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Olivier Messiaen's "Cinq rechants": The importance of rhythm as a structural element

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OLIVIER MESSIAEN'S CINQ RECHANTS:

THE IMPORTANCE OF RHYTHM AS A STRUCTURAL ELEMENT

by

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LIST OF ILLUSTRATIONS

ABSTRACT

Cinq rechants, composed in December of 1948, represents the culmination of Olivier Messiaen's rhythmic exploration. These rhythmic influences, including Greek versification, tâlas from ancient India, and medieval and Western associations with plainsong, canon, ostinato, and polymeter, drew Messiaen's attention to ways in which to alter rhythms. The techniques which Messiaen discovered enabled him to alter rhythmic patterns through added values, the addition or subtraction of a note, dot, or rest, and augmentation or diminution. An analysis of form, texture, text associations, and meter adaptation within Cinq rechants provides the framework for a study in the application of Messiaen's rhythmic discoveries and inventions.

INTRODUCTION

Cinq rechants represents Olivier Messiaen's explorations in rhythmic technique. Through his studies of the arsis and thesis of Gregorian chant, the placing of accents in works by composers such as Stravinsky and Debussy, Greek versification, and the rhythms from the provinces of ancient India, Messiaen's rhythmic investigations brought forth new rhythmic procedures. Messiaen's new procedures, developed from his studies of previous trends, and his application of these procedures, will be the main focus of this study.

Messiaen's intellectual curiosity led him to explore other cultures. His interest in tâlas from India and his application of Greek versification to the French language is reflected in the rhythmic patterns of Cinq rechants. The complexity of changing meters and the relationship of the French language and the Hindu syllables to the rhythm affect the rhythmic language of Messiaen's compositions. This study will include a discussion of his influences, how he used those elements, and how he applied those techniques in Cinq rechants.

CHAPTER I

RHYTHMIC INFLUENCES AND INVENTIONS

Medieval and Western Associations

When Olivier Messiaen was named to the post at Sainte Trinité in Paris in 1931, he became the youngest professional organist in France. His Christian faith and his duties as organist in the Catholic church led him to private studies of plainchant. Messiaen applied the contours, the syllabic and melismatic nature, and the phrasing of Gregorian chant to his own compositions.

Messiaen was also influenced by fourteenth-century isorhythm. The use of a rhythmic canon in stretto at a distance of a quarter note, augmentation and diminution of the values within a rhythmic pattern, and non-retrogradable rhythms, are evident within Movement III of Cinq rechants.[1] His use of ostinato or rhythmic pedal can also be traced to the origins of isorhythm. Messiaen often repeats a rhythmic pattern for extended periods.

Stravinsky's rhythmic ideas also influenced Messiaen. Along with the ostinato usage, Messiaen assimilated Stravinsky's techniques to obscure metrical regularity through polyrhythmic layers and through the development of rhythmic patterns.

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[1]Time values of the rhythmic pattern within the verse of Movement III are non-retrogradable. Whether they are read from left to right or from right to left, there is no difference in the rhythmic patterns.

Greek Versification

Messiaen's rhythmic interests were stimulated by a number of influences. His teachers, Dupré and Emmanuel, introduced Messiaen to ancient Greek rhythms and he found particular interest in rhythms using odd numbers, as well as combinations of symmetrical and asymmetrical rhythms with permutation and overlap. Through an analysis of le Jeune's Printemps, which utilized measured verse, Messiaen rediscovered techniques of form and text usage that he employed in Cinq rechants. The complexity of his rhythmic structures is often derived from Greek or Hindu rhythm and meter, which will be discussed in subsequent chapters.

In Greek prose, sentence structure depends upon the grouping of words in the sentence, or the rhythm. Structure in classical poetry depends upon the artistic combination of long and short syllables, or the meter. When defining the verse, ancient Greeks measured the length of the vowels but did not consider the logical importance of the words nor the proper accent. The length of the vowel was determined by the nature of the word or by its position before two or more consonants.[2]

A complete verse-foot, or combination of syllables, contains at least one thesis (raising) or arsis (lowering) of tone produced by greater or less stress of the voice. The thesis is always considered to be long unless resolved into two short syllables. Therefore, a long is equal to two short syllables. The arsis can be either short or long. The short note, which is the quarter note in

[2]Lucian Müller, Greek and Roman Versification, (Boston: Allyn and Bacon,1892), p. 37.

modern musical notation, was the time unit called *chronos protos*. The Greek practice was to begin with the *chronos protos* and then manipulate it to form different rhythmic feet.

The short and the long were classified into four groups according to the ratio of length. Isa, the first type, contains dactylic feet for even-beat measures (long-short-short or short-short-long). Diplasia, the second type, consists of a 2:1 ratio (short-long or long-short). The third group, hemiola, corresponds to our five-beat measure and has a ratio of 3:2. The last group, epitrita, consists of a 4:3 ratio, corresponding to our seven-beat measure.[3] The *chronos protos* became the nucleus of larger rhythmic patterns through combinations of threes, fours, fives, and sixes to form feet, which were then grouped to form measures.

Messiaen felt that time was divided into rhythmic groupings and these divisions were to be inspired by the movements of nature; free and unequal in length. He began with the simplest rhythmic grouping or pattern which he transformed and developed through his various methods of rhythmic manipulation. During a lecture in 1958, Messiaen said:

> The first, essential element in music is rhythm, and that rhythm is first, and foremost, the change of number and duration. Suppose that there were a single beat in all the universe. One beat; with eternity before it and eternity after it. A before and an after. Since any beat is prolonged in the silence which follows it, the second beat will be longer than the first. Another number, another duration. That is the birth of rhythm.[4]

The accumulation of durations derived from a primary time value is

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[3]Carla Huston Bell, Olivier Messiaen, (Boston: Twayne, 1984), p. 4.

