

# III. LES MAINS DE L'ABÎME

"L'abîme a jeté son cri! la profondeur a levé ses deux mains!" (Prophète Habacuc, III, 10)  
(pour les temps de pénitence)

1951

(1951 - Montagnes du Dauphiné, vallée de la Romanche)

*Apocrypha*

Tutti *fff* | G, P, R: fonds et anches 16, 8, 4, mixtures | Péd: fonds et anches 16, 8, 4, 32 | tous accouplements et tirasses |

(Interversions sur 3 rythmes hindous: manthikâ 1<sup>er</sup>, forme exagérée, ne change pas - manthikâ 2<sup>e</sup> et mallatâla augmentent chacun d'une ♩ par valeur, à chaque répétition.)

Bien modéré

*Tophex 6-223 CIII*  
*1-3*

MAN. GPR *fff* [2,4,7,9,3] 4-23  
 R *ff legato* PR *più ff leg.*  
 PÉD. manthikâ 1<sup>er</sup> manthikâ 2<sup>e</sup> mallatâla  
*4-23; [5, 2, 5, 7]*  
*6-22*  
*6-239*  
*7-236*  
*535*  
*1 3 4 5*  
*1 2*  
*1 3 4 5*  
*petit complet*  
*12-note aggr.*  
*fff legato*  
*7-20/7-20*  
*710*  
*0, 2, 2, 5, 8, 9, 10, 7*  
*6-226*

MAN. GPR *fff non leg.*  
 R *ff leg.* PR *più ff leg.*  
 PÉD. manthikâ 1<sup>er</sup> mallatâla manthikâ 2<sup>e</sup> manthikâ 2<sup>e</sup>  
*4-7*  
*fff legato*

MAN. R *ff leg.* PR *più ff leg.* GPR *fff non leg.*  
 PÉD. mallatâla manthikâ 1<sup>er</sup>  
*8-9*  
*(7-236)*

MAN. [Musical notation]

R: voix humaine (avec trémolo), nazard 2 2/3, bourdon 16 |  
Pos: quintaton 16, nazard 2 2/3, tierce 1 3/5 |  
G: flûte 8 | Péd: flûte 4 seule |

RELATION IF REORDERED  
ROW TO PRIME FORM 14 BAR 19

31-32

6-224: [11, 1, 3, 4, 6, 7]

6-246: [8, 9, 10, 0, 2, 5]



ORDER  
IN P

1 11 4 8 12 3 9 6 2 10 5 7

DYADS  
BY INVERSE  
RELATED  
ORDER

mod 12

mod 3

mod 12

(symmetric)

Way 3

Messiaen, Les Mains de l'abime (1951)

29  
bar 97: 12-tone row

hexachords:

6-Z46: {6,7,8,10,0,3}

6-Z24: {9,11,1,2,4,5}

First involution, hexachords:

6-Z38: {11,0,1,2,6,7}

6-Z6: {3,4,5,8,9,10}

Second involution, hexachords:

6-Z6: {3,4,5,8,9,10}

6-Z38: {11,0,1,2,6,7}

i.e., same as retrograde of First involution

.....

Bar 1, first chord

7-Z36: {1,2,3,4,6,7,9}

Bar 1, second chord

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

Bar 1, all:

10 pcs: lacking 11,0. These are provided in bar 2: "manthika 2<sup>e</sup>"

Bar 3: mallatala

first chord:

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

second chord:

7-20: {11,0,1,3,6,7,8}

The two forms of 7-20 are IT9-related: the 3 invariants, pcs 1,3,8 are common tones in voice leading.

Bar 3, all: an 11-note set, lacking pc4

Bar 12

pedals

6-22: {3,4,5,7,9,11}

whole-tone

manual

6-24: {2,3,4,6,7,8} symmetrical hex

first vertical:

5-4: {3,6,7,8,9}

second vertical

5-4: {11,2,3,4,5}

The two 5-4's are T8 related. 1 invariant, pc3

Bar 13

8-22: {6,7,8,9,11,0,2,4}

first hex of 8-22:

6-16: {4,6,7,8,11,0}

do imbri

Bar 14, l.h.

