

Diversification and Post-Regionalism in North American Hip-Hop Flow

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Abstract

Beginning in the late 1980s, North American hip-hop music grew into a dominant cultural force. Regional scenes boasted their own MCs (rappers) whose individual musical styles grew increasingly sophisticated and diverse. From approximately 2000 onward, a variety of factors have moved hip-hop music into an era of post-regionalism. Artists from disparate geographic regions routinely collaborate with one another, and the internet's ability to facilitate virtual musical communities and genres has arguably rendered the idea of local space in hip hop less and less important. In this dissertation I first explore how rhythm and meter in flow (rapping) evolved and became more diverse during hip hop's earlier years as a regional genre, and I then assess whether rhythm and meter in flow have become more homogeneous during this genre's more recent, post-regional era. To achieve these goals, I developed and analyzed two song corpora drawn from *Rolling Stone* magazine and the Grammy Award category of Best Rap Song. I manually transcribed and analyzed 472 verses of flow from 160 songs, focusing on musical parameters such as rhyme, accent/stress, tempo, syllabic density, microtiming, and rhythm. Some of these parameters are analyzed across the 472 verses, while others—which involved more time-intensive analytical methods—are analyzed with greater scrutiny across a 249-verse subset of the corpora.

Analytical results are presented in three contexts: statistical discussion, a newly developed theory of segmentation and phrasing, and a categorization scheme for flow profiles. I summarize the statistical component of the analysis by demonstrating that on the whole, flow practices of the 1990s were markedly more complex and diverse than those of the 1980s. The statistics also suggest that, rather than becoming more homogenous in the post-regional era, flow practices embody new forms of complexity and diversity in microtiming, rhythm, and syllabic density. I use the statistical norms to develop a theory of segmentation, phrasing, and meter in hip-hop music, which links the concept of phrasing to flow and the concept of meter to the beat layer (the instrumental accompaniment). This theory is contextualized in how listeners perceive phrasing and meter in hip-hop music: specifically, how phrasing and meter interact in temporal alignment and misalignment. Finally, I use observations from these statistical and phrasal analyses to propose a categorization scheme of flow profiles based on specific musical parameters of flow practices such as tempo, segmentation, or microtiming.

Abrégé

Vers la fin des années 1980, la musique hip-hop nord-américaine était en train de devenir une force culturelle dominante. À l'époque, les scènes régionales comptaient leurs propres MCs (rappeurs) aux styles musicaux de plus en plus sophistiqués et diversifiés. Autour de l'an 2000 et au cours des années qui ont suivi, un amalgame de facteurs ont propulsé la musique hip-hop dans une ère post-régionaliste. Dans ce contexte, des artistes œuvrant dans différentes régions géographiques collaborent couramment et l'Internet promeut les communautés musicales virtuelles et les genres de manière à minimiser graduellement l'importance de la localité dans le milieu du hip-hop.

Dans le cadre de cette dissertation, j'explore les manières dont le rythme et le mètre du débit (« *flow* ») ont évolué et sont devenus davantage variés durant les premières années du mouvement hip-hop, qui était alors caractérisé par son régionalisme. Puis, j'évalue si le rythme et le mètre se sont homogénéisés avec le temps, soit à l'ère dite post-régionaliste. Afin d'atteindre ces objectifs, j'ai élaboré et analysé deux corpus de chansons (issues de la catégorie de meilleure chanson rap de la revue *Rolling Stone* et des *Grammy Awards*). J'ai manuellement transcrit et analysé 472 couplets de rap provenant de 160 chansons — me concentrant sur divers paramètres musicaux, tels les rimes, l'accent/le stress, le tempo, la densité syllabique, les variations microtemporales et le rythme. Certains de ces paramètres sont examinés dans tous les couplets étudiés (soit 472), tandis que d'autres — exigeant une méthodologie analytique plus longue — sont analysés de manière plus détaillée dans les couplets regroupés dans une sous-catégorie de cette collection (au nombre de 249).

Les résultats analytiques sont présentés par l'entremise de trois contextes : une discussion statistique, une nouvelle théorie de segmentation et de phrasé ainsi qu'un schéma pour catégoriser les profils de débit. Je résume les statistiques de cette analyse en démontrant que, dans l'ensemble, les pratiques en matière de débit des années 1990 étaient manifestement plus complexes et variées que celles des années 1980. Plus encore, selon ces statistiques, au lieu de devenir de plus en plus homogènes dans un contexte post-régionaliste, les pratiques en matière de débit présentent de nouvelles formes de complexité et de diversité en ce qui a trait aux variations microtemporales, au rythme et à la densité syllabique. À l'aide de normes statistiques, je présente comment j'ai développé une théorie de segmentation, de phrasé et de mètre pour la musique hip-hop — qui relie le concept du phrasé au débit et le concept du mètre au *beat layer* (accompagnement instrumental). Cette théorie est caractérisée par l'interprétation des auditeurs, soit comment ils perçoivent le phrasé et le mètre au cœur de la musique hip-hop — donc, comment ces éléments interagissent avec l'alignement ou avec le désalignement temporel. Pour conclure, par le biais d'observations de ces analyses statistiques et phrastiques, je propose une schématisation pour classer les profils en matière de débit basé sur des paramètres musicaux propres aux pratiques de débit, soit le tempo, la segmentation ou les variations microtemporelles.

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I dedicate this dissertation to my sons, Simon and Mattias. I hope that when they're older they still love dancing to "Ridin'" (Chamillionaire, 2006) as much as they do now.

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1 Introduction

1.1 Background and Literature Review

Growing up in an isolated, mid-size Canadian city, I spent my childhood and early adolescence only vaguely aware of developments in hip-hop music and culture. Moving to a larger city coincided with my commencing high school, and though my knowledge of hip hop increased as a result, this music never dominated my listening tastes. It was only as I progressed as a drummer and percussionist in the early 2000s—eventually studying percussion in university—that I began to appreciate the subtle rhythmic, metric, and timbral nuances that imbue hip-hop music with its endless variety and complexity.

Having parents and educators that fostered in me an inquisitive approach to music listening, I have always been keenly interested in assessing how we, as listeners, shape our own musical experiences via our background understanding of music, which in turn is shaped by our listening habits. I recall an instance of this cyclical process when first listening to “California Love” (Tupac Shakur and Dr. Dre, 1995) as a young teenager. I did not know much about hip-hop music back then, but I knew enough to be able to anticipate when rhymes would occur and was always intrigued when they didn’t arrive exactly as I’d expected. Describing this phenomenon, hip-hop scholar Adam Bradley writes that rhyme “works by establishing a habit of expectation in listeners’ minds, conditioning them to identify patterns of sound, to connect words the mind instinctively recognizes as related yet distinct. All rhyme relies on the innate human impulse to identify patterns and to anticipate what will follow” (2009, 41). Listeners’ ability to “anticipate what will follow” is conditioned by what music has just been heard as well as by knowledge of stylistic norms in the hip-hop genre.

