

Theory of Music – Jonathan Dimond

Messiaen

(version May 2010)

Introduction

Olivier Messiaen (1908-1992) was a French composer and pianist who was a preeminent driving force in contemporary music from pre-WWII through to the 1990's when he died. Notable is Messiaen's independence from any specific school or grouping – he developed his own personal voice early on and experimented with many different composing methods during his life.

In perusing Messiaen's output one can see the effect of his devout Catholic faith upon his creativity – many titles have religious overtones. Messiaen maintained his post as principal organist at La Sainte Trinité church in Paris for some 60 years! It is said it was here that Messiaen conceived much of his work, and his contribution to the organ repertoire is the largest since Bach.

Messiaen taught at the same Conservatoire in Paris where he studied for a decade in his youth. Students flocked to him, and included such names as Pierre Boulez, Karlheinz Stockhausen, and Iannis Xenakis. Messiaen's teaching reached international status by the late 1940's with lectures in Darmstadt, Tanglewood, Budapest, etc. He was in residence at New England Conservatory in Boston shortly before his death.

Messiaen is famous for possessing the peculiar ability of synaesthesia – whereby he makes specific colour associations in his mind to specific pitches. Colourful descriptions sometimes accompany his scores (e.g. “violet” or “milk-white”). His music is truly colourful, and features a harmonic and timbral richness which is unmistakably his.

Lastly, as an avid ornithologist, Messiaen's musical ear naturally transferred bird song into his works, either literally in works such as *Catalogue d'Oiseaux* (“Catalog of the Birds”, 1958, for piano) or indirectly, as a bird-song-like effect.

Listen and read score for *Liturgie de Crystal* from the opening of the *Quatour pour la Fin du Temps*. Observe here the first major appearance of birdsong in Messiaen's writing. Read notes from Burkhart p.502.

Technique de mon langage musical **(Technique of my Musical Language)**

Before we examine our first piece it is worth recognizing the value of Messiaen's own theory book on his own music. This treatise was written and published in 1944 after Messiaen's return from the war, and contains two books in one – a “text” book and a “workbook” of musical examples. I recommend referring to this book for further reading on all of his techniques.

Quatour pour la Fin du Temps **(Quartet for the end of Time, 1940-1)**

This composition is famous for having been written while Messiaen was a Prisoner Of War and performed in Stalag VIII A, Gortitz (on the border of Poland and East Germany), and first performed there before 5000 freezing and starving prisoners, with Messiaen himself on piano. He spent 18 months at this P.O.W. camp, which must have tested him in many ways.

Messiaen wrote in the preface to the score that the work was inspired by text from the tenth chapter of the Book of Revelation:

And I saw another mighty angel come down from heaven, clothed with a cloud: and a rainbow was upon his head, and his face was as if it were the sun, and his feet as pillars of fire... and he set his right foot upon the sea, and his left foot on the earth... And the angel which I saw stand upon the sea and upon the earth lifted up his hand to heaven, and swore by him that liveth for ever and ever, ... that there should be time no longer: But in the days of the voice of the seventh angel, when he shall begin to sound, the mystery of God should be finished...

Of the eight movements, we will look at the *Danse de la fureur, pour les sept trompettes* ("Dance of fury, for the seven trumpets"). This is scored for the full quartet of Bb clarinet, violin, cello, and piano.

The work is a monody, which means the instruments play in unison or octaves, and features the aforementioned "apocalypse angel" which is meant to proclaim the end of space and time (at the end of the movement).

Messiaen's religious convictions are evidenced in the form of the work. For example, there are four statements of the first theme (at rehearsal letters 'A', 'B', 'D', and 'E') before a moment of contrasting stillness at 'F'. {See Pople, p.64}

And I beheld, and heard an angel flying through the midst of heaven, saying with a loud voice, Woe, woe, woe, to the inhabitants of the earth by reason of the other voices of the trumpet of the three angels, which are yet to sound!

