

for Yarn/Wire

Audiendum Estimate

*for 2 pianos, 2 percussion
and transduced electronic sound*

Louis Goldford (2018)



Version 19/08/2020



for Yarn/Wire | dedicated to Peter Szendy

AUDIENDUM EXTIMATE

for 2 pianos, 2 percussion, and transduced electronic sound

Percussion Staff Notation

Perc. 1

[opening] [medium wood block] [small temple block] [small wood block] [rehearsal C] [medium wood block] [large] [small] [triangles]

Perc. 2

[small wood block]

[rehearsal H and beyond where unmarked; particularly rehearsal Y through end]

[ride] [crash] [Chinese]

[pitched gongs: C, E, Ab (3rd octave)] [3 cymbals]

[large tam-tam]

[bass drum] [large thundersheet (3 levels of relative pitch height) (possible)] [pitched bell plates: C, D, A (3rd octave)]

Percussion Instruments

PERCUSSION I:

suspended:

small + large triangles (appx. 10 + 30 cm equilateral sides)

Thai gongs: C, E, Ab (3rd octave)*

3 stacked cymbals:

ride (e.g. 50 cm)

crash (e.g. 41 cm Sabian Studio)

Chinese (e.g. 55 cm Suzhou)

a trap table consisting of:

small temple block (appx. length 10 cm)

small + medium wood blocks (appx. length 10 + 15 cm)

Meinl SH16 Spark shaker

paper “chimes” (e.g. crumbled sheets of newsprint)

small, handheld kola nut rattle

PERCUSSION II:

suspended:

small + medium triangles (appx. 10 + 20 cm equilateral sides)

large thundersheet (appx. 60 x 100 cm)

large tam-tam (e.g. 90 cm Paiste)

pitched bell plates: C, D, A (3rd octave)**

large bass drum (head facing up)

a trap table consisting of:

small wood block (appx. length 10 cm)

small Waldteufel (diameter of skin head appx. 4 cm)

tied bunch of dried yucca leaves

small bunch of aluminum foil

*An original score draft called for 3 Thai gongs pitched at E₂ (appx. 82 Hz), A₂ (103.826 Hz), and C₃ (130.813 Hz). Please use these instead, if they are available.

**Similarly, bell plates were originally pitched at C₂ (appx. 65 Hz), E₂ (appx. 82 Hz), and A₂ (110 Hz), and would be preferred to those specified in this updated score.

Realizing these lower metals are increasingly rare to find among professional musicians, the current notation has been adapted for more common, higher-pitched metals.

Descriptive Mallet Notation

The score calls for a variety of different mallet types, often in quick succession. The players are often asked to hold multiple mallet types in each hand and to rapidly switch between them. The high density of action between switching mallet types may, at times, be difficult to execute. In cases where this is so, or where specific mallets may not be available, the player may freely redesign the sequence of mallet attacks apart from the notation.

In such cases, the given notation is conceived as “descriptive;” that is, a notation in which the rapid succession of mallet types describes the desired attack qualities that may be achieved using an alternative selection of mallets. The player must choose mallets that yield the same sonic results.

Instrumental Mockup to Reference Desired Percussion Sounds

In order to assess the correct instrument / mallet combination, an instrumental mockup of large sequences of the piece is available upon request. The mockup uses samples that identify the type and size of the instrument, mallet, as well as relative dynamic levels and modes of playing.

Email louis.goldford@columbia.edu for more information. These dense passages occur at the beginning of the piece and at rehearsal Y.

List of Desired Mallets and Exciters

Ideally the percussionists have access to as many of the following as possible: *for the Pianists:*

yarn marimba and vibraphone mallets (various degrees of soft—hard)
rubber mallets (various degrees of soft—hard)
triangle beater
tam-tam beaters
bass drum beaters
bell plate mallets
superball mallet
bow for cymbals
wire jazz brush
wooden rods brush
handheld aluminum foil bunch
tied bunch of dried yucca leaves

soft timpani mallets (for use on lower inside strings, e.g. Balter T4 Legato mallets)
small + large guitar picks (to be used for wedge multiphonics, e.g. Fender 351 + 355 celluloid)
piece of rubber bike tire (to rub laterally along higher strings)
gaffer tape (to mute the uppermost 2 octaves of PIANO II)

NOTE for concerned pianists, house managers, etc. — *Aside from the use of gaffer tape on the strings, there are no “preparations” in this piece, i.e. items placed on or left inside the strings. The items described above are only placed on strings when the fingers operate them and are immediately removed. All techniques used, especially in consultation with professional piano technicians, are considered safe. The only real “preparations” used are the two transducers placed inside the piano (described below).*

Placement of Transducers in PIANO II



The padded “foot” of each transducer must be placed flat on the surface of the piano soundboard. Lopsided or uneven placement of the transducers will result in a disproportionate frequency response.

