

Rhythmic and Meter Explorations of a Complex Metal Piece: Meshuggah's Catch 33

Oriol Nieto

MPATC-GE 2205
Music And Audio Research Lab
New York University
oriol@nyu.edu

Abstract. In this work I aim to analyze various rhythmic structures and patterns of the conceptual album “Catch 33” by the Swedish metal band Meshuggah. The remarkably complex rhythms and meters of this band have been previously discussed in recent music theory literature, especially since the release of the track “I” in 2004, a twenty-one minutes piece of music with hypnotic and extreme rhythmic patterns that were previously unheard in the Western popular music. I present a series of analysis and discussions on the most rhythmically relevant parts of “Catch 33”, a conceptual forty-seven minutes album that is considered to be a single song.

Keywords: extreme music, metal music, meter, meshuggah, rhythmic patterns

1 Introduction

In the mid eighties a great number of emerging metal bands were categorized as *thrash metal*, a popular sub-genre characterized by its relatively complex guitar riffs, fast tempi, lack of prominent melodies, and aggressive vocals. This sub-genre that originated mostly in the United States, the United Kingdom and Germany, had a strong impact on the occidental world, especially with the international success of bands like Metallica, Anthrax or Accept.

It is within this context that in 1987 an experimental band was formed in Umeå, Sweden, with the aim of expanding and exploring the boundaries of *thrash metal*. This band, named Meshuggah —which is the yiddish word for “insane” or “crazy”— and presently comprised of the singer Jens Kidman, the lead guitarist Thordendal, the rhythm guitarist Mårten Hagström, and the drummer Tomas Haake, published a series of relevant extreme thrash metal releases from 1989 to 1994 that gave them some modest international recognition in the specialized press. However, since 1995, with the album “Destroy Erase Improve”, their music became substantially more complex, harsh, and easily differentiable from other extreme metal bands of that time, which gave them the high rate of success they have had until today. This evolution culminated in the release of a remarkable EP in 2004 called “I” that was composed of a single highly complex twenty-one minutes song that entitles the publication. This release not only surprised many of their fans, but also a number of scholars wrote scientific articles about it [6] [8]. Other musicians, inspired by this apparently new style of extreme music, formed new bands to examine and expand these rhythmic patterns and distinctive musical timbre. Nowadays this musical style that Meshuggah unknowingly originated is known as *djent*¹, an onomatopoeia for the particular low frequency, distorted palm-muted guitar employed by the musicians of this metal sub-genre.

Right after “I”, Meshuggah published in 2005 a full-length conceptual album named “Catch 33”. This release is composed of thirteen tracks that can be considered a single forty-seven minutes song (the band actually acknowledges this fact in multiple interviews), with recurrent themes and motives across the entire suite and without clear perceptual boundaries between tracks. The remarkable complexity within this piece is worth exploring, and in this work I aim to analyze the most significant rhythmic and temporal aspects of this album, which

¹ Some of its musicians do not like this subcategorization, but I will keep using it for the lack of a better name. And because I actually like it.

can hardly be found in any other music style. Interestingly, these temporal structures create compelling meter hierarchies that can contradictorily induce both relaxation and tension to the listener. A cognitive discussion about this effect is also presented in this work.

2 Organizing Catch 33

The album “Catch 33” is originally divided into thirteen tracks. It would be a hard task to manually identify their boundaries if they were put into a continuous, concatenated single wave form, since the entire album is meant to be listened to as a single unique song, and in most cases no perceptual boundaries are apparent between tracks. In Figure 1 the full album is plotted as a single musical piece, with the original tracks segmented.



Fig. 1: Waveform of the entire “Catch 33” album divided into its thirteen original tracks.

When explored more deeply, these thirteen tracks could be collapsed into three large sections that follow similar patterns. These sections contain two sub-sections: one long, complicated, and harsh metal part that I will name *extreme metal part* and another one more experimental, jazzistic, softer, and progressive that I will refer to as *experimental part*. In Figure 2 the proposed organization is plotted. The main three sections, which are roughly fifteen minutes long each, are marked with a navy blue square, while the sub-sections are marked with

smaller pink squares. The wave form is color coded, where the green parts are the extreme metal parts and the pink ones are the experimental ones. In yellow it can be seen a type of fusion-rock part, which is acoustically different from the rest of the album and falls right in the middle of it. In this work I will focus on the metal parts, since it is where the characteristic rhythmic patterns take place.

