

Gyration Point 3.0

"Even quite ungainly objects, like chairs and tables, will become almost spherical if you wrap them in enough newspaper."

Martin Q Larsson

play each repetition
4-40 times, until you
find a good groove

I. Tables and chairs

Allegro leggiero molto

on cue

A **B**

The musical score is for the piece "I. Tables and chairs" by Martin Q Larsson. It is in 7/8 time and marked "Allegro leggiero molto". The score is for six instruments: Flute, Clarinet in Bb, Bass Clarinet in Bb, Violin, Viola, and Violoncello. The Flute part starts with a dynamic of *ff* and has two sections, A and B, marked with boxes. The Clarinet and Bass Clarinet parts also start with *ff* and have "solo" markings. The Violin, Viola, and Violoncello parts start with *ff* and have "pizz" and "arco" markings. The score is divided into two main sections, A and B, each with a repeat sign. The Flute part has a "solo" marking above the second measure of section B.

Stand up and read:

A plain rectangular table has two planes of symmetry, which divide the sphere into four segments. We can consider any one of these segments as the orbifold - its boundary consists of two semicircles that intersect each other at the zenith and at the nadir, at angle $\pi/2$. So this boundary curve has type $*22$, and indeed $*22$ is the orbifold notation for the symmetry group of the table.

C

Musical score for measures 9-16. The score includes parts for Flute (Fl.), Clarinet (Cl.), Bass Clarinet (B. Cl.), Violin (Vln.), Viola (Vla.), and Violoncello (Vc.). The Flute part has a 'solo' marking at measure 10. The Clarinet and Bass Clarinet parts have a 'solo' marking at measure 15. The Violin and Viola parts have 'pizz' and 'arco' markings. The Violoncello part has 'pizz' and 'arco' markings. The dynamic markings are *mf* for measures 10-16.

D

Musical score for measures 17-24. The score includes parts for Flute (Fl.), Clarinet (Cl.), Bass Clarinet (B. Cl.), Violin (Vln.), Viola (Vla.), and Violoncello (Vc.). The Flute part has a 'solo' marking at measure 20. The Violin and Viola parts have 'solo' markings at measure 20. The dynamic markings are *f* for measures 17-19 and *mp* for measures 20-24.

Stand up and read:

A plain square table has two further (diagonal) planes of symmetry, and the four symmetry planes divide the sphere into eight segments, the typical segment having two corners at angle $\pi/4$. This time the symmetry group is $*44$.

27 **E**

Fl. *mp*

Cl. *mp*

B. Cl. *mp*

Vln. *mp*

Vla. *mp*

Vc. *mp*

solo

34 **F**

Fl. *mf*

Cl. *mf*

B. Cl. *mf*

Vln. *mf*

Vla. *mf*

Vc. *mf*

Stand up and read:
 A chair has a single plane of symmetry, which cuts the sphere in a great circle, that is to say, a boundary curve without corners, type $*$. We might also write 1^* , so as to give the star something to hang on to. \dagger digits 1 have no significance in this notation, except as place-fillers.

attacca

II. Gyration points and cone points

43 **G**

Fl.

Cl.

B. Cl.

Vln.

Vla.

Vc.

solo

solo

solo

H

f

f

f

f

f

f

f

The musical score consists of six staves. The Flute (Fl.) part begins with a boxed letter 'G' above the first measure. The Clarinet (Cl.) and Bass Clarinet (B. Cl.) parts have 'solo' markings above their respective staves in the third measure. The Violin (Vln.) part has a 'solo' marking above the fifth measure. The Viola (Vla.) and Cello (Vc.) parts have 'f' markings below their staves in the eighth measure. A boxed letter 'H' is placed above the eighth measure of the Flute staff. The score includes various musical notations such as notes, rests, slurs, and dynamic markings.

53

Fl.

Cl.

B. Cl.

Vln.

Vla.

Vc.