On a baby grand (L) or a grand (R), the space exposing the soundboard between the lowest lengthwise metal crossbar and the outer frame typically provide enough space for the larger bass transducer, whose diameter is around 8 inches (i.e. 20.32 cm).

See **TECHNICAL REQUIREMENTS** for more information on transducer setup.

The padded “feet” on these transducers ensures vibration against the soundboard **WILL NOT** scrape or otherwise harm the instrument.

Piano Multiphonics

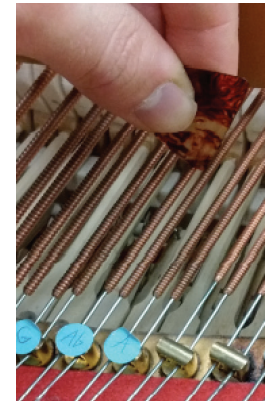
The musical score for Piano Multiphonics consists of two staves, Pno. 1 and Pno. 2. The score includes various annotations and diagrams. Key annotations include:

- Green letters A, B, C, D, E, F:** These letters are placed on the staves to indicate specific points or techniques. A and B are on the upper staff, while C, D, E, and F are on the lower staff.
- Diagram 1:** A diagram showing the relative distance between either (A) the agraffes and dampers, or (B) the entire string length from agraffe to bridge. It includes a diamond notehead (C) indicating where along the length of string the player must lightly touch between nodal points, so as to produce a multiphonic. Where available, a percent (%) of total string length is provided.
- Diagram 2:** A diagram showing the node is either touched with a finger (E) or created by placement of a large or small guitar pick (F). The pick may be placed directly on the nodal point in the case of a monochord, or its triangular “wedge” may be inserted between two dichords tuned to the same pitch (see photo at right).

Nodal clefs showing the relative distance between either (A) the agraffes and dampers, or (B) the entire string length from agraffe to bridge. Diamond noteheads (C) indicate where along the length of string the player must lightly touch between nodal points, so as to produce a multiphonic. Where available, a percent (%) of total string length is provided.

The lower clef always indicates the string on which the multiphonic is to be played (D).

The node is either touched with a finger (E) or created by placement of a large or small guitar pick (F). The pick may be placed directly on the nodal point in the case of a monochord, or its triangular “wedge” may be inserted between two dichords tuned to the same pitch (see photo at right).



Vesikkala, *Multiphonics of the Grand Piano*, p. 34.

At rehearsal T, PIANOS I + II begin node-glissandi along a series of fundamental strings. The strings are rapidly reattacked while the lightly-pressing nodal finger slides laterally between points along the string. These points always move towards the player and alternate between a farthest point away (i.e. towards the middle of the string) to the upper side of the hammers facing away from the player, and is then followed by another series of points between the lower side of the hammers up until the agraffes, i.e. the closest point to the player. This cycle keeps repeating at variously faster and slower rates so as to produce the abstract illusion of a Shepard tone of node glissandi. Attention to the harmonic glissandi of upper partials is necessary to ensure the nodal positions and overall sonic state of this section are executed correctly.

Technical Requirements

Two versions of the technical setup may be used: (1) in which individual transducer cues are triggered flexibly by the players, or by a computer assistant, with the aid of an available iOS device and interface, or with a computer space bar; or (2) in which a general click track is diffused over earbuds to all players while a continuous fixed media sequence feeds the transducers instead of individual cues. The individually numbered cues given in the score may then be ignored.

In the premiere performance, Yarn/Wire opted for scenario #2 using a click track. The specifications and technical rider below are therefore designed for playback with earbuds and a fixed media track. Materials needed only for scenario 2 are highlighted in **RED**, while those needed only for scenario 1 are highlighted in **BLUE**. Those materials necessary for both versions are not highlighted. Max patches for both versions are available from the composer:

small “*bone conducting*” surface transducer (for frequencies above 300 Hz, e.g. Dayton Audio BCT-2 45 mm. diameter)
small 2 x 20-Watt amplifier to run the smaller transducer (e.g. Lepai LP-2020A+ 2 x 20 watts RMS, 4-8 Ohms)
large “*bass shaking*” transducer (for frequencies below 300 Hz, e.g. Clark Synthesis TST209 Tactile Transducer, 8 in. diameter)
large 2 x 160-Watt amplifier to run the bass transducer (e.g. SMSL SA-98E TDA7498E 2 x 160 watts 4-8 Ohms)
16 AWG speaker wire connecting transducers to amplifiers (at mix position)
Wago Lever-Nuts may be used to connect speaker wires rather than soldering.

laptop or desktop computer
MaxMSP v. 7+ (or free Runtime version)

audio interface (min. 4 analog outputs; two for stereo click track, 2 for transducer outputs)
mixing console (min. 15 channels)
stereo loudspeakers and amplifiers for the house
11 condenser microphones for live diffusion

4-way headphone amplifier / splitter
4 earbuds and extension cables
long stereo headphone extensions connecting interface to headphone amplifier (on stage)

4 iPhones or other mobile devices capable of launching individual cues from within the ensemble; or 1 device at mix position

Computer assistant at mix position
Live diffusion specialist at mix position

See the TECHNICAL RIDER on the following pages for stage setup, mic positions, connections between equipment, etc. This rider is an earlier draft of that used in the premiere performance featuring Yarn/Wire.

