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Culture-specific production and performance characteristics: An interview study with ‘Teutonic’ metal producers

ABSTRACT

Viking metal, Teutonic metal, Mesopotamian metal – labels of this kind are common in fan discourse, media and academia. Whereas some research has investigated such labels and related them to the artist’s stage presentation, music videos, artwork and lyrics, there is still a lack from the perspectives of music production and performance as to how such culturally and geographically associated labels differ musically. This article explores culture-specific production and performance characteristics of Teutonic metal, focusing on how metal from Germany differed from British and US-American productions in the 1980s and 1990s, during which time metal spread to Continental Europe and German speed metal achieved an international reputation for its original interpretation of metal. The study is based on a qualitative interview design with three record producers who were crucial for the rise of German metal labels and their bands: Harris Johns for Noise Records, Siggie Bemm for Century Media and Charlie Bauerfeind for Steamhammer. The

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findings suggest that performances differed between bands from Germany, America and Great Britain regarding timing, rhythmic precision, ensemble synchronization and expressiveness. Likewise, production approaches varied due to distinct preferences for certain guitar amplifiers, drum tunings, microphone techniques, mixing concepts and studio acoustics. Despite such culture-specific differences, it proved difficult for the interviewed producers to identify distinguishing features. Genre conventions seem to have a stronger impact than cultural origin overall.

INTRODUCTION

In recent years, research in metal music studies has increasingly explored the global commonalities and distinct particularities of metal cultures in many parts of the world (e.g. Brown et al. 2016). Most of such investigations have been sociocultural in nature, like the recent collected edition *Sounds and Origin in Heavy Metal Music* (Karjalainen 2018) that explored Norwegian, Italian, Irish, Javanese, Australian and US-American metal scenes. Despite this wealth of knowledge, there is still a lack of research from the perspectives of music production and performance on geographically branded music and culturally associated labels such as Viking metal (Heesch 2010; von Helden 2015; La Rocca 2017), Teutonic metal (Elflein 2017) and Mesopotamian metal (Pichler 2017). This article builds on previous work by the author that investigated early metal from West Germany, including the formation of its (power) metal scene (Herbst 2019b, 2020b, 2021c), historical stereotypes of German popular music (Herbst 2020a), sonic and performative signatures of Teutonic metal (Herbst 2020c, 2020e, 2021b; Herbst and Bauerfeind 2021), generational effects in the production of German metal (Herbst 2020d) and German metal as heritage (Herbst 2021a, forthcoming 2022). Based on interviews with German and British metal producers, musicians, journalists and scholars, the initial research suggested that a characteristic Teutonic sound might indeed exist and could be understood as a third axis to the acknowledged British and US-American sounds.

This article aims to study the Teutonic sound more comprehensively, based on face-to-face interviews with three record producers who significantly shaped Germany's emerging metal scene in the 1980s and 1990s: Harris Johns (138 minutes), Siegfried Bemm (60 minutes), Karl Bauerfeind (259 minutes). All of them are still active today. Harris Johns was the main producer for Noise Records and is regarded as *the* producer of Teutonic thrash (Kreator, Sodom, Tankard). With Helloween's *Walls of Jericho* (1985b), he produced the album that Weinstein (2011: 40) considers one of the fundamental records of early European metal. This view is shared by several reviewers of the album on the Metal Archives (2019). Siegfried 'Siggi' Bemm was the main producer of the early Century Media label for which he produced some of Germany's major thrash and death metal bands (Angel Dust, Kreator, Morgoth) and international acts (Tiamat, Moonspell, Rotting Christ, Theatre of Tragedy, Therion, Samael). Karl 'Charlie' Bauerfeind worked closely with record label Steamhammer and produced many of Germany's internationally recognized melodic speed metal bands (Helloween, Gamma Ray, Running Wild, Blind Guardian, Rage). These three producers represent some of Germany's main metal labels and have recorded many popular bands playing speed metal, a genre description from the 1980s that was eventually replaced by thrash and melodic/power metal. Using the method of Interpretative Phenomenological

Analysis (Smith et al. 2012) to capture and analyse the phenomenological experiences of the three producers, this research seeks to find answers to the following questions:

- Do these producers give thought to the label Teutonic metal, and if so, how does it impact their work?
- How do Teutonic records of the 1980s and 1990s compare with British and American metal productions?
- Are there audibly distinct production and performance features between different cultures?

Neither the literature nor the interviewed producers agree on the geographical boundaries of Teutonic metal.¹ The German magazine *Rock Hard* attributes it to Germany, Austria and Switzerland (Schürer 2009). For producer Bauerfeind, however, Teutonic metal is based on a common musical heritage of the Prussian Empire, which means it also equates with other European countries: Poland, parts of Russia, Lithuania, Denmark, Belgium and the Czech Republic (see also Herbst 2019b; Herbst and Bauerfeind 2021). This study focuses on Germany because all three interviewees worked with German bands and produced foreign bands in Germany. Yet, when Teutonic characteristics are compared with the United Kingdom and United States, potentially a wider geographical area in Central Europe is implied.

Upon reviewing academic and professional literature on geographically associated sounds in music practice, this article discusses the producers' experiences made during the formative years of West Germany's metal scene. It will subsequently analyse the performance and production characteristics of Teutonic metal compared to British and US-American metal music. These issues are further explored elsewhere; the Teutonic signature is studied experimentally through practice-led research (Herbst 2020c), and performative characteristics are investigated through close musical analysis (Herbst 2020e). The distinct focus of this study is on the phenomenological experience of three relevant producers of early West German metal.²

GEOGRAPHICALLY ASSOCIATED SOUNDS IN LITERATURE

Music performance and production literature indicates that certain types of equipment or the way of using it is characteristic of geographic areas. Guitar amplifiers by Marshall, VOX and Orange are commonly regarded as devices with a British sound, whereas Fender, Mesa Boogie and Peavy are said to have an American sound (Stent 2019). The sonic characteristics mainly stem from differences in circuit design and valve choice (Brosnac 2004). In the digital world, amplifier simulations use geographical origins to classify impulse responses³ of guitar cabinets and speakers; normally, they include American and British characteristics, but some plug-in companies like Brainworx also brand a German sound. References to geography also exist in audio engineering literature. For example, New York-style compression is synonymous with parallel compression (Owsinski 2006: 58), a technique of blending unprocessed and processed tracks to achieve a full-bodied effect without removing the important transients. Similarly, the classic Urei/Universal Audio 1176 compressor set to 'all buttons in' is known as 'British mode' (Felton 2012). There also is the notion of a British equalizer sound – partly the result of marketing strategies by British audio console manufacturer Neve – which can