(Revelation 8:13)

Rhythm

Messiaen has described himself as a "*compositeur et rythmicien*", which underlines the importance of this parameter in his music. Rhythmically, the movement is a striking example of Messiaen's unique rhythmic language. This language features rhythms based on additive rhythm, which differ from divisive rhythm in that the durations are built as summations or additions of a constant atomic pulse, rather than as divisions of a whole value that fills a bar into progressively smaller units (usually by a factor of 2 or 3).

Task: Examine the score and determine the "atomic pulse" or subdivision which is creating all durations.

The result is that the first two bars have 17 16th notes; the next 18; and so on in an organic, multi-metred, phrase-based series of bars.

Examine rehearsal 'F' and you will notice another rhythmic characteristic – non-retrogradable rhythms and added values.

Task: Count out the duration of each note in each of the seven bars that make rehearsal 'F' and observe the palindromic pattern of duration that makes non-retrogradable rhythm. How do the next seven bars at 'G' relate?

The use of incremental changes in duration which is afforded by the additive rhythmic system creates phrases that can evade beat-orientated predictability. So-called added values involve the addition of an extra short (subdivision-based) duration (be it a note or a rest), or a dotted value to a phrase. Remember, the bar-line now acts as a guide to the performers as to the phrasing, and no longer communicates information about the length of the bar or the type of beat.

Messiaen has given the following examples of use of the added value as note, rest, and dot (respectively) in the following three examples in "The technique of my musical language" (workbook p.1). Accents indicate the technique used in each case. (Messiaen uses a + sign in his book.)



Such added values have their origin in Greek prosody, and in the context of the music prevent the persistence of a regular beat, as I have mentioned. They are the rhythmic version of chromaticism – involving incremental change of duration and a systematic process of varying duration in order to change the way in which time flows. Such rhythmic passages have been referred to as "chromatic rhythm".

Task: Write out the first three bars from this movement (*Danse de la fureur*), deleting the added 16th-note values. What regular beat emerges? What is the time signature now?



{See Pople, p.65}

A clear example of another characteristic rhythmic technique – that of augmentation and diminution – occurs from rehearsal 'I' bar 4. In 16th-notes, the intercepting motive F-C#-A initially takes the value 8-4-8 (also palindromic). Following versions of this motive have the values of 10-5-10, 6-3-6, and 2-1-2.

Task: Track the augmentation and diminution of this motive through to rehearsal 'L'. Read about exact and inexact augmentation and diminution in "The technique of my musical language" (p.18).

It is significant that Messiaen commences “The technique of my musical language” with a chapter on his rhythmic inspiration – the *Ragavardhana* and Hindu rhythm. Messiaen studied and absorbed the language behind the 120 *deci-talas* presented by the Indian author of this treatise of the 13th Century. In it are presented some of the rhythmic characteristics already examined, including a variety of durations built in an additive rhythmic language, augmentation and diminution that may be inexact or exact, rhythmic retrogrades (palindromes) or non-retrogradable rhythms, and a preference for rhythms of prime numbers. (Messiaen also carefully observed the Hindu rhythms’ religious and philosophical symbolism.)

All of these rhythms, while they may be ametric in a sense, require the performer to be very conscious of their subdivision and the greater phrase. In Messiaen’s first paragraph he appeals to his performers to “read and execute exactly the values marked”.

{See Messiaen, “The technique of my musical language”, p.14}.

Messiaen saw similar inspiration in the rhythms of ancient Greece and also plainchant.

Pitch

Messiaen’s pitch material uses his so-called Modes of Limited Transposition. In his “The technique of my musical language”, Messiaen has catalogued various symmetrical scales which form the basis of much of his composition. Being the pitch equivalent of his non-retrogradable rhythms, these modes elicit a sound which is often rich, exotic, eastern, pandiatonic and other-worldly. Together with his rhythmic language, it makes an unmistakable sound.

{See Messiaen, “The technique of my musical language”, p.58}.

In order to be symmetrical, a Mode of Limited Transposition needs to be based upon a cell which divides into the 12-semitone octave evenly. In the following list, the bracketed number indicates what this replicating interval cell is. Summing the numbers in this cell also yields the number of unique transpositions of the mode.

The first mode divides the octave into six whole tones. It has two transpositions.

