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5. IMPROVISING WITH MESSIAEN’S MODES

5.1 Introduction

In the previous chapter, practical applications of the Tone Clock were demonstrated, concluding that it can serve as a useful tool to embed twelve-tone techniques in the improvisational languages of contemporary jazz artists. In this chapter, I will discuss a compositional technique that also contains serial elements, yet with more obvious tonal references: Messiaen’s modes of limited transposition.

As well as composing an impressive oeuvre, Messiaen disseminated his theories and practices in a large number of publications, such as the seven volumes of the comprehensive Traité de rythme, de couleur, et d’ornithologie (1949-1992) and the earlier and more compact Technique de mon langage musical (1956), in which he explained his modes of limited transposition for the first time.

Organist and theorist Vincent Benitez (2008) explains that Messiaen’s modes of limited transposition, devised in 1929, originated from his improvisation classes with composer-organist Marcel Dupré, which implied the application of unconventional modalities as part of the Catholic liturgy. Benitez also claims a close relationship between Messiaen’s abilities as an improviser and the applications of the modes in his compositions, because in a number of passages he examined, “the harmonies lie comfortably in the hands, suggesting that they emerged from Messiaen’s improvisations” (Benitez 2008: 135).

The first time I became acquainted with Messiaen’s modes of limited transposition was in my days as a saxophone student, practicing Guy Lacour’s 28 Etudes pour saxophone sur les modes à transpositions limitées d’Olivier Messiaen (Lacour 1972). Lacour arranged the transpositions of all seven modes into comprehensive exercises that caught my interest by their mysterious sounds. However, presenting a book with technical exercises to enhance the dexterity of saxophone players, Lacour did not explain the theoretical or aesthetical context of these modes within the complex musical universe of Messiaen, nor its possible application to (jazz) improvisation.

In the context of this study, I will neither examine the role of the modes in Messiaen’s oeuvre, nor his practices as an improviser. My fascination with Messiaen’s modes

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concerns their options for (composing) improvisers to transcend conventional tonal practices. In section 1.4.4, I mentioned as my motivation for this study that I was unhappy with my writing and improvisations. Can operations with Messiaen’s modes satisfy my need for innovative harmonic issues as alternatives to my practices with the tonal system? Just like the twelve-tone related techniques in chapter 4, I consider the operations with Messiaen’s modes, discussed in this chapter as practical tools with the potential to help (composing) improvisers enriching their artistic palette. Since the focus in this study is mainly on the melodic and harmonic applications, other compositional techniques developed and discussed by Messiaen, such as his comprehensive approach to rhythm, will only receive limited attention.

The layout of this chapter is as follows. After an outline of Messiaen’s basic theory in subchapter 5.2, subchapter 5.3 displays interval analyses of all modes followed by examples of basic mode embellishments. In subchapter 5.4, I discuss applications of Messiaen’s modes of limited transposition in the jazz practices of guitarist Nelson Veras, baritone saxophonist Bo van der Werf, tenor saxophonist Jasper Blom, and soprano saxophonist Steve Lacy. Instead of presenting a historic overview of jazz artists who applied Messiaen’s modes in their compositions and improvisations, for instance from guitarist Jim Hall’s composition “Two’s Blues” on the LP Concierto (1975), via drummer Bill Stewart’s compositions on the CD Telepathy (1997), to pianist Pablo Held’s improvisations such as in “Gray” on Sebastian Gille’s CD Anthem (2011), I decided to focus on the works of Veras, Van der Werf, Blom, and Lacy, because, in their compositions and improvisations, and in the relationships between them, they show a diversity of applications of all of Messiaen’s modes that are relevant in the context of this study.

Then, in subchapter 5.5, I will discuss a number of examples of my own applications of Messiaen’s modes. Questions that will be dealt with are: How do my works relate to Messiaen’s ideas and to the works discussed in subchapter 5.4, and how do they contribute to my research aim to investigate techniques helping (composing) improvisers to move beyond their usual tonal practices? Subchapter 5.6 contains a generative compendium of melodic patterns, meant to serve other musicians as a point of departure for creating their own variations. In subchapter 5.7, the operations with Messiaen’s musical techniques in this chapter will be evaluated in the context of my principal research question and the methods discussed in chapters 3 and 4.
5.2 Messiaen’s seven modes of limited transposition

Throughout his career as a composer and educator, Messiaen has explained his modes of limited transposition in a number of publications, the first being Technique de mon langage musical (1956). Meant for the students who wanted to get acquainted with his works, the “little theory” is accompanied by a second volume with musical examples quoted from his own works. In chapter XVI Messiaen exposes the “mechanism” of his seven modes of limited transposition that “can be used melodically, and especially harmonically, melody and harmonies never leaving the notes of the mode” (Satterfield in Messiaen 1956: 58).

In volume VII of his impressive Traité de rythme, de couleur, et d’ornithologie (1992) Messiaen provides more detailed information on the structures and applications of modes 2, 3, 4, and 6. He explains that his modes of limited transposition have nothing to do with tonalities, neither with rows, nor with (his detailed expositions of) Chinese, Hindu, Greek, and church modes, claiming that “the chords that can be formed with the modes have to be thought and read modally, and not following the rules of classical harmony” (Messiaen 1992: 50, my translation). Rather than in terms of tonic and dominant, or serial principles, he defines them as “colors, harmonic colors. Every mode […] has its particular color, due to that actual impression of a closed door, or a closed circuit, and also to the different combinations of sounds which cause its limited number of transpositions” (Messiaen 1992: 51, my translation).

How does the concept of limited transposition work? In contrast with conventional diatonic scales and modes, occurring in twelve possible transpositions, the options of transposing Messiaen’s modes are restricted, because beyond a certain number of transpositions the same notes will sound again. For instance, as shown in the following example, taking CM2 (“M2” refers to the second mode, while the “C” indicates the first note of the mode) with its three possible transpositions (bars 1–3), the fourth transposition (bar 4) displays exactly the same notes as the first, while the fifth (bar 5) will give exactly the same notes as the second (bar 2).
The exposition of his “own modes of limited transposition” (Messiaen 1992 VII: 50) is only one of Messiaen’s compositional techniques. Their potential for application by (composing) improvisers will become evident from the practical examples discussed in this chapter. Other techniques such as extended rhythms and operations with “non-retrogradable rhythms” (rhythmic palindromes: rhythms that, played from right to left, sound the same as played from left to right) will be less apparent. Looking back to the concepts of “playing outside the chords” and “creating intended harmonic vagueness,” introduced as potential techniques to develop the improviser’s personal sound in chapters 1 and 2 of this study, the important question is how these operations with Messiaen’s modes can enhance the practices of (composing) improvisers.

The arrangement of this subchapter is as follows. Sections 5.2.1 – 5.2.7 are meant to expose the structures of Messiaen’s modes. Each section displays the basic mode followed by an analysis of its intervallic and segmental structure. This is followed by examples of so-called “mode embellishments” which I define here as scale variations. Dividing the scales into dyads with intervals that can be gradually increased (starting with thirds, then fourths, fifths, etcetera), could be applied effectively to study the individual colors of Messiaen’s modes. I connect each degree of the mode to the one that
is a fixed number of steps higher or lower. Put in its simplest form, I call these embellishments “skip 1 note”, “skip 2 notes”, “skip 3 notes”, etcetera.

The following example illustrates the application of the “skip 1 note” embellishment to CM3, resulting in three segments at a major third (4) distance, each containing a combination of a minor third (3), a major second (2), and again a minor third (3). Regarding the notation, the intervals within the dyads are written above the staff, unless all intervals are similar. In the latter case, they are omitted. The intervals between the segments are written under the staff. The degrees of the basic modes are always accentuated.

In order to make the embellishments in the following sections sound less predictable, I will randomly add variations to them, by alternating the ascending and descending directions of the lines and the dyads.

5.2.1 First mode (M1)

Structure of M1

The first mode of limited transposition (M1) is formed with six groups of two notes. Messiaen explains that M1 has two transpositions. In the following example, its basic form starting on the note c, is called the first transposition. The second is its transposition up a minor second. The next transpositions are irrelevant because they would contain the same notes as the first and the second transposition.
M1 can be identified as the whole tone scale. It is also embedded in the modes M3 and M6 (see 5.2.3 and 5.2.6).

Interval analysis shows that there are two ways to divide M1 into two symmetrical segments. Instead of Messiaen’s six groups of two notes, two groups of four notes are marked in the first line, still matching his principle of “the last note of a group always being common with the first of the following group” (Messiaen 1956: 58). The second line displays M1 as two separate trichords, arranged at the distance of an augmented fourth, without repetition of the root note c.

[ex 5.2.1.2]

**Embellishments of M1**

The following examples display the “skip 1 note”, “skip 2 notes”, “skip 3 notes”, and “skip 4 notes” operations on all (accentuated) degrees of the basic mode. They result in successions of similar intervals, respectively major thirds, augmented fourths, augmented fifths, and minor sevenths. In bars 1–2, and in bars 7–8, all intervals are played in ascending direction. In bars 5–6, and 7–8, the intervals are played in alternating ascending and descending directions. The successions of six similar intervals emphasize the characteristic symmetry of the whole-tone scale and its tonal color of the augmented chord (see section 5.6.1).
Messiaen’s second mode of limited transposition (M2) has three transpositions. It is formed with four symmetrical groups of three notes (each). Thus, M2 displays four trichords, themselves divided into two intervals: a minor second and a major second.

**5.2.2 Second mode (M2)**

**Structure of M2**

Messiaen’s second mode of limited transposition (M2) has three transpositions. It is formed with four symmetrical groups of three notes (each). Thus, M2 displays four trichords, themselves divided into two intervals: a minor second and a major second.
Among jazz improvisers, Messiaen’s second mode is widely known as the octatonic (eight-tone) scale, or as the diminished scale ordered in a succession of minor and major seconds (the so-called “half-tone–whole-tone” ordering). In the first line of the following example, interval analysis reveals four overlapping 1+2 trichords, steered by intervals of minor thirds, with every next group starting on the last note of the preceding one. In the second line the eight-tone scale is divided into two segments of 1+2+1 tetrachords at a tritone distance. Both lines clearly express the symmetry of this mode.