[4]Bell, Messiaen, p. 5.

regarded as the underlying factor in Messiaen's compositional techniques such as rhythmic augmentation and diminution and rhythms with added values. These patterns often occur along with other passages containing birdsong, plainchant, or Hindu rhythms.

Hindu Rhythms

The classical tradition of Indian music dates back three thousand years to the Vedas, the earliest Hindu spiritual texts. Based on the fundamentals of raga (melody) and tâla (rhythm), the music, which was considered the language of God, was developed to express various degrees of color and emotion. Indian classical music uses the same twelve notes utilized in the West but they are not used in equal temperament. A raga is formed from a series of ascending and descending notes of a given scale. The melody may reflect a certain character and mood: sadness, joy, elation, or a number of other emotions. The raga is presented in two sections. The first section, the alap, is an unaccompanied grouping of notes free of any fixed rhythmic structure. It is in the second section, the gat, where the raga is presented within a rhythmic cycle, called the tâla.

Messiaen's main source for Hindu rhythm was a thirteenth-century work entitled Salgîta-Ratnâkara by Hindu theorist Çarngadeva. He studied the one hundred twenty decî-tâlas, rhythms from various provinces of ancient India, which appear in Lavignac's Encyclopédie de la musique et dictionnarie du composition.[5] He was inspired to try to recover the poetic, cosmic, and religious meaning of each rhythm and to determine the general rules regarding the mâtras, the units of time into which each tâla may be divided.[6] Like the classical Greek system, the rhythmic system of India was also derived from poetic meter. The short syllable is a primary time unit called a mâtra, which is repeated or combined to form a pattern called a tâla. The tâlas are defined by the amount of mâtras they contain.

The phrasing of the length of notes, in Hindu rhythm, is opposed to the implied sense of stressed and unstressed beats in Western rhythm. The meters are summations of a series of equal time units, organized into a series of longs and shorts, rather than a pattern of multiples arranged into an accented grouping.

The most common tâla found in Messiaen's compositions is the râgavardhana (figure 1). He often uses this rhythm to illustrate various rhythmic techniques. When used in its retrograde form, the dotted half note may become divided into three equal time units (figure 2). From this pattern, Messiaen draws concepts as the basis for many rhythmic devices. The short value provides a key element of structure with rhythmic patterns, regulated by the subdivisions of all elements of the tâlas. The lack of barlines indicates an implied sense of freedom but the patterns are notated with rhythmic

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[5]The table of one hundred twenty decî-tâlas is given in Albert Lavignac and Lionel de Laurencies, eds. Encyclopédie de la musique et dictionnaire du composition, (Paris: Librairie Delagrave, 1924)1:301-4.

[6]Almut Rössler, Contributions to the Spiritual World of Olivier Messiaen, (Duisburg: Gilles and Franck, 1986), p. 41.

precision.

Figure 1
Râgavardhana

Figure 2
Retrograde of Râgavardhana

Rhythms with Added Values

Following the discovery of the Hindu rhythmic elements, Messiaen's attention was drawn to ways in which to alter the rhythms. His methods include the addition of the same duration to each element within the pattern, the addition or subtraction of a note, dot, or rest, augmentation and diminution, and the combination or splitting of rhythmic patterns into components.[7] Through the application of these methods, Messiaen also discovered non-retrogradable rhythms and symmetrical permutations.

The added value is a short unit of time, a note, a rest, or a dot, added to any rhythm to create or transform a simple pattern. Figure 3 illustrates the added value technique by note (a), by rest (b), and by dot (c).

Figure 3a
Added value-note

Figure 3b
Added value-rest

Figure 3c
Added value-dot

[7]Olivier Messiaen, The Technique of my Musical Language, transl. by John Satterfield, (Paris: Alphonse Leduc, 1956), p. 16.

Augmented and Diminished Rhythms

Although noted for his composition Mode de valeurs et d'intensités, Messiaen was not a serial composer. This work, written in 1949, within a year of the completion of Cinq rechants, takes on a different form than that of the twelve-tone serialism of Schoenberg. Messiaen utilized a new musical technique by which a series based on note-lengths and dynamic nuances along with pitch consideration and type of attack was pre-determined. All twelve pitches were varied through duration, intensity, and attack. His serial organization of rhythm, dynamics, and attack was influential upon avant-garde composers, such as Boulez and Stockhausen during the mid-twentieth century. Messiaen organized and developed his rhythmic patterns by taking a simple grouping of notes and varying it through systematic augmentation or diminution. This could be done by adding a quarter or half of the original value, adding the value of the notes to themselves (figure 4), or adding twice, three times, or four times the original value. Diminution occurs when the inverse, or withdrawal of the original values, takes place.[8]

Figure 4
Augmentation of rhythm by twice its value

[8]Messiaen, Technique, p. 18.

Non-retrogradable Rhythms and Symmetrical Permutations

Non-retrogradable rhythms consist of two groups of time values, the one being the retrograde of the other. These symmetrical wings enclose a free value, which is common to both groups, in the center. Therefore, whether the rhythm is read from left to right or from right to left, the arrangement of the time-values will remain the same. Since the rhythm is symmetrical, a separate and different retrograde form is impossible. An example of such a palindrome is shown in figure 5.

