Timbre:
Development of Understanding & Theoretical Application in Heavy Metal

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**Introduction**

“We have a duty towards music, namely, to invent it.”

~ Igor Stravinsky

In this essay, I am going to examine the attention to and exploitation of timbre; specifically, focus will be upon its unconventional, idiosyncratic or otherwise original use in heavy metal music. I will be examining the extreme and avant-garde ends of the spectrum, with focus on bands Gojira, Ehnahre, Gorguts and Negativa—though I shall begin by addressing the development and subsequent possible influence of jazz, singer/songwriter and modern classical music on the compositional styles and playing techniques of these bands. Issues of tone in regards to production values are secondary to the physical techniques, which shall relate largely to the sounds of the instrument outside of its conventional musicality. The primary intention of this essay is to examine, comprehend, acknowledge and promote the bands who explore timbre in fashions I believe to be noteworthy, but I am also conducting this essay to develop my own understanding of the topic, by which I intend to further my own compositional efforts.

Timbre refers to the quality of a sound, whether a musical note, tone or—critically—otherwise. Without the differences in timbre, an ensemble might sound like a single instrument; there would be no differentiation between the sound of a note played on a clarinet and the same played on an oboe. Of course, notes and tones can be measured by myriad musical components (such as pitch, volume, duration, interval etc.) but these are all conventional and objective measurements. Timbre has been branded by McAdams and Bergman (1979) as “the psychoacoustician’s multidimensional wastebasket for everything that cannot be labelled with pitch and loudness”, and herein lies the basis of idiosyncrasy and unconventionality I wish to explore. I shall be examining the use of possible sounds of the instrument outside of the notes and tones, within contexts of subjectivity and objectivity. Obviously I cannot explore every aspect of timbre across the selected genres, but I shall primarily investigate the playing techniques, compositional methods and levels of understanding which I believe hold relevant value or interest. Every technique and style I shall examine will serve two purposes: after initially explaining their theoretical basis, they shall then represent a cornerstone for my subsequent research into their appearances in heavy metal.

**Jazz & Singer/ Songwriter Music**

“It is possible to make sounds on a piano that are more orchestral than those of an orchestra.”

~ Olivier Messiaen

A hugely significant step away from conventional musicality, jazz bases its foundations on improvisation. After the advent of modal jazz in the 1950s, the basis on which improvisation could take place drastically broadened away from simple, pre-determined chord progressions. From here, the pioneering free jazz and avant-garde jazz musicians would continue to shatter the restrictions of musical backing components such as tone, rhythm, tempo and melody. These became largely ignored in lieu of greater focus on the musical voice of the
instrument and, simultaneously, on the voice of the musician (an aspect I shall look at contrastingly in the classical chapter). Musicians started to examine methods of broadening the dynamic and sonic ranges of their instruments. John Coltrane, for example, began to use techniques such as overblowing to create multiphonic, unconventional sounds. Obviously, with the dawn of instruments such as synthesizer keyboards, monotimbrality is perhaps a concept of the past, but this essay will not deal with such electronic progressions.

I became fascinated with the approach of dynamic broadening whilst attending a regular Sheffield improvisation night known as The Noise Upstairs – those present place their names in a hat and are drawn to perform in random groups. One particular ensemble remains with me: the pairing of bassoonist Mick Beck, drummer Jonny Hunter and an unknown man who brought only a newspaper. Beck clearly presented himself as an extension of his instrument, concentrating on variations of embouchure to create different sounds (literally representing the voice of the instrument), whilst Hunter used his sticks to hit almost every piece of his kit outside of the actual drum skins. The unknown man created rustling, tearing and slapping sounds (often together, in an arguably multiphonic manner), whilst simultaneously broadening the sounds of the “instrument” by blowing on it, or rolling it into a conical shape to magnify surrounding ambient sounds as they passed through it. Such dynamic exploration is inseparable from a timbral understanding of an instrument. Similarly, Sheffield-born guitarist Derek Bailey – who famously denounced the “jazz” label in favour of non-idiomatic music – became a leading figure in the free improvisation movement by exploring deliberate inconsistency in his arrangement of unconventional timbral playing styles, displaying what has been termed as “radical discontinuity” to composition. Whilst he successfully extended the vocabulary of the instrument and thus the voice of the performer, his formless timbral attacks perhaps inadvertently laid the foundations for a more structured form of sonic exploration.

