

TITLE: Isorhythmic Implications in Machaut's *Messe de Nostre Dame*

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ABSTRACT:

Machaut's *Messe de Nostre Dame* not only holds a special place in history as the first through-composed polyphonic setting of the Mass Ordinary by a single composer, it is compositionally fascinating as seen through a modern lens. With a focus on the use of isorhythm and an analysis using Sarah Fuller's technique of Directed Progressions, contrasts are drawn between the Kyrie and Gloria and the Amen sections of the Gloria and Credo. This analysis, along with the work of scholars Margaret Bent, Daniel Leech-Wilkinson, Owen Rees, and Anne Walters Robertson, provides the basis for conclusions about the composer's thought process.

Isorhythmic Implications in Machaut's *Messe de Nostre Dame*

Of all the varying opinions about the appropriate analysis of and possible meanings within Guillaume de Machaut's *Messe de Nostre Dame*, there at least can be agreement that it holds a special place in his oeuvre and that it has contributed to the history of Western music. As Wulf Arlt of *Grove Dictionary of Music* writes, "In the Mass, isorhythm and diverse other compositional techniques of Machaut's late period are brought together in one work that is outstanding in terms of artistic merit and belongs among the most impressive works of the Middle Ages."¹ After decades of research, it is agreed that the composition can be dated sometime around the 1360s, making it a late work in the composer's output and coinciding with his post in Reims.² In terms of function, scholars have concluded that it was composed for the Saturday Lady Mass for the Cathedral in Reims, and performed well past his own death in 1377.³ The reason for its initial longevity (besides its subsequent status as a pivotal composition in musical history), as historians have come to find out, was due to the fact that the Mass was conceived as the result of an endowment that Guillaume and his brother Jean made in order to compose and perform a Mass for the salvation of their souls, as was customary for the Catholic Church at this time.⁴ Its special place in history can be attributed to a number of factors: 1) it is the first through-composed polyphonic setting of the Mass Ordinary by a single composer still extant in the modern age; 2) it was a work that to some extent summarized past traditions and can be seen by some modern scholars as a means of bridging the way to new

¹ Wulf 2014

² Robertson 2002, 272

³ Wulf 2014

⁴ Robertson 2002, 258

traditions in the 15th century; and 3) it was a work which employs a unified form, a large variety of techniques, and a use of dissonance not normally found in this period.⁵

The focus of this paper is in on isorhythm, from the definition and use of the term itself, to the musical sections that are or are not isorhythmic within the Mass, and to the possible meanings behind these compositional choices. Through an analysis, the reader will see a contrast between the Kyrie and Gloria in terms of isorhythm, form, rhythm, harmony, counterpoint, and the large-scale conclusions that can be made as a result; and then an investigation of the similarities and differences between the “Amen” sections of the Gloria and Credo. All of the above will work towards some of the most difficult questions which musicologists and theorists often attempt to answer: why does this work contain isorhythmic and non-isorhythmic elements, and what effect do those choices have on the work as a whole? That these questions are pondered seven centuries later is further evidence that “Machaut is the most important poet and composer of the 14th century, with a lasting history of influence.”⁶

Before an analysis of the Kyrie is possible, it is necessary to address the potentially problematic term “isorhythm” which is so often used to describe the repetitive constructions of music in this age. Isorhythm (from the Greek: “same-rhythm”) is a convenient term, as it is an early 20th-century term coined by Friedrich Ludwig, applied to music of the 13th century, and later applied to music from the 14th and 15th centuries.⁷ Without careful thought, its long-codified definition carries with it a certain unwritten assumption that composers thought of isorhythm as a technique that could be employed like a preconceived tool in a composer’s toolbox. As Denis Harbinson pointed out in his article from 1966, theorists in the *Ars Nova* did

⁵ Arnold and Harper 2014

⁶ Arnold and Harper 2014

⁷ Bent 2001

not have a term for these repetitions, only terms for *color* and *talea*.⁸ While Ludwig's term has proven useful to describe large-scale constructions found within many a composition from the 13th century, one must approach scholarly research of the distant past with caution, as it invariably seen through the modern lens. In this paper, which is mainly focused on these techniques, the term "isorhythm" is used as the most convenient term to describe the function of repetitions of chant which are used to organize a given movement, but not to assume that Machaut thought "isorhythmically", for as much as we would like to know, we cannot ever truly understand the musings of a long-deceased composer.

