A STUDY OF MESSIAEN'S BIRD MOTIFS IN <u>CHANTS D'OISEAU</u>

by

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INTRODUCTION

In an attempt to explain his writing style, Olivier Messiaen wrote a
two-page preface to <u>La Nativite' du Seigneur</u> in 1935 which included an expla-
nation of the devices used in composing the work. Three years later he issued
an outline which was a concise statement of his ideas on the purpose of music
and the means by which this purpose would be achieved. He wrote as follows:

> The emotion and sincerity of musical work
> Which shall be at the service of the dogmas
> of Catholic theology.
> Which shall be expressed by melodic and harmonic
> means: the gradual augmentation of intervals, the
> chord of the dominant, pedal points, expanded orna-
> ments and appoggiaturas.
> Still more by rhythmic means: rhythms immediately
> preceded by their augmentation and sometimes increased
> by a short value (the addition of a half-unit).
> Above all by modes of limited transpositions:
> chromatic modes for harmonic use, their strange
> colour deriving from the limited number of possible
> transpositions (2, 3, 4, and 6 according to the mode).
> The subject theological? the best, for it com-
> prises all subjects.
> And the abundance of technical means allows the
> heart to expand freely.[1]

This manifesto was followed in 1944 by <u>The Technique of My Musical Lan-</u>
<u>guage</u>, a detailed analysis of his methods illustrated by excerpts from his
compositions. In its preface he cites the study of bird songs as having
influenced his compositional style. He also includes a short chapter on bird
calls.

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[1]Felix Amprahamian, <u>Grove's Dictionary of Music and Musicians</u> (5th ed.;
London: Macmillan and Company, Ltd., 1954), p. 722.

Messiaen finds the music of man too calculated and systemized; he much prefers the sounds of nature. Routh quotes Messiaen as saying, "Nature, the songs of birds! That for me is the home of music. Free, anonymous music, improvised for pleasure."[2] This attitude is apparent in a symphony for Piano and Orchestra, Les Reveil des Oiseaux (1953), which includes thirty-seven bird songs, each with an atonal intervallic structure. Slonimsky remarks that particular prominence is given to the intervals of the major seventh, the minor ninth, and two perfect fourths between which the tri-tone is interpolated.[3]

Though Olivier Messiaen maintains that melody should be the guiding principle in his music, he also states that rhythmic "mathematical impossibilities" help to control the overall effect.[4] He speaks especially of rhythms which are nonretrogradable. These rhythmic impossibilities accomplish horizontally what his harmonic modes of limited transposition do in vertical chords; devices to be explained later. Through these two "charms of impossibilities,"[5] he tries to achieve a "glistening music. . . . giving to the aural sense voluptuously refined pleasures. At the same time, this music should be able to express some noble sentiments (and especially the most noble of all, the religious sentiments exalted by the theology and the truths of our Catholic faith)."[6]

Messiaen and his colleague, Andre Jolivet, both believe that man is a

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[2]Francis Routh, Contemporary Music (London: English Universities Press, Ltd., 1968), p. 69.

[3]Nicolas Slonimsky, Music Since 1900 (New York: Charles Scribner's Sons, 1971), p. 965.

[4]Olivier Messiaen, The Technique of My Musical Language (Paris: Alphonse Leduc, 1944), p. 13.

[5]Ibid.   [6]Ibid.

part of something beyond himself. They think the way to discover this tie to the eternal, spiritual man is "to retrace one's steps to the beginning of human consciousness."[7] Both explored primitive and oriental civilizations, especially the exotic modes and rhythms.

Since the publication of The Technique, Messiaen has also assimilated a serial technique. Aside from utilizing his early preference for Hindu rhythms and nature's bird calls, the Chants d'Oiseau also uses his more recently employed serial techniques.

The following terms from Messiaen's vocabulary are applicable to a study of Chants d'Oiseau:

1. Ametrical music: music requiring precise rhythmic rules. "Measure" and "beat" are replaced by the feeling of a short value, i.e., the sixteenth-note, and its free multiplication.[8]

2. Hindu rhythms: rhythms taken from a table of a hundred and twenty deci-talas compiled by Carngadeva, a Hindu theorist of the thirteenth century. Messiaen's rhythmic theory is based on the ragavardhana rhythm. This rhythm, as well as the micra varna and sarasa rhythms found in the Chants d'Oiseau, will be discussed in the text.[9]

3. Inexact augmentation: an augmentation which deviates from normal augmentation as a result of the addition of an added value.[10]

4. Nonretrogradable rhythms: rhythms which are the same whether read from right to left or left to right.[11]

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[7]Routh, p. 65.

[8]Messiaen, p. 14.

[9]Ibid.
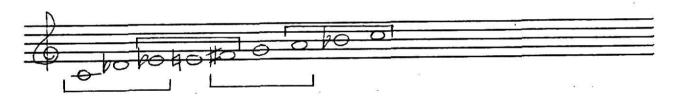
[10]Ibid., p. 19.

[11]Ibid., p. 20.

5. Returning Chromaticisms: a melodic device derived from Bela Bartok which uses a returning chromatic formula, where the <u>letter</u> is chromaticized on its return. Messiaen gives these examples:

Ex. 1

6. Modes of Limited Transposition: modes which are transposable only a limited number of times (Mode 1--the whole-tone scale, transposable twice; Mode 2--like the chord of the diminished seventh is transposable three times).[12]
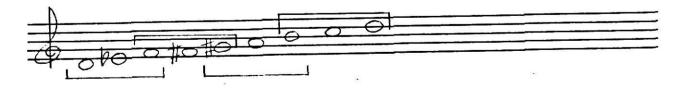
Ex. 2

Mode 2

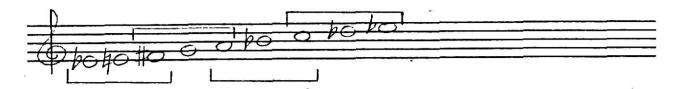First Transposition

Second Transposition

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[12]<u>Ibid.</u>, p. 58.

