

QUATUOR POUR LA FIN DU TEMPS

Violon. Clarinette en Si b, Violoncelle et Piano

OLIVIER MESSIAEN

I. Liturgie de cristal

(comme un oiseau)

Bien modéré, en poudrolement harmonieux

VIOLON *ppp* *(son flûté,*

CLARINETTE en Si b *(comme un oiseau)* *p expressif*

VIOLONCELLE *ppp (vibrato)*

A **Bien modéré, en poudrolement harmonieux** (♩ = 54 environ)

PIANO *pp legato (très enveloppé de pédale)*

von *vers la pointe)*

Clar. *3*

velle *glissando* *gliss.* (*)

(*) *Glissando bref; id. aux passages similaires.*

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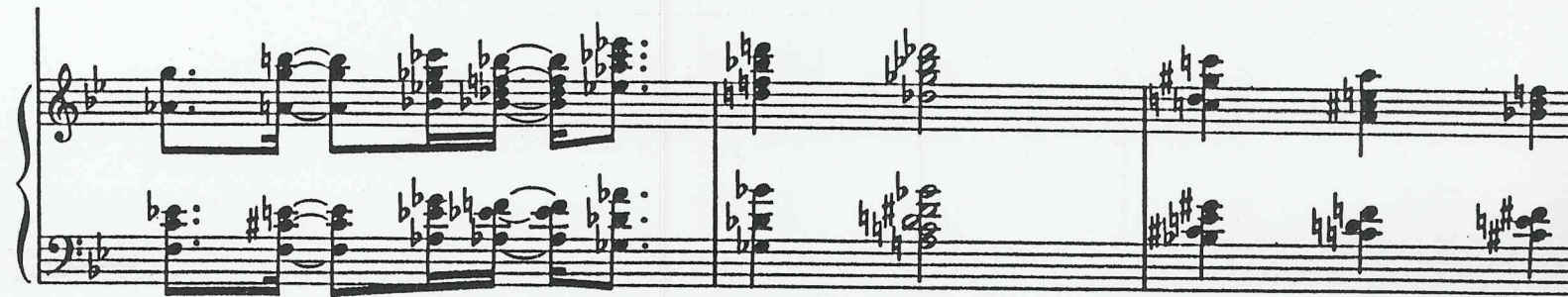
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Paris, 4 Place de la Madeleine.



pp legato (très enveloppé de pédale)

This system shows the first two staves of a musical score. The top staff is in treble clef and the bottom staff is in bass clef. The key signature has one flat (B-flat) and the time signature is 3/4. The music consists of chords and some melodic fragments. The instruction "pp legato (très enveloppé de pédale)" is written between the staves.



This system continues the musical score with two staves. The notation includes various chord voicings and some melodic lines. The key signature remains one flat, and the time signature is 3/4. The music is characterized by its legato and envelopping quality as indicated by the performance instruction.



This system shows the final two staves of the musical score. The notation includes various chord voicings and some melodic lines. The key signature remains one flat, and the time signature is 3/4. The music concludes with a final chord in the bass staff.

Chords at beginning of Liturgie de cristal

7-20: 3,4,5,7,10,11,0

7-35: 9,10,0,2,3,5,7

7-20: 1,2,3,5,8,9,10

7-35: 7,8,10,0,1,3,5

7-20: 10,11,0,2,5,6,7

7-35: 4,5,7,9,10,0,2

7-20: 5,6,7,9,0,1,2

7-35: 11,0,2,4,5,7,9

5-Z38: 10,1,4,5,6

5-25: 11,2,4,5,7

Coll. I

5-27: 0,3,5,7,8

6-34: 4,5,7,9,11,1

5-27: 3,6,8,10,11

5-35: 1,3,5,8,10

5-35: 11,1,3,6,8

5-21: 10,1,2,5,6

6-15: 6,9,10,0,1,2

LIST OF SETS

5-21: 10,1,2,5,6/ (1)

5-25: 11,2,4,5,7/ (1)

5-27: 0,3,5,7,8/3,6,8,10,11/ (2)

5-35: 1,3,5,8,10/11,1,3,6,8/ (2)

5-Z38: 10,1,4,5,6/ (1)

6-15: 6,9,10,0,1,2/ (1)

6-34: 4,5,7,9,11,1/ (1)

7-20: 3,4,5,7,10,11,0/1,2,3,5,8,9,10/10,11,0,2,5,6,7/5,6,7,9,0,1,2/ (4)

7-35: 9,10,0,2,3,5,7/7,8,10,0,1,3,5/4,5,7,9,10,0,2/11,0,2,4,5,7,9/ (4)