Technical Rider

This is an earlier draft of that used in the premiere on 10 March 2018.

Future performers may freely adapt the general layout of this rider.

This rider also permits multichannel recording as well as live diffusion.

Gear provided by Yarn/Wire –

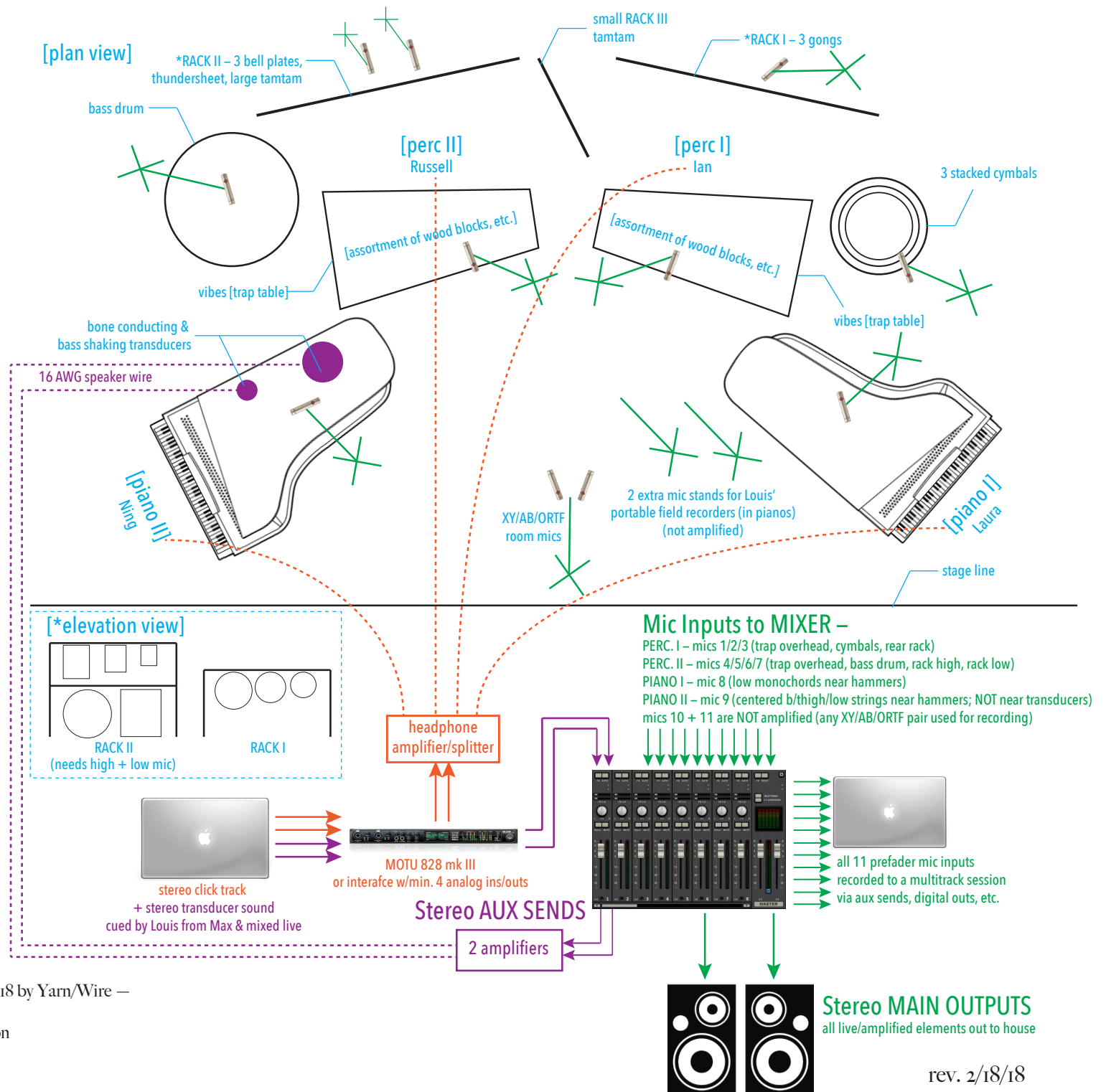
1. headphone amplifiers/splitters
2. 4 headphone extension cables
3. 4 earbuds

