The Meshuggah Quartet

Applying Meshuggah's composition techniques to a quartet.

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Acknowledgment

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INTRODUCTION

Meshuggah is a Swedish extreme metal band, formed in 1987 in Umea. They have succeed in obtaining a personal sound because of a relentless work through the years. Their style is unique for a regular listener of this type of music but someone inexperienced could be afraid by the violence and the blackness of the atmosphere released by the lyrics and the music. He could be chocked and unable to listen to it. But someone who can take some hindsight, can appreciate the incredible hard work composition-wise and particularly at a rhythmical level.

Nowadays, Meshuggah is one of the most relevant extreme metal bands, considering the fact that it cannot be considered as reachable as an accessible metal band. After 7 albums and tours all over the world, opening for the most popular bands (like Machine Head for instance), their music have reached not only this particular audience, but also a wider one. Jazzmen as Dan Weiss, in his Ode to Meshuggah or composers as Derek Johnson in his composition Frozen Light, have been inspired by Meshuggah, for they are working on the same idea in terms of the rhythm and construction of the songs. It is therefore common for a jazz musician, who is usually open to a lot of different cultures, to at least have heard about this band.

So this master research will be based on a transcription work and a composition work. It would be enriching for someone who has access to this research to really get to understand and perceive the essence of their music. Submerging the reader in their universe, he could acquire a new and original knowledge. Then the composition and arrangement work will enable the reader to experience a concrete application of the ideas gathered from the transcriptions. The quartet has been chosen as a base for the composition and the arrangements, as it is a very handy formation, it's easily movable and can contain rhythmical instruments, harmonics instruments and soloists, which is for the composer an ideal tool to create a complete repertoire.

From there, we can extract a lot of material from a radically different domain, useful to enrich our compositional background and bring it to a higher level. We can also enrich it in terms of harmony
and melody, bringing it to our domain, which main influence is the jazz.

1 OBJECTIVES AND METHODOLOGY

The objective of this research project is to realize an approach and an analysis of Meshuggah's music. Then, after having extracted a maximum of material and ideas we aim at using all this knowledge to compose a repertoire for a quartet formation with alto sax, electric guitar and effects, electric bass and effects, drums and double bass drum pedal. This quartet would make use of those new influences but also of its former jazz influences to create a different sound on a jazz or metal scene.1.

To do so we'll base our study on the transcriptions of New Millenium Cyanide Christ from the album Chaosphere (1998) and Stengah from the album Nothing, but also on very complete transcriptions that did Derek Johnson and that he sent by mail. After that, a work of "re-composition" of the transcriptions will be done to try to add a jazz dimension to the repertoire. This would be more appropriated to the quartet we're trying to initiate. Further will be explained the different techniques applied to recompose these songs, without pretending to improve them, but in order to adapt them to a different formation: in this case an electric jazz quartet.

2 ANALYSIS OF THE TRANSCRIPTIONS

2.1 Complete analysis of Stengah

2.1.1 Riffs

This song is opens the album Nothing, released in 2003 by the band. This album has

1. Note: after having rehearsed and practiced the first arrangements of the repertoire, we got to the conclusion that the use of the electric bass was necessary to avoid sound problems of low intensity signal that we could have with the double bass.
renewed contacts with melodic aspects and different atmospheres or "ambiances" (Metzger 2003a, ch. 2.33, p.63), it is less a “in your face agressive” album than *Chaosphere* the previous one. The song format of *Stengah*, which is long and complex however (5:38), shows the emergence of a non-noisy solo, played with the plектrum, contrary to a lot of solos played with the tapping technique in the previous albums. This solo is more a *jazz-rock* solo and we can feel Allan Holdsworth's influence in Fredrik Thordendal's playing. The soloist almost plays very fast in the whole range of the guitar, using quintuplets and sextuplets in a very precise way (Metzger 2003b, exS4, p18). On the second part of the solo (on the repeats 3 and 4) Thordendal uses the rhythmic of the riff played behind him to build up his solo, marking the accents of the rhythm guitar. We can feel that his solo is very structured and referenced to that kind of canvas developed behind him, using the F b13 mixolydian mode to improvise. It can remind somehow, improvisation on a fixed pattern in *Karnatic* music.

The form of this song is quite complex and is made by nine different riffs. The first riff, which is called here riff A, is made of a repeated motive in 11/8, represented here two times. It is firstly played by the lead guitarist Fredrik Thordendal, opening the song with a lo-fi effect. This way of exposing the first riff enables them to repeat it with a greater impact, using the whole band with a contrasting hi-fi sound the second time the riff is played. This motive is displaced over 8 bars, and than cut for the “rephasage contraint” (Metzger 2003, *Meshuggah: une formation de métal atypique*, ch.2.21, p.39): obliged re-phasing.

\[ j=120 \]

![Figure 1: pattern of the riff A](image)

The first motive appears alone with the guitar. It's played one time and than the electric bass, the other guitar and the drums enter together to produce a surprising and powerful effect. When the entire cycle of 8 bars is completed, the motive is cut. The picture joined below shows how they proceed to keep this cycle of 8 bars. It is very important for them, for a question of groove.

![Figure 2: riff A obliged re-phasing](image)

*Stengah - Nothing (2002) – transcribed by Charley Rose*

We can see on bar 8 as mentioned in the picture that the end of the riff is cut and comes back very naturally to the beginning of the cycle of 8 bars. This sounds natural because of the placement of the last 16th note of the eight bars, coming from the original pattern, separated from before by a 16th note silence.

It boosts the strong beat of the first bar of the cycle of 8 bars right after the double bar as on the picture above. We know that the Meshuggah's composers are particularly attentive to those kind of details, as says Mårten Hagström in an interview

> We tend to work with really odd rhythmical patterns, however, and mess around a lot with how the notes in the riff might point to the riff working toward a natural conclusion that the rhythm pattern doesn't really support.

This is an explanation o what we call the obliged re-phasing.

Then we have interlude 1. It's a riff that only appears once..
For this section, they use the slide technique (glissando). They glide from the Ab, which can be considered as the augmented second (or the minor third) of F, alternating with the major third A. This technique gives a lazy trend to the music and is preparing the listener to some more drama, some more action. The drummer plays those eight bars very simply. He smashes the open hi-hat on each beat and plays the four quarter notes accentuating the first one, and emphasizes the impacts of the guitars hitting a cymbal and the bass drum. This riff is very rooted on the 4/4, and contrasts a lot with the previous and following riffs. The only ethereal aspect of this passage is that it begins in anacrusis, on the fourth 16th note of the fourth beat of the bar.

Coming on the heels of this section, the band plays the following riff B. It can be decomposed in 3 parts. The first is kind of intro beginning like before on the anacrusis: on the fourth 16th note of the fourth beat. This sort of introduction to the riff B is played half tone above the original root. It makes feel a sudden heaviness when we come from the first section and go to the second.

This feeling comes back on the third section, because the first two notes of the riff are played again half step lower than in the second section, to finally come back to the F# as the central root of the riff, around which the three sections gravitate. Moreover, this modulation can perturb
and make the listener loose the cycles of four bars. This is probably what they attempted to do when they composed this part and we'll see that this confusion comes back a bit later with different techniques. Moving a little deeper into the pattern, we figure out that it is simple. As well as to the
interlude, it starts and ends on one only bar. So in this case, the obliged re-phasing phenomenon is absent. The riff is constructed on 4 patterns. The first begins on the fourth 16\textsuperscript{th} note of the fourth beat, as a logic continuation of the interlude. It is composed of groups of 3+3+3+3+3. This brings up to the up beat of the first bar of the riff. Then the second pattern begins and it is followed by the third which is exactly the same. They're both composed of groups of 4+3+3+3=16 eight notes. The pattern is developed on one only bar. Finally, the last pattern concludes the riff B and leads us to the anacrusis of the first bar of the cycle of 4: on the fourth eight note of the fourth beat. It permits the reuse of the B' pattern, slightly modulated half tone below for the two first notes.

![Figure 5: riff B drums](image)


The drum part is quite interesting. In the Bintro, the drummer Tomas Haake plays a *crash* on every beat and the bass drum accentuates the guitar. The snare is played on every anacrusis, on the beginning of the second, third and fourth patterns, as an ornament of the riff. It doesn't refer to the 4/4 and helps to feel it. It is confusing. For B and B', the only difference is that, as the singer
starts, to let him more space, the drummer plays a half closed hi-hat in order to get a dryer sound. Like that, it doesn't interfere with the vocals.