Stand up and read:
 An orbifold may have some special points
 that do not lie on boundary curves. A
 gyration is a rotation in the group whose
 centre does *not* lie on any mirror.

solo

I

63

Fl.

Cl.

B. Cl.

Vln.

Vla.

Vc.

Stand up and read:
A point of the surface is called an m -fold gyration point if it is the centre of some gyration of order m , but not of any gyration of higher order.

ff

ff

ff

ff

ff

ff

solo

71

Fl.

Cl.

B. Cl.

Vln.

Vla.

Vc.

Stand up and read:
The image in the orbifold of an m -fold gyration point is called a cone-point of order m – it is a point around which the angle is rather $2\pi/m$ than 2π .

fff

fff

fff

fff

fff

fff

solo

J

Flute

Gyration Point 3.0

"Even quite ungainly objects, like chairs and tables, will become almost spherical if you wrap them in enough newspaper."

I. Tables and chairs

Allegro leggiero molto

play each repetition
4-40 times, until you
find a good groove

Martin Q Larsson

on cue

A

ff

5

B

ff

11

solo

C

Stand up and read:
A plain rectangular table has two planes of symmetry, which divide the sphere into four segments. We can consider any one of these segments as the orbifold — its boundary consists of two semicircles that intersect each other at the zenith and at the nadir, at angle $\pi/2$. So this boundary curve has type $*22$, and indeed $*22$ is the orbifold notation for the symmetry group of the table.