Gear provided by Louis –

1. laptop producing click/transducer playback
2. bone conducting + bass shaking transducers
3. all speaker wire
- Distance between stage and mix?
- 2 amplifiers for transducers
- **potential audio interface: MOTU 828 mk III
- **potential mics: 2 x AKG C414s, 2 x Neumann TLM102s, 2 x Audio-Technica Pro 37s + clips
- **potentially 4 mic stands and cables
- RCA patch cables or 1/4" patch cables for transducer aux sends
- 2 portable Zoom field recorders for stereo piano recording

Gear needed from CMC, Shapeshifter, and/or Recording Engineer –

1. 11 x condenser mics** for amplification/recording
2. house mixing console supporting 13 inputs;
Alternatively, will a CMC mixer support this?
3. 12 x tripod boom mic stands + mic clips**
4. potentially: on stage power strips & extension cords for headphone amplifier(s) + transducer amplifiers
5. power at mix position for laptop, interface, and potentially headphone amps
6. potential audio interface: MOTU Traveler or UltraLite
7. multitrack recording session via laptop, field recorder, etc.
8. potential snake between onstage mics and house PA



Premiere performance given on 10 March 2018 by Yarn/Wire –
 Laura Barger + Ning Yu, pianos
 Russell Greenberg + Ian Antonio, percussion

at Shapeshifter Lab, Brooklyn, NY

Audiendum Extimate

for two pianos, two percussion, and electronically transduced sound

Draft #2A

Louis GOLDFORD (2018)

3 [1 mm. = 60 bpm]

med. soft [mba.]
hard rubber
hard [vib.]

med. soft [mba.]
hard rubber

fine-grain descriptive mallet notation*
actual mallets used for performance may differ;
see Score Preface for explanation

Percussion 1

[med. wood block]
[sm. temple block]
[sm. wood block]

Percussion 2

Transducers
[morphologic]
[eruption of piano multiphonics]

Piano 1

Piano 2

Perc. 1

0:08 mp pp 0:09 mp 0:10 0:11 pp 0:12 mp pp 0:13 0:14 pp 0:15 0:16 0:17

0:01 0:02 0:03 0:04 0:05 0:06 0:07

0:11 0:12 0:13 0:14 0:15 0:16 0:17

1

2

3

4

5

6

7

8

9

10

11

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91

92

93

94

95

96

97

98

99

100

2

Perc. I

mp

pp

mp pp

mp

3

Pno. I

ppp minimal attack; maximal resonance

Pno. 2

ppp minimal attack; maximal resonance

ppp come sopra

0:38 0:39 0:40 0:41 0:42 0:43 0:44 0:45 0:46

PETER TOWSE

This musical score page contains measures 3 through 5 of a piece. It features five staves: Percussion 1 (Perc. 1), Piano 1 (Pno. 1), Piano 2 (Pno. 2), Transverse Flute (Trans.), and Percussion 1 (Perc. 1) again at the bottom.

Measure 3: Perc. 1 has a triplet of eighth notes. Pno. 1 has a triplet of eighth notes with a *ppp* dynamic and a *come sopra* marking. Pno. 2 has a triplet of eighth notes with a *ppp* dynamic. Trans. has a triplet of eighth notes with a *sf* dynamic. Perc. 1 (bottom) has a triplet of eighth notes with a *mf* dynamic.

Measure 4: Perc. 1 has a triplet of eighth notes with a *mppp* dynamic. Pno. 1 has a triplet of eighth notes with a *mf* dynamic. Pno. 2 has a triplet of eighth notes with a *mf* dynamic. Trans. has a triplet of eighth notes with a *mf* dynamic. Perc. 1 (bottom) has a triplet of eighth notes with a *mf* dynamic.

Measure 5: Perc. 1 has a triplet of eighth notes with a *mf* dynamic. Pno. 1 has a triplet of eighth notes with a *mf* dynamic. Pno. 2 has a triplet of eighth notes with a *mf* dynamic. Trans. has a triplet of eighth notes with a *mf* dynamic. Perc. 1 (bottom) has a triplet of eighth notes with a *mf* dynamic.

Time stamps are provided for several measures: 0:47, 0:48, 0:49, 0:50, 0:51, 0:52, 0:53, 0:54, 0:55, 0:56, 0:57, 0:58, 0:59, 1:00, 1:01, 1:02, 1:03, 1:04, 1:05, 1:06, 1:07, 1:08, 1:09, 1:10, 1:11, 1:12, 1:13.

Audiendum Extimate | Louis Goldford | Draft #2A | 8/20/18 | Score

4
3 [C]

[triangle beater]

[med. wood bl.] [triangles] [small temple bl.] [large] [sm.]

[h.v.]

Perc. 1

Perc. 2

[erupton of piano multiphonics]

[sm. wood block] [hard rubber]

Trans.