For riff C, they use a relevant technique. This riff uses the same rhythm as riff B thus the same pattern, with a close difference: the pitches are changed. As we have seen before, the pattern is composed of five attacks and starts again after that. In riff C, four pitches are used: A, F, Gb and F an octave higher. So we have four pitches against five attacks played by both the bass drum and the guitar. This creates an other kind of phase shifting and even though it is the same pattern, it feels like having a new riff. In closing, they modify slightly the last pattern using the descending slide technique which comes back at different times during the song.

![Figure 6: riff C](image)


As a continuation and after re-quoting riff B (see appendix 1), we reach riff D.
This riff is a four bars riff divided into 3 patterns composed themselves of 6 groups and which the minor subdivision is the 16th note. These groups are as follows: 3+4+3+3+4+5.

On four bars with a 4/4 time signature, we have sixty four 16th notes. A pattern contains twenty two 16th notes. In total three patterns would be made of 22+22+22=66 16th notes. That means that if we want to keep the four bars structure with a 4/4 time signature, we need to take off two 16th notes.

Thus, by the end, it can be seen that we need three patterns, two completes and a reduced one.

The third pattern is also made of 6 groups of 16th notes as well as the others, but the last group is a group of three: 3+4+3+4+3.

In this specific case, it is particularly interesting because of the way the re-phasing is arranged. Indeed, when the riff starts again, it is slightly modified. The first note, instead of being a G, becomes a Ab. Let's have a look to the result, if we start from the last pattern we have:

\[
G(3) \ F\#(4)G(3) \ Ab(3) \ F\#(4) \ G(3) \ | \ Ab(3) \ F\#(4)G(3) \ Ab(3) \ F\#(4) \ G(5)
\]

Until the very last group of five 16th notes of the first pattern is reached, the patterns give the
impression to be different and to be made of a shorter sequence of 3+4+3. This impression is enhanced by the fact that the first note of the first pattern is changed. This maintains continuity in terms of melody. On its part the drummer supports this effect playing both cymbals and bass drum with the guitars and the bass. The only beat reference that we have is given by the snare and the hi-hat. Even if the hi-hat is played on each beat, its volume is so low that it is almost imperceivable. As to the snare, it's smashed on each third beat, typically as in a lot of rock patterns for drums, but it still doesn't offset the sloppy effect created by the ensemble bass drum/cymbals-guitars/bass. Furthermore, the guitars and bass play short notes. The length of each note played is not more than two 16th notes or a 8th note. This increases the violence of the riff, creating rough impacts, and the listener may loose the feeling of difference of length between each group and so the reference to the beat. Therefore, the listener may be lost on this section.

As a last remark, it is relevant to speak about the use of the drum when riff D is repeated for the third time. Here, we can see a different arrangement: the use of the toms. This is the moment where it is important to distribute the motion through the drummer's body. In this passage, the drummer plays every first and third 16th note with his right arm. The left arm is in charge for all the second and fourth 16th note, the low mid tom-tom and the low tom-tom. The left arm is in charge for all the first and third 16th note, the low tom-tom, the low floor tom-tom, and the snare but only on beat three. As in many Meshuggah's riff, the bass drum follows strictly the guitar's riff, reinforcing them in the low register, strengthening their attacks. Last but not least, the left foot accentuates each beat thanks to the hi-hat pedal. The distribution of the motion enables the drummer to find his own balance in order to execute this complicated rhythmical pattern.

After all this long introduction and exposition of the main themes of this song, we will reach the solo section. First we will hear a sort of introduction to the solo, played by one of the guitarist, that we will name riff E.
Riff E is composed by six similar patterns and an addition of two eight notes. The pattern is composed of two doted 8\textsuperscript{th} notes and two 8\textsuperscript{th} notes (3+3+2+2 if we use 16\textsuperscript{th} notes).

If we calculate: 3+3+2+2 = 10 16\textsuperscript{th} notes is the length of a pattern; 10X6 = 60 is the length of 6 added patterns. To obtain the required amount of 16\textsuperscript{th} notes, we still need four 16\textsuperscript{th} notes, given here by the two added 8\textsuperscript{th} notes. Instead of placing the addition of two 8\textsuperscript{th} notes at the end of the riff to re-phase it, they put it right after the fourth pattern. That makes the riff more fluid, seamless, because it finishes at the end of a pattern and starts again on a same pattern. This technique is used frequently. Even more so than the fluidity, it disorients the listener and makes him loose the cycles of four, although a strong sensation of the down-beat is given by a cymbal or a hi-hat. For the drums, the bass drum, as very often, follows the guitars on each one of its impacts. The hi-hat is hit on each downbeat and the crash is smashed on the beginning of every cycle of four bars.

Next comes the solo part.
This passage that we name riff F is made from the same pattern as riff E. They have just a few differences: firstly the rhythmical construction, secondly the melodic movement and thirdly the note pitch. If we have a look at figure 9, we can see that in riff F, the addition is placed right after pattern 2 whereas in riff E, it is placed after pattern 4. Furthermore, the groups 3+3 and 2+2 of pattern 4 are reversed. This permutation can also disorient the listener.

Secondly, the melodic movement is changed, it is directed upwards whereas for riff E it goes from top to bottom. Finally, riff E is composed of a two notes: a triton (A and Eb) and G#; riff F, for its part is composed of F muted with the heel of the hand -palm mute technique- and of note G.

Although the rhythmical material is similar for these two riffs, these details make them sound very different whilst keeping an underlying correlation.

For the drums, the cymbal and the bass drum keep the same role. However, the snare is used as an "ornament" of the riff, (see appendix 1) indeed, it supports some notes of the riff but doesn't take up
its prime function that we described a little before.

After Fredrik Thordendal's solo, we reach the solo outro.

This section is made of the same rythmical material than before with the exception of the addition. Instead of using an addition to rephase the riff, they repeat the same pattern six times and the seventh time they cut it. For its part, the drummer plays a fixed tom-tom pattern, and as he often does, he supports the guitar’s riff with his bass drum. Here, the snare serves as a reference point for feeling the 4/4 time signature, sounding on every second and third beat, thrown into relief by two low mid tom-tom; and lastly the left foot plays the hi-hat on each beat.

Riff H opens a new and final section before the final reexposition of the first riff.

Riff H is made of a pattern of seven 16\textsuperscript{th} notes (3+4) repeated over four bars of a 4/4 time signature.
This pattern is repeated nine times: $9 \times 7 = 63$. Thus, we still need one $16^{th}$ note to complete the cycle of four bars. Then instead of using a tenth shortened pattern as we've seen before, they extend the ninth one, adding one $16^{th}$ note to the group of four, which provides one group of three and one group of five $16^{th}$ notes. On that last group they bend the lowest string, from F to F#, increasing the tension of this ending of the riff enabling them to land with more intensity on the first beat of the first bar. On the recording, for the first exposition of this riff, they use a guitar with a lo-fi effect, reminding the opening riff played by Fredrik Thordendal, the lead guitarist. This riff is played in the background while the bass and the rhythm guitarist hold a low E and finally join in playing the last pattern including the bend, together with the lead guitarist, thereby triggering the repetition of the riff with a renewed interest. Throughout this passage, as usual the drummer marks the guitar riff with the bass drum, but also with the crash. Then he fills the remaining $16^{th}$ notes hitting the open hi-hat. The lack of beat reference given by either the hi-hat or one cymbal, makes us feel a different time signature. Indeed, suddenly there seem to be eight bars of 7/16 and one of 2/4 (or 8/16).
Following this repetition, a short interlude arises as a logical extension of riff H. We will call it interlude 2. The only difference is the arrangement. The whole band plays the first pattern but only the bass plays the second one. This interlude is an ideal tool to announce the last element of this song: riff I.