Experiences such as the one I had with “California Love” eventually led me to formalize my interest in hip-hop music by studying it in a music-theoretical context. In the years following

my graduate studies in performance and music theory I began familiarizing myself with the extant theoretical literature on hip-hop music, and on hip-hop flow (the rapped vocalization of lyrics) in particular. When I was preparing my PhD applications in late 2013, scholarship and writing on hip hop that focused primarily on musical analysis was scarce, but has since grown rapidly and vastly. By “musical analysis” I mean to include any study of hip hop that takes the music itself as a starting point or treats it as a central focus. This approach can assume a variety of perspectives: it can be listener-centered, meaning listener perception is prioritized. It can be performance- or production-centered, adopting a practice-based orientation. Finally, it can assume a critical perspective; using analysis of performance and reception as a vehicle to situate hip-hop music in a wider discussion of hip-hop culture, or of society in general. Since this dissertation assumes all three of these perspectives to some degree, it follows that a review of similarly oriented literature will aid in establishing the motivations behind this dissertation and its main research questions.

While ethnographic and case-study-based research into hip-hop music and culture already constituted a lively subdiscipline of the fields of musicology and sociology in the 1990s, this research only occasionally engages deeply with the music itself. Robert Walser’s 1995 essay “Rhythm, Rhyme, and Rhetoric in the Music of Public Enemy” was among the first publications to offer such deep and constant engagement. His stated goal is to “contribute specific discussion of musical details in order to corroborate and amplify their [ethnographers of hip hop] arguments” (194), which center around “explain[ing] various aspects of a richly nuanced and powerfully coherent hip-hop culture” (194). Walser used detailed transcriptions (using score-based notation, as I do in this dissertation) to support his discussion, and adeptly demonstrates how discourse about music, complete with what rightly passes as analytical work one might find in a theory journal, can be used to engage critically (in this case, support) with research that

focuses on sociocultural elements of hip-hop music. It warrants mention here that, in 1995, Walser was saddled with the burden of addressing the question of whether hip-hop music is indeed “music”. This factor, as well as the article’s publication in *Ethnomusicology* (as opposed to journals that focus primarily on Western music), indicates that analytical scrutiny of hip-hop music was far from established or accepted in the academic community of 1995.

Such acceptance and establishment began to emerge following Adam Krims’s seminal monograph *Rap Music and the Poetics of Identity* (2000). In addition to exploring the relationships among music analysis, genre, and identity, Krims established a taxonomy of flow practice, a genre system for evaluating hip-hop music, and a graphical system for representing and analyzing flow (the last of which is explained in Chapter 3 of this dissertation); these contributions remain the foundation for most subsequent hip-hop analysis. Krims’s taxonomy of flow practices involves three interconnected styles: sung, speech-effusive, and percussion-effusive. Sung style refers “to rhythms and rhymes equivalent to those of much sung pop or rock music” (50), and characteristic traits include “rhythmic repetitions, on-beat accents, regular, on-beat pauses, and strict couplet groupings” (50). The two effusive styles share some common characteristics, namely “a tendency to spill over the rhythmic boundaries of the meter, the couplet, and, for that matter, of duple and quadruple groupings in general” (50). Speech-effusive styles “tend to feature enunciation and delivery close to those of spoken language” (51) while percussion-effusive styles involve “a combination of off-beat attacks with a sharply-attacked and crisp delivery that accentuates the counter-metric gestures” (50–51). Krims’s genre system involves four genres: mack rap, party rap, reality rap, and jazz/bohemian rap. While insufficient for use in the current hip-hop music landscape, at the time of its devising this was a robust and flexible system to evaluate the musicality, lyrics, and identity of specific MCs and their performances. Krims used this framework to undertake a series of analytical case studies,

focusing on songs and their lyrics by Ice Cube and Goodie Mob, as well as hip-hop music from Dutch and Cree artists.

A pair of articles by Kyle Adams that appeared in *Music Theory Online* in 2008 and 2009 further developed flow analysis first by isolating and relating musical and semantic aspects of hip-hop flow, and then by dissecting these musical aspects in greater detail. In “Aspects of the Music/Text Relationship in Rap” (2008), Adams’s main argument is that “since the music in rap is composed before the text is written, we must change our analytical focus to examine not how the music supports the text, but how the text supports the music” (2008, abstract). While his assertion that the “music” (which in this context can be taken to mean the beat of a hip-hop song, a term I discuss further below) is composed first is contested and far from certain, his conclusion remains relevant for and influential to further scholarship.¹ Adams invites the reader to disassociate what the lyrics mean from how they are rapped, opening a door to rhetorical and musical analysis of the rapping itself, and of how non-lyrical aspects of flow relate to the beat (Adams’s “music”).

Adams’s 2009 article, “On the Metrical Techniques of Flow in Rap Music”, systematizes many of the observations made in his 2008 article, as well as in Krims’s book, into a concise system of analyzing flow from a musical perspective. Adams provides a useful definition for flow: “the ways in which a rapper uses rhythm and articulation in his/her vocal delivery” (2009a, [1]). He outlines seven metrical and articulative features of flow [2009a, 8], using the metrical features as the basis of his analyses. He uses a graph method of annotating flow—I discuss this method of annotation as well as a similar one developed by Krims in Chapter 3 of this dissertation. The article has also been influential because of its concise definition of flow, systemization of its characteristics, and cogent analytical work.

¹ Williams (2009) argues against Adams’s claims, warning against overgeneralizing about how (and in what order) hip-hop music is composed and produced.

A trio of recent corpus studies of hip-hop music have identified genre-wide standard practices as well as stylistic trends of change. Mitchell Ohriner—whose work influences and intersects with mine more than perhaps any other scholar except Adams—developed a small corpus study (2016) to demonstrate that a specific song by OutKast (“Mainstream”, 1996) afforded its MCs the opportunity to exploit the beat’s metric ambiguity with their flow phrasing. Ohriner’s corpora were meant to show that the metric ambiguity in this song is rare both in the context of OutKast’s oeuvre and in flow practice in general. In an article that underpinned his doctoral dissertation, Nathaniel Condit-Schultz (2016) produced a rigorous corpus study using statistical analysis to survey commercially successful hip-hop singles. His methodology and large corpus size enabled him to make general observations regarding “norms” in hip-hop flow, as well as evaluate how specific musical parameters have evolved over time. My first corpus study, co-authored with Denis Martin in 2017, followed a similar path as Condit-Schultz’s, but focused only on music from hip-hop’s Golden Age (1986–1996), highlighting the stylistic changes during this period as flow techniques evolved, and increased commercialism and technological developments influenced the way hip-hop music was produced. Martin and I analyzed our 100-song corpus using both music theory and audio-engineering critical listening tools, working from the assumption that a good portion of the stylistic changes during this era involved increasingly sophisticated production techniques, and examining certain parameters—such as loudness and compression—that are often overlooked in popular-music analysis.

More recently, scholars have developed flow analysis in more focused contexts. Two chapters in *The Cambridge Companion to Hip-Hop* (2015) focus on flow: Adams researched articulative and affective aspects of flow, while Oliver Kautny explored the relationship between lyrics and flow style. Robert Komaniecki (2017) focused on the way different MCs use rhythm and other musical parameters in collaborations, exploring notions of unity and musical identity in

recent hip-hop music, an era when hip-hop groups have become less prevalent, yielding to solo artists who frequently collaborate on a song-to-song basis. Komaniecki (2019) and Ohriner (2019a) have also studied the pitch aspects of MCs' flow performances: Komaniecki devised a five-fold system (graded by pitch stability) for categorizing and analyzing flow pitch, and Ohriner investigated pitch from a comparative, corpus-driven standpoint relative to how pitch is used in African-American spoken language. Finally, Woods (2010) has investigated timbral qualities of MCs' flow delivery with regard to masculine identity in hip-hop music.