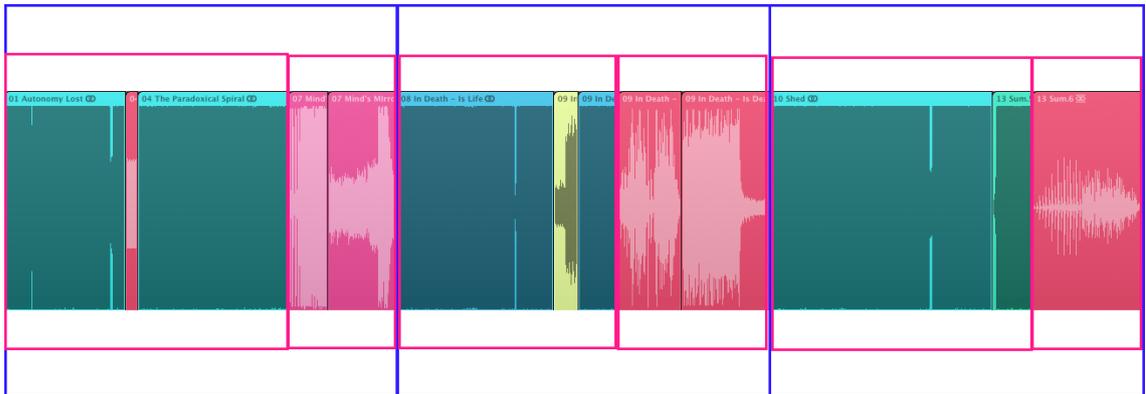


Fig. 2: The proposed organization of the album “Catch 33”, divided into three main sections (marked with navy blue squares), and two sub-sections per section (marked with pink squares). The colors over the waveform use the following code: green for extreme metal parts, pink for experimental parts, and yellow for fusion-rock parts.

In the following chapter I will explore the rhythm and meter of the three main extreme metal sections.

3 Rhythmic Explorations of Catch 33

Before analyzing each section separately, it is important to describe various global properties of the piece to understand some of the main features of Meshuggah’s music style.

3.1 Acoustic Features of Catch 33

The timbral features of the extreme metal parts (marked as green in Figure 2) are perceptually homogeneous, having loud drums, palm-muted guitars, and harsh-screamed voices. There are a few exceptions, like the guitar solo in track six, but when these exceptions take place, the entire music keeps following the same timbral ideas in the background.

These three main extreme metal parts are also “harmonically” similar, having a common key of F minor. Rarely melodies can be perceived, and the “harmony” relies in the F minor pentatonic tone for almost the entire album (with some key modulations to E minor in the last of the three extreme metal parts), hence the use of the quotes when using the term harmony because of its simplicity.

The most prominent rhythmic characteristic of Meshuggah that is also present in “Catch 33” is the idea of a constant beat underneath the complexity of the various superimposed meters. By exploring the different instruments separately in a live Meshuggah performance one can visually see these patterns: the guitars, and bass usually follow the kick drum and snare drum with highly complex rhythmic structures, while the cymbals (usually the hi-hat or ride, but sometimes also some chinese cymbals) keep a stable and constant meter throughout their pieces, therefore creating a hypnotic sensation rarely perceived with any other metal bands. The voice alternatively follows one of the two, and in some cases it also generates a third metric *layer*.

Rhythmically, all extreme metal parts have typical “djen” properties [5]: large-scale odd time signatures, mixed meter, and metric superimposition. Investigations on the ambiguity and role of rhythm in the western popular music such as [1] or [2] have been published in the past, mostly based on ideas of meter, hypermeter, and metric dissonance developed by Krebs [3], London [4] or Rothstein [7]. The framework that these methods define, and in which previous

analyses of other Meshuggah pieces have been based [6], are a good starting point for this work.

3.2 Section 1

This first section is composed of the first seven tracks of the album, with a total running time of approximately fifteen minutes. In the beginning of track 4 there is a brief experimental part (marked as pink in Figure 2) that I will not consider for this particular analysis. As mentioned, I will only focus on the first half of the sections, the extreme metal part, marked as green in Figure 2.