Riff I is made of the same pattern than riff H, there are only a few differences. The most significant one is that its pattern is repeated over eight bars rather than four. Furthermore, comparing to riff H, riff I is played half a tone higher. A closer look reveals the particular way this entire riff has been constructed. If we have a look to figure 12, we can see that riff I is composed of three phrases: the original one, the modified one and the extended one. Firstly the original one is a phrase made of six patterns of seven 16th notes and uses pitches F, Gb, G and Ab, that are the only ones used for this entire riff. On figure 12, the red and green colored inferior brackets are used to show the patterns that will be changed in the modified phrase. The modification made to the phrase is a permutation of pitch Gb and F of pattern 2 and G and Gb of pattern 5. Those pitches are reversed, which modifies slightly the phrase, makes it sound different and probably makes the listener loose his points of reference in the construction of the riff. For the third phrase, the only point of differentiation comparing to first phrase, is the last bended pattern. Indeed instead of a group of three 16th notes and a group of four composing the pattern, we have 3+6. This extension is necessary to complete the cycle of eight bars: if the last pattern wouldn't be extended, we would have three phrases of 6 patterns of seven 16th notes= 18 patterns= 126 sixteenth notes. To complete eight 4/4 bars, we need one hundred and twenty eight 16th notes, therefore two 16th notes are still missing, that's why they're added to the last pattern. Note as well that this pattern could be regarded as an extension of the previous lengthened pattern of riff H: from eight to nine 16th notes.

As this last riff is the climax of the song, where all of a sudden, the vocals come back with particular violence, the drummer managed to emphasize this intensity supporting the guitar riff with
both his bass drum and his cymbal and hitting the snare on beat three, which is the only reference
to the 4/4 with also a different cymbal smashed on the first beat of the first bar of the repeated riff.

Finally the song ends with the recapitulation of riff A with a different drum arrangement,
using the tom-tom, as has been done for the end of riff D and riff G. This sort of reuse of the
previous material, provides the song a strong form, as for the long bendings which constantly come
back throughout the theme.

2.1.2 Melodic and harmonic material

As for the transcriptions, a lot of work will go into this domain and a lot of liberties will be
taken, we won't take much more time analyzing *Stengah*'s melodic and harmonic aspect. We'll prefer to summarize them with the following board:

<table>
<thead>
<tr>
<th>Riff</th>
<th>Root</th>
<th>Used pitches (in order of appearance)</th>
<th>observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riff A</td>
<td>F#</td>
<td>G, F#, F</td>
<td>monody</td>
</tr>
<tr>
<td>Interlude 1</td>
<td>F</td>
<td>F, Ab, A</td>
<td>monody</td>
</tr>
<tr>
<td>Riff Bintro</td>
<td>G</td>
<td>Ab 5th, G 5th, G 5th b9, F# 5th</td>
<td>Fifth chords and b9, half tone harmonic movement, palm mute effect</td>
</tr>
<tr>
<td>Riff B</td>
<td>F#</td>
<td>G 5th, F# 5th, F# 5th b9, F 5th</td>
<td>idem</td>
</tr>
<tr>
<td>Riff B'</td>
<td>F#</td>
<td>F 5th, F# 5th, F# 5th b9, G 5th</td>
<td>idem</td>
</tr>
<tr>
<td>Riff C</td>
<td>F</td>
<td>Ab, F, Gb, F octave higher and G</td>
<td>Bended Ab: ambiguity between major 3rd and minor 3rd of the root</td>
</tr>
<tr>
<td>Riff D</td>
<td>G</td>
<td>G, F# and bended G</td>
<td>Use of the micro tone of G, monody</td>
</tr>
<tr>
<td>Riff E</td>
<td>G#</td>
<td>A, G# and Eb</td>
<td>Division of the guitars</td>
</tr>
<tr>
<td>Riff F</td>
<td>F</td>
<td>F, G and Db</td>
<td>Solo part, lead guitar's improvisation on F mixolydian flat 13</td>
</tr>
<tr>
<td>Riff G</td>
<td>E</td>
<td>Bb, E and C#</td>
<td>monody</td>
</tr>
<tr>
<td>Riff H</td>
<td>E</td>
<td>G, E, F and F#</td>
<td>First E pedal and lead guitar plays the riff, then the guitars ad bass play the riff together in octave</td>
</tr>
<tr>
<td>Interlude 2</td>
<td>F</td>
<td>B, F</td>
<td>Question/answer of the guitars and the bass</td>
</tr>
<tr>
<td>Riff I</td>
<td>F</td>
<td>Ab, F, F#, G</td>
<td>Transposition of riff H</td>
</tr>
<tr>
<td>Riff A</td>
<td>F#</td>
<td>G, F#, F</td>
<td>monody, drum rearrangement, recapitulation</td>
</tr>
</tbody>
</table>

This board shows us all the riffs that we can hear in *Stengah*, with what we believe to be their roots, and all the different pitches they contain. The third column is intended to add every observation we make for the corresponding riff.
Note, for the album version, the tuning of the 8 strings guitars is (from the lowest string to the highest or the highest pitch to the lowest):

1=D 2=A 3=F 4=C 5=G 6=D 7=A 8=E

However for the live version, the tuning is different:

1=Eb 2=Bb 3=Gb 4=Db 5=Ab 6=Eb 7=Bb 8=F

Indeed, if we listen to a live version, we realize that the entire song sounds one half-step higher. This is because they play almost all the songs of their repertoire with the second tuning. Thus, instead of changing their guitars during their live performance, they have opted for that better solution.

So if we consider only the studio recording version, it could be said that basically the song gravitates around the root F# played in riff A, riff B and the recapitulation of riff A. Meshuggah's music is usually atonal but shows the presence of central pitches around which gravitate other pitches. Throughout the song, most of the time the guitars play monodic riffs, avoiding any kind of polyphony or harmony. This is probably a matter of choice, because of the pitch on which the riffs are played and therefore the problems of intelligibility that would be caused by such a low pitch. The biggest chord that we can hear in Stengah is a F# 5th b9 in riff B (also played on root G in riff Bintro). Riff B turns around a F# root and shows the presence of half step modulations increasing the "gravity" effect, the heaviness of this passage.

The second section starts from riff E, this is the development part. It lasts until the recapitulation of riff A, at the very end of the song. According to the board, we can see that this part is based particularly on root F though all the central section (riff G and H) is based on E. This central section is a kind of development within the development which brings us even further away from F#, the main root of the song. Now focusing on this part, it could be examined that riff E acts as an introduction to the solo part. We clearly hear that the lead guitarist Fredrik Thordendal plays his solo on a F mixolydian b6 chord, the fifth mode of the Bb minor melodic scale (Metzger 2003b,
As a matter of fact, the pitches played by the guitars in riff B are F, G and Db, that helps to define a F7b13 chord, even if with these three pitches, one could easily play many other modes. However it is likely that the mixolydian b13 mode reflects better the mood that they needed for this section given that it is most likely a fusion solo than a dark or noisy solo that he does on other songs like in *New Millennium Cyanide Christ* from the album Chaosphere, using the *tapping* technique or in *Entrapment* from *Catch 33* where he plays a surprising two notes solo, bending them and supporting the groove created by the riff. Subsequently, riff G and H make a clean break with the previous riffs and announce the coming *climax* of riff I. They are both based on a E root, half step lower than riff I, which enables it to sound with more intensity when it appears. Riff I is an extended version of riff H as it's been said before and its root is F, and modulates half step higher, which is an intermediary evolution to finally rise until F# root at the very end of the riff.

2.2 **Partial analysis of *New Millennium Cyanide Christ***:

*New Millennium Cyanide Christ* comes from the album *Chaosphere* released in 1998. " This album is a pivot point between trash style from the former releases like *Contradition Collapse* (1991) and *Destroy, Erase, Improve* (1995) and should be considered as representative of the roots of the technical style expressed in the last albums like *Nothing* (2002), *Catch 33* (2005), *ObZen* (2008) and *Koloss* (2012). It's probably the most pragmatic, direct and violent album they released. The riffs are very effective, the general form of the songs is less complex. They are using seven strings guitars for that album, tuned one step lower than usual: 1=Eb 2=Bb 3=Gb 4=Db 5=Ab 6=Eb 7=Bb. For this track, the three main riffs will be extracted and analyzed.
The album *Chaosphere* begins by this powerful riff played at a very quick tempo. It's made of a pattern of twenty three 16th notes and played over eight bars of a 4/4 time signature. In such an amount of 4/4 bars, there are $4 \times 4 \times 8 = 128$ 16th notes. The pattern is twenty three 16th notes long, so if it's repeated six times we have: $6 \times 23 = 138$ 16th notes which is too much and that would mean that the eight bars length has been exceeded. In order to avoid this problem, one more time they make use of a break in the pattern, they cut it after thirteen 16th notes, that removes the ten 16th notes in excess. The ingenuity with which is constructed the pattern, enables the riff to flow perfectly when it starts again. The connection between the end of the riff and its beginning would be almost imperceptible if it wasn't marked by a smashed cymbal. For his part, the drummer Tomas Haake
plays a sort of counterpoint between the snare and the bass drum, whilst supporting the guitar riff. Indeed, he aims for a clear sound and avoiding to hit both the bass drum and the snare at the same time enhances the level of the snare. That brings it out.

