

Peter McKenzie Armstrong

Dreadful '0'

for 10-track autopiano

[Parts]

2011

Edition Ottaviano Petrucci

Dapper '1'

Tinkering one day with the Fibonacci series, I wondered what might happen if, instead of adding always just the most recent two terms to get the one following, I were to add every pair of terms to get for each pair a new term in between:

starting with	1 2
one iteration giving	1 3 2
the next	1 4 3 5 2
and so on.	

I wrote a short generator (J-language script) and ran it to the point (in iteration #9) where it had output all integers between 1 and 88 — the piano range — at least once.

Except for this sampling's unique final item, all its terms within range had occurred from 2 to 10 times each, with a few dozen others exceeding it.

Given these circumstances, I shaped a progression of equal durations, as follows:

at each instance, a term within key range is allocated to one of 10 unique-volumed tracks, according to the term's occurrence tally at that instance;

for each term (MIDI key number) so assigned, a rest is placed in corresponding position on all other tracks;

terms above range are realized as rests on all tracks (i.e., their time component is preserved);

an additional track, a copy of #1 but with the rest slots filled in by extension of their just-previous notes, integrates and highlights the pattern of first occurrences.

Scores

Dapper '1' is written in full score, as it has few enough tracks to fit a 11x17 page. *Dreadful '0'*, with too many to fit, is written instead as separate parts. In any case, neither score is intended to facilitate human performance. The music is for auto-sequencer. I did, however, want to give its overall patterning visual realization. Hence this style — with alto clef exclusively (Middle C in the middle!) to spare the eye an incessant disruption of clef changes. The LilyPond files rework drafts I had initially exported from Rosegarden.

These pieces are named for what strikes me as their "character" — ultimately their comfy vs jagged patterns of volume distribution.

Audio

I built each movement in Rosegarden's matrix editor, exported .mid files, and combined these as one .wav. Playing time is 78 secs.

Dreadful '0'

Then, comeuppance. Browsing at the "On-Line Encyclopedia of Integer Sequences" (OEIS), I encountered for the first time Stern's biatomic array (<https://oeis.org/A002487>).

When run for two iterations beyond the series I had improvised, this one clearly *subsumed* the latter's output!

The difference, Stern seeds "0 1" replacing my hazarded "1 2", exposes something extraordinary at work: with this "0 1" start, every generator iteration first replicates the just-previous one, before appending then a continuation of its own.

OEIS presents several offshoots. My improvised script output the sequence as follows:

starting with	0 1
one iteration giving	0 1 1
the next	0 1 1 2 1
and so on.	

Run this way well into its 11th iteration (to build up from 0), the procedure now filled the 88-slot range only after 1276 terms, accumulating an occurrence-frequency maximum of 42.

Musical realization here, to be conceptually as before, called for selective re-specifying, as follows:

there are now 42 unique-volume-specific tracks, necessarily at much narrower volume differences;

tempo is now 4-fold, to put so many more events into a time span compatible with *Dapper '1'*;

a 3-second coda cascades the first occurrences.

Dreadful 'O'

for sequenced MIDI piano

Peter McKenzie Armstrong

Occurrence 1 (Tempo $\text{♩} = 148$)

Track 1
(Vel=120)

The musical score is written for a single piano track in 12/8 time. It consists of five staves of music, with measure numbers 5, 10, 17, 21, and 35 indicated at the beginning of each staff. The notation includes eighth notes, rests, and various accidentals (sharps, flats, and naturals). There are also dynamic markings such as '2', '4', and '10' placed above the staves. The score is presented in a clean, black-and-white format suitable for MIDI sequencing.

39

43

69

74

22

2

2

Coda
(♩ = 180)

84

cluster A-D

Occurrence 2

Track 2

(Vel=70)

5

9

13

19

23

28

37

41

9/16

45

9/16

51

9/16

55

9/16

71

9/16

75

9/16

Occurrence 3

Track 3 (Vel=69)

5

9

13

18

22

26

30

3

2

36 **3**

Staff 36-41: Treble clef, key of B-flat major. Measure 36: whole rest. Measure 37: eighth rest, eighth note G4, quarter rest. Measure 38: whole rest. Measure 39: whole rest. Measure 40: eighth rest, eighth note G4, eighth rest, eighth note F#4, eighth rest, eighth note E4, eighth rest, eighth note D4. Measure 41: eighth rest, eighth note D4, eighth rest, eighth note C4, eighth rest, eighth note B3, eighth rest, eighth note A3.

