

Peter McKenzie Armstrong

Ostomachion

Wind Chimes from Archimedes' Box

for 12 MIDI instruments

[Score]

2013

Edition Ottaviano Petrucci

NOTES for Score*

I have reordered the 24 tessellation scores so as to pair them as variously as possible: the odd-numbers ascending as originally, with the evens interlaced and descending. Interlaced in turn, externally separating the pairs, are uniquely positioned isolate puzzle pieces.

The puzzle's intermediate "triangle" groupings are realized (not separately, but) as instrumental and rhythmic subsets of the full-square tessellations. I.e., each triangle's several voices share a single instrument (so, 4 per square) and sync rhythmically per their original specification.

But the timing *between* triangles I have made variable, shifting them apart: increasingly, through odd-numbered tessellations; decreasingly, through the even-numbered. All-told, only two full-square instances actually do fit together: the first and last. Their pair-partners are the most out-of-whack, with intervening pairs variously so and the center ones about matched.

Random choices (of order, possibly also selection) have played a part, as I wanted an impression of "wind chimes" (unscripted, one presumes) overall: within range constraints, instruments and volume levels are randomly assigned. Some choices made "instead" by design have the intent to *appear* random: a tempo scheme, and the progression of subgroup-shifting silences.

All of the above I embodied in a program that (calculating via *J*, template editing via *sed*, music scoring via *LilyPond* and page assembling via *pdfjam*) generated this listening Score, and has others, complete as is. (Note: its accidentals apply once only.) The output audios – 71 MIDI files – I merged via *Rosegarden*, then converted via *TiMidity* to WAV and via *pacpl* to MP3.

My grandmother's wind chimes enjoyed a breeze far less often than not. Accordingly, this piece's main character is its silence. I recommend to the listener low volume and a wandering mind.

– PMA

* The reader is referred first to those for the Catalog.

Ostomachion

Wind Chimes from Archimedes' Box

for 12 MIDI instruments

Peter McKenzie Armstrong



1: MM=72, Vol=0.24

tubular bells 

8 sec...

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2: MM=500, Vol=0.53

xylophone T1

steel drums T2

sitar T3

glockenspiel T4

4 sec...

3: MM=100, Vol=0.62

xylophone T1

sitar T3

steel drums T2

glockenspiel T4

9 sec...

4: MM=72, Vol=0.24



8 sec...

5: MM=431, Vol=0.29

guitar (nylon) T2

timpani T1

woodblock T3

guitar (steel) T4

3 sec...

6: MM=115, Vol=0.45

A musical score for four instruments: woodblock T3, timpani T1, guitar (nylon) T2, and guitar (steel) T4. The score consists of four staves, each with a treble clef and four horizontal lines. The woodblock T3 staff is at the top, followed by timpani T1, guitar (nylon) T2, and guitar (steel) T4 at the bottom. The music is in common time (indicated by a 'C'). The woodblock T3 staff has two measures of rests followed by a measure with three eighth-note pairs. The timpani T1 staff has two measures of rests followed by a measure with three eighth-note pairs. The guitar (nylon) T2 staff has two measures of rests followed by a measure with three eighth-note pairs. The guitar (steel) T4 staff has two measures of rests followed by a measure with three eighth-note pairs.

woodblock T3

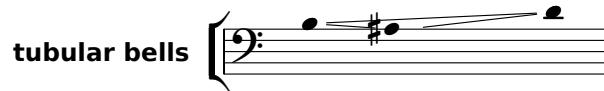
timpani T1

guitar (nylon) T2

guitar (steel) T4

9 sec...

7: MM=72, Vol=0.24



8 sec...

8: MM=371, Vol=0.45

xylophone T2

glockenspiel T1

guitar (steel) T4

sitar T3

1 sec...

9: MM=133, Vol=0.61

sitar T3

glockenspiel T1

guitar (steel) T4

xylophone T2

9 sec...

10: MM=72, Vol=0.24



6 sec...

11: MM=320, Vol=0.51

glockenspiel T1

timpani T2

guitar (nylon) T4

xylophone T3

2 sec...

12: MM=154, Vol=0.36

glockenspiel T1

xylophone T3

guitar (nylon) T4

timpani T2

24 sec...

||

13: MM=72, Vol=0.24



5 sec...