Scholars working in fields other than music theory or musicology have also contributed to the proliferation of flow research. Anthropologist H. Samy Alim (2003) undertook an in-depth study of rhyme in hip hop through a close reading of lyrics by the hip-hop artist Pharoahe Monch. Alim demonstrates how the practice of rhyming in hip-hop music is markedly distinct from and more complex than other contexts where rhyme is found. Adam Bradley's 2009 monograph *Book of Rhymes* continues the exploration of hip-hop flow with a focus on the linguistic and poetic aspects of rhyme; this research has become an important cornerstone in the scholarly literature on flow. In studying flow from a poetic or linguistic angle, neither Alim nor Bradley focus closely on the rhythmic aspect of flow; indeed, their work avoids detailed graphical representation of the lyrics as they occur in time. More recently, Jeremy Page (2019) has developed what he calls a "flowprint" representation of flow: a multilayered cyclical means of representing vocal utterances that accounts for rhythm, rhyme, and stress. While Page's framework is compelling, it ultimately falls short in being unable to account for microtiming (he does speak of "drag" but does not relate this term to microtiming as I do here with the term "lagging"), nor does he explicitly account for lyrics in his analyses.

Katz (2008) and Ammirante and Copelli (2019) have taken the linguistic analysis of flow by incorporating aspects of rhythm and meter into their work. Katz adapts Lerdahl and

Jackendoff's tree-diagram approach to modelling prolongation in tonal music (1983) and applies it to rhyme analysis. He shows that rhyme patterns cross-cut group boundaries implied by syntax or surface flow rhythm, and uses the principles of time-span and prolongational reduction developed by Lerdahl and Jackendoff to model the different ways rhyme and surface rhythm are organized in flow. This adaptation is important because it shows how the linguistic and syntactic organization of lyrics can either be preserved or violated when the lyrics are rhythmicized into flow, an idea I explore in Chapters 4 and 6 of this dissertation. Ammirante and Copelli (2019) use Condit-Schultz's (2016) corpus to demonstrate that syllables with higher vowel formants are typically rapped on beats where a percussive instrument also sounds; the authors suggest this occurs so that the lyrics can be more easily heard over the beat. This study should be supplemented in the future with a parallel study that assesses how flow syllables are microtimed to maximize audibility and comprehensibility amid dense beat patterns. In sum, these linguistic and poetic approaches to flow analysis have provided detailed insight into properties of lyrical organization that are useful to any scholar working on flow, even if these publications do not deal with flow in a holistic musical or performance context.

Writings on flow designed for a non-specialized readership have begun to appear as well. Paul Edwards's *How to Rap* (2009) and *How to Rap II* (2013) assemble the author's findings from interviews with dozens of MCs from different eras into a two-volume survey of techniques an MC uses to rap. Though lacking in intricate musical detail and perhaps oversimplifying the practices of MCs, these books are nonetheless valuable to hip-hop scholarship in their reliance on primary sources; analysts of hip-hop music have much to gain from the MCs themselves with regards to their musical approach to flow. Martin Connor's (2018) monograph *The Musical Artistry of Rap* is similarly aimed at a non-specialized readership. Developed from the author's blog, this book explores many of the same musical themes discussed in this literature review,

through the aid of a corpus of songs chosen by Connor himself, but ultimately lacks the rigor of peer-reviewed scholarship while simultaneously engaging too deeply with technical concepts to be suitable for a lay readership.

This is to say nothing of the host of publications that engage with hip-hop music in a more general sense, or the musicological and sociological publications that vividly portray hip-hop music and culture's ascendance, relation to society at large, and intersection with critical concepts such as race, gender, and sexuality. Joseph Schloss's 2004 book *Making Beats* remains the authoritative volume on the practice and culture of sampling and beat-making in hip-hop music. Dissertations by Amanda Sewell (2013) and Claire McLeish (forthcoming, 2020) build on Schloss's work by further investigating sampling practices—in McLeish's case, the stylistic ramifications of increased copyright scrutiny. Justin Williams's monograph on musical borrowing in hip hop (2013) dedicates much-needed attention to a particular aspect of hip-hop music (and indeed Black performance culture in general) that is fundamental to the genre's stylistic identity. Forman (2002), Keyes (2002), Perry (2004), and Rose (1994), among others, deftly investigate sociocultural trends and issues that have impacted—or have been impacted by—hip-hop music's rise to prominence in contemporary America.

Musical research on hip hop shows no signs of slowing down. Komaniecki's recent dissertation (2019) and Ohriner's new monograph on flow (2019c) have appeared within the last year; both works add depth to the extant scholarship in numerous contexts. My own article on triplet flow (published in October 2019) brings focused attention to a flow style that has emerged in the last decade and situates it as a stylistic hallmark of the American South, which dominates hip-hop music today. And finally, Michael Berry's 2018 textbook/monograph *Listening to Rap* "synthesizes approaches taken by scholars from a variety of disciplines, including music, cultural studies, African-American studies, gender studies, literary criticism, and philosophy" (vi). Taken

as a whole, this summary of recent literature pertaining to hip-hop analysis shows that the field has exploded over the past decade, as general interest in this musical genre continues to increase, research methods into it have become more diversified, inclusive, and sophisticated (with the aid of computation), and more graduate-level music theory programs boast faculty with research pedigrees in hip-hop music.

1.2 Terminological Overview

Musical terminology in hip-hop scholarship and journalism is inconsistently defined and used. Furthermore, hip-hop scholarship has not yet sufficiently permeated the academic or music-theoretic communities such that even the most general and fundamental terms are universally understood. To that end, in this section I define basic terms concerning the hip-hop genre, its main actors, and its prevailing musical features. These definitions are not meant as absolute truths or as an argument for what is “correct”, but rather as a guide for understanding how they are used in this dissertation and why I have chosen to use them in this way.

A fundamental question concerns whether the music I write about should be called rap music or hip-hop music. As will already be evident in this introduction (and indeed the title of this dissertation), I prefer the latter term, hip-hop music. In the context of 1970s Bronx, where this genre has its roots, the term “hip hop” encompassed four main activities of self-expression: rapping, DJing, breakdancing (or breaking), and graffiti art.² The first two of these activities are musical and are generally understood to comprise hip-hop music. As rapping developed and became more central to hip-hop culture, the term “rap music” gradually began to emerge as the preferred choice of journalists and scholars. While the term “hip-hop music” has been used consistently throughout the genre’s history, it traditionally encompassed related popular-music styles that may have not contained rapping. The ubiquity of the term “rap music” as this genre’s

² Occasionally a fifth component of “hip-hop” culture is included: fashion.

moniker is evidenced by *Billboard*'s chart "Top Rap Songs", the Grammy award categories "Best Rap Song" and "Best Rap Performance", and the references to "rap music" (rather than hip-hop music) in many of the books and articles summarized above.