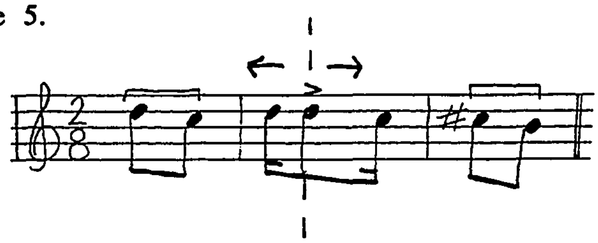

Figure 5
Movement III, First Couplet, measures 1-3.

Messiaen refers to the "charm of impossibilities" to identify the limitations of non-retrogradable rhythms. A rhythmic pattern, which cannot be used in retrograde because the reverse is the same as the original, constitutes an impossibility. This concept of invariance also applies to the tonal aspects of Messiaen's compositions. He regards his seven limited modes of transposition to be limited in possibilities of transposition since each mode may be transposed a certain number of times before the same notes are duplicated.

Rhythms are changed by an additive process, the result of which

Messiaen termed "symmetrical permutations".[9] Each time a pattern is repeated, a new dimension is added. Static repetitions and similarities could be eliminated with the addition of a new melodic and rhythmic line (seen in figure 8), or through the displacement of a rhythmic pattern by a specified time value (seen in figure 7).

Notation of Birdsongs

Messiaen's interest in birdsong can be traced back to 1935. With paper, pencil, and tape recorder, which could only record the theme of the birdsong without the luster, color, and picture of the environment, he would try to capture the essence of the bird's song and its environment within the specific time of year. Often accompanied by a professional ornithologist to aid in the recognition of the individual bird that is singing, Messiaen would dictate the fast and high-pitched birdsong which could contain a number of stanzas.

Rössler relates the idea of notating birdsongs with the leitmotiv idea of Richard Wagner, who "tried to depict objects and ideas"[10] by creating basic musical symbols that enabled him to directly involve the listener. Everything is recognizable by particular characteristics. In the case of birds, an ornithologist notes the style, themes, melodic turns of the phrase, and its specific rhythms.

Following the notation of the songs, a number of sketches must be

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[9]Claude Samuel, Conversations with Olivier Messiaen, transl. by Felix Aprahamian, (London: Stainer and Bell, 1976), p. 22.

[10]Rössler, Contributions, p. 30.

collected to produce an ideal song. The reproduction of timbres is perhaps the most difficult because no musical instrument could imitate or execute such a complexity of pitches, rhythms, and tone colors. Therefore, through a combination of instruments, and through complexes of pitches, each note of the melody is furnished with a chord who's function is to help produce the required timbre.

There are two different forms by which Messiaen utilized the birdsongs. The first has been termed, by the composer, as being "deceitful". He combined birdsongs from various areas even though the birds would not be found together in the natural state. This mixing together can be found in Oiseaux exotiques. The second form conforms to reality. The birdcalls, and all that surrounds them, landscapes, fragrances, colors, and the passing of time, come together to portray the birds in context with the complete environment within a certain amount of time.[11]

Rhythmic Notation

In his treatise, The Technique of My Musical Language, and in the preface of the score of Cinq rechants, Messiaen has expressed that the "values are always notated very exactly."[12] Although, the performer should read and execute the values of the notes and rests as indicated, whether the passages are barred or not, this does not imply a mechanical approach to the performance. Generally, Messiaen utilizes barlines to mark the periods, to change the

[11]Rössler, Contributions, p. 33.

[12]Messiaen, Technique, p. 14.

accidentals, and to aid the performer and the conductor of the ensemble.

Messiaen uses four methods of notating rhythms, excluding his method for birdsong notation. The first method consists of writing exact rhythmic values, without reference of measures, saving barlines to indicate periods and to end the effect of accidentals. This type of notation indicates the exact musical expression of the composer but is not conducive to ensemble performances. Messiaen used this method in many organ and vocal works and certain movements within works for small ensembles. Segments of solo passages in Cinq rechants can be found without reference of barlines.

The second notational style resembles traditional barring and explains metric variations through changes of time signatures. For larger ensembles, this conventional notation aids in the avoidance of reading a complex score in first notation. The majority of the notation in Cinq rechants is written in this style and contains many changes of meter.

The third notational system, developed by Roger Desormiere, utilizes signs placed over note values to indicate their duration. A number written at the beginning of each measure indicates the number of beats within that measure. The following symbols in figure 6 would be placed above the beats to indicate their exact duration.

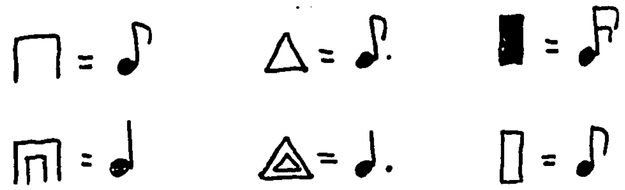

Figure 6
Notational symbols

In the fourth type of notation, a normal meter is used with an unrelated rhythm. The barlines accommodate the performer but the true meter is heard by the listener because of the accent marks utilized by the composer. This type of notation is helpful when several performers have different rhythms superimposed. The composer must increase the number of markings to indicate stress, dynamics, and accents as it relates to his rhythmic conception. This style is evident within the third movement of Cinq rechants.

