

Chain Reactions

Commissioned for the 75th Commemoration of Chicago Pile-1

Clifton Callender

I. Subcriticality

Allegro ♩ = 132-138

alto flute

tongue ram *

f possibile

vibraphone

piano

mf

p

8vb

Sost. Ped.

senza Ped.

sempre al fine

a fl

vb

pn

mf

f

mp

f

f

(*Sost. Ped.*)

* Finger diamond notehead; lower notehead is the sounding pitch.

11

a fl *mp* *ff*

vb *mp* *ff*

pn *mp* *ff*

(Sost. *Reo*)

16

a fl *p* *ff* *p* *ff*

vb *p* *ff* *p* *ff*

pn *p* *ff* *p* *ff*

(Sost. *Reo*)

22

a fl *p* *f*

vb *p* *f* *Ped.* *Ped.* *Ped.*

pn *p* *f* *Ped.* *Ped.* *** *Ped.*

(Sost. *Reo*)

27

a fl

vb

pn

f possibile

p

f

(Sost. Leo)

8^{va}

35

a fl

vb

pn

mf

mp

f

mf

mp

f

(Sost. Leo)

41

a fl

vb

pn

mp

ff

mfpp

mfpp

mp

ff

p

Leo

Leo

47

a fl *mf pp* *mf pp* *mf* 5:3 *f p* *f p* *f p*

vb *mf* 5:3 *mf*

pn *mp* *mf* 5:3 *mf* 5:3 *Reo.* *Reo.* *Reo.*

(Sost. Reo.) * *senza Reo.*

52

a fl *f p* *f p* *f p* *f p* *f p*

vb *mp* *f*

pn *f* *Reo.* *Reo.* *Reo.* *Reo.* *Reo.* * *senza Reo.*

(Sost. Reo.)

57

a fl *p* *ff*

vb *ff*

pn *ff*

(Sost. Reo.)

67

fl

p

67

vb

f

Ped.

67

pn

ff

Ped.

122 128

73

Tempo primo

152-153

tremolo: slow → fast

a fl

73

vibraphone

mf

pn

(Sost. And.)

79

a fl

f possibile

vb

più f *f*

pn

più f *f*

(Sost. Xco)

83 *to flute*

a fl

vb

f *ff*

pn

f *ff*

(Sost. Xco)

87

a fl

vb

8va *Ped.* *8va*

pn

f

(Sost. Xco)

This musical score is for a piece featuring flute, vibraphone, and piano. The score is divided into three systems, each with measures 92, 97, and 102. The flute part includes a 'flute' marking and a 'ff' dynamic. The vibraphone part includes a 'ff' dynamic. The piano part includes a 'fff' dynamic and a 'Sost. Leo.' marking. The score is written in 2/4 time and features various musical notations, including notes, rests, and dynamic markings.

fl

vb

pn

(Sost. $\text{F}\flat\text{C}\flat$)

Measures 107-110. Flute and Violin parts feature complex rhythmic patterns with 4:3 and 5:3 ratios. Piano accompaniment consists of sustained chords.

fl

vb

pn

(Sost. $\text{F}\flat\text{C}\flat$)

Measures 111-113. Flute and Violin parts continue with rhythmic patterns. Piano accompaniment consists of sustained chords.

fl

vb

pn

(Sost. $\text{F}\flat\text{C}\flat$)

Measures 114-117. Flute and Violin parts feature complex rhythmic patterns with 5:3 and 5:4 ratios. Piano accompaniment consists of sustained chords.

flute m. 119 – 125 independent of notated tempo and meter

presto possibile poco a poco ritardando e decrescendo

repeat figure through m. 125

119

fl *ff*

119 percussion and piano m. 119 – 125 maintain notated tempo and meter

119 percussion and piano m. 119 – 125 maintain notated tempo and meter

pn (Sost. *Reo.*) *mf* *Reo.* 5:3 5:3

al ♩ = 52 *pizz.* *mp* *fff**p* *fff**p* *fff**p* *fff**p* *8va* *8va* *8va* *8va*

124 *crotales* *ff* *8va* wait for flute to finish figure

pn (Sost. *Reo.*) *8vb* *ff* *Reo.*

----- (Sost. *Reo.*) -----

*

* Dampen immediately.

II. Criticality

$\text{♩} = 176$

flute

vibraphone **

piano **

fl

vb

pn

* Flute and vibraphone equally balanced throughout movement.

** Pedal ad lib. Use sparingly!

System 1 (Measures 20-24):

- fl:** Measures 20-24. Dynamics: *f*, *mf*, *p*.
- vb:** Measures 20-24. Dynamics: *f*, *mf*, *p*.
- pn:** Measures 20-24. Dynamics: *ff*, *p*, *f*, *p*, *f*.