Third Transposition

7. Theme and commentary form: a musical sentence composed of a theme followed by its rhythmic and melodic development.[13]

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[13]Ibid., p. 37.

RHYTHMIC ASPECTS OF THE CHANTS D'OISEAU

In discussing metrical rhythms in his book, The Technique of My Musical Language, Messiaen gives supplementary examples in "bird style" which do not obey the laws of his rhythmic system. By the use of grace notes and sixteenth or thirty-second notes as the shortest value, this style differs from his other works.

Ex. 3

Influenced by the study of Greek and Hindu rhythms and the neumes of plainchant, Messiaen tries to create an "ametrical" music. He uses the Hindu rhythm micra varna in the Chant d'Oiseau as a unifying element. This rhythm can consist of any note values which are equal to four sixteenths and a thirty-second.

Ex. 4

Aileen Cohalan, in her analysis of the <u>Livre d'Orgue</u>, states that since a "refrain" of seven measures which uses this rhythm reappears periodically in the piece, it should be called a quasi-rondo form.

Ex. 5

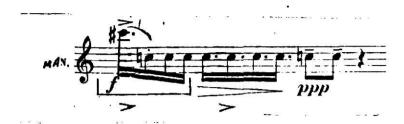Though in its following three appearances the measures are found in retrograde (7, 6, 5, 4, 3, 2, 1), then from the ends to the middle (1, 7, 2, 6, 3, 5, 4), and finally from the middle to the ends (4, 3, 5, 2, 6, 1, 7), it always uses the same <u>micra varna</u> rhythm. In retrograde this rhythm consists of a dotted sixteenth (a thirty-second plus a sixteenth note) followed by three sixteenth notes.

Ex. 6

Messiaen includes this retrograded rhythm in the song of the nightingale (ros-signol).

Ex. 7

Another Hindu rhythm Messiaen introduces in the first piece of the Livre d'Orgue, "Reprises par Interversion," is called sarasa. This rhythm consists of note values which are equal to a sixteenth followed by three thirty-seconds ending with a sixteenth note, as shown in Example 8.

Ex. 8

This sarasa rhythm occurs in the Chants d'Oiseau.

Ex. 9

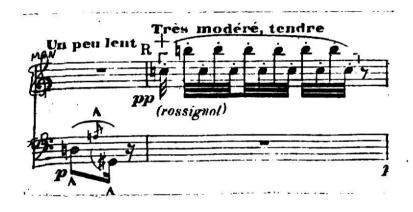Messiaen draws these conclusions from the Hindu rhythm ragavardhana:

Ex. 10

> First, it is possible to add to any rhythm whatsoever a small,
> brief value which transforms its metric balance; second, any
> rhythm can be followed by its augmentation or diminution accord-
> ing to forms more complex than the simple classic doublings;
> third, there are rhythms impossible to retrograde.[1]

In order to achieve metric imbalance, he adds a short value to any rhythm by

means of a note, a dot, or a rest. In the Chants d'Oiseau this added value,

marked by a cross, is found as a note in Example 11A and a dot in Example 11B.

Ex. 11

A.

B.

The rest as an added value is used throughout the piece as a divider

between the various sections:

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[1]Messiaen, p. 15.

Ex. 12

A. Following the <u>micra varna</u>

B. After each bird call
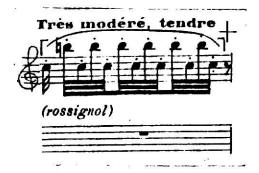
Call of the Thrush

Call of the Robin

Call of the Nightingale

Très modéré, tendre

(rossignol)

Call of the Blackbird

Presque vif et fantaisiste

(merle noir)

Un peu lent

C. Following the pedal motive which also serves as a divider.

Un peu lent

Instead of using bar lines in the impassioned song of the blackbird, merle noir, Messiaen again uses the added value rest as a means of punctuation.
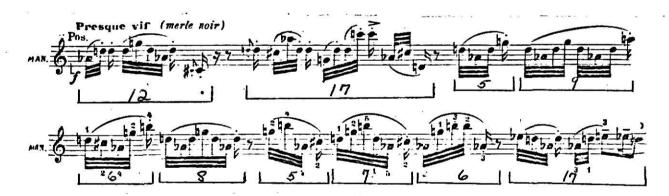
Ex. 13

"Ametrical" music satisfies Messiaen's predilection for prime numbers (three, five, seven, nine, eleven, thirteen, etc.). Chants d'Oiseau contains numerous instances of this concept, especially in the grouping of notes in the merle noir.

Ex. 14

Only four of the above groups contain an even number of notes. The uneven groupings range from five to seventeen notes per group. In one call of the thrush, grive musicienne, there is a total value of thirteen sixteenth notes, as shown in Example 15.
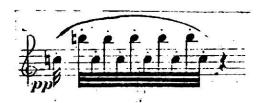
Ex. 15
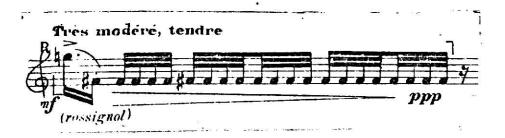
The nightingale, <u>rossignol</u>, uses calls of eleven thirty-seconds (Ex. 16A) and twenty-five thirty-seconds (Ex. 16B).

Ex. 16

A.

B.