CHAPTER II

CINQ RECHANTS

Form and Texture

Cinq rechants was composed in Paris in December of 1948 and published in 1949 by Salabert. It is scored for three sopranos, three altos, three tenors, and three basses and was first performed in 1949 under the direction of Marcel Couraud, to whom the set is dedicated. Cinq rechants was composed as an homage to Claude le Jeune (1528-1600), a collaborator of Jean-Antoine de Baïf in the late sixteenth century. They sought to create a rhythmically measured art of song, in emulation of the ancient Greeks.[13]

Each of the five movements consists of an alternation of couplet (verse) with rechant (refrain), a structural influence from his fellow countryman and predecessor from the Renaissance, le Jeune. Stylistically, both composers maintain the same text and music throughout the refrains of movements. In the verses, however, le Jeune used the same music but varied the text with each repetition. Messiaen's verses maintain the same text and change instead by increasing musical complications with the addition of new layers of sound, with extensions and variations, or by changing the instrumental, hummed accompaniment. The first, third, and fifth movements begin with introductions and all movements end with codas.

In the first movement, the refrain is sung three times and only in the

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[13]Paul Griffiths, Olivier Messiaen and the Music of Time, (London: Faber and Faber, 1985), p. 140.

third refrain does Messiaen add a new element. Now there is a three-part canon sung by the sopranos in stretto at a distance of an eighth note. The introduction and the coda are identical, both sung by a soprano solo with the same precise attention paid to every dynamic detail. The verse is repeated and also takes on a new element to add a new dimension to the ostinato figurations.

The texture within this movement varies from one monodic line to eight different parts. Messiaen indicates how he perceives the voicing of each vocal line in the score. At some points, he asks that all three sopranos sing a part, while at others, he may designate only one soprano. The texture is also varied by fragmenting the opening of the refrain. Some voices sing the phrases continuously, while others sing fragments of the line. The use of spoken syllables, interspersed within the refrain, adds color and rhythmic energy.

The second movement begins with a verse featuring the first alto and the first bass as soloists. Within the verse is an expressive, melismatic soprano solo which takes on the rise and the fall of plainsong. The refrain that follows alternates alto and bass sections with soprano and tenor sections, both in unison octaves. The second verse begins like the opening of the movement but with an additional element. Both the tenors and the basses are assigned spoken parts to create a new dimension. The refrain is an exact repetition of the first one and the coda incorporates the spoken Hindu-like syllables with what was originally the last five bars of the verse.

The introduction and the verses of movement three contrast with the mood, articulation, and tempo of the refrains. Messiaen uses three verses within this movement and adds a new dimension each time through various rhythmic techniques including added note values, augmentation and diminution, and non-retrogradable rhythms. The climax of the third movement and, indeed, the entire work occurs in the third verse. Here Messiaen employs a twelve-voice canon in stretto at the distance of a quarter note. The use of spoken text, with accents which are contrary to the sung parts, creates an example of polymeter.

The fourth movement begins with a unison refrain that is sung four times throughout. The verse contrasts a monodic chant with parallel tritone organum in the basses. The organum varies in rhythmic treatment, ranging from thirty-second notes to triplets to quarter and half notes, and Messiaen's scoring details the accents and dynamic nuances that need to occur to imitate the arsis and thesis of the phrases.

The fifth movement contains the most textural variety, often dividing into twelve parts. The framework of the movement consists of an introduction, a verse, the refrain, a reprise of the refrain, the second verse, and the coda. Perhaps the most rhythmic of the five, it contains a number of tâlas that Messiaen developed and transformed through his various rhythmic techniques. Throughout Cinq rechants, Messiaen employs palindromes, the verse and refrain structure, repetitive cycles, and closed periods.

Text and Mythological Suggestion

Messiaen favored the supernatural element in Shakespeare plays. Through his Catholic faith, he found a strong interest in the mysterious. His interest in both shows his sincerity and motivation that led him to examine musical and philosophical issues.

The text of Cinq rechants was written by Messiaen. It is a surrealistic succession of French words with pseudo-Hindu syllables and hard consonants chosen for their distinct qualities, such as their gentleness or violence of attack. Each syllable permits the blending of timbre, dynamics, accents, and duration. Perhaps the pseudo-Hindu syllables represent the expression of emotions from a time before words. Their individual character provides intensity and rhythmic drive, particularly when they are spoken. The use of these syllables seems to return human vocalization to a more primitive function to contrast with the fluidity of the French language. The fluidity of the French text, due to the lack of strong accents, contributes to the overall contour of the line and lends itself to Messiaen's application of Hindu tâlas and Greek versification.

The French text reflects the love based on the legend of Tristan and Isolde, specifically the love-death symbolic version of Wagner. Messiaen composed Harawi, the Turangalila-symphonie, and Cinq rechants, between 1945-1950, as a trilogy on the love-death subject. The objective of the allegoric symbols is to convey a dream-like setting where unrelated objects enter into opposition. The story most relevant to this work is the concern that the lovers have for each other and Brangaene's heedless warning of the approaching dawn. This is the medieval troubadour's influence of the "alba", a morning song in which a friend warns lovers of the approaching dawn.

Messiaen creates text and music to be interdependent upon one another. The words serve as guides to interpret the mood or expression of the poems and the music rather than the actual meaning. When composing, he seems to bear in mind the qualities of the voice and the placement of consonants and vowels in various registers to make the most advantageous use of the voice. By doing so, the color of the voices moves through perpetual changes. However, certain chords or sound complexes may be heard in the same position to produce the same combination of colors.

