APPENDIX VII: SUPPLEMENTARY COMPOSITIONS
VERMILION SANDS (2013)
Vermilion Sands

for flute, violin, violoncello
and percussion
Vermilion Sands
(after J.G. Ballard)

Duration: 14'30"

Information

A survey of dystopian landscapes, Vermilion Sands operates at the brink of instability brought about through procedural, parametric control.

Very softly. Remaining inconspicuous at all times. No vibrato.

Instrumentation

Flute

Violin

Violoncello

Percussion:
Crotale (bowed)
Vibriphone (no motor)
Timpani
Bass Drum (mounted in 360° rotating frame)
Woodblock (bowed)
Rice

Stringo require heavy muto

Seating Arrangement

The ensemble should be arranged quadrilaterally, facing inwards and able to make eye contact with each other. Where an audience is present, if possible, they should surround the performers in the round.
Notation

Standard 'metered' parts
In addition to the space-time layout of the score, the piece makes use of standard metered bars. Only the start of a metered bar is necessarily placed accurately within space-time, from this point onwards the bar is subject to the metronome mark of the piece (\( \frac{a}{4} = 40 \)).

Parametric change over sustained tones and actions
A number of the sustained sonorities within the piece are subjected to very subtle manipulations over time. Performance variables are examined by making small parametric changes (for instance: the flute's breath pressure, the strings' pitch or bow technique, or the percussion's impulse density). All of these changes make use of a parametric curve in the score, plotting a behaviour that falls between an upper and lower limit (relative to an initial state). For individual details of each type of parametric change, refer to the instrumental Performance instructions.

Crossfade between instruments
As one instrument fades out, the succeeding instrument fades in as if to counterbalance. Both instruments attempt to keep the level balanced as though the sonority is slowly morphing, rather than two distinct sounds.

Gradual change
A horizontal arrow signals a slow, even shift from one playing state or technique into another.

Fade out of / into nothing
An 'a' at the start or end of a crescendo or decrescendo signals a smooth transition dal or al niente.

Timing

Page time
Each page represents one and a half minutes, divided by vertical lines at thirty second intervals. Page times are given at the start and end of each page only.

- \( 0^00' \)
- \( 0^1^4'-0^3^4' \) (i.e. sustain the sonority from \( 0^1^4' \) until \( 0^3^4' \))
- \( 0^5^2' \)
- \( 0^0^1^1'-0^0^1^5' \) The endpoint should be implied (i.e. a single strike, or a metered bar)
- \( -2^4^5' \)

Play specifically from, until
Play action at specific time-point
Begin action between designated times, \( x \) and \( y \) Continue action until specific point

The tempo of the piece remains consistent throughout. Be aware that metered bars may not necessarily conform to strict time-space layout.

Players should use synchronised stopwatches, or a common clock source, to gauge the entrance and duration of their actions. Please note that actions connected with vertical lines are to be synchronised between players, and some visual cuing may be required (for example: note onsets, or the release of a sustained tone).
Performance Notes

Flute

Bread pressure
Bread pressure is controlled parametrically, relative to the dynamic marking given at the start of each action, and by the context of the action (i.e., breath tones sound louder than whistle tones). Moving down on the vertical axis signifies a reduction of breath pressure (to the point where the performer is no longer exhaling). Where the parametric curve moves upwards, breath pressure increases.

Bread tones
A subtle but clear 'air' noise, played with the slightest hint of the notated pitch. Approximately 80% 'air' noise, 20% 'pitched' tone.

Whistle tones
Unstable and very quiet. As breath pressure changes, different partials will come and go. Do not struggle to constrain the tone to the written pitch, simply use it as a point of departure.

A note on when (and where) to breathe
Specific breathing points are not written into the score. Instead, during longer sustained tones which cannot be completed within a single breath, players should take small breaths where required, attempting to disrupt the tone as little as possible.

Strings

Harmonics are not expected to always sound clearly, they will be unstable and dependant upon other variables which may be manipulated over time. Do not attempt to force a harmonic to sound.

Bow Pressure
Bow pressure is to be controlled relative to the dynamic marking given at the start of an action. Where the mid-point of the chart’s vertical axis is given by the dynamic marking (ppp,pppp), moving below this point signifies a reduction of bow pressure (to the point where the bow is barely in contact with the instrument). Where the parametric curve moves upwards, bow pressure increases slightly, whilst the bow movement or speed slows relatively.