The sole call of the robin, <u>rouge-gorge</u>, contains a group of five and a group of nine thirty-seconds.

Ex. 17
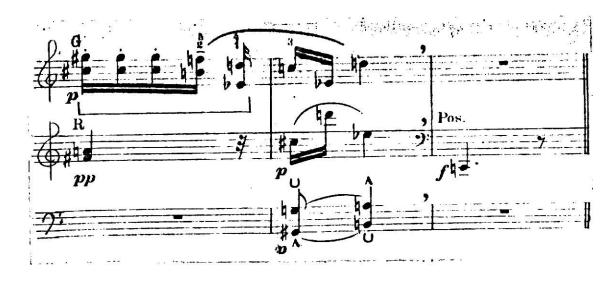
The <u>micra varna</u> rhythm contains nine thirty-seconds as a result of the added
value.

Ex. 18

The added values also serve the purpose of lengthening the preparation
for an accent, or accelerating or prolonging the descent from the accent.
This gives the accent or descent more expressive quality. The <u>micra varna</u>
rhythm shows the elongation of preparation for an accent by the addition of a
rest and a thirty-second note.

Ex. 19

In the song of the nightingale, a descent is elongated by the addition of the dot.

Ex. 20
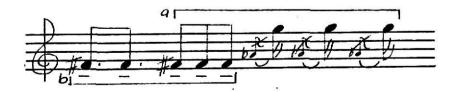
The third of Messiaen's developments from the Hindu ragavardhana is the use of nonretrograde rhythms. Retrograde rhythms are those in which one reads "from right to left what normally ought to be read from left to right."[2] A typical formula for such a rhythm is found in the last song of the nightingale.

Ex. 21

In a total value of fifteen sixteenth notes it contains a combination of an augmented rhythm at a and an inexact augmentation at b. With its note values reversed, i.e., in retrograde, the rhythm would appear as follows:

Ex. 22

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[2]Messian, p. 20.

Whether read from right or left, the order of values in a nonretrograd-
able rhythm remains the same. The first and last rhythmic groups will be
identical--a mirror image. If more than three values are used, the definition
must be expanded to read: "all rhythms divisible into two groups, one of
which is the retrograde of the other, with a central common value, are nonre-
trogradable."[3] This figure from Chants d'Oiseau has a common value of one
eighth note.

Ex. 23

Another nonretrogradable rhythm is found in the song of the thrush with
a common value of two thirty-second notes.
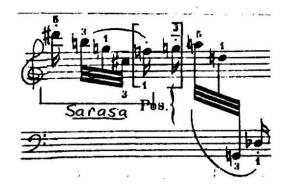
Ex. 24

A third nonretrogradable rhythm contains two instances of the Hindu
rhythm sarasa with a common value of two sixteenth notes.

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[3]Ibid.

Ex. 25

Messiaen's table of augmentation and diminution included in his treatise states that one-fourth, one-third, or one-half the value of a given note can be added to that note. Twice, three times, or four times the value of a given note can also be added. Notes can also be diminished by one-fifth, one-fourth, one-third, one-half, or two-thirds, three-fourths, or four-fifths. This principle is utilized in Chants d'Oiseau by adding one-half the value in Example 26A and by classic doubling in Example 26B.

Ex. 26

A.

B.

The augmentation-diminution principle is further developed by using inexact augmentations.

Ex. 27

The exact augmentation would be as follows:

Ex. 28

This is especially evident in this final song of the nightingale.

MELODIC ASPECTS OF THE <u>CHANTS D'OISEAU</u>

Though Messiaen is attracted by various rhythmic devices, he still places melody as the chief element. He writes as follows:
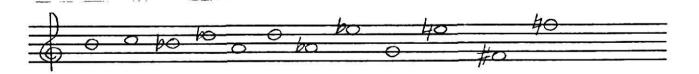
> Supremacy to melody! The noblest element of music, may melody be the principal aim of our investigations. Let us always work melodically. . . . And whatever may be the complexities of our rhythms and our harmonies, they shall not draw it along in their wake, but, on the contrary, shall obey it as faithful servants.[1]

In melody and harmony he finds a second attraction to mathematical impossibilities of mode: those which cannot be transposed beyond a certain number of transpositions, "because one always falls again into the same notes."[2] <u>Chants d'Oiseau</u> does not use these "Modes of Limited Transpositions"; rather, a series of twelve tones which are transposable a limited number of times are used. Cohalen discusses the six rows stated in the first composition of the <u>Livre d'Orgue</u>.[3]

Ex. 29

Row A

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[1]Messiaen, p. 13.

[2]Ibid.
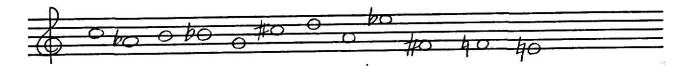
[3]Aileen Cohalan, "Messiaen: Reflections on <u>Livre d'Orgue</u>," <u>Music, The A.G.O. Magazine</u>, July, 1968, pp. 26-27.

Row B

Cohalen found Rows A and B in the <u>Chants d'Oiseau</u> in the first song of the merle.

Ex. 30
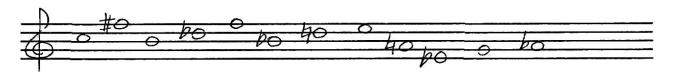
Rows C and D are not found in the <u>Chants d'Oiseau</u> in an exact order. However, some of the bird calls are suggestive of these rows.