The incorporation and expansion of these techniques into singer/ songwriter scenarios can be addressed in the work of Michael Hedges, who came to prominence in the early 80s with his acoustic guitar albums. These included unconventional playing techniques such as slap harmonics, unusual strumming and percussive slapping on the body of the instrument – techniques freely applied by Bailey, but cohesively structured by Hedges. Although classically trained, such techniques mirror the non-idiomatic sound experimentation of Bailey, albeit in a warped and resultant conventional realisation. Subsequently we can address the works of Jon Gomm, who plays soulful, blues-inspired acoustic guitar but streamlines the sounds experimented with by Hedges and Bailey into his own clearly-defined (2012) “drum sounds, bass lines and guitar melodies”. Although classically trained, he currently studies jazz, and the techniques he uses and has created reflect a mix of both influences. Hitting areas the body of the guitar to form sounds representative of snare drums, bass drums and bongos reflects a jazz approach to the instrument, whereas his timbral knowledge and development of various tunings to create bass tones as well as guitar tones reflects something of a classical influence. Combined, his output aptly portrays an approach to composition and performance I will be searching for in heavy metal: the synthesis of sounds outside of the conventional timbre of an instrument via awareness of the timbre of other instruments.
Modern Classical Music

“It’s true that I’m trying to search for new sounds, but this is not my aesthetic aim or credo as an artist. With conventional or unconventional sounds, the question is how to create a new, authentic musical situation. The problem isn’t to search for new sounds, but for a new way of listening, of perception.”

~ Helmut Lachenmann

In direct contrast to jazz, the classical approach to performance involves the musician not portraying his or her own musical voice, but that of the composer. Timbre obviously takes a high precedent in any orchestral composition, and a composer’s idiomatic understanding of the dynamic range of each instrument is paramount. Crucially, some composers exploit such traits; the opening line of Stravinsky’s The Rite of Spring, for example, features a bassoon melody played at the highest possible register of the instrument, testing the performance quality of the performer whilst, Kelly (2000) suggests, simultaneously “render[ing] the instrument almost unidentifiable”. I believe the reasoning for this was to draw closer attention to the musical quotation whilst exploring the sonic qualities of the instrument – an activity which requires a basic understanding of timbre. This approach has been greatly explored by several modern classical composers – primarily those who dwell in the realms of spectralism.

Perhaps misleadingly titled, spectral music is far removed from the ethereal or otherworldly connotations its name may inspire; instead, the practice is defined by its compositional decisions which have been made or influenced by in-depth analysis of sound spectra, whether by mathematical or sonographic analysis. For Gérard Grisey, it is “very important to have a[n]... ecological attitude towards different sounds, to just accept them as they are and try to find the right place or function for them in the context of the piece.”

The basic intention behind the use of the mathematical algorithms involved in composing spectral music is to transform one of these functions into another, which can represent the subsequent transformation of timbre. This is often primarily through physical manipulation of sound, but is frequently recreated by extremely well-informed live performance. In laymen’s terms, spectral composers use these mathematical programs and calculations to construct music whose timbral arrangements are directly determined by the results. As the human element of sonic understanding is removed, the music is structured in a fashion that may not be immediately apparent to a composer, with the basic timbral functions of the instruments becoming subject to transformation. In certain spectral traditions, focus can also be placed on how sound behaves specifically in a live environment. Although basic spectral composition is centred on harmonic (and in-harmonic) musical components, it can also be expanded to non-harmonic components such as rhythm and tempo; this draws attention to the duration and phrasing of notes and sounds and, significantly, the spacing between them.

In direct relation to these dynamics, there is a line of performance (relating generally to string and wind instruments) I would like to mention, known as the Lindeman-Sobel approach. This approach emphasizes the awareness of the resistances which naturally occur in such instruments. Its purpose is to train musicians to account for various lengths and materials of strings and tubes, in order to understand how such a measure of
resistance (or lack of resistance) can vary depending on the performer’s physical position on the instrument. Such an awareness of the instrument will greatly broaden one’s understanding of its timbre, which is as useful in classical recitation as it is in jazz-based improvisation. German composer Helmut Lachenmann has created his own brand of music which he has called “musique concrète instrumentale” – by this title he portrays a format of music entirely created by bespoke sound generation, usually produced by unconventional playing techniques invented by the composer. Such techniques are often extremely difficult to perform, but a successful rendition would aptly demonstrate an awareness of the instrumentation corresponding with the demand required by the Lindeman-Sobel approach. In Lachenmann’s own words, “the sound events are chosen and organised so that the manner in which they are generated is at least as important as the resultant acoustic qualities themselves.” Coupled with his intense concentration and application of lengthy but precise occurrences of “silence”, he highlights how qualities such as “timbre and volume… do not produce sounds for their own sake, but describe or denote the concrete situation: listening, you hear the conditions under which a sound or noise-action is carried out, [and] you hear what materials and energies are involved and what resistance is encountered”, again corresponding with the Lindeman-Sobel approach.