1. For a more extensive discussion see Herbst (2020a).
2. This study, first presented at the *Crosstown Traffic Conference* in 2018 and subsequently written up for the present Special Issue, actually precedes and served as the inspiration and starting point for Herbst (2020c, 2020d, 2020e) and Herbst and Bauerfeind (2021).
3. Impulse responses (IR) are sonic fingerprints that capture the frequency response of a playback system.

be explained by the broader bandwidth of bell filters, allowing engineers to apply more drastic frequency boosts on British mixing desks than on American consoles without creating an unnatural sound from imposed resonances (Winer 2012: 282). Moreover, language idioms and varying levels of importance of lyrical clarity result in distinct national production styles, according to French mixing engineer Veronica Ferraro:

I do not mix much typical French music, and of course I spend a lot of time listening to American and British music. There is a slightly different school of mixing here in France, because in France, people want to understand every word a French singer sings. The French language also takes more space in terms of frequencies, and it is less groovy than English, because we do not have the same accents. This all affects the way French-language tracks are mixed. There is less freedom than in mixing English-language tracks. Plus, here in France they are fonder of high end in the track.

(Ferraro cited in Tingen 2010)

In his *Mixing Engineer's Handbook* (2006: 3–4), Owsinski further mentions distinct city sounds that in Los Angeles, New York and London developed through different mixing approaches to compression, effects layering and spatial staging. Although these distinctions have blurred since the 1980s, Owsinski claims that variations still exist.

Asked about differences between British and US-American sounds, designer of British Trident mixing consoles Malcolm Toft stated:

I think there is definitely a distinction. I travelled a lot, in the early '70s in particular, because Trident became very popular in America, and I think there is a distinctly different way that the English and the Americans did things [...] I don't think our Brit acoustic designers thought the same way as maybe the Americans did [...] Our rooms sounded different, the way we designed things was definitely different. I think it was the approach that the engineers had. There's definitely a British sound and an American sound [...] So there was a difference, I think, from both sides of the Atlantic, to do with music, to do with the producers, to do with the engineers, to do with the studios.

(Toft cited in Zagorski-Thomas 2012: 57–58)

Toft's arguments are not shared by Malcolm Addey, a former engineer at Abbey Road Studios before he moved to New York. For him, comparing

the sounds from the hundreds of studios in the many culturally different regions, created by many hundreds of recording engineers in such a vast country as the USA with only a half dozen major studios in London, operated by no more than perhaps a couple of dozen engineers in tiny UK, is, in my opinion, impossible.

(Addey cited in Zagorski-Thomas 2012: 57)

Owsinski (2008) asked professional mastering engineers in the United States about different sonic signatures between cities or regions in the country. Whilst the style of individual engineers was the crucial factor for Greg Calbi,

Bob Katz and Bob Ludwig, others like Eddy Schreyer and Glen Meadows saw differences between East and West Coast, even if decreasing.

I don't think that's as much true anymore as it used to be. I could probably put a vinyl record on and tell you where it was mastered and who did it. To some extent the early CD transfers were very similar to that as well. Right now, though, it's all blended in to be a big jumble of sound, and you almost can't pinpoint anybody's characteristic fingerprint anymore. Everybody has basically the same kind of tools and is doing the same kind of thing to satisfy the customers.

(Meadows cited in Owsinski 2008: 218–19)

The only academic exploration of production differences is by Zagorski-Thomas (2012), who studied British and US-American practices in the 1970s. His findings show that American producers had a higher track count and tended to record live more often than their British counterparts. That is why their microphone techniques diverged; American engineers favoured placing microphones close to the source, whereas British engineers preferred traditional microphone set-ups, relying on room capture as requested by their record companies. Other differences existed in studios and their acoustics. British productions were often recorded in large studios that created a warm sound, whereas American productions had a more intense and controlled sound derived from smaller spaces with more acoustic treatment. Using different desks and microphones on the two continents further contributed to distinct sounds. However, these differences narrowed in the 1970s as staff became more mobile and production resources increasingly available internationally.

EARLY RECORD PRODUCTIONS IN THE GERMAN METAL SCENE

West Germany had been an important market for international rock music ever since the 1960s. The beginning of German rock music, however, was marked by structural challenges, such as the lack of independent record labels that only emerged with krautrock in the 1970s (Herbst 2021c). Inspired by the New Wave of British Heavy Metal (NWOBHM) and early German rock bands such as the Scorpions and Accept, the mid-1980s saw a wave of new German metal bands (Herbst 2019b, 2020b). Along with this development, independent labels burst onto the scene, most notably Noise in 1983, Steamhammer in 1984, Nuclear Blast in 1987 and Century Media in 1988 (see Herbst 2021c). Just like their international counterparts like American Metal Blade (Slagel 2017), neither record labels, bands nor producers could build on metal-specific production knowledge; they all had to rely on their experiences with earlier rock music and develop it into a new metal aesthetic.

The three interviewed producers found their way into the metal music business differently, but all experienced that producing in Germany for German labels was no disadvantage compared to their colleagues in the United States and United Kingdom. Harris Johns (b. 1950) studied business management but sat in on lectures of the audio engineering course at the Technical University of Berlin. He had worked at Berlin's famous Hansa Studio for one year when he opened his Music Lab in West Berlin in 1978. Karl Walterbach, CEO of Berlin-based record label Noise, needed an audio engineer and producer, so he employed Johns, whom he knew as a front of house

4. All interviews were conducted in German and translated into English.

engineer. The first metal record Johns produced was German Grave Digger's debut album *Heavy Metal Breakdown* (1984), one of the earliest metal releases of the beginning wave of German metal. He recalled the production conditions of the album:

They came from the Ruhr District, where there were many bands who desperately wanted to play metal music without ever wasting thoughts on it. I think Grave Digger's guitar player even studied for his apprenticeship between the sessions. They were young people who didn't know much about studios but fancied metal, and then they happened to be in a studio. I tried to capture their spirit, which worked quite well for a first production [...] Today I would do it differently, but it was my first metal record.⁴

(Johns 2018)

Grave Digger was the first band signed by Noise in 1983. Walterbach explained that the difference to American thrash bands and the resemblance with German veteran band Running Wild intrigued him:

They were not part of this new wave of thrash; they reminded me a bit of Exciter – straight, powerful metal [...] Nothing I would consider comparable to the new breed of Metallica, Slayer and Exodus, the thrash metal bands. They were like Running Wild [...] They were both bands where I thought musically and technically they were good [...] At the beginning, what stuck out was Chris's voice. It had an edge. I felt that made the difference.