Ex. 31

Row C
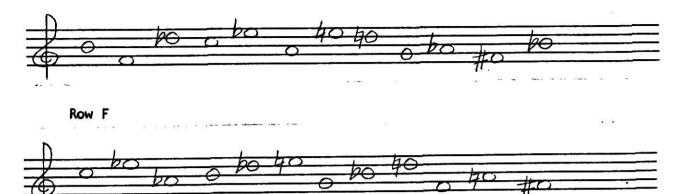
Row D
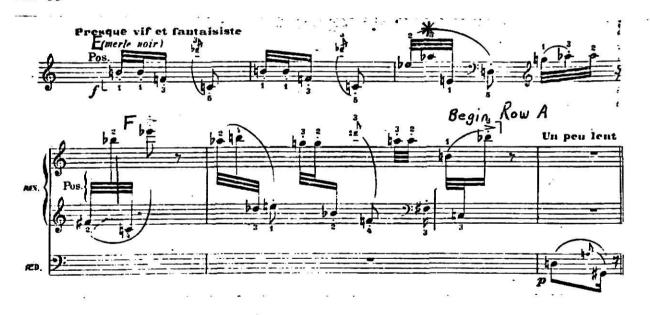
In addition to the presence of Rows A and B found by Cohalen, Rows E and F can also be found in the <u>Chants d'Oiseau</u>.

Ex. 32

Row E

Row F

These rows are found in the second call of the _merle_. The A flat, marked

below by an asterisk, is an exception not found at that point in the row.

Ex. 33

Though the _micra varna_ refrain quoted above uses a series of twelve

tones, this series does not conform to any of the previously established rows,

but is a random order of tones. After the initial statement of Rows A, B, E,

and F, there are no other literal uses of the rows in any transposition or in

any logical order. Row A is limited in its transpositions because the original

and the retrograde, when they begin on the same note, are the same (See Appendix). Row C is also limited, for its inversion is exactly the same as its retrograde (See Appendix). The songs of the thrush, robin, and nightingale do not give a literal statement of any of the stated rows. They do, however, seem to suggest certain features in the rows by their treatment of tritone resolutions and use of returning chromaticisms. These will be illustrated later.

Messiaen has a preference for the interval of the augmented fourth since "a very fine ear clearly perceives an f-sharp in the natural resonance of a low C."[4] This particular interval is the main basis for the calls in Chants d'Oiseau, since each of the calls contains several instances of this interval. Ex. 34

A. Call of the Merle
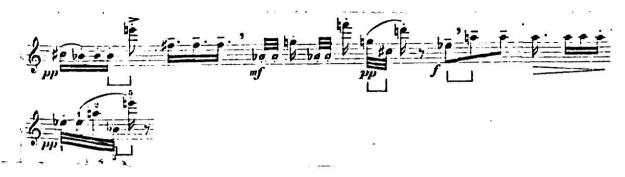
B. Call of the Thrush

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[4] Ibid.

C. Call of the Nightingale

D. Call of the Robin

Messiaen also favors a melodic contour he labels as "returning chroma-ticisms."[5] These occur four times in the composition as literal translations. Ex. 35

A. Occurs twice

B. Occurs once

Presque vif et fantaisiste (merle noir)

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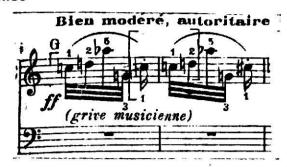
[5]Ibid., pp. 31-32.

C. Occurs once

The chromaticisms are much more numerous when octave transpositions of single

notes are disregarded.

Ex. 36

A.

B.
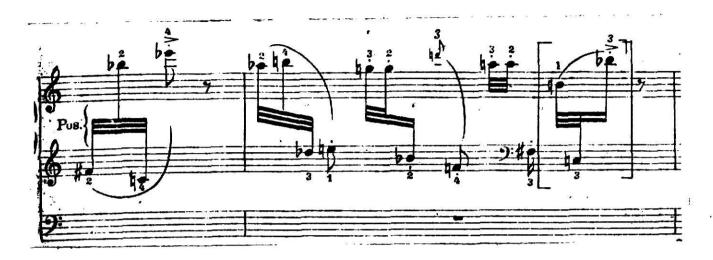
C.
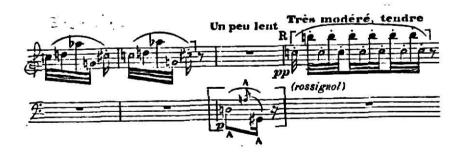
Messiaen states that he uses this octave transposition to give "crushing power"

to his themes.[6] He also uses this technique in the song of the merle.

Ex. 37

As stated, Cohalen has labeled the form as "quasi-rondo" because of the recurrence of the micra varna refrain quoted in Example 3. Another unifying element is also found in the use of a pedal motive stated above to separate the various calls.[7] This motive occurs most strikingly on the fourth page of the score where the short calls seem to be in dialogue.

Ex. 38

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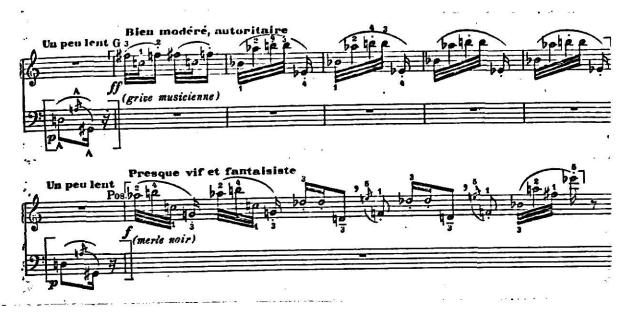
[6] Ibid., p. 36.

[7] See Example 10, page 8.

Ex. 38, cont.