A particular problem with the term "rap music" has arisen in recent years: many artists associated with this genre either only occasionally rap, or no longer rap at all. A particularly telling example of this involved the Canadian artist Drake winning the 2016 Grammy for Best Rap Song for his single "Hotline Bling" (2015), which does not contain any rapping. While singing has been a part of hip-hop music since its earliest days, the popularization of its current, usually autotuned format can be traced through Kanye West's 2008 album *808s and Heartbreak*, Kid Cudi's 2008 mixtape *A Kid Named Cudi*, and Drake's 2009 mixtape *So Far Gone*. Singing is now almost as prevalent as rapping in some artists' oeuvres, redefining what it means to be a hip-hop (or rap) artist by gradually shifting the focus away from the act of rapping. From the standpoint of inclusivity, calling this music "rap" music also marginalizes the instrumental or sampled beats that comprise one half of the composite texture of this music. While my dissertation is mainly about vocal aspects of hip-hop music, I do engage substantially with metric aspects of hip-hop beats, particularly in Chapter 6. For these reasons I choose to call the music I study hip-hop music, for this term's accommodation of singing and beat-making alongside rapping.

The gradual increase of singing as a fundamental element of hip-hop music also informs my decision to call vocalists in this genre MCs rather than rappers. The term "MC" (or emcee, as it is occasionally written) also dates back to hip hop's earliest days, when vocalists (occasionally the DJs themselves) would host block parties and other events centered around music and dancing, essentially acting as masters of ceremonies, or MCs. The term MC remained in constant use as hip-hop music developed beyond its initial party-oriented function, and is present in the

monikers of artists such as MC Shan, MC Lyte, Ultramagnetic MCs, Young MC, MC Hammer, and many others. (In ironic contrast to these self-styled MCs who mainly rap, the artist Chance the Rapper often sings in many of his best-known songs.) Because of its all-encompassing definition of a hip-hop vocalist who might sing, rap, sing-rap, or combine these delivery styles, I prefer the term MC over rapper.³

The final terms defined here include textural and formal terminology related to hip-hop music. I follow Adams, Krims, and others in defining *flow* as the rhythmicized and articulated delivery of lyrics by an MC; this definition includes singing, especially the mechanized, autotuned vocalizing present in much recent hip-hop music. I define *beat* as encompassing all instrumental, computerized, and sampled content that comprises the accompaniment texture against which flow operates. This definition of the term, which is consistent with scholarly and journalistic usage, should not be confused with “beat” as it pertains to drumbeats. Indeed, drums form a vital if not omnipresent part of hip-hop beats, but only a part. Therefore, when I explicitly discuss drums (in any of their forms: breakbeats, samples, and drum machines), I refer to the beats they create as drumbeats with the assumption the reader will understand “beat” as always referring to the composite accompaniment texture. Furthermore, when discussing interaction between flow and beat, I frequently refer to them as textural “layers” of a song. This terminology is inspired in part by Yeston (1976) and Krebs (1999), whose works engage with rhythm and meter as a product of stratified textural layers.⁴ Since Chapter 6 deals with metric interaction between flow and beat in much the same way, the layer concept in this discussion is especially relevant.⁵

³ Though often only in passing, I use the term “producer” to denote the artists responsible for producing hip-hop beats, following customary scholarly and journalistic usage.

⁴ See also Wilson (1974) and Pressing (2002). Both authors contrast variable speech-like rhythms with the comparatively fixed repeating cycle of groove in “Black Atlantic” rhythm.

⁵ This layer concept operates in the spirit of Moore’s functional layers of rock music (2012, 20–21).

When referring to formal sections of a hip-hop song, I again prefer terminology that is already in widespread use. Verses in hip-hop songs are much the same as in most vernacular repertoire, and do not require further explanation here. While early hip-hop songs normally alternate between rapped verses and sections without any rapping, as the genre commercialized, its songs increasingly featured chorus or hook sections. While many songs feature choruses that sound remarkably similar to a standard pop chorus—such as “Juicy” (The Notorious B.I.G., 1994)—many others feature a refrain phrase tailing each verse, occasionally repeated but often only rapped or sung once. Other songs use extremely limited vocal material between verses that are neither refrains nor choruses. In light of this formal variety of song sections interpolated between verses, I prefer to use the more general term “hook” to define these sections. While studies of hip-hop music that are more concerned with form might prefer greater specificity, my dissertation only focuses on verses and their flow, and thus does not require this level of focus for hook sections. Other terms used in the dissertation are defined at the point of their introduction.

1.3 Outline of the Dissertation

In this dissertation I investigate two aspects of the rapped vocals, or flow, of North American hip-hop music. I first explore how rhythm and meter in flow evolved and became more diverse over hip hop’s earliest years as a recorded genre (1979–2002). Second, I assess whether rhythm and meter in flow have become more homogeneous during a more recent period (2003–2016), a time when the genre has become increasingly commercialized and less regional in scope. I develop and analyze two song corpora in order to achieve these goals. The first corpus contains 88 songs released between 1979 and 2002, and the second corpus contains 72 songs released between 2003 and 2016.

Through the mid-1990s and early 2000s, North American hip-hop music grew into a dominant cultural force. Regional scenes boasted their own MCs (rappers) whose individual musical styles grew increasingly sophisticated and diverse. Adam Krims wrote that “it is widely recognized and remarked that rhythmic styles of many commercially successful MCs, since roughly the beginning of the 1990s, have progressively become faster and ... more ‘complex’” (2000, 49). Krims’s observation invites further inquiry into *how* the rhythmic styles of MCs grew faster and more complex. From approximately 2000 onward, a variety of factors—mainly driven by the ubiquity of the internet and hip-hop music’s increasing commerciality—have moved this genre into an era of post-regionalism. Artists from disparate geographic regions routinely collaborate with one another, and the internet’s ability to virtually facilitate musical communities or genres has rendered the idea of local space in hip hop less and less important. Amid this post-regionalism, the stylistic influence of the American South has gradually come to dominate hip hop, and now plays an outsized role in dictating the trajectory of this genre. These observations spur my two major research questions.

1) How can complexity and diversity in flow practice be quantified or qualified? Given Krims’s assertion of the increasing complexity of flow after 1990, and the widely held position that hip-hop music diversified during the late 1980s and early 1990s, how is this increasing complexity and diversity expressed in the metric and rhythmic aspects of hip-hop flow?

2) How can flow diversity be connected to regionalism and post-regionalism? If the hip-hop scene were regional, does this regionalism play any part in the diversity discussed above? In light of the internet facilitating post-regionalism and the South influencing the genre as a whole, how, if at all, have flow practices become more homogeneous in recent years? Does post-regional flow sound more stylistically homogeneous, given the aspects and drivers described above? With the diminution of associations with any particular geographic “place”, do the

musical characteristics of those “places” also vanish or assimilate?

Chapter 2 details the background context of regionalism and post-regionalism in American hip-hop music, concluding with the presentation of the main research questions above. Chapter 3 outlines various issues inherent in the development and encoding of popular-music corpora and considers how these issues relate to the two corpora in this dissertation. I discuss the necessity for popular-music corpus studies and the importance of aligning analytical goals with corpus size, objectivity, and selection criteria. In light of these points, I summarize the development of my two corpora, drawn from *Rolling Stone* magazine’s list of the 100 Greatest Hip-Hop Songs of All Time and the Grammy Award category for Best Rap Song (introduced in 2004). I briefly outline how each song’s form was encoded in my database—an important step because I only transcribed verses.⁶ I summarize issues inherent in transcription: notation choice, micro-inflections in pitch and rhythm, and interpretive latitude. Because I transcribe manually, certain aspects of flow could not be systematically encoded, such as microtiming, pitch, and other subjective parameters such as accent. My transcriptions thus focused on the musical parameters I could analyze statistically, such as rhythm, rhyme (type, quantity, and metric location), and tempo.