The "houm" or hum tone is frequently used throughout the work. A hum should be produced whereby the overtones of the fundamental tone are heard, perhaps even stronger, and the combination of the frequency of the main tone with that of the overtone creates the "houm" sensation. This can be created by maintaining space between the teeth while lips remain closed to provide an open, resonant space within the oral cavity.

The setting of the text is generally syllabic, with a few melismas usually assigned to soloists. Messiaen retains the long and short time-lengths of the Greek meters by transferring them to the French poetry, as in the first phrase of the refrain in the first movement. The Greek meter of "les amoureux s'envolent" is translated into long-short-short-long-short-long-long. This is a combination of epitrita, consisting of a 4:3 ratio, and isa, containing even-beat groupings.

The voices may be scored individually or in combination with others. To create texture and timbre changes, Messiaen varies the registers, contrasting the color of the vocal qualities. The diamond-shaped notes indicate that it should be spoken. The pseudo-Hindu words are pronounced phonetically, as written, and any letters in parentheses should not be pronounced.[14]

Meter Adaptation

Messiaen uses the *chronos protos* to create rhythmic patterns and to transform the Hindu tâlas. He prefers using groupings of prime numbers (such as two, three, five, and seven) to establish and maintain irregularity of rhythm through their uneven quality of beats. This technique is a development and application of Greek versification.

The pulses are gathered into a meter. Regularity is constantly upset by irregular groupings or syncopation. Contrast is provided when Messiaen mixes relatively free solo vocalises with music measured in irregular quantities, as in the coda of the fourth movement. Irregularity also occurs when there is a modulation of Greek rhythms by changing the ratio. Most of the meters are derived from the collection of Çarngadeva's one hundred twenty tâlas or invented by the composer in spirit of the Indian or Greek patterns.

Since meter is indicated only as a point of reference for performers, rhythms should not be influenced by barlines and the implied stresses therein. In the first movement, the entire verse is in duple meter. The rhythms, however, do not naturally fit into this meter. Therefore, each repetition of a rhythm begins at a new place in the measure. In this case, each entrance becomes displaced by a sixteenth note.

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[14]Bell, Messiaen, p. 93.

In the second movement, the seemingly free opening monody returns only to be juxtaposed with the duple meter. Within the verse of the third movement, Messiaen chooses the meter to accomodate the material presented in the upper voices. The material in the lower voices, however, is different and does not conform to the given meter. Therefore, natural stresses do not coincide with the barline. This creates a sense of polyrhythm.

The meters of the fourth movement indicate only a framework since the accents fail on irregular pulses. The chant of the verse, which appears to be a counterpoint to contrast with the tritone organum, is quite meditative and the duple meter aids in the appropriate stress. The duple meter also helps to set up the tritone rhythmic figurations. In all of the movements, there are sections where the meter constantly changes. These changes reflect the long-short versification system that Messiaen was using, and therefore reflect the expressive, qualitative character of the text.

CHAPTER III

RHYTHMIC TECHNIQUES EMPLOYED WITHIN CINQ RECHANTS

Movement I

Within the verses of the first movement, Messiaen employs a cyclic application of specific rhythmic formulas. The short rhythmic segment passed between the first and third altos constitutes an ostinato which is presented ten times, each time being displaced by the value of a sixteenth note (figure 7). The repeated figure in the soprano line is longer and more complex. Each of the three sopranos takes part in the passage but the pattern is only completed twice, the second and the start of the third being displaced by the value of a sixteenth note.

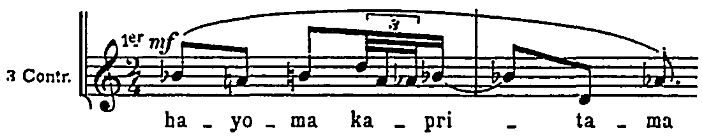

Figure 7
Movement I, Couplet, alto 1, measures 1-2.

In the second verse, the cyclic treatment of the ostinato figures continues. Now, however, there are two additional elements that cause permutation. There is a new counterpoint transferred between the second and third basses that is completed four times, each time being displaced by the value of a sixteenth note. An additional dimension is created by the spoken tenor line which utilizes hard consonant sounds to penetrate the thickening texture. The tenor line, also cyclic, is completed almost three times but is not displaced by the value of a sixteenth note each time it occurs. It is possible that these ostinato figurations were taken from various birdsong notations that Messiaen transcribed. Their repetitive nature and unusual turns along with disjunct, quick register shifts reflect the character of birdsong.

The final statement of the refrain also contains an additional element which varies the original presentation of the line. The sopranos sing a three-part canon at the distance of an eighth note (figure 8). In this way, Messiaen introduces new effects to a rather repetitive form to maintain interest and achieve variety, while remaining unified by some constant element.

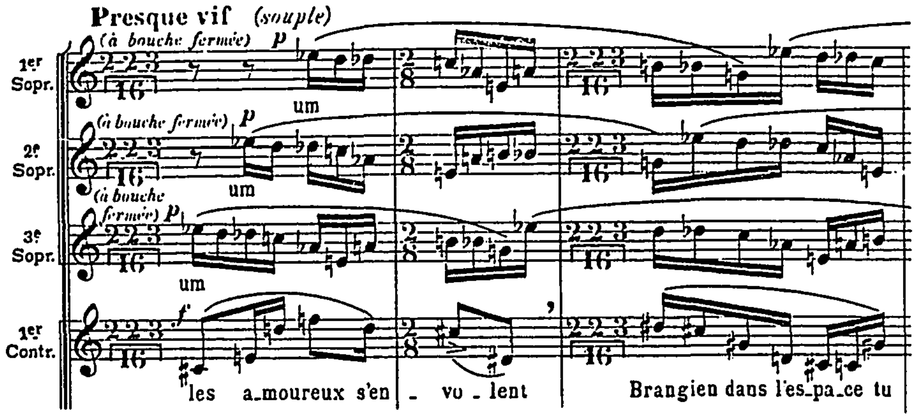

Figure 8
Movement I, Third Rechant, sopranos and alto 1, measures 1-3.

