke, where the bow is thrown against the strings, with wrist pressure applied throughout the stroke so that the bow quickly comes to rest against the string.
Winds	
	-Air tone, consisting of mostly air noise with a faint coloring of pitch.
	-Breath tone, consisting of a mixture of approximately 60% tone and 40% noise. In the alto sax, this symbol indicates an extremely quiet tone that verges on falling back into an air tone. In the trombone, this calls for a tone (often combined with fluttertongue) that, similarly, is held at the unstable breaking point between air and pitch.
	-“Teeth on reed:” In the alto saxophone, a high pitched, indeterminate and fragile sound is gradually brought in over an air tone by placing the teeth on various locations on the reed, the note heads on the two-line staff indicating approximate degrees of high and low pitch.
Piano	
	-Hammer on frame: Toward the end of the piece the pianist taps lightly on the braces of the piano with a rubber mallet. Note heads indicate relative pitch (high/low) of the brace to be struck.
	-Harmonic: the square note head indicates the key to be struck, while the player’s free hand touches the indicated harmonic on the string inside the piano.

Steelpan

For the duration of the piece, the tenor steelpan will be turned upside down and set on top of the bass pan, with its top rim resting on two wooden planks placed between the two pans, so that it is still allowed to resonate. Actions performed on the tenor pan will therefore be performed on its convex underside, or the rim or inside wall of the skirt, as indicated in the score.



-A dashed ring indicates the approximate region of the steelpan where a given action will be performed.



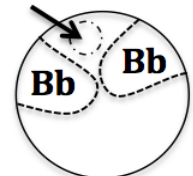
-A dashed line next to an articulation indicates that this gesture continues for the duration of the dashed line.



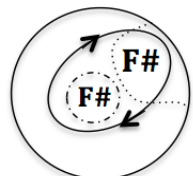
-A circular stroke (with either a wooden beater or marble). Smaller circles indicate quicker motions, while larger circles call for slower gestures.



-Percussive stroke on the inside skirt of the tenor pan.



-A percussive hit on the “dead space” between notes, containing a faint hint of the indicated pitch but with a large component of other undetermined resonances.



-A circular motion, usually with the marble held against the surface of the pan, which traces the rim of the circular area corresponding to the given pitch, moving between octaves of this pitch if available on the given pan.



-The guitar pan (with water in the basin) is turned with the knee toward the player, and then slowly released towards its resting position, creating slight upward bends in pitch.

APPENDIX C

Piano Preparation

The piano is prepared with nylon fasteners and screws in the upper registers, and rubber stoppers in the lower register:



A. B. C. D. E.

- A. large rubber stopper (1.0 cm diameter at narrow end; 1.4 cm at wide end)
- B. small rubber stopper (0.9 cm diameter at narrow end; 1.1 cm at wide end)
- C. thin nylon screw (.2 cm diameter)
- D. thick nylon screw (.3 cm diameter)
- E. nylon fastener (.4 cm diameter)

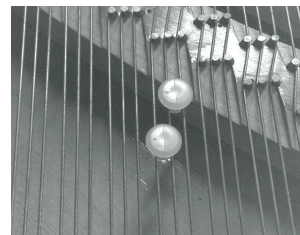
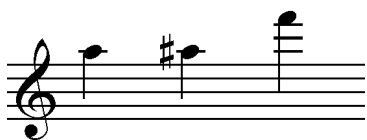
There are 7 different preparations across the range of the piano:

I.



For each pitch, one **nylon fastener** is inserted between two of the three piano strings, 1 cm from the metal pegs (and almost touching the wooden brace); the remaining string is left free to ring.

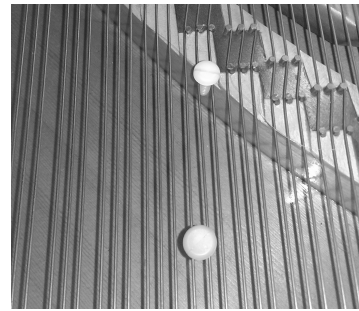
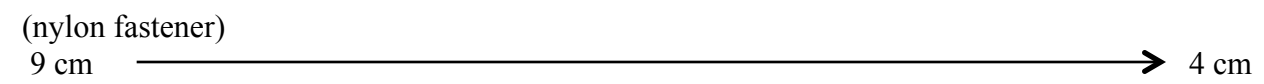
II.