Chapter 4 covers the techniques I use to analyze the annotated transcriptions. I modify and expand the list of metrical flow techniques developed by Adams (2009a, [8]), developing my own list of metric and rhythmic parameters to analyze:⁷

- The location of and interaction between performed accents (syllables stressed by the MC), lexical and prosodic stresses (stressed syllables in spoken language), and metric accents (accents implied by, but not necessarily heard in, the beat layer).
- The location of rhyming syllables (end, internal), their type (couplet, chain), and their

⁶ I only transcribed verses because these are where the most rapping in a song can consistently be found.

⁷ Adams’s metrical techniques of flow are:

- The placement of rhyming syllables.
- The placement of accented syllables.
- The degree of correspondence between syntactic units and measures.
- The number of syllables per beat.

- metric correspondence with one another.
- The overall syllabic density of a passage.
- The relationship between musical measures and organizational aspects of flow: group, phrase, and line.
- The general approach to microtiming (microrhythm) in each performance.

The first section of this chapter discusses my conceptualization of and analytical approach toward accent and stress in flow. Like Kramer's "stress accents" (1988) and Lerdahl and Jackendoff's "phenomenological accents" (1983), *performance accents* are the foreground accents an MC performs through increased volume, duration, or higher relative vocal pitch (tessitura). MCs can structure their flow either to align performance accents with these other types of accents and stresses, or contradict them. I define instances where a word's lexical stress falls on an unaccented metric position as *lexical syncopes*. Rhymes are analyzed according to type (internal vs. end rhymes), quantity (couplets of two rhymes, or chains of more than two), metric location, and metric correspondence. Syllabic density is measured in syllables per second, in order to compare densities in songs with different tempos (which a syllables-per-measure method would be ill-equipped to do). The chapter concludes with a preliminary analysis of a flow performance ("Shook Ones, pt. II", Mobb Deep, 1995) in order to explore how notions of meter, grouping, and syntax intersect when the metric and rhythmic aspects of flow and beat are considered in tandem, an idea that is explored further in Chapter 6.

Chapter 5 engages with the musical parameters most amenable to statistical analysis: song tempo, syllabic density, microtiming, lexical syncopes, and rhyme structure. Throughout the two corpora, I observe a general downward trajectory in song tempo over time, yet syllabic density remains generally constant. Microtiming was only measured with respect to its perceived presence in a verse, in one of three types: conversational (imitation of conversational rhythm), lagging (behind the beat), and swung (unequal division of the tactus, or pulse). Microtiming and lexical syncopes do not exhibit any compelling patterns, but their overall presence is elevated in

songs released during the 1990s. The 1990s also see an elevated level of rhyme density (the average number of rhymes per measure in a verse or song), as well as a more balanced mixture of couplets and chains, and a more balanced distribution of rhymes on each of the four-beat classes in a typical 4/4 measure.⁸ My analysis of rhyme placement shows how “anticipation rhymes”—those that fall one 16th note before the fourth beat of a measure—were very common in old-school flow styles, but are in general a defining feature of hip-hop flow. My final measurement examined in this chapter concerns rhyme entropy: a combination of the richness and evenness of rhyme distribution across a verse or song.

Chapter 5 isolates trends, prevalences, and anomalies in the data. Chapter 6 takes these prevalences as a starting point, using them to propose a series of rules regarding segmentation, and hypothesizing how listeners may segment or “chunk” passages of flow into units that are meaningful for them. I discuss the factors that influence flow segmentation: rhyme patterning, syntactic structure, lyrical subject matter, breathing patterns, and rhythmic patterns. Based on these factors, I formulate five *segmentation rules* that reflect these main influences on our perceptual organization of flow passages.⁹ I explain how segmentation in flow patterns suggests grouping, but the internal characteristics of such groups imbue them with a sense of directed motion, a fundamental criterion for calling these groups phrases. In applying the idea of directed motion to phrase, I follow Westergaard (1975), Rothstein (1989), Attas (2011), and Adams (2020). I conclude this section with three short analyses, in order to demonstrate how conflicting segmentation markers and ambiguous lyrics (in both syntax and semantics) can obfuscate

⁸ Metric outliers from the 4/4 paradigm are exceedingly rare in hip-hop music.

⁹ These rules are conceived in the spirit of Lerdahl and Jackendoff’s preference rules. While their preference rules “designate out of the possible structural descriptions those that correspond to experienced listeners’ hearings” (1983, 9), mine follow a more generalized approach to perception: I make no claims regarding the level of experience or familiarity in listeners; rather I posit these rules as a general model of segmentation possibilities for all listeners. While unfamiliar listeners might rely on one particular parameter (rhyme or syntax, for example), a listener familiar with hip hop and/or educated in music analysis might privilege other parameters, or several of them in tandem.

identification of phrase boundaries. I establish a working definition of meter as it applies to the beat layer and enumerate the four main ways that phrases of flow and metric units of beat interact in hip-hop music. These interactions are drawn from Krebs's (1999) theory of metric consonance and dissonance, though I use the terms *alignment* and *non-alignment*. I analyze songs by Brand Nubian and Missy Elliott to demonstrate alignments and non-alignments in hip-hop textures. Finally, I present a longer analysis of "Grindin'" (Clipse, 2002), a song that exploits the metric tension between flow and beat more thoroughly than is typical in hip-hop music. In this analysis I invoke Jackendoff's *multiple parallel-analysis processor* model to hypothesize how listeners might perceive one layer or another as the primary agent of metric structure. The work presented in this chapter ultimately seeks to establish a broad theory of meter, phrasing, and form in hip-hop music by dissecting how this genre's main textural layers are organized temporally and examining their interactions in this domain.

Chapter 7 uses the statistical observations and close readings from the previous two chapters to generate a theory of flow profiles, which are assemblages of flow performances that are similar according to a particular musical, lyrical, or situational dimension. *Tempo profiles*, for example, outline a collection of stylistic approaches to flow that predominate in certain tempo windows: specifically, below 80 bpm, 80–110 bpm, and above 110 bpm. Verses below 80 bpm have a wide range of syllabic densities, compared to a much narrower distribution across verses above that tempo. This discrepancy is likely because at around 80 bpm and above, it becomes prohibitively difficult for MCs to rap in sixteenth-note triplets or thirty-second notes; thus, in verses above 80 bpm the smallest basic sub-tactus pulse is the sixteenth note. *Segmentation profiles* are used to demonstrate what I believe is the most salient marker of increasing complexity in 1990s flow practice: the obfuscation of clear segmentation or grouping patterns. I also argue that flow styles in more recent commercial hip hop have returned to

straightforward segmentation patterns. The three microtiming practices I outlined above are conceptualized as profiles, each with its own functional appeal. For example, swung microtiming relates to the common African-American musical practice of uneven division of the tactus, conversational microtiming enhances the rhetorical function of the lyrics, and lagging microtiming is analogous to the groove-based notion of being “behind the beat”, which can evoke a sense of swagger and aloofness in the lyrical delivery.