The first mode (2):



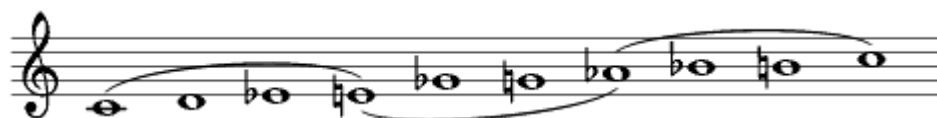
The second mode, also called octatonic scale, divides the octave into four groups of three notes each. It has three transpositions, like the diminished-seventh chord. (It also represents the whole-half scale, being a mode of the same scale.)

The second mode (1,2):



The third mode divides the octave into three groups of four notes each. It has four transpositions, like the augmented triad.

The third mode (2,1,1):

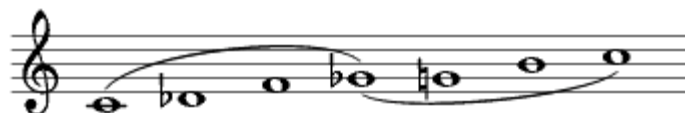


Here are the fourth, fifth, sixth and seventh modes. They each have six transpositions, like the tritone.

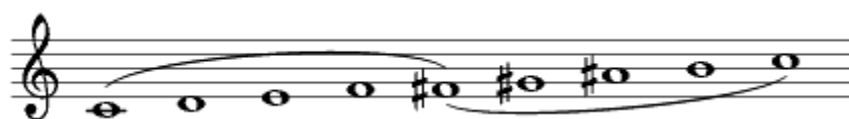
The fourth mode (1,1,3,1):



The fifth mode (1,4,1):



The sixth mode (2,2,1,1):



(This is also called the “leading whole-tone” scale.)

The seventh mode (1,1,1,2,1):



The symmetry inherent in these modes (meaning no note can be perceived as the tonic), together with certain rhythmic devices, Messiaen described as containing "the charm of impossibilities." There is a religious association here, for, like the Indians, the limitations placed upon pitch and rhythm combine to

create a sort of timeless sense through which the composer may pay homage to God.

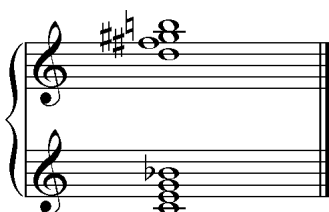
(Graphics taken from http://en.wikipedia.org/wiki/Modes_of_limited_transposition)

Task: Examine the score for *Danse de la fureur* and determine which modes are being used. {Refer to the extract from my analysis for section 'A'.}

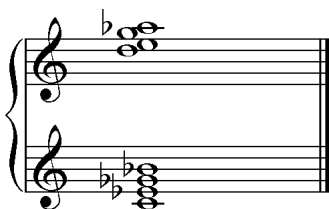
Other Characteristics

Messiaen creates vertical sonorities from these scales in his music. One of the most famous examples is his “Chord of Resonance”. An 8-note chord built on the third mode of limited transposition, this chord also shares likeness to the notes in the harmonic/overtone series.

In his chord constructions, Messiaen builds up intervals in a manner that relates either to the harmonic series, or to “effects of pure fantasy, very distantly analogous to the phenomenon of natural resonance”. {See Messiaen, “The technique of my musical language”, p.50}.



In this key, this is like C7 below B-6 (1st inversion). The vibrancy of such chords is not resolved, but rather changed or altered, such as by following such a chord with an inversion of the same chord, transposed back to the same bass note:



Like Debussy, the importance of timbre was such that for Messiaen it could take on a functional role, in that it could be organized for essential structural purposes. (Sadie, p.206). Messiaen's “*Chronochromie*”, as the title indicates, places equal structural importance on time/duration and timbre. Composed in 1960 for large orchestra, it features a “chromatic scale” of durations from one 32nd note to a whole note, which are numbered from 32 to 1. The 32 durations are ordered and reordered by special processes called “intversion”, which are paralleled by his timbral organization. Birdsong and his usual theological tendencies have a role in the work also.

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