**Heavy Metal**

“It’s about breaking the old context by whatever means, to break the sounds, looking into their anatomy. Doing this is an incredible experience... full of ambivalence. You can still see that you knew that sound before, but now it has changed. This is the only reason for me to make music – to hear, in a new way, what you knew before.”

~ Helmut Lachenmann

Armed with the basic knowledge of the theories and performance techniques outlined above, I can now commence my research into their appearances in heavy metal. It should be noted that a key aspect of heavy metal is the occurrence of electronic distortion, but due to the vast array of subsequent effects which can be applied, this should not redirect the focus of the essay. I shall begin with the French progressive/ death metal band Gojira who are, within the circles of heavy metal, regarded as highly mainstream. As you will notice from the bands I shall explore, experimental compositional traits such as timbral exploration are not commonly tied with their level of popularity, but as I examine the opening tracks from Gojira’s three most recent albums, it will become clear that their application of various performance techniques is actually quite sophisticated:

- **From Mars To Sirius** (2005) commences with “Ocean Planet”, a track centred primarily on amplified pinch harmonics and palm-muted riffs.
- **The Way of All Flesh** (2008) commences with “Oroborus”, which features extended two-hand tapping phrases, with additional left-hand finger-slides.
- **L’enfant Sauvage** (2012) commences with “Explosia”, which starts with a guitar riff focused on amplified toneless pick slides, before evolving into a verse riff which incorporates tremolo-picked artificial harmonics.
The emphasis on these playing techniques is augmented by the band’s electronic rig, but the way in which these unconventional sounds are integrated seamlessly into conventional death metal riffs reflects the streamlining of experimental sounds into a definable structure employed by Hedges and Gomm. The extensive use of pick slides throughout the discography of Gojira shows a willingness to abandon tone in favour of idiomatically uncommon sounds, which mirrors the aforementioned pioneering techniques of free jazz. Their understanding of this compositional style is enforced by a guest appearance by Fredrik Thordendal – guitarist of Swedish progressive metal band Meshuggah – who advocates a free, fusion-style solo technique. “Oroborus” also features syncopated “stop-start” riffs, interspersed with silence, which can be easily compared to Lachenmann’s approach of allowing sounds to be heard in terms of their concrete situation. It is clear that Gojira possess more than a basic understanding of their instruments; famed for their unique atmosphere (second perhaps to their uncommonly ecological-minded stance and lyrical themes for a heavy metal band), I believe that their application of timbral exploration provides one of the cornerstones for their distinctive sound and subsequent popularity, and should serve as a message to aspirational, forward-thinking heavy metal musicians.

Canadian avant-garde death metal band Gorguts refute the levels of popularity attained by Gojira in favour of a more concentrated, dedicated exploration to sound: the abandonment of tone in favour of non-idiomatic sounds is much more frequent, song structures and rhythms are highly irregular, and the tonal notes and chords used are generally extremely dissonant. By examining three of their songs, this becomes clear:

- **Obscura** (1998) closes with “Sweet Silence”, which ends with the repetition of a toneless rumble – I believe this is produced by striking the strings of the instrument, which are detuned beyond tonal recognition. However, each rumble begins to descend in tone, attaching an abstract form of melody. Additionally, each sound is interspersed with large gaps of silence, whose duration doubles with each consecutive occurrence.
- **From Wisdom To Hate** (2001) opens with “Inverted”, which commences with a riff that combines dissonant chords with pick slides, pick tapping and conventional picking.
- “Earthly Love”, the second track on **Obscura** (1998), features a mid-section defined by its highly discordant, squealing and scraping rhythm guitar, which is heavily rendered through a wah-pedal. Accompanying this, frontman Luc Lemay performs atonal patterns on a viola to provide the “melody” of the phrase.