One thought we can be confident in is that Guillaume de Machaut and his brother Jean were concerned with the salvation of their souls towards the end of their lives. Typical to the Catholic Church of this period, one method of guaranteeing entry into Heaven was to commission a Mass which would serve as a Holy celebration while the donor (and in this case, composer) was alive, and a kind of blessing after he was deceased.⁹ Anne Walters Robertson made a convincing case in her comprehensive book about Machaut's life and compositional output during his time at Reims that Machaut purposefully chose chants which were closely associated not only with the Virgin Mary, but more specifically with variations of those chants which pertained to that region (Kyrie IV, Gloria IV, Credo I, Sanctus XVII, and Agnus XVII).¹⁰ The Cathedral at Reims was the "earliest church in the West" to be dedicated to worshipping the Virgin Mary¹¹, and more specifically, the Marian altar (where Machaut's Mass was sung) was, according to Robertson, "the most important devotional site to the Virgin in the church in the 14th century."¹² In regards to Machaut's time at Reims, as Roger Bowers underlines, out of 143

⁸ Harbison 1966, 100

⁹ Robertson 2002, 258

¹⁰ Robertson 2002, 261

¹¹ Robertson 2002, 265

¹² Robertson 2002, 272

works that Machaut wished to be remembered by, paradoxically only “one single item was composed for actual use during the conduct of the ecclesiastical liturgy,” and that is the Mass.¹³ Thus, Machaut’s choice to compose a Marian Mass and to create music which was so unified in its devotion to her, must have assuredly been a result of wanting to secure his and his brother’s place in the heavenly gates, a kind of “musical ladder to salvation.”¹⁴

Obviously, the principal way of unifying all of these chants associated with the Virgin Mary was by using a technique which we now call isorhythm. Of all six movements of the Mass, the following are isorhythmic (see Ex. 1):

Ex. 1: Isorhythm in Machaut’s *Messe de Notre Dame*

<u>Movement</u>	<u>Voice(s)</u>	<u>Pattern</u>
I. Kyrie (I)	Tenor	(4 x 7)
Christe	Tenor and Countertenor	(8+8+8+1)
Kyrie II	Tenor and Countertenor	(10+10+1)
Kyrie III	Tenor and Countertenor	(7+10+7+10)
III. Credo (Amen)	T/CT – T/CT – CT/T	(12+12+12+1)
IV. Sanctus	Tenor and Countertenor	(8 x 7 + 7)
V. Agnus Dei I	Tenor and Countertenor	(7+7+1)
Agnus Dei II	Tenor and Countertenor	(3 x 6 + 1)
Agnus Dei III	Tenor and Countertenor	(7+7+1)
VI. Ite Missa Est	Tenor and Countertenor	(8+8+1)

And the following are freely composed (i.e. non isorhythmic) in a homophonic style (see Ex. 2):

Ex. 2: Free composition in Machaut’s *Messe de Notre Dame*

- II. Gloria (including the Amen)
- III. Credo (excluding the Amen)
- IV. Sanctus introduction (15 measures)
- V. Agnus Dei introduction (6 measures)

Notably, the only section of a movement that uses isorhythm exclusively in the Tenor is the Kyrie I, while the rest of the movement operates in isorhythm in a Tenor and Countertenor pair. As we shall see in greater detail, the Credo Amen exchanges the isorhythmic voices from Tenor/Countertenor to Countertenor/Tenor. The Sanctus, Agnus Dei and Ite Missa Est, like