(Walterbach cited in Gehlke 2017: 111)

Apart from vocal timbre, their German accent distinguished Grave Digger from their international competitors, yet it also caused some problems (see also Herbst 2020b). In Gehlke's (2017: 112–13) documentary on Noise Records, interview statements indicate that the band was sympathetic to singer Chris Boltendahl's lacking command of the English language. Boltendahl expressed himself: 'My English from this time was on the same level of Klaus [Meine of the Scorpions] [...] But this was the charm from the German metal bands. I never changed my approach, even to this day' (Gehlke 2017: 113). Johns had a different opinion; he was open to all production ideas but insisted on correct English. Consequently, he hired a native speaker from the United States to correct the lyrics and improve pronunciation. Johns knew from his experience that Germans have fewer difficulties learning American pronunciation. They worked together for eight hours every day, teaching singer Boltendahl correct pronunciation phrase by phrase, which was recorded in short vocal lines. Though good English was important, Johns stressed that nobody thought about expectations from abroad, neither the band nor he as their producer; all they intended was to create a good metal production. Bemm and Bauerfeind, the other two producers, shared this habit of disregarding international expectations, and so did the bands they produced. But since language quality increasingly became a crucial factor, they, too, began consulting native speakers to improve overall production quality (Herbst 2019b, 2020b). Yet, most releases from German bands in the 1980s and early 1990s had a distinct German accent that was often criticized abroad, as exemplified by various *Kerrang!* reviews of that time (Herbst 2020b).

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One year later, Johns produced Helloween's self-titled EP (*Helloween* 1985a) and influential album *Walls of Jericho* (1985b). Helloween, who would become one of Germany's most successful metal bands in the 1980s after the Scorpions and Accept (Herbst 2020b), is an example of a different production approach. Founded in 1978, the band already had extensive playing experience (Gehlke 2017: 148). As Johns remembered, the band had very concrete ideas about their production, which provoked a dispute because, by then, he had developed his own understanding of how metal music should sound like. *Walls of Jericho* (1985b) became influential on European metal, and power metal in particular (Weinstein 2011: 40; Metal Archives 2019). Its successors, *Keeper of the Seven Keys* Parts I and II (1987, 1988), competed with Iron Maiden, Metallica, Europe and Guns N' Roses, influencing countless bands across Germany, Europe and beyond (Herbst 2019b, 2020b). Reviews inland and abroad proclaimed their uniquely German and prototypically European style as their main appeal (Dome 1987a, 1987b), a style influenced by the NWOBHM and US-metal but blended with German and Central European classical traditions (Herbst 2020a, 2020b). This distinct approach to songwriting, performance and production led to a metal sound that was perceived as modern and unique outside Germany (Dome 1987b: 16).

Up until this formative period, Johns was not much interested in metal music. When he started working with thrash bands, the musicians made him listen to Metallica records to show him the sound they strived for. The outcome was noteworthy with well-received albums by Kreator (*Pleasure to Kill* 1986; *Terrible Certainty* 1987) and Sodom (*Persecution Mania* 1987; *Agent Orange* 1989; *Better Off Dead* 1990). Johns then began occupying himself intensively with metal music. He exchanged ideas with established rock and metal producers like German, US-based Michael Wagener (Metallica, Megadeth, Overkill, Skid Row) and analysed American studio designs, equipment and production concepts by looking at photos, reading interviews and watching documentaries. Although in the 1980s, the same equipment was generally available in Europe (see Zagorski-Thomas 2012), producing Kreator and Sodom, according to Johns, needed a different approach because both German bands were more raucous than their American counterparts, and they wanted to sound as brutal and aggressive as possible. Although Metallica records served as a guideline for guitar and drum sounds initially, the production concept was soon changed for a better fitting aesthetic. By Johns's account, he became recognized for his transparent guitar sound that stayed intelligible despite high distortion levels and fast tempos. This transparency was one of his primary ambitions from the beginning.

Johns believes that the unique style of bands like Helloween, Kreator and Sodom resulted from the hardships and poor infrastructure German bands had to bear back then.

We were glutted from abroad. England and America. They just had so much more support because they were better internationally known. The very big bands whom I worked with still managed to become internationally recognised, step by step. There were so many things working against us. Lacking media support, bad reviews for German bands abroad. But when [Sodom's] *Agent Orange* (1989) was released, the Americans suddenly came to us saying, 'Very well done!' Indeed, it was recognised, and for Sodom, this was their international breakthrough.

(Johns 2018)

Acclaimed records in the late 1980s by Helloween, Sodom and Kreator put German bands on the international map, which for Johns led to collaborations with foreign bands such as Brazil's Sepultura (e.g. *Third World Posse* 1992; *Refuse/Resist* 1994), America's Voivod (*Dimension Hatröss* 1988), Immolation (*Dawn of Possession* 1991), Saint Vitus (*Die Healing* 1995) and Australia's Hobbs Angel of Death (*Hobbs Angel of Death* 1986).

Siggi Bemm (b. 1956), a self-taught rock producer, started his career in the early 1970s, recording and producing in rented studios in Europe and America. In 1977, he founded his Woodhouse Studio in Dortmund. When Robert Kampf and Oliver Withöft opened Century Media in 1988, they relied on Bemm as artist and repertoire advisor and producer. Their aspirations were international right from the start, and in Bemm's experience, German bands easily made it on different markets if they sang in English (Herbst 2019b). Since the global metal markets were still small in the late 1980s and early 1990s, German bands could be distributed worldwide successfully. Morgoth, for example, became one of the most acknowledged death metal bands from Germany that could compete with Scandinavian death metal in the 1990s. Unlike Johns, who invited his bands to bring reference tracks to their productions, Bemm tried to avoid such influence. For him, each band sounded original, and so he was keen to emphasize their unique features. Like Johns, Bemm did not feel restricted by the availability of production equipment at that time.

Bauerfeind's (b. 1963) background diverged from that of the other two producers. Initially intending to pursue a career as a professional jazz drummer, he eventually went to America to study music production and engineering at Berklee College of Music. Upon his return to Germany in 1989, he was given the opportunity to produce *Steps* (1990) by German progressive metal band Sieges Even, who were signed by Steamhammer; a collaboration that paved his way into the metal music industry. Not having been much interested in metal before producing this record, Bauerfeind for the first time consciously listened to metal bands such as Iron Maiden to get acquainted with the sound aesthetic the band desired. Though he valued creative input when discussing his approach with the band, he still preferred to stay as self-contained as possible. Producing Sieges Even led to collaborations with bands such as Germany's Running Wild, Helloween, Gamma Ray, Blind Guardian and Rage, Brazil's Angra, Britain's Saxon and Sweden's HammerFall. Like the other producers, Bauerfeind did not feel it was a disadvantage to produce in Germany. What earned him employment with German and international bands that aspired to the sound of early German speed metal bands was his production style. By collaborating with internationally operating German label Steamhammer, he had the chance to work with popular foreign bands such as Motörhead, Saxon and Venom, an experience that led to a growing realization of distinct performance styles and production aesthetics of different metal cultures and eventually to his self-perception as a Teutonic producer (see also Herbst and Bauerfeind 2021).