Though Messiaen specifically mentions that he will not deal with the effects of timbre in his Technique ("it is a question of language and not of timbre"[8]), he nevertheless remarks that he uses unexpected organ registrations. This is especially true of Chants d'Oiseau since each bird has its own distinct registration and dynamic range. The calls are not copies of nature. Messiaen himself states that,

> Since they use untempered intervals smaller than the semitone, and as it is ridiculous servilely to copy nature, we are going to give some examples of melodies of the 'bird genre' which will be transcription, transformation, and interpretation of the volleys and trills of our little servants of immaterial joy.[9]
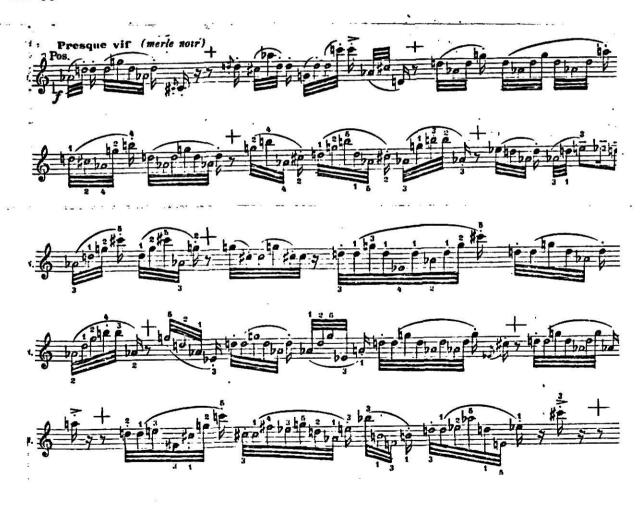
The micra varna rhythm refrain referred to above (See Example 3) is to be played with the following registration: Swell--cymbale, bourdon 16'; Positif--clarinette and quintaton 16'; and Great--bourdon 8'. The pedal motive and the pedal part of the micra varna refrain are to be played on flute 4' only.

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[8]Ibid., p. 7.

[9]Ibid., p. 34.

That the blackbird (merle noir) is one of Messiaen's favorite songs to imitate is shown by a statement in the Technique that the merle, especially, has melodic contours which "surpass the human imagination in fantasy."[10] In the Chants d'Oiseau, he exhibits this favoritism by the length of the songs for this bird. One song sentence, in "theme and commentary form" (See Introduction), is made up principally of the intervals A^b-D-G and is based on this sequence of tones in the inversion of Row A (ten staves long). As mentioned earlier, he uses the eighth rest in this song as a means of division instead of bar lines.

Ex. 39

[10]Ibid.

This bird motif is also the first call he uses and the only one which has a literal statement of Rows A, B, C, and F. The registration is flute 4', nazard 2-2/3', and tierce 1-3/5', with a dynamic level at <u>forte</u>. The performer is instructed to play this bird motif "Very lively and whimsically."

The songs of the thrush are fairly short, but are marked "A little moderately, authoritatively" and are to be played <u>fortissimo</u>. They are characterized by the use of the intervals of the Major Ninth and the Major Seventh, both in the same rhythm.

Ex. 40

A.

B.
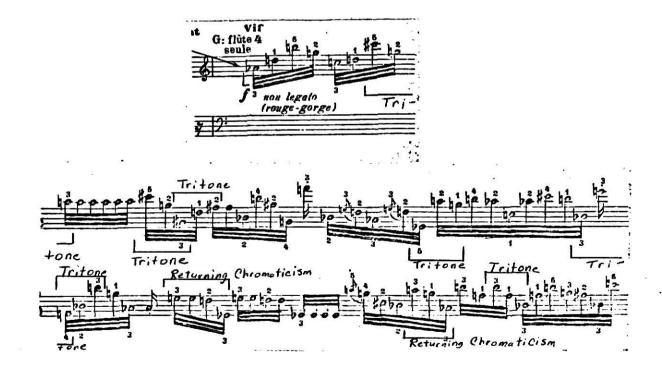
The registration is <u>plein jeu</u> and <u>clairon</u> 4'. By the treatment of its tritone resolutions (See Example 40B) and its many returning chromaticisms, it is based on Row C.

Ex. 41

The only bird not introduced at the beginning of the piece is the robin
(rouge-gorge). When it enters, it has a long, breathless song composed mostly
of thirty-second notes. It is to be played "Lively" at the forte level and
registered flute 4' only. The resolution of its tritones and the presence of
several returning chromaticisms would place it in Row E.

Ex. 42
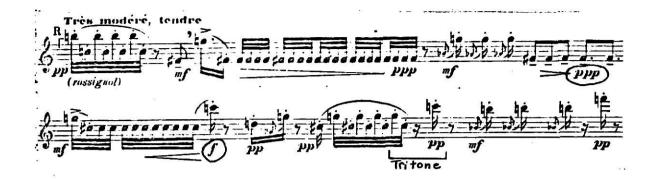
Ex. 42, cont.

The second bird, the nightingale (rossignol), is introduced with a short
motive marked "Very moderately, tenderly" at the pianissimo level. Cohalan
writes that two motives of this bird are the only ones in the composition which
are genuine imitations. She thinks Messiaen copied this particular bird call
by slowing down a recording, "reducing it drastically in speed and thereby
getting only an approximation because of the simple fact that the speed was
slower and hence the pitch was lower."[11] The call fits no given Row. However,
its tritone resolutions and returning chromaticisms suggest Row E, while a few
also suggest Row C, as in Example 43. The nightingale is to be registered
flute 4', octavin 2', bourdon 16'. Its final call is the only one which has
any variation in dynamic range--triple piano to forte.

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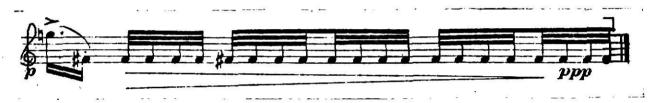
[11] Cohalan, p. 28.