Pno. 1

4

f

[gaffer tape]

Pno. 2

pp....clear pedal * when previous chord fully decays....

p

p

p

pp

1:14 1:15 1:16 1:17 1:18 1:19 1:20 1:21

==

3

[h.v.]

mp

mp

p

mp

p

mp

p

mp

p

pp

p

pp

p

pp

p

pp

p

1:22 1:23 1:24 1:25 1:26 1:27 1:28 1:29

==

The musical score is divided into two systems, each beginning with a double bar line and a repeat sign. The first system includes measures 1:30 to 1:37. The second system includes measures 1:38 to 1:45. The score is for four parts: Perc. 1, Perc. 2, Pno. 1, and Pno. 2.

First System (Measures 1:30 - 1:37):

- Perc. 1:** Starts with a 4-measure rest, then plays a series of notes with dynamics *p*, *mp*, *p*, *mp*, and *p*. A 3-measure rest follows.
- Perc. 2:** Plays a series of notes with dynamics *mp*, *p*, *mp*, and *p*.
- Pno. 2:** Plays a series of notes with dynamics *mp*, *p*, *pp*, *p*, and *pp*. Time stamps 1:30, 1:31, 1:32, 1:33, 1:34, 1:35, 1:36, and 1:37 are indicated.

Second System (Measures 1:38 - 1:45):

- Perc. 1:** Starts with a 3-measure rest, then plays notes with dynamics *mf*, *p*, *mp*, *p*, *pp*, *p*, *pp*, and *p*. A 2-measure rest follows.
- Perc. 2:** Plays a series of notes with dynamics *mp*, *p*, *mp*, *p*, *mp*, and *p*.
- Pno. 1:** Includes performance instructions: "[remaining length of pno. wire]", "[above hammers]", "[bike tire scrape]", and "[approx. bike tire range]".
- Pno. 2:** Plays a series of notes with dynamics *pp*, *p*, *pp*, *p*, *pp*, *ppp*, *p*, *pp*, *p*, and *pp*. Time stamps 1:38, 1:39, 1:40, 1:41, 1:42, 1:43, 1:44, and 1:45 are indicated.

Musical score for Percussion 1, Percussion 2, Piano 1, and Piano 2, measures 1:46 to 1:55. The score includes dynamic markings (mp, p, pp, normale, come sopra) and performance instructions (bike tire scrape, [h.r.]).

Perc. 1: Measures 1:46-1:55. Dynamics: mp, p, mp, p, pp, p, mp, p. Performance instructions: [h.r.], bike tire scrape.

Perc. 2: Measures 1:46-1:55. Dynamics: p, mp, p, mp, p, mp, p, mp, p. Performance instructions: [h.r.], bike tire scrape.

Pno. 1: Measures 1:46-1:55. Dynamics: mp, p, pp, normale, come sopra, mp. Performance instructions: [h.r.], bike tire scrape.

Pno. 2: Measures 1:46-1:55. Dynamics: p, pp, p, pp, p, pp, come sopra, pp, pp. Performance instructions: [h.r.], bike tire scrape.

Musical score for Percussion 1, Percussion 2, Piano 1, and Piano 2, measures 1:56 to 2:02. The score includes dynamic markings (mp, p, pp, normale, come sopra) and performance instructions ([h.r.]).

Perc. 1: Measures 1:56-2:02. Dynamics: mp, p, mp, mp, mp, p, mp, p. Performance instructions: [h.r.].

Perc. 2: Measures 1:56-2:02. Dynamics: mp, p, mp, p, mp, p, mp, p, p, p, p. Performance instructions: [h.r.].

Pno. 1: Measures 1:56-2:02. Dynamics: normale, come sopra, pp. Performance instructions: [h.r.].

Pno. 2: Measures 1:56-2:02. Dynamics: mp, p, pp, mp, ppp, p, pp. Performance instructions: [h.r.].

4

Perc. 1

Perc. 2

Pno. 1

Pno. 2

2:03 2:04 2:05 2:06 2:07 2:08 2:09 2:10

3

Perc. 1

Perc. 2

Pno. 1

Pno. 2

2:11 2:12 2:13 2:14 2:15 2:16 2:17 2:18 2:19 2:20

Get in touch for full score

2

3

Perc. 1

Perc. 2

Pno. 1

Pno. 2

mf

mp

p

mf

mp

mf

mp

2:21 2:22 2:23 2:24 2:25 2:26 2:27 2:28

3

4

4

3

Perc. 1

Perc. 2

Pno. 2

p

p

pp

p

pp

p

pp

2:29 2:30 2:31 2:32 2:33 2:34 2:35 2:36 2:37 2:38 2:39 2:40 2:41 2:42

==

==

Perc. 1

- ride cymbal decay... (wavy line)
- 3 gongs (circles with dots)
- [tam-tam beaters] (scissors icon)
- ppp

Perc. 2

- tam-tam (circle with dot)
- soft yarn (mba.) (yarn icon)
- C → R → C → R C R C → R → C
- low fundamental murmur
- ppp
- CRCRCRCRCRCRC R C R C R C → R C R C

Pno. 1

- 6
- [entire length of monochord]
- ≈ 46%
- mf metallic; higher partials
- [dampers]
- [agraffes]
- veiled; distant; more lower partials
- mp

Pno. 2

- [dampers]
- [agraffes]
- mf veiled; more lower partials
- mf come sopra

Time signatures: 3:14, 3:15, 3:16, 3:17, 3:18, 3:19, 3:20, 3:21, 3:22, 3:23, 3:24, 3:25, 3:26, 3:27, 3:28, 3:29, 3:30, 3:31, 3:32, 3:33.