5-4: {1,4,5,6,7}

same pc set as verticals in bar 12

bar 14: r.h. over first ostinato bass

6-Z13: {8,9,11,0,2,3} (octatonic, symmetric)

bar 18ff., r.h. over second ostinato

7-4: {8,9,10,11,0,2,3}

complement of 5-4 bars 18-19

bar 20, r.h.

8-2: {0,1,2,3,4,5,6,8} ???

first pentad, bar 20:

5-5: {1,2,3,4,8}

bar 20, first 7-note group:

4-6: {1,2,3,8}

bar 20, second 7-note group

5-13: {4,5,6,8,0} ???

bar 21, upper stratum

7-20: {6,7,8,11,1,2,3}

bar 21, lower stratum

6-16: {4,5,8,9,10,0}

see 6-16 earlier

## Les Mains de L'Abime, Introduction

	G1	G2	G3	G5	G6	G7	G9	G10	G11	G12
4-3					o					
4-23									o	
7-z12	o		o			o				
7-20	o	o						o		
7-35									o	o
7-z36	o		o	o	o	o	o		o	o

Counts: 3 1 2 1 2 2 1 1 3 2

G1	G2	G3	G5	G6	G7	G9	G10	G11	G12
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## Squo Indices in Descending Order with Genera

- .206: G11 (dia)
- .095: G1 (atonal)
- .088: G3 (diminished), G6 (semichroma), G7 (chroma-dia), G12 (dia-tonal)
- .068: G5 (chroma)
- .048: G9 (atonal-tonal), G10 (atonal-tonal)
- .030: G2 (whole-tone)

# Reduced matrix

Messiaen, Livre d'orgue III, "Les mains de l'abîme"

	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12
4-3						●						
4-17									●			
4-23											●	
5-4	0	0	0		●	0	0	0				
5-20	●	0							0			
5-35											●	0
5-z36	0		0		●	0	0		0		●	0
6-z4	0	0			●	0		0				
6-z6	●	0										
6-z10	0	0	0		●	0	0	0	0	0		0
6-z13	0	0	0			●	0		0			
6-16	0	0		0	●	0		0	0	0	●	0
6-22	0	0		0	●	0	0	0	0	0	●	0
6-z24	0	0	0			0	0	0	0	0	●	0

Counts: 10 9 5 2 6 9 6 6 7 5 6 6

G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12
[SI			]	[SII			[SIII		]	[SIV	]

Squo Indices in Descending Order with Genera

- .147: G5 (chroma), G11 (dia)
- .142: G6 (semichroma)
- .121: G9 (atonal-tonal)
- .113: G1 (atonal)
- .104: G8 (atonal)
- .100: G2 (whole-tone)
- .095: G7 (chroma-dia), G12 (dia-tonal)
- .087: G10 (atonal-tonal)
- .083: G3 (diminished)
- .071: G4 (augmented)

## Livre III. DFT (WORD 6.0)

Livre d'orgue III Les mains de l'Abîme

I. Background: Messiaen in TROC

Begins with autobiographical ruminations

p. 188: Analysis of the opening chords (see lecture below) Very detailed discussion of organ registration. But nothing on serial materials and transformations.

References to serial components:

First "guirlande" (p. 8, bar 2) p. 191 top: "Une guirlande mélodique autour de [sic] la bémol pivot, sur la flute du Grand Orgue, complète le tableau sonore."

p. 191, end of Section II discussion: "Autour du la bémol pivot, par le bourdon du Grand Orgue, de nouvelles guirlandes mélodiques situent le mystère, se placent au centre du décor, et donnent l'échelle." [Around the Ab pivot, played on the Bourdon of the Great Organ, new melodic garlands locate the mystery, placing it at the center of the scene and giving the scale.] This comment verifies the importance of Ab as a special pitch through this piece. Also suggest the programmatic significance of the various rows (hexes).

Section III (p. 9) Translation: Continues the music of Section II, but as a trio. That is to say, the preceding melodic garlands, forming embroidered groups about an Ab pivot, mix two extreme voices, establishing distance with greater precision. There are 11 different garlands; the last [p. 10, last system] is a group of 13 nonolets, repeated 5 1/2 times and inscribed in irrational groups of nonolets.

p. 11, 3rd system: transition rhapsodique: un trait rapide du tutti de l'orgue, évoluant vers l'aigu, at amenant par ralenti la Section IV.

