Production Perspectives of Heavy Metal Record Producers

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Abstract

The study of the recorded artefact from a musicological perspective continues to unfold through contemporary research. Whilst an understanding of the scientific elements of recorded sound is well documented the exploration of the production and the artistic nature of this endeavour is still developing. This article explores phenomenological aspects of producing Heavy Metal music from the perspective of seven renowned producers working within the genre. Through a series of interviews and subsequent in-depth analysis particular sonic qualities are identified as key within the production of this work: impact; energy; precision; and extremity. A conceptual framework is then put forward for understanding the production methodology of recorded Heavy Metal Music, and, how developing technology has influenced the production of the genre.

Keywords: recording; Heavy Metal; production; producers; phenomenology

Introduction

The affordances of digital technology have significantly changed the opportunities for practicing musicians to record music. Technology enables even amateur music makers the opportunity to record music with relative ease. The democratisation of technology has meant that mobile devices can become pocket sized recording studios (Leyshon, 2009), whilst affordable solutions and emulations of prohibitively expensive computing and recording technology are readily available via the Internet. The technology associated with certain aspects of music making is now more widespread and enables a new sense of creative musical freedom; music producers command a limitless array of technological choices. Despite the benefits of the ever-increasing rate of technological development, the recording industry is changing dramatically, and with it, the production perspectives of record producers. Through the experiences of seven renowned record producers, this article will provide unique

1

insights into the production contexts of recorded Heavy Metal (HM) music, the potential impact technology has when producing HM music, and aim to signpost routes that could be explored in other creative production contexts. This article refers to HM music, rather than Metal, or Contemporary Metal Music (Mynett, 2013), as the participants of the study do not produce any one particular subgenre of HM music, and the timeline represented by the participants (1969 – 2018), and the artists they have worked with, presents a broad insight of the genre's production.

For HM record producers, technology permeates the recording process in unique ways, both influencing the recording itself, and the performance styles that HM artists have developed since the late 1960s. Shuker (2005) attempts to define the sonic qualities of HM thus:

> The musical parameters of [HM] as a genre cannot be comfortably reduced to formulaic terms. It is usually louder, harder, and faster-paced than conventional rock music, and remains predominantly guitar-orientated. (p.132-133)

For Shuker, HM does not deal in subtleties. The relationship between technology and the sonic signatures of HM music, far from subtle, can be heard in early examples of Heavy Rock and Metal recordings: Tony Iommi's heavily distorted power chord guitar riffs from 'Black Sabbath' (Black Sabbath, 1970); Robert Plant's double tracked war cry vocals in 'Immigrant Song' (Led Zeppelin, 1970); and, the ferocity of the overdubbed snare drum of 'Helter Skelter' (The Beatles, 1968). Technology enhanced the performances of these artists in the recording studio, offering new sonic possibilities and dramatically altering popular instrumental performance. Proto-metal artists during the late 1960s and early 1970s would have been recorded with early 4, or 8, track tape recorders, with technology influencing the sonic characteristics of individual instruments and performance styles. This is true of Tony Iommi's overdriven Laney LAB100L amplifying his signature power chord playing style; a style that was informed by an industrial accident making more traditional approaches to guitar

2

performance difficult. Five decades later and HM music retains some of these traditional sonic traits; heavily distorted guitars, extended vocal techniques, and exaggerated percussive elements. However, they are presented in very different ways to the recordings above. Whilst the technology that defined the sound of the genre remains (overdriven amplifiers as a key example), more innovative processing and architectural approaches to recording, and mixing, the instrumental elements of the genre takes place. It is this observed movement away from traditional, performance focused, recording, towards a more fragmented, technologically architectural approach that presents phenomenological problems for record producers and researchers alike; how to balance tradition and innovation in the production of HM music. The difficulties and intricacies of producing HM music are explored and re-evaluated in the context of the participant interviews.

Heavy Metal production

One of the problems of working within the emerging field of Metal Studies (Spracklen et al. 2011) is that the existing literature focuses on the historical and socio-cultural themes that the genre exhibits. Key authors explore gender, politics, sociology, and youth culture (Arnett, 1995; Jones, 2011; Kahn-Harris, 2006; Walser, 1993; and Weinstein, 1991) whilst production is often discussed in passing. When production is discussed we are often met with generalisations of overdriven guitars and extreme volume:

> Heavy metal music is distinguishable from other forms of rock music by its reliance on heavily distorted electric-guitar-based-minor key song structures and the absence of the use of keyboards. HM is extremely loud, relatively simplistic, and general associated with the alleged delinquent, or worse, behaviour of its fans. (Friesen and Epstein, 1994, p.3)

Themes in the literature exploring HM production more acutely include: guitar timbre (Berger and Fales, 2005); artistic convention (Friesen and Epstein, 1994); HM production techniques (Mynett, 2012, 2013; Mynett, Wakefield and Till, 2010, 2011);

socially influenced production (Reyes, 2008); empirical analysis of HM recordings (Turner, 2009); and, the changing timbre of recorded HM music (Williams, 2015).

Frith (1998) uses HM's technicality to discuss the role of the critic and the mediation between musician and audience (p.64). The relationship that Dockwray and Moore (2010) suggest between cognitive choice and informed musical decision causes tension for record producers. To fully understand these tensions, the development of technology must be explored alongside record producers' subjective experience of using technology; further linking recorded HM music with the production processes that seemingly define its sonic character. Zagorski-Thomas (2010b) writes:

> Rock artists whose audience experienced them in large venues developed production techniques that were mimetic of that form of large-scale space. (p.6).

It is suggested that specific genres of music encompass very different production aesthetics according to their social consumption and playback devices. For recorded Rock, and more importantly, HM music, listeners are likely to relate more closely to the live experience and the sound of an artist in a large venue, with size becoming a very important consideration. The potential for HM production to be an exaggeration of this theory is also possible, with contemporary examples of recorded HM purposely being presented as unrealistic.