Ex. 43

The piece ends with the "genuine song of the nightingale."[12]

Ex. 44

Cohalan states this occurs not by accident, but as a symbolic meaning of

Paschaltide for which this piece was written.

> Easter is the dawn of NEW life; other sounds and sights will fade
> away when on that Great Day we shall be caught up in praise and
> in adoration; when we shall at last take part in "what eye has
> not seen nor ear heard--nor has it entered into the heart of man
> to conceive what God has prepared for those who love Him.[13]

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[12]Messiaen.

[13]Cohalan, p. 28.

SUMMARY

Though written seven years after The Technique, the Chants d'Oiseau
still embodies many of the principles exemplified in this work. Messiaen con-
tinues to be intrigued by the use of Greek and Hindu rhythms and the neumes of
plainchant. The Hindu rhythms micra varna and sarasa are used, the former
serving as a unifying element. He bases his unique rhythmic system on the
treatment of the Hindu rhythm, ragavardhana: 1) the addition of a small,
brief value to a given note for metric imbalance, 2) the following of a given
rhythm by its augmentation or diminution, and 3) the use of rhythms which
cannot be used in retrograde. Since it can prolong the preparation for an
accent or the descent of a phrase, expressive quality is also contributed by
the added value.

Messiaen also utilizes many of the melodic devices set forth in The
Technique. The Chants d'Oiseau does not use the "Modes of Limited Transposi-
tion"; rather, it uses a series of twelve tones which are transposable only a
limited number of times. He does, however, still rely heavily on the interval
of the tritone. "Returning Chromaticisms" another melodic device, are also
used.

Since this composition is the Song of Birds, Messiaen selects four dif-
ferent bird calls to imitate. He gives each one a specific registration and
separates the themes by means of a pedal motive. As seen by the length of its
songs, the blackbird is his favorite. The "genuine" call of the nightingale
in the last measures of the piece symbolizes once again Messiaen's endeavor to
portray natural sounds as he seeks for the true understanding between Man and
Divinity.

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APPENDIX

Row A Transposed

B	C	B^b	C$^\#$	A	D	A^b	E^b	G	E	F$^\#$	F
B^b	B	A	C	A^b	C$^\#$	G	D	F$^\#$	E^b	F	E
A	B^b	A^b	B	G	C	F$^\#$	C$^\#$	F	D	E	E^b
A^b	A	G	B^b	F$^\#$	B	F	C	E	C$^\#$	E^b	D
G	A^b	F$^\#$	A	F	B^b	E	B	E^b	C	D	C$^\#$
F$^\#$	G	F	A^b	E	A	E^b	B^b	D	B	C$^\#$	C
F	F$^\#$	E	G	E^b	A^b	D	A	C$^\#$	B^b	C	B
E	F	E^b	F$^\#$	D	G	C$^\#$	A^b	C	A	B	B^b
E^b	E	D	F	C$^\#$	F$^\#$	C	G	B	A^b	B^b	A
D	E^b	C$^\#$	E	C	F	B	F$^\#$	B^b	G	A	A^b
C$^\#$	D	C	E^b	B	E	B^b	F	A	F$^\#$	A^b	G
C	C$^\#$	B	D	B^b	E^b	A	E	A^b	F	G	F$^\#$

Row A Inverted

B	B^b	C	A	C$^\#$	A^b	D	G	E^b	F$^\#$	E	F
B^b	A	B	A^b	C	G	C$^\#$	F$^\#$	D	F	E^b	E
A	A^b	B^b	G	B	F$^\#$	C	F	C$^\#$	E	D	E^b
A^b	G	A	F$^\#$	B^b	F	B	E	C	E^b	C$^\#$	D
G	F$^\#$	A^b	F	A	E	B^b	E^b	B	D	C	C$^\#$
F$^\#$	F	G	E	A^b	E^b	A	D	B^b	C$^\#$	B	C
F	E	F$^\#$	E^b	G	D	A^b	C$^\#$	A	C	B^b	B
E	E^b	F	D	F$^\#$	C$^\#$	G	C	A^b	B	A	B^b
E^b	D	E	C$^\#$	F	C	F$^\#$	B	G	B^b	A^b	A
D	C$^\#$	E^b	C	E	B	F	B^b	F$^\#$	A	G	A^b
C$^\#$	C	D	B	E^b	B^b	E	A	F	A^b	G^b	G
C	B	C$^\#$	B^b	D	A	E^b	A^b	E	G	F	F$^\#$

Row B Transposed

C	Ab	B	Bb	G	C#	D	A	Eb	F#	F	E
B	G	Bb	A	F#	C	C#	Ab	D	F	E	Eb
Bb	F#	A	Ab	F	B	C	G	C#	E	Eb	D
A	F	Ab	G	E	Bb	B	F#	C	Eb	D	C#
Ab	E	G	F#	Eb	A	Bb	F	B	D	C#	C
G	Eb	F#	F	D	Ab	A	E	Bb	C#	C	B
F#	D	F	E	C#	G	Ab	Eb	A	C	B	Bb
F	C#	E	Eb	C	F#	G	D	Ab	B	Bb	A
E	C	Eb	D	B	F	F#	C#	G	Bb	A	Ab
Eb	B	D	C#	Bb	E	F	C	F#	A	Ab	G
D	Bb	C#	C	A	Eb	E	B	F	Ab	G	F#
C#	A	C	B	Ab	D	Eb	Bb	E	G	F#	F