15

solo

D

f

19

E

25

F

mp

29

G

35

H

mf

2 2

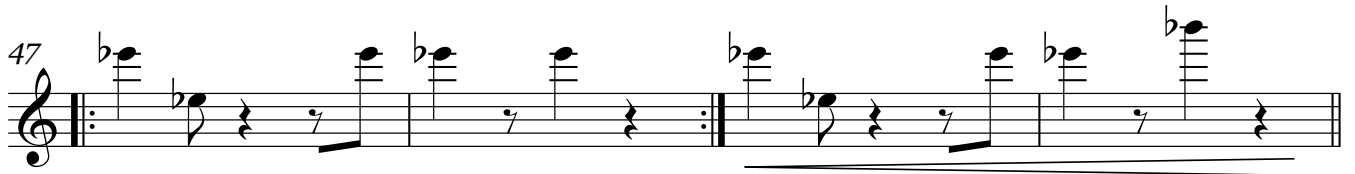
II. Gyration points and cone points

attacca

43 **G**

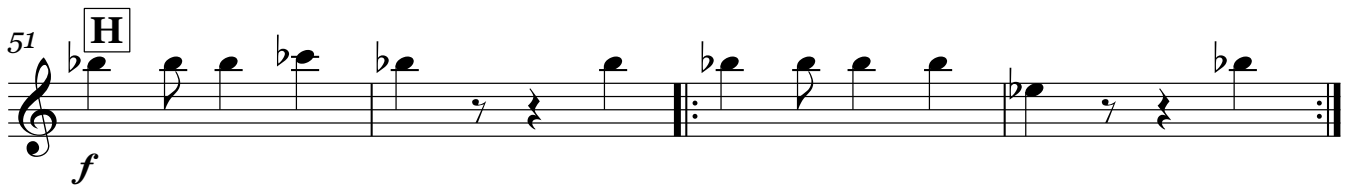


47



51 **H**

f



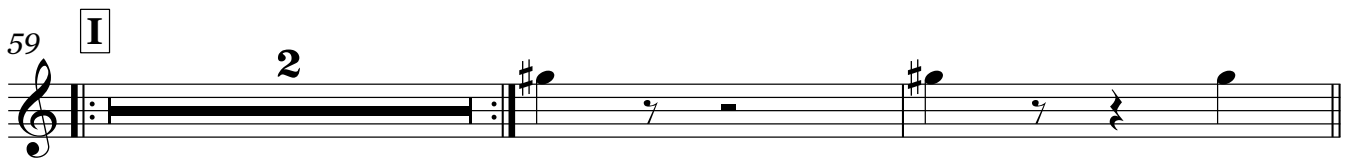
55

solo



59 **I**

2

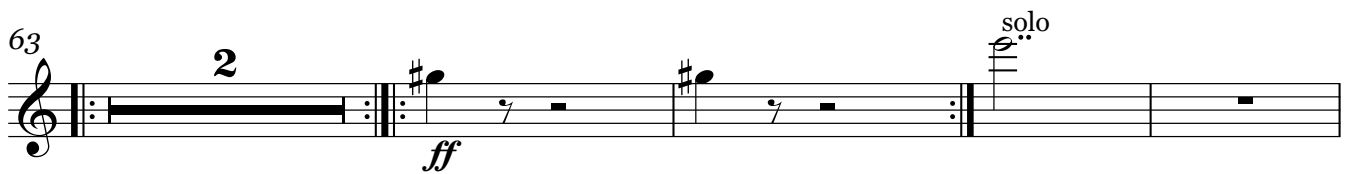


63

2

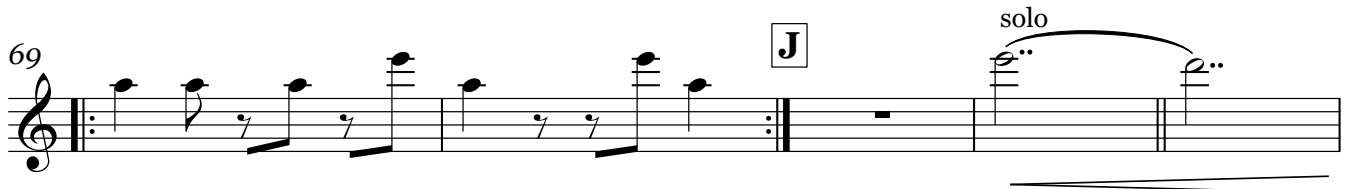
ff

solo



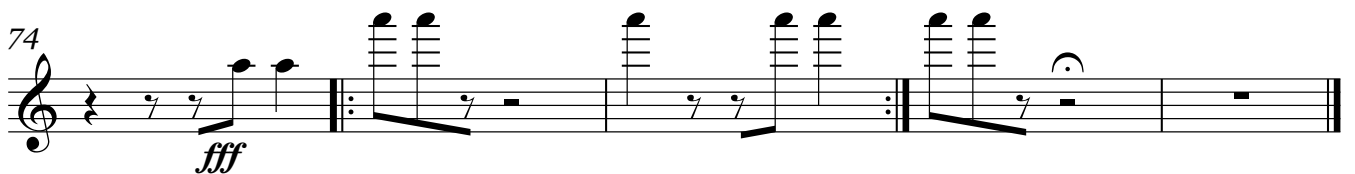
69 **J**

solo



74

fff



Clarinet in B \flat

Gyration Point 3.0

"Even quite ungainly objects, like chairs and tables, will become almost spherical if you wrap them in enough newspaper."

I. Tables and chairs

Allegro leggiero molto

play each repetition
4-40 times, until you
find a good groove

Martin Q Larsson

A on cue
solo

B solo

C solo

D

E

F

G

H

ff

mf

f

mp

mf

II. Gyration points and cone points

43 **G** *attacca* solo

48 **H** *f*

53 **2** **Stand up and read:**

An orbifold may have some special points that do not lie on boundary curves. A gyration is a rotation in the group whose centre does *not* lie on any mirror.

59 **I**

63 *ff*

67

71 **J**

75 *fff*

Gyration Point 3.0

"Even quite ungainly objects, like chairs and tables, will become almost spherical if you wrap them in enough newspaper."