5 1 4 J

Perc. 1 *ppp* tam-tam beater + med. hard [vib.]

Perc. 2 *ppp* (soft bell plate mallet) bell plate

Pno. 1 [8] [entire length of monochord] 9

Pno. 2 *mf* come sopra [≈30% or any F# multiphonic in which the 10th partial is audible]

3:34 3:35 3:36 3:37 3:38 3:39 3:40 3:41 3:42 3:43 3:44 3:45 3:46 3:47 3:48 3:49 3:50 3:51

large thunder sheet

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2 **N** 6 6 4

Perc. 1 [ride] [crash] [Chinese] [hard rubber] 3 5 6 3 3 5

Perc. 2 [tam-tam] aluminum foil bunch wipe rapidly come sopra bunch of yucca leaves come sopra bass drum

Trans. semi-quantized rain/hail field recordings etc. continues... filter C.F. = 164 Hz 119 Hz

Pno. 1 13

Pno. 2 continues...

4 6 5 **o** 14

Perc. 1 5 6 *p* *mp*

Perc. 2

Trans. 60 Hz *mf* *p* assistant pushes amplitude gradually until shaking emerges bass shaking murmurs...

5:55 5:56 5:57 5:58 5:59 5:00 5:01 5:02 5:03 5:04 5:05 5:06 5:07 5:08 5:09 5:10 5:11 5:12

5:13 5:14 5:15 5:16 5:17 5:18 5:19 5:20 5:21 5:22 5:23 5:24 5:25 5:26 5:27

5 7 6 5

Perc. 1

3 gongs *indiv. spaced attacks occasional scrapes*

bunch of yucca leaves come sopra

© bass drum

ad lib. swells of varying frequency/saturation

kola nut rattle

Perc. 2

+ jazz brush; [L.H.] rapidly

Trans.

48 Hz

68-88 Hz band

Pno. 1

fingernail perforations on slots of monochord string between agraffes and hammers both individual and rapid perforations as the dots suggest

permutate dyads or trichords on these strings

Pno. 2

Ped. --- continues...

15

[soft timpani mallets] in this range:

sparse attacks on lower strings dampen higher portion of strings with 1 mallet while striking with the other

5:28 5:29 5:30 5:31 5:32 5:33 5:34 5:35 5:36 5:37 5:38 5:39 5:40 5:41 5:42 5:43 5:44 5:45 5:46 5:47 5:48 5:49 5:50 5:51 5:52 5:53 5:54 5:55

P

ad lib. 34 seconds

Perc. 1 *mf* rapid gong & cymbal attacks & rolls, kola nut rattle gestures, paper crumbling, sparse woodblock piercings
any combination of mallets — leave space for and blend with piano fingernail and bike tire perforations

Perc. 2 *mf* rapid rolls on bass drum, tamtam, thundersheets, and bell plates
any combination of mallets — leave space for and blend with other low timbres

Trans.

Pno. 1 *mf* combine fingernail perforations with bike tire perforations in upper strings *come sopra*
leave space for, blend with Perc. 1 sparse, higher gong, woodblock, cymbal attacks & paper crumbling

Pno. 2 *mf* continue sparse attacks, add low, rumby rolls & blend into bass shaking transducer
leave space for and blend with Percussion 1 lower roll timbres

intensify...

intensify...

intensify...

intensify...

5:56 5:57 5:58 5:59 6:00 6:01 6:02 6:03 6:04 6:05 6:06 6:07 6:08 6:09 6:10 6:11 6:12 6:13 6:14 6:15 6:16 6:17 6:18 6:19 6:20 6:21 6:22 6:23 6:24 6:25 6:26 6:27 6:28 6:29

Q continue ad lib. 15 seconds

Perc. 1 *mf-ppp* continue activities *come sopra*, diminuendo & gradually "thin" texture
decreasing density of events; similar to 2:26—2:56 *ppp*

Perc. 2 *mf-ppp* continue activities *come sopra*, diminuendo & gradually "thin" texture
decreasing density of events; similar to 2:26—2:56 *ppp*

Trans. high microtonal piano cluster "cricket"-like *mp*

Pno. 1 *mf-ppp* continue activities *come sopra*, diminuendo & gradually "thin" texture
decreasing density of events; similar to 2:26—2:56 *ppp*