Row B Inverted

C	E	C#	D	F	B	Bb	Eb	A	F#	G	Ab
B	Eb	C	C#	E	Bb	A	D	Ab	F	F#	G
Bb	D	B	C	Eb	A	Ab	C#	G	E	F	F#
A	C#	Bb	B	D	Ab	G	C	F#	Eb	E	F
Ab	C	A	Bb	C#	G	F#	B	F	D	Eb	E
G	B	Ab	A	C	F#	F	Bb	E	C#	D	Eb
F#	Bb	G	Ab	B	F	E	A	Eb	C	C#	D
F	A	F#	G	Bb	E	Eb	Ab	D	B	C	C#
E	Ab	F	F#	A	Eb	D	G	C#	Bb	B	C
Eb	G	E	F	Ab	D	C#	F#	C	A	Bb	B
D	F#	Eb	E	G	C#	C	F	B	Ab	A	Bb
C#	F	D	Eb	F#	C	B	E	Bb	G	Ab	A

Row C Transposed

B♭	C	B	F	E	F#	G	A	A♭	D	C#	E♭
A	B	B♭	E	E♭	F	F#	A♭	G	C#	C	D
A♭	B♭	A	E♭	D	E	F	G	F#	C	B	C#
G	A	A♭	D	C#	E♭	E	F#	F	B	B♭	C
F#	A♭	G	C#	C	D	E♭	F	E	B♭	A	B
F	G	F#	C	B	C#	D	E	E♭	A	A♭	B♭
E	F#	F	B	B♭	C	C#	E♭	D	A♭	G	A
E♭	F	E	B♭	A	B	C	D	C#	G	F#	A♭
D	E	E♭	A	A♭	B♭	B	C#	C	F#	F	G
C#	E♭	D	A♭	G	A	B♭	C	B	F	E	F#
C	D	C#	G	F#	A♭	A	B	B♭	E	E♭	F
B	C#	C	F#	F	G	A♭	B♭	A	E♭	D	E

Row C Inverted

B♭	A♭	A	E♭	E	D	C#	B	C	F#	G	F
A	G	A♭	D	E♭	C#	C	B♭	B	F	F#	E
A♭	F#	G	C#	D	C	B	A	B♭	E	F	E♭
G	F	F#	C	C#	B	B♭	A♭	A	E♭	E	D
F#	E	F	B	C	B♭	A	G	A♭	D	E♭	C#
F	E♭	E	B♭	B	A	A♭	F#	G	C#	D	C
E	D	E♭	A	B♭	A♭	G	F	F#	C	C#	B
E♭	C#	D	A♭	A	G	F#	E	F	B	C	B♭
D	C	C#	G	A♭	F#	F	E♭	E	B♭	B	A
C#	B	C	F#	G	F	E	D	E♭	A	B♭	A♭
C	B♭	B	F	F#	E	E♭	C#	D	A♭	A	G
B	A	B♭	E	F	E♭	D	C	C#	G	A♭	F#

Row D Transposed

C	F$^{\#}$	B	C$^{\#}$	F	B^{b}	D	E	A	E^{b}	G	A^{b}
B	F	B^{b}	C	E	A	C$^{\#}$	E^{b}	A^{b}	D	F$^{\#}$	G
B^{b}	E	A	B	E^{b}	A^{b}	C	D	G	C$^{\#}$	F	F$^{\#}$
A	E^{b}	A^{b}	B^{b}	D	G	B	C$^{\#}$	F$^{\#}$	C	E	F
A^{b}	D	G	A	C$^{\#}$	F$^{\#}$	B^{b}	C	F	B	E^{b}	E
G	C$^{\#}$	F$^{\#}$	A^{b}	C	F	A	B	E	B^{b}	D	E^{b}
F$^{\#}$	C	F	G	B	E	A^{b}	B^{b}	E^{b}	A	C$^{\#}$	D
F	B	E	F$^{\#}$	B^{b}	E^{b}	G	A	D	A^{b}	C	C$^{\#}$
E	B^{b}	E^{b}	F	A	D	F$^{\#}$	A^{b}	C$^{\#}$	G	B	C
E^{b}	A	D	E	A^{b}	C$^{\#}$	F	G	C	F$^{\#}$	B^{b}	B
D	A^{b}	C$^{\#}$	E^{b}	G	C	E	F$^{\#}$	B	F	A	B^{b}
C$^{\#}$	G	C	D	F$^{\#}$	B	E^{b}	F	B^{b}	E	A^{b}	A

Row D Inverted

C	F$^{\#}$	C$^{\#}$	B	G	D	B^{b}	A^{b}	E^{b}	A	F	E
B	F	C	B^{b}	F$^{\#}$	C$^{\#}$	A	G	D	A^{b}	E	E^{b}
B^{b}	E	B	A	F	C	A^{b}	F$^{\#}$	C$^{\#}$	G	E^{b}	D
A	E^{b}	B^{b}	A^{b}	E	B	G	F	C	F$^{\#}$	D	C$^{\#}$
A^{b}	D	A	G	E^{b}	B^{b}	F$^{\#}$	E	B	F	C$^{\#}$	C
G	C$^{\#}$	A^{b}	F$^{\#}$	D	A	F	E^{b}	B^{b}	E	C	B
F$^{\#}$	C	G	F	C$^{\#}$	A^{b}	E	D	A	E^{b}	B	B^{b}
F	B	F$^{\#}$	E	C	G	E^{b}	C$^{\#}$	A^{b}	D	B^{b}	A
E	B^{b}	F	E^{b}	B	F$^{\#}$	D	C	G	C$^{\#}$	A	A^{b}
E^{b}	A	E	D	B^{b}	F	C$^{\#}$	B	F$^{\#}$	C	A^{b}	G
D	A^{b}	E^{b}	C$^{\#}$	A	E	C	B^{b}	F	B	G	F$^{\#}$
C$^{\#}$	G	D	C	A^{b}	E^{b}	B	A	E	B^{b}	F$^{\#}$	F