Bow Movement
Shows the part of the bow (frog to tip) in contact with the string. Where there is minimal movement it is expected that the bow will stick and slip, causing sound to break up and be unstable. Bow pressure is linked relatively to acceleration and velocity, more movement means a extremely light, fast (flautando) where possible) bow pressure, while minimal movement should yield more pressure. Where such overpressure is used, be careful to move the bow as little as possible: the intention is that it should barely sound.

Bow Rotation
Directs the bow’s angle of incidence with the strings in order to move between strings in given chord. The lower limit of the chart would represent the bow in contact with only the iv string, whilst moving towards the upper limit would have the moving rotating towards the i string. Due to the generally light bow pressure used in the piece, at most only a double stop will ever be produced.

Pitch Deviation (Glissando)
The parametric curve plots a detailed glissando path to follow between the given upper and lower limits (relative to the specified pitch).

Bow Location
 Usually given as a simple sul pont., ord., or sul tasto marking, although occasionally movement is required whilst bowing. This either occurs as a simple, gradual transition (sul pont. → ord. → sul tasto) to be executed as smoothly as possible, or as a parametric change. In the case of the parametric change (using the G clef), the bow moves from melto sul tasto (the chart’s upper limit) down to melto sul ponticello (lower limit), and again this should be executed smoothly.

Bowing directly on the bridge, parallel to the string indicated (i, ii, etc.) causing it to softly resonate.

Bowing on the tailpiece, using both hair and the smallest amount of the bow wood. Approximately 80% hair, 20% wood.

Dampen strings, using the left hand to mute the specified string (where no string number is given, mute all strings), producing no-specific pitch.
Bowing behind the left hand, pitches given are for normal playing position (not the pitch that will be produced). The string length between the nut and left hand which is being bowed will sound most prominently, but the string length from the left hand to the bridge should also be allowed to resonate.

Violin

Tuning:

Left hand pull-off
Whilst bowing behind the left hand, stop the note with the 1st finger. Using the 2nd or 3rd finger, perform a left hand pizzicato. This will cause the length of string on the opposite side of the bow to sound.

Violoncello

Knock on the body
Knock on the body of the instrument below the f-holes with the fleshy part of the finger, sf. A dull sound, not sharp. Do not dampen the strings, allow them to ring if possible.

Percussion

Unless otherwise specified (i.e. ‘with fingertips’), the softest mallets are required for all struck parts.

Bow Pressure
Bow pressure is to be controlled relative to the dynamic marking given at the start of an action. Where the mid-point of the vertical axis is given by the dynamic marking (ppp, pppp), moving below this point signifies a reduction of bow pressure (to the point where the bow is barely in contact with the object). Where the parametric curve moves upwards the bow pressure increases slightly.

Bow Movement
Shows the position of the bow (frog to tip) in contact with the crotale. Where there is minimal movement it is expected that the bow will stick and slip, causing sound to be unstable and preventing the crotale from ringing freely. Bow pressure should be gauged relative to the amount of movement and speed.

‘Granular’ Drumming
The drums should be rotated so the skin is parallel to the floor, thus preventing the rice from sliding across the skin once it lands. Using two hands, the performer allows a steady stream of rice to fall onto the skin: controlling the flow carefully. A very light stream should be unstable and inconsistent. Single grains of rice should be clearly distinguished, (approximately 1-3 grains per second). A light stream is such that individual grains can be heard (approximately 3-6 grains per second). In a steady stream, individual grains should be almost indistinguishable, but the flow should not be heavy enough such that the drumming resembles white noise. To control the volume fades at the beginning and end, the player should alter the height from which the rice falls.
MATHEMATICAL FORMS 001: ORBIT (2013)
Mathematical Forms 001:

Orbit

for viola and contrabass

Oliver Thurley
Mathematical Forms 001:
Orbit
for viola and contrabass

approx. 4'

Two instruments move together, intertwined in concentric spirals.

Performance Notes


The entire piece should be performed as a single glissando. Bow length played as slowly as possible, at the brink of instability.

Barlines, note heads and stems are simply for metric guidance, they are not to be articulated.

Contrabass plays entirely on the IV string. If possible, the viola also plays entirely on the IV string, although the III may be required.