The piece starts with a motive that will be of high relevance throughout this section. The motive is transcribed in Figure 3. As can be seen, the cymbals follow a simple steady rhythm in 4/4 time at 120 bpm that will be constant for the entire section (except for the short experimental part). On the other hand, the snare drum and the kick drum generate a superimposed meter by performing a complex rhythm that repeats every four bars. This hypermeter is followed both by the guitars and bass guitar from the very start. One could subdivide this complex part into four parts of 9/8, 9/8, 9/8, and 5/8 times, where the first three bars of 9/8 would have a structure of 3, 4, and 2 beats (total of 9 beats), and the last bar of 5/8 would have a structure of 3 and 2 beats. This superimposed meter is depicted in Figure 3 using blue bars.

The entire motive is repeated for approximately five minutes, until the short experimental part begins. Small variations occur, especially in timbre when the lead guitar produces a dissonant solo at second 33 or when the voice starts at minute 1:08. However, the underneath motive remains constant.

After the short experimental part, a different motive appears, which also follows the same Meshuggah pattern of two different meters at the same time, and it lasts for the entire rest of the extreme metal part of section 1.

The image displays a musical score for Meshuggah's "Catch 33". At the top, it indicates a tempo of 120 bpm. The score is divided into two systems. The first system includes three staves: Cymbal, Snare Drum, and Bass Drum. The Cymbal part consists of a steady quarter-note pulse. The Snare Drum part features a complex pattern of eighth and sixteenth notes, including rests and accents. The Bass Drum part has a highly syncopated pattern with many rests. The second system includes three staves: Cym., Sn. Dr., and B. Dr. This system shows a 3-measure phrase (indicated by a '3' above the first measure) that repeats. The Cym. part has a steady quarter-note pulse. The Sn. Dr. part has a complex pattern of eighth and sixteenth notes. The B. Dr. part has a highly syncopated pattern with many rests. Vertical blue lines mark specific points in the music, and double bar lines with repeat dots are used to indicate the end of phrases.

Fig. 3: The main motive of the extreme metal part of section 1. The album starts with this motive (transcribed from the track named “Autonomy Lost”), which keeps repeating throughout the section. While a constant meter is kept using the cymbals, both snare drum and kick drum create a hypermeter that is followed by the guitars and bass guitar.

3.3 Section 2

The second main section of “Catch 33” is composed of two tracks: “In Death — Is Life” and “In Death — Is Death”. As their titles may imply, these tracks are musically strongly coordinated, reinforcing the correctness of the proposed organized structure of the three main sections. In the exact center of this section in terms of time (which coincides with the exact center of the entire album, marked as yellow in Figure 2) there is the only fusion-rock part of the entire album, which only lasts approximately one minute. As mentioned before, in this

analysis I will only focus on the extreme metal parts, so this special one-minute section will be left unexplored.

One of the main motives of section 2, which repeats across some parts of both tracks, is transcribed in Figure 4. From the figure we can see that the cymbals keep a steady 4/4 time while, again, the snare and kick drums generate a superimposed meter on top of it. This hypermeter could be seen as two bars of 7/8 and 9/8 times respectively. The boundary between these two superimposed bars is marked in Figure 4 with a blue vertical line.

The figure shows three staves of musical notation for a drum set. At the top, a tempo marking indicates a quarter note equals 120 bpm. The top staff is labeled 'Hi-Hat' and shows a steady 4/4 time signature with a sequence of quarter notes. The middle staff is labeled 'Snare Drum' and shows a pattern of quarter notes with accents, alternating between the two halves of the 4/4 bar. The bottom staff is labeled 'Bass Drum' and shows a pattern of quarter notes with accents, also alternating between the two halves of the 4/4 bar. A blue vertical line is drawn between the second and third measures of the first two bars, marking the boundary between the 7/8 and 9/8 hypermeter segments. The notation ends with a double bar line and repeat dots.

Fig. 4: One of the main motives of the extreme metal part of section 2. This motive occurs in “In Death - Is Life” and in “In Death - Is Death”. As the motive of section 1, a constant meter is kept using the cymbals, both snare drum and kick drum create a hypermeter (marked with blue vertical lines) that is followed by the guitars and bass guitar.

Even though the drums follow this two-bars pattern for the entire motive, the guitars and bass guitar create yet another layer by building a simple harmony (mostly composed of octaves and fifths) that lasts four bars, thus having a complete motive that actually lasts four bars instead of two.

3.4 Section 3

This final section is composed of the last four tracks of the album. As the two other sections, this one lasts approximately fifteen minutes. Even though all the extreme metal parts of “Catch 33” are remarkably loud and complex, this last final section includes some of the most epic and more complicated rhythms of the entire album. In this case, and as opposed of the other two sections, there is no “pause” in the middle of the extreme metal part. I hypothesize that this fact might lead to a more conclusive end when the coda takes place at the end of the extreme metal part (found in the last track called “Sum”). This coda, which repeats for almost two minutes, is one of the only moderately melodic moments of the entire album (even though the vocals are only two long screams that last approximately thirty seconds each).

