

Intimate Expanse

for String Quartet

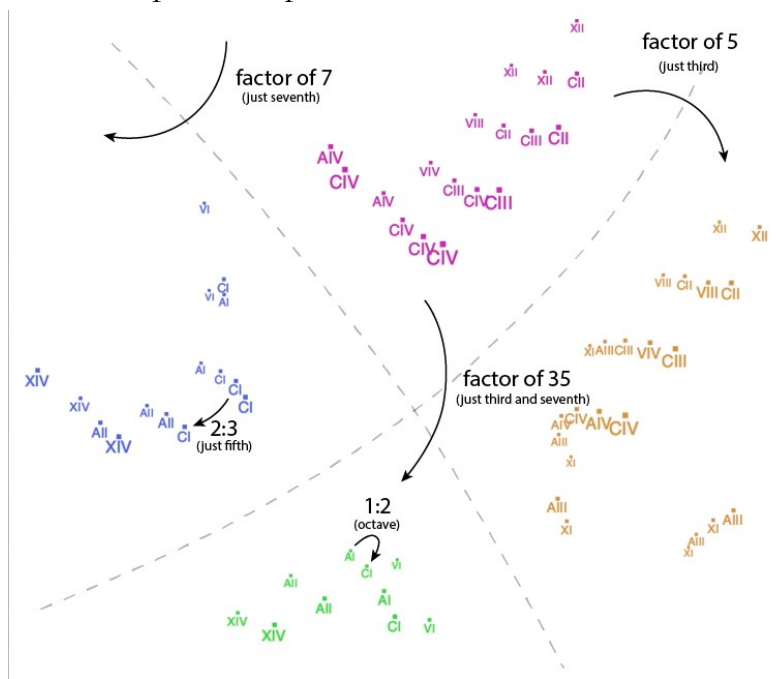
by Marc Evanstein

Background

Intimate Expanse, originally written for the LA-based Formalist Quartet, began as an idea for a string quartet and live electronics. I planned to have both the quartet and the electronics surround the audience, with the speakers placed at four corners of a square and the quartet at the midpoints of the sides. The electronic part was to consist of hundreds of tiny sound-producing creatures that would recoil in response to loud gestures by members of the quartet, bouncing around the space. I spent months designing and building this system, at which point I realized that the deadline was approaching and I still had no idea what the quartet itself would be playing.

So, with a healthy degree of deadline-induced panic, I started by constructing an interesting *scordatura*, or retuning of the quartet's strings. The goal was to increase the availability of microtonal intervals such as just thirds and just sevenths; with this tuning, these intervals were possible using open strings and natural harmonics, and the instruments resonated in a new way.

Having devised this tuning, I [wrote a computer program](#) to explore the newly available harmonic relationships. Taking significant inspiration from composer Clarence Barlow, I used a process called multi-dimensional scaling to create an interactive map of the space:



In this annotated screenshot from the program, each dot represents a pitch easily playable by one of the members of the quartet. The distance between any

two dots is based on how harmonically distant their respective pitches are, i.e. how complicated the frequency ratio between them is. The overlaid annotations show how the pitches are separated into four distinct groups, based on the relatively more complicated intervals of the just third (a ratio of 5:4) and a just seventh (a ratio of 7:4).

Using this program, I searched out interesting sonorities by ear and assembled them into a cyclic chord progression. Having done this, I returned to paper and pencil, orchestrating these chords into a variety of quartet textures. Finally, I built transitions between these textures and joined them together into the score that you see before you. The result is a piece driven by the harmonic language of a foreign land, one that I still don't fully understand, but for which I at least had a map.

Interestingly, after all of this, I ran out of time to go back and incorporate the electronics. Ultimately, the only remnant of the electronics in the final work was in the positioning of the quartet around the audience, and the sense of musical gestures being passed back and forth across an expanse.

Performance Notes

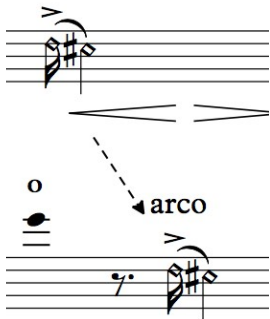


This “X” in place of a time signature indicates an unmetred passage. Timing in such a passage is roughly proportional to horizontal placement, but not strictly. Sometimes metered and unmetred parts occur simultaneously.