Question of principal 12-note row:

Sherlaw Johnson (p. 112): Third and fifth movements use the same pitch-series. There is confusion here. Further, Johnson (p. 113), writing of the third movement: "In the middle section a number of twelve-note sets are used as florid decorative



figures, one of which (p. 9, bar 1) is to become the sole twelve-note row of the fifth movement."

But the figure on p. 9, bar 1 (bar 24) is the same as the earlier figure in bar 19. Further, because of the repeated notes, it is not a 12-note row, although it embeds 6-z24, which is one of the hexes of the forthcoming principal row of III, which finally appears in bar 29 and is followed immediately by the series of "interversions." It is these transformations that confirm the status of that row as the principal row of the composition. N.B. its hex 6-24 has already been present in the music, but not as a consecutive sequence of notes.

From my Exeter lecture:

Page 11 of the handout contains the first illustrations of quite a different kind of composition, the third piece of the *Livre d'orgue*, dating from 1951. In this work Messiaen displayed a remarkable facility with order, demonstrating a unique approach to serialism and one that, in my opinion, has not been completely appreciated. Before I deal with that aspect of the music, however, I would like to quote from Messiaen's notes to a recording of the music, and then point out some important features of the pitch organization of the opening.

With characteristic dramatic flamboyance, Messiaen writes:

«L'Abîme a jeté son cri! la profondeur a levé ses deux mains!» (*Livre du Prophète Habacuc*, III, 10). [The abyss has flung its cry. The depth has raised its two hands.] He continues:

This piece is played during the period of penitence. It was written in the mountains, in the high alps, while contemplating the terrifying procession of the gorges of the Infernet and the twists and turns of the torrent of the Romanche, in the vertigo of the chasms and precipices, in the terror of the abyss. Symbolically, this abyss is the great call of human misery toward God. Beginning of the piece a great fortissimo of the full organ: cry of the abyss! In the middle register the highest and lowest plays of the organ are superimposed without intermediary, and give a spatial sensation. In the lowest register the supplication of the depth, emerging from the entrails of the earth by vox humana, tremolo, nazard, 16 foot bourdon and more distant, the 32 foot.

## PLAY TAPE

With your indulgence I will read the comment at the upper right of page 11:

The opening chords of 'Les Mains de L'Abîme' comprise two pairs. Although the first of these pairs consists of sets from different classes (7-z36 and 7-z12), these sets have the same interval content [444342]. When Messiaen discusses this group of three chords in TRCO III (p.188) his notation retains the low D-E dyad in the second chord. The second chord pair, in contrast, consists of a single set class, septad 7-20, a favorite of Messiaen's that appeared in earlier examples for this talk. Thus, the first chords are equivalent with respect to interval class, while the second are equivalent with respect to pitch class. The bass dyad C-B, has symbolic significance in the work. I might also point out that Messiaen's predilection for 7-20 was probably influenced by its interval content [433452], which includes five intervals of class 5 (that is, perfect fifths or fourths), the maximum-1 number for a septad, with only 7-35, the pure diatonic sonority containing the maximum of six.

In addition to the special qualities of the vertical harmonies in this introductory music, the linear components, in particular, the outer voices are both lucid, interesting, and typical of the composer's pitch-class set aesthetic, if I may use that term. These are shown in the second musical example on p. 11. The soprano projects a form of 4-23, a prominent subset of the verticals as well, while the bass projects a form of the octatonic tetrachord 4-3. Thus, the harmonic dualism of the chords, described in the inset comments, is reflected in the dualism of diatonic and octatonic lines.

Messiaen's explanation of the chords derives from his "appoggiatura" idea, which perhaps derives from French fig. bass, via Rameau. In TROC III (p. 188), he gives an elaborate description of the first two chords of L'Abîme. I translate his description of the structure of the first chord:

[The] Real chord [is] . . . a 9th without leading tone [G, the fundamental is Eb.] It is preceded by a quintuple appoggiatura [G, Eb, A, Db, Gb]. D natural and E natural [are] inferior and contracted resonances. In the text the appoggiatura [chord] is so long and the resolution so brief that we only hear the appoggiatura [chord].