A little further arrives this riff. It has been a source of inspiration to compose a riff in *Au-delà de la fin*, composition that will be analyzed further in this research project.

This riff is composed by a pattern made of nine 16\textsuperscript{th} notes and repeated over four bars, still in a 4/4 time signature. The pattern is repeated seven times: $7 \times 9 = 63$ 16\textsuperscript{th} notes. Thus the riff misses one 16\textsuperscript{th} note to complete the cycle of four bars. So in this case, instead of taking of a part of the pattern, they add one 16\textsuperscript{th} note to it. If one listens to the pattern, he can hear that the accent is given on the E and C interval, at the end of the pattern. This effect is highlighted for the guitar and bass players dampen the strings with the *palm mute* technique. Played at this tempo, it can easily disorient the listener who may think that the beginning of the pattern is marked by these accents.

The monotony generated by the repetition of this short pattern accentuates the trance effect.

The drummer hits a crash on each beat and the snare every third beat of the bar. The bass drum doubles the guitar riff. This is the most common way Tomas Haake has to play on a riff. It makes it very effective and the contrast provided by the ratio between the bass drum and the snare, gives the paradoxical impression of speed and slowness at the same time.
Finally, the last riff studied in this partial analysis will be that which opens the last section of the song.

Figure 15: last riff studied

*New Millennium Cyanide Christ - Chaosphere (1998) Meshuggah - transcribed by Charley Rose*
It is composed of three series of dotted 8th notes played from the fourth fret and bended half step up and beginning on the first beat of bar one, bar two and bar four, respectively. The first one is a series of three dotted notes, the second one of eight and the third one of five. The second series is not contained in one only bar but crosses the limit of the second bar line. In fact, the down-beat of the third bar is not marked since the off-beat is emphasized by the series coming from the beginning of bar two; this makes us lose our points of reference. At the end of the cycle, the drummer hits the snare on the very last 16th note of the bar and gives the coming next riff a kick. This way of playing the end of a riff is very common and comes back more often in several Meshuggah's riffs. Usually the drummer plays a break with different elements of the drums at the end of a cycle of four bars to relaunch the coming riff.

2.3 Vocals

In Meshuggah's music, the vocals are used in a particular way. Almost every voice lines are screamed, except here and there in certain isolated cases where the vocals are whispered or the lyrics recited with a strange effect like at the beginning of the very last Ep *Pitch Black* (2013) or in *Mind's Mirror* from the album *Catch 33* (2005) where the singer, Jens Kidman, speaks through a vocoder. This particular vocal technique is very used by a lot of singers involved in the same kind of band as Meshuggah, it is obtained by distorting the sound of the voice contracting the upper part of the vocal cords. It can be dangerous for the voice, a lot of time is needed to master this technique and to avoid damage one's vocal cords. The different pictures shows that the vocals are always a counterpoint to the guitar and the bass, emphasizing the important pressure points of the guitar but maintaining a strong relationship with the 4/4, as a bridge between the two elements. Most of the lyrics are written by Tomas Haake, the drummer and most of the voice lines are composed by him as well.
2.4 Summary of the analysis

It is useful to gather all the informations extracted from the analysis to turn this into a brief and clear summary.

The techniques founded for Meshuggah's compositions are as follows.

- Vocals:
  - counterpoint to the guitar riff
  - supporting the guitar riff
- Guitars and bass techniques:
  - bending
  - palm mute
  - tapping
  - slide
- Obliged re-phasing:
- cutting the last pattern
- Adding a value to the pattern:
  - at the end of the cycle of four bars
  - at a different place than the end
  - extending the pattern

- Use of the drum:
  - Bass drum:
    - supporting the guitars
    - supporting the guitars in counterpoint with the snare
  - Hi-hat:
    - played on each beat with the foot
    - hit on the beat (beat reference)
  - Cymbals:
    - played on each beat (beat reference)
    - supports the guitar riff
    - marks the cycles of four bars
    - makes loose the points of reference
  - Toms:
    - riff based on the toms
  - Snare:
    - marks every third beat
    - used as an ornament
    - 4:3 ratio like in the ep I (2004) 5'40"

- Miscellaneous:
  - A desorienting accent or long value placed elsewhere other that on the beginning of a pattern
  - more accents than pitches
  - note changed at the beginning of a riff to make it flow when it starts again
3 APPLICATION OF THE DIFFERENT TECHNIQUES

3.1 *Au-delà de la fin* – Charley Rose

*Au-delà de la fin* was composed at the end of 2012 and the beginning of 2013, with the help of Derek Johnson. It was made with the objective of gathering the maximum of techniques found in Meshuggah's music and trying to adapt it to an amplified jazz quartet, exploiting all the differences in terms of sound and material. It is made for an electric guitar using distortion, a finger bass using distortion, an amplified saxophone and a rock drum kit, using three cymbals: a crash, a china and a ride; two toms, a bass floor tom and a hanging tom, a double bass pedal and the usual material: snare, hi-hat and bass drum. An analysis of the composition shall be made, highlighting the use of the methods. This analysis shall reveal the differences between Meshuggah's music and the composition as well.

![Figure 18: riff Aintro](image)

*Au-delà de la fin* (2012-2013) – composed by Charley Rose
After a short drum intro marking the 5/8 time signature used for the beginning, guitars and bass enter massively together. The guitar plays a nine 8\textsuperscript{th} notes pattern against the bass line which supports significantly the time signature, every bass phrase starting on the down beat of the 5/8 bar which enables the listener to feel easily this difficult odd meter. However, during all this time, the guitar is continually becoming out of phase over eight bars of the riff structure and has to be re-phased at the end. To do so, the last pattern lasts only four 8\textsuperscript{th} notes. If we calculate, eight 5/8 bars last 40 eight notes. The pattern lasts nine 8\textsuperscript{th} notes and is played five times. 9X5=45, so there are too many 8\textsuperscript{th} notes, we need to take off five 8\textsuperscript{th} notes so that we can reach the number of forty 8\textsuperscript{th} notes corresponding to eight 5/8 bars. As it is cut, the last 8\textsuperscript{th} note of the pattern contrasting with the previous whole note stimulates the repetition of the riff. An added feature of the guitar line is that it can be considered as a kind of "atmosphere" characteristic of a lot of Meshuggah's riffs, played by the lead guitar on top of a riff, enriching the rhythm guitar's riff harmonically, except that, unlike Meshuggah's "atmospheres" which are usually steady and marking the present time signature, this one is becoming out of phase and re-phases as a normal riff while the bass riff acts like an atmosphere. There is like an exchange of feature between the bass and the guitar.

With respect to the drums, a china is hit on every beginning of the bar and the toms are used to give the subdivision as for the bass drum, but which only supports the bass riff. Concerning the snare, its role is to emphasize every beat two and beat four of a sort of big 4/4 bar, composed by four bars of 5/8. This provides space and relaxes the tension caused by the 5/8.

- **Riff A intro:**
  - guitars and bass:
    - polyphony
    - use of the obliged re-phasing for the guitar "atmosphere" cutting the last pattern
  - drums
    - china cymbal on every beat
    - snare on beat 2 and 4
    - use of the toms
- bass drum supports the guitar riff

Riff A is a development of riff Aintro over sixteen bars, twice as many as the previous riff, that consists of a harmonization of the preceding bass line and the resumption of the prior guitar’s melody by the saxophone (for the second time only), taking it to new heights and, instead of being static, becomes a rising melody modulating, changing all the time to finally stabilize on a kind of Ab minor although the harmony is a little more complex.