42

Staff 42-45: Treble clef, key of B-flat major. Measure 42: whole rest. Measure 43: eighth rest, eighth note G4, eighth rest, eighth note F#4, quarter rest. Measure 44: eighth rest, eighth note E4, eighth rest, eighth note D4, quarter rest. Measure 45: eighth rest, eighth note C4, eighth rest, eighth note B3, eighth rest, eighth note A3, quarter rest.

46

Staff 46-49: Treble clef, key of B-flat major. Measure 46: whole rest. Measure 47: eighth rest, eighth note G4, eighth rest, eighth note F#4, quarter rest. Measure 48: whole rest. Measure 49: eighth rest, eighth note E4, eighth rest, eighth note D4, quarter rest.

50

Staff 50-53: Treble clef, key of B-flat major. Measure 50: eighth rest, eighth note G4, eighth rest, eighth note F#4, eighth rest, eighth note E4, eighth rest, eighth note D4, quarter rest. Measure 51: whole rest. Measure 52: eighth rest, eighth note C4, eighth rest, eighth note B3, eighth rest, eighth note A3, quarter rest. Measure 53: eighth rest, eighth note G4, eighth rest, eighth note F#4, eighth rest, eighth note E4, eighth rest, eighth note D4, quarter rest.

54 **11**

Staff 54-57: Treble clef, key of B-flat major. Measure 54: eighth rest, eighth note G4, eighth rest, eighth note F#4, eighth rest, eighth note E4, eighth rest, eighth note D4, quarter rest. Measure 55: whole rest. Measure 56: eighth rest, eighth note C4, eighth rest, eighth note B3, eighth rest, eighth note A3, quarter rest. Measure 57: eighth rest, eighth note G4, eighth rest, eighth note F#4, eighth rest, eighth note E4, eighth rest, eighth note D4, quarter rest.

68 **3**

Staff 68-73: Treble clef, key of B-flat major. Measure 68: eighth rest, eighth note G4, eighth rest, eighth note F#4, eighth rest, eighth note E4, eighth rest, eighth note D4, quarter rest. Measure 69: whole rest. Measure 70: eighth rest, eighth note C4, eighth rest, eighth note B3, eighth rest, eighth note A3, quarter rest. Measure 71: eighth rest, eighth note G4, eighth rest, eighth note F#4, eighth rest, eighth note E4, eighth rest, eighth note D4, quarter rest. Measure 72: whole rest. Measure 73: eighth rest, eighth note C4, eighth rest, eighth note B3, eighth rest, eighth note A3, quarter rest.

74 **5**

Staff 74-77: Treble clef, key of B-flat major. Measure 74: whole rest. Measure 75: whole rest. Measure 76: eighth rest, eighth note G4, eighth rest, eighth note F#4, eighth rest, eighth note E4, eighth rest, eighth note D4, quarter rest. Measure 77: eighth rest, eighth note C4, eighth rest, eighth note B3, eighth rest, eighth note A3, quarter rest.

Occurrence 4

Track 4 (Vel=68)

5

9

13

17

23

28

32

3

2

Musical staff 32-38: Treble clef, 9/16 time signature. Measures 32-33: quarter rest, eighth rest, eighth note (F#), quarter rest. Measure 34: whole rest. Measure 35: eighth rest, eighth note (F#), quarter rest, quarter rest. Measure 36: whole rest. Measure 37: whole rest. Measure 38: whole rest.

39

4

Musical staff 39-45: Treble clef, 9/16 time signature. Measures 39-40: eighth rest, eighth note (F#), quarter rest, quarter rest. Measure 41: whole rest. Measure 42: eighth rest, eighth note (F#), quarter rest, quarter rest. Measure 43: whole rest. Measure 44: eighth rest, eighth note (F#), quarter rest, quarter rest. Measure 45: eighth rest, eighth note (F#), quarter rest, quarter rest.