THE TEUTONIC METAL LABEL

Previous research (Herbst 2019b, 2020a) has demonstrated different understandings of the Teutonic label regarding musical characteristics, geography and associations. Accordingly, the three producers varied in their views on music genres and their respective labels. For Bemm, genre labels are meaningless and do not inform his decisions.

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I don't understand 'Teutonic Metal', just as I don't understand the various metal subgenres [...] The term Teutonic metal, okay, we are Teutons, and we make loud noises. The Americans have done it and the British too; the Finnish in any case. Therefore, Teutonic metal puzzles me, and when I listen to Helloween, I wouldn't know they are a German true metal band. They could be an English or American band just as well [...] I can't see a difference between Helloween and bands from America except maybe that they cannot speak proper English. What is Teutonic metal, I don't know?! Teutonic metal is metal.

(Bemm 2017)

Bemm rejects the idea that the origin of a band or producer significantly impacts the sonic result.

Johns, often classed as a Teutonic thrash metal producer, was undecided about the label. For him, Germany was famous for power and thrash metal, just like Scandinavia was known for melodic death and black metal. Whether or not there were clear differences between bands from Germany and elsewhere, he was unsure about. He does not mind being regarded as a Teutonic producer; after all, his fame is built on Teutonic thrash. From his personal and stylistic viewpoint, though, labels are unimportant, and he would always have learned about them late. As with Bemm, every band was different, and he did not see why he should class them in any way. However, he admitted that this label still helps him to attract clients.

Strongly contrasting with Bemm and Johns, Bauerfeind understands himself as a Teutonic metal producer. From his professional experience, record labels have clear ideas about their target audience when they sign artists. Although they do not necessarily envision all details of the production aesthetic, they have a sound in mind and like to work with a producer who will deliver it (see Herbst and Bauerfeind 2021). Owing to his production portfolio with popular German bands in the 1990s, he has become the producer for melodic Teutonic metal (Mineur 2000; Böhm 2002). This label, however, is not a marketing strategy to him; it is fundamental to his production approach.

PERFORMANCE CHARACTERISTICS

One recurrent theme in all interviews regards performance characteristics that diverge between cultures, which was even expressed by Bemm and Johns, who are less convinced of the Teutonic label. Bauerfeind strongly believes that the different musical heritage of the United States and Central Europe distinguishes performances.⁵ Having grown up in Bavaria, his ears were attuned to marching rhythms by the likes of Ernst Mosch and the Original Oberkrainer, as well as traditional Bavarian folk brass music. This musical socialization accustomed him to preciseness in performance and musical arrangement. As a trained drummer, he noticed a different rhythmic feel in America during his studies at Berklee. Instead of emphasizing all four beats in a 4/4 beat as common in music he grew up with, American popular music, rooted in jazz and rhythm and blues, was based on the backbeat (beats two and four). This observation was important for Bauerfeind's slowly developing understanding of a Teutonic metal aesthetic. These attributes, for him, reach back to Prussian military music, which is 'absolutely precise, ordered and musically aligned to facilitate marching in lockstep'.⁶ In most metal music where the drumbeat is based on a sixteenth-note subdivision, he experienced that many American

5. More detailed, autobiographic accounts are presented in Herbst and Bauerfeind (2021).
6. This almost mechanical sounding aesthetic is stereotypical for German popular music, and there are references indicating a direct link to the Teutonic label. Kraftwerk once stated to 'have a Teutonic rhythm, really Germanic' (Barr 1998: 142). German proto metal band Accept continued this aesthetic, which was also perceived internationally as such, demonstrated by a *Kerrang!* (1986) feature: 'If musical precision is akin to logic then Accept can rival even the most sophisticated of computer technology'. Even decades later, this aesthetic is still present as a Rammstein concert review shows: 'classically Teutonic; all metronomic rhythms' (Everley 2001: 44).

7. These performance characteristics are too subtle to be discernible in spectrograms. This is due to the rich arrangement and sonic texture characterized by a wall of distorted guitars as well as the fast tempo and overlap of several rhythmic subdivisions characteristic of most metal productions. However, having done guided critical listening sessions with Bauerfeind, I gradually started noticing the subtleties in performance. It is likely that advanced performance and production expertise as well as guidance is necessary to be able to discern such details of sound. Yet, it is possible that firm beliefs about idiomatic performance differences trick the listener into hearing features not physically present in acoustic sound.

metal drummers tended to perform a laid-back feel by slightly delaying the snare in relation to the kick drum. In contrast, Central European or Teutonic drummers either align both instruments precisely or rush the snare to avoid masking.⁷

There are very few American drummers that play Teutonic metal well [...] Even excellent drummers play laid-back, the snare slightly delayed. This doesn't work at all in Teutonic metal because the attack that the ear picks up first is the most important one. I don't want the snare to be masked by a kick drum hit [...] that's why the snare, in my opinion, has to be slightly ahead of the kick drum. This is preposterous to many American drummers and also hard for them to perform because they were trained to play laid-back. I've had real arguments with people. If the smallest element of a rhythmical unit is a sixteenth, then for me, there is just one right way of placing the snare, right on one of the sixteenth. Why should it be laid-back? If I want this effect, I'll let the drummer know. Not many drummers comprehend this and are able to perform either way. One of those is Mikkey Dee [Motörhead, Don Dokken, King Diamond, Scorpions]. He sits down and asks you how I want it. 'Do you want me to play in a European or American style?' He is even capable of gradually morphing one style into the other. At the very European end, the drums are perfectly aligned; that's how I want it. Then it's Teutonic metal.