Quatuor: The 12 set classes of the 29 chords

Correct incorrect symbols (rerun mtx)

| | G1 | G2 | G3 | G4 | G5 | G6 | G7 | G8 | G9 | G10 | G11 | G12 | |
|---------|----|----|----|----|----|----|----|----|----|-----|-----|-----|----|
| 4-z29 | b | o | | | | | | | | | | | 2 |
| 7-20 | o | o | | | | | | | | b | | | 2 |
| 5-21 | | | | b | | | | o | o | o | | | 4 |
| 5-25 | o | o | * | | | | o | | | | | b | 5 |
| 5-27 | | | | | | | o | | | o | o | b | 4 |
| 7-35 | | | | | | | | | | | o | b | 2 |
| 5-z38 | o | o | o | | | | | o | o | o | | b | 7 |
| 6-14 | | | | o | o | o | o | o | o | o | o | * | 9 |
| 6-15 | o | o | o | b | o | o | o | o | o | o | | * | 11 |
| 6-21 | o | o | o | b | o | o | o | o | o | o | | * | 11 |
| 6-z23 | o | o | * | | | o | o | | | | | b | 6 |
| 6-34 | o | o | o | b | | o | o | o | o | o | o | * | 11 |
| Total | 8 | 8 | 6 | 5 | 3 | 5 | 7 | 6 | 6 | 8 | 4 | 9 | |
| Reduced | 1 | | | 5 | | | | | | 1 | | 5 | |

Squo Indices in Descending Order with Genera

.216: G4 (augmented)
 .181: G12 (dia-tonal)
 .177: G10 (atonal-tonal)
 .141: G7 (chroma-dia)
 .133: G8 (atonal), G9 (atonal-tonal)
 .125: G11 (dia)
 .121: G3 (diminished)
 .115: G1 (atonal)
 .111: G2 (whole-tone)
 .101: G6 (semichroma)
 .094: G5 (chroma)

Although the 12 set classes engage all 12 genera, only 5 genera remain active after judicious application of reduction strategies, primarily derived from the status quotient (squo) calculation, which measures the status of a genus by taking into account the number of representatives of a genus (X), the total set count for the matrix (Y) and the total size of the genus (Z). For a genus G_a : $Squo(G_a) = ((X / Y) / Z) \cdot 10$. The constant 10 simply shifts the decimal number one place to the left for greater legibility. Matrix display and calculations are done by computer program.

Notice that the sets vary greatly with respect to number of genera affiliations. Whereas 4-z29, one of the all-interval tetrachords, belongs to only two genera, hexachords 6-15, 6-21, and 6-34 (Scriabin's mystic chord) are very gregarious, avoiding only the pure diatonic genus, G11.

The reduced matrix dramatizes the conflict between Genus 4 (augmented) and Genus 12 (dia-tonal) in four instances, with Genus 4 winning preference, largely because of its small size and the corresponding value of Z. Because the difference in Squo is so small, I have compensated by assigning the four sets involved in this dilemma to G12 as well, indicating their secondary membership by *.

Forte, Allen. "Pitch-Class Set Genera and the Origin of Modern Harmonic Species." *Journal of Music Theory* 32:2, Fall 1988: 187-270.

Messiaen, *Quatuor pour la fin du temps*: Vn, Cl, Vc

| | G1 | G2 | G3 | G4 | G5 | G6 | G8 | G9 | G10 | G12 |
|---------|----|----|----|----|----|----|----|----|-----|-----|
| 4-5 | ■ | ○ | | | | | | | | |
| 4-8 | ■ | | | | | | | | | |
| 4-9 | ■ | | | | | | | | | |
| 4-21 | | ■ | | | | | | | | |
| 5-13 | ■ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | |
| 5-z18 | ■ | ○ | ○ | | | ○ | ○ | ○ | ○ | |
| 5-22 | ■ | | ○ | | | | ○ | ○ | ○ | |
| 5-28 | ■ | ○ | * | | | ○ | | | | ○ |
| Counts: | 7 | 5 | 3 | 1 | 1 | 3 | 3 | 3 | 3 | 1 |

| G1 | G2 | G3 | G4 | G5 | G6 | G8 | G9 | G10 | G12 |
|----|----|----|----|----|----|----|----|-----|-----|
|----|----|----|----|----|----|----|----|-----|-----|

Squo Indices in Descending Order with Genera

- .138: G1 (atonal)
- .096: G2 (whole-tone)
- .091: G8 (atonal), G9 (atonal-tonal), G10 (atonal-tonal)
- .083: G3 (diminished), G6 (semichroma)
- .059: G4 (augmented)
- .043: G5 (chroma)
- .027: G12 (dia-tonal)