Messiaen adds an element of the unexpected by inserting an extra measure or augmenting a rhythm. In the last refrain of the first movement, Messiaen adds one bar of triple meter and rhythmically augments the last bar of the chordal cluster on the word "*soif* ".

Movement II

In the second movement, the structure of the first verse influences that of the entire piece. The first alto begins with a solo for four bars, followed by the same melodic and rhythmic line sung by the first bass one octave lower. The rhythmic influence of plainsong can be seen in the gradual quickening and then slowing of the rhythmic pulse through notation and metric changes within the phrases that form the verse (figure 9).

Figure 9
Movement II, Couplet, alto 1, measures 1-4.

Messiaen explores the use of Greek meters within the second movement, utilizing an example from each of the basic categories of time ratio that exists: simple ratio of 1:1 called spondée, double ratio of 2:1 called trochée, hemiola with a ratio of 3:2 called cretic or a ratio of 2:3 called antibacchic peon, another 1:1 ratio called anapest, and a 2:1 ratio called tribach (figure 10).[15]

[15]Bell, <u>Messiaen</u>, pp. 95-96.

Name	Ratio	*Chronos Protos*	Pattern
Spondée	1:1	2+2	♩ ♩
Trochée	2:1	2+1	♩ ♪
Cretic	3:2	3+2	♩ ♪ ♩
Anapest	1:1	2+2	♫ ♩
Tribach	2:1	2+1	♫ ♪

Figure 10
Table of Greek Meters

Applying these Greek meters to the first phrases of the verse, it is possible to illustrate how Messiaen used the *chronos protos* as the foundation upon which is established an original interpretation of Greek principles by the multiplication of the primary unit (figure 11).

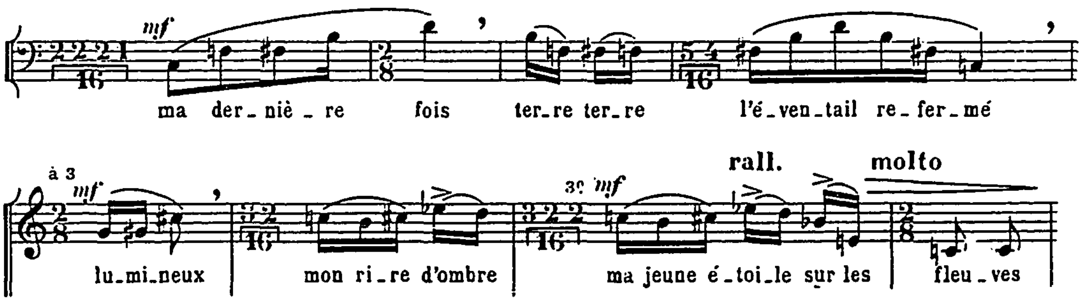

Figure 11
Movement II, Couplet, measures 5-12.

The spoken section of the verse contains rhythms which Messiaen chose from the collection of tâlas. Within the tenor part, three rhythms are used: râgavardhana, candrakalâ, and lackskmiça (figure 12).

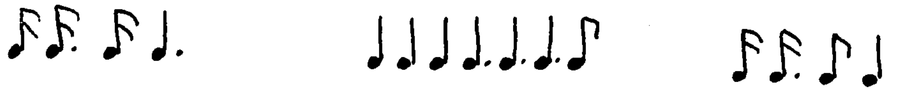

Figure 12

Râgavardhana — Candrakalâ — Lackskmiça

These form a composite rhythmic pattern that repeats in the tenor part. The bass part also has a spoken rhythm that consists of the same three rhythms but is written in the retrograde form. Together, the spoken rhythms, matched with the pseudo-Hindu words, provide an accompaniment to the original statement of the verse, which has now been notated in duple meter rather than its seemingly free first presentation.

Movement III

Within the third movement, Messiaen applies his techniques of added values, augmentation and diminution, non-retrogradable rhythms, and a rhythmic canon to create irregularity and momentum. The introduction includes a repetition of the first three bars plus the addition of the second bar sung twice. This creates the irregularity of meter and of rhythm by extension. Measures 12 and 13 are a sequence of measures 10 and 11, but in measure 13, Messiaen augments the rhythmic pattern. In measures 16 through 18, Messiaen transforms the first two eighth notes by reducing the value of the second note, then adding to the value of both notes, and finally, lengthening the value of both by three times their original value (figure 13).

Figure 13
Movement III, Introduction, soprano 1, measures 16-18.

Messiaen's most creative use of non-retrogradable rhythms combined with the technique of augmenting and diminishing those rhythms is found in this movement. The non-retrogradable rhythm, or palindrome, is found in the first three measures of the verse (figure 14). This palindrome is immediately repeated but the common three notes in the center are augmented by the addition of a sixteenth note.