46

Musical staff 46-51: Treble clef, 9/16 time signature. Measures 46-47: whole rest. Measure 48: eighth rest, eighth note (F#), quarter rest, quarter rest. Measure 49: whole rest. Measure 50: eighth rest, eighth note (F#), quarter rest, quarter rest. Measure 51: eighth rest, eighth note (F#), quarter rest, quarter rest.

50

2

Musical staff 50-54: Treble clef, 9/16 time signature. Measures 50-51: whole rest. Measure 52: eighth rest, eighth note (F#), quarter rest, quarter rest. Measure 53: whole rest. Measure 54: eighth rest, eighth note (F#), quarter rest, quarter rest.

55

2

Musical staff 55-60: Treble clef, 9/16 time signature. Measures 55-56: eighth rest, eighth note (F#), quarter rest, quarter rest. Measure 57: whole rest. Measure 58: eighth rest, eighth note (F#), quarter rest, quarter rest. Measure 59: whole rest. Measure 60: eighth rest, eighth note (F#), quarter rest, quarter rest.

60

7

Musical staff 60-66: Treble clef, 9/16 time signature. Measures 60-61: eighth rest, eighth note (F#), quarter rest, quarter rest. Measure 62: whole rest. Measure 63: eighth rest, eighth note (F#), quarter rest, quarter rest. Measure 64: whole rest. Measure 65: eighth rest, eighth note (F#), quarter rest, quarter rest. Measure 66: eighth rest, eighth note (F#), quarter rest, quarter rest.

70

4

Musical staff 70-76: Treble clef, 9/16 time signature. Measures 70-71: whole rest. Measure 72: eighth rest, eighth note (F#), quarter rest, quarter rest. Measure 73: whole rest. Measure 74: eighth rest, eighth note (F#), quarter rest, quarter rest. Measure 75: whole rest. Measure 76: eighth rest, eighth note (F#), quarter rest, quarter rest.

Occurrence 5

Track 5
(Vel=67)

5

10

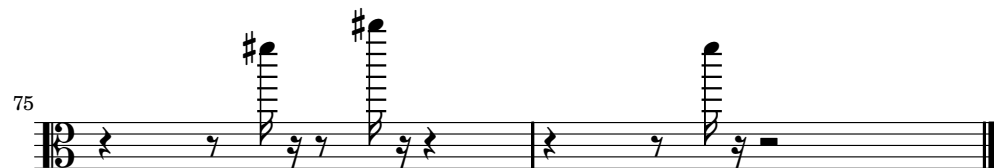
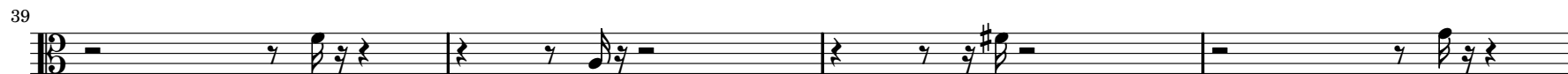
14

19

25

29

35



Occurrence 6

Track 6

(Vel=66)