Reyes (2008) presents the unique technological discourses of different genres of heavy music (Black Metal, Punk, HM) and considers production from a subcultural context, signifying the potential scope for genre specific studies of record production in a technologized 'mass-mediated culture' (p.iv). Reyes addresses the presence subculture plays when determining how recording technology is used, specifically the act of making a deliberate aesthetical decision. Reyes asks us to consider whether technological development signifies a change in agency and locus of control, asking if 'modern, digital production [is] a trick in itself?' (p.143). The creative agency of the

4

record producer is potentially subservient to the affordances of digital recording technology, forcing particular types of production decisions and potentially informing genre specific production aesthetics more broadly. Critical to Reyes' thesis, and to the genre's audience, is HM's intention to embody power. The intention of power is something that becomes increasingly evident with HM artists, with volume often becoming the prime method of achieving power. This volume, and relating intensity, links to the metaphoric discourse concerning power (Walser, 1993); and, the constructs of size and power as 'fundamental human metaphor[s]' (Zagorski-Thomas, 2010b, p.256) which are apparent in contemporary HM productions.

Turner's (2009, n.p) paper explores the nature of recorded HM music as 'extreme music', and how more extreme mixing techniques can be applied. To do so, Turner focuses on the work of prolific HM producer Andy Sneap (known for his work with 36 Crazyfists; Accept; Arch Enemy; Cradle of Filth; Judas Priest; Killswitch Engage; Machine Head; Megadeth; Trivium; and many more). Turner approaches Sneap's work by examining the multi-track Pro Tools sessions of extreme metal band Cradle of Filth, suggested that HM affords the extreme application of certain production techniques:

> The evidence from the multitrack points towards the notion that extreme music can tolerate extreme mixing methods. Sneap's liberal approach to sample augmentation also adds credence to this argument. However, the approach of moderation in equalisation to the guitars and bass highlights that Sneap does not 'EQ for EQ's sake'. The application of extreme EQ in this instance is not an arbitrary process, but one based in a clear production methodology and an insightful musical rationale. (n.p, 2009)

It is implied that HM is a tangible object that can 'tolerate' extremity. Not only does this reinforce HM's namesake weight, it suggests that perhaps other genres of music could not tolerate the same technical processing. Turner isolates HM music by drawing the same conclusion, albeit about its sonic aesthetic, that Walser (1993) and Sinclair (2011) draw about its confrontational nature. As well as providing a clear rationale for

5

the workflow and mix techniques applied by HM mix engineers, Turner also suggests that:

> It is hoped, ultimately, that these processes may yield a production methodology for extreme Metal, in addition to progressing the field of record production as a bone fide scholarly discipline. (n.p, 2009)

Turner's thoughts can be supplemented by Izhaki (2013) who states:

> We must not forget that, as with many other mixing tools, sometimes we are more interested in hearing the edge – subtlety and transparency is not always what we are after. For example, in genres such as death metal, equalizers are often used in what is considered a radical way, with very generous boosts. The equalizer's artefacts are used to produce harshness, which works well in the context of the specific music. (p. 231)

It is clear from Turner and Ihzaki's work that we should consider HM production as a unique phenomenon. Ihzaki's 'radical' presentation, via technology, is seemingly inherent in recorded HM, linking closely with the work of Walser (1993) and Sinclair (2011).

Reoccurring, extreme, radical, or unrealistic, aspects of production are clearly supported by their extended use within HM: replacement and sample reinforcement of drums; hyperrealism of performance and timbre; the extreme quantisation of rhythmic elements; and dynamics processing are among the many examples of technology based processes commonplace in HM production. These processes are promoted by the availability of affordable software packages of: drum samples recorded by world-class engineers in top facilities; guitar amp impulses modelled on successful HM guitarist's sounds; and master bus pre-sets that boast 'All you need for Metal'.[1] The production aesthetics that musicians strive for, professionals and amateurs alike, are now available as quick and easy software solutions. These

processes allow everyone access to the technical and sonic aesthetics that are synonymous with the production of a contemporary HM record.

Technology developers have become influential in the production of HM, particularly software developers Toontrack, since the release of the *Drumkit From Hell* (DfH) in 1999 (with updated *Superior Drummer* releases in 2005 and 2007). This particular library or drum samples was built with HM production in mind, with a number of kits multi-sampled in Sweden at Dug Out Studios.[2] Since the initial software release Toontrack have released the aforementioned *Superior Drummer* and they continue to release frequent sample packs and pre-set updates that have been designed by numerous HM producers (Andy Sneap; Daniel Bergstrand; Jason Suecof; Misha 'Bulb' Mansoor; Randy Staub; and many more). The success of this software lies not only with its popularity with project studio composers but also with mainstream HM artists. Devin Townsend used the DfH exclusively on *Ziltoid The Omniscient* (2007), Meshuggah used the DfH for all drum sounds on *Catch ThirtyThree* (2005) and Agoraphobic Nosebleed's *Agorapocalypse* (2009) featured a fully programmed drum track. *Steven Slate Drums* is also another popular sample pack and drum replacement package that encompasses samples designed and recorded by a number of successful HM and Rock producers including: Chris Lord-Alge; David Bendeth; and Terry Date.

Heaviness

Weinstein (2000) describes how the rhythm section plays a specific role in creating heaviness within recorded HM music:

> The distinctive bottom sound provided by the bass drum is greatly enhanced by the electronic
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> bass guitar, which performs a more important role in heavy metal than in any other genre of
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> rock music. Mainly used as a rhythm instrument, the bass produces a heavily amplified sound.
>
> Its contribution to the instrumental mix is what makes heavy metal 'heavy'. (p.24)

Berger and Fales' (2005) 'Heaviness in the Perception of Heavy Metal Guitar Timbres: The Match of Perceptual and Acoustic Features over Time' presents a more in-depth study of heaviness the relationship between noise, or distortion, and acoustic events. Comparable to Turner (2009), Berger and Fales provide precise deconstructions of specific harmonic content, the historical context of specific guitar timbres, and the audible effects of distortion that, in their opinion, provides HM with its 'heaviness' (p.187). The authors present timbre as an objective trait of a genre, in this case by presenting the empirical measurement of the audible qualities of heaviness, specifically related to the distorted electric guitar, and discussing this in relation to sociological perceptions of HM. It is stated:

> The puzzle, in other words, is this: metalheads affirm that they hear a quality X, heaviness, that defines the genre that contains it, a genre that must demonstrate greater X – that must increase in Xness – over time. If X were 'brightness' (presumably a timbral quality), then over time the music's timbre would become brighter; if X were 'syncopation' (presumably a rhythmic quality), then over time the music's rhythm would become more syncopated (p.193)

The central theme here is that heaviness, an audible phenomenon, is defined comparatively by listeners and is an example of how audible phenomena are 'historically emergent within specific music cultures' (p.197). Whilst Berger and Fales' chapter is not strictly a discussion of production methods it presents a relationship between the audible and the socio-cultural issues that potentially influence HM producers. This view contradicts the work of Friesen and Epstein (1994) suggesting the HM is potentially defined by the increasing development of its aesthetical conventions, its 'Xness'. This also suggests a practice of consumer led audible trends in musical subcultures.