I. Tables and chairs

Allegro leggiero molto

play each repetition
4-40 times, until you
find a good groove

Martin Q Larsson

A on cue solo

5 **B** solo

9

13 **C** 2

19 **D** 4 2

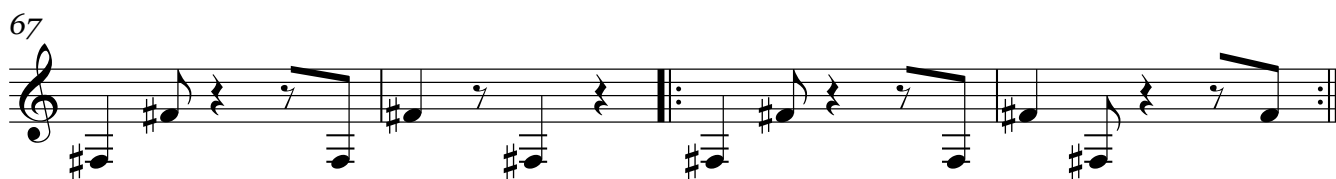
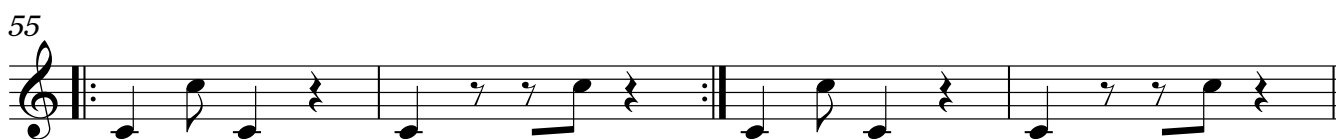
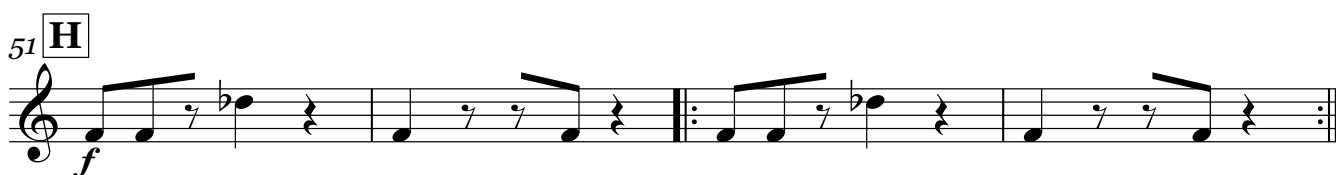
27 **E**

32 **F** mf

37

II. Gyration points and cone points

43 **G** attacca



Stand up and read:
The image in the orbifold of an m -fold gyration point is called a cone-point of order m – it is a point around which the angle is rather $2\pi/m$ than 2π .

Violin

Gyration Point 3.0

”Even quite ungainly objects, like chairs and tables, will become almost spherical if you wrap them in enough newspaper.”

Allegro leggiero molto

I. Tables and chairs

Martin Q Larsson

play each repetition
4-40 times, until you
find a good groove

on cue

1
ff
pizz arco **A** pizz

5 arco pizz arco **B** pizz arco

9 pizz arco pizz arco

13 **C**
mf

17 **D**
f

23 *mp*

29 **E** solo

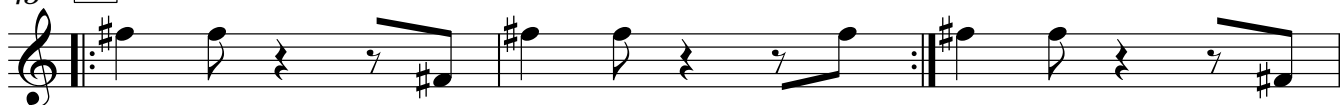
Stand up and read: **F**

34 a boundary curve without corners, type *. We might also write 1*, so as to give the star something to hang on to – digits 1 have no significance in this notation, except as place-fiers.