¹³ Bowers 2004, 1

¹⁴ Robertson 2002, 274

the Kyrie, uses a Tenor and Countertenor pair throughout. As far as the non-isorhythmic movements, the Gloria and Credo are composed freely, creating a seemingly purposeful pair. Denis Arnold and John Harper suggest that Machaut was probably familiar with the anonymous Tournai cycle which also has a Gloria and Credo pair of movements, written in a homophonic style and containing long melismatic ‘Amens’.¹⁵ Though an explanation cannot be truly accounted for, the introductions to the Sanctus and Agnus Dei are clearly not isorhythmic. David Maw asks the following question but never answers it: “Why are the initial sections of the Sanctus and Agnus not included in the isorhythmic schemes of those movements?”¹⁶ This is a what shall occupy the conclusion of this paper. The forms of the Kyrie and Agnus have the most in common as both have tripartite structures. Leech-Wilkinson points out that the overall form of the Mass has “no single thread which runs through every movement – no one cantus firmus, no parody model. But it is coherent – in technique, in style and perhaps in intention (although we cannot know that).”¹⁷

Out of the six movements of polyphony, Machaut begins with the most tightly organized and isorhythmically strict movement. At the largest level, the Kyrie is a three-part structure as relates to the text: Kyrie, Christe, Kyrie. Due to its established liturgical practice, each section is repeated three times with the exception of the return of the Kyrie, for which a separate concluding section is added, all of which makes for the following form (see Ex. 3):

Ex. 3: Form of Kyrie in Machaut’s *Messe de Notre Dame*

Kyrie I	Christe	Kyrie II/Kyrie III
AAA	A’A’A’	BB/B’

Already, at the broadest view of the movement, there is a complexity in play: it is a three-part structure in terms of text, a four-part structure in terms of sections, and a 9-part structure with

¹⁵ Arnold and Harper 2014

¹⁶ Maw 2006, 286

¹⁷ Leech-Wilkinson 1990, 95

repetitions.¹⁸ In one view, all parts fit evenly (3+3+3) into the number of the Holy Trinity (3) and at another, the sections have a quickening pace (3+3+2+1) within a ‘temporal number’ (4) of sections without repetitions.¹⁹ However basic, the numbers 3 and 4 carry with them symbolic meanings which were commonly understood in this period: 3 being the number of the Spirit (e.g. the Holy Trinity, the 3 steps to sin, 3 days of creation) and 4 being the number of human or temporal existence (e.g. 4 seasons, 4 elements, and 4, the number to follow after the Holy Trinity).²⁰ Within this large structure, each movement has its own unique formulaic constructions.

The Kyrie I of Machaut’s Mass is based on a strict isorhythmic adherence to a plainchant melody in the Tenor. It is a Mode I chant used for principal or double feasts, containing a 28-note *color* and divided into seven four-note *talea* (see Ex. 4).

Ex. 4: Kyrie Tenor Pitches in Machaut’s *Messe de Nostre Dame*

The image displays five staves of musical notation for the Kyrie Tenor Pitches in Machaut's *Messe de Nostre Dame*. Each staff begins with a treble clef and a common time signature (C). The notes are represented by black dots on a five-line staff. Above each staff, the total number of notes in the color and the structure of the talea are indicated. The first staff, 'Kyrie I', shows a 28-note color divided into seven 4-note talea (labeled 1 through 7). The second staff, 'Christe', shows a 25-note color divided into three 8-note sections (labeled 1, 2, 3) and a final note (labeled F). The third staff, 'Kyrie II', shows a 21-note color divided into two 8-note sections (labeled A, B) and a final note (labeled F). The fourth staff, 'Kyrie III', shows a 13-note color divided into two 8-note sections (labeled A, B). The fifth staff, '(cont.)', shows a 21-note color divided into two 8-note sections (labeled A, B) and a final note (labeled F).

¹⁸ Leech-Wilkinson 1990, 18

¹⁹ Maw 2006, 285

²⁰ Hopper 1938, 83-84

Short phrases contribute to the sense of continual cadencing, the simple rhythm of which, Daniel Leech-Wilkinson points out, harkens back to such *Ars Nova* compositions found in *Roman de Fauvel*.²¹ The Countertenor of the Kyrie I is also isorhythmic; it is based on a longer rhythmic pattern, taking up three Tenor-*taleae*, breaking its pattern to accommodate the Tenor as seen in the graph below, taken from Leech-Wilkinson (see Ex. 5).

