The Heaviest Metal

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Abstract:
It has recently been argued that metal's 'heaviness' is conceptually inarticulable. I argue, on the contrary, that 'heaviness' is a matter of inaccessibility—the 'something more' that makes metal 'heavy' is actually something *less*: less auditory processing fluency. Like profound literature, metal resists, but also invites and rewards, interpretation. I argue that understanding 'heaviness' in terms of auditory processing fluency allows us to make sense of a number of otherwise puzzling features of the music, and to articulate a unifying *gestalt* for the genre.

The Heaviest Metal

1. Introduction

In chemistry, to ask which metals are heaviest is to misstate the question, which is better posed in terms of density (mass per unit volume) or atomic weight (the average mass of an element's atoms relative to the atomic mass constant). Similarly, talk of the 'heaviness' of metal music—an adjective usually dropped in favour of particular genre descriptions (e.g. 'black', 'death', 'doom', 'folk', 'industrial', 'goth(ic)', 'melodic death', 'nu', 'power', 'ragga', 'thrash', etc.)—draws our attention to the wrong features of the music. In fact, to look for some combination of features which would be necessary and sufficient for heaviness is to miss the forest for the trees. We could take precise measurements of any number of forests, carefully tabulating the numbers of trees and their species, measuring the spaces between the trunks, analyzing root penetration and canopy cover, estimating decay and regeneration, and even cataloguing the local wildlife. All of these features are part and parcel of being a forest, but to try to reverse-engineer a definition of 'forest' from those qualities is a futile endeavour. Likewise, dissonance, distortion, extreme tempi, and power chords are part and parcel of metal's heaviness, but we have no hope of building up an adequate concept of 'heaviness' out of such disparate and perhaps even incompatible parts.

This is the thrust of a recent paper by Jason Miller (2022) which asks what we mean when we say that metal music is 'heavy'. Pointing to uses of the term which seem to apply to music with contrary properties—e.g. some of the metal characterized as particularly 'heavy' features a blistering tempo, such as with Metallica's *Master of Puppets*, while sometimes it is positively somnolent, as with Sleep's *Dopesmoker*—Miller concludes that metal's 'heaviness' is conceptually inarticulable. This conclusion is consonant with Theodore Gracyk's contention that heavy metal is so stylistically varied that it has no unifying gestalt, and thus does not form a Waltonian category.[1] It is also consistent with musicological

[1] Gracyk (2016: 778).

and sociological analyses of the phenomenon, which typically take it to be highly pluralistic, encompassing not just the music's sonic properties, but also its emotional dimensions, lyrical and thematic content, performance elements, and production and textural qualities, among other things.[2] But while Miller and Gracyk are right to note metal's astonishing stylistic diversity, their pessimism ultimately sells the genre short as a locus of aesthetic experiences.

The answer is hiding in plain sight, lurking behind the very first (derogatory) uses of the term in 1970: "heavy metal robots" and "noisy, unmelodic, heavy metal-leaden shit-rock band."[3] Miller himself circles around it in his consideration of expressive "noise" (distortion, rhythm, volume, etc.), structural elements (e.g. atonality, chromatic chord progressions, pitch, variable tempi, etc.), lyrical content, etc., although he ultimately concludes that metal's stylistic diversity resists any one unified account. Nevertheless, there is no doubt that these are all ways of introducing 'heaviness' into music, and my contention is that they all do, in fact, contribute a common element: they increase the music's experiential *inaccessibility*. And that, I think, is what it means to call metal 'heavy'; it is to say that the music is (relatively) inaccessible, along certain historically-specified dimensions.

2. Processing Fluency

What do I mean when I say that heavy metal is (relatively) inaccessible? Quite simply, that its characteristic features all contribute to *disfluent* auditory processing.

'Processing fluency' is the name given to our experience of processing perceptual and conceptual information: 'fluent' processing is characterized by the rapid flow of information and easy uptake, whereas 'disfluent' processing is characterized by slow and difficult flow and uptake.[4] Processing fluency depends, in large part, on the brain's wiring. Some kinds of patterns are easier for

[2] Berger (1999: 58) and Herbst and Mynett (2022: 638-42).
[3] Miller (2022: 72).
[4] Reber (2012: 225).

us to detect, after all, and others not. But it also depends on familiarity with the stimulus in question: the more often one has encountered it (or something like it), the faster and easier it is to process, and the more we tend to like it.[5] The flip side of this coin, however, is that repeated experiences lead to the phenomenon known as 'habituation', which sees decreased responsiveness to a repeated stimulus.[6] There are limits to what familiarity can achieve, after all. As we become more habituated to some stimulus, it occupies less of our mental attention, and so our responsiveness to it is reduced. It becomes less attentionally salient and fades into the background. And that, unfortunately, is when boredom sets in.[7]

A robust body of evidence in psychology shows that people tend to prefer stimuli which are easier for them to perceive. These are known as 'fluency effects', and they can be demonstrated for a wide variety of stimuli, including perceptual, motor, and cognitive behaviours. These fluency effects suggest that the ease or difficulty of processing some stimulus (its fluency) is strongly correlated with our evaluative attitudes towards that stimulus. In other words, we tend to prefer stimuli that are easier for us to process, and disprefer those that are harder to process. So, for example, instructors are systematically biased in favour of legible handwriting, and audiences find jokes which are easier to process funnier than those that aren't (e.g. multi-layered puns).[8] Similarly, listeners rate standard accents more favourably than non-standard accents, and have far more positive reactions to information delivered in quiet, rather than noisy, conditions.[9]