**Embellishments of M2**

Both the symmetry of M2 and its tonal color of the diminished chord are illustrated in the following lines. All of the operations, “skip 1 note”, “skip 3 notes”, and “skip 5 notes”, divide the mode into four symmetric segments at a minor third distance. Each segment contains two dyads with similar intervals: minor thirds, augmented fourths, and major sixths. In order to avoid a predictable sound, I randomly modified the directions of the dyads and the lines.

1. skip 1 note: minor thirds

2. skip 3 notes: augmented fourths

3. skip 5 notes: major sixths

[ex 5.2.2.3]
Next, the operations "skip 2 notes", "skip 4 notes", and "skip 6 notes" result in segments containing dyads with dissimilar intervals: a perfect fourth (5) and a major third (4), a perfect fifth (7) and a minor sixth (8), and a minor seventh (10) and a major seventh (11). Because of these dissimilar intervals and their irregular directions, the following mode embellishments could sound less predictable than the ones in the example above.

![skip 2 notes: perfect fourths and major thirds](image)

![skip 4 notes: perfect fifths and minor sixths](image)

![skip 6 notes: minor and major sevenths](image)

[ex 5.2.2.4]

### 5.2.3 Third mode (M3)

#### Structure of M3

Messiaen divides his third mode of limited transposition (M3) into three symmetrical groups of four notes (each). It has four possible transpositions. Messiaen refers to this mode as “the chord of the augmented fifth” (Messiaen 1956: 60). M1 (the whole-tone scale) is embedded in this nine-tone scale.

![M3](image)

[ex 5.2.3.1]
Interval analysis reveals that two ways of grouping the segments are possible. The first line reflects Messiaen's division shown above, displaying three 2+1+1 tetrachords, with every next tetrachord starting on the last note of the preceding one. The second line shows that, without repeating the root note, it can also be considered as a sequence of three 2+1 trichords at distances of major third intervals.

![Ex 5.2.3.2]

**Embellishments of M3**

M3 allows the improviser a large variety of scale embellishments. The operations "skip 2 notes” and “skip 5 notes” result in three segments at a major third (4) distance, each containing three dyads with similar intervals: major thirds, and their inversions, minor sixths.

1. skip 2 notes: major thirds

![Ex 5.2.3.3]

In the following lines, the operations “skip 3 notes”, “skip 4 notes”, “skip 6 notes”, and "skip 7 notes”, result in segments containing combinations of dissimilar intervals. Augmented and perfect fourths, perfect and diminished fifths, minor sevenths and major sixths, and major and minor sevenths, appear in different orderings: a–b–b in bars 1 and 3; a–b–a in bars 2 and 4. The combination of these larger intervals with their specific
orderings highlights the interesting structure of this mode that, constructed of three symmetric segments, includes the minor and major thirds as well as the minor and major sevenths on the “root notes” of the parallel segments.

\[\text{skip 3 notes: augmented (a) and perfect (b) fourths}\]

\[\text{skip 4 notes: perfect (a) and diminished (b) fifths}\]

\[\text{skip 6 notes: minor sevenths (a) and major sixths (b)}\]

\[\text{skip 7 notes: major (a) and minor (b) sevenths}\]

[ex 5.2.3.4]

\[5.2.4\] Fourth mode (M4)

Structure of M4

Messiaen relates his modes M4, M5, M6 and M7 to the interval of the augmented fourth: “These modes are transposable six times, like the interval of the augmented fourth” (Messiaen 1956: 61). Each of these four modes can be divided into two symmetrical groups, an augmented fourth interval apart. Messiaen divides M4 into two groups of five notes as follows.
Interval analysis of this mode without repetition of the initial note reveals two tetrachords with the similar intervallic construction 1+1+3, two minor seconds and a minor third, at the distance of an augmented fourth.

**Embellishments of M4**

Operation “skip 3 notes” perfectly illustrates the symmetry of CM4: two symmetrical segments at an augmented fourth distance, both containing a succession of dyads with the same augmented fourth intervals.

In the following example, the operations "skip 2 notes", "skip 6 notes", and "skip 4 notes" work well to illustrate the characteristic sound of M4. They all result in two segments containing dyads with dissimilar intervals. In the first and second lines they are ordered a–a–a–b, in the third line they are ordered a–a–b–a.
5.2.5 Fifth mode (M5)

Structure of M5

The fifth mode of limited transposition (M5) is the same as the fourth, but with the third and the seventh note omitted. According to Messiaen, it is formed with two groups of four notes as follows.

The following interval analysis of this mode without the initial note repeated reveals two 1+4 trichords at the distance of an augmented fourth.
Embellishments of M5

Operation “skip 2 notes” in the following example demonstrates the symmetry of M5. Just as in section 5.2.4 two symmetrical segments appear at an augmented fourth distance, both containing a succession of dyads with the same intervals.

skip 2 notes: augmented fourths

Operations “skip 1 note” and “skip 2 notes” result in the interval groupings of perfect fourths and major seconds, and major seventh and minor sixths, both in the order a-a-b. The third line shows combinations of perfect fifths and minor sevenths in the order a-b-a.
5.2.6 Sixth mode (M6)

Structure of M6

According to Messiaen, his sixth mode is formed with two segments of five notes. Each group contains two major seconds followed by two minor seconds.

[ex 5.2.6.1]

Interval analysis of the sixth mode without repetition of the initial note displays two 2+2+1 tetrachords at the distance of an augmented fourth (6). In other words, Messiaen’s mode M6 displays the first tetrachords of the C and the F# major scales.

[ex 5.2.6.2]

Embellishments of M6

The next succession of dyads with similar intervals of augmented fourths inside two segments at an augmented fourth distance results from operation “skip 3 notes”.

[ex 5.2.6.3]
The application of operation “skip 1 note” on CM6 creates the most complicated interval collection so far: both segments, arranged at the distance of an augmented fourth (6), in the first line of the following example contain dyads with intervals of a major third, two minor thirds, and a major second in the order a-b-c-b. Operation “skip 2 notes” executed in the second line creates two segments containing two perfect fourths and two major thirds in the order a-b-b-a. By manipulating the directions of the intervals, both lines manage to obscure the bare symmetric structure of CM6.

skip 1 note: major third (a), minor thirds (b), and major second (c)

skip 2 notes: perfect fourths (a) and major thirds (b)

[ex 5.2.6.4]

5.2.7 Seventh mode (M7)

Structure of M7

With ten pitches, the seventh mode contains the largest number of pitches of all modes. It is only two pitches away from being a chromatic scale. According to Messiaen it is formed with two groups of six notes. Each group displays the intervallic structure of three minor seconds, followed by one major second and another minor second.

[ex 5.2.7.1]

Interval analysis of the mode without repetition of the initial note displays two groups of five notes at a distance of an augmented fourth interval. Each of the two groups consists of three minor seconds and one major second.
Embellishments of M7

Operation “skip 4 notes” results in a succession of similar intervals of augmented fourths within two segments at the distance of an augmented fourth.

[ex 5.2.7.3]

The following example shows how operation “skip 2 notes” results into two segments containing successions of dyads with minor and major thirds in the order a-b-b-b-a. In the second bar “skip 7 notes” creates successions of major sixths and minor sevenths in the order a-b-a-b-a.

[ex 5.2.7.4]
To summarize the exposition of Messiaen’s seven modes, both the interval analyses and the embellishments of the modes illustrate Messiaen’s notion of the “charm of impossibilities” (Messiaen 1956: 58). With this term, he indicates the “strange charm” of the modes due to their limited transpositional possibilities. However, this does not mean that the sound of the modes becomes more interesting when the amount of their transpositions is smaller. Certainly, M1 (two transpositions), M2 (three transpositions), and M3 (four transpositions) have strong characteristics. However, in my opinion, the same goes for (the embellishments of) M4, M5, and M6, which contrasts with Messiaen’s statement that they are “transposable six times, and presenting less interest, for the very reason of their too great number of transpositions” (Messiaen 1956: 58). In the case of M7, I consider the large amount of pitches, rather than the numerous possible transpositions, as the main reason for being less interesting.

Based on my musical experiments and experience, I maintain that my examples of mode embellishments manage to create a form of “strange charm” even to the less interesting modes; besides, they also enhance the charm of the less transposable ones. Therefore, in my predominantly melodic approach to Messiaen’s modes, embellishment techniques are as important as the numbers of possible transpositions.

The interval analyses I have added as an alternative to Messiaen’s expositions of the modes are meant to mark the segments they are formed with more precisely. Thus, the symmetry of their segments, responsible for their characteristic tonal ambiguities, is illustrated more clearly, helping the musician to either emphasize the various tonalities or to leave them aside. After all, according to Messiaen, his modes are “at once in the atmosphere of several tonalities, without polytonality, the composer being free to give predominance to one of the tonalities or to leave the tonal impression unsettled” (Messiaen 1956: 58).

The following subchapter discusses applications of Messiaen’s modes by four (composing) improvisers introduced in subchapter 5.1. How do Veras, Van der Werf, Blom, and Lacy use the modes, and how do they treat the tonal ambiguities? Rather than present a kind of historic overview, I have selected their works because they show melodic applications of one or a limited number of modes in a way that connects to the predominantly melodic approach to improvisation that is the subject of this study. Moreover, taken together, the following four examples show applications of all seven modes.
5.3 Applications of Messiaen’s modes in jazz

5.3.1 Master class (Nelson Veras)

An interesting blend of intuitive and well-informed applications of Messiaen’s modes M3, M6, and M4 was demonstrated during a master class by Brazilian guitarist Nelson Veras at the Conservatory of Amsterdam on November 27, 2009. Veras strikes me as a creative improviser who, as he mentioned during his master class “is constantly looking for new ways to surprise himself.” The following sections examine a number of the lines he played, instantaneously responding to the questions by students attending this master class.