Ex. 5: Tenor and Countertenor division in Machaut's *Messe de Nostre Dame*



Here, we focus on the counterpoint between the Tenor and Countertenor with a graph originally from Leech-Wilkinson (see Ex. 6) with annotations by the author. Using Sarah Fuller's analytical technique, Directed Progressions can be found within the Kyrie I.²² As defined by Fuller, Directed Progressions occur when one voice of two-part counterpoint moves by whole-step and the other by half-step, resolving from an imperfect interval to a perfect interval. The implication of Directed Progressions is that they are significant and therefore to be potentially emphasized by the performers as later addressed.

Ex. 6: Tenor and Countertenor pitches in Machaut's *Messe de Nostre Dame*

○ = Tenor ● = Countertenor

²¹ Leech-Wilkinson 1990, 20

²² Fuller 1992, 231-232

Another feature of this counterpoint is a palindromic relationship between the opening gesture (5th to 3rd) and the final gesture (3rd to 5th) at the same pitch level. Though this feature might have been conceived in a different manner to which we can understand it now, it is difficult to see these relationships as happenstance.²³

The first Directed Progression of this section can be found in mm. 6-7 between Tenor and Countertenor at the same time as an occurrence of a double leading-tone cadence including the Motetus (during this analysis of the Kyrie, the reader may refer to the annotated score just before the bibliography). An implied Directed Progression occurs between the lower voices in mm. 21-22; though the Countertenor rests, the resolution to a unison is suggested. In a similar fashion, directly following in mm. 22-23 is a delayed Directed Progression where the Countertenor resolves to the octave on the weak beat. The closing cadence of the Kyrie I occurs in mm. 26-27 with a Directed Progression and double leading-tone cadence simultaneously, both of which serve to conclude this first section concretely. An additional feature of this cadence is that it could be seen as have two overlapping Directed Progressions—one between the Motetus and Tenor, and another between the Tenor and the Countertenor if one were to use the G# (*musica ficta*). Circled in mm. 6-9 and mm. 18-19 are where the Countertenor departs from its rhythmic pattern to accommodate the tenor. Another notable rhythmic aspect of the Kyrie I is the hocketing exchange between upper voices in mm. 10-11 and mm. 22-23, in both cases pushing towards a cadence. All of the above illustrates a tightly-woven section which was carefully planned in form and masterful composed on the minute level of polyphony, a *modus operandi* which Machaut continued in the next sections.

The *Christe* is in some ways more tightly organized. It has a Tenor containing three eight-note groups with a final (8+8+8+1) with a 25-note *color* (see Ex. 4). The Countertenor of

²³ Leech-Wilkinson 1990, 21-24

the *Christe* follows the *talea* of the Tenor, making a Tenor-Countertenor pair throughout. The Motetus and Triplum are in strict isorhythm with some small exceptions (as marked in mm 1, 7 and 13). Directed Progressions can be found between the lower voices at m. 6, m. 13 and m. 16, though a true sense of cadence is avoided until the final two measures of the *Christe*. With the exception of a voice exchange between Tenor and Countertenor, the cadence is nearly identical to the closing of the *Kyrie I* if one were to add the *ficta* that would most likely be expected at this moment.²⁴

The *Kyrie II* is also well organized, with a Tenor consisting of a 21-note *color* (see Ex. 4) in two groups of a 10-note *talea* plus final (10+10+1). The Tenor and Countertenor pair continue just as in the *Christe*. Directed Progressions are seen in mm. 3-4 and at the closing cadence in mm. 16-17, also featuring a double leading-tone cadence. *Kyrie III* will repeat material from *Kyrie II*, leaving out the measures corresponding to *Kyrie II*, mm. 5-6. The *Kyrie III* must balance the other sections, and to do so, it adds a repetition of the first phrase so that the original 21-note *talea* of *Kyrie I* fits into a 34-note *talea* in *Kyrie III*. It also allows for the alternation of groupings 7 and 10 (7+10+7+10). The Motetus and Triplum follow the ABAB phrases, rewriting their isorhythmic scheme to fit within those confines.