<table>
<thead>
<tr>
<th>Bow position</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>m.s.t.</td>
<td><em>Molto sul tasto</em> close to left hand.</td>
</tr>
<tr>
<td>s.t.</td>
<td><em>Sul tasto</em></td>
</tr>
<tr>
<td>1/2 s.t.</td>
<td>Halfway between <em>sul</em> and <em>sul tasto</em>.</td>
</tr>
<tr>
<td>ord.</td>
<td><em>Ordinary bow position</em>.</td>
</tr>
<tr>
<td>1/2 e.p.</td>
<td>Halfway between <em>ord.</em> and <em>ord. pont.</em></td>
</tr>
<tr>
<td>e.p.</td>
<td><em>Sul ponticello</em></td>
</tr>
<tr>
<td>m.s.p.</td>
<td><em>Molto sul ponticello</em>; Almost over the bridge; a sharp tone, with crisp harmonic partials.</td>
</tr>
</tbody>
</table>

The arrow signals a gradual and even transition between bow positions.

Olive Thoolby
Winter, 2015
Mathematical Forms 001: Orbit
FACE OF THE DEEP (2014)
FACE OF THE DEEP
VIOLA QUARTET
FACE OF THE DEEP

written for the Impuls academy, 2015

PERFORMANCE NOTES

viola quartet

extremely quiet. faltering. no vibrato

GENERAL NOTES

SPATIAL ARRANGEMENT

If space permits, the quartet should surround the audience at four equally spaced points (possibly towards the corners of the performance space).

TIMING

Each page/section is divided into four equal bars/sub-sections, each of which should last 15 seconds (1 page per minute). The quartet should perform with stopwatches in order to orient their timings.

If the performance schedule does not permit the full 20-minute/page version, a number of pages may be freely omitted from the score to form an abridged version of the piece. This decision is left to the discretion of the ensemble, however the quartet must of course all play the same pages in the same order.

WAVEFORM DYNAMICS

The waveforms show the amplitude envelope of the preceding pitch through the control of bow pressure. At the zero-point, no pressure is exerted on the string. The maximum pressure in the piece should be equivalent to approximately ppp.

Bowing speed is linked to the pressure dynamics. At an average pressure of roughly pppp, bowing speeds should be as slow as possible in order to barely maintain a constant tone. At higher pressure, the bow should barely move. It is expected that slight inconsistencies in bowing will cause the string to stick and slip, with the tone faltering.

N.B. Operating at such low speeds and dynamics, it is expected that tones will be inconsistent, frequently breaking up or failing to sound clearly. This is entirely intentional and to be embraced.
### BOW POSITION

<table>
<thead>
<tr>
<th>MST</th>
<th>molto sul tasto: close to left hand.</th>
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<td>MSP</td>
<td>molto sul ponticello: Almost on the bridge: a sharp tone, with crisp harmonic partials.</td>
</tr>
</tbody>
</table>

### FINGER PRESSURE

The left-hand finger pressure compressing a note may shift cause the string to sound as either regular tone, noise or harmonic.

- ○: 0% pressure, harmonic / noise.
- •: 50% pressure (N.B. pitch will be inconsistent)
- ●: 100% pressure (ord.).
- ☐: open string

Unless indicated otherwise, presume all events are performed ord. in terms of bow position and finger pressure.
Envelop

for eight voices

Oliver Thurley
Envelop

Duration: ca. 26’

For eight vocals: S-S-A-A-T-T-B-B

Very softly. Hesitant at all times. No vibrato.

Pronunciation

Vowels are given below the initial pitch of a tone in the International Phonetic Alphabet (IPA). Envelop requires only four basic vowel shapes throughout, and additional sounds of breath noise and singing bocca chiusa (with mouth closed). The letters in capital italics below are English approximations of the IPA vowels.

\[
\begin{align*}
\text{ar} & : \text{ether} & \text{i} & : \text{sEA} \\
\text{a} & : \text{thOUGHt} & \text{u} & : \text{fOOL}
\end{align*}
\]

Where no vowel is given below a pitch, assume that note should be sung bocca chiusa.

N.B. Page 1 of the score is performed entirely bocca chiusa.

Mouth aperture

The waveforms show the amplitude envelope of the sustained tone through the control of breath pressure. At the zero-point, no pressure is exerted on the vocal chords. Maximum pressure should be equivalent to approximately pp.

N.B. Operating at such low dynamics, it is expected that tones will be inconsistent, and occasionally break-up at lower volumes. This is entirely intentional and to be embraced.

In addition to breath dynamic, the vertical axis also parametrically controls the mouth’s aperture. At the zero-point, the mouth is closed, gradually opening (into the shape directed by the vowel) as the waveform’s vertical value increases. In some combinations this method of control will create unusual and possibly uncomfortable mouth shapes.