HM fans are often '…critically invested in the production value[s] of new releases.' (Williams, 2015, p.40). Artists respond in kind to this practice of consumer led critical investment; Metallica stated in an interview for *Rolling Stone* magazine that their

follow up to *Death Magnetic* would be 'a heavier version of what we were doing in the early 90s'.[3] Likewise, on the 40th anniversary of their debut album, Black Sabbath announced that their latest release is 'a legacy to live up to',[4] implying external pressures for artists to move towards more extreme levels of heaviness, as a signifier of improvement or development. It would seem that there is a constant struggle for HM bands to prove their *heaviness* and this is likely to manifest in production decisions whilst making the recorded artefact. Furthermore, Williams (2015) uses an empirical approach to develop a psychoacoustic framework for understanding the timbral trends in HM production. The conclusions made suggest that current HM productions are 'identifiable by their acoustic fingerprints' (p.63), namely: bass guitar distortion; brightness and heaviness of guitar timbres; and kick-drum sampling. It supports a view that HM production methods have become homogenised and contemporary HM production styles are beginning to converge into a production methodology.[5]

Mark Mynett's work (2012, 2013, 2016; Mynett and Wakefield, 2009; Mynett, Wakefield and Till, 2010, 2011) explores the detail and precision of contemporary HM music. There are a number of central concepts including: heaviness; intelligibility; masking; and replicated ferocity. The notion of heaviness in musical contexts can be linked to 'sonic weight' (2012, p.1) and how different sonic elements work together to create heaviness whilst dealing with the problem of presenting each instrumental element of the mix in an 'intelligible' way (p.6). Contemporary HM production's 'heaviness' is defined thus:

> [Contemporary Metal Music's] defining and essential feature of 'heaviness' is primarily
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> substantiated through its displays of distortion and, regardless of the listening levels involved,
>
> the fundamentals of this identity are inherently linked to volume, power, energy, intensity,
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> emotionality and aggression. (p.104)

The issue with production agency, which is missing from Mynett's analysis, suggests that contemporary HM production is concerned with a number of defining sonic

features, potentially causing the production process to become homogenised further. It would be fair to assume, as with the concept of consumer led audible trends, that record producers working with HM music are tied to these defining sonic features, informing, and impacting, their methodology. Likewise, the 'radical' (Mynett, 2013, p.106) way in which HM is produced, alluding to a more extreme approach, or, less conservative than may be used to produce other styles of music; is similar to the conclusions made by Turner (2009). As a generalisation, the same, rather precise and extreme equalisation and dynamic processing of percussive elements in a HM mix, would be contextually inappropriate for the percussive elements of recorded folk music.

Mix considerations

Friesen and Epstein (1994) set out to define HM as a 'result of specific, socially constructed definitions which serve to delineate what HM is, and conversely, what it is not' (p.1); relating to Turner's (2009) suggestion that HM music can be a product of extreme production techniques that would not make sense applied elsewhere. Drawing on this antonymic relationship, the sonic aesthetics of HM in the present are quite different from the production values of early Black Sabbath records. Consider the opening guitar chords (0:00 – 0:52) of 'Warpigs' from *Paranoid* (1971). Each chord begins to feedback and fluctuate pitch as it decays, the antithesis of Meshuggah's super-human approach to guitar production. The opening of 'Do Not Look Down' from *Koloss* (2012) is an example of Meshuggah's highly technical approach to production aesthetics and timbral design, that influences compositional strategy. The opening bars of this song (0:00 – 0:25) exemplify the extended use of noise gates and waveform edits to accentuate the staccato palm muting, which in turn compliments the complexity of rhythmic patterns being performed.[6] Due to the intensity of contemporary HM music, Meshuggah being an extreme example, both in terms of production and musical syntax, there is little room for manoeuvre when approaching a mix that could be described an intelligible. Kennedy (2012) supports this problem of

10

intelligibility in a musical deconstruction of Between the Buried and Me's (BTBAM) *Colors* (2007):

> During 'Foam Born (A) the Backtrack' at 1:51, BTBAM unleash their first example of what can be heard as noise on *Colors*. With the drums playing a blast beat, a distorted guitar tremolo picking chords, the other distorted guitar arpeggiating chords in a high register, and the bass occupying the low end, a listener could be forgiven for hearing this timbral density as noise. In addition, Rogers' vocals have been layered so that there is a sung vocal holding a note, placed on top of a screamed vocal, with Rogers beginning his next, growled vocal midway through the held notes. The texture created is much thicker than anything heard to that point, and is diametrically opposed to the solo piano that begins the track (0:00). (p.18)

BTBAM are an example of contemporary HM, whose extreme musical syntax presents a problem for producers when trying to achieve intelligibility. Kennedy discusses this in terms of the musical texture being 'thick'; this is seemingly the result of a number of extreme performance techniques that fill the audible spectrum.

This extremity is an aspect of HM that contemporary producers now face. Compared to the work of Tom Allom (who is interviewed later in this article), engineer on *Black Sabbath* (1970) and *Paranoid* (1970), the production process is now seemingly linked to the technicality implied by contemporary HM music. For engineers like Allom, the process was technologically experimental at best. In an interview for the website *www.recordproduction.com,* Allom suggests that whilst recording the drums for *Black Sabbath* he used an unusual technique: stereo. When recording the drums, Allom implemented a 'pair of Neumann 64s as overheads' (9:45).[7] This highlights the relative simplicity early HM records displayed in terms of production techniques. This was due to the technological limitation of the recording studio only having access to a 4-track tape machine, (although this would not have been limiting at the time) but, in essence, a contemporary production will feature the same instrumentation and spatial

presentation as these early works; it is the perception of what the recorded artefact should sound like that has changed.