With the end of “Sweet Silence”, Gorguts display clear attention to the effects of silence, which mirrors both the spectral approach of various modern classical composers, and the concrete situational approach of Lachenmann. The compounded doubling of the lengths of silence shift attention from the repeating rumbles to the interspersed lack of sound, which both prepares the listener for the conclusion of the album, but also allows for an on-going sense of anticipation. “Inverted” displays a similar, but much less conventional approach to Gojira’s streamlining of sounds with structure, whilst retaining echoes of the work of Hedges and Gomm for its clear application of rhythm, tempo and other basic musical components. Finally, the unique
combination of discordance, playing style and a wah-pedal with the atonal viola melody allows “Earthly Love” creates a distinct atmosphere, made more potent for the timbral listener by its extremely unique arrangement. The precision of the sonic, tonal, structural and rhythmic properties of Gorguts amount to a highly classical-influenced, extremely technical compositional approach, with little room for jazz-based improvisation. This is enforced by the knowledge that Luc Lemay composes his own modern classical music. Predictably, such a complex approach to arrangement has not led to popularity anywhere near as widespread as Gojira; indeed, in York’s (2010) review of their influential album Obscura, he describes it as “one of the most challenging, difficult albums ever released within the metal genre” but also notes that it is “a work of great depth and vision”.

Moving further into avant-garde territory, we arrive at the music of the modern classical-inspired American avant-garde/ death metal/ doom metal/ band Ehnahre. As their albums are frequently singular compositions split into a number of tracks, I shall briefly and holistically describe them in release order.

- **The Man Closing Up** (2008) features near-total abandonment of traditional melody, rhythm, structure, tone, and many other musical components – largely accomplished with the application of the twelve-tone technique of composition.
- **Taming The Cannibals** (2010) removes one guitarist from the line-up, allowing for a more barren, sparse approach to the composition. Greater dynamic range is added to the drumming style, whilst the twelve-tone technique now allows for less repetition.
- **Old Earth** (2012) takes these steps even further and shifts the focus towards the sections portraying a distinct lack of instrumentation.

It is clear that Ehnahre have an extremely forward-thinking approach to composition. Primarily, they portray direct influence from Schoenberg, whose pioneering twelve-tone technique historically presents him as the ambassador of virtually all atonal music. His technique employs a calculated weighting of appearance and duration of each note in a regular tone row, in order to ensure that the music can be attached to no particular key, and no particular notes are emphasised. The result is hugely disorienting to those unfamiliar with atonal music, and its application into heavy metal music was an approach I was working on when I discovered Ehnahre, which subsequently allowed for a strong personal bond to their music. The performance of twelve-tone music requires heightened understanding of instrumentation (to a level perhaps comparable to the Lindeman-Sobel approach) and the ability to precisely recite the correct attack, sustain, release and decay of each single note – aspects a timbral listener would focus on within a sonic environment.

Ehnahre’s holistic use of dissonance and arrhythmic song and phrase structures mirrors the approach of Gorguts, but takes it a step further from conventional metal and places them closer to the modern classical end of the spectrum. The continuously expanding spatialized quality of their compositions is extremely apparent, and the eventual replacement of one distorted guitar with a cello has allowed for further timbral variation – the new instrument is gently scraped as if it were part of a Lachenmann performance. Their instrumental awareness is progressing at a rate which matches their intensifying subtlety; perhaps an effect
which can again be contextualised within the Lindeman-Sobel approach. In essence, their music portrays modern classical compositions played on traditional heavy metal instrumentation, whilst their level of renown is predictably hindered by the “inaccessibility” of their music.

Concluding my study of timbral exploration in heavy metal, I shall examine the sole release (a three-track EP) of Canadian avant-garde death metal band Negativa, simply entitled Negativa Demo (2006). A side-project of Gorguts guitarist Steeve Hurdle, this twenty-minute release displays everything I have examined in this essay.

- “Chaos in Motion” commences the EP with a toneless, muted pick-tapping riff from one of the two guitarists, which continues arrhythmically until a drumbeat adds clear structural accentuation to the noise. As this beat commences, pick slides are added to form two distinct sounds – this represents the entirety of the riff played by one guitarist, whilst the other plays some underlying discords. It ends with a formless, sparse exploration of extremely slow pick-scraping up and down a singular string, whilst cymbals are hit sporadically in the background.