The drummer switches to the crash cymbal and keeps playing in the same way as before, except for the snare which previous role is mixed with an ornament role as described in the analysis of Stengah.

![Figure 19: riff A](image)

*Au-delà de la fin (2012-2013) – composed by Charley Rose*
• Riff A:
  ◦ guitar and bass:
    ▪ separated in two parallel voices (harmonized bass)
  ◦ saxophone:
    ▪ reuse the previous guitar pattern and makes it a rising melody.
  ◦ drums:
    ▪ changes the cymbal
    ▪ double role of the snare:
      • stabilizes the beat
      • ornament (bar 24 and 28)

Riff Bintro arrives right after the end of the saxophone's melody. Suddenly, there is a metric modulation, it switches to an other time signature but with equivalent 8\textsuperscript{th} notes. The subdivision doesn't change, it remains the same. However the tempo increases suddenly as we switch to a 2/2 bars. If we decide to be very precise, in the 5/8 part, the tempo would be 90 pulsations per minute and the new tempo at bar 38 would be 112,5. This result can be found doing this calculation: if the 8\textsuperscript{th} note is the same in both signature, we can consider that there are 450 8\textsuperscript{th} note per minute (90x5) during the 5/8 For the 2/2 bar, we are looking for the half note's tempo. To obtain the 4\textsuperscript{th} note we divide 450 by 2 which gives 225, and to obtain the half note we finally have to divide 225 by two as well. So the final result is 112,5, for the number of half note per minute, which is also the tempo of the 2/2. For a matter of simplification, the tempo has been lowered to 112.

In Bintro, the guitar and the bass continue their polyphony while the saxophone makes the link with the new riff, holding a Ab in the high register. There is a sudden modulation, the Ab minor from the previous part becomes a sort of F minor. At the end of riff A, the sax seems to wish to resolve on the tonic, but the tonic becomes the minor third of the tonality, and this, together with the metric modulation, makes a good transition to move to a different place or story and recycle the
ideas of composition. The guitar and the bass still remind the 5/8 from before, playing a melody that we can conveniently group in cells of five notes. Of course, as the riff evolves on four bars, it has to be re-phased at the end. To do so, an addition of two eight notes is placed before the last two cells of five 8\textsuperscript{th} notes. As Meshuggah does sometimes, the addition is placed at another spot than the end of the riff. If we calculate: we have six cells of five 8\textsuperscript{th} notes and one addition of two 8\textsuperscript{th} notes. That makes sixty-two eight notes which is the number of 8\textsuperscript{th} notes contained in four 2/2 bars. For a greater intensity, the drummer hits a crash on every quarter note. He supports the guitar's riff with the double bass in counterpoint with the snare that emphasizes cells 2, 4, 5 and 6, but also beat three of a sort of big 4/2 bar.

\begin{center}
\begin{figure}
\includegraphics[width=\textwidth]{riff_Bintro.png}
\caption{riff Bintro}
\end{figure}
\end{center}

\begin{quote}
\textit{Au-delà de la fin} (2012-2013) – composed by Charley Rose
\end{quote}

- Riff Bintro:
  - observation:
    - metric modulation, from 5/8 to 2/2 with equivalent 8\textsuperscript{th} note
Riff Ba extends the introduction to provide added space to the saxophone's melody. The melody is built following the cells of five 8\textsuperscript{th} notes marked by the bass and the guitar. It is a calm quotation of the elements that will be developed further. Bass and guitar evolve over eight bar against sixteen for the saxophone. They reuse motives and elements from riff A, differentiating them according to the harmony of this passage. The re-phasing method used for this riff is the cutting method. The drummer continues to use the double bass like before, but also plays it together with the snare, which marks every five 8\textsuperscript{th} notes. The cymbals are hit every half note, contrary to riff B, which gives space to the saxophone melody.

- **Riff Ba:**
  - saxophone:
    - calm melody of the piece based on the 5/8 cells
  - guitar and bass:
    - polyphony
    - reuse of material coming from riff A
  - drums:
- cymbals played on every half note
- snare emphasizes the movement of the bass and the guitar
- double bass played together with the snare
Figure 21: riff Ba

Au-delà de la fin (2012-2013) – composed by Charley Rose
Riff Bb is a sort of bridge inserted between Ba and Ba'. It is still made of a five 8\textsuperscript{th} note cell, starting from the lowest register of the bass and the guitar, and rising chromatically and progressively enters in the mode of F minor from bar 53. The manner in which the cell is made can mislead the listener. Indeed, as a 8\textsuperscript{th} note silence as been inserted between the third and the fifth half notes, it may lead others to believe that the end of the cell is marked by this silence. The saxophone melody also changes radically and adds tension because of its higher density and its decreased range. If we have a look to the pitches used (F, G, Ab, B, C, Db, D, Eb, E), we'll notice that it is basically a F minor scale with an augmented 11 and b13, 13, b7 and major7. Thus, although there's a concrete harmonic movement during this bridge, we still have an underlying connection to that mode released, given off by the saxophone.

![Music notation image]

Figure 22: riff Bb

*Au-delà de la fin* (2012-2013) – composed by Charley Rose
The drums seem to return to the previous meter. Indeed, the cymbals don't emphasize the 2/2 beat like before but accentuate every five 8th notes, reminding the 5/8 time signature. At bars 62 and 63, a transitional phase has been created, in which the china cymbal is hit every four 8th notes and the crash cymbal every five 8th notes, so that a link is established between the 5/8 and the 2/2.

- Riff Bb:
  - observation:
    - metric modulation
  - saxophone:
    - denser melody with smaller range
    - evolves in parallel with the guitars
    - Pitches used: F, G, Ab, B, C, Db, D, Eb, E
  - guitar and bass:
    - cell in 5/8
    - disorienting silence in the cell
    - ascending chromatic scale that turns into a Fmb13 scale.
  - Drums:
    - cymbals:
      - supports the metric modulation
      - bars 62 and 63: link between the 5/8 and the 2/2
    - snare hit on the third quarter note of each bar
    - double bass follows the guitar riff and is also played together with the snare

Riff Ba' is an evolution of riff B intro, it is just slightly different in its second version. The guitar plays the nine of F minor (G), a color that comes back very often in this piece. The saxophone's melody is played over two cycles of the riff: 8 bars. It is a variation of riff Ba's melody. It is shorter, more dynamic and its range is increased, it is extended until c1. The major third of the F also appears for the first time. For the two first bars and the two last bars of this passage, the drummer hits the crash cymbal on each quarter note but switches to half notes for the other bars. It
mixes the way of using the cymbals coming from riff Ba and riff Bb, this enables to stimulate the beginning and the end of the riff, without tiring listeners too much through abuse of intensity. The snare is in counterpoint with the double bass and marks every movement of the guitar and the bass.

Figure 23: riff Ba'

*Au-delà de la fin* (2012-2013) – composed by Charley Rose

- Riff Ba'
  - saxophone:
    - variation of Ba melody, extends its range, reuse of previous material.
• appearance of the A (major third of F)
  ○ guitars and bass:
    ▪ play riff Bintro slightly modified, using cells of five 8\textsuperscript{th} notes becoming out of phase with an addition placed before the end of the riff.
  ○ Drums:
    ▪ double role of the cymbals:
      • marks quarter notes on bars 1, 2, 7, 8 of the passage
      • marks half notes on bars 3, 4, 5, 6 of the passage.
    ▪ Snare supports the movement of the guitar and the bass
    ▪ double bass in counterpoint with the snare, supporting the guitar riff

Riff Ca goes to Am by the same process used between riff A and riff Bintro, making the saxophone a link between riff Ba' and riff C. It is based on the development of a cell of three quarter notes that extends, gets smaller and concludes by opened arpeggios of Dm/F and C#m/G#.

The drums extend the meter feeling by hitting the crash and the china at the same time on each first beat. For the arpeggio, the drummer involves the toms and the snare which marks the guitar movements.

Riff Cb is a variation of riff Ca. It expands the final opened arpeggios moment and almost makes feel a metric modulation because of the snare marking each group of three 8\textsuperscript{th} notes played by the guitar and the bass; only one cell of five 8th note has been inserted after the second group of three.