Row E Transposed

F	B	C#	C	Eb	A	E	D	G	Ab	F#	Bb
E	Bb	C	B	D	Ab	Eb	C#	F#	G	F	A
Eb	A	B	Bb	C#	G	D	C	F	F#	E	Ab
D	Ab	Bb	A	C	F#	C#	B	E	F	Eb	G
C#	G	A	Ab	B	F	C	Bb	Eb	E	D	F#
C	F#	Ab	G	Bb	E	B	A	D	Eb	C#	F
B	F	G	F#	A	Eb	Bb	Ab	C#	D	C	E
Bb	E	F#	F	Ab	D	A	G	C	C#	B	Eb
A	Eb	F	E	G	C#	Ab	F#	B	C	Bb	D
Ab	D	E	Eb	F#	C	G	F	Bb	B	A	C#
G	C#	Eb	D	F	B	F#	E	A	Bb	Ab	C
F#	C	D	C#	E	Bb	F	Eb	Ab	A	G	B

Row E Inverted

F	B	A	Bb	G	C#	F#	Ab	Eb	D	E	C
E	Bb	Ab	A	F#	C	F	G	D	C#	Eb	B
Eb	A	G	Ab	F	B	E	F#	C#	C	D	Bb
D	Ab	F#	G	E	Bb	Eb	F	C	B	C#	A
C#	G	F	F#	Eb	A	D	E	B	Bb	C	Ab
C	F#	E	F	D	Ab	C#	Eb	Bb	A	B	G
B	F	Eb	E	C#	G	C	D	A	Ab	Bb	F#
Bb	E	D	Eb	C	F#	B	C#	Ab	G	A	F
A	Eb	C#	D	B	F	Bb	C	G	F#	Ab	E
Ab	D	C	C#	Bb	E	A	B	F#	F	G	Eb
G	C#	B	C	A	Eb	Ab	Bb	F	E	F#	D
F#	C	Bb	B	Ab	D	G	A	E	Eb	F	C#

Row F Transposed

C	E♭	A♭	B	C#	E	G	B♭	D	F	A	F#
B	D	G	B♭	C	E♭	F#	A	C#	E	A♭	F
B♭	C#	F#	A	B♭	D	F	A♭	C	E♭	G	E
A	C	F	A♭	B	C#	E	G	B	D	F#	E♭
A♭	B	E	G	A	C	E♭	F#	B♭	C#	F	D
G	B♭	E♭	F#	A♭	B	D	F	A	C	E	C#
F#	A	D	F	G	B♭	C#	E	A♭	B	E♭	C
F	A♭	C#	E	F#	A	C	E♭	G	B♭	D	B
E	G	C	E♭	F	A♭	B	D	F#	A	C#	B♭
E♭	F#	B	D	E	G	B♭	C#	F	A♭	C	A
D	F	B♭	C#	E♭	F#	A	C	E	G	B	A♭
C#	E	A	C	D	F	A♭	B	E♭	F#	B♭	G

Row F Inverted

C	A	E	C#	B	A♭	F	D	B♭	G	E♭	F#
B	A♭	E♭	C	B♭	G	E	C#	A	F#	D	F
B♭	G	D	B	A	F#	E♭	C	A♭	F	C#	E
A	F#	C#	B♭	A♭	F	D	B	G	E	C	E♭
A♭	F	C	A	G	E	C#	B♭	F#	E♭	B	D
G	E	B	A♭	F#	E♭	C	A	F	D	B♭	C#
F#	E♭	B♭	G	F	D	B	A♭	E	C#	A	C
F	D	A	F#	E	C#	B♭	G	E♭	C	A♭	B
E	C#	A♭	F	E♭	C	A	F#	D	B	G	B♭
E♭	C	G	E	D	B	A♭	F	C#	B♭	F#	A
D	B	F#	E♭	C#	B♭	G	E	C	A	F	A♭
C#	B♭	F	D	C	A	F#	E♭	B	A♭	E	G

A STUDY OF MESSIAEN'S BIRD MOTIFS IN <u>CHANTS D'OISEAU</u>

by

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B. M. E., Florida State University, 1968

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AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

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MASTER OF MUSIC

Department of Music

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Though written seven years after The Technique, the Chants d'Oiseau still embodies many of the principles exemplified in this work. Messiaen continues to be intrigued by the use of Greek and Hindu rhythms and the neumes of plainchant. The Hindu rhythms micra varna and sarasa are used, the former serving as a unifying element. He bases his unique rhythmic system on the treatment of the Hindu rhythm, ragavardhana: 1) the addition of a small, brief value to a given note for metric imbalance, 2) the following of a given rhythm by its augmentation or diminution, and 3) the use of rhythms which cannot be used in retrograde. Since it can prolong the preparation for an accent or the descent of a phrase, expressive quality is also contributed to a phrase by the added value.

Messiaen also utilizes many of the melodic devices set forth in The Technique. The Chants d'Oiseau does not use the "Modes of Limited Transposition"; rather, it uses a series of twelve tones which are transposable only a limited number of times. He does, however, still rely heavily on the interval of the tritone. "Returning Chromaticisms," another melodic device, are also used.

Since this composition is the Song of Birds, Messiaen selects four different bird calls to imitate. He gives each one a specific registration and separates the themes by means of a pedal motive. As seen by the length of its songs, the blackbird is his favorite. The "genuine" call of the nightingale in the last measures of the piece symbolizes once again Messiaen's endeavor to portray natural sounds as he seeks for the true understanding between Man and Divinity.