The complexity or simplicity of the stimulus also factors into our evaluative judgements. On the one hand, simpler stimuli are easier, and complex stimuli more difficult, to process; but we do not always prefer simple, familiar, and easily-processed stimuli. If we did, then we would expect to see

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[5] Reber (2012: 225). This is known as the *exposure effect*; see Zajonc (1968).
[6] Huron (2013: 9).
[7] Huron (2013: 30).
[8] See, e.g., Griefeneder et al. (2010) and Topolinski (2013).
[9] Dragojevic and Giles (2016).

people routinely prefer *Happy Birthday to You* to virtually any other piece of music, given its high degree of processing fluency (the tune is simple, overwhelmingly familiar, etc.). High processing fluency can count against a stimulus in cases where we consciously think that our ease of processing is itself a bad thing. This is what happens when, for example, someone evinces the 'I can do that' reaction to a work of minimalist painting or sculpture; they attribute their ease of processing to the *work*'s simplicity, thereby breeding a more negative judgement of the work.

Conversely, an art critic armed with the conceptual and art theoretical background informing works of minimalist art might instead attribute their easy processing to their own knowledge and experience, thereby reinforcing a more positive evaluation of the work—or, indeed, they may look past the work's perceptual simplicity to its conceptual complexity and focus on that instead. As Rolf Reber has observed, the salience of the *source* of perceptual fluency seems to matter most for simple stimuli, and least for complex stimuli.[10] Part of the explanation for why fluency effects are so strongly tied to preference judgements is just that people enjoy it when things come to them easily, and also enjoy overcoming a challenge; unsurprisingly, cognitive progress is rewarding. Conversely, we become frustrated when our efforts are stymied, such as due to high disfluency.[11] Indeed, too complex a stimulus—or a stimulus too far outside one's own competency—seems to consistently result in a lower evaluation of that stimulus: our preferences seem to follow an inverted U-shaped curve.[12] Likewise, paying too much focused attention to a musical work can undermine our ability to enjoy it, much as when a literature class is said to 'ruin' a novel or poem.[13]

But we can also derive fluency-related pleasure relative to our expectations of some stimuli. So, for example, someone who expects to struggle with a Bach fugue but finds the experience

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[10] Reber (2012: 232).
[11] See Reber, Schwarz, and Winkielman (2004), Schwarz and Clore (2007), and Dragojevich and Giles (2016: 400).
[12] Berlyne (1971).
[13] Szpunar, Schellenberg, and Pliner (2004).

considerably easier is likely to have a more enjoyable experience as a result.[14] Because complex stimuli feature less repetition[15] they retain the ability to surprise us upon repeated exposure, thus counteracting the effects of habituation, while simpler stimuli spark less interest.[16]

The other side of processing fluency is processing *disfluency*, which is closely tied to negative evaluative judgements. Once again, however, disfluency is not all bad. For one thing, more complex stimuli are less fluent than simpler ones but, as we saw above, we often prefer more complex stimuli. For another, audiences seem to reflect more carefully on disfluent stimuli, which leads them to make fewer mistakes concerning such stimuli than with fluent stimuli.[17] In one study, for example, when presented with the question "How many animals of each kind did Moses take onto the Ark?" in an easy-to-read font, 88% of participants answered 'two'—when, of course, it was *Noah* who was responsible for the Ark project. Of the rest, 6% correctly answered 'can't say'. But when asked in a harder-to-read font, 53% answered 'two', and 40% correctly answered 'can't say'.[18] The upshot seems to be that when processing fluency is too high, audience engagement is relatively shallow, since they need not pay much attention to their lectoral, visual, or auditory experience. But when fluency is low, audiences must pay much more careful attention to the experience in order to parse it out. In doing so, they rely less heavily on heuristic cues or intuition, leading to deeper engagement with the stimulus in question.[19]

Predictably, then, fluently processing a complex piece of music is a rather more pleasing experience than struggling to process that same piece, or than simply listening to the same simple piece over and over again. That is why *Happy Birthday to You* ranks on virtually nobody's top-ten list

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[14] Reber (2012: 228).
[15] Cochrane (2021: 40).
[16] Reber (2012: 228). On the role of expectation and surprise in musical appreciation, see Huron (2006).
[17] See Alter et al. (2007) and Song and Schwarz (2008)
[18] Song and Schwarz (2008: 794-5). As a result, this is known in the literature as the 'Moses illusion'. See also Reber (2012: 237)
[19] Alter et al. (2007).

of musical works, as simple and catchy a tune as it is. It also helps to explain why Karlheinz Stockhausen's *Helikopter-Streichquartett* (*Helicopter String Quartet*, 1983), composed for a quartet of strings and matching quartet of helicopters, is not particularly popular either, despite its notorious complexity. But what does this have to do with metal's characteristic 'heaviness'?

