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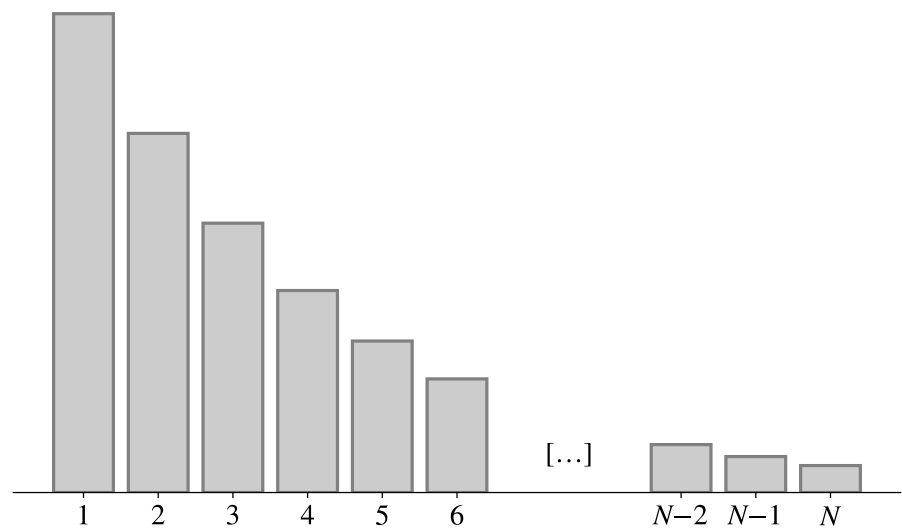
Cartography #1

for piano and vibraphone

2017

Full Score

All pieces in this series were composed using the following distribution:



$$P(n) = (3/4)^k \times P(n - k)$$

Cartography #1, for piano and vibraphone

Mapping and rules

pitches

set size	$N = 6$
transformation period	$8 \times \text{♩}$
transformation mechanism	$[a, b, c, d, e, f] \rightarrow [b, c, d, e, f, g]$, with uniformly randomly selected g between F3 and E5 such that $g \bmod 12 \neq x \bmod 12, \forall x \in [a, b, c, d, e, f]$.
initial set	[G4, D4, Eb4, A4, F4, B4]

articulations

set size	$N = 6$
transformation period	no transformation.
set	$[\emptyset, \emptyset, \emptyset, >, >, \wedge]$, where $\emptyset$ represents no articulation.
selection mechanism	accents are tied to pitches, so when a random index has been generated to select a pitch, this same index also selects an accent.

durations (vibraphone)

set size	$N = 8$
transformation period	$32 \times \text{♩}$
transformation mechanism	$[a, b, c, \dots, g, h] \rightarrow [a - 1, a - 2, a - 3, \dots, a - 7, a - 8]$, where an element equals to 1 if $a - k < 1$.
initial set	[10, 9, 8, 7, 6, 5, 4, 3]

durations (piano)

set size	$N = 8$
transformation period	$32 \times \text{♩}$
transformation mechanism	$[a, b, c, \dots, g, h] \rightarrow [a + 1, a, a - 1, \dots, a - 5, a - 6]$, where an element equals to 1 if $a - k < 1$.
initial set	[1, 1, 1, 1, 1, 1, 1, 1]

constraints

- number of pitch transformations: 40.
- number of duration transformations: 10.
- the piece begins with the vibraphone and the piano playing at the same time.
- the last note of the piano will dictate the last note of the vibraphone.

General performance notes

- all notes are notated as sixteenth-notes, but the effective durations are much longer due to the use of pedalling; that is, the notes represent the attack points only.
- this piece has no dynamic marks. Loudness is solely notated using marcato and martellato signs ($>$ and $\wedge$, respectively). Notes without articulations marks should be played as softly as possible (equivalent to *pp*), notes with a marcato sign should have a medium level of loudness (equivalent to *mf*) and notes with a martellato sign should have a high level of loudness (equivalent to *f*).
- the vibraphone's motor should remain off throughout the piece.
- the vibraphone's pedal should be held down throughout the piece; the performer may flush it ad libitum.
- the piano's sustain pedal should be held halfway down throughout the piece. A good reference point for this is when individual note lengths cannot be precisely perceived (that is, the sound is not cut when releasing a key). Some instruments and acoustic spaces might call for slightly different pedalling (at the discretion of the performer).
- after the last note of the piece, wait for a few seconds before raising the vibraphone's and piano's pedals.

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Example 1

Example 1 is a musical score for Vibraphone and Piano, marked "motor off". The tempo is indicated as $\text{♩} = \text{ca. } 84$. The score is in 2/4 time and consists of 12 measures. The Vibraphone part features a melodic line with eighth and quarter notes, often with rests, and includes a "Ped. →" marking. The Piano part provides a harmonic accompaniment with eighth and sixteenth notes, including triplets and dynamic markings such as *sf* (sforzando). The score is divided into three systems of four measures each, with measure numbers 6 and 12 indicated at the start of their respective systems.

18

sf *sf*

24

sf sf sf sf

30

sf

36

sf

42

sf

sf

48

sf

sf

sf

54

54

sf

sf

sf

Measures 54-59: This system contains six measures. The upper staff features a melodic line with various accidentals (sharps, flats, naturals) and dynamic markings including *sf*. The lower staff provides a harmonic accompaniment with chords and single notes, also marked with *sf*. The music is written in a key with one flat and a common time signature.

60

60

sf

sf

Measures 60-65: This system contains six measures. The upper staff continues the melodic development with some rests and dynamic markings. The lower staff features a more active accompaniment with frequent sixteenth-note patterns and dynamic markings including *sf*.

66

66

sf

sf

Measures 66-71: This system contains six measures. The upper staff shows a melodic line with some rests and dynamic markings. The lower staff has a rhythmic accompaniment with dynamic markings including *sf*.

72

Musical score for measures 72-77. The system consists of two staves. The upper staff contains six measures of music, and the lower staff contains six measures. The music features complex rhythmic patterns with eighth and sixteenth notes, often beamed together. There are several accidentals, including flats and naturals. Dynamic markings include *sf* (sforzando) in measure 75 of the lower staff. The key signature has one flat.

78

Musical score for measures 78-83. The system consists of two staves. The upper staff contains six measures of music, and the lower staff contains six measures. The music continues with complex rhythmic patterns. There are several accidentals, including sharps and flats. Dynamic markings include *sf* (sforzando) in measure 80 of the upper staff. The key signature has one flat.

84

Musical score for measures 84-89. The system consists of two staves. The upper staff contains six measures of music, and the lower staff contains six measures. The music continues with complex rhythmic patterns. There are several accidentals, including sharps and flats. Dynamic markings include *sf* (sforzando) in measure 84 of the lower staff and measure 86 of the upper staff. The key signature has one flat.

90

sf

96

sf

102

sf

108

sf sf

114

sf sf sf sf sf sf

120

sf sf

126

126

132

132

137

137

143

sf sf sf sf sf sf sf

149

sf sf sf sf sf sf

155

sf sf sf sf sf sf