5

9

13

17

21

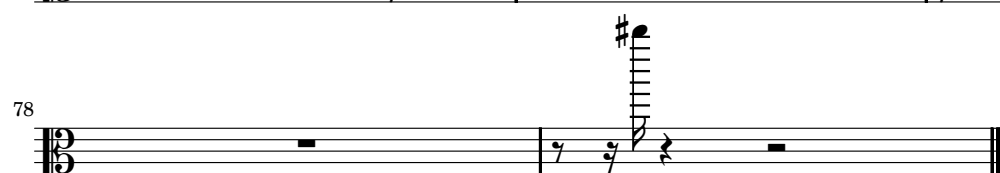
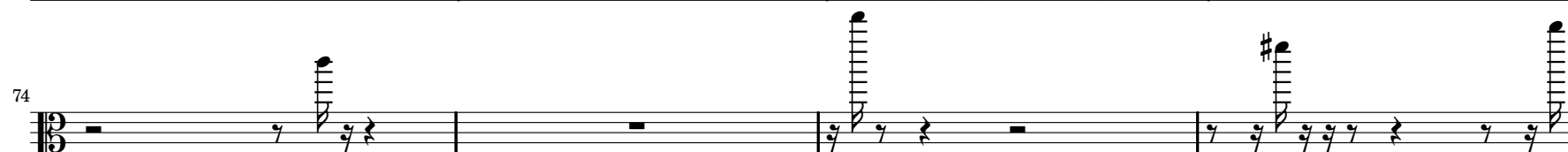
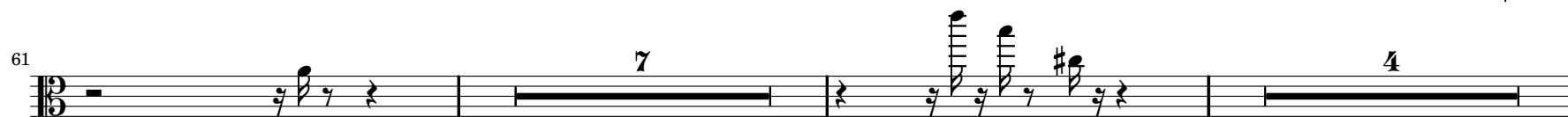
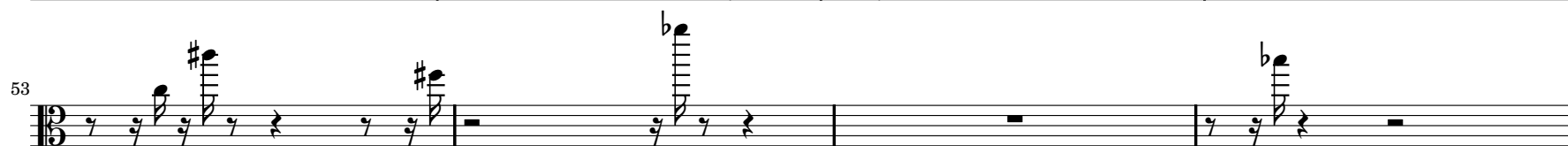
26

31

2

2

3



Occurrence 7

Track 7
(Vel=65)

Musical score for Track 7, Occurrence 7, measures 1-30. The score is written in 9/16 time with a common key signature. It consists of eight staves. The first staff begins with a double bar line, a '2' above it, and a common time signature 'C'. The notation includes various rhythmic values (eighth, sixteenth, and thirty-second notes), rests, and accidentals (sharps and flats). The score is divided into measures by vertical bar lines. The first staff contains measures 1-5, the second staff measures 6-9, the third staff measures 10-13, the fourth staff measures 14-17, the fifth staff measures 18-21, the sixth staff measures 22-25, the seventh staff measures 26-29, and the eighth staff measures 30-33. The eighth staff ends with a double bar line and a '2' above it.

35

39

47

52

56

60

69

74

Occurrence 8

Track 8
(Vel=64)

Musical score for Track 8 (Velocity = 64), Occurrence 8. The score is written in 9/16 time and consists of 32 measures across eight staves. The notation includes various note values, rests, and articulation marks. Measure numbers 6, 10, 15, 21, 25, and 29 are indicated at the start of their respective staves. A '2' is placed above the first staff, and a '3' is placed above the fifth staff, likely indicating fingerings or phrasing. The score ends with a double bar line at the end of the eighth staff.

33 **2** **2**

39 **4**

46 **2**

51 **2**

56

60

64 **6** **3**

75 **4**

Occurrence 9

Track 9
(Vel=63)

Musical score for Track 9, Occurrence 9, showing measures 1 through 30. The score is written in 9/8 time with a common key signature. The tempo is marked as (Vel=63). The score consists of six staves, each containing four measures. The measures are numbered 1 through 30. The notation includes various musical symbols such as rests, eighth notes, and sixteenth notes, along with dynamic markings like **3** and **2**.

Measures 1-4: Measure 1 contains a whole rest and a **3** above the staff. Measures 2-4 contain eighth notes and rests.

Measures 5-8: Measure 5 contains an eighth note and a rest. Measures 6-8 contain eighth notes and rests.

Measures 9-12: Measure 9 contains a whole rest. Measures 10-12 contain eighth notes and rests.

Measures 13-16: Measure 13 contains a whole rest. Measures 14-16 contain eighth notes and rests.