The aforementioned coda keeps a similar Meshuggah pattern as can be seen in its transcription in Figure 5. In this case, the cymbals keep repeating a 4/4 time pattern for 3 bars, while the last bar would be a 2/4 time bar². On the other hand, the snare drum and the kick drum superimpose a different meter that could be seen as four bars of 7/8 times (each divided into 4 and 3 beats). This hypermeter can be inferred from the figure by looking at the vertical blue bars.

4 Cognitive Properties

The experience of listening to the full “Catch 33” song from the beginning to the end in just one sit is, subjectively, a highly rewarding and unique cognitive experience. Here I hypothesize that the fact of having a steady 4/4 time throughout almost the entire piece (sometimes 2/4) plus the high amount of repetition of

² This, of course, could be easily understood as six 2/4 bars, but I decided to keep the 4/4, 2/4 pattern to match the number of bars of the superimposed meter.

The image shows three staves of musical notation for Cymbal, Snare Drum, and Bass Drum. The tempo is marked as 120 bpm. The Cymbal staff is in 4/4 time, with a steady quarter-note pattern. The Snare Drum staff is in 4/4 time, with a pattern of eighth notes and rests. The Bass Drum staff is in 4/4 time, with a pattern of quarter notes and rests. Three blue vertical lines mark the beginning of a hypermeter, which is a 2/4 time signature. The notation ends with a double bar line and repeat dots.

Fig. 5: The rhythmic motive of the coda of “Catch 33” found in the track called “Sum”, in the extreme metal part of section 3. Following Meshuggah’s rhythmic characteristics, a constant meter is kept using the cymbals, both snare drum and kick drum create a hypermeter (marked with blue vertical lines) that is followed by the guitars and bass guitar.

most of its rhythmic patterns induce a hypnotic feeling rarely perceived in metal music.

The sensation of being hypnotized in a focused and aware way might come from the fact that these steady beats let you explore the complex rhythm underneath them without letting you lose the sense of orientation throughout the piece. If at any time you feel lost within the rhythm (which is actually a very interesting exercise as well), you can always come back by listening to the steady cymbals.

5 Conclusions

In this work I have analyzed the album “Catch 33” by Meshuggah, published in 2005. I have proposed a three-section structure, subdivided into extreme metal parts and experimental parts. I have analyzed some of the most relevant rhythmic motives of the extreme metal parts of the three sections, describing the superimposed meters that the snare drum and the kick drum might induce. Finally, I have hypothesized about the cognitive properties of the experience of

listening to the full *song*, expressing some subjective feelings that this album can evoke. In the future, it would be interesting to run an experiment with various subjects to see whether these hypnotic feelings are actually produced by the steady meter of the cymbals plus the strong repetition of the rhythmic patterns.

References

1. M. J. Butler. Turning the Beat Around: Reinterpretation, Metrical Dissonance, and Asymmetry in Electronic Dance Music. *Music Theory Online*, 7(6), 2001.
2. W. Everett. Confessions from Blueberry Hell, or, pitch can be a sticky substance. In *Expression in Pop-Rock Music: A Collection of Critical and Analytical Essays*, pages 269–345. 2000.
3. H. Krebs. *Fantasy Pieces: Metrical Dissonance in the Music of Robert Schumann*. Oxford University Press, USA, 1999.
4. J. London. *Hearing in Time: Psychological Aspects of Musical Meter*. Oxford University Press, USA, 2nd edition, 2012.
5. B. Orson. Beats that Commute: Algebraic and Kinesthetic Models for Math-Rock Grooves. *Gamut: Online Journal of the Music Theory Society of the Mid-Atlantic*, 3(1), 2012.
6. J. Pieslak. Re-casting Metal: Rhythm and Meter in the Music of Meshuggah. *Music Theory Spectrum*, 29(2):219–245, 2007.
7. W. N. Rothstein. *Phrase Rhythm in Tonal Music*. New York: Schirmer Books, 1989.
8. E. T. Smialek. *Rethinking Metal Aesthetics: Complexity, Authenticity, and Audience in Meshuggahs I and Catch Thirtythr33*. PhD thesis, McGill University, 2008.