This simplicity is directly contrasted by Mynett (2012) who highlights the problem, created by constructions of complexity within HM, with issues of separation in contemporary HM mixes. This is also noticeably affected by the way in which mixes are approached with precision:

> […] separation techniques therefore need to be employed. These techniques include focussing on attenuation rather than amplification, the use of high pass and low pass filters, avoidance of simultaneous amplification or attenuation of the same frequency on multiple instruments, the attenuation of frequencies on masking instruments rather than amplification of the same to the sound being equalised, and mirrored equalisation choices whereby the amplification of a certain frequency on one sound is mirrored with the attenuation of the same frequency on another relevant sound. (p.7)

In short, the challenges that contemporary HM production techniques present engineers and producers can be reduced to a series of considerations:

(1) The clear presentation of each instrumental element, which more often than not will present abnormal frequency content (down tuned and distorted guitars for instance);

(2) Maintained levels of 'sonic weight' (Mynett, 2012) through attenuation, dynamics processing and extreme equalisation and filtering (Turner, 2009); and

(3) The importance of precision separation with regard to collective frequency.

The Record Producer

The role of the record producer is problematic for musicologists. [8] The role has changed dramatically since early incarnations more than a century ago and theorists

suggest this has been determined by technological development, the transformative nature of the recording industry, and the social contextualisation of the recording studio. It is important for this research, as the participants identify as record producers, to briefly contextualise this role within a contemporary musicological understanding.

Muikku's 'On the Role and Tasks of a Record Producer' (1990) explores transformative nature of the profession and constructs a model that suggests that the producer balances artistic, economic, and social roles (p.28). However, Muikku does suggest that this model is still somewhat problematic as it has to embrace expectations (Hennion, 1989) and producers must also act as the link between artists and record companies:

> For example, during different kinds of conflicts (economic, artistic or social) the producer is the person who tries to conclude peace. In the end, the producer is loyal to money. (p.32)

The problem with Muikku's conclusion is that, since 1990, the recording industry has changed more dramatically with the development of the internet and digital capabilities. Current research suggests that the role of the music producer is definable by interchangeable tripartite models that include, in some form: artistic; commercial; technical; social influences; and skillsets. Martin's (2014) tripartite model, that encompasses social, artistic and technical skillsets, presents the most contemporary view of the spectrum of working record producers. Howlett's 'The Record Producer as Nexus' (2012), supports the tripartite model proposing that the producer acts as a nexus, 'a means of connection' (p.1), between 'artist, the technology, and the commercial interest'. For Howlett, the role is defined by the music produced, as a result of balancing artistry, technology, and commerciality. Howlett also suggests that this connection makes the music meaningful (p.4), highlighting the crucial role of the producer. Zak's *The Poetics of Rock: Cutting Tracks, Making Records* (2001), dedicates

an entire chapter to the role of the engineer and the record producer. Crucially, Zak notes:

> While [producer's] work includes things as mundane as budget management, it can also tend to the enigmatic [...] Conceptions of the producer's role vary greatly among producers themselves and from one era to another, and the scope of the role is limited only by the number of tasks on a given project. (p.172)

Zak's analysis suggests that the producer role is transformative depending on the types of artist the producer works with, and the period of time the producer is active within. At this juncture, it is important to reiterate the timeline that the participants represent, producing music between 1969 and the time of writing.

Exploring the phenomena of recorded Heavy Metal music

An understanding of the phenomenological aspects of producing this genre was explored through a series of interviews with key record producers. The central aims were:

(1) To identify the ways in which the sound of HM has changed, as experienced by the people who make it, with specific relation to music technology; and

(2) To understand the views of working producers and engineers to gain insight into the way in which recorded HM is produced, whether this has changed and suggest directions in which it may develop further.

Semi-structured in-depth interviews took place with seven participants who work almost exclusively with HM artists, or have significant credits within the genre:

(1) **Romesh Dodangoda (RD)**, credits include: *Bleed from Within; Bring Me the Horizon; Bullet for My Valentine; Earthtone9; Funeral for a Friend; Monuments; Motörhead; and Sylosis.*

(2) **Mike Exeter (ME)**, credits include: *Black Sabbath; Cradle of Filth; Heaven & Hell; Iommi; Jaguar; Judas Priest; and Sonic Altar.*

(3) **Russ Russell (RR)**, credits include: *Dimmu Borgir; Evile; The Ga-Ga's; Napalm Death; The Rotted; Sikth; and The Wildhearts.*

(4) **Tom Allom (TA)**, his credits include: *Aerosmith; Black Sabbath; Def Leppard; Judas Priest; Krokus; Loverboy; and The Tourists.*

(5) **Dave Chang (DC)**, credits include: *Dagoba; Earthtone9; Electric Wizard; Forever Never; Gorerotted; Orange Goblin; and Stamping Ground.*

(6) **Oz Craggs (OC)**, credits include: *Dead Harts; Feed The Rhino; Mallory Knox; and Pay No Respect.*

(7) **Martyn 'Ginge' Ford (MF)**, credits include: *Axewound; Bleed From Within; Bullet For My Valentine; Trivium; and Slipknot.*

These interviews were coded adhering to the process of *Interpretative Phenomenological Analysis* (IPA) to reveal recurrent themes in HM production, as interpreted by the participants.

Interpretative Phenomenological Analysis (IPA) is 'a qualitative research approach committed to the examination of how people make sense of their major life experiences', or hermeneutics (Smith, Flowers, and Larkin, 2009, p.2). IPA allows for observed or recorded experience to be categorised independent of any pre-existing categorical approach, whilst providing a 'focus on personal meaning and sense-making in a particular context, for people who share a particular experience' (Smith et al., 2009, p.45). In this case the shared experience is the use of technology to make HM records. The importance of interpretation reflects the mediation that each participant enacts within the recording studio and how they interpret their own actions and position with regards to technological influence. It is also suggested that IPA '[situates] participants in their particular contexts exploring their personal perspectives' (Smith et al., 2009, p.32), making IPA an ideal choice when exploring the experiences participants have with technology in the 'everyday activity' of recording HM music.