Pno. 2 *mf-ppp* continue activities *come sopra*, diminuendo & gradually "thin" texture
decreasing density of events; similar to 2:26—2:56 *ppp*

6:30 6:31 6:32 6:33 6:34 6:35 6:36 6:37 6:38 6:39 6:40 6:41 6:42 6:43 6:44 6:45 6:46 6:47 6:48 6:49 6:50 6:51 6:52

16

20

Audiendum Extimate | Louis Goldford | Draft #2A | 8/20/18 | Score

18
R

crash cymbal (sus.)
jazz brush wipe once (starts on metal)
3 gongs
jazz brush ordinario
Meinl Spark shaker
ppppp sempre smorz.
waldteufel
med. & small triangles
triangle beater

Perc. 1

Perc. 2

Trans.

Pno. 1

Pno. 2

250 Hz

17 18

6:53 6:54 6:55 6:56 6:57 6:58 6:59 7:00 7:01 7:02 7:03 7:04 7:05 7:06 7:07 7:08 7:09

3 5 med. hard [vib.] 3 gongs 2 3 7 2 7

Perc. 1

Perc. 2

Trans.

large thunder sheet
bass drum
poco
molto

7:10 7:11 7:12 7:13 7:14 7:15 7:16 7:17 7:18 7:19 7:20 7:21 7:22 7:23 7:24 7:25 7:26 7:27 7:28 7:29 7:30 7:31 7:32 7:33 7:34 7:35 7:36 7:37 7:38 7:39 7:40 7:41

3 T 4 5

Perc. 1

Perc. 2

Pno. 1

Pno. 2

f

[near ≈50% of string length]

[above hammers]

[near ≈50% of remaining distance]

[below hammers]

[agraffes]

[near ≈50% of remaining distance]

f

[near ≈50% of string length]

[above hammers]

[near ≈50% of remaining distance]

[below hammers]

[agraffes]

[near ≈50% of remaining distance]

[near ≈50% of string length]

[above hammers]

[below hammers]

[agraffes]

7:42 7:43 7:44 7:45 7:46 7:47 7:48 7:49 7:50 7:51 7:52 7:53

2 3 4

Pno. 1

Pno. 2

p

mp

[near ≈50% of string length]

[above hammers]

[near ≈50% of string length]

[below hammers]

[agraffes]

[near ≈50% of string length]

[above hammers]

[below hammers]

[agraffes]

7:54 7:55 7:56 7:57 7:58 7:59 8:00 8:01 8:02 8:03 8:04 8:05

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20

2

4

Jing (Korean gong) laid flat
med. hard [mba.]

or any metal instrument with the capacity to strike nodes
mimicking piano node glissandi; using appx. onsets provided

3

Perc. 1

Perc. 2

Pno. 1

Pno. 2

8:06 8:07 8:08 8:09 8:10 8:11 8:12 8:13 8:14

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

[near ≈50% of string length] [below hammers] [above hammers] [agraffes]

2

3

4

Perc. 1

Pno. 1

Pno. 2

8:15 8:16 8:17 8:18 8:19 8:20 8:21 8:22 8:23

[near ≈50% of string length] [below hammers] [above hammers] [agraffes]

5 3 2

Perc. 1

Pno. 1

Pno. 2

8:24 8:25 8:26 8:27 8:28 8:29 8:30 8:31 8:32 8:33

f *p* *f* *p*

[near ≈50% of string length] [above hammers] [below hammers] [agraffes]

3 4 v 3

Perc. 1

Perc. 2

Pno. 1

Pno. 2

8:34 8:35 8:36 8:37 8:38 8:39 8:40 8:41 8:42 8:43

mf *mp* *f* *mf*

dense eruption of indiv. gong + cymbal attacks
decelerando mimicking piano notes decel. to 8:46

dense eruption of indiv. bell plate attacks
decelerando mimicking piano notes decel. to 8:46

[near ≈50% of string length] [above hammers] [below hammers] [agraffes]

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22
2 4 3 3 w

Perc. 1

Perc. 2

Pno. 1

Pno. 2

8:44 8:45 8:46 8:47 8:48 8:49 8:50 8:51 8:52 8:53 8:54

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

[near ≈50% of string length] [above hammers] [below hammers] [agraffes]

3 3 3

Perc. 1

Pno. 1

Pno. 2

8:55 8:56 8:57 8:58 8:59 9:00 9:01 9:02 9:03

[near ≈50% of string length] [above hammers] [below hammers] [agraffes]

4 3 2

Perc. 1

Pno. 1

Pno. 2

9:04 9:05 9:06 9:07 9:08 9:09 9:10 9:11 9:12 9:13

[near ≈50% of string length]

[above hammers]

[below hammers]

[agraffes]

[near ≈50% of string length]

[above hammers]

[below hammers]

[agraffes]

3 5 x 3 3 4

Perc. 1

Perc. 2

Trans.