5.3.1.1 M3

Veras first plays BM3, Messiaen’s third mode starting from the root note b. In bars 1–3 of the example below he plays a succession of intervals of fifths and augmented fourths\(^3\), resulting from the operation “skip 4 notes” (see section 5.2.3), and ends with a conventionally arpeggiated Bm7 chord. Next, in bars 4–6, he illustrates the ambiguous tonal color of this mode by firstly extending the Bm7 chord before changing it into a B major triad at the end. Both tonal colors are implied in BM3 (see sections 5.2.3 and 5.6.3).

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{ex_5.3.1.1}
\caption{Nelson Veras first example}
\end{figure}

\(^3\) Veras consistently uses the term “raised fourths”
In the following example Veras demonstrates how M3 can be considered as a sequence of three parallel tonal centers at distances of a major third. Due to this partition of the mode he explains that, without leaving the notes of the mode, “everything you do, you can do a major third above or below.”

In bars 1–2 he plays the three implied minor seventh chords Bm7, Ebm7, and Gm7. Bars 3–6 display symmetrical four-note patterns (2+2+1 tetrachords) at major third distances in alternating directions. In bars 3–4 interval analyses reveal a sequence of six 2+2+1 tetrachords, and in bars 3–6 a sequence of six 2+2+5 tetrachords. In bar 7 he plays a sequence of major seventh chords. All pitches in the examples below belong to mode BM3.

[ex 5.3.1.1.2 Nelson Veras second example]

In bars 1–2 of the next example, Veras plays the embedded b whole tone scale. BM3 matches here with BM1 as discussed in sections 5.2.1 and 5.2.3. Finally, in bars 3–4 he plays a sequence of embedded minor triads, starting with F#m and ending on Bm, the root of BM3. With this example, he shows that minor triads can be built both on the roots
of the three implied tonal centers, and on the preceding notes in the mode. The C minor chord in bar 4 is marked with an asterisk because it is foreign to mode BM3.

After these technical demonstrations, Veras discusses his aesthetic approach to the Messiaen modes, which is principally melody-oriented. As he explains during the workshop: “I like the sound of these modes melodically. I like [them] harmonically too but I like just the melodies that can appear. [...] Actually I avoid the symmetry of it. I try to not play, say, all the time like...” [plays the following two sequences].

Veras continues, “I try just to see where it takes me [plays bars 1–5 of the following examples] and what kind of colors I can find [plays bars 6–22].” There is a noticeable difference between these two fragments. In bars 1–5 Veras strictly keeps to the notes in the mode. Only in the last bar does he add the note c, which is foreign to the mode, evoking the sound of Cm. Then, in bars 6–22 he continues playing the note c, and combines this with two other notes that are not in the mode: e and a♭. The notes that sound outside the mode are marked by an asterisk. Together these notes form the augmented triad c–e–g♯, sounding a minor second above the basic triad b–e♭–g of the mode. It could be considered as a tritone substitute of its F# dominant-seventh chord.
Furthermore, in bars 6–22 five three-voice harmonies appear. Two of these, in bars 12 and 16, can be identified as B diminished and Bm triads. The others are the incomplete F#maj(omit5) /A# chord in bar 8, and two cluster chords in bars 7 and 10 that can both be regarded as first rotations of 1+5 trichords.

With his application of BM3 that combines an intelligent usage of the mode with a deeply embodied knowledge of functional harmony, Veras manages to create unconventional melodic lines that evoke an intended harmonic vagueness. Admittedly, he occasionally leaves the mode. As such, he seems to act in conflict with Messiaen’s intentions as discussed in subchapter 5.2, of “never leaving the notes of the mode.” However, I agree
with Veras that these “false” notes are acceptable both from an aesthetic perspective ("they sound good in the line") as well as from the perspective of the jazz improviser: risk-taking is an important part of the improvisational practice. Thus, Veras’ approach convincingly proves the potential of M3 in the context of the subject of my research.

### 5.3.1.2 M6

Veras’ approach in subsection 5.3.1.1 is also obvious in his operations with M6 as shown in the following examples. First, he demonstrates his tactic named “everything you do on this one, you can do a raised four above.” After exposing the basic mode CM6 he illustrates its characteristic sound, playing a sequence of tetrachords at distances of an augmented fourth (6).

![CM6](image)

[ex 5.3.1.2.1 Nelson Veras sixth example]

Then, as shown in bars 1–3 of the next example, he plays the same mode, but now starting on the last note, to create a Bm tonality. The lines in bars 4–5 and in bars 6–10 show embellishments of Bm. Despite their increasing complexity, Veras almost never leaves the notes of the mode. The note d♯ in bar 10 is the only exception.
Taking the note b as a pivot and building a B minor tonality on it, Veras inventively solves the “problem” of the two separate fragments from the tonalities of C and F# by merging them into one scale with a B minor tonal color.

5.3.1.3 M4

In the following examples, Veras demonstrates his operations with M4. After his exposition of CM4, he plays the mode up and down in bars 1–2. By stretching the notes b in bar 1, and g♯ in bar 2, he suggests the presence of the harmonic dominant on the fifth, sounding as the characteristic ending of the C major or minor harmonic scale: g–g♯–b–c. The fragment of the mode he plays in bars 3–5 continues to illustrate this tonal reference inside M4: the dominant-seventh chord with tension notes b9 and #11. It is resolving to the note c because since the minor or major third is lacking, it is not possible to create a conventional C chord. The notes under the bracket represent the scale of g mixolydian with passing notes between the root and the seventh and between the fourth and fifth degrees of the chord.
Veras played the following lines to highlight the chords that are implied in CM4 as a kind of compensation for the “missing” C chord. In the first bar it is Dbmaj7, and in bars 3–7 it is Bm. Bar 2 contains the root, the second, and the major seventh, representing a (very) incomplete C chord.

In the next example Veras introduces the G7b9 chord, as a parallel to the Db tonality in the example above. The resulting line shows an advanced blending of the tonalities Db, G, and Bm. The Db chord appears both as a major seventh and a dominant seventh chord. With F minor and Bm considered as the third degrees of Dbmaj7 and Gmaj7, the following line strictly covers these two tonalities appearing at a tritone distance in CM4.
Evaluation

Veras offers instructive practical examples of improvising with M3, M6, and M4. He clearly shows their tonal ambiguities by concentrating on diatonic structures embedded in the modes as well as by picking various pivot notes as temporal tonal centers in order to simulate harmonic cadences. With his emphatic melodic approach of the modes, he convincingly demonstrates how he profits from their “soft guidance” to arrive at surprising tonal colors. I consider his sparse additions of “foreign” notes to the actual modes, resulting from his intuitive approach to improvisation, as acceptable operations from an aesthetic point of view, for instance in order to make lines sound less predictable, or to avoid the obvious symmetry of the mode. Thus, his applications of Messiaen’s modes M3, M6, and M4 show their potential to help (composing) improvisers move beyond the obsolete tracks of conventional harmony. Conversely, objections could be raised against the fact that his lines, however instructive and useful they are, only show one side of the coin. Freely scattering his applications of the actual modes, he does not limit them to any context of a composition or a set of chord changes. This particular aspect, the use of Messiaen’s modes in jazz compositions and the interactions of the improvisations with the composed material, will be addressed in section 5.3.2.
5.3.2 “Calcutta” (Bo van der Werf)

Baritone saxophonist and composer Bo van der Werf is widely known for his use of Messiaen’s compositional techniques in his writings for the ensemble Octurn, and in his improvisations. A recording of his piece “Calcutta” on the CD 21 emanations (2006) shows examples of multiple applications.

This section will first discuss the harmonic structure of "Calcutta" in relation to Van der Werf’s intended applications of Messiaen’s modes M2 and M6. Next, the contrapuntal bass and melody lines will be analyzed in relation to these modes. Finally, fragments of the alto saxophone and Van der Werf’s own solo on the baritone saxophone will be investigated.

“Calcutta” is based on the following rhythmic structure that contains two “non-retrogradable rhythms.” Messiaen coined this term for rhythmic palindromes: rhythmic sequences that, repeated in reverse order, sound the same. These are the non-retrogradable sequences in “Calcutta”:


The following example shows the first solo form, underlying the solos by the alto saxophonist and the guitarist. The upper staff exposes the tetra-chords that are continued throughout the tune, with the associated chord symbols written above them. The lower staff displays the bass notes of these chords with, written above them, Van der Werf’s chord symbols or Messiaen modes M2 and M6. Van der Werf indicates that it is up to the soloist which of the lines to pick, but that his principal reference should be the succession of tetrachords notated in the upper staff and their relation to the bass notes.

In bars 3, 4, 6, 15, 18, 20, 21, 24, and 26 all pitches can be identified as members of various transpositions of M2. Bars 12, 20, and 22 contain one note that is not in the transpositions of the present M2: the fourth note from the root (add 11). In bars 7, 16 and 17 all pitches belong to various transpositions of M6.
Calcutta
first solo form
Bo van der Werf

[ex 5.3.2.1]
The next example shows the bass melodies in sections A and B. They are different from the solo form above, and arranged in a non-retrogradable rhythm: section B contains the retrograde of the rhythmic structure of section A. Both sections are identical, except the encircled notes. The bass line as a whole contains seven fragments in which seven Messiaen modes can be identified, reflecting a symmetrical structure in this part. C#M4 and GM4 contain the same notes, just like F#M7 and CM7. The first two modes of A and the last two modes of B do not match, but the third and fourth of A and the first and second of B do.