Timing

Every page is divided into four equal bars, each of which should last approximately 15 seconds (1 page per minute). There should be a short pause between each page of between 5 to 10 seconds (for this reason, elapsing time marks are not used).

The choir may choose to perform with stopwatches or a conductor, cueing players at either the start of each new page or at each bar.

Timing in the score should be followed as closely as possibly, although it is accepted that it will gradually shift out of sync over the course of each bar/page.

Spatial arrangement

The ensemble may choose one of two options for staging a performance. If space permits, the choir may surround the audience, spacing themselves as evenly as possible in the formation shown below. Alternatively, the choir may be arranged in front of the audience in an arced formation: S-A-T-B-B-T-A-S.
(Performance notes, continued)

**Notation**

**Breathing**
Breathing locations are not marked at any point within the score. Performers are encouraged to breathe only where required which — in the case of longer tones — will mean briefly interrupting a tone.

**Glissandi**
Glissandi should be performed as slowly and evenly as possible, reaching the target tone at the end of the waveform.

**Vowel transition**
A straight arrow from one vowel symbol to another signals a smooth transition from one mouth/vowel shape to another. Occasionally, a vowel will transform into *bocca chiusa*. This is a gradual closing of the mouth, which takes precedence over the mouth movement given by the envelope.

**Breath noise**
A horizontal dashed line (with no waveform characteristics) denotes a soft breath sound without a discernible pitch. Pressure should be as even as possible.

**Pitch / noise balance**
Where the balance of breath/air noise changes, the following symbols signal the level to which pitch is perceived.

\[\begin{align*}
\mathrel{\Downarrow} & \quad \text{0% pitch, 100% breath noise.} \\
\mathrel{\Downarrow} & \quad \text{50% pitch, 50% air noise. N.B. Pitch will be inconsistent.} \\
\mathrel{\Downarrow} & \quad \text{100% pitch, 0% breath noise (ord.).}
\end{align*}\]

**Reference pitches**
Due to pitches not being shown for the duration of a sounding note, the ensemble may find it hard to orientate pitches with one another. To alleviate this to some extent, reference pitches are given. Currently sounding, stable pitches are displayed, from which a performer might take their tuning.

\[\begin{align*}
\mathrel{\bullet} & \quad \text{Closed (fully shaded) note-heads display the pitch to be sounded.} \\
\mathrel{\circ} & \quad \text{Open (unshaded) note-heads display the reference pitch.}
\end{align*}\]

\[\begin{align*}
\text{N.B.} & \quad \text{Not all notes feature a reference pitch. It is expected that in some cases these pitches will fall fractionally out of tune. These notes then form the basis of pitch reference point for subsequent notes, with the tuning slowly becoming more fragmented over the course of a performance.}
\end{align*}\]

My thanks to Jeffrey Gavett for his invaluable insight during the development of this piece.

Oliver Thurley, Spring 2014
now did one now did one now did one now did one

written for the Impuls academy, 2013

performance notes

for ‘paperclip’ contrabass clarinet (low C).

veiled, extremely quiet, faltering.

ca. 9’

clarinet notation

tongue ram - against reed. dark, resonates quietly.

flutter-tongue - with a slight acceleration and deceleration.

teeth on reed - place teeth on reed and (gently) bite to cause the pitch to break and ‘squeak’. (If notated as a grace above a note, only the very beginning of the note should be articulated with teeth on reed. As soon as the note ‘breaks’ and becomes unstable, the performer should quickly return to a normal playing position/pitch.)

breath tone - where a pitch is given, the faintest trace of that pitch (even as a tonal coloration) should be heard through the air noise. (If notated as a grace above a note, only the very beginning of the note should be articulated as a breath tone before quickly articulating the note. Ideally, this will sound as air noise morphing into a pitched tone.)

register key - starting with the key (‘r.k.’) closed, slowly open (‘o’) or close (‘c’) the register key until the tone becomes unstable and breaks.

Composer’s draft note: ideally I would like to have worked with specific multiphonics, which could at least act as a guide to individual performers. However I have been unable to locate a working chart of contrabass clarinet multiphonics, I am regretfully unable to provide precise working options at this time.

50% - a breath tone which is roughly 50:50 discernible pitch and air noise.

harmonic whistle tones - quiet whistle tones, moving freely through the available harmonics. Whispering.

voice - acts as a disruptor to the saxophone’s tone. Pitches are relative: as high or low as the performer can reach while playing.

multiphonic - containing the specified pitch. Most preferable multiphonics are those which contain the smallest interval from the stipulated pitch, (i.e. Minor second > major second > minor third).
**general notes**

**rhythmic notation**

Rhythmic layers are distributed throughout the piece at various strata. Where possible, these have been distributed vertically to indicate scope of discrete layers.