3 cm 2.8 cm 2.5 cm (fastener 2)

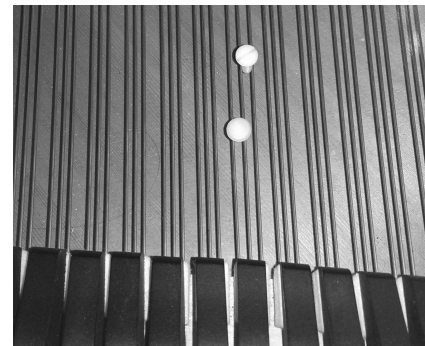
One **nylon fastener** is inserted between two of the strings, as close as possible to the wooden brace without touching it; a second **fastener** is inserted between the remaining string and the center string (with distances from the metal pegs given in the figure at left). The resulting sound (for this preparation as well as for preparations III and IV) should include a faint but audible presence of the notated pitch (especially in the resonance after the initial attack), but with an additional (strong) presence of a pitch one quarter-tone lower.

III.



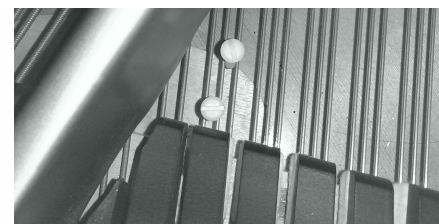
One **thick nylon screw** is placed between two strings, as close as possible to the wooden brace without touching it; a **nylon fastener** is placed between the remaining string and center string (with distances from the metal pegs given in the figure at left).

IV.



One **nylon fastener** is inserted 5 cm from the end of the felt; a **thick nylon screw** is inserted 7 cm from the end of the felt.

V.



One **thin nylon screw** is inserted as close as possible to the felt without touching it; another **thin nylon screw** is inserted 2 cm from the end of the felt. The sound should differ from the above preparations, with an audible 5th harmonic of the notated pitch, and a strong presence of an eighth-tone below the pitch.

VI.



14cm
31cm

→ 11cm (stopper 1)
28cm (stopper 2)



Two **small rubber stoppers** are inserted, so that each is held between one of the two wound strings of the notated pitch and a string of a neighboring pitch:



These positions along the string should be close to the 2nd and 3rd harmonics of that string, though far enough away from the nodes that only a slight hint of these harmonics comes through. Two exceptions are the F2 and F#2, where the stoppers should be closer to the 3rd harmonic and directly on the 2nd harmonic, so that a strong octave component is audible in the resulting sound.

VII.



Large rubber stoppers are inserted in a similar fashion to that above (flanking the wound string of a given pitch), with the stopper to the left (held against the lower neighboring string) inserted 11 cm above the felt, and the other stopper inserted 6 cm above the felt. The sound should be muffled, deep, with mostly high partials audible.

VITA

Jeffrey Bowen is a composer and guitarist originally from St. Louis, Missouri. Jeff was awarded a BA in Music with Distinction from Stanford University, where he studied classical guitar with Charles Ferguson and composition with Mark Applebaum and Jaroslaw Kapuscinski.

His compositions feature continuous, gradually evolving processes, with a focus on how memory contributes to perception of musical perspective and musical space. His pieces have been performed by Pascal Gallois, Beta Collide, Ensemble DissonArt, and the Nebraska Chamber Players, among other ensembles in the USA and Europe. In 2013 his orchestral work *Stalasso* was chosen by conductor Ludovic Morlot for performance by the Seattle Symphony Orchestra as a part of the SSO's *New Music Works* program. He has also presented work at the Darmstadt Summer Courses for New Music, with his piece *Stalasso II* selected for the 2012 *boost!* reading sessions.

Jeff is currently based in Seattle, where he has been pursuing a DMA in composition at the University of Washington under Professor Joël-François Durand.