The melody lines in section A and B contain fragments of chromatic scales. Although these fragments imply transpositions of all of Messiaen modes, it does not make sense to mark them individually. Therefore, I rather consider them as incomplete chromatic scales. In the following example I have subdivided section A into parts of roughly two bars, each displaying distinct fragments. The range between the lowest and the highest note of each fragment is marked above the brackets. Listing the intervals between the lowest and the highest notes displays another symmetric structure. From the first to the last line in section A, the intervals are getting larger. From the first to the last line of section B, the intervals are getting smaller, in both sections by groupings of two, one, and two lines. The axis of the symmetry is between bars 10 and 11.
Calcutta
Bo van der Werf

[ex 5.3.2.3 “Calcutta” (Bo van der Werf) - melody]
The next example shows the transcription of the first half of the alto saxophone solo by Guillaume Orti over the first solo form as shown in example 5.3.2.1.

As noticed before, the solos can be based on both distinct accompanying lines in solo section A, but the principal reference should be the succession of tetrachords in the upper staff and their relation to the bass notes (example 5.3.2.1). Analysis of section A above confirmed a close connection between the pitches in the tetrachords and the transpositions of M2 and M6 indicated above the lower staff. In most cases, all notes belong to the actual mode, while only in a few cases are other notes added. How does Orti’s solo respond to the demands and the actual structure of this solo section?

The thirteen encircled passages show solo fragments in which the notes can be connected to an actual transposition of M2 or M6. Of the nine passages that contain transpositions of M2, seven match Van der Werf’s suggestion written in the lower staff (example 5.3.2.1). These passages are marked with an asterisk. Four passages contain transpositions of M6, of which only one, marked with the asterisk in bar 16, matches the composer’s suggestion. The remaining bars contain melodic ornamentations of the chords written above them. In bars with the chords written in normal format, all notes fit in the actual chord. In bars with the chords written in cue notes, one or more notes sound outside the written chords.

Thus, in connection to Van der Werf’s arrangement of the solo section, Orti’s solo contains a mix of Messiaen’s modes and conventional chord ornamentations, both elements displaying variable grades of discipline. Just like Veras, both Van der Werf in his composed part, and Orti in his solo, take the freedom to occasionally leave Messiaen’s modes. Orti applies the same principle to the stated chord symbols, which creates a sound as if he is slightly playing outside the chords.

The operations above connect well to the usual practice of the jazz artist, whose principal goal is to instantly create musical lines that are meaningful in the context of their actual musical environment. Just like tonal ornamentations – tonal, and non-tonal superimpositions on conventional chord changes – these creative applications of Messiaen’s modes appear to be a useful tool, helping (composing) improvisers to broaden their artistic horizon.
Calcutta
alto saxophone solo

[ex 5.3.2.4 “Calcutta” (Bo van der Werf) – alto saxophone solo fragment]
The next example shows the first half of Van der Werf’s baritone saxophone solo, played on the second solo form. The accompanying chords are the same as in the first solo form, but now the chords are played twice as fast, and strongly punctuated. In contrast with the predominant chord-scale approach in the alto solo, Van der Werf plays a loose application of F#M2 as an overall superimposition on the complex rhythmic and harmonic structure accompanying his solo.

The encircled passages in the transcription mark the fragments containing F#M2 patterns with zero or few notes added to the basic mode. These additions are either chromatic passing tones, such as the notes d and b in bar 3, or notes added intentionally such as the note d in bar 7, g♯ in bar 17, and b in bars 18 and 19.

The brackets above selected groups of notes mark the tonal colors appearing alongside the basic F#M2 mode. These excursions outside the mode are the result of Van der Werf sparsely adding neighboring notes. Because of this, the notes within the brackets sometimes overlap the encircled fragments.
Calcutta
baritone saxophone solo

[ex 5.3.2.5 “Calcutta” (Bo van der Werf) – baritone sax solo fragment]
**Evaluation**

“Calcutta” is a complex piece in which a variety of Messiaen’s techniques can be found, both in the composed and improvised parts. In his accompanying text "About ‘CALCUTTA’", Van der Werf explains that the piece is based on two modes, M2 and M6, “but the main reference for soloing should be the written chords (four notes-chords and their relation with the bass).” Furthermore, he employs non-retrogradable rhythms in connection with symmetric melodic structures.

How do my analyses relate to the mentioned operations with M2 and M6? First, in the composed parts it is striking that, in contrast to the apparent presence of M2 and M6 in the majority of the chords, the bass melody rather uses M4 and M7. Second, by the abundance of notes added in the melody lines of A and B, these should rather be analyzed as (fragments of) chromatic scales. Third, concerning the solos, Orti plays embellishments of various transpositions of M2, but his embellishments of M6 are sporadic. Since during his solo the chords are played at half tempo, he succeeds to apply

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**About ‘CALCUTTA’**

This tune is constructed on the following rhythmic form

\[
\begin{align*}
\end{align*}
\]


the chords played during the head (A+B) follow this basic rhythmic form (2x faster)

the ‘bells’-figure played during the solos also follow this basic rhythmic form (2X faster)

in the alternate solo form, the whole harmonic structure is played 2X faster, while the backing melody is based on the original rhythmic form

about the chords notation:

there are two different harmonic structures for the solo parts, but the main reference for soloing should be the written chords (four notes-chords and their relation with the bass)

M2 : 2\(^\text{nd}\) of the modes of limited transpositions (ex: CM2= C C# D# E F# G A Bb)
M6 : 6\(^\text{th}\) of the modes of limited transpositions (ex: CM6= C D E F G# A# B)
a chord-scale approach, matching the complex harmonic structure. His embellishments navigate between the written chords and the transpositions of the relevant modes. Van der Werf’s solo takes M2 as its point of departure for excursions to implied and neighboring harmonies by adding foreign notes to the mode. Thus, he displays an inside-outside-inside approach to the mode. Within the context of this study, this can be considered as another interesting tool to transcend the conventional chord-scale approach.

In addition to what has been said about the operations by Veras and Orti, Van der Werf adds a next step into the creative application of Messiaen’s modes. Veras quite simply demonstrated the content and structure of M3, M4, and M6, with sparse additions of notes outside of the original modes. Orti’s solo displayed the form of a chord-scale approach by obvious references to Van der Werf’s composed structures. But he also felt free to creatively embed notes that were outside the chords or outside the modes. The same freedom Van der Werf took in the composed parts of “Calcutta,” that is, to embed “foreign” notes alongside the original notes of the modes, is also present in his improvisation. In my opinion, his application of M2 convincingly illustrates how the combination of a strictly arranged mode and a freely creative approach facilitates a composing improviser to enrich the jazz idiom in a convincing way.

It should however be noted that adding too many notes to the basic transposition of a mode could cause problems. The more notes that are added to the original mode – adding two notes to M7, three to M3, or four notes to M2 or M6, changes these modes into twelve-tone rows – the more its symmetry and thereby its characteristic sound tends to be obscured. Although I am not arguing in favor of a strict approach to any of Messiaen’s modes and although I do not have objections to improvisational operations with twelve-tone scales (see chapter 4), I advise students who employ these modes in their compositions or improvisations to avoid (or to only sparsely apply) the addition of extra notes.

5.3.3 Jasper Blom “Let’s Give This Tree A Little Friend”

In his composition “Let’s Give This Tree A Little Friend” (2014) for saxophone quartet and big band, saxophonist and composer Jasper Blom applies combinations of different transpositions of M3 and M6 in layers of contrapuntal lines. The following example displays the first sixteen bars of the melody that is formed by stacking five layers upon each other. Every time this section is repeated, another group of instruments is added.
Piano, bass and drums (not notated) start off with a descending line constructed with mode transposition EM6 (with the note c♯ added), followed by an ascending line constructed with EbM6. At the first repetition, the baritone saxophone and the bass trombone play a contrapuntal line of EbM6 (ascending) and EM6 (descending). At the second half of this first repetition, first and second trombones enter their parts with contrapuntal lines that contain fragments of FM3 (a♭ added) and AM3 (f♯ added). Next, both the saxophone quartet (not notated in this score) and the saxophone section of the big band appear. The alto and baritone saxophones play four different groups of four notes that are arranged in intervals of major thirds and perfect fifths. Each group can be related to a distinct transposition of M3: GbM3 in bars 1–2; BbM3 in bars 3–4 and 5–6; BM3 in bar 7; and AbM3 in bar 8.

The soprano and alto saxophones and the fourth and fifth trumpets expose the main melody which contains two transpositions of M3, in three short fragments and in prime forms: EM3 in bars 1–3; AM3 in bars 4–5; and again EM3 in bars 6–7. Because AM3 belongs to the same mode as FM3, the melody can be considered as a construction of two transpositions of M3 at a minor second distance. Thus, it reflects the structure of the rhythm section and the lowest horns, but with EM3 and FM3 instead of EbM3 and EM3.
Let's give this tree a little friend

[ex 5.3.3.1 “Let's Give This Tree A Little Friend” (Jasper Blom) – mini score first section]
Further on, the solo section of Blom’s composition is introduced by a “break” played in unison and octaves by the saxophone section. This line is a “skip 1 note” embellishment of AbM3 (see ex 5.2.1). The final chord Ebmaj7#5 (add#9) is built on the fifth degree of AbM3.

[ex 5.3.3.2 “Let’s Give This Tree A Little Friend” (Jasper Blom) – break by saxophones]

After this break, the saxophone quartet repeats the first line of the main melody, as a “send-off” to Blom’s unaccompanied solo. The line is now arranged in a parallel harmony of five stacked layers of CM3, each starting on different positions of the mode. These positions are marked above the brackets. They refer to the three implied tonalities of C, E, and Ab within CM3. Only in the alto saxophone and first tenor saxophone parts do the lines start on the root notes of these tonalities. In all other parts the lines are marked after the root notes that are closest to the first note of the line.

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5 Messiaen calls this a harmony “en succession parallèle d’accords” (Messiaen 1992 VII: 192).
The following example shows a transcription of Blom's first unaccompanied solo fragment. This passage as a whole can be considered an embellishment of CM3, illustrating its various characteristic tonal colors. The brackets above the staff indicate which of the three “basic tonalities” actually dominates the line: C, E, or Ab. The parts that are encircled mark the chords that are evoked in Blom's lines.

