Portfolio of Compositions:

Pitch-Class Set Theory in Music and Mathematics

Volume II: Scores

Thesis submitted in accordance with the requirements of the University of Liverpool for the degree of Doctor in Philosophy

Michael James McNeilis

March 2017
Scores

From Zero

In Equal Measure

Unequal Measures

Space Ripple

Three Minds Fractured

One to Another

One to Another (*Octet Arrangement*)

Aggregation

Aggregation (*Finale Excerpt Arrangement*)

In Three Elements
From Zero

for solo flute

(2011-2016)

c.a. 3’45

Michael McNeilis
From Zero
(for solo flute)

*dashed slurs indicate phrase marks*

\( \frac{3}{8} \) = 50 \* dolce con rubato

\( \frac{3}{8} \) = 40

\( \frac{3}{8} \) = 54

\( \frac{3}{8} \) = 44

\( \frac{3}{8} \) = 58 \* espressivo

Michael McNeilis
In Equal Measure

for solo piano

(2011-2016)

Michael McNeilis
In Equal Measure

for solo piano

(2011-2016)

Movement One: ca. 5’30
Movement Two: ca. 3’45
Total: ca. 9’15
In Equal Measure
(for solo piano)

Movement One

Michael McNeilis

\[ \text{meccanico, moto perpetuo} \]

\[ \text{poco riten.} \]

\[ \text{poco accel.} \]

\[ \text{ppp} \]

\[ \text{pp} \]

\[ p \]

\[ \text{mp} \]

\[ \text{mf} \]

\[ f \]

\[ \text{mf} \]
In Equal Measure
(for solo piano)
Movement Two

Michael McNeilis
Unequal Measures
for string quartet
(2012-2016)

Michael McNeilis
Unequal Measures

for string quartet

(2012-2016)

Movement One: ca. 6’05
Movement Two: ca. 4’25
Total: ca. 10’30

Instrumentation:

violin x 2
viola
violoncello
Unequal Measures
(for string quartet)
Movement Two

Michael McNeilis

\[ \text{\textcopyright Michael McNeilis} \]

\[ \text{\textcopyright Michael McNeilis} \]
Space Ripple
for solo electric guitar and tape
(2013-2016)
ca. 8’15

Michael McNeilis
Performance Key

Cue = Time (in seconds) that the performer waits before playing the next guitar phrase: +4 means to wait 4 seconds, for example
Guitar = Live guitar part notation
GS = Guitar Support – Rolling crescendo immediately before a guitar phrase, or a downbeat emphasis towards the end of a phrase
MOT = Motif – The main recurring motif with heavy reverb and other effects
ARP = Arpeggiator – Arpeggiator of set 5-Z17 played to signal the start of each section
CS3 = Cells of Size 3 – Low frequency two-note gesture and swelling e-bow
CS4 = Cells of Size 4 – Low frequency pitch bend swelling, high frequency e-bow and chordal delays
CS5 = Cells of Size 5 – Glissando, repeated natural guitar notes and high frequency piercing notes
HAR = Harmony – Sustained pad-like chord provided by sets 4-14, 4-19 and 5-Z17

The performer is to follow timecode displayed in the accompanying software and use cue points highlighted in darker shading in the score. For example, the below passage indicates that the guitarist should perform the guitar phrase 6 seconds after the guitar support sound is played.

<table>
<thead>
<tr>
<th>Cue</th>
<th>+6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guitar</td>
<td></td>
</tr>
<tr>
<td>Guitar Support</td>
<td>GS</td>
</tr>
<tr>
<td>Motif</td>
<td>MOT</td>
</tr>
</tbody>
</table>

Accidentals are naturalised after each guitar phrase.
Space Ripple

\[ \text{Fingerpicked softly throughout} \quad \text{Concrete audio dynamics: } pp - p \]

\[ \text{Cue} \]

\[ \text{Guitar} \]

\[ \text{Guitar Support} \]

\[ \text{Motif} \]

\[ \text{Arpegg.} \]

\[ \text{Cell Size 3} \]

\[ \text{Cell Size 4} \]

\[ \text{Cell Size 5} \]

\[ \text{Extra Harmony} \]

\[ \text{Time} \quad 0'00 \quad 0'05 \quad 0'10 \quad 0'15 \quad 0'20 \quad 0'25 \quad 0'30 \quad 0'35 \quad 0'40 \quad 0'45 \quad 0'50 \quad 0'55 \]
Concrete audio dynamics: $p < mp$

Cue

Guitar

Support

Motif

Arpegg.

Cell Size

<table>
<thead>
<tr>
<th>3</th>
<th>CS3</th>
<th>CS3</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>CS4</td>
<td>CS4</td>
</tr>
<tr>
<td>5</td>
<td>CS5</td>
<td>CS5</td>
</tr>
</tbody>
</table>

Extra Harmony

| HAR | HAR | HAR |

Time

| 1'00 | 1'05 | 1'10 | 1'15 | 1'20 | 1'25 | 1'30 | 1'35 | 1'40 | 1'45 | 1'50 | 1'55 |
Concrete audio dynamics: $mp < mf$  
Delay effects become more prominent

<table>
<thead>
<tr>
<th>Time</th>
<th>2'00</th>
<th>2'05</th>
<th>2'10</th>
<th>2'15</th>
<th>2'20</th>
<th>2'25</th>
<th>2'30</th>
<th>2'35</th>
<th>2'40</th>
<th>2'45</th>
<th>2'50</th>
<th>2'55</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell Size 3</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>Cell Size 4</td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Cell Size 5</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harmony</td>
<td>HAR</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Motif</td>
<td>MOT</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Guitar Support</td>
<td>GS</td>
<td>GS</td>
<td>GS</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guitar</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Arpegg.</td>
<td>ARP – Section 2 Begins</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cue</td>
<td>+6</td>
<td>+2</td>
<td>+4</td>
<td>+2</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Concrete audio dynamics: \( mf < f \)
Concrete audio dynamics: \(f \prec ff\)  Tremolo effects increase in intensity as flanger effects are introduced

