

# **Four Pieces with Cognitive Constraints**

## **II. Repetitiveness**

For Two Marimbas

(2021)

Kenrick Ho

## Preface:

The set of *Four Pieces with Cognitive Constraints* are inspired by Fred Lerdahl's work in music cognition. All four compositions were generated from a Max patch that is specifically designed to satisfy the 17 constraints from Lerdahl's essay titled *Cognitive Constraints on Compositional Systems*. These constraints provide the basis for constructing a highly organised hierarchical structure for the Max patch to work with. The set of work explore how Lerdahl's idea of a 'musical grammar' can be coded into a music generation program.

## Performance Notes:

This piece is structured around two types of phrases: a motif and a transition. The motif is notated as a repeated cell in a box, and the transitions are conventionally notated on the score. The Marimba 2 player will be a leader that dictates the flow of the piece. Each motif should be played between 4 to 12 times, and when the leader decides to move on to a transition, he/she will play the bar after the box as a cue, which is a unison version of the motif.

It is encouraged that the two marimba players communicate the flow of the piece by listening for the unison cue, rather than rehearsing and counting for an agreed number of repetition.

c.a. 5'00"

# Four Pieces with Cognitive Constraints

## II. Repetitiveness

For Two Marimbas

**Allegro** ♩ = c.a. 100

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Repeat boxes for 4-12 times, until the Marimba 2 player proceeds to play the bar after.

Marimba 1

Marimba 2

*pp* *(fade in)* *mf*

*x4-12*

Mar. 1

Mar. 2

Mar. 1

Mar. 2

Mar. 1

Mar. 2

**A** *x4-12*

9

Mar. 1

Mar. 2

11

Mar. 1

Mar. 2

13

**B**

Mar. 1

Mar. 2

x4-12

15

Mar. 1

Mar. 2

17

Mar. 1

Mar. 2

**C**

19 *x4-12*

Mar. 1

Mar. 2

21

Mar. 1

Mar. 2

23

Mar. 1

Mar. 2

**D**

25 *x4-12*

Mar. 1

Mar. 2

27

Mar. 1

Mar. 2

29

Mar. 1

Mar. 2

31

**E**

Mar. 1

Mar. 2

x4-12

33

Mar. 1

Mar. 2

35

Mar. 1

Mar. 2

37

**F**

Mar. 1

Mar. 2

x4-12

39

Mar. 1

Mar. 2

41

Mar. 1

Mar. 2

43

Mar. 1

Mar. 2

**G**

x4-12

45

Mar. 1

Mar. 2

47

Mar. 1

Mar. 2

8

49 **H** x4-12

Mar. 1

Mar. 2

51

Mar. 1

Mar. 2

53

Mar. 1

Mar. 2

55 **I** x4-12

Mar. 1

Mar. 2

57

Mar. 1

Mar. 2

59

Mar. 1

Mar. 2

61

Mar. 1

Mar. 2

**J**

*mf* (fade out) *pp*

x4-12

63

Mar. 1

Mar. 2