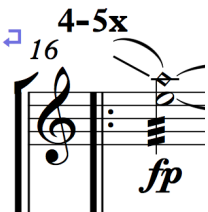
CUE



In freely looping and/or proportional passages, one part is sometimes given musical material that acts as a cue for a change of state in the other parts.



Dashed arrows are used to indicate desired ordering or trading of material in a passage that is otherwise rhythmically free.



Repeats are often accompanied by a specific number of times that the passage should be repeated, written above the start of the repeat. When not specified, the passage is repeated only once.

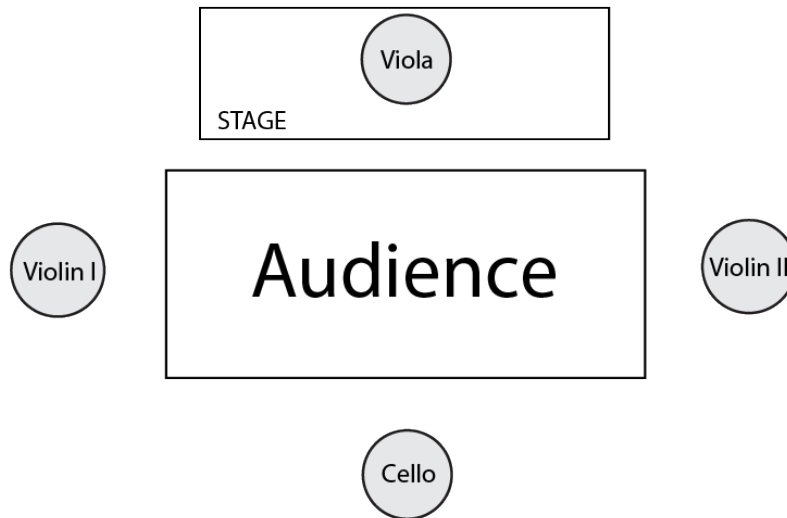


This indicates that the given material should be looped for the duration of the wiggling arrow. Several passages connected in this way represent a gradual transformation.

(2:42) Approximate timings are given at the start and end of each system to give a sense of the duration of unmetred passages.

Seating

Ideally the ensemble is seated surrounding the audience in the following configuration:



Scordatura

The following scordatura is to be used throughout:

	IV	III	II	I
Violin I	+33¢ #e	+35¢ #e		+2¢ o
Violin II	-4¢ o	+17¢ #o	+37¢ #e	+17¢ #e
Viola	+31¢ e	+33¢ #o	-2¢ o	
Violoncello	+31¢ o	+33¢ #o	+35¢ #o	

The purpose of the scordatura is to place just sevenths and thirds easily at the players' disposal, especially as open strings and natural harmonics. The following sequence shows how one might tune the strings by ear, and should help to clarify the intervallic relationships involved:

Step 1

Diagram illustrating the tuning sequence for Step 1, showing the relationships between the strings:

- Violin I: +2¢ (2:1 ratio from C₂)
- Violin II: -4¢ (3:2 ratio from C₂)
- Viola: -2¢ (3:2 ratio from C₂)
- Violoncello: +31¢ (3:2 ratio from C₂)

Intervallic relationships shown:

- Violin I to Violin II: 2:3
- Violin I to Viola: 1:1
- Violin I to Violoncello: 3:2
- Violin II to Viola: 3:2
- Violoncello to Viola: 3:2
- Violoncello to Violin I: 2:1

Step 2

Musical score for Step 2. The score consists of four staves (treble and bass clefs). The notes and their corresponding pitch bends are as follows:

Staff	Measure 1	Measure 2	Measure 3	Measure 4
Treble 1				+2¢
Treble 2	-4¢			
Bass 1	+31¢	7:1	-2¢	
Bass 2	+31¢ (1:2)			

Arrows indicate a 7:1 ratio between the notes in the second measure of the Bass 1 staff and the notes in the first measure of the Treble 1 and Bass 2 staves.