Most interestingly, some notes were altered from *Kyrie II* to *Kyrie III* (m. 6, Triplum; m. 9, Motetus; and m. 10 Triplum), as shown in the annotated score. The first variation in m. 6, notes G-A-D instead of D-G-D, seem to be the result of the elision in the previous measures. Comparing the Triplum between the *Kyrie II/III* in these measures, it is clear that the compositional need for change has to do with the continuation of the melodic line and a general sense of variation, for there is no reason for alteration in terms of dissonance treatment. In m. 9 of *Kyrie III*, the addition of eighth-notes in the Motetus prepares the addition of more

²⁴ Leech-Wilkinson 1990, 24-25

movement and alteration in the following measure. Finally, m. 10 is a turning point into new material, though that which does repeat in the rest of the movement rounds out an entire movement of a manifold structure.²⁵

Of all the characteristics in this movement, one principal feature operates completely in the background: that the inconvenient rhythmic schemes serve to preserve the integrity of the Tenor chant. As Leech-Wilkinson summarizes in his seminal book on the Machaut Mass, the Kyrie is most likely composed in the order in which the sections stand, due to the additive nature of each progressive section. While this is probable, it is not completely provable. It is also possible that Machaut mapped out the entire Tenor of the piece first, then wrote the Kyrie III, then Kyrie II, then Christe, then Kyrie I. The fact that we have no way of knowing is part of what makes some scholarly research in this area frustrating and potentially here-say. What we can contend is that the sections of the Kyrie, like the other movements of the Mass, are clearly related and tightly organized within themselves. The choice to abide by the Tenor chant at all costs points to a potentially older style, but as Leech-Wilkinson confirms, the language of this piece and its unique dissonance, point to the work “of an experienced and technically assured composer.”²⁶

In contrast to the tightly organized opening movement, the Gloria presents a quite different approach in organization and texture, though it offers similarities in harmonic language. A notable characteristic of this movement is how the rhythm is grouped, or in modern terms, how the time-signatures change throughout the movement. As modern listeners, we can hardly assume that Machaut thought similarly about time-signatures, but one cannot help but notice the change in meter in Leech-Wilkinson’s edition for example, from 4/2

²⁵ Leech-Wilkinson 1990, 27-28

²⁶ Leech-Wilkinson 1990, 29

to 6/2 to 4/2 to 2/2 just in the opening five measures only.²⁷ Despite the fact that most of the movement remains in cut-time, due to the expansion and contraction of the harmonic movement, there is an ebbing, flowing, and halting style as heard in its many cadence points. Bent offers a strong opinion about the performance of these perceived cadences, for as she noticed, almost all recordings made in the modern age have interpreted cadences (at measures 12, 24, 34, 40, 54, 69, 77, 80, 92, 102) with which she disagrees.²⁸ If we were to keep the music moving at these points, that would certainly have a different effect on the listener.²⁹

Though his work on the Machaut Mass is impressive in its scope, this paper is not the first to disagree with Leech-Wilkinson on other aspects of his analysis. Bent has a number of statements in which she questions his exhaustive (and in her view, flawed) analysis. In her analysis of the Gloria, she claims for her analysis that “what first seemed a jungle of arbitrary dissonance, and still seems so after Leech-Wilkinson’s explanation, a diagnostic examination of voice functions has enabled an entire part to be considered as the cause of irregularities.”³⁰ Bent supports Gilbert Reaney’s view that the dissonances not normally allowed by the rules of counterpoint of this period (fourths, sevenths and ninths) are all results of contrapuntal duets with the Tenor, and whose compound makes for the signature “spicy flavor of this Mass.”³¹ Her rationalization for the extraordinary dissonance comes from: exceptions, held notes, passing notes, special license, bifocal collisions, linear thinking and, to a lesser extent, errors in copying. Simply put, Bent convincingly shows that in nearly all cases in this movement, the dissonance comes from the Countertenor.