Pno. 1

Pno. 2

19

250 Hz

387-417 Hz

[below hammers]

[agraffes]

[near 50% of string length]

[above hammers]

bowed draw out mid-range partials that are not as glassy or metallic

pp

mp

p

f

decresc. yucca leaves (cont. superball) to med. hard vib. mallets [R.H.]

superball mallet drag

lascia vibrare

9:14 9:15 9:16 9:17 9:18 9:19 9:20 9:21 9:22 9:23 9:24 9:25 9:26 9:27 9:28 9:29 9:30 9:31

24

Audiendum Extimate | Louis Goldford | Draft #2A | 8/20/18 | Score

3 5 3 3 2

soft yarn (mba.)

ride cymbal edge (suspended)

pp

fine-grain descriptive mallet notation*
actual mallets used for performance may differ;
see Score Preface for explanation

pp sempre l.v. jazz

mp

p sempre l.v.

[a wire jazz brush; on cymbals to produce a specific "hissing" or "sibilant" sound]

rods jazz

jazz

med. hard [vib.]

large thunder sheet

pppp

20 21 22

9:32 9:33 9:34 9:35 9:36 9:37 9:38 9:39 9:40 9:41 9:42 9:43 9:44 9:45 9:46 9:47

Perc. 1

Perc. 2

Trans.

2 2 2 2 3

jazz

jazz

jazz

jazz

jazz

3

23 24 25 26 27

9:48 9:49 9:50 9:51 9:52 9:53 9:54 9:55 9:56 9:57 9:58

Perc. 1

Perc. 2

Trans.

[percussion rolls mimicking instruments]

come sopra

[eruption of piano multiphonics]

3 Z

Perc. 1

Perc. 2

Trans.

9:59 10:00 10:01 10:02 10:03 10:04 10:05 10:06

28 29 30 *come sopra* 31

3 2 1 2

jazz

3

6

PERUSAL

Get in touch for full score

1 2 2 2

Perc. 1

Perc. 2

Trans.

Pno. 1

Pno. 2

10:07 10:08 10:09 10:10 10:11 10:12 10:13 10:14

pp *mp* *pp* *mp*

bike tire scrape

jazz

32 33 34

3 3 3 3

6

Ped. -> *mp*

Ped. -> *mp*

Get in touch

4 3 3 AA 3

Perc. 1

Perc. 2

Trans.

10:15 10:16 10:17 10:18 10:19 10:20 10:21 10:22 10:23 10:24 10:25 10:26 10:27

[eruption of piano multiphonics]

[jazz]

[jazz]

[jazz]

[cymbals, "underwater" vocal-like sounds, winds]

5

2 **BB** 3

Perc. 1

Perc. 2

Trans.

Pno. 1

Pno. 2

40 [eruption of piano multiphonics]

41 [cymbals, "underwater" vocal-like sounds, winds]

42

mp

10:36 ppp 10:37 10:38 10:39 10:40 mp 10:41 10:42 10:43 10:44 10:45

Audiendum Estimate | Louis Goldford | Draft #2A | 8/20/18 | Score

30
2

Perc. 1

Perc. 2

Trans.

43 come sopra

44 [eruption of piano multiphonics]

45

10:46 10:47 10:48 10:49 10:50 10:51 10:52 10:53 10:54 10:55 10:56

The score is written for three parts: Perc. 1, Perc. 2, and Trans. Perc. 1 and Perc. 2 are in 2/4 time, while Trans. is in 3/4 time. The score includes various musical notations such as notes, rests, and dynamic markings. Performance instructions include 'jazz' and 'eruption of piano multiphonics'. Time stamps are provided for each measure, ranging from 10:46 to 10:56. A large watermark 'PERUSALLO' is visible across the score.

3 3 2

Perc. 1

Perc. 2

Trans.

Pno. 1

Pno. 2

46 [cymbals, "underwater" vocal-like sounds, winds]

47 come sopra

48

mp

mp

ppp

mp

10:57 10:58 10:59 11:00 11:01 11:02 11:03 11:04

32

Audiendum Extimate | Louis Goldford | Draft #2A | 8/20/18 | Score

2

4

4

3 DD

Perc. 1

Perc. 2

Trans.

11:05

11:06

11:07

11:08

11:09

11:10

11:11

11:12

11:13

11:14

11:15

11:16

11:17

49

50

[eruption of piano multiphonics]

51

[cymbals, "underwater" vocal-like sounds, winds]

4

3

Perc. 1

jazz

jazz

jazz

3

3

Perc. 2

3

3

3

Trans.

52 come sopra

53

54

Pno. I

15

Ped. - ->

mp

11:18

11:19

11:20

11:21

11:22

11:23

11:24 mp

U.S. AIR FORCE FULL SCORE

Trans.

Trans.

PERUSAL ONLY
Get in touch for full score + parts.

ISMN 979-0-2325-4643-8