(Bauerfeind 2017)

This Teutonic feel Bauerfeind realized for the first time when working with Germany's well-known Running Wild on their *Black Hand Inn* (1994) album. Their German drummer Jörg Michael meticulously recorded the drum tracks to a downbeat click. Whilst this is common practice in music production, the band was obsessive with it and insisted that Bauerfeind constantly checked the synchronization of all drum instruments and the snare timing in relation to the kick drum. Performance precision could be enhanced with a digital Pro Tools system. Even though it could only play back four tracks simultaneously at that time, it was sufficient to edit the primary drum instruments: kick, snare and overheads. The rhythm guitar recordings followed a similar procedure. The band's vocalist, main rhythm guitarist and songwriter, Rolf Kasperek, used only one reference performance when evaluating each of the four rhythm guitar tracks to ensure perfect synchronization. Since alternating strokes sound less defined, he played downstrokes whenever possible (Herbst 2019b).

This Teutonic aesthetic, already an international trademark in the early 1990s, attracted Brazilian band Angra who hired Bauerfeind as producer for their albums *Angels Cry* (1993) and *Holy Land* (1996). Establishing a Teutonic feel with a band from a different culture was a considerable undertaking, as Bauerfeind admitted. In his perception, the musicians, attuned to Brazilian carnival music that is not rigidly aligned to a fixed tempo but loose and improvised, initially did not understand the point he was trying to make. Timing precision and alignment did not feel natural to them; however, this Teutonic feel was eventually achieved through time-consuming guidance. With other bands, especially those from Britain, it was also difficult to accomplish Bauerfeind's performance ideals. When NWOBHM icons Saxon experimented with a heavier and more contemporary metal sound in the late 1990s and early

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2000s, they asked Bauerfeind how to achieve their desired sound. His strategy was to blend in German Engl guitar amplifiers with their British Marshalls and to record German drummers Fritz Rando and Jörg Michael instead of British drummer Nigel Glockler. Although their collaboration proved successful, Saxon later reversed this move to a contemporary production by hiring British producer Andy Sneap for their *Sacrifice* (2013) album, replacing the sterile and all-controlled Teutonic production concept with the traditional rock 'n' roll inspired NWOBHM sound. Venom's comeback album *Cast in Stone* (1997) is another example of different aesthetic preferences between Bauerfeind's strive for preciseness and a British rock 'n' roll feel. Bauerfeind edited the drumbeat to achieve a more precise feel in one song, convinced it would sound better. Their German label supported the decision, but the band did not because the result did not coincide with their aesthetic preferences. Venom did not wish for a Teutonic sound, and so Bauerfeind had to undo his 'preciseness work'.

A prerequisite for enhancing timing and alignment through editing is the availability of single instrument tracks recorded to a fixed reference, normally a click track or drum performance in an overdub approach. Bauerfeind has never recorded a metal band live, nor could he think of many colleagues who have done so since the 1990s. Neither has Johns recorded live, even though thrash metal shares some traits with punk music. All his classic thrash metal albums were recorded with an overdub approach. He would have preferred live recordings and had tried several times, but he always kept only the drum performance and re-recorded the other instruments. As Johns recalled, the main problem was that, especially in the 1980s and early 1990s, guitarists wanted to play complex material but had little time to practise because record release intervals were much shorter at that time. Such short intervals between releases were not unique to European metal; many American and British bands also released one album a year in the 1980s to the mid-1990s. However, American bands such as Slayer and Machine Head (Mynett 2017: 32–33), and British bands like Iron Maiden (Wall 2001: 181–82; Andresen 2012), recorded (at least some instruments) live during that time, which possibly resulted in more organic sounding performances but less precise group synchronization. Regarding rhythmic differences between musical cultures, as per Bauerfeind's theory, Johns was undecided. Drawing on his experience of working with bands like Saint Vitus (*Die Healing* 1995) and Hobbs Angel of Death (*Hobbs Angel of Death* 1988),⁸ he speculated that bands from Germany might come across as stiffer than those from America and Australia. Like Bauerfeind, Johns paid close attention to timing and rhythmic alignment.

8. This accords with British producer and metal music scholar Mark Mynett's perception of German metal bands being so aligned and metronomic that they are lacking groove (Herbst 2019b).

It's very important that the people play cleanly; this is what I paid attention to the most. They never cared much about precise playing in their rehearsal rooms, and I had to make them realise how different it sounds if it is precise. This is crucially important, and they accepted it. With Tankard, we sometimes recorded only four guitars a day. More wasn't possible because they tried to play something super-fast [...] With thrash metal, it is important that you hear every attack transient, and this works well with one guitar, also with two guitars if you pan them left and right. But if you have more, then it becomes blurry [...] We wanted very hard, precise attacks that are perfectly aligned with the drums. Drum attacks came from the middle; guitars were left and right.

(Johns 2018)

In line with Bauerfeind, drum timing was important to Johns, though the guitar work was an even bigger concern for him, a difference that might stem from their musical backgrounds; Bauerfeind as a drummer, Johns as a guitarist.

Bemm's production approach varies considerably from that of Bauerfeind and Johns. Although all of them are inspired by American production practices in many ways, Bemm is the only one who wishes to record as much live as possible, a practice he considers characteristic of the United States, which accords with Zagorski-Thomas's (2012) findings. Musical interaction between the musicians evokes a live feel that is crucial to Bemm's production aesthetic. He believes interfering with this natural process is a problem, one he sees in German productions particularly.

Many American productions are recorded live and are not quantised. This is a way of dealing with music that is completely different from that in Germany. Here everything must be exact. Everything must fit – micrometre calliper. 'Hmm, the 16" tom could be a bit earlier'. The English are more like the Americans. Much more open-minded and relaxed. The Irish are relaxed too. But the Germans are exact [...] When I'm recording, I mute the click. The click is just for orientation. This differentiates my work from other competitors [...] I don't use Auto-Tune, and I don't quantise drums.

(Bemm 2017)

However, he admitted that it was not possible to generalize. 'In the true metal genre, double kick performances must be machine-like, of course. Sometimes this requires some correction because this is a stylistic element [...] But in the groove parts, don't touch the drums!' Despite Bemm's doubts about a Teutonic sound, further statements support the impression that he experienced cultural differences.

I've noticed this several times; the Americans have a different attitude in their playing. Bobby 'Leather Lungs' Lucas [singer of Morbid Sin, Seven Witches, Overlorde and Attacker] records vocals for a whole album in one and a half days. With power you won't believe. Other people need a week for this. And the drummer, he can play it right, immediately. Bands from other countries, especially in Europe, are very different. This is because they had a completely different level of competition over in America [in the late 1980s, early 1990s]. You had to be excellent to join a band. Here it was easier because there was less competition [...] Another thing that comes to mind is their mentality, especially of the singers. American and Scandinavian singers naturally sing very emotionally. With German singers, this is difficult; they don't dare to sing like that. I think it is our tendency for perfectionism that sets us back. I have noticed this in various genres, in pop, metal or anything else.