²⁷ Leech-Wilkinson 1990, 188

²⁸ Bent 2003, 89-93

²⁹ Leech-Wilkinson 1990, 36

³⁰ Bent 2003, 90

³¹ Bent 2003, 81 and 84

On a larger view of voice functions, the most obvious difference between the Kyrie and the Gloria is the mostly homophonic texture of this movement's 4-part writing, what Robertson calls "simultaneous declamation".³² The most notable variant on this declamatory style is the Triplum, which often provides a florid line in contrast to a homophonic set of lower-three voices. At first glance, this style could be likened to music which would follow it centuries later, where more motion and thus more importance is placed on the soprano voice, with the alto, tenor and bass voices in a supporting role. Where those roles diverge in this movement, counterpoint in the other voices help to provide motion to the movement, variation to the style, and character to the individual voices. For example, the eighth-notes of the Motetus (in mm. 13, 15, 22, 33) provide motion and define a certain character for that voice (see Ex. 7), while the syncopation in the Countertenor at m. 6, and the eighth-notes (in mm. 11, 28, 32) do the same.

Ex. 7: Mm. 13-18 in the Triplum of the *Gloria* in Machaut's *Messe de Nostre Dame*

Be - ne - di - ci - mus te. A - do - ra - mus te. Glo - ri - fi - ca - mus te.

If one were to correspond activity with importance, the Triplum would be the voice most emphasized, followed by the Motetus, then the Countertenor, and ending with the Tenor, still the voice which is holding as the Latin definition dictates.

Another consideration to take into account is the use of *ficta* throughout the movement. As two of the most well-known scholars on the subject present, Leech-Wilkinson and Bent present many disagreements as to where the written notes should be adjusted. Many disagreements occur in the Triplum (as it does have the most notes throughout the movement); for example, Bent proposes a G# for the final note of m. 6, followed by an adjusted Bb in m. 7,

³² Robertson 2002, 258

just as she proposes a C# in m. 11 (see Ex. 8) and Bbs in mm. 15 and 17, all notes that Leech-Wilkinson keeps without adjustment (see Ex. 7).³³

Ex. 8: Mm. 5-12 in the Triplum of the *Gloria* in Machaut's *Messe de Nostre Dame*

The list goes on and on, but the point being made is that there are still many ways to interpret the music as a modern performer, one who would have to do much research to understand the way in which the voices should probably operate.

The differences between the Kyrie and Gloria help to create a sharp contrast in tone, but there is still much that remains similar due to the consistent use of basic counterpoint. Directed Progressions and double leading-tone cadences abound throughout the movement, just as they do in the Kyrie, which is one reason modern performers might gravitate towards these moments as cadences. Mm. 12-13 (Ex. 9) feature both a Directed Progression between the Triplum and Countertenor and double-leading tones between the Motetus and Triplum.

Ex. 9: mm. 12-14, in the *Gloria* of Machaut's *Messe de Nostre Dame*

³³ Bent 2003, 92-93

This might lead some performers to take additional time to emphasize this progression but Bent insists that the motion should continue. In contrast, the final two chords between mm. 17-18 feature the exact same chord with the exception of the Countertenor, yet both Bent and Leech-Wilkinson seem to agree that this is a strong cadence. Most notably, the two scholars disagree about the use of *ficta* in mm. 82-83: Leech-Wilkinson does not adjust any notes, resulting in a weak cadence which could be seen to serve as a preparatory gesture leading towards a concluding section, whereas Bent prefers to adjust the notes so that they match the exact same notes as mm. 17-18 (see Ex. 10).

Ex. 10: mm. 17-18 in the *Gloria* of Machaut's *Messe de Nostre Dame*

The musical score for Ex. 10 consists of four staves labeled TR., M., T., and CT. The key signature is one sharp (F#) and the time signature is 3/4. The first measure (mm. 17-18) contains the notes G4, B4, G4, and G4 for TR., M., T., and CT. respectively. The second measure (mm. 18-19) contains the notes B4, D5, B4, and B4 for TR., M., T., and CT. respectively. A sharp sign is placed above the first measure, and a double sharp sign is placed above the second measure.