39 **2**

II. Gyration points and cone points

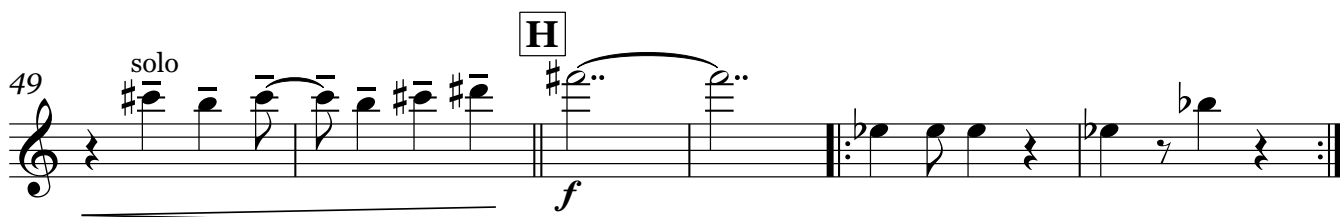
43 **G** attacca



46



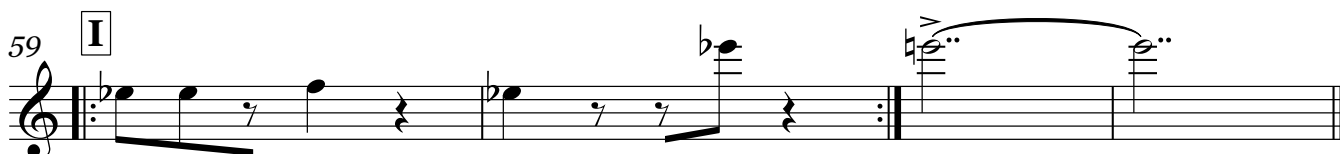
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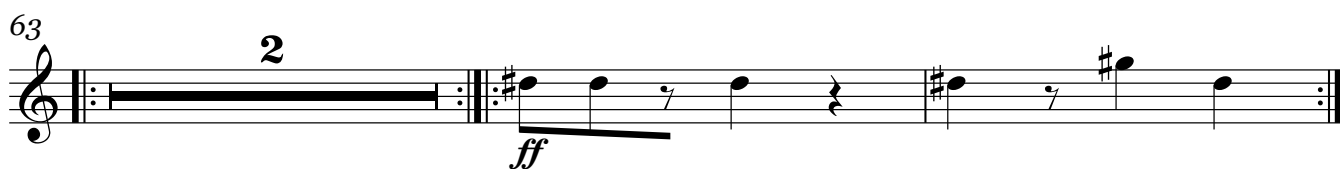
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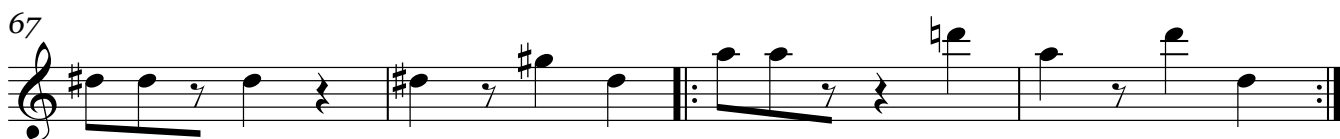
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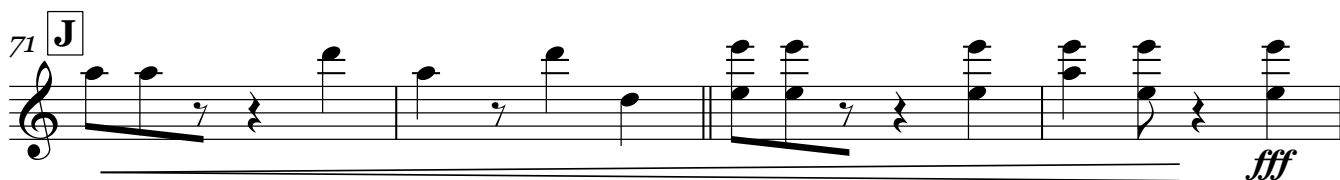
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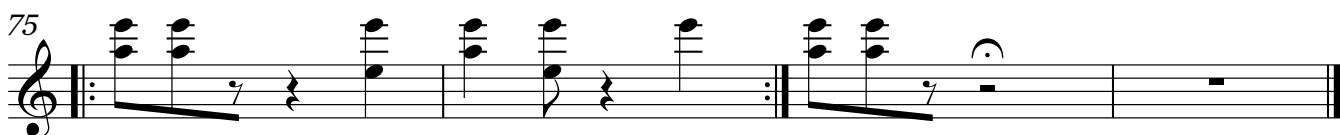
67