(Bemm 2017)

Such deliberation on expressiveness corresponds with Bauerfeind's experience, albeit in the context of the solo guitar. Implicitly influenced by European classical music but only weakly so by African American styles like blues (Herbst 2020a, 2020b), Teutonic metal guitarists tended to have a more straightforward phrasing with less string bending and more emphasis on



Figure 1: Original tempo map of Halloween's 'Nabataea' (2013) in Pro Tools, showing drum performances recorded without a click track. © Jan Herbst. This Figure is available to download and view from the Supplementary Data section for this article: <https://ingentaconnect.com/content/intellect/mms/2021/00000007/00000003/art00006>.

downbeats, as Bauerfeind expressed: 'A guitar solo has to be a melody, and if possible, a harmonised twin melody. This is expected' (2017). Bauerfeind realized this implicit demand in melodic metal when working with Swedish HammerFall. Although Scandinavian musicians were rather Americanized in his experience, HammerFall belonged to the most typically Teutonic bands, hugely inspired by German pioneers Accept (Schäfer 1998). Their guitar player Oscar Dronjak had so internalized the Teutonic style that, to Bauerfeind's surprise, any feeling or blues rock inspired phrasing was absent from his solos, unlike in most other American and Swedish rock music. Bauerfeind noticed that HammerFall's appreciation of precision and Teutonic phrasing increased from their first collaboration on *Crimson Thunder* (2002) to the *No Sacrifice, No Victory* (2009) production. This was a record he produced right after Saxon's *Into the Labyrinth* (2009). Inspired by Saxon's blues-influenced NWOBHM style, Bauerfeind remembered having been intrigued to give HammerFall's solo guitar work more of a rock feel, so he encouraged phrasing like string bending. Dronjak rejected this feeling, however, as he believed it to be incompatible with the Teutonic aesthetic he was striving for. This experience made Bauerfeind realize differences in solo guitar phrasing between European, British and American metal cultures.

Despite the producers' common beliefs that timing needed to be precise, all refrain from rigid quantization, the correction of rhythmic inaccuracies in relation to the metronome, for its lack of human feel. Bauerfeind emphasized that precision must not be confused with quantization, which has increasingly become customary in metal music productions (Thomas 2015: 194–96; Mynett 2017: 35, 106–09), a trend he dislikes. Instead, he looks for performance precision and alignment, which also works with songs not recorded to a click track. Exploring the potential overlap between Teutonic and South American aesthetics, the drums on Helloween's 'Nabataea' (2013) were performed freely by German drummer Daniel Löble. The tempo fluctuates throughout the performance, creating a floating beat map, as seen in Figure 1, but the alignment and inherent metric precision between the single events are preserved when a drummer performs with a Teutonic feel.

This was a challenging task for the performer, yet to Bauerfeind, the result of mixing precise Teutonic alignment with the expressiveness of loose performances without a metronome was unique. Such experiments have also convinced him that producing a Teutonic metal sound whilst incorporating diverging musical elements is possible, like Brazilian Angra's appropriation of Teutonic attributes (see Herbst and Bauerfeind 2021).

PRODUCTION CHARACTERISTICS

The producers were asked if they observed cultural differences in sound aesthetics and production approaches when collaborating with artists. Bauerfeind did so when he worked with bands from various countries in Europe, Great Britain and the Americas, which made him realize that engineering and mixing standards diverged between different cultures. In melodic metal, a Teutonic aesthetic was 'heavier' than the more traditional metal approach common in the United Kingdom and United States. Fundamental to this effect of heaviness was a punch effect achieved by precise synchronization between all instruments. As Bauerfeind explained, in older, more rock-based metal, drum and guitar hits were complementary rather than focused on the same rhythmic subdivisions. Yet, with more instruments emphasizing the same rhythmic accents in the arrangement, a sonic impact is created (Mynett 2012).

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This synchronization of all instruments was a stylistic trademark of Teutonic metal, a view supported by British metal producer Mark Mynett (Herbst 2019b). The primary elements of Teutonic performances – precise drumming and alignment of all drum instruments, as well as alignment between all instruments, arrangement focusing on synchronization – extended to recording and mixing practices.

A significant difference between British and American metal cultures that Bauerfeind sees is in relation to their frequency spectra. For him, American productions tended to sound ‘wooden’, and British productions even more so. This impression resulted from emphasizing middle frequencies rather than the low and high end. In American productions, the snare drum was most featured in the drum sound, whereas in Teutonic metal, it was the kick drum. ‘In a Teutonic production, the bass drum is most important. It doesn’t matter what happens in the guitars; the double kick is always upfront. The presence of this instrument is a crucial difference to American productions’ (Bauerfeind 2017). Engineering-wise, the differences were due to tunings, recording techniques, instruments and processing approaches, as will be explained in the following paragraphs.

Kick and snare, in Bauerfeind’s view the primary elements of the drum kit, had to have a certain aesthetic if they were to fit a Teutonic sound. Metaphorically he describes the kick as a ‘cannon shot’, rich in low end, compressed and loud in the mix. An example is the Brazilian Angra’s *Angels Cry* (1993) album for the Japanese label JVC. Expecting a Teutonic aesthetic, the label’s head artist and repertoire manager sent the following feedback on the first mixes per fax: ‘Japanese kids love the sound of bass drums. Therefore, we would appreciate that this Angra production has a bass drum sounding more like the Teutonic bass drum on the last Gamma Ray album’ (*Insanity and Genius* 1993), which Bauerfeind had produced. In the early 1990s, Teutonic productions were internationally known for their loud and low kick drums, a sound the Japanese label wanted their Brazilian power metal band to have to pay tribute to influential German bands. This aesthetic requires playing the bass drum very evenly (Herbst 2019b), which is why in the early 1990s Teutonic producers like Bauerfeind and Johns made heavy use of samples. Both applied drum samples for reinforcement or replacement already in the 1980s, long before this practice became common with computer-based digital sequencing technology (see Herbst 2020a). Johns stated that he adopted sampler units to separate snare and hi-hat channels. In his experiments with Musical Instruments Digital Interface (MIDI) control signals, he controlled noise gates with side-chain signals to avoid cutting the important drum transients. Such production techniques show the sophistication and effort to create hyperreal drum sounds (Mynett 2017) in West German metal’s formative phase.