This explanation has a great deal in common with one offered by Schoenberg in his 1911 Harmonielehre, and I have reproduced that at the bottom of p. 11. From the standpoint of modern music

theory, both seem odd, since the unusual sonority does not qualify as an independent harmony, but is explained as a confluence of elements dependent in some way upon another harmony. In Messiaen's case, however, in contrast to Schoenberg's, the "other" harmony is itself an atonal harmony. There is a big gap between 1911 and, say, 1950.

In his 1980 book entitled Olivier Messiaen (with Messiaen's signature on the cover), Harry Halbreich writes of "Les Mains de l'Abîme": "C'est assurément un des sommets de l'oeuvre de Messiaen!" I certainly agree with the (intensity with which the musical materials are deployed to depict the dramatic program of the work testifies to Messiaen's special--and I would say unique--talent as a composer. "Les Mains de L'Abîme" is also one of the most "speculative" of Messiaen's works. Along with two other movements of the Livre d'orgue, it contains his extraordinary explorations of serialism, explorations the details of which, as far as I know, have not yet been discussed in print, except of course for the obvious manipulations of row order numbers, which the composer himself described. I refer here to the differentiations Messiaen has built into what he called (in TROC) the "guirlandes" or garlands that form the hallmark of the work's main sections and that find their definitive form in the 12-note row of bar 29.

Page 12

Please turn now to p. 12 of your handout. At the top of p. 12 is the first of Messiaen's garlands, the nine-note figure in demisemiquavers. [PLAY] Notice that the descending contour groupings form the pattern 2 + 3 + 4, clearly a depiction of the yawning abyss. I should point out that the terminal note here, the semiquaver Ab, serves as a centric referential pitch in the movement, and does not contribute to the garland.

The second musical example on p. 12 shows the result of a further analytical step, which entails the extraction of the boundary notes from each contour. This produces the upstemmed, beamed succession labelled 6-z46, with a list of the pitch-classes that comprise that hexachord. The downstemmed beamed configuration consists of the six adjacent notes of the garland beginning with the second note. Now, this hexachord, of class 6-z24, is a close relation of the upstemmed hexachord, 6-z46. It is, in fact, a transformation of the complement of that hexachord [T9I]. What makes these hexachords special in the context of "Les Mains de L'Abîme" is their connection to the 12-note row that will ultimately make its appearance, in bar 29: they are the disjunct hexachords of that row. In this way

5-4 < 7-236 [1,2,3,4,7]

Presque lent

MAN. Pos. 8 *più f*  
 R *f legato*  
 PÉD. *f legato*

6-24: [6,7,8,2,3,4] headnotes by contour  
 9 (pour 8)

4-17: [4,7,8,11] C I  
 concludes 6-30 C II

Contour groups: 2 + 3 + 4

5-4: p legato [5,6,7,8,9]  
 6-24: [6,7,8,2,3,4]  
 6-213: [8,9,11,0,2,3] - sans m.  
 r.h. m. 14-17 C II

Max of 12-note row  
 Boulemas per of contour groups = 6-246

R: voix humaine (avec trémolo), nazard 2 2/3, bourdon 16 |  
 Pos: tierce 1 3/4 et piccolo 1 (tout seuls)

Très lent

MAN. Pos. 8 *p*  
 R (la profondeur)

5-10: [5,10,11,12] C II  
 4-12 (bass)

6-213 C II  
 4-9: [4,9,11,12] C II

almost octo

(Pos. sempre)

MAN. *f legato*  
 R (R sempre)

6-213: [8,9,11,0,2,3] C II Excluding Bb

6-224 (peaks) [0,1,3,4,6,8]  
 Second hex  
 9 12-note row  
 m. 29

7 (pour 8)

pressez beaucoup

MAN. *Très lent*  
 R

12-note "aggrégat" (G)  
 10 (pour 8)

7-20: [6,7,8,11,1,2,3] T4 I

6-16: [4,5,8,9,10,0]  
 6-210 (contig.) 6-230 (contig.) - sans bar 2)

Presque lent

MAN. Pos. 8 *più f*  
 R *f legato*  
 PÉD. *p legato*

G. (flûte 8)  
 = bar 12  
 mf

9 (pour 8)

the "garlands" conceal structures that become explicit in the explicitly serial portion of the music, performing an "introductory" function.