Though there is some modern-day merit in not adjusting, the logical deduction of Bent is more convincing here. In fact, the same cadence occurs seven times through the piece (if one were to use Bent's *ficta*), in mm. 17-18, 28-29, 56-57, 82-83, 96-97, 103-104, as well as the final cadence of the Amen. It is as if, in the absence of isorhythm, the piece is structured around the repetition of these exactly replicated cadences. Here, number-symbolist Owen Rees would probably not hesitate to add that the cadence is repeated 7 times, 7 being the sum of 3 (the Holy number) and 4 (the temporal number). The purposeful occurrence of this symbolism would be difficult to prove, but the fact that it provides structure to a freely composed Gloria is fortification of this argument.

As already seen, there are strong arguments for the occurrence of extra-musical meaning in Machaut's organizational choices. In Rees's estimation, "there existed, in the medieval view, a fundamental link between the numbers 7 and 12, due to their being respectively the sum and product of the same two numbers (3 and 4).³⁴ The groups of 7 are obvious in the Kyrie I and, as he explains, the Tenor's notes are grouped into $3 \times 4 = 12$ within each Countertenor *talea*. Thus, 7 and 12 are at the heart of Machaut's construction of Kyrie I.³⁵ The symbolism associated with these numbers are striking in relation to the text. Biblical references associate the number 7 with sin and forgiveness:

"If seven times in a day [your brother] acts wrongly towards you, and seven times turns again to you and say, "I repent", forgive him." (St. Luke 17:4)

Peter asks: "Lord, how often shall my brother sin against me, and I forgive him; up to seven times?" (Matthew 18:21)

There are also the 7 gifts of the Holy Spirit, 7 petitions of the Lord's Prayer, 7 beatitudes, 7 virtues, 7 last words from the Cross, 7 sacraments, and 7 churches, etc.³⁶

Rees poses the question that one is left still pondering at the end of his article: to what extent did composers manipulate with "numerical intent"?³⁷ Of course, the answer is that we can never really know, and therefore should probably not go too far in proposing too distant and improbable connections. Maw, in his review article, makes a summary of the Mass movements in relation to their *talea* lengths, seeing that the numbers 3, 4, 7, 8 and 12 are all featured prominently. He concedes that 7 appears frequently, but that 12 is only present twice, but 8 occurs just as much as 7. The existence of inconvenient numbers side by side Rees' meaningful ones, in the end, makes Rees' argument less convincing.³⁸

³⁴ Rees 1938, 97

³⁵ Rees 1938, 96-99

³⁶ Rees 1938, 106

³⁷ Rees 1938, 100

³⁸ Maw 2006, 285-286

What remains unanalyzed in the Gloria is the Amen, a section that will be contrasted with the Credo's corresponding section. Maw hints at asking the central questions which preoccupy scholars about this Mass: "Why are the initial sections of the Sanctus and Agnus not included in the isorhythmic schemes of those movements? Why is the Amen of the Gloria not isorhythmic as is that of the Credo, given that their styles are basically similar?"³⁷ In the comparison and analysis of these sections, this author will attempt an answer. Robertson correctly describes the obvious pairing of the Gloria and Credo as having a simultaneous style, and then she incorrectly labels them both as "ending with isorhythmic Amens."³⁹ Both share a similar texture, the same mode around D, and of course the same text, but they are sharply different in terms of isorhythm. The Gloria Amen is freely composed while the Credo Amen is isorhythmic in the lower two voices, as a Tenor/Countertenor pair. Perhaps Robertson's confusion lay in the Tenor of the Gloria Amen, for it begins with five repetitions of the same rhythm, though that rhythm does not portray itself as important thereafter. This raises an important question about the definition of isorhythm, for though this is technically the "same rhythm", it does not seem to play a structural role in the piece. From the point of view in this paper, the rhythm in question (see Ex. 11) is used as a kind of rhythmic motive at the start of the piece, with all voices employing it in alternating and overlapping fashions.

Ex. 11: rhythmic motive in the *Gloria's* of Machaut's *Messe de Notre Dame*



This makes for a similar texture to the opening of the Credo Amen but it does not make it isorhythmic as defined here.