The last part of the chapter introduces profiles that relate closely to the opening questions: era profiles and regional profiles. I do not, however, explain these profiles in terms of positivistic relationships between specific flow styles and eras or regions. For era profiles, I focus on how specific changes in flow practice correlate with the transition between different historical regions as defined in scholarship and journalism. For regional profiles, I undertake a brief case study of chart-topping singles released in the late 1990s, one from each of the main regions of American hip-hop music: East Coast, West Coast, the Midwest, and the South. I demonstrate how these four specific regional styles are identifiable—for a brief period at least—among the most commercially viable hip-hop music, and suggest that the late 1990s was perhaps the only period where this was true.

The theoretical assumption underpinning this dissertation research is that analytical techniques and orthography associated with Western art music can be adapted for use in hip-hop music as long as consideration of the rhetorical and performative practices of this genre is integrated into the analytical techniques themselves. My research contributes to the growing body of music-analytical scholarship on hip hop by offering a large-scale assessment of the stylistic properties of flow in the context of a corpus-driven study, analyzing flow in a holistic manner that involves narrative, rhetorical, and musical function, relating this analysis to the roles of place and commercialism in hip-hop culture, and focusing on the perceptual aspect of flow.

Corpus studies have become a robust and viable method of analyzing popular music and art music alike. They are appealing in their comparative objectivity and empiricism: corpus research enables scholars to study repertoires without the shadow of canonization, which is especially relevant for popular-music genres that are vulnerable to canonization through focused study on a select repertoire. Aside from Ohriner (2016), Condit-Schultz (2016), Duinker and Martin (2017), and Ohriner (2019c), there are no published analytical/music-theoretical corpus studies of hip hop. Studies such as mine allow us to better understand stylistic constants and changes, and to situate specific musical events or trends within the larger stylistic trajectory of hip-hop music. My dissertation is, however, not a bona-fide corpus study. Rather, I define it as a corpus-assisted study, where corpus data forms the basis of my analysis and motivates many of the theoretical claims I make, but ultimately serves a set of broader arguments about the roles of region, technology, and performance practice in hip hop, and listening approaches for this music.

2 Historical Summary and Main Questions

2.1 Overview

This chapter presents, develops, and contextualizes the main questions driving the research undertaken in this dissertation. These questions explore the relationships between the rhythmic and metric aspects of flow and the notions of regionalism, post-regionalism, and diversity in the musical practice of hip hop. My research agenda was initially influenced by a passage in Adam Krims's 2000 book *Rap Music and the Poetics of Identity*. Explaining his genre system for rap music, Krims wrote that "it is widely recognized and remarked that rhythmic styles of many commercially successful MCs, since roughly the beginning of the 1990s, have progressively become faster and, as it is often put, more 'complex'" (49). Krims precedes this statement by discussing the gap between "old-school" and "new-school" rap music; the former term generally describes hip-hop music of the early 1980s.¹⁰ My initial impulse had been to substantiate Krims's observations regarding speed and complexity by conducting a corpus-driven study on hip-hop flow, but I realized (through conducting a separate study on Golden Age hip-hop music) that, parallel to this complexification, there was a diversification of both flow styles in general and hip-hop music-producing regions in particular.¹¹ Parallel processes of complexification, inter-urban regionalization, and diversification all seemed to have occurred in the late 1980s and early 1990s; with these topics driving my research interests, I have endeavored to study them in the context of a large corpus of songs released between 1979 and 2002.

Furthermore, I have become increasingly aware of the prevailing sense of post-regionalism in recent hip-hop music. Hip-hop artists still hail from a variety of North American

¹⁰ For example, *The Anthology of Rap* (Bradley and DuBois, 2010), defines old-school Hip Hop with the dates 1978–1984. Perry (2004, 54) points out that the term "old school" as referencing this period of time was already in use in rap lyrics as early as 1988.

¹¹ See Duinker and Martin (2017).

locales, but the internet's intricate relationship with popular music has arguably made the notion of geographic origin less important than ever before, especially in hip-hop culture.¹² With that in mind, I developed a second corpus of hip-hop music released since 2002, with the aim of evaluating whether flow practices have become more homogeneous in the post-regional era of this genre. In order to expand on these research objectives, this chapter presents an overview of the eras of regionalism and post-regionalism, and the geographic regions, trends, and artists that have played a role in shaping these eras. I conclude with a brief discussion on measuring diversity, and the potential pitfalls of mapping these measurements onto geographic regions.

2.2 American Hip-Hop Music as a Regional Phenomenon

Hip-hop culture was, from its beginnings, a regional, even place-obsessed phenomenon. Long before The Sugarhill Gang recorded “Rapper’s Delight” in 1979, the hip-hop culture burgeoning in the South Bronx was steadfastly territorial, down to the block, street, park, or housing project.¹³ Loci of hip-hop culture eventually emerged in other New York City boroughs and areas just beyond its city limits: suburban communities eastward on Long Island, directly north of the city (such as Mt. Vernon), and across the Hudson River in New Jersey. By the late 1980s, with the commercial emergence of West Coast hip-hop music, regionalism had become inter-urban, rather than intra-urban, as it hitherto had been within the New York City area. The subsequent rise of Southern and Midwestern hip-hop music in the mid- and late 1990s placed this inter-urban regionalism in greater relief, but as hip hop became increasingly mainstream and commercialized through the late 1990s and early 2000s, the importance and influence of regionalism began to wane.

Abundant scholarship chronicling hip hop’s history exists, and while most of it engages

¹² See Weiner (2012), Lee (2014), and Setaro (2016).

¹³ Forman refers to hip hop’s continued connection to intra-urban landmarks such as these as the *extreme local* (2002, xvii).

to some degree with concepts of urbanism, space, place, regionalism, and geography, Murray Forman's monograph *The Hood Comes First: Race, Space, and Place in Rap and Hip-hop* (2002) explores these concepts most extensively.¹⁴ Forman situates space and place across three streams: the geographic factors of hip-hop's developmental trajectory; the ways in which discourse in hip-hop culture generates, defines, and reflects real or imagined spaces/places; and the ways in which the music-industrial complex both facilitated and inhibited hip-hop music's development and growth beyond its local enclaves. In a two-volume collection geared toward chronicling this music in specific places or regions, Mickey Hess's *Hip Hop in America: A Regional Guide* (2010) takes as its premise that "the roles of place and region are central to hip hop culture" (vii), citing local pride-induced competitiveness in rap battles and the role graffiti plays in territorialism as support for this assertion. Early in his book, Hess cites Forman's coining of the term *extreme local*, signifying MCs' use of neighborhood landmarks to signify their territorial allegiance or provenance.¹⁵ While the *extreme local* still manifests in rap lyrics, and remains foundational to the generation of identity in hip-hop music, other aspects of this music—flow styles and beat production in particular—have moved beyond a regional scope as the genre grew larger and more profitable.