Analysis

The participant accounts revealed four key production elements within recorded HM music that relate to genre specific qualities: *impact; energy; precision;* and *extremity*.[9] This analysis begins with insights from Tom Allom (TA), the participant who has been working the longest in the field and is viewed as the producer that gave birth to the HM sound, notably for his work with Black Sabbath between 1969 and 1972.[10] TA provides insight into what aspects of a record's production makes for a successful production. He describes recording with Judas Priest:

> TA: That was about feel. It just had a good feel and it was a great riff. I was listening to [the guitar] and it was sending shivers down my spine.

For TA, production aesthetics seem to be given value when elements of the production, in this case the sound of the electric guitar, made him feel a specific way. When these elements gave him the 'shiver' reaction, he knew it was right. Affirmation comes in the form of an emotional response. TA stands out as an anomaly due to his removal from producing HM records for a number of years; although this does not devalue his experiences. [11] His importance to this study lies in establishing a historical context for the development of recorded HM and music technology. Concerning the early Black Sabbath recordings TA recalls:

> TA: The thing that struck me when I was listening to the multi-tracks, when I did this Classic Albums [documentary] (2010). I don't think I was aware at the time just how good they were; the way that the bass and drums worked together.

Implied in this reflective statement is the importance of the rhythm section. The concepts of size and power that are linked to the rhythm section and the problems that performance style and timbre create have clearly been at the forefront of HM

production since 1969. TA continues to suggest that Black Sabbath were important in establishing this trait within HM production:

> TA: The way that the bass and drums worked together. It was almost a jazz band in a way, really amazing intricate patterns and everything. […] They were [making] this music that no one else had […]

More importantly, this suggests there is a value system in place for HM production. For TA value is evident in his description of feel; this becomes an indicator for a successful production. MF also highlights feel as an indicator of value, whilst highlighting his own concerns for production:

> MF: The feel of music, for me, as long as you don't over trigger it […] comes from where you are hitting the drums […] It being perfectly in time doesn't alter the feel of something; as long as the drummer is playing that.

Using this idea of value, worth and importance, as a pathway through understanding the production perspectives of HM producers, also highlights the significant influence music technology has over the process. This is evident in the drum sampling technology, and its widespread use, explored earlier. The prominence of a value system held by each of the participants is recurrent within discussion of production aesthetics.

Impact

For DC the value of impact, suggestive of power, becomes a focal point. Interestingly DC chose to explore the value of impact through discussion of his influences:

> DC: It was really the sounds of the nineties and people like Nirvana. The Andy Wallace mixes and things like that. I was thinking this is really what I want to be hearing, this sound, this kind of impact. Now there is the Chris Lord Alge

17

> [...] new wave of rock and metal sound, and that more modern sound [...]
> this is what it should all be about.

Impact stands out as part of DC's motivation to become a producer and the attributes he values of records produced by Andy Wallace and Chris Lord Alge. DC suggests that the sound he heard, when listening to records produced by the aforementioned producers, was 'what it should all be about'. This *should be* suggests that these values potentially spawn from feeling that something is missing where production is concerned; a record with less impact is by default, not as inspirational. Andy Wallace, as a further example of influence, is equally as important for OC.

> OC: Everything Andy Wallace has done is my favourite thing in the world. [...] I just would sit and deconstruct Andy Wallace mixes.

OC follows with:

> OC: Heavy music is supposed to sound aggressive, sounding like it's jumping out of the speakers.

Heavy music is supposed to sound like X. OC supports his own influences and how these influences hold value, comparably to DC, by implying how HM music should evoke feeling, how it should be presented; HM record production holds value through a representation of its perceived underlying characteristics. However, by 'deconstructing' the records made by his influences, OC has had to process his own understanding of his emotional responses. For OC however, the production aesthetics that HM supposedly finds invaluable also present their own problems for the people that produce it. Expectations and desirables influence the way technology is used to produce HM music, further supporting homogeny, and Mynett's intelligibility production methodology (2013).

18

Energy

OC takes a stance that heavy music production is primarily concerned with energy. Achieving energy, like DC's impact, is paramount for OC:

> OC: I think the most important part is the energy and I think that people kind of have an idea of what energy should be.

> OC: It's really about getting that energy onto the recording in whatever capacity it takes.

OC believes there to be a prior understanding, presumably for musician, producer and listener, that a fundamental quality for a successful HM production is energy. Energy can be achieved in a number of ways and means different things within the context of production:

> OC: I want people to play their best and I think the energy, the most important thing for me, comes from people thinking they are playing their best.

Energy once again becomes an indicator of success, linking to TA's feel. It is interesting that OC suggests that perhaps a part of his role as producer is about convincing people that they are performing at their best. It would seem it is more the case that producers are providing the opportunity for musicians to give their best performance. Producers are still looking to capture the essence of live performance, whilst being conscious of how they will treat these performances post-recording. Technology affords the opportunity to create and encourage energy on record:

> OC: My primary focus is energy and making things sound exciting. Now if I can use these tools, like drum quantising or drum samples, or anything else, to give that more energetic sound then I will use it.

OC begins to identify a tension between technology and desired aesthetic effect. This tension begins to show how genre specific trends in production, drum quantising and sampling for example, can potentially hold influence over the process. Tension is placed elsewhere for DC. He suggests that the tension he feels with producing music is between the perception of live and recorded versions of the same music:

> DC: I want the recording to be special for them […] I want everyone to feel like this is providing something the live performance isn't providing. Because the live performance gives you the energy, people jumping about, the crowd, all of that. This is the studio performance. Depending on the kind of genre you might want it to be more accurate; you certainly still want the energy and the life […]

For DC, the recorded version of a piece of music must demonstrate qualities beyond the live performance of the same piece. He wants his production approach to emphasise this, whilst retaining the energy of live performance. ME relates his view of energy within HM production to how fans perceive the music, and how fans expect certain aesthetics:

> ME: When you're getting into the metal side of things, yes, they may want it loaded up with [Metallica Drummer] Lars Ulrich kick drums and bell brass snares, and maybe that's the energy that the youngsters are looking for […]

Drums commonly feature as a significant way of creating the energy HM music now seems to find necessary. It is also noted that ME identifies how energy can be created by technology when he uses the term 'loaded up', referring to pre-recorded sounds being added, programmed, or selected from libraries of sonically, or aesthetically, pleasing samples. For RD energy seems to be embodied in creating excitement and surprise. This seems similar to DC's view on the essence of live performance and how

20

that fits into the recorded format. For RD, this excitement is also created in the way the drums are presented in HM:

> RD: …you have to find things that are gonna make the listener be surprised I guess. You want an element of excitement for the listener […] drums are a really good way of creating excitement.