³⁷ Maw 2006, 286

³⁹ Robertson 2002, 260

The Credo, however, features a strongly determined isorhythmic structure of a 12-measure repeating pattern between the Tenor and Countertenor. This rhythm is repeated verbatim in mm. 13-24, at which point the voices exchange rhythm during measures 25-36. The only variant of the rhythm is within the penultimate measure, where the Countertenor should have half-whole, it instead has three half-notes. This variant not only seems necessary to prepare the final cadence, it also cleverly presents the retrograde of m. 23 in the same voice: C-B-A-G turns to G-A-B-C before the final cadence (see Ex. 12).

Ex. 12: Countertenor mm. 23-24 and mm. 35-37 in the *Credo's Amen*



The overall effect of these differences in construction is felt but not necessarily heard, that is because in both cases, the texture is so thick with overlapping rhythms and short three-note motives that it is difficult to perceive the absence or presence of isorhythm in either section. On some level, these organizations have a general effect on the listener that the piece is well put together, whether or not they know how or why. In the absence of isorhythmic structure, the listener will cling to the repetitive nature of the cadences as well as the rhythmic motives. Additionally, it is surely no accident that Machaut brings back an isorhythmic construction before proceeding to the isorhythmic Sanctus (with the exception of its introduction). Just as the Credo Amen is a segue to the rest of the Mass, so could the Sanctus and Agnus Dei introductions be seen as a complement to the Gloria/Credo pair.

The analysis of Machaut's Mass offered here is hardly comprehensive, but the elements found in the Kyrie, Gloria and Credo are representative of the work as a whole. Of all the questions we ponder about the Mass, many musicologists and music analysts are most concerned with the question which preoccupies this paper as well: why did Machaut make his isorhythmic choices? Instead of providing an answer to this question, Maw, for instance, takes

the opportunity in his article to make a counterstatement to Rees – that he is able to find another seemingly meaningless numerical value to answer this question. Perhaps a better way to answer is in an affirming light, that what we now call isorhythm was then just one method in organizing a composer’s thought process in composition. While composers of many ages have been preoccupied with the symmetries, extra-musical meanings, and organizational structures, what often matters most is the end result, and in that case, Machaut succeeded in a way that would have an arguably profound impact on the way audiences listened and composers created for centuries to come. There is much dissent in the field of musicology, but there is one statement that even Bent would most likely not object to in Leech-Wilkinson’s book, that Machaut’s Mass rightly holds the “status as a masterpiece, one of the greatest achievements of any medieval composer.”⁴⁰

Of course, scholars must be careful to suggest lasting influence for it is difficult to prove directly. Robertson is quick to describe Machaut as transitionally moving towards the Renaissance, but Lawrence Earp in his review of Robertson’s book, believes those types of statements to be unnecessary and improvable.⁴¹ Machaut is certainly in a lineage of composers who would follow him and compositional practices which he fit between, but the fact that a composer’s importance and place in history can only be seen much after his death makes those definitions susceptible to modern agendas. It is mostly convenient to call him transitional because his works survived his epoch the most completely; that his contribution to Western musicology can be measured by the composers which followed him is a disgrace to his actual talent which was at one point the most provocative music being written in its day.

⁴⁰ Leech-Wilkinson 1990, 95

⁴¹ Earp 2004, 392

Ultimately, what can we say for sure? The *Messe de Notre Dame* is a fascinating work. Whether it was composed today or in 1365, it would be equally rewarding to analyze. Findings that have been illuminated are continually changing in the field of medieval musicology and theory. From the term isorhythm itself, to the application of its constructions, to the meaning behind Machaut's choices, to the way in which it coincided with his intention during his life and times, we are intrigued by the story, and ultimately always left wanting more of it. The fact that we can never fully know the truth does not and should not prevent us from continually reaching for it. As the picture of Machaut's life and work becomes clearer in our minds, the fact remains that the end result, the music itself, was good to begin with, and what the composer intended to live on past his own life, has done just that. The last line of Machaut's epitaph reads, "May the Lord who takes away all sin save these brothers."⁴² It is what some might hope and others might believe happened for Machaut and his brother, though that is mystery, too.

⁴² Robertson 2002, 259

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