The snare sound diverged between the cultures too. Unlike British and American productions tending to have higher-pitched snares, Teutonic productions, according to Bauerfeind and Johns, followed the aesthetic of two influential German bands, the Scorpions and Accept. They favoured a low-pitched snare with a centre frequency around 130 Hz along with audible snare wire rattle, producing a sound like a ‘pistol shot’. To achieve a similarly deep and voluminous tom sound, large shells and low tunings were favoured. In Johns’s view about a characteristic (Teutonic) thrash drum sound, the snare needed to have a short sustain and be full-sounding with extensive low and high frequency content. For most of his classic German thrash albums, he used an 8-inch deep and 15-kilogram heavy bell bronze snare, the HLD-590

9. Johns first recorded this snare on Sodom's EP *Expurse of Sodomy* in 1987, and it can be heard on all later Sodom albums. Rammstein drummer Christoph Schneider also plays this snare. It lost its distinct Germanness, if it ever existed, because it became popular with drummers of foreign bands such as Tool and Meshuggah (Edgar 2017).

signature model by German manufacturer Sonor sold between 1987 and 1991, that produced a thundering sound.⁹ Yet diverging from Accept's snare sound, Johns stressed that this sound was not only deep but also had piercing top end without a high tuning due to the characteristic presence of snare wires.

In the guitar player community, amplifiers are often divided into British and American tones (Stent 2019). To some degree, this association is historic because both cultures produced popular amplifiers early on (Burrluck and Seabury 1996). Much more affordable on the continents of their manufacture than elsewhere (Brosnac 2004: 56), influential bands in the formative phase of rock music played amplifiers from their own countries (e.g. VOX and the Beatles; Led Zeppelin and Deep Purple playing Marshall; Mesa Boogie and Carlos Santana). Apart from these historical reasons, the deviating circuit designs, types of valves, speakers and cabinets create sounds that differ in distortion characteristics, frequency spectrum and shape, and dynamic response (Brosnac 2004; Stent 2019). These distinct sounds were used deliberately in the various metal cultures, as Bauerfeind outlined:

The basic character [of the guitar sound] is determined by the amp; they all have different characters, Marshall, Engl, [Mesa] Boogie and so on [...] And this is what shapes styles within metal, i.e., in melodic metal, you have the even distortion of Engl amps. In more rock-based metal, you have Marshall sounds, which by far don't distort so evenly [...] British and American players liked the [Peavy] 5150, and Americans [Mesa] Boogie, of course. The [Mesa Boogie] Rectifier is the typical sound of America. And Germany is Engl for sure; it is Engl country, that's a trademark! Everybody in Germany was interested in sounding original, not sounding like everybody else internationally. This was easy to achieve because everybody who played Engl had a sound of their own; this was the Teutonic metal sound. Engl amplifiers were also extremely distorted. One of the most characteristic sounds was that of the Engl Straight model; every Teutonic metal band played it. I know of Victory, Gamma Ray, Helloween, Kreator; everybody played them, they still do in the studio. Engl supported many bands, endorsed them all! But it's worth noting that when Engl changed management in the late '90s and replaced the Straight by the Savage model, the sound changed too. The classic Teutonic sound is that of the old Straights!

(Bauerfeind 2017)

This view is shared by German producer Lasse Lammert who is internationally known for his guitar tones sold as virtual rig packs for Kemper's Profiler and Fractal Audio's Axe-FX (Herbst 2019a, 2019b). Bauerfeind uses distinct amplifier characteristics intentionally, especially when adding a Teutonic signature to artists from abroad. This can be heard on the Saxon albums he engineered and produced (*Metalhead* 1999; *Killing Ground* 2001; *Heavy Metal Thunder* 2002; *Lionheart* 2004; *The Inner Sanctum* 2007; *Into The Labyrinth* 2009). Characteristic for an English band, Saxon's guitar sound was based on Marshall amplifiers. To achieve a heavier metal aesthetic, Bauerfeind layered the band's common guitar sounds with German Engl Savage tones. Band leader Biff Byford acknowledged that this approach led to a more contemporary metal sound (Saxon n.d.). Besides amplifier circuits and valves, a country's utility frequency was important for the guitar tone, according to Bauerfeind. This effect can be heard on Running Wild's *Black Hand Inn* (1994). Band leader

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Rolf Kasperek played an American Mesa Boogie Mark IV amplifier head that did not create a characteristic Teutonic metal sound. Yet, the American amplifier running on a European power line of 50 Hz gave the set-up a more European-sounding character. The same set-up would have sounded different if recorded in America on the 60 Hz power line. Bauerfeind stated that some American producers, as well as European producers recording in the United States, use a variac, an electrical transformer utilized to control flickering neon lamps, to artificially lower the power line from 60 to 50 Hz to achieve European-sounding distortion. Newer American Mesa Boogie amplifiers like the Heartbreaker have this variac feature built in, often in combination with the option to switch between different power valves, 6L6 for an American and 6V6 for a more European sound (Mesa Boogie n.d.: 10). Some modern Mesa Boogie amplifier simulations (e.g. Brainworx bx_megadual) emulate this variac and power valve differentiation.

Johns shared Bauerfeind's experience, feeling that Engl quickly became the standard in German metal productions. Neither the British Marshall amplifiers nor the American Mesa Boogie Rectifiers and Peavy 5150s that were becoming increasingly available could replace Engl. Johns also agreed with Bauerfeind that Engl sounded unique and shaped the sound of German metal. However, for him as a thrash metal producer, the distortion level was more important than subtleties of tone. As long as the combination of amplifier and guitar was reasonable, he could work with any set-up. Experimentation with distortion was common; he remembered a recording session with German thrash band Assassin (*Interstellar Experience* 1988), for which the guitar was sent into a distortion pedal and VOX AC30 amplifier, then into a Marshall. Such endeavours created original and extreme sounds for which German thrash bands in the 1980s strived to become more aggressive and extreme.

According to Bauerfeind, vocal sounds were less characteristic in Teutonic metal, mainly due to American productions diverging from the rest of the world. Typical vocals on American metal records in the 1980s and 1990s had pronounced treble frequencies and presence created by Dolby® A, a multi-band noise reduction compressor/expander (AudioThing 2019). Vocal sounds by Los Angeles-based Michael Wagener were characteristic for heavy multi-band peak-limiting, achieved with the Aphex Dominator II, easily recognizable on the early Skid Row albums (*Skid Row* 1989; *Slave to the Grind* 1991). Both Bauerfeind and Johns admit to having been influenced by such American experiments, but these vocal production techniques were generally uncommon within the Teutonic scene.