14: MM=276, Vol=0.24

The musical score consists of four staves, each representing a different instrument: timpani T1, xylophone T4, woodblock T2, and harpsichord T3. The staves are grouped by vertical brackets. Each staff has a bass clef and a '8' below it, indicating an 8th note value. The music is divided into measures by vertical bar lines. The instruments play various patterns of eighth notes, some with stems pointing up and others down, and some with diagonal stems.

timpani T1

xylophone T4

woodblock T2

harpsichord T3

2 sec...

15: MM=178, Vol=0.22

The musical score consists of four staves, each representing a different instrument: timpani T1, xylophone T4, harpsichord T3, and woodblock T2. The staves are arranged vertically from top to bottom in the following order: timpani T1, xylophone T4, harpsichord T3, and woodblock T2. Each staff begins with a bass clef and a '8' below it, indicating an octave. The music is divided into four measures. In the first measure, the timpani (T1) plays a single note on the second line, while the xylophone (T4), harpsichord (T3), and woodblock (T2) play sustained notes on the fourth line. In the second measure, the xylophone (T4) and harpsichord (T3) play eighth-note patterns on the second line, while the timpani (T1) and woodblock (T2) play sustained notes on the fourth line. In the third measure, the harpsichord (T3) and woodblock (T2) play eighth-note patterns on the second line, while the timpani (T1) and xylophone (T4) play sustained notes on the fourth line. In the fourth measure, the woodblock (T2) plays a sustained note on the second line, while the timpani (T1), xylophone (T4), and harpsichord (T3) play eighth-note patterns on the fourth line.

12 sec...

16: MM=72, Vol=0.24

tubular bells



A musical staff for tubular bells. It features a bass clef and five horizontal lines. On the first line, there is a note with a vertical stroke through it. On the second line, there is a note with a vertical stroke through it. On the third line, there is a note with a vertical stroke through it. On the fourth line, there is a note with a vertical stroke through it. On the fifth line, there is a note with a vertical stroke through it.

7 sec...

17: MM=238, Vol=0.50

guitar (steel) T4

timpani T1

woodblock T2

xylophone T3

1 sec...

18: MM=206, Vol=0.45

guitar (steel) T4

A musical score for four instruments: guitar (steel), timpani, xylophone, and woodblock. The score consists of eight staves, each with a bass clef and four horizontal lines. The instruments are grouped by a vertical brace on the left side of the page.

- guitar (steel) T4:** The top staff. It starts with a single note followed by a sixteenth-note grace note. The next measure shows a sixteenth-note grace note followed by a quarter note. The third measure features a sixteenth-note grace note followed by a eighth-note grace note.
- timpani T1:** The second staff. It starts with a sixteenth-note grace note followed by a quarter note. The next measure shows a sixteenth-note grace note followed by a quarter note. The third measure features a sixteenth-note grace note followed by a eighth-note grace note.
- xylophone T3:** The fourth staff. It starts with a sixteenth-note grace note followed by a quarter note. The next measure shows a sixteenth-note grace note followed by a eighth-note grace note. The third measure features a sixteenth-note grace note followed by a eighth-note grace note.
- woodblock T2:** The bottom staff. It starts with a sixteenth-note grace note followed by a quarter note. The next measure shows a sixteenth-note grace note followed by a eighth-note grace note. The third measure features a sixteenth-note grace note followed by a eighth-note grace note.

10 sec...

19: MM=72, Vol=0.24



7 sec...

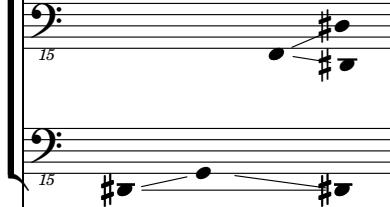
20: MM=206, Vol=0.34

woodblock T4



Musical score for woodblock T4 across four staves. Each staff has a bass clef and a tempo marking of 15. The music consists of eighth-note patterns with slurs and sharp accidentals.

dulcimer T1



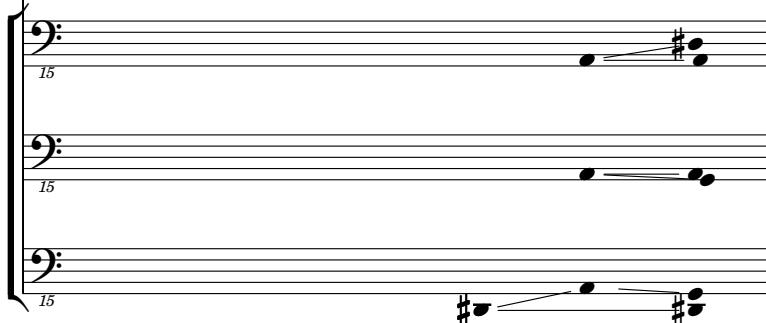
Musical score for dulcimer T1 across three staves. Each staff has a bass clef and a tempo marking of 15. The music consists of eighth-note patterns with slurs and sharp accidentals.