Riff D was inspired by one of Meshuggah's riff in New Millennium Cyanide Christ (see figure 14) that we have analyzed previously. Riff Da and Db are the same, except for their arrangements which are a bit different. Riff Da works as a base for a saxophone improvisation while riff Db serves as a preparation for the next riff. They are both made of a pattern of nine 8th notes following this sequence: three 8\textsuperscript{th} notes – one 8\textsuperscript{th} note rest – four 8\textsuperscript{th} notes – one 8\textsuperscript{th} note rest. Bass and guitar are still separated, and a third voice played by the guitar appears over the others: a B which is the 9\textsuperscript{th} of A minor. At the end of the 8 bars, on which the riff evolves, a little cadence
appears: the bass plays a F and the guitar still plays a major seven, A and G#, that makes a F(#9)/A chord. This little cadence announces the end of the riff. The pattern made of nine 8\textsuperscript{th} notes repeats seven times which gives sixty-three 8\textsuperscript{th} notes. Thus, we need one more to complete the cycle of 8 bars. That's why a short addition of one 8\textsuperscript{th} note has been placed at the very end of the riff. The effect resulting from this addition is confusing. A break in the monotone flow released by the repetition of the pattern makes itself felt: all of a sudden, we have two cells of five in a row. The drummer plays in the most basic way to accompany such a riff: cymbals on each half note, snare on second beat of the 2/2 and finally, the bass drum following the guitar riff, in counterpoint with the snare.

During riff Db, the saxophone changes its role, it switches from soloist to "atmosphere" (cf Matthieu Metzger). The atmosphere is a cyclically repeated phrase and lasts two bars. It is repeated three times. The third time the usual rest bar separating it from an other phrase is removed so that the phrase doesn't become out of phase. The way in which the drummer plays is still the same. The end of the riff is marked by a sudden stop emphasized by the snare and followed by a break in which guitar and bass perform a great slide of a major seven to launch the following riff.
Figure 24: riff Db 2nd time

_Au-delà de la fin_ (2012-2013) – composed by Charley Rose

- **Riff D:**
  - saxophone:
    - Da: soloist role
    - Db: atmosphere re-phasing
  - guitar and bass:
    - nine 8th note cell becoming out of phase
    - polyphony
    - three voices (3rd and 9th played played with the guitar)
    - small cadence F(#9)/A to Am9
    - break and slide at the end of Db
  - drums:
- basic accompaniment:
  - cymbals hit on each half note
  - snare hit on each 3 beats of a big 4/2
  - double bass in counterpoint with the snare supporting bass and guitar
  - final break

Riff E brings a new wave of riffs in the song, we could say that it's the second part of the piece before the final recapitulation. First Ea, which is played over 8 bars, is made of two new elements, a distinct rhythmical material and a new pitch system. We also have two layers of phase shift. The first disjunction occurs at rhythm level. The thirteen 8th notes pattern (2+1+2+2+2+2+2) becomes very fast out of phase and it has to be re-phased. That's why it is cut at its end. The fifth and last pattern is constructed in this way: 2+1+2+2+1+2+1. The one 8th note movement before the two 8th note movement at the very end of the last pattern seemed to be more appropriate configuration to make the riff groove better. The second phase shift occurs between the twelve tone series and the pattern. A twelve tone method has been used to create three distinct series. The first one: F, F#, A, G, B, D, C, E, Bb, Ab, Eb, Db, the second one: E, F, D, Eb, Gb, A, B, Ab, C, G, Bb, Db and the third one: E, F, C, Ab, Gb, A, B, Bb, G, Eb, D. For the last series, Db has been removed, there's only eleven different pitches, it happens because it was preferable to re-phase completely the riff to really make it look like a riff. In this passage, the saxophone improvises according to precise rules indicated above its staff. The indication "try to use a few pitches and play with them using the rhythm" refers to a way of improvising that Fredrik Thordendal, the lead guitar, uses sometimes. One of the best example comes from the album Catch 33 in Entrapment (1'04""). The soloist uses F#, G, Ab and their octaves, bending them and building his improvisation upon the rhythm guitar riff. Note: Fredrik Thordendal has basically three ways of improvising: the fusion way (ex: Stengah from Nothing), the tapping way (ex: New Millenium Cyanide Christ from Chaosphere) and the noisy way. Entrapment's improvisation belongs to the third category.
Figure 25: riff Ea

Au-delà de la fin (2012-2013) – composed by Charley Rose

- Riff Ea
  - observation:
    - twelve tone method
    - two layers of phase shifting
  - saxophone:
    - improvises using a few pitches (noisy improvisation)
  - guitar and bass:
    - 13/8 pattern becoming out of phase, 5th pattern cut at the end
    - 3 series of twelve tones:
      - 2 complete
• 1 incomplete (Db removed)
  ○ drums:
    ▪ same way of accompanying as before

Riff Eb is almost the same as riff Ea but some changes were introduced. The first two pitches are reversed and after, some pitches are either augmented half-step up or diminished half-step down. Note: every tops of the series are systematically augmented. This provides a clearly audible evolution to the riff. The saxophone switches to the atmosphere mode as sometimes does Meshuggah's lead guitar after a solo. The saxophone line is displaced from the first quarter note to the second one. Each pitch ends one quarter note after each bar. It can be disorienting for the guitar pattern is complicated, the first beat of the cycle of eight bars barely makes itself felt and the displacement of the saxophone line doesn't help at all and the listener can get lost very fast. Now, the drummer hits the crash at the beginning of each bar and the ride bell, together with the bass drum in counterpoint with the snare, in order to support the guitar riff. The snare becomes an ornament of the pattern and accentuates the third and the seventh pitch of each guitar pattern.
Figure 26: riff Eb

\textit{Au-delà de la fin} (2012-2013) – composed by Charley Rose

- Riff Eb:
  - observation:
    - evolution of the previous riff
  - saxophone:
    - displaced atmosphere
  - guitar and bass:
    - $\frac{1}{2}$ step diminution or augmentation of some pitches of the previous riff
  - drums:
    - cymbals:
• crash at the beginning of each bar
• ride bell and bass drum support the guitar riff
• snare played as an ornament

Riff Ec is a little more different to riff Ea than riff Eb. Although it still uses the same rhythmic patterns as Eb and Ea, its sonority becomes very distinct because we stop using the twelve tone method and choose to create series of three groups of three pitches:

\[(Gb, F, E | Gb, F, E | Gb F Ab) \times 2.\]

Then comes the third one which is almost the same but that exchanges one pitch with the shortened fourth series:

\[(Gb, F, E | Gb, F, E | Gb, F, E) \text{ and the shortened fourth one } (Gb, F, Ab | F, E).\]

The third group of pitches of the third series has been switched with the first group of the fourth series. This passage is very difficult to understand because of its complexity and its two layers of phase shifting like Eb, the pattern becoming out of phase with the 2/2, and the pitches becoming out of phase with the pattern. A certain monotony and an effect of trance is released by the limited number of pitches combined to this constantly reversing pattern. The saxophone reduces the held note value by one half, which increases the tension. For the drums, the hi-hat is played every quarter note with the pedal, announcing the coming climax and the drummer switches from the ride bell to the ride, which provides a bigger sound than that of the ride bell.
• Riff Ec:
  - observations:
    - waiting time before the climax
    - tension released by the monotony and the trance effect provided by two layers of phase shifting
  - saxophone:
    - atmosphere
  - guitar and bass
    - stop using the twelve tone method
- 4 series of 3 groups of 3 pitches and the last series is cut in order to re-phase the riff
  - drums
  - same as riff Eb + hi-hat added on each quarter note
  - uses the ride instead of the ride bell

At bar 141, the whole band stops to let the guitar alone for two bars, enhancing the arrival of the next riff Fa. This is the climax of *Au-delà de la fin*. We are very far from the initial ideas of the piece. This riff is made of a very short pattern of three 8\textsuperscript{th} notes, that constantly undulates in a pendulum motion. The pattern generates a two against three that lands on a beat every three half notes but that becomes out of phase with the 2/2 bar. The pattern can be inserted in a 3/2 bar, which would make eight 3/2 bars for the riff, equal to twelve 2/2 bars. Moreover, it lands on a down-beat every three bars. The entire riff is played over twelve bars and therefore the pattern starts four times on the down-beat which enables the riff to flow eternally without the necessity to be cut, since the fifth time is when the riff starts again. As the snare is played regularly every three 8\textsuperscript{th} notes, starting on the second 8\textsuperscript{th} note of the riff, it gives the impression of a metric modulation. Indeed the snare creates a new beat upon the 4/4 beat given by the crash, hit on every quarter notes. The bass drum accentuates every beginning of the pattern. From its side, the china marks the cycles of four bars to keep feeling them. In terms of melody, the guitar and the bass play in unison at a distance of one octave, the guitar and bass line are made of two voices (a superior one and an inferior one) drawing two different melodies evolving in different ways, presenting all kind of contrapuntal motions possible: contrary motion, similar motion, oblique motion and parallel motion.
**Figure 28:** riff Fa (bass removed for more clarity)