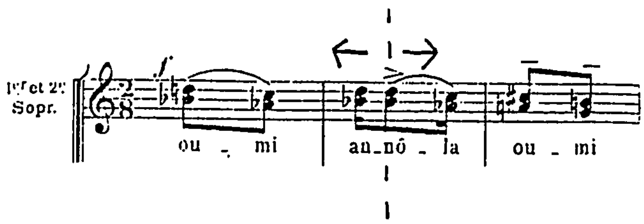

Figure 14
Movement III, First Couplet, measures 1-3.

In the second verse, the original palindrome is presented, followed by its augmented version. Messiaen adds another sixteenth note to each of the three central notes to further augment the rhythm. The third verse begins with another augmented version, by another addition of a sixteenth note to the three, already augmented, central notes and then begins to diminish in value, a sixteenth note at a time, until the original pattern recurs (figure 15).

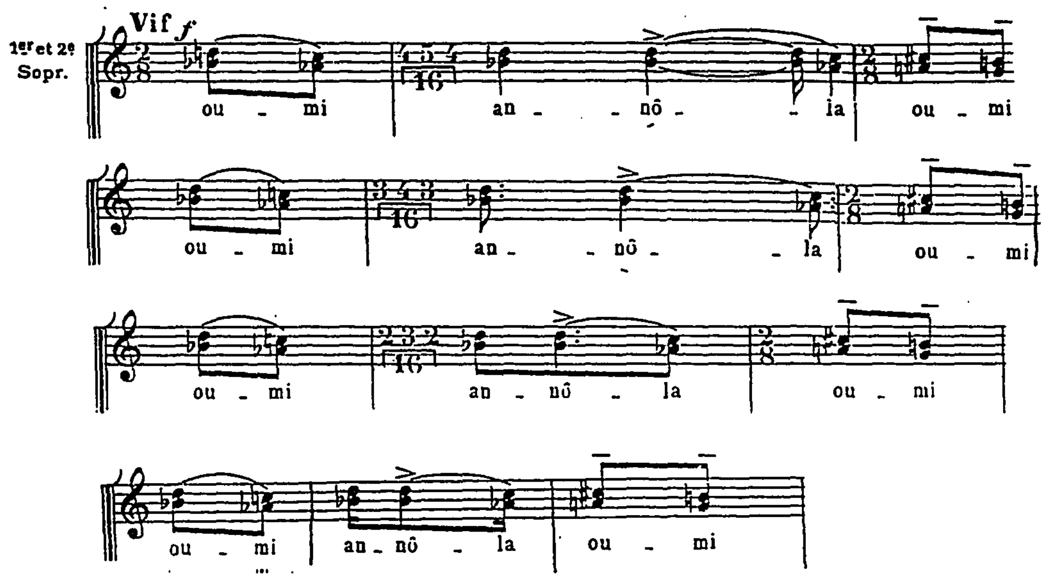

Figure 15
Movement III, Third Couplet, measures 1-12.

Beneath the tightly organized augmentation and diminution of the non-retrogradable rhythm, Messiaen provides rhythmic accentuation contrary to that of the singers. In the spoken text of the basses and third tenor, Messiaen inserts barlines according to the metric accents in the upper parts but they do not correspond to the proper accentuation of the rhythmic grouping in the lower parts. This underlying pulse contrasts with the groupings above to produce an additional element of rhythmic intensity (figure 16). Therefore, the irregularly accented rhythm of sixteenth notes, supplied with detailed markings for accents, produces a polyrhythmic sensation with that of the upper vocal lines.

Figure 16
Movement III, First Couplet, measures 1-4

The final verse builds to the twelve-voice canon, the climax of the movement. The rhythmic canon consists of ten notes and the stretto entrances occur at the distance of a quarter note. Each of the twelve voices sing the same melodic formula, but at a whole step below the voice immediately preceding it. The formula is repeated over and over until the third bass has completed three statements of the pattern and the first soprano has completed five. The overall effect of the entrances of the canon creates a chromatic scale from g^2, sung by the soprano, to a, the final entry by the third bass. Each voice, as it enters, sings two half-steps that generate the cascading of the chromatic scale.

Movement IV

The interval of the tritone dominates the fourth movement. In the refrain, it is used melodically and in the verse, it is treated harmonically, like organum, to accompany the seemless meditative chant in the altos and in a fragment given to the tenors. In each statement of the verse, the chant remains unchanged, while the tritone organum is rhythmically varied (figure 17).

Figure 17
Movement IV, Couplet, measures 1-2.

The retrograde version of the Hindu tâla, râgavardhana, is incorporated in the refrain of the fourth movement (figure 18).

Figure 18
Movement IV, Rechant, sopranos, measures 2-3.

Messiaen expands sections of this rhythm and develops fragments by regrouping the mâtras.

Movement V

In the fifth movement, Messiaen uses the simha rhythm as the basis for the opening of the verse (figure 19).

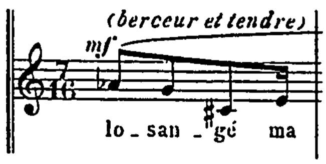

Figure 19
Movement V, Couplet, alto 1, measure 1.

The second measure is an augmentation of the first three notes of the simha rhythm in its original form and measures 5 through 8 contain a non-retrogradable rhythmic pattern that stems from the retrograde of the simha rhythm (figure 20).

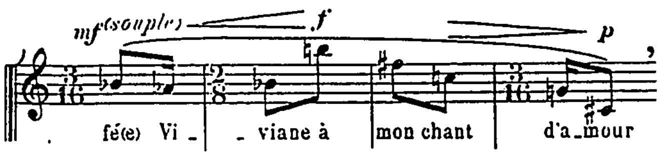

Figure 20
Movement V, Couplet, soprano 1, measures 5-8.