Importantly, energy is frequently linked to the production of transients. Further exploration might focus on how transient detail is specifically dealt with in guitar production, but using drum production as the key example, transient intelligibility is explicitly linked to energy and excitement. Energy, as DC describes above, as a key element of a successful 'studio performance', pushes transient intelligibility to the forefront. A mix of a recorded performance must exhibit clear presentation of these transients, as one element of overall intelligibility. Whilst the participants strive to convey energy in a number of ways it can be exemplified by the intelligibility of transient detail; most often in drum presentation in HM production.

The processes RR chose to leave out defines his construction of energy, how that fits into his production approach, and what this does for the music he produces:

> RR: What I like is when it sounds a bit raw, not perfect, not like it's been edited to death. When it sounds like a band. When it sounds like *that* band more importantly.

Energy is not the central focus of RR's thoughts here; however, consider the previous examples displayed above. Each example links energy in HM production to an aesthetic that they want to achieve: excitement, feel, live-ness, and surpassing expectations. For RR the energetic aesthetic is more aligned with reproduction of the artist's sound. He wants the music he makes to sound like a band. The tensions that striving for specific sonic qualities cause are apparent in how the participants interpret their own actions. For RR this tension is caused by perfection and precision.

21

Precision

> OC: I think the expectation of the listener on heavy music is an expectation of clinical precision now. I think if you were to do a certain type of heavy band and do not include the editing of tightness maybe people would feel cheated, feel like it's not tight. The technology has made the performance element transcend what was acceptable, now it has become unacceptable in some ways.

OC's idea that modern HM productions must be edited and tightened confirms that production techniques directly affect musical elements. It is also interesting to find that OC considers HM production to be defined by an aesthetic that is no longer desired. This almost directly juxtaposes the view of TA that feel is the most important aesthetic within HM music. Precision, synonymous with tightness, now takes precedence over feel. MF takes the view that to create the power that is often associated with HM music, precision plays an important part:

> MF: Even though I am going to nail it to the grid, if its full-on metal that's where the power comes from, when everything lands together.

However, MF acknowledges that precision becomes a compromise for modern HM. To achieve the aesthetic his clients strive for, the energy, the power, he must put everything into perfect time ('nail it to the grid').[12] His response suggests an acceptance that HM production cannot be done any other way, much like OC. Interestingly, MF goes on to acknowledge that because of the precision required, HM music has forged itself as one of the most difficult musical genres to engineer, or produce:

> MF: As far as production is concerned metal probably uses the technology more than most […] If you can record a metal band and make that sound decent

22

> you can pretty much do anything else […] It's so precise, the playing, [it is]
> the most difficult thing you could record.

This could also highlight why limited academic enquiry exists that explores the process of producing HM music. Secondary to this acknowledgement of HM music's complexity is the acceptance that technology plays a far more important role for HM production than any other genre. This technological influence over production techniques transcends the production process and also impacts upon the song writing and performance practices of HM musicians. RR identifies with this:

> RR: It's almost the norm now for a HM drummer to practice and always play with
>   triggers on his kicks, not everybody, but more than not now. Just that alone
>   has influenced how songs are being written, tempo and precision has gone
>   up and up and up.

Technologically informed precision is a specific example of how production techniques have influenced both the recording process and performance practice. Once again drums are presented as the key indicator of the influence production techniques have, perhaps due to their position in the *Sound-box* (Dockwray and Moore, 2010) or because of the widely accepted order in which instruments are recorded.[13] Whilst most view HM as a genre that exhibits unique production techniques, DC takes the opinion that HM shares its precision focused aesthetics with electronic and dance music. He also suggests that precision affords the technological processes that are often employed within HM production.

> DC: Even before digital came in I was already beginning to think HM has a lot in
>   common with electronic and dance music in that kind of, people are after
>   that precision […] it suited the kind of editing you could do with Pro Tools
>   more than any other genre.

Precision is a key production element of HM music. The acceptance of precision as a requirement for success within a HM recording, as well as the ways in which it is implemented, suggests that a reliance on technology has been developed over time, paralleling how precision performances in HM have become more prominent. DC highlights this chronological development by identifying the use of *Pro Tools* and its vast array of audio editing functions, in direct contrast to pre-digital production, as a key motivator for precision.

Extremity

Impact, energy, and precision have been identified as central production phenomena within HM music. Extremity can be seen in the precision of both performance and recording practices; it is also present in the links made by Mynett (2013) to the concepts of size and weight within HM production. Extreme musical attributes, such as tempi, low-tuned instruments, and distortion often influence production decisions; whilst extreme performance qualities such as tempi and dynamics often inform the equalisation and dynamic processing that is used. Extremity is suggested by the production methodology and how HM producers set out to achieve them; heaviness and sonic weight are but some of the examples that are defined by extremity. Impact implies an object coming into contact with another object with relative force; as well as the overall impact a record has musically, culturally, and sonically. Energy, within the participant responses, is only ever linked to having an *abundance* of energy. Extreme attention to detail is implied by precision. Heavy describes something with extreme weight. Within the confines of this study, extremity alludes to sonic, musical, and performance attributes that influence production methodologies. This is highlighted by the radical EQ and dynamics processing that are analysed by Turner (2009). It can also be interpreted as a reflexive aesthetic suggesting that the extreme performance attributes are a product of the affordances of technology, allowing for more radical, and often necessary, processing techniques (extreme dynamics processing allows drummers to perform with less dynamic consistency to focus on

24

high tempi for example). Extremity is both musical and technological for recorded HM music production.