*Au-delà de la fin* (2012-2013) – composed by Charley Rose

- **Riff F:**
  - observation:
    - climax
    - metric modulation feeling
  - guitar and bass:
    - short pattern with constant melodic motion (pendulum)
    - all kind of contrapuntal motions
  - drums
    - cymbals:
      - crash on every quarter note
      - china marking each cycle of four bars
- snare:
  - gives the impression of a metric modulation
  - placed every second notes of the pattern
- bass drum played on every first notes of the pattern

For Fb, the saxophone appears; no changes for the rest of the band have taken place, apart from the snare which has been placed on the first note of every pattern for the saxophone relies on it to execute its line, and consequently, the bass drum replaces the snare on the second note of each pattern. If we considerate that each pattern can be a chord, a long harmonic sequence can be extracted. The saxophone adds thirds, sevenths and tensions to these chords. In this passage, the role of the saxophone is to precises a bit the chords but also to support the impression of metric modulation released by the pattern, playing duplets (or doted quarter notes) all along the twelve bars of the riff. The saxophone line has a melodic motion in the form of tiles, with ascending phrases growing step by step to reach the very high register of the saxophone and finally fall progressively in a pendulum motion form.

![Figure 29: riff Fb (sax melody)](image)

*Au-delà de la fin* (2012-2013) – composed by Charley Rose
For Fc, the drum plays the same way as in Fa and the saxophone plays a different line. It's a long phrase requiring circular breathing and involving smaller phrases of nine 8\textsuperscript{th} notes involving themselves subgroups of three 8\textsuperscript{th} notes. The first one defines an ascending arpeggio, the second one a descending arpeggio and the third one an ascending a conjunct movement. This generates a flow of nine 8\textsuperscript{th} notes against the cycle of twelve 8\textsuperscript{th} notes that the pattern needs to land on a beat. Nonetheless, four patterns complete a cycle of three beats which means one bar of a 3/2 time signature. Thus we have three layers of phase shifting: 9/8 against 3/2 against 2/2 and three different down beat: one for the 9/8 emphasized by an accent in the saxophone line, one for the 3/2 felt when a pattern lands on a beat and lastly, one every four bars of 2/2 marked by the china. These conditions coupled with the extremely dense harmonic context makes F (a,b,c) the most nerve-racking of the composition.

![Figure 30: riff Fc (sax melody)](image)

*Au-delà de la fin* (2012-2013) – composed by Charley Rose

The listener will probably get lost during riff F(a,b,c), and riff G may seem to come out of nowhere, all of a sudden. This section allows the listener to rest, to get a breath of fresh air before the final recapitulation of Riff Ba'. But let's go directly to riff Gb because Ga is just an extension of Gb. This
section has been elaborated from riff Bintro, lowering each note of the riff to a low E for the guitar and the bass, and adding the major seven to the saxophone. As we can notice, the riff lasts twelve bars, three cycles of four bars. It is because we have doubled the amount of attacks and chosen to convert each 8th note rest (two in total) in a double whole rest to add a third cycle of four bars only for the rests. This low E pedal with its major seven stands in stark contrast with the rhythmical and harmonic complexity of riff F(a,b,c). The drummer plays the simplest possible, exploiting the rests, inserting a real blank where only the crash resonates (in the third bar of riff Gb), highlighting the snare when it’s hit without any cymbal at the same time.

Figure 31: riff Gb

*Au-delà de la fin* (2012-2013) – composed by Charley Rose

- Riff G (a,b):
○ observations:
  ▪ allows the listener to rest
  ▪ contrast with previous section

○ saxophone:
  ▪ distance of major seven with guitar and bass

○ guitar and bass:
  ▪ E pedal
  ▪ Extension of riff Bintro

○ drums:
  ▪ crash on each half note
  ▪ added chinas on riff Gb
  ▪ snare every third beat of a big 4/2 bar
  ▪ bass drum follows the guitar riff

Riff Gc and Gd (from bar 207 to bar 225) bring progressively the recapitulation. Indeed, more and more harmonic colors are inserted: firstly in Gc with the saxophone and finally in Gd, guitar and bass abandon their pedal role for half of the riff and play the line coming from riff Bintro. At Gb, the drum plays in the same way than in riff Bintro, except that the crash is hit on each half note instead of each quarter note. This is a matter of saving the energy in order to release it completely in the recapitulation.

After a long development, riff H is finally coming. For the guitar and the bass, it is the same than riff Ba'. From bar 233 to bar 240 and bar 249 to bar 253, the melody is a variation from that of Ba'. Some elements are changed based on the original melody. Big intervals are added and the saxophone is used a bit more in its higher register, reaching Db, the highest note in the piece. The drum is totally recomposed from bar 225 to bar 240. The idea is to use the melody as a basis to elaborate the drum part, more than the guitar and the bass. Although most of the time the bass drum follows the guitar part (in counterpoint with the snare), the other elements are more independent and don't stick to their common role, they have more freedom. It is more a math-rock approach, with
emphasis on the accents of the melody for the cymbals, more than on the beats. Then, from bar 241 until the ending, the drum part becomes the same than in riff Ba'.
Figure 32: riff H

_Au-delà de la fin_ (2012-2013) – composed by Charley Rose
• Riff H
  ○ observations:
    ▪ recapitulation
  ○ saxophone:
    ▪ variation of Ba'
    ▪ big intervals added and reaches the highest note of the piece (Db)
  ○ guitar and bass
    ▪ same as riff Ba'
  ○ drums
    ▪ from bar 225 to bar 240:
      • variation of Ba'
        ▪ cymbals, snare and toms are ornaments of the melody
        ▪ bass drum follow more or less the guitar part
      • from bar 241 to 256:
        ▪ The drum part is the same as from that of Ba'

For the ending, the pattern of riff F has been reused for a cadential movement resolving in F°9Maj7, the final chord. Indeed, vertically at bar 257, we have F, Ab, E than E, G, C. It is like having Fm(Maj7) and C/E which is a cadential movement (I – V6) of Fm. The final F°9Maj7 gives a perfect color for the end of this piece, dark and enigmatic, which reminds the name of the piece and the powerlessness of the rational gaze where it doesn't see, and therefore all the questions that arouse that blindness.
3.2 New Millennium Cyanide Christ 2:

3.2.1 Harmonizing a riff with three voices

Figure 33: riff Fb (sax melody)

*Au-delà de la fin* (2012-2013) – composed by Charley Rose
The riff opening this song is of great interest, its rhythmically propulsive content doesn't really deserve to be modified, but can be enriched in terms of harmony. The idea was to give the riff a reharmonization with two voices having the same melodic direction and one voice staying still. The saxophone and the guitar have a common cascading melodic motion and the bass just plays the riff normally and therefore becomes a sort of pedal re-harmonized by the two other voices. The cascading melodic motion reaches a first peak bar 3 (C for the saxophone) and culminates bar 7 (F for the saxophone) to finally descend until after the end of the riff, creating a flowing connection between the riff and its repetition.

3.2.2 Examples of a vocal line turned into a saxophone line

![Figure 34: original vocal line and re-arrangement for the saxophone](image)

*Figure 34: original vocal line and re-arrangement for the saxophone*

*New Millennium Cyanide Christ – Chaosphere* (1998) – Meshuggah – arranged by Charley Rose

New Millennium Cyanide Christ was arranged for the purpose of playing it with the instrumental quartet. Much has been done to adapt the vocals to the saxophone. As the saxophone cannot express what the voice expresses through the lyrics but also with the violent way in which it
is released, a way had to be found to compensate this lack of intensity. So the idea has been to base the saxophone line on the rhythm of the vocals and to add him a progressively growing pitch system, limiting it at the beginning, and then deploying it to make it evolve in figure 34 the vocals are from the original transcription, and the saxophone part is from the arrangement. As we can see, the saxophone is supported on the vocals' accents and bases its evolution on the B that is the note around which gravitate the others.