Measures 17-20: Measure 17 contains a whole rest and a **2** above the staff. Measures 18-20 contain eighth notes and rests.

Measures 21-24: Measure 21 contains a whole rest and a **2** above the staff. Measures 22-24 contain eighth notes and rests.

Measures 25-28: Measure 25 contains a whole rest. Measures 26-28 contain eighth notes and rests.

Measures 29-30: Measure 29 contains a whole rest and a **2** above the staff. Measure 30 contains eighth notes and rests.

34

38

45

50

54

62

68

73

Occurrence 10

Track 10

(Vel=62)

Musical score for Track 10, Occurrence 10, showing measures 1 through 24. The score is written in 9/8 time and features a complex rhythmic pattern with many beamed sixteenth notes. The key signature has one sharp (F#). The score is divided into six systems, each containing four measures. Measure numbers 7, 12, 16, 20, and 24 are indicated at the start of their respective systems. Measure 19 is indicated at the bottom center of the page. The score includes various musical notations such as rests, eighth notes, and sixteenth notes, some of which are beamed together. There are also some unusual markings, such as a sharp sign (#) above a note in measure 12 and a flat sign (b) above a note in measure 19.

3

2

2

19

29 **3**

35

39

43 **2**

48 **3**

54 **2**

59

64 **3**

70

74

Occurrence 11

Track 11
(Vel=61)

4

8

13

18

25

29

35

41

49

57

63

68

2

3

2

5

4

2

3

2

4

75

Occurrence 12

Track 12
(Vel=60)

5

9

2

3

16

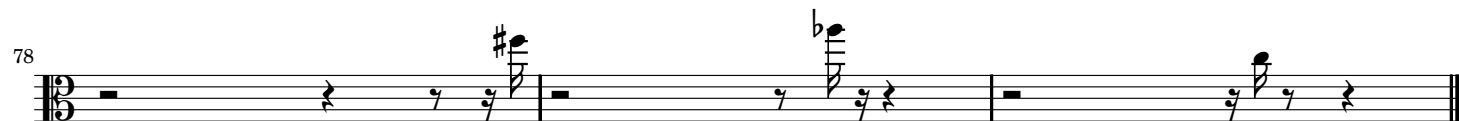
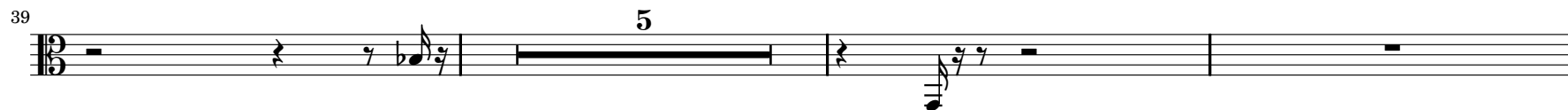
3

22

2

27

3



Occurrences 13

Track 13
(Vel=59)



6

2

3

3

3

35

39 2

44 4

52

56

60 4

67

71 4 2

26

Occurrence 14

Track 14

(Vel=58)

7

2

2

5

2

2

3

27

35

41

45

54

58

62

67

72

28

Occurrence 15

Track 15

(Vel=57)