71



75



Viola

Gyration Point 3.0

"Even quite ungainly objects, like chairs and tables, will become almost spherical if you wrap them in enough newspaper."

I. Tables and chairs

Allegro leggiero molto

Martin Q Larsson

play each repetition
4-40 times, until you
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A
on cue

7

ff

11

mf

15

mf

19

f

25

mp

29

mp

35

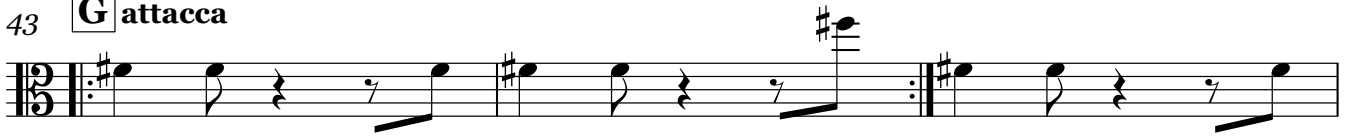
mf

39

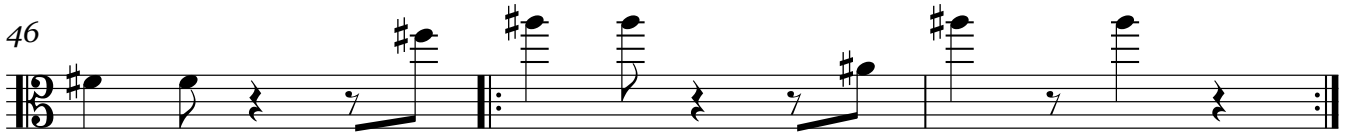
mf

II. Gyration points and cone points

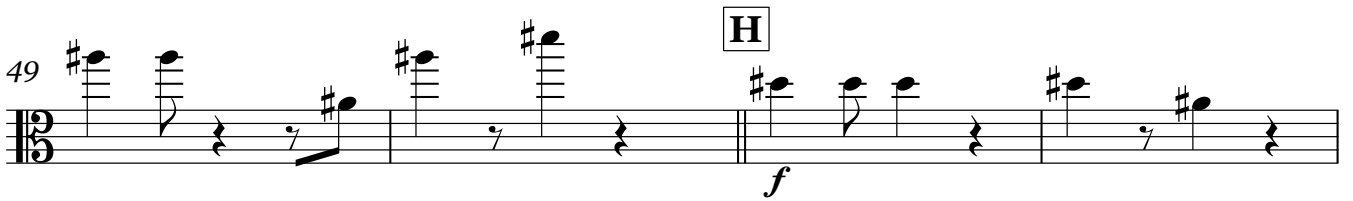
43 **G** attacca



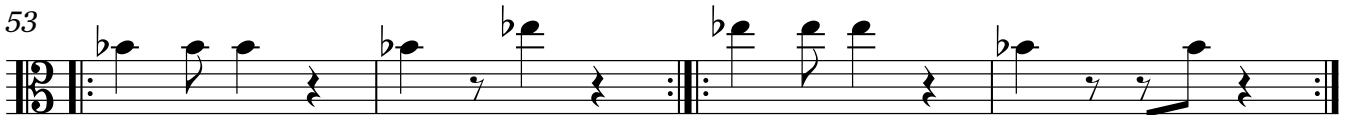
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49