![Score](image)

**Figure 35:** riff Fb (sax melody)

*Au-delà de la fin (2012-2013) – composed by Charley Rose*

This second example shows a second way to arrange a vocal line. This time, the guitar substitutes for the vocals. The idea was to find an easily playable voicing in fourths for the guitar and to use it as a constant structure to re-harmonize the vocals. The saxophone is in the perfect register, between the bass and the guitar to make the connection and create an open chord. Here the saxophone player must use an extended technique, singing a fifth above each note he plays. From
its side, the bass plays the normal riff but sometimes also modulates with the guitar and the saxophone. The figure only presents one of the two riffs that have been arranged, but on the entire arrangement, it's possible to see both of the riffs and that the second one is also different and still evolves.

3.3 **Stengah 2**

3.3.1 **Arranging the vocals**

The aim of this arrangement was above all to find a way to showcase the options provided by the vocals. That's why three distinct forms of singing are present in that arrangement. First, bar 22 (see appendix 4), the lyrics are whispered and bass and drums play very softly while the guitar intervenes sporadically, punctuating the vocals with various effects.

Then suddenly, at bar 30, the sound level increases considerably for the screamed part. The whole band plays very loud during this passage, this is the moment where the energy level is the closest to that of Meshuggah. At this moment, which corresponds to riff C and concerns the phase shifting between the amount of pitches and the attacks (see 4.1.), guitar and bass are arranged distinctly. A contrary motion has been given to the voices, adding this passage a harmonic content with a homorhythmic texture instead of an exclusively melodic content.

Lastly, from bar 42 until bar 64, a long ascending line of seconds or sekundgang has been constructed to reach the second screamed part, bar 64. During that progressive terrace ascension, the voice becomes monotonous like that of a robot and combined with what happens in the background, the atmosphere becomes more and more strained and there's an overall rising up tension which reaches its climax bar 61, where the bass and the vocals play in their high register. This whole passage shows a wide range of arrangements with a homorythmic texture for the bass and the guitar. It finally ends up on the slide: leitmotiv of the piece which launches the violent and screamed following riff.
3.3.2 **Changing an atmosphere into a riff**

Bar 38, the riff has been changed, it is normally played in the low register but now it is played by the guitar in the high register, creating a Meshuggah-like *atmosphere*, supported by a bass drone, an A in octaves. Meanwhile, the saxophone is playing the vocal line but with an ascending melody marking successively different tensions: b9, 9, 11, b13 providing a very dark atmosphere before bar 42, where the vocal line of seconds starts.

![Figure 36: riff Fb (sax melody)](image)

*Au-delà de la fin* (2012-2013) – composed by Charley Rose
This standard written by Cole Porter and published in 1954 was ideal to arrange using Meshuggah's composition techniques because of its strong melody with long notes and its floating aspect that could be easy to support by more activity concerning the bass and the guitar, playing with the rhythm and the harmony. First the work that has been done was to re-harmonize the chords played in the Miles Davis' version finding a nice bass line with the most conjunct motion possible and a modern color merging tonal and modal harmony with constant structures (Bmaj7sus4 going to Cmaj7sus4) and slash chords like D#m/E#. Then the melody had to be played with a Meshuggah-like arrangement. On the A, the guitar and the bass don't accompany the saxophone for the melody like in the previous chorus, but they play a riff composed of a pattern of seven triplet quarter notes becoming out of phase, repeated seven time and slightly modified the last time. However, seven patterns of seven triplet quarter notes is too long to fit in eight bars, therefore it remains one triplet quarter note that belongs to the B part. In other words, the seven pattern goes over the last bar line of the A part. On the B, the idea was to double the length of the pattern so that it lasts for fourteen triplet quarter notes and gives the impression to slow down, extending space and time. The bass plays a E during four triplet quarter notes and then a F pedal. From its side, the guitar plays two dissociated parts, one first playing the E together with the bass but letting it ring for the second part, which creates an interval of major seven on which the guitarist plays a progressively reducing interval in descending oblique motion. The pattern begins on the second fifteen note and is repeated four times with a cut on the last one which boost the arrival of the second A. Finally, for the C, part of the melody has been used but a coda has also been created, reusing the fourteen triplet quarter notes value of the pattern of the bass, coming from the B, but totally modified and based on A and Bb pedals. This very last section is meant to be an atmospheric moment creating a trance effect-which is enhanced by the long and steady chords of the guitar and the final A major triads- and concluding with the pattern of the A part which has been reduced to five triplet quarter notes with
the bass and the guitar harmonized in fifths.

3.5 *Infinite plunge – Derek Johnson*

Derek Johnson, multi instrumentalist, composer and educator active in the world of contemporary concert music, has a close link to Meshuggah and works with them on various projects as a transcriber and other really interesting projects that will be soon released. His enthusiasm for the music of this band has pushed him to transcribe and analyze a huge amount of songs from them, and to compose using the principles extracted from the results of his analysis. Although the world of contemporary music and that of Meshuggah can seem far apart from each other, the link which has been forged between the two entities has proved its efficacy and this wonderful piece is partly the result of that crossover.

As we can see in figure 37 representing an extract of Derek Johnson's transcription of *Bleed* from the album *ObZen*, the pattern of this section of the song, which length is equal to twenty-seven 16\(^{th}\) notes, is decomposed in five cells (7+7+5+3+5) beginning by accents and two 32\(^{nd}\) notes. These cells are also grouped in two main cells (14+13) indicated as an alternative bar signature in the fifth staff.
Derek Johnson took exactly the same rhythm to compose the third movement of his piece, but not only that, from his background he brought his own ideas that he crossed with Meshuggah's concept to create a section with strong bases, deeply rooted in a music cultivating huge differences with the contemporary music and at least in appearance, far away from it. Here, Derek Johnson plays with the harmonic series of two roots: F# and G. He mixes one series into another in a continuously ascending movement, broken by the accents imposed by the cells of the pattern. If we hear the entire piece, we can see that he gradually moves aside the roots, first lowering F# half step down and further, elevating G half-step up and so on, increasing the interval between the harmonic series, generating distinct combinations of pitches, reaching step by step the high register of the piano in order to get a full resonance of the instrument.
4 CONCLUSION

One day Guillermo Klein, the Argentinian piano player and composer, said during a master class that whatever he composes, he is sure that it has ever been done before. Right after that he added that from that absolute certainty, he feels freed thus the process of composition becomes easier and without complex. Influences are something positive, maybe not inevitable, but they contribute to the birth of originality. Regardless of where influences can originate, they have always a positive impact on the one who knows how to recognize them, study them and how to exploit them at his own way, increasing the field of musical possibilities, opening the way to a new nascent ramifications. Furthermore, the further an influence will come from, the bigger openness it will bring to the mind of its receiver.

Far from our most common source of knowledge, a remote source can revive our inspiration with its rough novelty. In extreme cases, if someone gets to be shocked by something, the trauma will generate a strong reaction but positive because not passive. Meshuggah's music is for sure a source of reactions, for someone who listens to them for the first time, the violence released and the rough energy might frighten, but a long and intent listening may enable to collect some precious material. The phase shifting technique and the obliged re-phasing, the connection to the 4/4 time signature, the most known, the most heard and integrated in the body language by a western musician, and thus the strong connection to the dance, which is enhanced by the violence and turned into a head-banging, the way they use the drums, so perfectly merged with the rhythm guitar and the bass, the two souls of their music; all these elements constitute an incredible source of inspiration, material to renew our language and take it to new heights.

The quartet which was born from that very old dream of doing a significant work connected to that fascinating band, is an hybrid, a strange creature which tries to make itself feel appreciated from its two origins, and despite its pitiful aspect and its fragile constitution, its mixed blood is emblematic of a desired cultural exchange. We hope that its voice will be a bridge linking jazz and
metal, a path followed by the listener “armed” with his tolerance and his curiosity to visit his furthest neighbor and make peace with his differences.
5 **BIBLIOGRAPHY**


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6 **DISCOGRAPHY**

6.1 **Albums**

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6.3 **Compilation Album**
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6.4 **Live album**