harpsichord T3



Musical score for harpsichord T3 across four staves. Each staff has a bass clef and a tempo marking of 15. The music consists of eighth-note patterns with slurs and sharp accidentals.

xylophone T2



Musical score for xylophone T2 across four staves. Each staff has a bass clef and a tempo marking of 15. The music consists of eighth-note patterns with slurs and sharp accidentals.

2 sec...

21: MM=238, Vol=0.31

The musical score consists of four staves, each representing a different instrument: woodblock T4, dulcimer T1, xylophone T2, and harpsichord T3. The staves are arranged vertically from top to bottom in the following order: woodblock T4, dulcimer T1, xylophone T2, and harpsichord T3. Each staff begins with a bass clef and a tempo marking of '15'. The music is divided into measures by vertical bar lines. The woodblock T4 staff contains measures 1 through 4. The dulcimer T1 staff contains measures 1 through 3. The xylophone T2 staff contains measures 1 through 5. The harpsichord T3 staff contains measures 1 through 4. The notes are represented by black dots on the staff lines, with some notes having stems and others being grouped by horizontal lines.

woodblock T4

dulcimer T1

xylophone T2

harpsichord T3

10 sec...

22: MM=72, Vol=0.24



5 sec...

23: MM=178, Vol=0.20

xylophone T1

sitar T4

harpsichord T3

guitar (steel) T2

3 sec...

24: MM=276, Vol=0.33

xylophone T1

sitar T4

guitar (steel) T2

harpsichord T3

24 sec...

|||

25: MM=72, Vol=0.24



6 sec...

26: MM=154, Vol=0.56

The musical score is divided into four sections, each corresponding to an instrument:

- timpani T1**: The top staff. It starts with a note on the first line, followed by a rest, then a note on the fourth line, another rest, and a note on the fifth line.
- harpsichord T3**: The second staff from the top. It starts with a note on the first line, followed by a rest, then a note on the fourth line, another rest, and a note on the fifth line.
- guitar (nylon) T4**: The third staff from the top. It starts with a note on the first line, followed by a rest, then a note on the fourth line, another rest, and a note on the fifth line.
- xylophone T2**: The bottom staff. It starts with a note on the first line, followed by a rest, then a note on the fourth line, another rest, and a note on the fifth line.

Each section contains a series of measures. The notes are represented by small circles, and rests are indicated by short vertical dashes. The instruments play different patterns of notes and rests throughout the score.

2 sec...

27: MM=320, Vol=0.48

A musical score for four instruments: timpani T1, xylophone T2, guitar (nylon) T4, and harpsichord T3. The score consists of four staves, each with a bass clef and a key signature of one sharp. The instruments are grouped by a vertical brace.

- timpani T1:** The top staff. It plays a series of notes on the second, third, and fourth lines, followed by a rest, and then continues with eighth-note pairs on the second and third lines.
- xylophone T2:** The second staff from the top. It plays eighth-note pairs on the second and third lines, followed by a rest, and then continues with eighth-note pairs on the second and third lines.
- guitar (nylon) T4:** The third staff from the top. It plays eighth-note pairs on the second and third lines, followed by a rest, and then continues with eighth-note pairs on the second and third lines.
- harpsichord T3:** The bottom staff. It plays eighth-note pairs on the second and third lines, followed by a rest, and then continues with eighth-note pairs on the second and third lines.

11 sec...

28: MM=72, Vol=0.24



7 sec...

29: MM=133, Vol=0.21

A musical score for four instruments: timpani (T3), woodblock (T1), guitar (steel) (T4), and sitar (T2). The score consists of four staves, each with a bass clef and four horizontal lines. The instruments are grouped by vertical brackets on the left side of the page.

- timpani T3:** The top staff. It starts with a single note, followed by a short rest, then two notes. This pattern repeats.
- woodblock T1:** The second staff from the top. It starts with a single note, followed by a short rest, then two notes. This pattern repeats.
- guitar (steel) T4:** The third staff from the top. It starts with a single note, followed by a short rest, then two notes. This pattern repeats.
- sitar T2:** The bottom staff. It starts with a single note, followed by a short rest, then two notes. This pattern repeats.