Tuplets may be nested within other tuplets. In these cases, the brackets are tied together with a curved line. If tuplets are not tied, they are assumed to be independent of one another, but acting concurrently.

Given the monophonic nature of the instrument, passages which appear as a polyphonic layering of voices should be read as a linear reading of these strata. The performer should read palimpsestically through the layers and any conflicting or interrupting nature.

**sigma sections**

Sections marked with the sigma symbol (σ) signal a temporal 'hang' within the piece and should be thought of as existing outside the normal time of the performance. The duration of these sections is approximately 30"-40".

Each section is to be performed in a single, long breath (no circular breathing), which will in turn be affected by the energy required for each action. The duration of each note will therefore be specific to the individual performer. When the performer (inevitably) runs out of breath, wait for the end of the section rather than attempting to re-articulate the tone.

**remarks on quietness**

The volume for this piece is extremely low. It is intended that many of the notes will not sound as written. Indeed, many pitched tones will fail to sound clearly. Notes should always be attempted as notated, taking into account the dynamic. Do not attempt to force any tone.
WITH THE VERY SAME TWIST TO THEIR FACES
(UNDER ERASURE)
(2014)
with the engines kept below their fans

(under erasure)
A TECHNICAL DIAGRAM FOR THE ABSTRACTION OF OCKEGHEM'S MISSA PRO DEFUNCTIS: KYRIE — SIDE ELEVATION

FOR KLAUS & BARBARA ON ILKLEY MOOR

HARMONIUM & VIOLA D'AMORE
OLIVER THURLEY, WINTER 2015
a technical diagram for the abstraction of Ockeghem’s missa pro defunctis: kyrie, side elevation
for klaus and barbara
harmonium and viola d’amore

performance notes

always quiet. always slowly. on the moors.

moving slowly through the diagram, link musical events by following the pathway. all timings are free. it is not necessary to play all of the material in a single performance and events may be repeated. the piece lasts a minimum of 5 minutes, ending with an agreed signal.

harmonium:

in systems of two or more staffs, not all staffs have to be played. in these systems, notes do not have to be perfectly aligned, allow layers to move freely. slowly blending and swelling.

systems may overlap at the players discretion.

viola d’amore:

assumed tuning:

single-note events should swell dynamically, moving out of or into silence.

systems may overlap at the players discretion.
FALLING AS RAIN AND THEN RISING (2016)
falling as rain and then rising

for clarinet, violin, cello

oliver thurley, 2016

fragile, elsewhere and extremely quiet

played as written: with overwhelming anxiety and self-doubt
general remarks

falling as rain and then rising should be performed extremely quietly, almost to the point of inaudibility.

rhythmic notation has been deliberately obscured throughout the score, prompting performers to approach the multiple knotted layers as complex surfaces, overlapping and interrupting themselves. all instrumental parts should be approached as if they are polyphonic.

parts I, II, and III may be played all together (sequentially, or in any other order), or independently. where a single section is played by itself the time guides (20”–30” per bar) no longer apply. instead, each system should last for a long time. after part I, no durational information is given. all notes should be sustained for as long as is practically possible. the start and end of notes should never be accented or draw attention to themselves.

I am grateful to Martin Ilden whose work has served as a notational model for part III.

note: all rhythmic notation is drawn to scale in 'time-space' form. performers wishing to make their own mensural markings (i.e. time-space/rational beats), please note that each staff system begins with a 15mm margin and is 300mm long (on an A3 score).
general notation

state transition

notes in parenthesis are played with less energy, out of focus, like an echo

duration (part I only)

dotted line: performers should synchronise events or observe other mensural relationships

note that glissandi are often interrupted by other layers

each system/bar should last between 20-30 seconds. faster or slower is also permitted
clarinet

no breathing or duration markings are given. notes are sustained evenly and with no vibrato. breathe wherever is convenient

\( \text{air noise < air/tone < tone} \)

strings

all notes are played without vibrato

sustained notes should be bowed as slow as possible. where possible overlap notes using open strings (empty noteheads) and double-stopping

artificial harmonics using a semi-tone interval should be thought of as hollow harmonics. a clear sounding pitch is not as important as the tone’s hollow, shadowy timbre

\[ \text{multiphonic}, \text{ producing approximate grouping of overtones shown} \]
amplification

the volume of the entire piece is extremely quiet. It is expected that some of the material will not sound as written and that tones will often falter, fail to sound, or fracture completely. the entire piece is fragile and remains porous to the agency of the performers.