Towards a framework for understanding Heavy Metal production aesthetics

What extremity *does* represent is an accepted ideal; the acceptance of a value system, or indeed a production methodology, for HM production. This is supported by the reliance on technology that the participants discuss. Whilst the above key aesthetics seem fundamental to HM production, it seems that the fact that they *are* accepted is more important than simply acknowledging their existence. The above production aesthetics are part of a construction of accepted ideals, by engineer, producers and musicians alike. Their presence begins to fulfil the aims of this article, but to truly understand the influence music technology, and its development, has over the production of HM music, the proposed concept of accepted ideals must be explored further. The anticipated use of technology and the potential use of technology are analysed below as emergent super-ordinate themes from the participant interviews. Early HM productions emphasise feel as the central musical aesthetic of recorded HM. TA discusses how the absence of any form of prior knowledge of how to record HM music caused the production process to simply focus on feel. Emphasis is placed on the rhythm section and how this influenced the feel of the recording, purely related to performance. This develops out into a set of individual aesthetics that are both musical and sonic. These form the central production aesthetics of HM: Impact; Energy; Precision; and, Extremity. The shared experience of these aesthetics suggest that the participants have a value system, or at least a subconscious notion of what recorded HM music should sound like. This is strengthened by the ways in which the participants strive to achieve these aesthetics. Finally, the proposed concept of a value system for HM record production suggests that HM production is subject to an accepted ideal. As well as the participant identified aesthetics for HM music creating a value system when producing HM, the participants also suggest that HM production

is partly an exercise in compromise. This compromise allows us to place the aesthetics discussed into a framework that draws on the lived experience of the participants.

Energy, not always as an expression of acoustic properties, is linked to the expectations surrounding performance capture, the live-ness of a recording, and the subjective perfection of a HM recording. It could be that semantic issues cause this compromise; for instance, the *experience* of capturing a HM performance. Performance suggests a singular, live, event that could not be recreated, re-performed if you will, in exactly the same way ever again. However, HM production employs such precision that it removes the variables that seemingly define performance. If a drum performance is edited to fit exactly within a fixed tempo quantise grid, it may be a *perfect* musical artefact but it becomes a compromised production, with an absence of the variations of the live performance. Here lies the first suggested compromise: HM productions can either be an exercise in capturing the performance of a group of musicians (multi-track technology is an issue here as it separates a live performance into its constituent parts), *or*, they can be a representation of a performance that fits into the accepted ideals of a typified contemporary recorded HM production. Seemingly energy can be created by both of these methods, it is just expressed in different audible contexts.

The same could be said for impact. Creating impact within a HM production is part of the process of recording and mixing, whilst simultaneously being a musical, or sonic, device. Participants described it as 'the sound we should be hearing' (DC) or the way HM music should 'jump out of the speakers' or 'be aggressive' (OC). As with performance, and consequently precision, impact could be created through capturing a live performance or enhancing a performance through technological processes; something will be compromised each time. It can also be contextualised more broadly, with the final production being described as 'having impact'. If the individual elements of the final production are presented to convey energy, impact, precision, and extremity, the record can potentially be seen to have impact socio-culturally; perhaps

even commercially. This is most notable in the way in which artists communicate the necessity for new productions to be heavier (more X-ness) than the last. Ultimately this compromise seems to be about a representation of authenticity, whilst it also relates directly to Mynett's intelligibility. An unprocessed, un-intelligible recording could provide as much impact as one that is processed and edited to the nth, intelligible, degree. However, it seems that impact, both at an instrumental and final product level, is linked to intelligibility and the socio-cultural success could also be measured using intelligibility. Of course, this also presents potential problems; striving for intelligibility could force artists and producers to treat musical and sonic content in an increasingly surgical way, interpreting intelligibility as separation.

RR stated that he does not make 'perfect records' as they do not excite him; it is assumed that to achieve the aesthetics he finds authentic, or exciting, a record cannot be an exercise in precision or acute production processing. Perhaps this is not so much a compromise, for RR, as a realisation that having a specific production methodology, which extends to the use of technology, only adds to the problem of homogeny within HM production; replication of recordings that already exhibit ideal sonic and musical aesthetics. Of course, to return to the idea that production aesthetics are affected by semantics, RR's idea of excitement may be different to another HM producer. The idea of precision and energy extends to OC's view that the emotional content of HM is often compromised in the same way:

> OC: I think sometimes the technology has reduced the emotion level, for the
>
> sake of tightness. It comes down to finding the ethical point.

Extremity within HM production provides quite a clear example of compromise. As a product of the production aesthetics identified by the participants, extremity forces HM production to be less concerned with subtleties and shifts its focus towards explicit sonic aesthetics. The compromise lies in the idea of the production methodology that may be subscribed to, and equally criticised, by some of the

participants. Extreme production methods *must* be used to achieve the expectations held for a HM recording (Turner, 2009). As a result, every other sonic component in the mix must then be treated equally as extremely. This is also a further signifier of Mynett's intelligibility:

> Furthermore, when additional spectral information, in the form of high frequency energy, is introduced to guitars' timbres, they are perceived as heavier (Berger and Fales, 2005, pp.193-194). In order for the other instrumentation to punch through, and be perceived as within the same context of, this 'sonic wall' (Turner, 2009) of extremely bright rhythm guitars, heightened high frequency content is normally required for much of the other instrumentation. (2013, p.45)

Here the example of distortion, and the resultant audible effect, is a clear indicator that achieving the desired extreme aesthetic is a product of compromise with the rest of the mix. Exercising extreme production techniques influences the technical, surgical approaches (linked to intelligibility) that RR finds himself pushing against; but the same approaches that OC and MF find essential parts of a contemporary HM production.

This tension supports accepted ideals within HM production. The ideals are reinforced by the influence that the participants of this study draw upon, and the influence that contemporary HM recordings have. A tension is created between providing the realisation of musical vision and the producer's own vision for any one production. Idealism in HM productions supports a normalised view of record production; a view that producers work, in some fashion, to make records that compete with others of the ilk.

HM productions also fall victim to a number of compromises as a result of technological development. HM can only be one of two things: an exercise in capturing a performance; or a *representation* of a performance that displays HM's sonic ideals;

as Zagorski-Thomas (2010a) asks: 'at what point does ever-increasing consistency in a performance cease to sound like an expert human and start to sound like a machine?' (p.63). As HM performances have increased in extremity, so too must the production techniques used. The compromise here is that once an extreme process has been applied (extreme EQ for example), the same process *must* be applied globally to achieve intelligibility. Technological development, as suggested by the participants, changes the way people are making HM music, but it is not changing what HM music is.