Three main factors speak to why regionalism was central to the development of hip hop through the 1980s and 1990s. These are discussed below: the concentrated urbanization of the African-American populace (heavily influenced by the Great Migration of the mid-twentieth century) leading to hip-hop culture's inextricable relationship with urban spaces, the pre-commercial status of hip-hop music until the mid 1990s, and the notions of community and

¹⁴ Many influential monographs in hip-hop studies discuss the genre's origins, roots, and development: Forman (2002) and Hess (2010) explore these topics from a geographical angle, Rose (1994) in contexts of race and gender, Perry (2004) takes a poetic approach, Chang (2005) focuses on the political aspect of hip hop, while Bradley and Dubois (2010) and Keyes (2002) adopt more general, comprehensive approaches to the topic.

¹⁵ See Forman, xvii.

competitiveness that have permeated hip-hop culture since its origins.

2.2.1 Hip Hop's Relationship with Urban Spaces

Usually understood to have occurred in two large waves, the Great Migration occurred between approximately 1910 and 1970, when millions of African Americans left their rural lives in the American South and settled in urban areas of the Northeast and Midwest, and to a lesser extent, the West Coast. In 1910, 89% of African Americans lived in the South; by 1970 that number had shrunk to 53%.¹⁶ By this time, many African Americans lived in urban areas, with cities such as Chicago, Detroit, Baltimore, Washington DC, Cleveland, Saint Louis, and New York seeing their racial composition change markedly during the mid-twentieth century.¹⁷ Instead of being distributed across a wide swath of rural and urban territory as they had been in the South, African American populations of the Northeast and Midwest became clustered in disparate urban centers, often heavily segregated within these centers. While the African-American population of the pre-migration South had always been segregated from the more substantial white population, segregation in urban areas (due to the closer confines) exposed social issues on a different, more acute scale: these populations were larger and lived closer together in ghettoized circumstances, thus magnifying the issues inherent in their segregation.¹⁸

Many of the urban areas, neighbourhoods, or housing projects with concentrated

¹⁶ See Gibson and Jung (2002). The United States Census Bureau defines the South as including sixteen states and the District of Columbia, as shown on the Bureau's website at <https://www.census.gov/geo/reference/webatlas/regions.html>

¹⁷ This change has as much to do with white flight as it does with the Great Migration; indeed, these two demographic shifts are intricately related.

¹⁸ For example, negligent landlords could more easily ignore their tenants in ghettos, letting living quarters decline in quality and increase in squalor, simply because no one "of consequence" was directly affected as a result. (The apex of this behavior can be seen in intentional fires set by landlords in vacant slum buildings, in order to collect insurance money.) The word "ghetto" has historically involved segregation of some sort, initially of Jewish populations in European cities, and increasingly of African-American populations in American cities. Perhaps more than any other source, the *Racial Dot Map* website (<https://demographics.virginia.edu/DotMap/>) illustrates the extent of urban segregation in American cities. Because the US Census Bureau collects data on race (by contrast, the Canadian Census does not), this website is able to plot the distribution of race on a map, highlighting segregation especially in areas such as Chicago's South Side, the entire city of Detroit, areas of Brooklyn, and so forth. See Cable (2013).

populations of African Americans—South Bronx, Queensbridge, Brooklyn, Harlem, Compton, Oakland, Atlanta’s College Park, Houston’s Fifth Ward, and Chicago’s South Side among them—would eventually become loci of hip-hop music and culture. As such, hip-hop music’s soundscape, lyrics, and overall ethos are inextricably linked to the urban landscape. Lyrics often depict issues of urban life, such as slum-based living, urban decay, geographic locations of gang territory, and lack of personal space, and they frequently reference streets, blocks, housing projects (including specific buildings within those projects), neighbourhoods, and other urban landmarks such as buildings, bridges, or parks. But as much as hip-hop music reflects urban American life, this life is also influenced by the music. Forman writes that “hip-hop comprises a deliberate, concentrated, and often spontaneous array of spatial practices and spatial discourses that are both constituted by and constitutive of the spaces and places in which its primary cultural producers live and work. Its expressive forms have therefore been exceedingly influential in both the representation and the transformation of the urban environment throughout the 1980s and 1990s” (42). One such way this occurs, according to Forman, is via the proliferation of hip-hop music through car stereos—to which I would add the recent phenomenon of music being played publicly from smartphones, without the use of headphones, a practice that could perhaps be linked to the use of portable stereo equipment, colloquially known as ghetto blasters. In these ways, the consumer also plays a role in defining the sound of an urban space/place, contributing to the dense network of relations between artist, consumer, and environment.

2.2.2 Hip Hop’s Underground Pre-Commercial Status

The success of “Rapper’s Delight” in 1979 kickstarted hip-hop music’s life as a recorded genre. Over the following decade, singles and albums from Grandmaster Flash and the Furious Five, Afrika Bambaataa, Run-DMC, the Beastie Boys, Eric B. and Rakim, Public Enemy, N.W.A., De La Soul, A Tribe Called Quest, and others elevated hip-hop music from a local

cultural phenomenon to a burgeoning national and (eventually) international industry. Yet by the late 1980s, hip-hop music had still not achieved the massive crossover success that other African-American genres such as blues, jazz, rhythm & blues, rock ‘n’ roll, Motown, and funk had before it.

Despite this, hip-hop music’s ascendancy to commercial success and critical attention (both positive and negative) was reflected in two industry-led changes that occurred in 1989. First, *Billboard* magazine dissolved its Black Singles and Albums chart and created two new ones in its place: Hot Rap Tracks (now known as Hot Rap Songs) and Hot R&B Singles. This adjustment acknowledged both the volume of hip-hop music being produced (in that it required its own chart) and the sales numbers it had reached. Second, in 1989 the Grammy awards introduced a new prize for Best Rap Performance, although this was not without some controversy (because it was awarded in the pre-televised portion of the event).¹⁹ These two events are notable in that they represent the popular-music industry’s acceptance of hip-hop music as a standalone genre. Yet while these events represented hip hop’s entrance to mainstream status to some extent, well into the 1990s it was still rare for a hip-hop album to chart high on the Billboard hot 200, or contend for a top-level Grammy award such as album or group of the year. (Contrast these observations with today, where hip-hop music all but dominates the billboard top 200, and Kendrick Lamar’s last three albums have been nominated for the Grammy award for Album of the Year.)

In order to situate hip-hop music’s ascent through the late 1980s to the mid 1990s, becoming a dominant mainstream genre in the English-speaking world, we can orient this music along the genre-trajectory system developed by sociologists Jennifer Lena and Richard Peterson.²⁰ Lena and Peterson propose a system that situates musical genres on a chronological

¹⁹ See Rys (2017).