System 2 (Measures 25-29):

- fl:** Measures 25-29. Dynamics: *mf*, *mp*, *f*, *ff*, *f*, *ff*, *mp*.
- vb:** Measures 25-29. Dynamics: *mf*, *mp*, *f*, *ff*, *f*, *ff*, *mp*.
- pn:** Measures 25-29. Dynamics: *ff*, *mf*, *ff*, *p*. Includes a *pizz.* marking above measure 28.

System 3 (Measures 30-34):

- fl:** Measures 30-34. Dynamics: *mf*. Includes a *pizz.* marking above measure 30.
- vb:** Measures 30-34. Dynamics: *mp*. Includes a *dead stroke* marking above measure 30.
- pn:** Measures 30-34. Dynamics: *mp*, *mf*, *p*.

System 1 (Measures 35-38):

- fl:** Measures 35-38. Dynamics: *mf* (measures 36-37), *mf* (measure 38).
- vb:** Measures 35-38. Dynamics: *mf* (measures 36-37), *mp* (measure 38).
- pn:** Measures 35-38. Dynamics: *p* (measure 35), *mf* (measures 36-37), *mp* (measure 37), *mf* (measure 38), *f* (measure 38), *ff* (measure 38).

System 2 (Measures 39-43):

- fl:** Measures 39-43. Dynamics: *f* *ff* (measures 39-40), *p* (measure 41), *ff* (measure 42), *mf* (measure 43).
- vb:** Measures 39-43. Dynamics: *f* *ff* (measures 39-40), *p* (measure 41), *ff* (measure 42), *mf* (measure 43).
- pn:** Measures 39-43. Dynamics: *p* (measure 39), *ff* (measures 42-43).

System 3 (Measures 44-47):

- fl:** Measures 44-47. Dynamics: *ff* *mp* (measures 44-45), *f* *p* (measures 46-47), *mf* (measure 47), *ff* (measure 48), *mf* (measure 49).
- vb:** Measures 44-47. Dynamics: *ff* *mp* (measures 44-45), *f* *p* (measures 46-47), *mf* (measure 47), *ff* (measure 48), *mf* (measure 49).
- pn:** Measures 44-47. Dynamics: *mp* (measures 44-45), *mf* (measures 46-47), *mp* (measure 47), *mf* (measure 48), *ff* (measure 49), *p* (measure 50).

fl 48 *f* *ff* pizz. *p* *cresc.*

vb 48 *f* *ff* dead stroke *pp* *cresc.*

pn 48 *f* *pp*

fl 53 *al f*

vb 53 *al f*

pn 53 *f* *ff* *8va* *p* *mf* *f*

fl 57 *ff* *ff* *mf* *f*

vb 57 *ff* *ff* *mf* *f*

pn 57 *mf* *f* *mf* *f* *ff* *f*

Detailed description: This musical score page, titled 'Chain Reactions', contains three systems of music for fl, vb, and pn. The first system (measures 48-52) features a complex rhythmic pattern with accents and dynamic markings of *f*, *ff*, *p*, and *cresc.*. The fl and vb parts include performance instructions like 'pizz.' and 'dead stroke'. The pn part has a more melodic line with *f* and *pp* dynamics. The second system (measures 53-56) continues the patterns, with *al f* (all *f*) markings for fl and vb. The pn part introduces an *8va* (octave up) marking and a variety of dynamics including *f*, *ff*, *p*, *mf*, and *f*. The third system (measures 57-60) shows further development of the themes, with *ff*, *mf*, and *f* dynamics prominently used across all parts. The notation includes many slurs, ties, and accents, indicating a highly technical and expressive piece.

fl

vb

pn

61

ff fff

ff fff

ff fff

8va

64

sempre fff

sempre fff

sempre fff

fff

fff

fff

Detailed description: This musical score page, titled 'Chain Reactions', is page 14 of a composition. It features three staves: flute (fl), vibraphone (vb), and piano (pn). The score is divided into two systems, measures 61-63 and 64. In the first system, measures 61-63, the flute and vibraphone parts have a crescendo hairpin leading to a fortissimo (ff) and fortississimo (fff) dynamic. The piano part also has a crescendo hairpin leading to ff and fff dynamics. The piano part includes an 8va (octave up) marking. In the second system, measure 64, all three parts are marked 'sempre fff' (always fortississimo). The flute part has a final accent mark. The vibraphone and piano parts also have final accents. The piano part ends with a double bar line and a final chord.