53



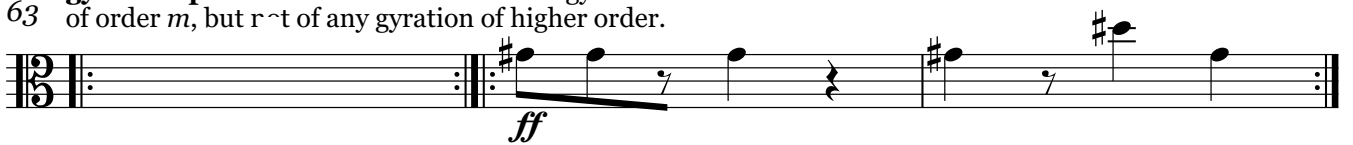
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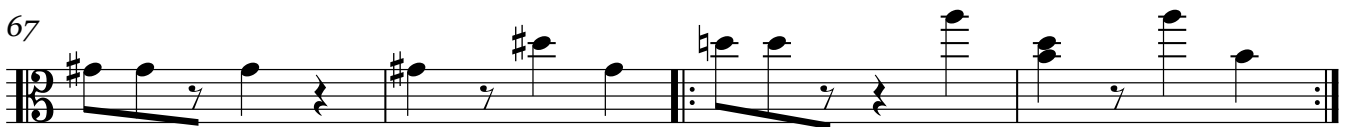
Stand up and read:

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of order m , but not of any gyration of higher order.

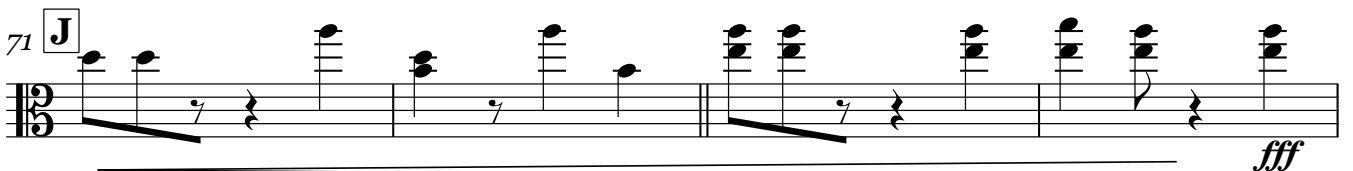
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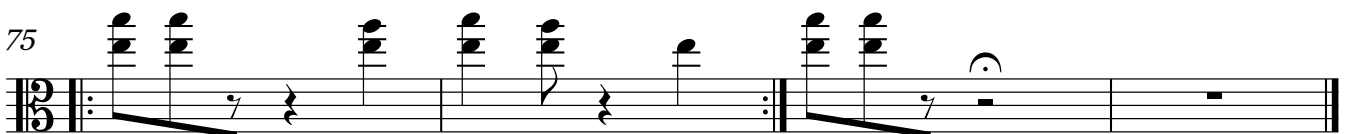
67



71



75



Gyration Point 3.0

Violoncello

"Even quite ungainly objects, like chairs and tables, will become almost spherical if you wrap them in enough newspaper."

I. Tables and chairs

Allegro leggiero molto

Martin Q Larsson

play each repetition
4-40 times, until you
find a good groove

5 **A** on cue arco pizz

ff

9 **B** arco pizz arco pizz arco

mf

13 **C** pizz arco pizz arco

f

19 **D** solo

mf

Stand up and read:

A plain square table has two further (diagonal) planes of symmetry, and the four symmetry planes divide the sphere into eight segments, the typical segment having two corners at angle $\pi/4$.

24 This time the symmetry group is $*44$.

27 **E**

mp

31

35 **F**

mf

II. Gyration points and cone points

43 **G** attacca