- “Thedium Vitæ” begins with hugely dissonant chords, played at a slow tempo but with enough holistic precision to form a coherent structure. The song evolves into a minimalist repetition of three bass notes (accompanied by sole drum hits), whilst the most subtle nuances of the Hurdle’s extremely distorted guitar are freely explored in a largely toneless, completely formless fashion. The backing instrumentation ceases, but the harsh timbral exploration develops.

- “Rebellion” concludes the EP with more conventional guitar and drum-work, similar to the precise but discordant work of Gorguts. This evolves into a riff which decomposes in terms of both tempo and – with the use of a whammy bar – tone.

The opening riff to “Chaos in Motion” builds on the footsteps of Hedges, Gomm, Gojira and Gorguts: Hedges and Gomm create tonal compositions with unconventional playing techniques, Gojira add toneless timbral sounds to conventional riffs, whilst Gorguts add them to unconventional riffs – but Negativa have created a riff wherein one guitarist plays a phrase consisting entirely of two distinct, unconventional sounds (muted pick tapping and pick sliding) with no conventional harmonic component, as the other plays syncopated discords underneath. This is something I would like to greatly explore in my own compositions. The sparse, tense and seemingly unnatural ending to the track represents a combination of the concrete situational structures of Lachenmann and the improvised, unstructured and explorative nature of free jazz; the strings are scraped arrhythmically, and the cymbals are hit sporadically.

After its dissonant opening, “Thedium Vitæ” develops this formless, toneless improvisation – but this time there is a repetitive, albeit very slow bass line with accompanying drums underpinning the freeform playing. This reflects the early movements of jazz, namely the bebop/hard-bop, pre-modal era wherein the rhythm section played to a pre-defined composition whilst the accompanying lead instrumentation was improvised. However, once the backing instrumentation ends, the harshness of the previously subtle timbral exploration increases dramatically, mirroring the evolution of jazz from bebop/hard-bop to its much freer
nature. Hurdle’s high level of distortion and volume places heavy emphasis on the sounds of the instrument, and the pre-defined voice of the performer is truly heard. The intensely visceral colour of the scratching and scraping can be directly compared to Lachenmann’s string quartet pieces, set in a barren, concrete situation which allows for the sound to be heard. Before further free, toneless improvisation concludes the EP, the decomposing riff of “Rebellion” uses the whammy bar of the guitar to greatly reduce tone, in a manner which could be said to “render the instrument almost unidentifiable”, similar (but in a contrasting register) to the opening bassoon line of The Rite of Spring. It could therefore be imagined that the performance quality of the musician is perhaps being tested, whilst attention is consciously being drawn to the musical quotation.

**Conclusion**

“I don’t know if there are still new sounds, but what we need are new contexts.”

~ Helmut Lachenmann

Having examined the attention to and exploitation of timbre, I have highlighted some extremely unconventional, idiosyncratic and original compositional styles and playing techniques in heavy metal music. Firstly, it is clear that an awareness of the instrument is as paramount as the ability of the performer and – crucially – the setting of the performance, in which every musical attack, sustain, release and decay can be precisely defined. I have portrayed how it is possible to make sounds on an instrument outside of its intended harmonic components; these can be used to replicate other sounds, to draw attention to technique or playing, to increase the dynamics of the music, or to provide a basis for something completely new. Such sounds can be invented or reproduced, before they are placed in accordance with the insight, the awareness or even the mathematical calculation of the composer. With context, the perception of any existing or non-existing sound can become anything the composer desires or a performer feels.

When compared to jazz, singer/ songwriter and modern classical music, it is clear that there is an overlap of intentions, but the formats in which such musical voices can be portrayed is vastly different. Whilst jazz music portrays the voice of the instrument as spoken through the performer, and classical performers vocalise the intentions of the composer – heavy metal allows for both, which allows for an extremely bespoke atmosphere to be created by the composer-performers. I believe I have successfully examined, understood and acknowledge the forward-thinking attitudes and abilities of four of the most forward-thinking groups of musicians within this genre, and this essay has also proved extremely useful on a personal level, regarding my own compositional efforts. I sincerely hope that it has provoked an interest in or even compositional inspiration surrounding this field of music.
Bibliography