- **Cue**: \(+6\) \(+4\) \(+5\)
- **Guitar Support**: GS GS GS GS
- **Motif**: MOT
- **Arpegg.**: ARP – Section 3 Begins
- **Cell Size**:
  - 3: CS3 CS3
  - 4: CS4 CS4
  - 5: CS5 CS5
- **Harmony**: HAR HAR HAR
- **Time**: 4’00 4’05 4’10 4’15 4’20 4’25 4’30 4’35 4’40 4’45 4’50 4’55
Concrete audio dynamics: $\text{fff} \to f$

Flanger effects peak and begin to subside as the piece gradually decays in intensity

Cue

Guitar

Guitar Support

Motif

Arpegg.

Cell Size

Cell Size

Cell Size

Harmony

Time
Concrete audio dynamics: $f > mp$

<table>
<thead>
<tr>
<th>Cue</th>
<th>+6</th>
<th>+3</th>
<th>+4</th>
</tr>
</thead>
</table>

**Guitar**

- Graphic notation

**Guitar Support**

- GS
- GS
- GS
- GS

**Motif**

- MOT
- MOT

**Arpegg.**

- Cell Size 3: CS3
- Cell Size 4: CS4
- Cell Size 5: CS5

**Harmony**

- HAR
- HAR
- HAR

<table>
<thead>
<tr>
<th>Time</th>
<th>7'00</th>
<th>7'05</th>
<th>7'10</th>
<th>7'15</th>
<th>7'20</th>
<th>7'25</th>
<th>7'30</th>
<th>7'35</th>
<th>7'40</th>
<th>7'45</th>
<th>7'50</th>
<th>7'55</th>
</tr>
</thead>
</table>
Concrete audio dynamics: \( mp > pp \)

Cue

Guitar

Support

Motif

MOT

Arpegg.

Cell Size

3

CS3

Cell Size

4

Cell Size

5

Harmony

HAR

<table>
<thead>
<tr>
<th>Time</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8'00</td>
<td>8'05</td>
<td>8'10</td>
<td>8'15</td>
</tr>
</tbody>
</table>
Three Minds Fractured
for brass sextet

(2013-2016)

Score in C

Michael McNeilis
Three Minds Fractured

for brass sextet

(2013-2016)

ca. 8’25

Score in C

Instrumentation:

trumpet in B♭ x 2
*tenor trombone x 2
    tuba x 2
Three Minds Fractured
(for brass sextet)

Michael McNeilis
One to Another

for large ensemble

(2014-2016)

Score in C

Michael McNeilis
One to Another

for large ensemble

(2014-2016)

Movement One: ca. 4’25
Movement Two: ca. 5’00
Movement Three: ca. 4’50
Total: ca. 14’15

Score in C

Instrumentation:

flute
oboe
clarinet in B♭
bassoon
French horn in F
trumpet in B♭
tuba
timpani (3 – tuned to C, F# and G)
violin x 2
viola
violoncello
contrabass
One to Another
(for large ensemble)
Movement One

Michael McNeilis
One to Another
(for large ensemble)
Movement Three
Michael McNeilis

Flute

Oboe

Clarinet in Bb

Bassoon

Horn in F

Trumpet in Bb

Tuba

Timpani

Violin 1

Violin 2

Viola

Violoncello

Contrabass
Appendix E

One to Another
(Octet Arrangement)

for small ensemble

(2015)

Score in C

Michael McNeilis
One to Another
(Octet Arrangement)

for small ensemble

(2015)

c. 4’45

Score in C

Instrumentation:

flute
oboé
clarinet in B♭
bassoon
French horn in F
trumpet in B♭
trombone
contrabass
One to Another
(Octet Arrangement)

Michael McNeilis
Aggregation for large ensemble (2016-2017)

Score in C

Michael McNeilis
Aggregation
for large ensemble

(2016-2017)

c. 8’20

Score in C

Instrumentation:

- piccolo
- flute
- oboe
- clarinet in B♭
- bassoon
- French horn in F
- trumpet in B♭
- tenor trombone
- tuba
- timpani (2 – tuned to C and G)
- suspended cymbal (percussion player 1)
- snare drum (percussion player 2)
- bass drum (percussion player 3)
- violin x 2
- viola
- violoncello
- contrabass
Appendix F

Aggregation
(Finale Excerpt Arrangement)
for small orchestra

(2017)

Score in C

Michael McNeilis
Aggregation
(Finale Excerpt Arrangement)
for small orchestra

(2017)

c.a. 1’00

Score in C

Instrumentation:

- flute
- oboe
- clarinet in B♭
- bassoon
- 4 French horns in F
- 2 trumpets in B♭
- tenor trombone
- bass trombone
- 6 violins 1
- 4 violins 2
- 4 violas
- 4 violoncellos
- 1 contrabass
Aggregation
(Finale Excerpt Arrangement)

Michael McNeillis
Appendix G

In Three Elements

for mixed quartet

(2016)

Score in C

Michael McNeilis
In Three Elements

for mixed quartet

(2016)

c.a. 4’10

Score in C

Instrumentation:

violin
clarinet in B♭
cello
piano
In Three Elements
(for mixed quartet)

Michael McNeilis