Different recording practices combined with studio acoustics were some of the distinguishing features Zagorski-Thomas (2012) found in his study of British and US-American sounds. Both Bemm and Johns highlighted that many German bands wished to record abroad, especially in America, although studios in Germany were equipped with similar equipment. One of the differences was the size of live rooms that were larger in America, with which only a few German studios could keep up. Exceptions were Hansa Studios in Berlin (U2, David Bowie, Iggy Pop), Dierks Studios near Cologne (Bon Jovi, Deep Purple, Mötley Crüe) and Musicland Studios in Munich (Queen, Led Zeppelin, Rolling Stones). However, most German bands lacked the budget to record abroad or rent one of the big German studios. Therefore, the German scene was based on a small nucleus of national studios: Music Lab (Johns), Woodhouse (Bemm), Twilight Hall (Bauerfeind), Horus, RA.SH, Hansen Studios, Karo Musikstudio, HG Studios and Vox Klangstudio (Herbst 2019b, 2021c).

Particular acoustic characteristics were important for all three producers. Bemm emphasized it was the tone of the drum sounds shaped by glazed tile walls in his Woodhouse studio that made his productions stand out. If the room was big enough not to cancel out bass frequencies, Johns appreciated hard reflections of concrete or tiled walls too. However, tiled walls mostly served him as reverberation chambers, especially for snare drums and guitars; otherwise, he preferred the wooden walls in two of the three versions of his Music Lab (Herbst 2021a). Still, all walls in his live rooms were at least partially tiled. Bauerfeind, who never had a studio of his own, frequently recorded at Hansen Studios for its character, a former Second World War bunker with concrete walls (see Herbst 2019b). To create his Teutonic aesthetic, he needed to choose the right studio for each production. Convinced of the importance of the Prussian music heritage with its war associations, he worked in studios that supported the specific rhythmic and tonal concept acoustically. For example, Running Wild's *Black Hand Inn* (1994) was recorded in an old cinema with controlled reverberation, the Vox Klangstudio in Bendestorf. The kick drum should sound like a 'cannon', characterized by a low pitch and long decay, the snare drum like a 'shotgun', also with a low fundamental frequency. RA.SH studio was popular with many Teutonic metal bands, including Gamma Ray, Rage, Axel Rudi Pell and Sodom, for its thundering drum sound, achieved through a reflection chamber with pure ferro-concrete walls that supported the intended militaristic sonic impressions. These acoustic characteristics have likely contributed to the sound of Teutonic metal.

DISCUSSION AND CONCLUSION

Labels that denote cultural or geographical origins are common in metal music discourse – between fans, in journalistic media and academia (see Herbst and Bauerfeind 2021). The most obvious links to labels such as Viking metal arguably are visual by a band's stage presentation, music videos and artwork (Heesch 2010; von Helden 2015), or they are lyrical (La Roca 2017), featuring themes around actual or imagined cultural heritage (Anderson 1983). How music as a recorded product fits into such a culturally connoted artistic concept still needs to be investigated. In contrast to direct melodic references such as Germany's Accept quoting Beethoven's 'Für Elise' in 'Metal Heart' (1985) or Sweden's In Flames interpreting traditional folk tunes ('Hårgalåten' 1994; 'Pallar Anders Visa' 1999), musical and sonic characteristics not based on structural features such as melody and harmony are far less tangible. The present study aimed to look deeper into cultural differences in music production and performance, focusing mainly on the 1980s and 1990s when metal started to spread from the United Kingdom and United States to Continental Europe, Japan and Australia, and when German bands became known worldwide for their original interpretation of metal (Weinstein 2011). As the phenomenological interview study has suggested, the Teutonic label was not unanimously accepted by the three producers who were instrumental in creating early German speed, power, thrash and death metal. Whilst for Bauerfeind, a Teutonic production concept was crucial for his professional identity, Bemm rejected most forms of genre classification. Johns was somewhere in between, accepting the label as *the* producer of Teutonic thrash because it helps him economically, even today. However, despite their different viewpoints, all recognized distinct recording, producing and performing practices in Central Europe, Great Britain and the United States.

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The interviews support findings from previous studies on German metal music (Herbst 2019b, 2020a, 2020b, 2020c, 2020e), which suggested that a Teutonic metal sound might indeed exist. Yet, most distinguishing features are at such a subtle level that even those involved in the records' productions have difficulties naming them and finding common ground. Similar results were found by Zagorski-Thomas (2012) in his research on the United States and United Kingdom sounds in the 1970s as well as by Owsinski (2008) when interviewing professional mastering engineers. This blurriness mainly stems from the effects of globalization. Although budgets in the metal music industry were limited, forcing German producers to work in small to medium studios (Herbst 2019b), the same equipment as in Britain and America was available, allowing for similar recording, mixing and mastering techniques when the German metal scene emerged in the mid-1980s. The interviewed producers were aware of production techniques in America and Britain, but while favouring the bigger and more modern American wall of sound aesthetic over the traditional British approach (Zagorski-Thomas 2012), they were keen to develop their own production style. Many German bands were equally influenced by American and British artists, and most of them were more interested in creating high-quality music than appealing to an international audience (Herbst 2019b). This melting pot of inspirations, grounded in different musical traditions and intentions, created an international brand of German metal, often described as Teutonic speed metal or Teutonic thrash. Such labels are problematic for their generalization and implied stereotypes (see Herbst 2020a; Herbst and Bauerfeind 2021), which is probably why Bemm and Johns refrained from categorizing bands in any way.

Regarding performance differences between American and Central European musicians, Bauerfeind holds a rather stereotypical view. However, when I listened to music, guided by his insider's knowledge about how songs had been recorded and mixed, what the bands' intentions were, and how record labels influenced the productions, I was able to recognize cultural differences. Finding complete commonality between bands coming from one geographical area playing the same (sub-)genre is still unlikely given that bands from Europe and America may sound more alike than those from the same culture. Rather than the cultural background, genre plays a crucial role, as the interviews suggested. Whereas for the general audience, it is fairly easy to identify genre differences, it requires a high level of expertise in music production and performance to discern the subtle features that cultures add to their interpretation of a genre. To investigate this issue further, practice-led research (Smith and Dean 2014; Dogantan-Dack 2016) might be a useful method (see Herbst 2020c). It could compare several versions of a song, recorded with different musicians, engineers and producers in various studios. Such an approach seems promising for qualitatively evaluating the impact of the characteristics highlighted by the producers of this study, even if the potential for generalizability would be still limited by the small sample size and other factors. If or to what degree sonic details are perceptible to the common listener could be determined with a listening test. The chances are that only a minority of listeners would be able to discern the details and comprehend them as part of the overarching production concept. However, the interviews in this study strongly suggest that metal productions are driven by aesthetic visions that may not always be uncontested but are nevertheless intentional and meaningful to the artist and producer.

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