The third garland in "L'Abîme" enters in bar 20, and is shown at a) in the second example on p. 12. [PLAY] Again a series of demisemiquavers, differentiated only by contour groups of two notes. Taking the headnotes of each group as one segment and the tailnotes of each group as another yields the parsing shown at b). This procedure can also be described as an application of the saute-mouton, as explained in the note. The term, of my devising, not Messiaen's, sounds like an item on a French menu, and with any luck at all, will disappear from the technical vocabulary of music analysis at the end of this talk.

The amazing result of this parsing, however, is the uncovering of the seven-note set 7-20, a representative of the set class that is so prominent in the introduction. In the note at the bottom of p. 12 I have indicated the relation between this linear form of 7-20 and the first chordal form of 7-20 in the introduction, shown on p. 11, as a transposed inversion. A simpler and perhaps more direct way of explaining the connection between chord and line is to compare the pitch-class content of the second chord with that of the linear form of 7-20 in the third "guirlande." They differ by only one note: C in the chordal form of 7-20 becomes D in the linear form of that set. Elsewhere I have called this process--forgive me--a unary voice-leading transformation.

The lower strand of the third garland, the other sheep, if you will, forms hexachord 6-16, which is almost another 7-20, as I have indicated in my note, lacking only Eb.

Page 13

On the top line of p. 13 I have given the notation for the 12-note row of bar 29. [PLAY] This too is clearly organized in contours--ascending contours, in contrast with the descending contours of the previous garlands--that form the non-retrogradable, that is, symmetric pattern 3 2 2 2 2 3. I will return to this basic form of the row in a moment. First, however, I draw your attention to the "involuted" form of the row that follows the original form--also on the top line, marked "Involution." This reordering, an invention of Messiaen, did not become standard, nor did it replace any of the usual serial manipulations: inversion, retrograde, and retrograde inversion. Like the traditional reorderings it is completely systematic. Messiaen calls it "involution" because it reorders the row beginning with the outermost elements and working

inward. In order numbers it begins with the end elements 0 and 11. Zero then begins an ascending series of numbers interleaved with a descending series on 11, so that each pair of order numbers sums to 11: 0 11 1 10 2 9 3 8 4 7 5 8. In a moment I will come to the extraordinary result of this in the case of Messiaen's 12-tone row.

First, however, please look at the second musical example on p. 13: the disjunct hexachords of the row. As promised, these are members of the set classes shown in the 'guirlande' on p. 12: 6-z46 and 6-z24. Here, however, and obviously, the hexachords are pitch-class complementary; there are no pitch intersections as there were in the garland of bar 12.

In the margin of page 13, upper right side, I have noted the correspondence of the interval content of 6-z24/46 and the nonretrogradable contour groups. The interval classes are arranged beginning with the semitone, or interval-class 1, and ending with the tritone or interval-class 6, to create what is called an interval vector. Like the pattern of contour groups this is a non-retro pattern: 2 3 3 3 3 2.

In the third example from the top of p. 13, I have indicated by means of stems and beams the remarkable circumstance that the headnotes of contour groups form hexachord 6-z46 again, while the remaining notes form 6-z24, an extraordinary and unexpected result of this contour-based parsing, and one that provides a new perspective on the connection between the pitch-organization of the work and its dramatic program. A technical detail is worth mentioning before we leave this reading of the 12-note row, namely, that the transposition of the two hexachords by 8 semitones leaves six pitch classes in common with the original disjunct hexachords: Eb, F#, Ab, F, A, Db. The hexachord is 6-z24: [1,3,5,6,8,9]. Thus, Messiaen's 12-note row is saturated with hexachords of classes 6-z24 and 6-z46.

As I move along to a brief discussion of the involuted form of Messiaen's 12-note row, which comprises the final part of my references to the music of "Les Mains de L'Abîme," I just wish to mention that this does not by any means complete a study of the serialism in this work, nor in the whole of the Livre d'orgue.