The music is divided into measures by vertical bar lines. The notes are represented by small black dots on the staff lines. Some notes have short horizontal dashes extending from them, likely indicating attack or release dynamics.

4 sec...

30: MM=371, Vol=0.47

sitar T2

woodblock T1

guitar (steel) T4

timpani T3

10 sec...

31: MM=72, Vol=0.24



7 sec...

32: MM=115, Vol=0.67

acoustic bass T3

The musical score consists of four staves, each representing a different instrument and its specific timeline (T3, T1, T2, T4). The staves are grouped by a vertical brace. Each staff begins with a treble clef and a tempo marking of 15. The instruments and their corresponding timelines are:

- acoustic bass T3**: The top staff. It starts with a note on the 15th measure, followed by a rest, then a note on the 16th measure, another rest, and a note on the 17th measure.
- glockenspiel T1**: The second staff from the top. It starts with a note on the 15th measure, followed by a rest, then a note on the 16th measure, another rest, and a note on the 17th measure.
- guitar (steel) T2**: The third staff from the top. It starts with a note on the 15th measure, followed by a rest, then a note on the 16th measure, another rest, and a note on the 17th measure.
- xylophone T4**: The bottom staff. It starts with a note on the 15th measure, followed by a rest, then a note on the 16th measure, another rest, and a note on the 17th measure.

The score shows various musical notes and rests, indicating the timing and pitch for each instrument at each measure. The notes are represented by black dots on the staff lines, with stems and beams indicating their duration and pitch.

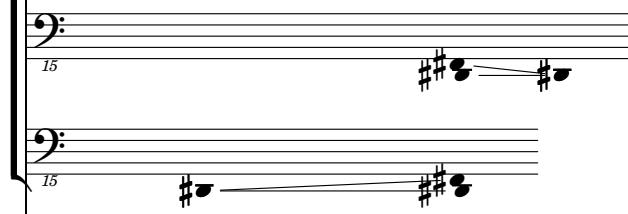
4 sec...

33: MM=431, Vol=0.15

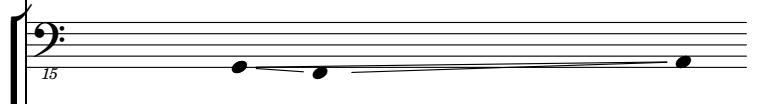
guitar (steel) T2



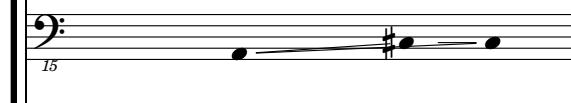
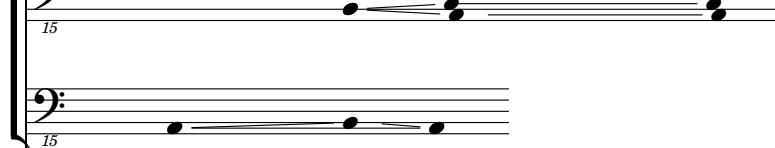
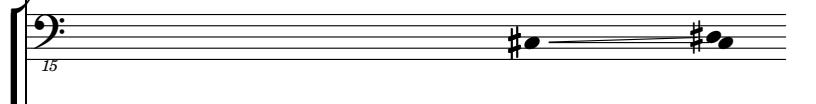
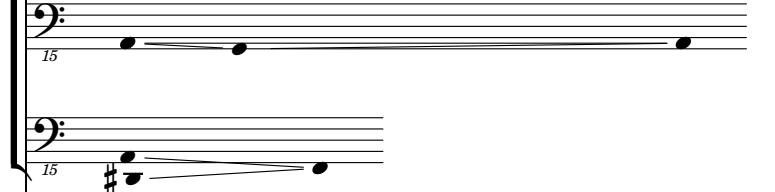
glockenspiel T1



acoustic bass T3



xylophone T4



10 sec...

tubular bells

34: MM=72, Vol=0.24

A musical staff for tubular bells. It features a bass clef, a key signature of one flat, and a common time signature. The staff consists of five horizontal lines. There are three notes: the first note is a quarter note on the second line, the second note is a eighth note on the third line, and the third note is a eighth note on the fourth line. All notes have a small flat symbol below them.

7 sec...

35: MM=100, Vol=0.40

timpani T1

guitar (steel) T3

harpsichord T2

dulcimer T4

4 sec...

36: MM=500, Vol=0.52

timpani T1

harpsichord T2

guitar (steel) T3

dulcimer T4

END