Bars 1–8 contain repetitions and variations of a limited fragment of CM3. The whole and half notes at the end of the fragment express the tonal anchors G and F#. The tonal color of Gmaj7#5 is confirmed in bar 8. The line in bars 9–10 is disjointed because two foreign notes, f and d♭, are added. Both notes serve as chromatic passing notes. Because of the forceful ending on the a♭, this line is marked AbM3.

Just as in bars 1–8, Blom’s line in bars 11–18 never leaves the M3 mode. Due to the strong presence of once again the a♭, this time as a fortissimo-played initial note, bars 11–16a are marked as AbM3. In bars 16b–19, as a result of playing “false fingerings”, the “foreign” notes a and f are added to the line that is originally based on EM3.

The encircled parts indicate a number of chords that can be identified in Blom’s embellishments of M3. After the tonal color of Gmaj7#5 in bar 8, bars 11–19 show a
variety of chords constructed on the three basic roots: Abmaj7; Cm\textsuperscript{maj7(add\#11)}; Em, Em7, Emin\textsuperscript{maj7}, and Emaj7\textsuperscript{add4}. Beside these, the G augmented tonal color sounds again.
Let's Give This Tree A Little Friend

*tenor saxophone solo*

[ex 5.3.3.4 “Let’s Give This Tree A Little Friend” (Jasper Blom) - tenor saxophone solo first fragment]
After this solo the saxophones repeat the main theme, again arranged in a five-part parallel harmony. In bars 1–3 all lines are again samples of CM3, starting from different positions in the mode. This also goes for the descending line in bars 6–7. The descending line in bars 4–5, however, breaks the overall unity of CM3. By playing EM3 (encircled) the baritone saxophone persists, but the parts of the remaining four saxophones play parallel harmonies with AM3, starting from different positions in the mode.

[example 5.3.3.5 “Let’s Give This Tree A Little Friend” (Jasper Blom) – saxophones repeating the main theme]
Evaluation

Both in the composed and in the improvised parts, “Let’s Give This Tree A Little Friend” demonstrates how the ambiguous tonalities in Messiaen’s third mode can be used to create adventurous musical content. The construction of the composed parts is kept relatively simple in comparison to Van der Werf’s “Calcutta”, and the operations with M3 and M6 are quite basic. As an addition to Messiaen’s compositional techniques applied by Van der Werf, Blom demonstrates the creating of parallel harmonies, by stacking parallel successions of notes along the order of the modes. In his first tenor saxophone solo he shows obvious operations with M3, highlighting the mode’s characteristic ambiguous harmonic content. Altogether he manages to create an unconventional musical space incorporating a clear relation between the composed and the improvised parts of his piece.

5.3.4. Steve Lacy “Prayer”

In his composition “Prayer,” soprano saxophonist and composer Steve Lacy combines transpositions of M3 and M5 in an arrangement for sextet, plus two vocalists reciting a poem written by Galway Kinnell, on the CD Anthem (1990).

In bars 1–4 the three horns play the triads Db, Eb, and $f^{#11}_{\text{omit}5}$. Together the notes in these bars form the mode $\text{DbM3(}\text{add } b^{\flat})$. The two-bar ostinato by piano and bass can be considered an incomplete representation of DbM3 (add $b^{\flat}$). Its missing notes f, g, a, and b, are played by the horns.

In bars 5–8 a two-part harmony line by the saxophones and the two vocalists exposes the main melody using notes from mode CM5(add $b^{\flat}$). The trombone now plays a contrapuntal line in which a chromatic succession between the notes $g^{\flat}$ and $b$ leads to bar 8 where he plays the first half of CM5.

In bars 9–12 the vocalists continue their melody with CM5 in alternating orders and directions, emphasizing the symmetry of the melody line in which the second half is the inversion of the first line transposed up an octave. The soprano saxophone and the trombone play contrapuntal lines that again represent DbM3(add $b^{\flat}$), now with the addition of the note $g^{\flat}$. 
"Prayer" (Steve Lacy) – introduction and theme

Steve Lacy/Galway Kinnell

Sop. Sax., Alto. Sax

Tbn.

Pno., A. Bass

Voice

5

CM5(add bb)

Sax.

chromatic (g♭ - b)

Tbn.

DbM3

A. Bass

CM5(add bb)

Voice

9

DbM3(add bb, gb)

Sax.

DbM3(add bb, gb)

Tbn.

DbM3

A. Bass

CM5

Voice

Wha-ter hap-pens.
Wha-t ever wha-t i-s
i-s wha-t
I want. On-ly wha-t
But that.
The DbM3 mode also determines the sparse notes in the following first fragment of Lacy’s soprano saxophone solo. Here, by omitting the notes e, g, and c, he uses only six of the nine possible notes: d♭–e♭–f– a♭–a–b, evoking the augmented tonal color of Db7♯5.

[ex 5.3.4.2 “Prayer” (Steve Lacy) – soprano sax solo fragment]

**Evaluation**

Compared to the comprehensive compositions by Van der Werf (2006) and Blom (2014), Lacy creates a convincing result with limited means, and with a small line-up. By means of the many repetitions of the mode, he evokes an almost spiritual atmosphere. Lacy’s dividing of the mode between the horns and the rhythm section, thereby considering the latter as the complement of the incomplete DbM3(add b♭) in the horn section, is an interesting compositional operation. Even more convincing are his contrapuntal lines, particularly the trombone line in bars 9–12, displaying a contrast with the straightforward mode pattern in the soprano saxophone part. Further on, the first fragment of Lacy’s improvisation shows a deliberate selection of notes from DbM3, creating an unconventional superimposition on the Db pedal point played by the rhythm section.
Résumé

So far, the analyses in this subchapter have disclosed various applications of M2, M3, M4, M5, and M6. M6 was announced quite often, but only sparsely applied. Veras showed a useful approach to M6 in his improvisation examples, Blom applied it in his contrapuntal lines, and in Van der Werf’s piece it got sporadic applications both in the composition and in the alto saxophone solo. The most frequently applied was M3. Veras and Blom referred to its implied minor, diminished, major, and augmented triads and seventh chords. The aesthetic qualities of M4, and particularly M5, were emphasized by their repetitive applications in Lacy’s piece. M7 could be found in Van der Werf’s composed bass line as a result of notes added to M4.

However different the compositions and solos, they all illustrate the potential of Messiaen’s modes to be applied as advanced operations for (composing) improvisers creating less conventional musical spaces. Yet, it should be noted that, in the strict sense, the addition of notes outside the actual modes, found in all pieces analyzed here, does not match Messiaen’s original aim of “never leaving the notes of the modes.” Although I advise my students to avoid the addition of “foreign” notes as much as possible (see section 5.3.2), I simply cannot disapprove of these additions in the practices of (composing) improvisers applying the modes to create fresh and meaningful musical content, combining the modes explicitly or intuitively with their conventional improvisational languages.

Unfortunately, operations with basic or advanced mode embellishments, highlighting the splendor of the modes, are rare in the music analyzed so far. Only the operation “skip 1 note” could be identified in Blom’s saxophone section’s riff accompanying his solo. There, Blom is also the only one creating parallel harmonies with the modes.

In the next subchapter I will display my applications of mode embellishments and parallel harmonies, as well as a more comprehensive application of Messiaen’s sixth mode in some of my own compositions and improvisations.

Messiaen would have probably disliked the way jazz musicians run off with the contrived applications of his modes. In the examples so far, they are mainly commended for their ambiguous tonal colors, facilitating (composing) improvisers to connect them freely to various environments. He may even have denounced these connections as they contain the possible danger of “pan-tonality”, an interpretation of twelve-tone music in which, instead of all twelve pitches, all keys are equally important. I dare to counter this possible objection by quoting John Satterfield’s words in his “Introduction to the English Translation” of Messiaen’s Technique de mon langage musical: “The cataloguing and explanation of methods of building tonal structures may strike a creative response in a
student or mature composer” (Satterfield in Messiaen 1956: 3). I consider the actual interventions with Messiaen’s modes as typical responses by creative jazz artists, founded on their traditions and broadening their artistic palette by adapting elements from surrounding musical worlds. This reflects my view of jazz music, expressed earlier in subchapter 1.2, acting as a guesthouse in which elements from other musical worlds are welcomed.

5.4 My applications of Messiaen’s modes

5.4.1 “A Crow Calling”

My composition “A Crow Calling” is based on BbM3: b♭ – c – d♭ – d – e – f♯ – g♯ – a. The bass melody, shown in the example below, serves as the backbone of the theme and the solo sections. It consists of two mode embellishments. The first, played in bars 9–20 and 25–28, displays the operation “skip 4 notes” (example 5.2.3.4). The second, played in bars 21–24, displays the operation “skip 5 notes” (example 5.2.3.3).

[ex 5.4.1.1]
The following example shows a mini score of the intro and the A section. In both parts the notes never leave the BbM3 mode. In section A, the tenor saxophone plays the upper melody, and the guitar the lower. Thus, together with the bass melody, section A contains two contrapuntal melodies that together emphasize the melodic wealth of mode M3.

A Crow Calling

![Musical notation]

[ex 5.4.1.2 “A Crow Calling” – intro and A section]
The following examples shows section B, which is again strictly created with BbM3. In bars 29–32, the bass plays the descending Bb whole-tone scale that is implied in BbM3. From bar 33 on, both the cluster harmonies as well as the (contrapuntal) melody parts do not leave the notes of BbM3.

[ex 5.4.1.3 “A Crow Calling” – B section]
As the following example shows, the bass line in section A is continued throughout the solo section D. It is based on the same bass line as section A, serving as the basis for the chord changes that are derived from BbM3. The chord symbols merely serve as suggestions for the accompaniment of the soloists. The guitarist or pianist is free to change the chord constructions, as long as he stays with the notes of the mode. Despite suggested “voice-leading” operations such as the top lines in bars 83–90 and in bars 91–98, the chords do not intend to express any functional harmonic relations. They rather represent a choice of local harmonic colors implied in BbM3. However, amidst these quite random harmonies, there is still a sense of unity due to the characteristic melodic quality of Messiaen’s third mode.