Conclusion

Recorded HM is intrinsically influenced by technological developments, and has been since 1969. Multi-track technology has played a pivotal role in shaping the way we record HM music, moving away from a linear production style, to a fragmented process that uses more and more extreme processing. This has altered the way in which recorded HM is made, and perhaps altering the balance between capturing and enhancing performance to create the recorded artefact. This resultant effect of striving for specific production aesthetics has led to the existence of a recorded HM production methodology; informed by intelligible recorded HM music that conveys appropriate levels of *heaviness*. This methodology can only be put into practise if those using it adhere to accepted ideals of HM production. The producers who were interviewed have suggested that production aesthetics, and, more importantly, an accepted ideal HM production, highlights how technology has influenced the production of HM music. It is also apparent that music technology has developed alongside changing ideals suggesting that the production aesthetics that the participants described could also be a technological issue. Compromise seems to follow suit; idealism implies that producers begin to compromise performance, live-ness, and (or) decision-making. OC explores the act of compromise:

OC: Metal for example, metal guitars, you do have to make them sound of the

ilk, what everyone else does. The kick drum does have to be a certain way,

[…] no one wants to admit that, no one wants to say that's there because it

implies limitation on what you can do and your hands are tied.

HM producers have a number of decisions to make: how they employ technology; how to manage technological influence over performance; and how to exercise their own experience of HM production aesthetics. Accepted ideals support a 'normalised' view as per Taylor (2010) that works to please others, industry, and to keep HM records sounding 'of the ilk' (OC). Through the participant accounts a framework can be developed suggesting that HM production is the relationship between an accepted ideal, a socially constructed agreement with HM audiences and listeners, and, the compromises producers must make that inform their decisions whilst recording and mixing HM music. Technology affords extreme processing, forcing producers to work in particular ways, which can often cause artistic and technical tensions. The intrinsic link between HM and technology enables producers to make reality-warping technical decisions, altering performances in space and time, but also implanting unreal-ness at the heart of HM production.

This points to further study, working more closely with an expansive sample of record producers to ascertain whether or not the issues of idealism and compromise are as prominent as has been suggested, as well as in other genres of music. Some of the extreme processing is not dissimilar to electronic dance music or contemporary pop. One of the key outcomes is, of course, the unique nature of the participant's experiences; experiences that have been explored as a direct result of the use of Interpretative Phenomenological Analysis. The rich discussion, and interpretations made, have allowed us to begin constructing a conceptual framework based on the ideals of HM production and the compromises that have changed 21st century approaches to HM production. These views may not necessarily be expressed by producers who have significant credit in other genres of music and this study's intent

was to promote the views of HM producers. There are however links to be made across the digital arts; coincidentally it could be argued that filmmaking and music production developments have been intrinsically linked at various points in recent history (Taylor, 2001, p.93). Both filmmaking and photography involve capturing a performance whether portrayed by actors on a soundstage or a moment in time captured by a stills camera. These mediums also make use of technologically influenced editing to change the original captured performance: music is quantised and tuned to perfect and improve the captured performance; film footage is edited together or trimmed to alter how the audience perceives the performance; and photographs can be digitally edited, or *photoshopped*,[14] to alter the image to the taste of the photographer. Compromise may be issues dealt with by artists working in these other mediums, suggesting a further link to the influence of technology in the creative arts.

Notes

1. http://www.toontrack.com/product/ezmix-2-metal-bundle/ [online] accessed 04/01/2015

2. It is important to note that this studio complex, run by producer Daniel Bergstrand, has been used to record a number of seminal contemporary metal bands including: Dimmu Borgir; Evergrey; In Flames; Meshuggah; and Strapping Young Lad. Tomas Haake and Fredrik Thordendal (Drummer and Guitarist, respectively, of Meshuggah) were part of the team involved with the inception of the DfH which not only included drum samples, but also MIDI libraries of various drum beats and groove patterns to allow for drag-and-drop composition.

3. www.metalhammer.co.uk/top-posts/metallica-new-album-is-a-heavier-black-album/ [online] accessed 23/04/2013

4. http://www.youtube.com/watch?v=3GLqS7yjyMw&feature=youtu.be [online] accessed 13/02/2013

5. Record producers, as well as amateurs, will often compare their mixes to mixes that are already established as successful productions. Whilst the intent is not to replicate the successful mix, knowing when a production is meeting a standard can be helpful.

6. Palm muting is the use of the palm of the hand to mute the strings of the guitar whilst simultaneously picking to create a muted, aggressive sound. It is also used to accentuate staccato playing styles applying emphasis to the rests in between notes and syncopation.

7. http://blip.tv/recordproduction/tom-allom-video-interview-at-mark-knopfler-s-studio-5858561 [online] accessed 01/10/2013

8. For the purpose of this article, the use of the title producer will also include the roles of recording and mix engineer. These roles overlap increasingly in the 21st century.

9. Whilst these elements do not fall into any immediate hierarchy, the order in which they are presented is linked to the interpretation made as to their importance for the participants.

10. Roger Bain was the producer of Black Sabbath's first three albums, with TA working alongside him as recording engineer. In an interview discussing the production of guitar sounds on the early Black Sabbath records, TA suggests that had he recorded them a decade later they would be 'heavier'. This is attributed to TA learning more about microphone technology and use.

11. http://www.ultimateguitar.com/interviews/interviews/tom_allom_the_sounds_ on_first_sabbath_albums_could_have_been_heavier.html [online] accessed 17/06/2015

12. At the time of writing TA has collaborated with ME and Andy Sneap to record Judas Priest's 'Firepower' (2018)

13. The 'Grid' is part of the architecture within modern DAW (digital audio workstations) that highlights different aspects of musical timing: bars, beats or seconds.

14. Drums are often the first instrument to be recorded, typically as they will then be edited to conform to timing and dynamic constraints. This allows other instruments to be overdubbed to a perfect performance, often to enhance rhythmic patterns and riffs.

15. http://everydayliteracies.net/files/DIY_Media_ms.pdf#page=109 [online] accessed 23/07/2015

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