due to the quiet nature of the piece, some performances may require a degree of amplification depending on the performance space. If amplification is absolutely necessary, it should be as slight and transparent as possible. the amplified signal should not dominate the space at any time. It should remain quiet, and still allow for the sound to retreat towards inaudibility at points.

version 1.0
may 2016

this work was commissioned by tzili meudcan festival
and written for the meitar ensemble
always extremely quiet with accompanying sounds

flying as rain and then rising

pt. I

for Merle Ensemble
SO MUCH VAPOUR ALOFT (2015)
so much vapour aloft

sketches for Ellen Fullenfield, 2015

Oliver Thurley, 2015

performance notes

for solo ’cello

\{C-G-D-A\}

fragile. extremely quiet. faltering, always unstable.

notation

\(\text{\textbullet}\) - harmonic finger position

\(\text{\textbullet}\) - multiphonic (approximate position)

\(\text{\textbullet}\text{\textbullet}\text{\textbullet}\text{\textbullet}\) - string number (I-IV)

\(\text{\textbullet}\text{\textbullet}\text{\textbullet}\text{\textbullet}\text{\textbullet}\) - soft re-articulation of tied note, echoing

\(\text{\textbullet}\text{\textbullet}\text{\textbullet}\text{\textbullet}\text{\textbullet}\) - note in parenthesis is played with less energy

\(\text{Tuplets may be nested within other tuplets. In these cases, the brackets are tied together with a curved line. If tuplets are not tied, they are assumed to be independent of one another, but acting concurrently.}\)

\(\text{pizzicato}\)

\(\text{\textbullet}\text{\textbullet}\text{\textbullet}\text{\textbullet}\) - regular pizzicato

\(\text{\textbullet}\) - pizz. with left hand (usually an open string)

\(\text{\textbullet}\) - harmonic pizz. (with left hand) - using thumb or index finger to touch harmonic node; pizz. with spare finger

\(\text{ca. } 4’\)
(notation, continued)

**bow position**

<table>
<thead>
<tr>
<th>MST</th>
<th>molto sul tasto: close to left hand</th>
<th>-</th>
<th>bow on harmonic node. lighter flautando for a shadowy, filtered harmonic tone, or slow/overpressure to bring out sub-harmonic</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST</td>
<td>sul tasto</td>
<td>-</td>
<td>bow on tailpiece. strings and body resonate. overpressure (particularly at the thinner section) brings out 'squeak'</td>
</tr>
<tr>
<td>ord.</td>
<td>ordinary bow position</td>
<td>-</td>
<td>bow on tailpiece. strings and body resonate. overpressure (particularly at the thinner section) brings out 'squeak'</td>
</tr>
<tr>
<td>SP</td>
<td>sul ponticello</td>
<td>-</td>
<td>bow on tailpiece. strings and body resonate. overpressure (particularly at the thinner section) brings out 'squeak'</td>
</tr>
<tr>
<td>MSP</td>
<td>molto sul ponticello: almost on the bridge: a sharp tone, with crisp harmonic partials</td>
<td>-</td>
<td>bracket indicates a single bow length. used to slow motion movement significantly, the tone will falter as the bow sticks and slips.</td>
</tr>
</tbody>
</table>

**finger pressure**

The left-hand finger pressure compressing a note may shift, cause the string to sound as either regular tone, harmonic or otherwise destabilised.

- harmonic pressure
- 50% pressure (between harmonic and normal, sounding unstable)
- 100% pressure (normal)

Unless indicated otherwise, presume all events are performed ord. in terms of bow position and finger pressure.
general notes

multiphonics

Multiphonics are notated as a harmonic position with an 'M' (and string number I-IV). The theoretical sounding pitches are given in a bracketed staff above the main stave. String multiphonics are achieved through clusters of close harmonic nodes, and by playing a harmonic slightly sharp of the highest partial position. Above the sounding pitches, the sounding partials are given (i.e. M IV[4th+13th+9th+15th+5th]), although they may not all sound.

remarks on quietness

The volume for this piece is extremely low. It is intended that many of the notes (particularly the multiphonics) will not sound as written. Indeed, many pitched tones will falter, fail to sound, or fracture completely. The entire piece is fragile and remains porous to the agency of the performer.