[ex 5.4.1.4 “A Crow Calling” section D chords]
The next example shows the first half of the tenor saxophone solo in an unpublished recording of "A Crow Calling" (2015). The encircled notes are notes outside BbM3.

The solo as a whole follows the baseline that is shown in example 5.4.1.1. It meanders through the BbM3 mode intertwining its various implied tonal colors. For instance in bar 7, the presence of the note d evokes a Bb major tonality, changing into Bbm7 by the note d♭ in bar 8. Then in bars 9–11, the presence of the notes f, f♯, and a, evokes the tonal color of Bb harmonic minor.

In bars 24–32, BbM3 is played continuously. First, in bars 24–25, the mode is exposed in its basic form, followed in bars 26–32 by a lyrical passage with larger intervals, never leaving the mode.

Bars 33–40 contain a sequence of four fragments from the mode. Each of these ends with two descending notes from the mode, creating a tension that quasi resolves to the interlude in section C, which starts in bar 41. From bar 50 on, minor and major third and perfect fourth intervals with the top note f are played, ascending to bar 56 that contains a short fragment of a “skip 1 note” embellishment.
A Crow Calling

tenor saxophone solo (first chorus)
The "skip 1 note" embellishment in bar 56 is continued in bars 57–61 of the second solo chorus. The parts within the rectangles mark the “skip 1 note” operations around the symmetric root notes b♭-flat, d, and f♯. The fragment within the dotted line contains two major third intervals that result from operation “skip 2 notes.”

Evaluation

“A Crow Calling” displays the characteristic melodic quality of BbM3 in various ways. Both in the composed parts and in the tenor saxophone solo, the ambiguous colors of the three implied parallel tonalities, Bb, D, and F#, are found in a variety of mode embellishments. Its basic structure consists of the embellishments “skip 4 notes”, and “skip 5 notes.” The latter, added with the embellishment “skip 1 note” are found in the tenor saxophone solo, in which the ambiguous colors of the implied tonalities are illustrated as well.

The dyads in the melody and the accompanying chords for the guitarist are exclusively constructed with notes from the mode. Although these pre-stated harmonies serve well to emphasize the characteristics of BbM3, they should be considered as suggestions rather than obligatory chord changes. The guitarist however is not supposed to leave the notes from the mode while constructing his chord variations.

As I mentioned in my resume at the end of section 5.3.4, the tonal colors of Messiaen’s modes can be highlighted effectively by shaping them as mode embellishments. With “A Crow Calling” I want to highlight these particularly melodic operations, demonstrating that, maybe even more than their implied harmonic structures, these embellishments serve remarkably well to emphasize the characteristic sound of M3.

The transcribed fragment of my tenor saxophone solo proves that the three symmetric minor/major tonal centers intertwined with the shape of the mode are a fruitful source
for melodic improvisation. The solo is triggered by the embellishments in the bass lines, either by copying them or by playing other, contrasting interval embellishments, without leaving the mode.

5.4.2 “Sparrows”

In my resume at the end of subchapter 5.3, I concluded that I have found only a few applications of Messiaen’s sixth mode in the discussed works. This is one of the reasons I created a first version of “Sparrows” using B♭M6 for a line-up of tenor saxophone, trumpet, trombone, bass guitar, and drums. In the mini-score of this composition, shown in the next example, only the note d♭ in bars 10 and 18 sounds outside of this mode.

The trumpet plays the melody, with doublings by the tenor saxophone from bar 12 on. In the lower staff, the bass guitar plays intervals of an augmented fourth, the “steering” interval that divides M6 in two symmetric parts. Between the bass line and the contrapuntal trombone line, a variety of intervals between a major second and a major seventh results. This variety obscures the austere symmetric structure of M6. In bars 5–12, I have marked these intervals in the lower staff. Intervals larger than an octave are marked according to their root position within the octave.
Section F in the following example displays an application of parallel harmonies. All horizontal lines are basically constructed by "skip 3 notes" operations (example 5.2.6.3). In other words, in all four melodic lines, augmented fourth intervals are omnipresent. While moving in ascending and descending directions, they all follow the order of BbM6, starting from different positions in the mode. The vertical intervals that appear as a result of these horizontal operations are marked in between the staffs.
Section H contains repetitive riffs, mostly played in unison. In the extracted score below the unison passages are written in small notes. The encircled notes are notes outside of BbM5.

In bars 1–4 the upper and lower parts are played in rhythmic counterpoint; from bar 5 on, all instruments play the same rhythm. The quasi-pentatonic line in bar 1 is

[ex 5.4.2.2 “Sparrows” – parallel harmonies]
harmonized in augmented fourths, the lower staff in alternating minor and major seventh intervals. From bar 17 on, the four instruments display three- and four-part cluster harmonies. I have defined these clusters by trichord and tetrachord notations of their prime forms, written above the upper staff. These harmonies are again created without leaving the notes of the mode.
[ex 5.4.2.3 “Sparrows” – final section]
Evaluation

Because BbM6 is a combination of the two first tetrachords of the diatonic major scales of Bb and E, it inspired me to create melodic lines that sound like conventional scale patterns within the limited range of a perfect fourth. These lines are phrased as if they are common diatonic melodies, however without gravitating towards a tonal center. At the same time the augmented-fourth "steering" interval that defines the distance between the two symmetrical segments of the mode is omnipresent, both in the horizontal and vertical structures of the piece. Compared to the wealth of variations and tonal colors that are possible with M3, M6's possibilities are more limited. But in this composition, the blunt and dissonant presence of the augmented fourth's sound works well in connection with the percussive elements in this piece.

5.4.3 “Dicke Luft”

As a third example of my personal application of a Messiaen mode, I will discuss the superimposition of EM2 in a part of my tenor saxophone solo on “Dicke Luft,” as played with my septet on the CD The Burning Of The Midnight Lamp (1999). The next example shows an abstract of the theme, based on a conventional twelve-bar blues in Am. There are no references to any M2 mode in this theme.
Dicke Luft
Theme

Dick de Graaf

\[ j = 204 \]

straight eights

[ex 5.4.3.1 "Dicke Luft": theme]
My solo consists of three choruses on the minor blues in Am. After the third chorus, as a reference to the B part of the theme, the E7 chord is extended. The rhythm section embellishes an E pedal, on which I play various superimpositions. The passage below shows how I gradually change from the tonal color of B locrian in bars 1–9 to a long passage using EM2 from bar 29 on. EM2 is already present in bars 3–4, but it becomes obscured by the strong presence of the note c. Bars 9–20 contain a long embellishment of an E7 chord with the alterations b13, b9 and #9. After a short excursion to Emaj7 in bars 21–22, EM2 pops up again in bars 23–25. Then, after an interruption in bars 26–28, starting with a chromatic embellishment of the note e, and ending with the augmented tonal color of E7#5(add f), the fragment ends with a long run in bars 29–41 which, with the exception of the (passing) note a in bar 33, exclusively consists of notes from EM2.
Dicke Luft

tenor saxophone solo (fragment)
Evaluation

In contrast with all examples so far, in "Dicke Luft" the application of the Messiaen mode is only used in a restricted part of the improvised section, rather than being a concept for the piece as a whole. As an addition to Van der Werf’s embellishments of F#M3 on top of a complex rhythmic and harmonic structure, my solo shows an application of M2 in a more quiet harmonic environment. The static E pedal point played by the rhythm section allows me the freedom to intuitively whirl around the exact content of EM2, switching between embellishing the basic notes EM2, its implied E7 chord with ad libitum alterations, and, as a result of intuitively added notes, Emaj7.

5.4.4 “Another Hero’s Journey”

“Another Hero’s Journey” is written for the same line-up as “Sparrows” (section 5.4.2): tenor saxophone, trumpet, trombone, bass-guitar, and drums. It is largely based upon mode EM3 and includes a riff that is constructed with stacked “skip 2 notes” embellishments of the mode. The following example intends to show the resulting parallel harmonies, serving as a background to (and as an interlude between) the solos. The upper line shows the three-part harmonies as played by the horns, the lower one the tritone d–g♯, played by the rhythm section. In contrast with the application of M3 in “A Crow Calling” (section 5.4.1) emphasizing the minor tonal colors inside this mode, in “Another Hero’s Journey” I was inspired by its implied intervals of major thirds (4), perfect fourths (5), augmented fourths (6), and perfect fifths (7). Apart from the encircled notes d♭-flat and f, all pitches belong to EM3.
Evaluation

This short fragment shows the remarkable sounds resulting from creating a parallel harmony with M3. Although the individual voices “only” follow the genuine order of EM3, the resulting vertical structures display interesting and unconventional harmonies.
Translating these three-part harmonies into traditional chord terminology appears problematic, but, just like in examples 5.4.2.2 and 5.4.2.3, trichord notation of the consisting intervals serves as a useful option.

Résumé

Referring meaningfully to these abstract harmonies, or to the conventional chords and scales implied in Messiaen’s modes, the soloist has to be informed about their differences and similarities. For instance, M1 is implied in M3 and M6; M4 is implied in M5 and M7. Other relations between the modes have to do with their “steering” intervals. This term, introduced in chapter 4 to identify the intervals between the trichords in the Tone Clock hours, I use here to define the intervals between the symmetric segments of the modes. Mostly present is the augmented fourth. With the exception of M3, all modes can be divided into two symmetric segments at a tritone distance. Consequently they can all be played as mode embellishments displaying successions of equal augmented fourth intervals. Divisions of M1 and M3 can result into successions of equal intervals of major thirds (or their inversions: augmented fifths). Divisions of M2 can result in successions of equal intervals of minor thirds. In sub-chapter 5.2 the operations leading to these embellishments are explained in detail (see also the summary in section 5.5.8).