Step 3

Musical score for Step 3. The score consists of four staves. The notes and their corresponding pitch bends are as follows:

Staff	Measure 1	Measure 2	Measure 3	Measure 4
Treble 1	+33¢	+35¢		+2¢
Treble 2	-4¢		+37¢	
Bass 1	+31¢	+33¢	-2¢	
Bass 2	+31¢	+33¢	+35¢	

Arrows indicate the following ratios:

- 2:3 between Treble 1 and Bass 2 in Measure 1.
- 1:1 between Treble 2 and Bass 1 in Measure 1.
- 2:3 between Treble 1 and Bass 2 in Measure 2.
- 2:3 between Treble 2 and Bass 1 in Measure 2.
- 2:3 between Treble 1 and Bass 2 in Measure 3.
- 2:3 between Treble 2 and Bass 1 in Measure 3.

Step 4

Musical score for Step 4. The score consists of four staves. The notes and their corresponding pitch bends are as follows:

Staff	Measure 1	Measure 2	Measure 3	Measure 4
Treble 1	+33¢	+35¢		+2¢
Treble 2	-4¢	+17¢	+37¢	+17¢
Bass 1	+31¢	+33¢	-2¢	
Bass 2	+31¢	+33¢	+35¢	

Arrows indicate the following ratios:

- 1:5 between Treble 2 and Bass 2 in Measure 1.
- 1:2 between Treble 2 and Bass 1 in Measure 3.

Intimate Expanse

Marc Evanstein

Shimmering with Energy

♩ = ca. 64

etc.

(0:15)

Violin I
f oscillating irregularly

Violin II
f *fp* *f* *fp*

Viola
fp *f* *fp* *f*

Violoncello
f *f*

Try to align at first

(0:15)

(0:30)

etc.

fp *dim poco a poco.*

f *dim poco a poco.*

f *dim poco a poco.*

f *pp* *mf*

...the energy dissipates...

(0:30)

(0:45)

3

arco pizz. arco

p

No longer aligned with viola arco pizz.

No longer aligned with 2nd violin pizz. arco

mf *dim.*

(0:45)

(1:00)

4

pizz. arco

p

arco pizz.

p

pizz. arco

(*p*)

mp

5 arco pizz. arco pizz. (1:15)

p arco pizz. arco pizz. arco pizz. arco

p pizz. pizz. pizz. pizz. pizz. pizz. pizz. pizz.

p

p

B Shimmering with Energy

$\text{♩} = \text{ca. } 64$

7 (1:15) etc. (1:30)

f oscillating irregularly

f *fp* *f* *fp*

fp *f* *fp* *f*

f *f*

(1:30)

(1:40)

8

fp *pp*

f *pp* *mp* *dim*

C

♩ = ca. 64

(ca. 4")

♩ = ca. 64

(1:40)

arco

pizz.

arco

pizz.

(2:04)

9

2x *p* *pp* *mp* *p*

arco pizz. arco pizz.

p *pp* *mp* *p*

D

(2:04)

Musical score for measures 12-13. The score is written for four staves: Treble (top), Treble (second), Bass (third), and Bass (bottom). Measure 12 starts with a treble clef and a common time signature. The first staff has a treble clef and a common time signature, with a 'pizz.' marking above the first measure and a 'pp' dynamic marking below. The second staff has a treble clef and a common time signature, with 'pizz.' markings above the first and last measures, and a 'pp' dynamic marking below. The third staff has a bass clef and a common time signature, with a 'pizz.' marking above the first measure. The fourth staff has a bass clef and a common time signature. Measure 13 starts with a treble clef and a common time signature. The first staff has a treble clef and a common time signature, with an 'arco' marking above the first measure and a 'pizz.' marking above the last measure. The second staff has a treble clef and a common time signature, with 'pizz.' markings above the first and last measures, and an 'arco' marking above the second measure. The third staff has a bass clef and a common time signature, with a 'pizz.' marking above the first measure. The fourth staff has a bass clef and a common time signature.