3. Processing Heavy Metal

Considered in these terms, it is easy to see that many of the candidates suggested for metal's characteristic 'heaviness' are properties which actively inhibit, rather than facilitate, fluent processing. Consider its loudness,[20] which is achieved both with sheer volume (e.g. Manowar's status as the 'loudest' band in the world) but also by means of heavily distorted guitars (especially power chords). Heavy metal is intended to be blasted at a high volume, but its emphasis on distortion also contributes to its perceived loudness because of how the brain processes distortion. On the one hand, we are primed to associate distorted sound with loud phenomena, as with, e.g., shouting or screaming. On the other hand, distortion allows a guitar's tone to occupy a wider band of the audio spectrum, meaning that the guitar will tend to drown out sonic contributions in the same frequency range from other instruments (especially the bass, drums, and vocals).[21] To counteract this effect, the rest of the instrumentation must work to cut through the guitars or retire to the producer's suite. That all this loudness is routinely characterized as 'noise' or a 'wall of noise' is a good indication of how ordinary listeners experience it—that is to say, they struggle to process its musical and expressive content. Here, for example, is the rock critic Lester Bangs, writing for the *Rolling Stone Illustrated History of Rock and Roll* in 1980: "As its detractors have always claimed, heavy-metal rock is nothing more than a bunch of noise; it is not music, it's distortion."[22] Nor is this surprising, since the literature on processing

[20] Miller (2022: 76).
[21] Mynett (2017: 13-5). Mynett clarifies that it is the drum's shell, in particular, which is vulnerable to being drowned out.
[22] Bangs, cited in Weinstein (2014: 40).

fluency suggests that familiarity with a stimulus facilitates its perception.[23] Nowhere is this more apparent than in metal's 'extreme' sub-genres, where even the vocals are heavily distorted by being growled or shrieked; this allows them to occupy a larger band of frequencies and cut through the noise of the guitars, but results in largely unintelligible lyrical content for the uninitiated.[24] Metal is an acquired taste, and its loudness contributes to its disfluency, at least for ordinary listeners.

Another hallmark of metal's heaviness is its lyrical content, which, at least in the "heavier" subgenres (e.g. black or death metal), tends towards the dark and transgressive.[25] Part of what makes black metal so heavy, for example, is that its lyrical content is dominated by death, misanthropy, Satanism, suicide, war, etc. These are precisely *not* run-of-the-mill pop themes and are bound to turn off a great many listeners. Their fluency-inhibiting effect is enhanced by singers' tendency to shriek, rather than sing, the lyrics, making their semantic content more difficult to discern in the first place. Processing fluency can be further inhibited by writing and singing in languages other than English, which is the *lingua franca* of global pop music and usually a pre-requisite for greater market share. A great deal of melodic death metal, for example, is sung in Finnish, Norwegian, and Swedish, and some metal is even performed in extinct languages such as Gaulish, Latin, Middle-English, or Old Norse. Where pop songs proudly showcase their lyrics, many sub-genres of metal seem to go out of their way to hide them, often relegating them to just another musical (i.e. non-semantic) element.

Extreme tempi are another marker of metal's heaviness.[26] Popular music tends to cluster around 90-120 beats per minute (BPM), with some genres, such as hip hop, anchoring the lower end of the spectrum (~85-115 BPM) and others, such as rock, anchoring the higher end (~110-140 BPM).[27] Metal exhibits a wide range of tempi, ranging from Sleep's "Dopesmoker" at 96 BPM to 310

[23] Huron (2013: 16).
[24] See Berger (1999: 58ff) and Mynett (2017: 19).
[25] On metal's lyrical content, see Miller (2022: 78-9).
[26] Miller (2022: 79), Herbst and Mynett (2022: 642), Herbst and Mynett (2023: 24-5).
[27] Biss (2023).

BPM for Spawn of Possession's "Scorched". Extreme metal typically features song tempi between 150-250 BPM, with the drum's blast beats reaching 300-400 BPM, or tremolo riffs on the guitar hitting 600 BPM.[28] Not all metal is quite so fast, of course; in fact, much of it falls into the (still rather wide) range of 100-160 BPM. Still, we can see that tempi well outside the typical pop range (say, 160+) are likely to contribute significantly to an ordinary listener's processing disfluency by introducing an overwhelming number of stimuli over a short span. To date, much of the literature on heaviness has advocated for slow tempi, because these are typically (though defeasibly) associated with the lower-frequency sounds which give listeners the impression that the music emanates from a large, heavy entity.[29] In fact, however, outside the doom and sludge sub-genres, listeners, musicians, and producers alike adopt a much more pluralistic perspective on heaviness, arguing that slow tempi alone lead to sluggishness, and should be counterbalanced by a forceful "impact," typically delivered by higher-frequency sounds, which give the impression that the sound's source is very close.[30] Here again, processing fluency can help us to make sense of these divergent attributions: the goal here is to shake listeners out of their accustomed ruts. Extreme tempi at both ranges of the spectrum are capable of doing so, but need to be balanced out by other factors lest they lead too quickly to habituation and boredom. A fast tempo is "in your face," but a very small object intruding upon your personal space is just annoying; a slow tempo connotes ponderous enormity, but a huge object at a significant remove is not very alarming. Heavy metal, however, aims to be both huge *and* "in your face." Changing time signatures can likewise throw the unprepared listener off-balance, although suitably acculturated

[28] Kahn-Harris (2007: 32-3). Note, however, that perception of speed seems to depend more on the speed of rhythmic subdivisions than tempo (Herbst and Mynett 2023: 25).