In all works examined in this subchapter, the discrete melodic characteristics of the modes prevail over the chords that could be constructed with them. Harmonies so far occurred as a result of melodic operations: mode embellishments, linear counterpoint, vertically stacking (fragments of) modes, and assigning tonal centers to (alternative) pivot notes.

Just as the applications of the Tone Clock hours, Messiaen’s modes have the potential to enrich the jazz musician’s skills in improvising beyond functional harmony. However, compared to the twelve-tone techniques discussed in chapter 4, in Messiaen’s modes, references to (ambiguous) tonalities are omnipresent. They can help (composing) improvisers to add a certain “harmonic vagueness” to their music. Liebman (2013) coined this term to define chords in which the third, fifth, or seventh are deliberately absent or ambiguous. This ambiguity can best be demonstrated by mapping the different thirds, fifths, and sevenths occurring in the chords that can be built on the root of CM3. This mode contains both the minor (e♭) and the major third (e); the diminished (f♯), the perfect (g), and augmented fifth (g♯); and the minor (b♭) and major seventh (b). The resulting variety of chords will be discussed in section 5.5.3.
Although the aim of my research is to look beyond the limitations of functional harmony, harmony plays such an important role in Messiaen’s modes, that the following brief summary of their implied tonalities cannot be omitted.

5.5 Connections between Messiaen’s modes and traditional harmony

This section discusses the traditional chords and scales that can be identified inside Messiaen’s modes. This may seem in contrast with the aim of this research to help the (composing) improviser move beyond the limitations of conventional chord-scale practices, but I think it is not. Just like in diatonic scales, the implied chords are interpretations of harmonies that can be created by grouping the available notes in intervals of thirds and fourths. In the case of Messiaen’s modes, these chords are not extracted from a complete diatonic scale; or, the underlying mode contains more notes that do not all fit the extracted chord. More important, through the absence of a predetermined hierarchy among the notes, these chords have no functional meaning either. As Messiaen remarks, “the composer [is] free to give predominance to one of the tonalities or to leave the tonal impression unsettled” (Messiaen 1956 I: 58). Transferred to the (composing) improviser addressed in this study, this means that the modes allow the freedom to extract, manipulate, and interpret complete and incomplete chords and scales as long as one does not leave the notes of the mode. Considering the aim of my research, these implied chords and scales could be employed to serve as superimpositions on pre-stated or imaginative chord changes in order to achieve fresh and surprising sounds.

5.5.1 CM1

CM1 is constructed with six parallel segments steered by intervals of a major second. It contains a C7#5 as its most comprehensive chord that can be transposed by a major second, a major third, an augmented fourth, an augmented fifth and a minor seventh, “fitting” on every stage of the mode.
5.5.2 CM2

CM2 embeds the minor chords Cm6, Cm7, Cm7\(^{b5}\), Cdim7, and Dbdim7, as well as the major chords C7, C7\(^{b9}\), C7\(^{b10}\), and C7\(^{13/b9}\). The latter chord symbol is commonly used to indicate the C octatonic scale. M2 is constructed with four segments steered by intervals of a minor third so all chords can be transposed by intervals of a minor third, an augmented fourth, and a major sixth.

5.5.3 CM3

The following example shows how three minor, three major seventh, and three dominant seventh chords can be constructed with notes from CM3.

In addition to these chords built on the root, the following “adjacent” chords are also possible: Bm\(^{maj7}\) and Bmaj7. Because M3 is constructed with three segments steered by intervals of a major third, all chords can be transposed by a major third or an augmented fifth interval.
5.5.4 CM4

Remarkably, by the absence of a major or minor third in CM4 conventional chords can be built only on its second and eighth stages. On the second stage the chords C#maj7#11 and C#7b9 are possible, and on the eighth stage Bm6, and Bdim7. All chords can be transposed by augmented fourths, because CM4 is constructed of two segments steered by a tritone interval. As the following example shows, M4 relates partly to the fifth hour (trichord 1+5) of the Tone Clock (subchapter 4.2, and section 4.7.4).

5.5.5 CM5

This mode is constructed of two 1+4 trichords at a tritone distance, by which it relates to the fourth hour of the Tone Clock (trichord 1+4). No conventional chords can be found. M5 also relates to the fifth hour (trichord 1+5) of the Tone Clock.
**5.5.6 CM6**

[ex 5.5.6.1]

CM6 implies the following chords built on the first tetrachord: Cmaj7#5, C7#5, Dm7♭5, Ddim7, E7♭9/#11/♭13, and E9. M6 is constructed of two segments at a tritone distance, so all chords can be transposed up or down an augmented fourth.

The symmetry of the sixth mode – in which M1 (the whole-tone scale) is embedded – sounds clearly in the following line of the six 4+4 trichords. Or in traditional terms: the augmented triads on the first, second, and third degrees of both segments.

[ex 5.5.6.1]

**5.5.7 CM7**

[ex 5.5.7.1]

The following chords can be built on the notes in the first segment of M7: Cm6, Cm maj7, Cdim, C#maj7(#11), C#7(#11/♭13), Dm7, Dmaj7(#11), D7♭9/♭10/#11/♭13, D#m maj7, D#dim, Fmin7, and F7. All chords can be transposed by augmented fourth intervals, because M7 is constructed of two segments at a tritone distance.
### 5.5.8 Summary

In the following diagram the characteristics of the seven modes of limited transposition ("MOLT" in ex 5.5.8.1) are summarized. The term "steering interval" in the third column indicates the intervals between the segments within the modes (see subchapter 5.2).

<table>
<thead>
<tr>
<th>MOLT segments</th>
<th>steering interval</th>
<th>implied chords</th>
<th>Diatonic scale</th>
<th>Character</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM1</td>
<td>6</td>
<td>2 (major second)</td>
<td>C7#5</td>
<td>Whole-tone</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CM2</td>
<td>4</td>
<td>3 (minor third)</td>
<td>C713b9; Cm6; Cm7; Cm7b5; Cdim</td>
<td>Diminished half-tone - whole-tone; &quot;octatonic&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CM3</td>
<td>4</td>
<td>4 (major third)</td>
<td>Cm6; Cm7; Cm7b5; Cdim; C7b9; C7b10; C713/b9</td>
<td>Whole tone; augmented</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CM4</td>
<td>2</td>
<td>6 (tritone)</td>
<td>Dominant 7th of the root (G7#11); Bdim; C#7; Gmaj7(#11); C#maj7(#11)</td>
<td>Contains no major or minor third; embeds a &quot;turn-around&quot; of root notes of the two segments; relates to the fifth hour of the Tone Clock</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CM5</td>
<td>2</td>
<td>6 (tritone)</td>
<td>Dbmaj7(omit 5); Gmaj7(omit5)</td>
<td>M4 minus two notes; relates to the fifth hour of the Tone Clock</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CM6</td>
<td>2</td>
<td>6 (tritone)</td>
<td>Major seventh (Cmaj7#5; F#maj7#5); dominant 7th (C7#5,F#7#5); more dominant 7th possibilities on third and seventh stage (E7#11; Bb7#11); minor/major seventh(E7/maj7; Fm/maj7)</td>
<td>Whole tone; augmented</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CM7</td>
<td>2</td>
<td>6 (tritone)</td>
<td>Cm6; Cm/maj7; Cdim; C#maj7(#11); Cm7(#11/b13); Dm7; Dmaj7(#11); D7(b5/b10/#11/13); D#m/maj7; D#dim; Fmin7; F7</td>
<td>harmonic minor; melodic minor (on the parallel root notes)</td>
</tr>
</tbody>
</table>

[ex 5.5.8.1]
5.6 Generative compendium of melodic patterns

As in subchapter 4.7, I call the following collection of patterns with Messiaen’s modes a “generative compendium,” meaning that the patterns are arranged in such a way that they allow musicians to adapt them to their own taste. The examples are displayed along the individual modes in first transposition, with random variations of shapes and directions. At the start of each section, I comment on characteristic (steering) intervals, the relation to other modes, and on implied harmonic structures. Thus, I intend to suggest possible applications of the actual patterns. Just as with the melodic patterns derived from Tone Clock trichords (subchapter 4.7), this compendium represents a rather subjective choice, displaying my personal adaptation of the characteristic colors of Messiaen’s modes. By combining the concrete patterns and my additional comments on their characters and usages, I intend to motivate and help musicians to use them as a point of departure for their individual applications.

5.6.1 CM1

In the following lines, I have mixed the characteristic intervals of mode CM1: major seconds, major thirds, augmented fourths and fifths, and minor sevenths. This mode refers to the augmented dominant 7th chord. Because M1 is also implied in M3 and M6, the following patterns can also be played in combination with modes CM3 and CM6.
The following melodic patterns show mode variations with successions of the implied major triads, at distances of minor thirds and augmented fourths. The notes marked with an asterisk are chromatic passing notes. I took the freedom to add them to the original notes of the mode in order to create four-note groupings instead of the usual three-note groupings that result from creating triad pairs.

1. C F♯ C F♯ etc

2. C F♯ C C C A C

3. C A C F♯ C

[ex 5.6.2.1]

The steering interval of a minor third in this mode is emphasized in the following successions of minor triads at minor third distances.

1. Cm(b9) Am F♯m(b9) Ebm

2. F♯min(b9) Ebm(b9) Cm(b9) Am

[ex 5.6.2.2]

The ambiguous tonality resulting from the presence of both the major and minor third of the C tonality is well expressed in the next lines, containing embellishments of incomplete dominant seventh chords with the added sharp ninth.
The next example shows eight lines in which the minor and the diminished tonal character of Messiaen’s third mode are emphasized. In bars 15–18, I play the major third as a passing note to the minor third to stress the ambiguous tonal character of M3.
[ex 5.6.3.1]
The major and augmented tonalities implied in M3 are expressed in the following patterns.