Please look now at the first of the three final examples on p. 13, which simply duplicates the involuted version of the 12-note row already shown at the top of the page. The beamed example directly below it shows the result, in terms of disjunct hexachords, of this rearrangement. Now, there is no

reason to believe that such a radical rearrangement would preserve any of the features of the original form of the 12-note row, in particular, that it would preserve any connection with what seems

to be the Ur-sonority of the movement, namely, septad 7-20, the Cry of the Abyss, from the introduction. This expectation is disappointed, however, since the second hexachord of the involuted row, 6-z6, turns out to be a transposition (T9) of the upper hexachord of the second form of 7-20 from the introduction (page 11 of your handout). This strikes me as an amazing connection, one whose cognitive origin eludes me. Was Messiaen somehow aware of this when he constructed the original row? With all his elaborate explanation of the opening chords there is not the slightest hint that they have anything to do with the serial portion of the music. He seems deliberately to avoid even a suggestion of this kind of constructivism, when he playfully refers to the intricate demisemiquaver figures as 'guirlandes.'

There is, however, a bit more to be said about the involuted

form of the row, namely, the feature graphed in the final example on p. 13. Again, extracting and connecting the headnotes of each contour group--and note that all the contour groups are now descending, reflecting a change of orientation in the program of the music, this procedure highlights the pentad 5-20, as labelled on the example. To complete the parsing of the row, the remaining notes, downstemmed and beamed on the example, comprise the complement of pc set 5-20, the by-now-familiar 7-20, the chord of the Abyss in this movement. I have indicated in the marginal note the precise relation between this version of 7-20 and the two forms of that septad in the introduction, appending for the benefit of those who can never have enough of pitch-class set analysis the recondite information concerning invariance under transposition. In my experience, this way of structuring a 12note row is absolutely novel. I believe I am correct in saying that it is not exemplified in any of the serial music of the composers of the Second Viennese School. It certainly belongs in any large-scale study of the history of serialism in the 20th century.

Additional material:

From Messiaen's notes to the recording

III.

**Error! Reference source not found.** (Livre du Prophète Habacuc, III, 10).

The abyss has flung its cry. The depth has raised its two hands.

This piece is played during the period of penitence. It was written in the mountains, in the high alps, while contemplating the terrifying procession of the gorges of the Infernet and the twists and turns of the torrent of the Romanche, in the vertigo of the chasms and precipices, in the terror of the abyss. Symbolically, this abyss is the great call of human misery toward God. Beginning of the piece a great fortissimo of the full organ: cry of the abyss! In the middle register the highest and lowest plays of the organ are superimposed without intermediary, and give a spatial sensation. In the lowest register the supplication of the depth, emerging from the entrails of the earth by vox humana, tremolo, nazard, 16 foot bourdon and more distant, the 32 foot.

p. 188 TROC

Parsing of opening two chord-pairs

N.B. M. ties low D and E of first chord to second, creating 7-z12, the z-corresp. of 7-z36

His explanation of the chords derives from his "appoggiatura" idea, which derives from French fig. bass (?), via Rameau. It also relates to Schoenberg's 1911 Harmonielehre--probably not known in France.

Messiaen's explanations of the two chord pairs, which present the Cry of the Abyss:

The first: [The] Real chord [is] at the + (it is a 9th without leading tone [G], fundamental is Eb) It is preceded by a quintuple appoggiatura [G, Eb, A, Db, Gb]. D natural and E natural: inferior and contracted resonance. In the text the appoggiatura [chord] is so long and the resolution so brief that we only hear the appoggiatura [chord].

The second:

First chord: chord on the dominant (with two notes added: D natural, A natural, of which the implied resolution would be : C, G).

Second chord: The same, first inversion, transposed upon the same bass note: Eb (with two added notes: C natural, G natural, of which the implied resolution would be Bb, F).



N.B. M. consciously replicates the first chord by the second. He does not seem to realize the intervallic equivalence of the first two septads, however.

His notes on p. 8 of the published score deal first with organ registration, then with the second system and the rest of the page: "Ici commence la supplication de la profondeur." This refers to the bass line, which represents "la lente et longue supplication de l'homme . . ." Above this is "la réponse Divine."

p. 191 bottom. On the "guirlandes mélodiques" (bars 19 and 20) "Il y a onze guirlandes différents."

The opening chords of 'Les Mains de L'Abime' comprise two pairs. Although the first of these pairs consists of sets from different classes (7-z36 and 7-z12), these sets have the same interval content [444342]. When Messiaen discusses this group of three chords in TRCO III (p.188) his notation retains the low D-E dyad in the second chord. The second chord pair, in contrast, consists of a single set class, septad 7-20, a favorite of Messiaen's. Interval content [433452]. Thus, the first chords are equivalent with respect to interval class, while the second are equivalent with respect to pitch class. The bass dyad C-B, has symbolic significance in the work.