[29] E.g. Smialek (2015), Thomas (2015), Kennedy (2017), and Miller (2022). Conversely, Berger (1999) argues that heaviness is intimately tied to fast tempi.

[30] Mynett (2017: 9), Herbst and Mynett (2022: 649).

listeners may take great pleasure in such surprises, which interrupt habituation, allowing the listener to respond to a repeated stimulus much as they initially did.[31]

Finally, use of the guitar riff is often identified with metal's heaviness, as has the music's rhythmic difficulty.[32] A riff is just an iterated musical phrase or chord which, when doubled in the bass line, creates a dense and layered sound, while rhythmic difficulty simply refers to the difficulty of following the pattern of the length of the notes being played. Repetition, of course, serves to increase the audience's familiarity with a sound and thus, via the exposure effect, to increase its liking for it—provided it is positively-valenced to begin with. But the evidence suggests that metal is widely perceived negatively.[33] Repetition, then, is not likely to increase an unacculturated listener's liking of the music, and if what is repeated are relatively dense and disfluent musical phrases, then this is apt to further inhibit the listener's ability to process the sound. We might likewise expect that acculturated listeners would see their own positive reactions diminish over time, as riffs are repeated. The other face of the exposure coin, after all, is habituation. But habituation can be interrupted by other characteristic aspects of the music, such as metal's sharp variations in pitch and tempo, the preponderance of low-frequency sounds, atonality, chromatic chord progressions, etc.[34] These are all properties we associate with metal's paradigmatic energy, and energeticness or intensity have a documented dishabituating effect.[35]

4. Dopesmoker

Miller focuses his analysis of metal's 'heaviness' on one particular puzzle case, Sleep's *Jerusalem* (1999; re-released in 2003 under its original title, *Dopesmoker*), an album whose aim was to be "the heaviest

[31] Huron (2013: 9-11); on the dishabituating effect of variable tempi, see Herbst and Mynett (2023: 24-5).
[32] Miller (2022: 80); on the relationship between rhythmic difficulty and heaviness, see Hannan (2018).
[33] See Bryson (1996).
[34] Miller (2022: 80).
[35] Huron (2013: 11, 21).

thing ever recorded."[36] The result, as Miller characterizes it, is "a single, hour-long song filled with slow, churning guitars and monotonic chants about a new race of 'Weedians'."[37] What is interesting about *Dopesmoker* is the apparent mismatch between ends and execution; heavy metal is characteristically fast-paced music organized around dark, serious thematic content; yet here we have an incredibly slow (96 BPS) and monotonous song stretched out to a mind-numbing 63 minutes, rather than the more typical five or six. What could possibly have led Sleep to think they were producing the *heaviest* piece of metal?

We have, here, everything we need to explain why *Dopesmoker* is so heavy, if indeed it is. First, when it comes to ordinary listeners—i.e. non-metalheads—the auditory experience of listening to *Dopesmoker* is particularly disfluent. Audiences accustomed to an upbeat tempo, dance beats, clean vocals, and songs about love will find no familiar ground to cling to in Sleep's atmospheric sludge. Audiences must wade through eight minutes and twenty-three seconds of uneventful guitar before the first words—"Drop out of life with bong in hand"—are uttered. Absent some pre-existing interest in doing so, auditors are given little reason to listen much past the song's opening bars. This explains what makes it 'heavy' in the first place.

Metalheads, on the other hand, are at least familiar with the kind of atmospheric noise that characterizes *Dopesmoker*, so it need not be an insuperable barrier. Entire sub-genres (e.g. doom, sludge, and stoner metal) are devoted to this kind of noise, after all. The metalhead's increased proficiency with the standard features of the music she loves allow her to perceive greater formal and semantic coherence in the piece, leading to greater conceptual fluency and, thus, a more satisfying overall experience of the work.[38] Experienced metalheads are also more likely to be animated by an

[36] Billy Anderson, quoted in Miller (2022: 70).
[37] Miller (2022: 70).
[38] Reber (2012: 236).

independent desire to experience "the heaviest" metal in the first place, even absent any strong interest in or appreciation for the particular sub-genre at issue.

But we also have to account for the comparative judgement that *Dopesmoker* is heavier than other heavy music—the *heaviest*, in fact. This is easily done: if what makes something heavy in the first place is its relative inaccessibility—its low processing fluency—then, by symmetrical reasoning, we should expect that what seems heavi*er* or heavi*est to a metalhead* will be what metalheads as a group find more difficult to process fluently. Since they are accustomed to power chords, riffs, rapid changes of tempo and pitch, etc., these will not serve to inhibit their processing much on their own. In order to inhibit a metalhead's processing fluency, a band could try to double down on any or all of these features, but we should expect that there will be limits to how much we can inhibit someone's processing fluency by giving them more of what they love. The other option—and this is what Sleep seems to have attempted with *Dopesmoker*—is to actively undermine some or all of the properties which the target audience takes to be standard for the genre. In other words, a band can shift the audience's aesthetic focus to properties which are contra-standard for the genre in question. So, for example, because metal is stereotypically fast, *Dopesmoker* is unbearably slow; because metal typically features belted-out self-serious vocals, *Dopesmoker* is sparsely peppered with chants about drug-induced musings.