8

2

2

4

3

3

2

5

48 **5**

56

60 **2**

65 **2**

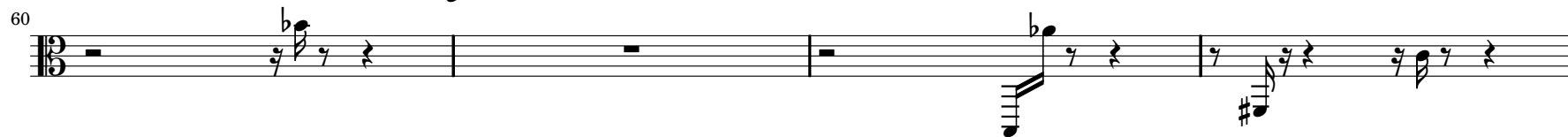
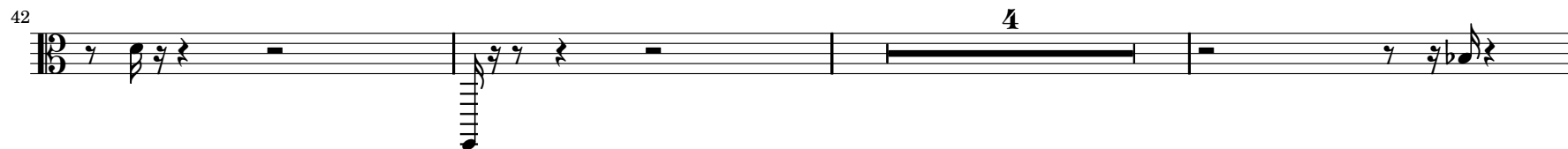
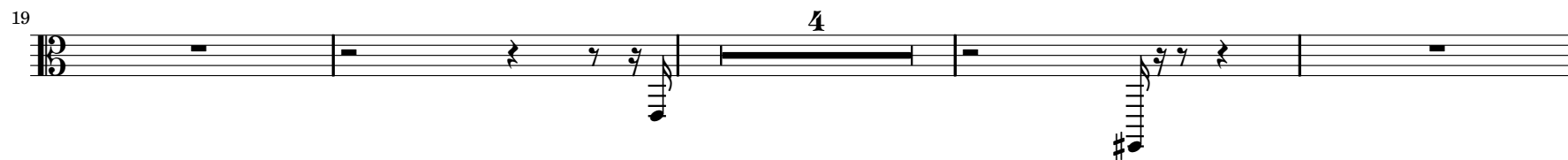
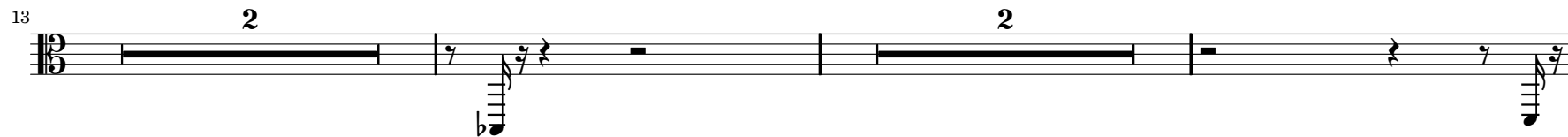
70 **2** **2**

76 **2**

Occurrence 16

Track 16 **9**

(Vel=56)



64

3

70

7

Occurrence 17

Track 17
(Vel=55)

11

15

3

22

7

32

2

37

5

32

45 **2**

50 **5** **3**

60 **5**

68 **2**

73

Occurrence 18

Track 18
(Vel=54)

12

C

16 4

23 6

32 2 3

39 5 4

50 10 2

64 3

70

74

Occurrence 19

Track 19 (Vel=53)

14

18

26

33

41

52

56

4

2

4

2

5

4

4

63

2

3

70

3

5

Occurrence 20

Track 20
(Vel=52)

15

19

4

2

27

3

33

3

3

41

3

5

36

51 **4** **2**

59 **3** **8**

72 **6**

Occurrence 21

Track 21 **16** **2**
(Vel=51)

21 **6**

30 **3** **9**

44 **2**


49

3 5

59

2 4

67



6

Occurrence 22

Track 22
(Vel=50)

18

3

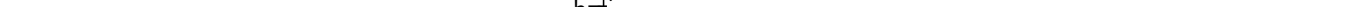
6

b

b

b

23 

32 

46

2

51 **2** **6**

61 **3** **4**

70 **8**

Occurrence 23

Track 23
(Vel=49)

20 **2**

25 **6** **3**

36 **12** **5**

55 **6**

64 **6**

Occurrence 24

Track 24
(Vel=48)

Musical score for Track 24, Occurrence 24, showing measures 23 to 66. The score is written in 9/16 time with a common time signature 'C'. The key signature has one flat (B-flat). The score is divided into six systems, each starting with a measure number. Measure numbers 23, 27, 38, 50, 59, and 66 are indicated at the beginning of their respective systems. The notation includes various musical symbols such as rests, eighth notes, sixteenth notes, and beams. Some measures contain a thick black bar, likely indicating a sustained note or a specific performance instruction. The score ends with a double bar line at measure 66.