Example legend

R: voix humaine (avec trémolo),  
 nazard 2 2/3, bourdon 16 |  
 Pos: tierce 1 3/8 et piccolo 1 (tout seuls)|  
 G: bourdon 8 |  
 Péd: contrebasse 16, soubasse 16, bourdon 32,  
 et tirasse R |

*24*

*= b.19*

Lent

G m.dr. 2 4 1 2 5 1

MAN. Pos. 7-4

m.g. p (la profondeur) 4-17 cII

PÉD. f legato

*25*

*7-4: [8, 9, 11, 9, 2, 3]*  
*= b.19, 15, 10, 13*

*7-20*

*7-4: [8, 9, 11, 9, 2, 3]*  
*= b.19, 15, 10, 13*

*12-10ths now*

*5-19: [8, 11, 9, 2, 3]*

*7-31 cII*

*8-28 cII and 9-4 2x*

*4-12: [4, 7, 8, 10]*

*26-27*

*m.31: counts modulation of row in bars 29-30 (= retrograde of modulation with dyads reversed)*

*4-19: [2, 3, 4, 5]*

*7-31 cII*

*28*

*= b.12*

G m.dr. 3

MAN. Pos. très long

m.g. p très long

10 (pour 8 ♯)

10 (pour 8 ♯)

5 (pour 4 ♯)

Repetition

special dyad

*entous frops* 2 + 3 + 4

29-30

as in b. 30

6-246: [6,7,F,10,0,3] 6-224-bar 12

INVOOLUTION 6-255A:26

MAN. m.dr. p

Pos. 3 + 2 + 2 + 2 + 2 + 3

PÉD. 5-4 *estinto* *sur bague* 4-3 (m=1-3)

f

(30)-31

MAN. 31

PÉD.

COUNTER-INVOLUTION (a retrograde of Involution with dyads reversed)

part occurred in bar 26

(31)

MAN. 31

PÉD.

Retrogression

Dyads by leap /os w/a tete Sante de greenville

6-24/37

9 (pour 8)

9 (pour 8)

(31-32)

MAN. 31

PÉD.

6-244: [11,1,3,4,6,2] Second half of 2 "unmarked"

2 (negation)

3

legato

9 (pour 8)

9

9

(22) 33

AN. 9

PÉD.

(33)-34

IAN. 9

PÉD.

6-224: C11, 1, 3, 4, 6, 7

(6) inc. poco rall.

(33) (Lent)

Tutti **fff** |  
 G, P, R: fonds et anches  
 16, 8, 4, mixtures |  
 Péd: fonds et anches  
 16, 8, 4, 32 |  
 tous accouplements et  
 tirasses |

12-tone statement (bm 29)

Un peu vif, librement

legato

MAN. GPR **fff**

6-7

6-224

1-12 2-11 etc.

6-7 CENTER

Involution (bm 30)

6-238/6

COUNTER-INVOLUTION

6-26/38

(35)

MAN.

12

11-12

Retrospection

rall.

molto

35-37

REPRISE

Bien modéré

(suite des interversions sur 3 rythmes hindous)

MAN. GPR **fff non leg.**

manthikâ 2<sup>e</sup>

manthikâ 1<sup>er</sup>

PÉD. **fff** legato

5 3 1 C

4 2 1

5 3 1 C

1 3 4 5

1 3 4 5

37-38

MAN. R } *ff legato* PR } *più ff leg.*

mallatâla

39-40  
38-39

MAN. R } *ff legato* PR } *più ff leg.*

mallatâla

PÉD. *fff legato*

manthikâ 2<sup>e</sup>

41

MAN. GPR } *fff non leg.*

manthikâ 1<sup>re</sup>

42

MAN. R } *ff leg.* PR } *più ff leg.*

mallatâla

43-44

MAN. GPR } *fff non leg.*

manthikâ 1<sup>re</sup>

PÉD. *fff legato*

manthikâ 2<sup>e</sup>

(8va)

7-z36 7-z12 7-z36 7-20 7-20 (T10) 7-20

The opening chords of 'Les Mains de L'Abime' comprise two pairs. Although the first of these pairs consists of sets from different classes (7-z36 and 7-z12), these sets have the same interval content [444342]. When Messiaen discusses this group of three chords in TRCO III (p.188) his notation retains the low D-E dyad in the second chord. The second chord pair, in contrast, consists of a single set class, septad 7-20, a favorite of Messiaen's. Interval content [433452]. Thus, the first chords are equivalent with respect to interval class, while the second are equivalent with respect to pitch class. The bass dyad C-B, has symbolic significance in the work.