Listeners who are habituated to metal's standard properties have an easier time processing the music because they have a better idea of which elements they should attend to and which not, and so can focus their attention on particular elements of the music hidden behind the 'noise'. Thus, when it comes to a work like *Dopesmoker*, which "consists of some 1800 loops of a single C-based pentatonic blues riff,"[39] the research on processing fluency suggests that unacculturated audiences should find it rather difficult to process. Acculturated audiences, by contrast, are liable to become *bored* by the endless

[39] Miller (2022: 80).

repetition—recall the inverted U-curve above[40]—especially since it runs counter to the genre's norms along so many axes (e.g. speed, variations in pitch and tempo, etc.). And boredom presents its own obstacle to processing a sixty-three minute stimulus like *Dopesmoker*.

5. Explanatory Virtues

Emphasizing metal's characteristic stress on decreasing auditory processing fluency helps to explain a number of otherwise puzzling features of the genre.

First, consider comparative assessments of heaviness. Sleep's music, Miller argues, is obviously heavier than Buddy Holly's: there is a great deal more 'noise' to the former than the latter.[41] But how can we explain cross-metal comparisons, such as the judgement that Sleep's *Dopesmoker* is heavier than Slayer's *Reign in Blood*? The answer, I think, is rather straightforward: if *Dopesmoker* is heavier than *Reign*, it is because the album and its music are less accessible to listeners, which is just to say that listeners will experience more disfluent processing of *Dopesmoker* than *Reign*. By virtue of being metal, both albums are inaccessible to a standard pop audience, since both feature a significant combination of disfluent elements. But if we want to know which piece of metal is heavier, we need to ask which is least accessible *to a metalhead*, since metalheads are accustomed to the kinds of stimuli on offer. It is an open question whether the metalhead in question is a period metalhead, a suitably-informed contemporary metaller, or an ideal headbanger of the kind postulated for literature by hypothetical intentionalism.

Regardless, cross-metal comparisons of heaviness are no more mysterious than other kinds of expert comparative judgements. We need simply start with the class of people accustomed to the kinds of properties which are standard for the practice in question, and ask them which works even they

[40] Berlyne (1971).
[41] Miller (2022: 77).

struggle to appreciate, despite their background expertise. There is not much point in trying to divorce the judgement of relative heaviness from the capacities of its appreciators. As Kendall Walton has observed, "A cubist work might look like a person with a cubical head to someone not familiar with the cubist style. But the standardness of such cubical shapes for people who see it as a cubist work prevents them from making that comparison."[42] Cross-metal comparisons of heaviness may seem nonsensical to those not accustomed to listening to metal; this is not surprising, since they experience significantly disfluent processing, to the point that what they hear is 'noise' rather than music. But such comparisons are perfectly tractable for audiences familiar with the genre; they, after all, are capable of hearing the music, of discerning its notes, instrumentation, and even its lyrics.

Appealing to processing fluency also explains the phenomenon of decreased heaviness over time—i.e., the fact that music perceived as being incredibly heavy in decades past (e.g. Iron Maiden in the 1970s and '80s) no longer qualifies as particularly heavy to metalheads today, though none would dispute its credentials as metal. This fact presents a problem for accounts which reduce 'heaviness' to the music's sonic properties (e.g. distortion[43]), since a song's sonic properties are invariant over time. If heaviness were a function of distortion alone, we would expect judgements of heaviness to remain static over time and to be invariable between fans and non-fans, since they would refer to the same basic acoustic properties of the song. But, in fact, the opposite is true: fed on a steady diet of extreme metal, today's metalheads do not think of early metal as particularly heavy, and fan/non-fan judgements of heaviness diverge significantly.[44]

There is really no question that it is listeners' perceptions which have changed over the intervening time; what processing fluency contributes is the mechanism of that change: habituation. Habituation predicts that, as audiences become accustomed to the 'heaviness' of an era's sound, it will

[42] Walton (1970: 345).
[43] Mynett (2017).
[44] See Berger and Fales (2005).

become less attentionally salient and listeners' responsiveness to it will decrease. Where heaviness is concerned, Black Sabbath, Judas Priest, and Iron Maiden are victims of their own success. Their characteristic sounds were widespread and widely emulated, thereby increasing audiences' familiarity with them and, thus, their processing fluency. Over time, and as their success inspired further innovation at the margins of the audible sound spectrum, a substantial body of more disfluent music built up. Similarly, processing fluency explains empirical findings which demonstrate differing perceptions of heaviness between fans and non-fans: quite simply, a much wider swathe of the music is difficult for a non-fan to process, and we should expect similar difficulties for listeners accustomed to very different sub-genres (e.g. hair vs. black metal).[45] If heaviness is a matter of processing disfluency, then it comes as no surprise that music may gain or lose it over time, as it becomes increasingly experientially accessible to greater numbers of people (metalheads and pop music fans alike).