23

27

38

50

59

66

Occurrence 25

Track 25
(Vel=47)

24 2

30 2 6

40 11 6

60 4 6

67 5 6

Occurrence 26

Track 26
(Vel=46)

27 2

41

32

36

55

63

71

Detailed description: This block contains five musical staves. Staff 32-35: Measures 32-35, 9/16 time. Staff 36-39: Measures 36-39, 9/16 time. Staff 55-58: Measures 55-58, 9/16 time. Staff 63-66: Measures 63-66, 9/16 time. Staff 71-74: Measures 71-74, 9/16 time. Fingerings: 5, 12, 5, 4, 2, 4.

Occurrence 27

Track 27 (Vel=45)

29

42

Detailed description: This block contains one musical staff. Staff 29-32: Measures 29-32, common time. Fingerings: 29, 42.

34 **2** **6**

44 **12** **10**

69 **2**

Occurrence 28

Track 28
(Vel=44)

31 **6**

40 **6** **11**

59 **12**

74 **3**

Occurrence 29

Track 29

(Vel=43)

32

6

41

4

2

50

11

2

65

11

Occurrence 30

Track 30

(Vel=42)

35

6

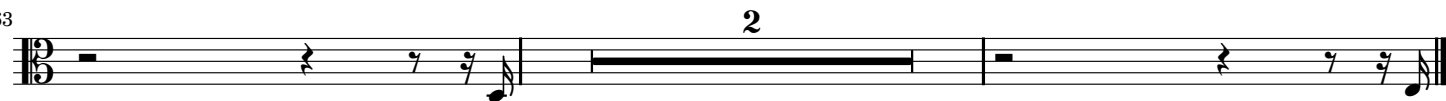
4

39

9

51

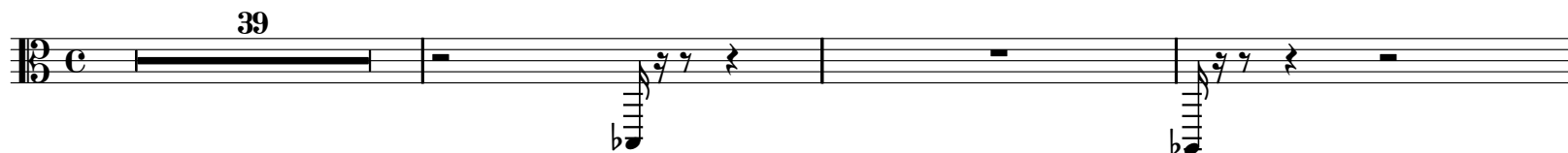
63



Occurrence 31

Track 31

(Vel=41)



43



52



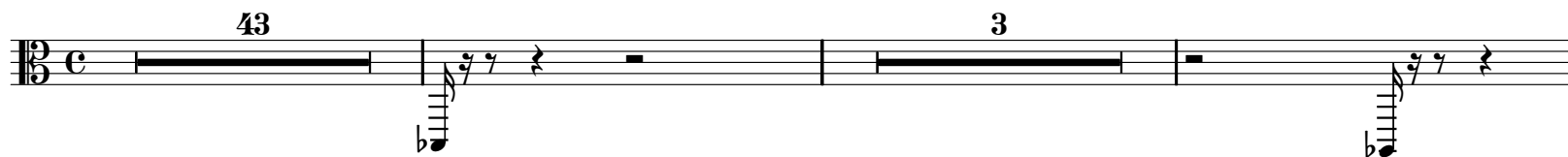
60



Occurrence 32

Track 32

(Vel=40)



49

5

57

6

2

67

3

Occurrence 33

Track 33
(Vel=39)

47

2

52

4

2

60

5

2

69

3

Occurrence 34

Track 34 (Vel=38)

48 6

57 3

63 9 4

Occurrence 35

Track 35 (Vel=37)

53 3

59

63 11

Occurrence 36

Track 36
(Vel=36)

56 3

62 15

Occurrence 37

Track 37
(Vel=35)

60

64

Occurrence 38

Track 38
(Vel=34)

63

Occurrence 39

Track 39
(Vel=33)

64 2

69 4

Occurrence 40

Track 40
(Vel=32)

66 4

Occurrence 41

Track 41
(Vel=31)

71 6

Occurrence 42

Track 42
(Vel=30)

77