Within the refrain, Messiaen also applies rhythms based on tâlas from India. The rhythm of gajajhampa makes up the first two measures. The next three measures are formed from the simhavikrama rhythm (figure 21).

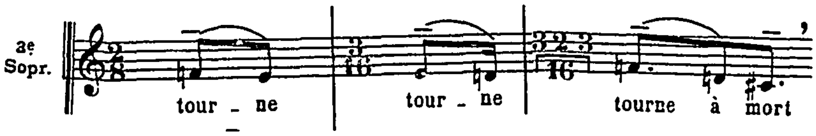

Figure 21
Movement V, Rechant, measures 3-5
Simhavikrama

Measures 6 and 7 are formed from the rhythm of candrakalâ and measures 8 and 9 are based on the râgavardhana rhythm to close the refrain (figure 22). Therefore, the entire refrain is constructed from four different Hindu tâlas.

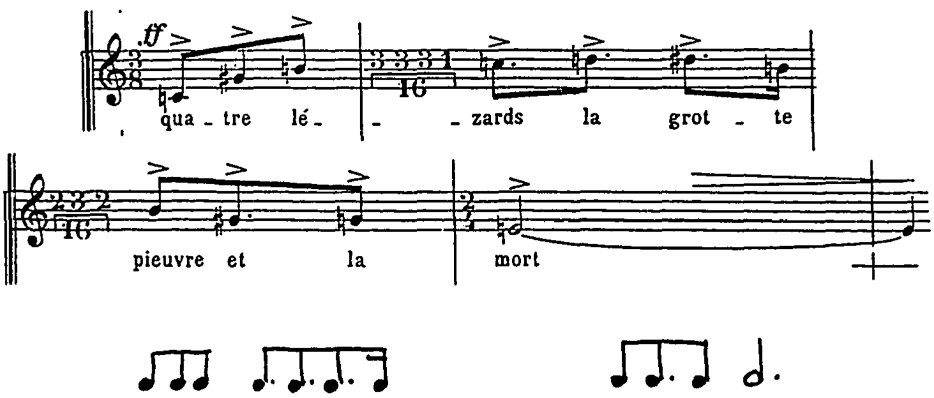

Figure 22
Movement V, Rechant, alto 1, measures 6-10.
Candrakalâ and Râgavardhana

CHAPTER IV

CONCLUSIONS

Olivier Messiaen was successful in developing an individual language through his studies of the past. As the organist of a Catholic church, he began to explore the use of plainchant and became influenced by isorhythm and irregular accents through his study of various composers from Machaut to Stravinsky. Stimulated by le Jeune's developments in the field of measured verse, along with encouragement from his organ teacher, Marcel Dupré, Messiaen's interest in the meters of Greek poetry peaked. Maurice Emmanuel, another of his teachers at the Paris Conservatoire, wrote a great deal on Greek rhythm and music and introduced his pupil to unconventional modalities and rhythmic groupings. His study of Greek versification aided in his ability to bring together the text and the music so that they are not separate entities, but complimentary to and interdependent upon each other.

Through his study of the tâlas of ancient India, Messiaen tried to recover the poetic, cosmic, and religious meaning of each of the one hundred twenty different rhythms. It seems that his intellectual curiosity led him to the application of the tâlas of India. The outside influences helped Messiaen to understand the past but the creative process came from within.

Following his discovery of the Hindu rhythmic elements, Messiaen's attention was drawn to ways in which to alter the rhythms. The stability of non-retrogradable rhythms provided new possibilities of alteration in other aspects of rhythm. By augmenting and diminishing the value of a rhythmic pattern, by adding the value of a dot, a rest, or a note, and by combining and splitting rhythms into components, Messiaen was able to vary passages.

Messiaen drew from the past and created new ideas. The compositional use of traditional form and techniques helps to maintain unity and structure but serves only as a framework. Within the frame, he constantly varies his fundamental ideas to create new dimensions and new possibilities.

Messiaen used the French language to produce the surrealist poetry of Cinq rechants. The text of the five movements is based on the love-death legend of Tristan and Isolde. The human voice reflects the meaningful language and the sounds chosen for their color and attack and their ability to invoke musical rhythm.

The constantly changing meter that occurs within sections of the movements is perhaps an imposition on the score. It seems that the groupings and accents are of the most importance, rather than stresses that occur as a result of a meter. To create a sense of irregular groupings and accents, Messiaen used groupings of primary numbers and exploited the consonants and the pseudo-Hindu words.

As a rhythmatician, Messiaen was often asked to voice his opinions and ideas on the importance of rhythm. In his book, The Technique of My Musical Language, Messiaen wrote:

> We shall not reject the old rules of harmony and of form; let us remember them constantly, whether to observe them, or to augment them, or to add to them some others still older (those of plainchant and Hindu rhythmics) or more recent (those by Debussy and all contemporary music). One point will attract our attention at the outset: the *charm of impossibilities*. It is a glistening

> music we seek, 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). This charm, at once voluptuous and contemplative, resides particularly in certain mathematical impossibilities of the modal and rhythmic domains.[16]

These sentiments represent a man of great faith, perception, and skill to reflect on the past and to meet the needs of the present. Through the element of rhythm in his compositions, Messiaen is able to express his love of nature and mythology and his respect for the past and present.

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[16]Messiaen, Technique, p.13.

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