Relatedly, Miller introduces a thought-experiment which he takes to demonstrate that we cannot articulate (in any general terms) the 'something more' that makes metal heavy, since it will hinge on various perceptually distinct and even contradictory features.[46] He asks us to imagine that an aspiring metal band wants to cover Buddy Holly's "Peggy Sue." They make it 'heavier' by adding surplus noise, by adding as much distortion as technologically feasible, adding power chords, etc., until they hit the point at which quantitative increases in expressive 'noise' no longer entail concomitant increases in 'heaviness'. But suppose they want the song to be heavier still: what more should they add?

Once again, inaccessibility points the way forward, and even explains why noise entails heaviness, when it does: adding expressive noise results in a denser, less immediately accessible sound.

[45] e.g., Czedik-Eysenberg et al. (2017), and Herbst (2019).
[46] Miller (2022: 77-8).

It introduces obstacles to processing fluency. Once one has maximized the heaviness noise can contribute, one has to look for other ways to diminish auditors' processing fluency. This can be achieved by pushing the song to an extremely fast, slow, or highly variable tempo, by substituting growls or screams for clean vocals, by finding ways to emphasize certain portions of the lyrical content (or altering it outright), and so on. Indeed, this is just what happened with black metal in the 1990s, when death metal was the undisputed champion of the heavy sweepstakes; in order to compete for the crown, black metal found itself opting for a less familiar sound.[47] In a slogan, the 'something more' that is 'heaviness' is actually something *less*: less auditory processing fluency.

Against the suggestion that lyrical content confers heaviness, Miller objects that it is unclear *which* kinds of lyrical content do so.[48] But this concession is premature: the less immediately accessible the lyrics are to aesthetic appreciation, the more heaviness they confer. Indeed, listeners and practitioners do cite lyrical content as a contributing factor to heaviness, particularly (though not exclusively) when it emphasizes the stereotypical themes of chaos, gore, occultism, and violence.[49] As we saw in §3, this can be achieved through the selection of atypical (or even repulsive) thematic content, by writing and singing in non-standard or extinct languages, or by employing growls, screams, and shrieks rather than clean vocals. By doing so, bands actively inhibit listeners' uptake of a song's semantic content, so that the lyrics and vocals have a predominantly musical or atmospheric, rather than a semantic, function.[50]

Miller also argues that the 'heaviness' associated with an extremely slow tempo (e.g. 96 bpm) is different in kind from that associated with an extremely fast one (e.g. 250+ bpm), and that such differences in kind are reflected throughout the range of structural properties which can contribute to

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[47] Reyes (2013) chronicles this piece of metal history.
[48] Miller (2022: 78).
[49] Herbst and Mynett (2022: 639).
[50] This may also be true of music that places a significant premium on rhyme, as rap and hip hop do. Nevertheless, these genres do not work quite as hard as metal to undermine audience uptake of their songs' semantic content.

heaviness.[51] Miller's worry is that the features we normally think of as contributing to heaviness—expressive power, breakneck tempo, growls, sombre lyrical content, etc.—aren't much in evidence in Sleep's *Dopesmoker*, which suggests the band failed to make metal, let alone the heaviest metal.[52] But if the foregoing is correct, then it does not matter that extreme slowness produces a different experience of noise from extreme speed. Ultimately, these are just different ends of tempo's accessibility spectrum. The key explanatory notion here is not beats per minute, but rather the immediacy of auditory uptake.

6. The Categorical Objection

The philosophical literature on genre is highly indebted to, and largely dominated by, Kendall Walton's account of artistic categories.[53] A Waltonian category is a grouping of works based on the active perception of a shared and unified *gestalt* between them.[54] Perceiving a unified *gestalt* is itself dependent on perceiving (though not necessarily recognizing) a suite of properties which are standard, relative to the category in question.[55] Recently, Theodore Gracyk has argued that metal is not a proper Waltonian category because its sheer stylistic diversity ensures it lacks a single identifiable *gestalt* which its auditors experience.[56] The worry, here, is that metal is so stylistically diverse that it has no truly standard properties: let us call this the *categorical objection*.

Miller evinces a similar concern, arguing that the 'something more' which makes metal 'heavy' is tied to radically different and even incompatible musical properties and auditory perceptions.[57] As

[51] Miller (2022: 79). Several scholars have adopted a pluralistic view of heaviness; see, e.g., Berger (1999: 59), Hannan (2018: 437-8) and Herbst and Mynett (2023: 17-8, 32).
[52] Miller (2022: 74).
[53] Walton (1970).
[54] Walton (1970: 340-1).
[55] Walton (1970: 340).
[56] Gracyk (2016: 778).
[57] Miller (2022: 71).

he puts it, "despite the distinctive know-it-when-I-hear-it character of heaviness, there are no features or set of features that necessarily warrant the application of the term 'heavy' to works of music."[58] The upshot, for Miller, is that metal's 'heaviness' is conceptually inarticulable. For some music, heaviness will be a function of its thematic content; elsewhere, a function of the 'wall of noise' created by distortion, blast beats, and growls; while in other cases, such as Sleep's *Dopesmoker*, it is in no small part a function of the painfully slow tempo.