(2:16)

(2:28)

Musical score for measures 13-14. The score is written for four staves: Treble (top), Treble (second), Bass (third), and Bass (bottom). Measure 13 starts with a treble clef and a common time signature. The first staff has a treble clef and a common time signature, with an 'arco' marking above the first measure and a 'pizz.' marking above the last measure. The second staff has a treble clef and a common time signature, with 'pizz.' markings above the first and last measures, and an 'arco' marking above the second measure. The third staff has a bass clef and a common time signature, with a 'pizz.' marking above the first measure. The fourth staff has a bass clef and a common time signature. Measure 14 starts with a treble clef and a common time signature. The first staff has a treble clef and a common time signature, with a 'pizz.' marking above the first measure. The second staff has a treble clef and a common time signature, with a 'pizz.' marking above the first measure. The third staff has a bass clef and a common time signature, with a 'pizz.' marking above the first measure. The fourth staff has a bass clef and a common time signature, with a 'pizz.' marking above the first measure and a 'p' dynamic marking below.

(2:28)

(2:42)

E

(2:55)

accelerando

4-5x

(uncoordinated)

(3:30)

16 *4-5x*

fp fp

mf p mf

accent bow changes; dynamics swell and recede

alternate irregularly between these gestures

pizz. arco pizz. arco

f mf f mf

arco 8va

fp

fp

CUE

arco

fp f fp

(3:30)

CUE

(♩ = 72)

(3:48)

19 *4-5x*

(uncoordinated)

sfp sfp

alternate irregularly between these gestures

fp mf mf fp

vary length of gesture and gap between gestures

fp f

arco

fp f fp

trn trn trn trn trn trn

F

8

(3:48) ♩ = 72

(3:57)

21 arco

fp — *f*

Repeat and accel.

like a really crazy bird

f

arco

fp — *f*

Repeat and accel.

arco

fp — *f*

Repeat and accel.

(3:57)

(reaching ♩ = ca. 140)

(4:05)

22

STOP

rit.

molto

STOP

STOP

G**Shimmering with Energy**

(4:05) ♩ = ca. 64

etc.

(4:20)

23

f oscillating irregularly

f *fp* *f* *fp*

fp *f* *fp* *f*

f *f*

(4:20)

(4:30)

fp *pp*

fp *pp*

f *mp* *dim.*

As if Calling Across a Lake

(4:30)

(4:48)

25

Musical score for 'As if Calling Across a Lake' in 4/4 time. It consists of four staves: Violin I, Violin II, Viola, and Cello/Double Bass. The key signature has one sharp (F#). The score starts at measure 25. The Violin I part features a melodic line with a fermata and a dynamic marking of *p*. The Violin II part has a similar melodic line with a dynamic marking of *p*. The Viola part has a melodic line with a dynamic marking of *p*. The Cello/Double Bass part has a melodic line with a dynamic marking of *p* and an *arco* marking. The score ends at measure 48.

H Incredibly Delicate

(4:48) ♩ = ca. 58

A Little Faster

♩ = ca. 76

pizz. (5:03)

26

Musical score for 'Incredibly Delicate' and 'A Little Faster' in 4/4 time. It consists of four staves: Violin I, Violin II, Viola, and Cello/Double Bass. The key signature has one sharp (F#). The score starts at measure 26. The Violin I part features a melodic line with a fermata and a dynamic marking of *pp*. The Violin II part has a melodic line with a dynamic marking of *pp* and *arco* markings. The Viola part has a melodic line with a dynamic marking of *pp* and *arco* markings. The Cello/Double Bass part has a melodic line with a dynamic marking of *pp* and *pizz.* markings. The score ends at measure 53.

(5:03)

♩ = ca. 58
arco

♩ = ca. 76

(5:18)

30

pp

pp

pp

pp

mp

mp

p

fp

fp

pizz.

arco

arco

arco

arco

ossia: alternate with 7th harmonic on D string

8va

8va

(5:18)

(5:38)

34

Continue pattern, with somewhat varied timing

cresc. poco a poco

2x

Continue pattern, with somewhat varied timing

cresc. poco a poco

Continue pattern, with somewhat varied timing

cresc. poco a poco

fp

fp

fp

fp

fp

(5:38)

39 2x

pizz. arco

2x

5-6x

accel. (uncoordinated)

CUE (♩ = 72)

(6:18)

(6:18) I ♩ = 72

(6:27)

43 arco

Repeat and accel.

like a really crazy bird

f

arco

Repeat and accel.

arco

Repeat and accel.