Les Mains de L'Abime, outer parts

Soprano Bass  
4-23 (dia) 4-3 (octa)

201 202 203  
Accord sur dominante appoggiaturé

04 p expressif T10

340  
Klar. Solo-Geige Oboe Solo-Bratsche Horn Solo-Vcl. Horn Klar. Solo-Bratsche Bass-Klar. Bass-Tuba Kur-Fag.

In diesem Akkord kommen elf verschiedene Töne vor. Aber die zarte Instrumentation und, daß die Dissonanzen weit auseinander liegen, macht, daß dieser Klang sehr weich wirkt. Aber vielleicht noch eins. Die einzelnen Gruppen sind so gesetzt, daß man sie leicht auf frühere Formen zurückführen könnte. Beispielsweise den ersten Einsatz. Ich glaube, das Ohr erwartet hier diese Auflösung:

Bar 12: first 'guirlande'.

Musical notation for Bar 12: first 'guirlande'. The notation shows a treble clef staff with a sequence of notes. Below the staff, there are three groups of notes, each enclosed in a box and labeled with the numbers 1, 3, and 4 respectively.

Boundary pitches of contour groups

Musical notation for boundary pitches of contour groups. The notation shows a treble clef staff with a sequence of notes. Below the staff, there are two groups of notes, each enclosed in a box. The first group is labeled '6-z46:[11,2,4,6,7,8]' and the second group is labeled '6-z24:[4,6,8,9,11,0]'. There is also a handwritten note '7-20' and a bracketed list '[0,2,4,2,3,4]' to the right.

Bar 20: third guirlande

Musical notation for Bar 20: third guirlande (a). The notation shows a treble clef staff with a sequence of notes. Below the staff, there is a group of notes enclosed in a box.

Musical notation for Bar 20: third guirlande (b). The notation shows a treble clef staff with a sequence of notes. Below the staff, there is a group of notes enclosed in a box. The label '7-20' is written above the box, and the label '6-16' is written below the box.

The upper strand of this bi-linear figuration unfolds 7-20, an inverted form of the first 7-20 in bar 3 (T<sub>4</sub>I). The parsing here is also one favored by Messiaen, the saute-mouton, or leapfrog. In French, sheep, not frogs, leap over each other. In the lower strand, the hexachord 6-16, one of the seven hexachords of 7-20, unfolds. It lacks a single pc to become a second form of 7-20 in this melodic 'garland', viz., pc3, or Eb.

"Les Mains de L'Abime" Bar 29: 12-tone row

Involution

3 2 2 2 2 3  
non-retro contour groups

"Les Mains de L'Abime" Bar 29: disjunct hexachords

6-z46:[6,7,8,10,0,3]  
6-z24:[9,11,1,2,4,5]

Non-retro contour groups: 3 2 2 2 2 3

6-z24/46 interval vector: [2 3 3 3 3 1]  
N.B. ic6 counts twice; thus the non-retro pattern is 2 3 3 3 3 2.

"Les Mains de L'Abime" Bar 29: Headnotes of contour groups

6-z46:[2,3,4,6,8,11]  
6-z24:[5,7,9,10,0,1]

Contour groups and contour in general form yet another programmatic parameter, the mountainous terrain of the Dauphiné (along with register, dynamics, etc.)

"Les Mains de L'Abime" Bar 29: 12-tone row

Involution

Involution: disjunct hexachords

6-z38:[11,0,1,2,6,7]

6-z6:[3,4,5,8,9,10]

Involution: Headnotes of contour groups

5-20

7-20

Septad 7-20, here in linear form, is  $T_{11}$  of the first 7-20, bar 3, and  $T_1$  of the second form. Since the transposition operators are inverse-related mod 12, the same set-class is held invariant with respect to each of the "original" forms of 7-20. This connection, although remote, is interesting from the standpoint of abstract set structure.