It is certainly true that metal exhibits a very wide range of highly divergent styles—to the point where it would not be entirely inaccurate to say that it is so fragmented that many bands are the sole occupiers of their sub- (sub-, etc.) genres. And yet, I have argued, all of these sub-genres operate with a shared commitment which organizes the features auditors experience in the work: a commitment to an *inaccessible* sound. Heavy metal is a paradigmatically acquired taste; to untutored ears, it initially presents as a 'wall of noise'. But, as Miller and Gracyk demonstrate, metal is not characterized by any one particular kind of noise. Rather, metal's perceptual *gestalt* is its inaccessibility to ordinary auditors; it is characterized by the difficulty of listening to and appreciating it.

Inaccessibility, of course, is nowhere near unique to metal music, nor is it uniquely identifying. Some kinds of experimental music, for example, are highly disfluent; this is the case with music that does not sound musical, such as Erwin Schulhoff's silent composition *In futurum* (1919), Pierre Schaeffer's noise musical work *Étude aux Chemins de Fer* (1948; *Railroad Study*), or John Cage's better-known *4'33"* (1947-8). Some, such as Ligeti's *Étude No. 14A: Coloana fara sfarşit* (*Column without End*) are too fast and demanding for a human player to play, and so must be appreciated from their scores. But other, more obviously musical, works can be highly disfluent, too; just think of atonal music or improvisational jazz. Such works are not for everyone; they require a lot of work from listeners, both in the moment of appreciation and in terms of prior acculturation. They are all highly disfluent, and

[58] Miller (2022: 71).

achieve their disfluency by means of many of the same tricks as metal. And yet noise music and jazz are not heavy metal; indeed, the description 'heavy' seems to be largely reserved for, and synonymous with, metal.[59] So what is it that makes some kinds of disfluency heavy, and others not?

A big part of the reason why metal is called 'heavy' seems to be associative or metaphorical. This comes from the fact that distorted guitars give the impression that the source of the sound is both very near, and very, very large. This is because high-frequency sounds typically travel only a short distance, and are easily absorbed by intermediary substances, while low-frequency sounds travel much further, and enjoy far greater penetration. Consequently, a distorted electric guitar's high frequency emissions will give listeners the impression that the source of the sound is very near to them; conversely, low-frequency emissions will suggest that the sound's source is enormous.[60] From these facts, it is easy to see how one might come to use 'heaviness' as a metaphor to characterize music that aims to be very much in your face and over-aweing. Because they are less focused on introducing disfluency through distortion, other musical genres simply lack the same metaphorical association (or must get it elsewhere).

In order to answer the categorial objection we need to take a step back and ask what purpose is served by metal musicians' focus on distortion. The answer, I have suggested, is the pursuit of disfluent auditory processing, and this answer likewise helps to explain the other elements which are commonly cited in support of heaviness, including non-musical (e.g. visual or thematic) properties. But if the root of heaviness is the pursuit of disfluency, then that means that non-metal music may also be heavy, provided it aims to be difficult for some listeners to process.

This is a bullet which the metalhead should simply bite, and it need not even be a particularly large one. Schulhoff's, Schaeffer's, Cage's, and Ligeti's compositions are indeed 'heavy,' as are atonal

[59] Herbst and Mynett (2022: 638).
[60] Mynett (2017: 13).

music and improvisational jazz. But what they are not is heavy *metal*. Metal is a musical genre distinguished by a particular history which has taken certain kinds of disfluent sounds (especially distorted guitars and vocals), sights (especially black costumes, corpse paint, and spikes), and themes (especially dark ones) as standard properties of genre-membership. Different kinds of music are characterized by their pursuit of certain historically-delimited kinds of sounds, and heavy metal is no exception: it pursues disfluent auditory processing along particular historically-constrained axes. Even if all disfluency introduces heaviness, not all heavy sounds are metal.

Metal is not unique in featuring or even pursuing disfluency; it *is* unique in the cluster of disfluent phenomena it standardly pursues, and that cluster is determined by the history of audiences and musicians accepting and responding to particular kinds of auditory disfluency. Over its fifty-year history, metal's practitioners have pushed the physical limits of these axes to their extremes, resulting in music that is extremely difficult for the unaccustomed ear to process., and which sounds very different from other kinds of music which feature inhibited processing fluency. Inaccessibility may not be unique to metal, but what *is* particular to the genre are the *means* through which this inaccessibility is standardly achieved—that is, through the use of power chords, riffs, double bass drums, high or highly variable tempi, abrupt changes of pitch, growls, dark thematic content, etc. As Jan Herbst and Mark Mynett put it, "Musical heaviness in the metal genre seems to be based on a nucleus of commonly accepted features: weight, size, density, loudness, power, aggression, energy, emotion, and intensity, conveyed through harmonic distortion, composition, and performance."[61] These are the historical tools of the trade, the jointly sufficient means through which its signature *gestalt* is achieved and articulated.