1. Ab C E C

2. C(b6) E(b6) Ab(b6) C(b6) Cmaj7 Abmaj7 Emaj7 Cmaj7

3. C(5) Eb etc

4. Eb(5) C(5) etc

[ex 5.6.3.2]

5.6.4 CM4

Due to the absence of a major or minor third in CM4, the following examples highlight the triads and chords on the fifth degree of the tonalities of C and F# implied in the mode. The lines show triad pairs, triads with additions, major seventh chords, and dominant seventh chords.
The following patterns can be created with two similar tetrachords: 2+3+2 on the root note c; and 1+5+1 on the g, resulting in an extended G dominant-seventh chord, in addition to the one in bar 8 in the example above.

[ex 5.6.4.1]
An alternative approach to CM4 is to emphasize its implied B minor tonality (as an upper structure of Gmaj7). The following example is also discussed in section 4.3.1.3.

5.6.5 CM5

Since M5 is implied in M4, all lines in the following example can also be played in combination with CM4. The lines in bars 1–3 can also be played in combination with CM6.
5.6.6 CM6

Because it is impossible to associate a tonal reference other than a C or F# pedal point to the next two lines, I have identified them by their intervallic structure. Bars 1–2 can also be played in connection with M4 or M5.

By taking the notes e and b as pivot notes, triads and dominant seventh chords with altered notes can be found in CM6. They can either be played over those pre-stated chords, or be superimposed over C or F# pedal points.

The following example displays the implied whole tone scale starting on the note e. The notes in bars 1–2 do not leave the mode. In the pattern in bars 3–4, the notes f and b
are added. Thus, the tonal color of the E7alt chord is consolidated without leaving the notes of the actual mode.

[ex 5.6.6.3]

5.6.7 CM7

[ex 5.6.7.1]
5.7 Connections with the Tone Clock and the jazz models

Are there any connections between Messiaen’s modes of limited transposition, the Tone Clock, and the methods of the jazz educators in chapter 3? After all, Schat and Messiaen represent musical worlds that are quite separate from each other, and from those of the jazz educators discussed in chapter 3.

This study so far has shown how elements from compositional techniques used by Schat and Messiaen are brought together in the works of various (composing) improvisers. Thus, it illustrates how crossing borders, drawn by those composers of new music, helps the improvisers to broaden their musical space. The same can be said with regard to the connections with the educational methods in chapter 3. However, employing these methods to enrich one’s artistic palette is more obvious, because most of them result from the practices of actual jazz improvisers.

A systematic comparison between Messiaen’s modes of limited transposition, Schat’s Tone Clock, and the jazz educators’ improvisational techniques is not relevant here, as it would not create any new perspectives on the usage and utility of the separate techniques. However, it is important to stress that jazz easily allows a combining of those techniques, which, in their original state, appear so radically different from one another. Therefore, the remainder of this subchapter will contain short examples of my applications in which interrelations between twelve-tone techniques in the Tone Clock, Messiaen’s modes, and the methods of Liebman, Bergonzi, Weiskopf and O’Gallagher become apparent and productive.

Firstly, I consider the theoretical connections between Messiaen’s modes of limited transposition and the Tone Clock. According to the definition of twelve-tone techniques by Wuorinen (1994) discussed in section 2.2.3 and in subchapter 4.1, both systems are based on pitch successions arranged by interval orderings instead of tonal hierarchies of triads or chords. In both systems, these successions can be divided into a number of symmetrical segments, so-called “content groups” that stand out from the strict intervallic ordering of the basic form of the row.

As a practical example, I consider the relationship between Messiaen’s third mode of limited transposition and the twelfth hour of the Tone Clock. With its nine pitches, mode M3 is only 3 pitches away from being a twelve-tone row. With the twelve-tone techniques discussed in chapter 4, it would be possible to analyze M3 as an incomplete row of the third hour of the Tone Clock, which consists of three 2+1 trichords. The three missing pitches f–a–c♯ represent a 4+4 trichord that would complete the twelve-tone row. In order to obtain a Tone Clock hour with four equal trichords, the twelve-tone row in bar 2
of the following example can be constructed. With its four 4+4 trichords, it represents
the twelfth hour of the Tone Clock. This highlights the augmented tonal colors implied in
M3 in a clear and effective way. Thus, this example shows how an operation using
twelve-tone techniques can be applied alongside the mode embellishments such as the
tones in section 5.2.3 in order to emphasize an actual tonal color implied in the mode.

![Example notation]

And what about connections between Messiaen’s modes and the educational publications
in chapter 3? Which techniques, discussed in chapter 3, could, possibly be employed to
these modes? Concerning the relation with Liebman’s concept of chromatism (subchapter
3.2), operations with Messiaen’s modes can be added to Liebman’s survey of techniques
of non-tonal superimpositions on pre-stated or imaginary chords and chord changes. My
tenor saxophone solo on “Bohemia After Dark” (Oscar Pettiford) on the unpublished duo
recording with pianist Andrea Pozza (Milan, 2015) can serve as an illustration. The
embellishments of GM3 that I play in the A-sections of the first three solo chorusses⁶
show basic examples of the application of Messiaen’s modes, as non-tonal
superimpositions over the pre-stated chord changes.

Concerning the connection of Messiaen with Bergonzi’s concept of intervallic melodies
(subchapter 3.3), the tables of interval directions (section 3.3.2) can be used as effective
tools to construct mode embellishments or mode patterns. However, since all of
Messiaen’s modes contain fixed interval structures, it is not relevant to connect them to
Bergonzi’s quite random construction of intervals successions. The same conclusions can
be drawn regarding the interconnection of Bergonzi with the Tone Clock. Conversely, the
concepts of Weiskopf’s triad pairs (subchapter 3.5) and Bergonzi’s hexatonics
(subchapter 3.6) can be efficiently applied to illustrate the characteristic tonal colors of
Messiaen’s modes. For instance, triad pair C#₅+D#₅ can be played to define the

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⁶ Time codes are: 00:33 (first chorus); 01:07 (second chorus); 01.41 (third chorus).
augmented tonal colors inside CM1, CM3, and CM6. The triad pairs Bm+Cm, and C♯5+Ebm, can be played to mark the ambiguous tonal colors of CM3. The triad pairs C+F♯, and Cm+F♯m, can be played over CM2; and the triad pair Db+G can be superimposed on CM4 and CM7.

Finally, O’Gallagher addressed relations between segments of the twelve-tone rows with trichords 1+4 and 1+5 and Messiaen’s modes M4 and M5 (example 3.7.1.10). Example 5.6.6.1 above shows a similar relationship between those rows and M6. Example 5.6.4.2 shows how tetrachords 2+3+2 and 1+5+1 can be considered as twelve-tone segments, in superimposition on CM4.

To summarize the relevance of the combinations of elements from the various techniques discussed in this study, I once again stress that among the characteristics of jazz there is the tendency of (composing) improvisers to cross musical borders in their search for new elements to enrich their current jazz languages. In the context of my research aim to help improvisers extend their practices beyond conventional harmony, combining the techniques discussed separately in this study seems a logical next step to add to its value. During the years of my research, I experienced how combining the elements from the various techniques was an important step after my initial acquaintance with their basic forms, in order to become new “building blocks” of my personal sound.

5.8 Conclusion

The symmetry of Messiaen’s modes, their implied tonalities, and their horizontal and vertical applications are potential ingredients that can be taken from his musical language to enrich the (composing) improviser’s artistic palette. Just like the Tone Clock, Messiaen’s modes represent a well-defined collection of tools that can be freely adapted by (composing) improvisers in order to extend their musical vocabulary. Once connected to the musicians’ already existing musical knowledge and practices, these tools can also contribute to their informed intuition. From there on, they gradually turn into skills that can pop up spontaneously during actual improvisations.

The various examples of composed and improvised content discussed in this chapter reveal bits and pieces of the musical vocabulary, created in and through the musical practice of a number of (composing) improvisers including myself. Altogether, these data prove that Messiaen’s modes can serve as tools to operate creatively both outside and alongside functional harmony. It is up to the individual musician to either respect Messiaen’s intended “charm of impossibilities” and the obvious tonal references found in most of his modes, or to bypass these and apply (parts of) them as superimpositions on
pre-stated or imaginary chord changes. As such, these operations can be seen as supplements of more conventional (non-)tonal techniques of superimposition.

Ironically, in *Conversations with Claude Samuel*, Messiaen remarks: “Personally, I’ve never had an affection for jazz. I’m sorry to say it, but I think that jazz is a ‘robber’ whose ‘innovations’ are, really, borrowing from previous symphonic music” (Samuel 1976: 195). Within the musical space that I am operating in as a (composing) improviser, usually called “contemporary jazz”, innovation is regarded as the continuous extension of existing musical conventions. “Robbing” elements from other musical genres and cultures, and adapting these to one’s own artistic needs, is one of the ways innovation can be achieved. The blending of existing practices with these “extra muros” elements acquires meaning as a result of the interaction of the actual repertoire, the line-up of a band, and the concrete physical environment of a live performance or a recording session. It is within these limitations of time and space that performing jazz artists usually develop and evaluate new elements and operations, such as those distracted from Messiaen’s musical language. Their dissemination can only be achieved during the very “celebration of the moment” that the musicians are able to create, individually or together, by their open-mindedness and informed intuition, and thanks to their inquisitive practicing, listening and mutual influencing.

In the first two chapters of this dissertation, I summarized my personal development as a (composing) improviser during my early years as a performer. More recently, my findings with elements from Peter Schat’s Tone Clock and Messiaen’s modes of limited transposition inspired me to undertake the present study into advanced tools to enrich the skills of (composing) improvisers. During the initial phase of my research into the techniques of these composers of new music and their practical applications in jazz praxis, I realized the contextual relevance of the publications of the jazz models in chapter 3. They provided educational frameworks to make steps beyond the strict borders of tonality, while some of them also contained connections to the serial techniques discussed in chapters 4 and 5.

My recent musical practice displays a mixture of elements from those jazz models and from the techniques derived from Schat and Messiaen. To express the musical results of my study more concretely, I will in the next chapter conclude with a coda in the form of a number of recent recordings in which the journey I have embarked upon in this study comes to a temporary end.