(6:27)

44

STOP

molto cresc.

STOP

STOP

J Chaotic, Ricocheting

1st and 2nd violin trade off at first, and then diverge

(6:41)

(6:34)

45

ff

ff

ff

fp

sf

sfz

sfz

sfz

sfz

II

III

sim.

(6:41)

Musical score for measures 46-54. The score is written for four staves: two treble clefs and two bass clefs. Measure 46 starts with the instruction *dim poco a poco*. The first treble staff contains a melodic line with slurs and accents. The second treble staff has a similar melodic line with triplets in measures 50 and 51, and a *fp* dynamic marking in measure 54. The first bass staff has a bass line with slurs and accents, and the instruction *dim poco a poco* appears below it. The second bass staff has a bass line with triplets in measures 50 and 51, and the instruction *dim poco a poco* below it. Roman numerals I, II, III, and IV are placed above the staves at various points. The word *sim.* is written above the first treble staff in measure 48.

(6:47) ...becoming gentler, sparser...

(6:54)

Musical score for measures 47-54. The score is written for four staves: two treble clefs and two bass clefs. Measure 47 starts with the instruction *sf*. The first treble staff contains a melodic line with slurs and accents. The second treble staff has a similar melodic line with slurs and accents, and the instruction *sf* appears below it. The first bass staff has a bass line with slurs and accents, and the instruction *sf* appears below it. The second bass staff has a bass line with slurs and accents, and the instruction *p* appears below it. The word *p* is also written below the second bass staff in measure 54.

(6:54)

(7:02)

Musical score for measures 48-53. The score is written for four staves: Treble Clef (top), Treble Clef (second), Bass Clef (third), and Treble Clef (bottom). Measure 48 starts with a treble clef staff containing a complex melodic line with many accidentals and slurs. The second treble clef staff has dynamics *sf* and *fp*. The bass clef staff has a dynamic *p*. The bottom treble clef staff has a long note with a slur. The piece concludes with a double bar line at the end of measure 53.

(7:02)

(7:09)

Musical score for measures 49-53. The score is written for four staves: Treble Clef (top), Treble Clef (second), Bass Clef (third), and Treble Clef (bottom). Measure 49 starts with a treble clef staff containing a complex melodic line with many accidentals and slurs. The second treble clef staff has a dynamic *p*. The bass clef staff has a dynamic *p*. The bottom treble clef staff has a long note with a slur. The piece concludes with a double bar line at the end of measure 53.

(7:09)

K ♩ = ca. 64

(7:28)

Violin I: 50, arco, pizz., arco, pizz.
 Violin II: 50, pizz., II, mp
 Cello/Double Bass: 50, arco, pizz., arco, pizz.
 Bass: 50, pizz., p

Languid

(7:28)

(ca. 6")

(♩ = ca. 64)

(ca. 6")

(♩ = ca. 64)

(7:48)

Violin I: 54, pizz., pp, arco, pizz., p
 Violin II: 54, pizz., pp, II, mp
 Cello/Double Bass: 54, pizz., pp, III, arco, pizz., p
 Bass: 54, pizz., pp, pizz., pp

(7:48) arco

The musical score consists of four staves, each with a performance instruction box on the right. The first two staves are in treble clef, and the last two are in bass clef. The time signature is 3/4. The score is divided into two measures by a double bar line. The first measure is marked 'arco' and the second 'pizz.'. The first two staves have a 'pp' dynamic marking. The third staff has a 'pizz.' marking and a 'III' fingering. The fourth staff has a 'pizz.' marking. Each staff ends with a wavy arrow pointing to a box containing the instruction: 'Repeat and fade, uncoordinated, gradually slowing'. The number '58' is written above the first staff.