In the quest for greater heaviness, new axes of disfluency may well be added which were not, previously, standard for the genre; this is how we get sub-genre fragmentation. As with any other

[61] Herbst and Mynett (2022: 649).

genre, however, musicians must be careful not to deviate too much from its standard properties, lest they end up in a new genre altogether. For this reason, although distortion may not be sufficient to explain metal's heaviness, it has a good claim to necessity:[62] it is, after all, the sonic property of the music which first captivated everyone's interest and prompted their subsequent innovation. Distortion is both the signature sound of heavy metal, and widely accepted as the primary contributor to its 'heaviness'.[63] One can innovate by introducing contra-standard properties, but these must be balanced against the background of what audiences will recognize as familiar. So, for example, a song with growled lyrics but no distorted guitar is unlikely to be counted as metal, while one with distorted guitars and clean vocals is.

7. Profoundly Heavy Metal

Since music is a paradigmatically audible art-kind,[64] it is a strange thing for a musical genre to aim to inhibit auditory processing fluency—especially if its musicians hope to earn a living. But most metal does not aim for inaccessibility *tout court*; metal musicians are not setting out to make *unlistenable* music.

Heaviness may be metal's *gestalt*, but that does not mean it is pursued above all else. In making *Dopesmoker*, Sleep aimed for maximal heaviness. But most bands set their sights somewhat lower, aiming for a (relatively) *commercially-successful* heavy sound. This means blending heaviness with more easily accessible expressive content, and it is this balancing act that generates the incredible variety of heavy metal on offer today.

This is why bands like Amon Amarth combine melodeath growls with catchy riffs and themes from Norse mythology; why Eluveitie balances its Gaulish lyrics, growls, and power chords with clean vocals and traditional Celtic melodies and instrumentation; why Nekrogoblikon pair their growls and

[62] Mynett (2017: 9).
[63] Mynett (2017: 9).
[64] See, e.g., Dodd (2007).

highly variable tempo with goblin costumes and absurdist humour; and why Manowar blends sheer volume (they hold the Guinness World Record for the loudest sound, having registered 129.5 and even 139 dB) with spoken word poetry and songs valorizing metalheads and heavy metal. Ultimately, the point is not utter inaccessibility; the point, rather, is to actively resist straightforward appreciation of the music and all its attendant heuristics, forcing a deeper, practiced engagement instead. That engagement is rewarded with a complex, high-intensity, and texturally rich sound that resists habituation, thus rewarding active listening and giving it significant 'replay value'.[65]

In this respect, metal is reminiscent of Literature. As Bence Nanay has observed, it is a hallmark of profound literature—i.e. Literature—that it resists efforts to interpret it, while actively encouraging such efforts.[66] As he puts it, "A literary or musical composition is profound if it is difficult to see how it works, if it is not clear what is going on, or if the feeling of fluency is missing."[67] This describes metal to a tee, suggesting that its 'heaviness' is a mark of its *profundity*—or, at least, a claim to profundity. Whether it ever achieves profundity rather than wallowing in its trappings is another matter. As good as the music itself may be, after all, the lyrics (though not the vocals) typically let it down. On the other hand, this may help to explain the popularity of both growls and singing in languages other than English, since auditors who do not know what is being said can more easily maintain the illusion of profundity.

It also gives us the resources to draw intra-musical comparisons, as we saw in §5. Metal is 'heavy' because it presents as acoustically dense sound, because it is difficult for someone with a pop music sensibility to parse what is going on. Amon Amarth is heavier than Poison because melodic death metal is less accessible—is more of an acquired taste—than glam; and Sleep's *Dopesmoker* is the

[65] On the effects of intensity on habituation, see Huron (2013: 11, 21). On the importance of active listening for metalheads, see Smialek (2015: 153, 164-5) and Hannan (2018: 435-7).
[66] Nanay (2021).
[67] Nanay (2021: 347).

heaviest metal, if it is, because it is the least legible piece of music an audience of acculturated headbangers can hope to appreciate.

Turning the heaviness up to eleven is not—or is not usually—the *point* of heavy metal. In itself, heaviness makes the work less accessible, it challenges straightforward appreciative activity. But a challenge without a payoff is not very interesting, save perhaps as a conceptual exercise. As Nanay puts it, that sort of exercise results in merely *pseudo-profound* works.[68] Making music that is hard for the human auditory apparatus to process is not a particularly difficult task; at the extremes, we end up with music that is all heavy and no metal. Heaviness, I have argued, is a matter of inhibiting processing fluency; the metal, on the other hand, is the payoff: it is the set of historical relationships—expressed in genre and sub-genre conventions (most of which are aural, but many others of which are kinetic, thematic, or visual)—which facilitate the headbanger's appreciative access to the music and its aesthetic properties. These conventions increase processing fluency for the initiated, even as the music's heaviness decreases it for the novice. They allow us to take different kinds of interrogative interests in the music. Without those pathways into the music, we are left with… noise. After all, if your foot doesn't tap or your head bang, then it is not much of an auditory experience.

So, what about *Dopesmoker*? The music certainly repels attempts to listen to it, but does it also nudge us to take an interrogative interest in it?

I have no idea. I can't make it past the noise.

[68] Nanay (2021: 350-1).

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