²⁰ See Lena and Peterson (2008).

trajectory featuring four discrete phases: *Avant-garde* (Ag), *Scene-based* (S), *Industry-based* (I), and *Traditionalist* (T). (This trajectory is collectively known as AgSIT.) The *Avant-garde* phase describes the beginnings of a genre, before its codes of behavior are fully cemented or any true, positive exemplar of the genre emerges (be it a song, artist, behavior, etc.). *Scene-based* genres exist on a localized level, with increasingly solid codes of production and behavior as well as a concentrated locus of orientation. *Industry-based* genres simplify these codes as the genre expands to a greater area, consistent with the reach of the commercial apparatus supporting it. In so doing, Industry-based genres effectively commodify the notion of space (as occurred to some extent in the mid-1990s East-West feud), perpetuating it as a product of commerciality rather than a hallmark of genre created and cultivated by that genre's proponents. And finally, *Traditionalist* genres are more concerned with preservation and canonization. Most Golden Age hip-hop music (excepting that of commercial superstars such as MC Hammer and Vanilla Ice) existed in a space roughly equidistant from the Scene-Based and Industry-Based categories: still "underground" enough to maintain local and regional vitality but mainstream enough to garner ever-increasing market share and appeal to a growing mainstream (read: white) audience.²¹

In the introduction to his book, Forman tells of a road trip he took along the Eastern Seaboard. He recalls that many radio stations he listened to on this trip (constantly changing as he entered new broadcast coverage regions) played the same top-40 music, with one notable exception: the urban stations played mostly hip-hop music, which conveyed a much stronger sense of local orientation in their musical choices as well as did the on-air behavior of their DJs. As Forman writes, "urban radio functions as a cultural mediator, influencing localized cultural tastes and facilitating a musical and spoken dialogue within the various cities" (xvi). The very

²¹ This uneasy balance between Scene-based and Industry-based status is what characterized the Golden Age of hip-hop: mainstream enough to command a large and growing audience, but underground enough that sampling practices were (initially) overlooked as a source of litigation-based revenue and that artists were relatively free to experiment stylistically, unbound by the major-label restrictions of producing hit after commercially viable hit.

fact that the urban stations Forman heard were (by his assessment) much more locally or regionally oriented, combined with the fact that he was not (apparently) hearing much hip-hop music on the mainstream, placeless, top-40 stations, fits perfectly with the view that hip-hop music had not *fully* reached Industry-based genre status and its mainstream connotations even in 2002, the time of his writing.²²

2.2.3 Hip Hop's Senses of Competitiveness and Community

From its earliest manifestations in the South Bronx, hip-hop music (particularly through its MCs) has involved senses of competitiveness and community.²³ Rivalry-tinged tropes of dissing, braggadocio, allegiance/solidarity, and one-upmanship tend to figure prominently in rap lyrics.²⁴ Many of these have historical antecedents that pre-date hip-hop music itself. The Afro-diasporic vernacular traditions of Signifyin(g) and Doin' the Dozens each lend elements of competitiveness, rivalry, and dissing to hip-hop lyrics.²⁵ Rivalry between MCs or artists was often amplified through allegiance to other artists from the same area, be it a project, neighborhood, borough, city, or broader geographic region; this phenomenon can be seen in the

²² This is, naturally, a debatable point that depends on the understanding of Lena and Peterson's Industry-stage definition, as well as one's own definition of mainstream. Guy Zapoleon (quoted in Seabrook 2015, 120) posits that what constitutes "the mainstream" in popular music tends to cycle in roughly three-year segments, alternating between more conventional top-40-sounding pop hits and generic representation that Zapoleon calls "The extremes". As such, hip-hop music has historically tended to enjoy momentary status and influence on the mainstream in the periods where traditional top-40 music is less prominent on the charts. Zapoleon's first example of this is Eminem's and 50 Cent's mainstream chart performances of the late 1990s and early 2000s. Thus, while hip-hop music reached some sort of Industry-stage genre status in the 1990s, with artists such as Tupac Shakur, The Notorious B.I.G., and Lauryn Hill, it is perhaps unsurprising that Forman wasn't hearing their songs on top-40 radio when one considers Zapoleon's theory.

²³ Hess (2010, xix–xx) describes this in detail.

²⁴ Duinker and Martin (2017) found this to be true in a corpus study of Golden-Age hip-hop music.

²⁵ "Doin' the Dozens" refers to a back and forth game of insults where the opposing parties try to insult one another so creatively that the other one cannot respond: "yo' mama" jokes fall into this category. Doin' the Dozens essentially serves as a form of Signifyin(g), a family of strategies of lyrical trickery that often involve a subversion of literal meaning. "In vernacular oral culture the black rhetorical tropes subsumed under Signifyin(g) include "marking, loud-talking, testifying, calling out (of one's name), sounding, rapping, playing the dozens, and so on" (Floyd Jr. 2002, 52). "Signifyin(g) involves saying something about someone nearby using indirection or misdirection such that the person cannot respond. To do so, [it] relies on the flexibility of language and the multiplicity of available meanings" (Berry 2018, 62).

mid-1980s in the so-called “bridge wars”, and in the 1990s in the East Coast-West Coast feud.²⁶ The heightened rhetoric associated with these feuds (especially the East-West feud) as they reached their apexes of animosity solidified both physical and imagined boundaries, cementing the regionalism of the warring factions through their stated or perceived differences from one another. Beginning with the leading mouthpieces of the East-West feud (Tupac Shakur in the West, the Notorious B.I.G. in the East), rivalries began to take on an increasingly commercial role, in two ways. Firstly, the braggadocio spouted from these MCs’ mouths became more and more concerned with material wealth (gained through record sales and the like), and secondly, the rivalries themselves became instruments of commercial profitability.²⁷ As much as these artists, their entourages, and their labels were at odds with one another over non-monetary matters, they were also in stiff competition to dominate in the sales category. Feuds of varying severity between less commercially successful artists and the hip-hop mainstream existed as well, and can be seen through the activities of local underground hip-hop communities in cities such as New York, Los Angeles, and Memphis, among others.²⁸ In these cases, a reaction to the mainstream success of artists like MC Hammer, Vanilla Ice, Bone Thugs-N-Harmony, Tupac Shakur, and the Notorious B.I.G. evinced tight-knit localized scenes, from which some artists eventually reached mainstream success themselves.

Although hip-hop *groups* (as opposed to solo artists) had existed from the genre’s earliest days in the mid-1970s, the notion of an extended familial community or collective of hip-hop

²⁶ As Hess observed: “Hip hop’s local pride has bred competition between neighborhoods, cities, and even sides of the country, and territoriality has become a topic of several hip-hop conflicts over where true hip hop resides. The three moments of regional conflict that stand out across hip hop history are the Bridge Wars of the 1980s (the feud between Bronx-based Boogie Down Productions and Queens-based The Juice Crew over the true birthplace of hip-hop music), and the East coast vs. West Coast beefs of the 1990s, and more recently, the offense some Southern rappers took to Nas’s 2006 album *Hip Hop is Dead*” (2010, xix).

²⁷ Anso and Rappleye (reproduced in Brackett 2014, 454) support this claim that the East-West feud boosted profitability for the artists and labels involved.

²⁸ For example, artists who performed at Los Angeles’ The Good Life Cafe accused Bone Thugs-N-Harmony of stealing flow styles they first heard there. Memphis group Three Six Mafia has also accused Bone of this action (see DuVernay 2008 and Sarig 2007).

artists became more pronounced from approximately 1990 onward.²⁹ The collection of hip-hop acts known as the Native Tongues (Jungle Brothers, De La Soul, and A Tribe Called Quest) were all known for their positive-minded Afrocentric lyrics and jazz-influenced beats. The Wu-Tang Clan released albums under that name, but its members also released solo records on which other clan members frequently appeared.³⁰ And finally, the East-West rivalry was clustered around the MCs, producers, and executives associated with two record labels: Bad Boy on the East Coast and Death Row on the West Coast. Releases by artists signed to these labels often featured guest appearances by labelmates (a notable example is Snoop Dogg's numerous appearances on Dr. Dre's *The Chronic* (1992)) or label executives themselves (as seen in Bad Boy founder and occasional MC Sean Combs's frequent appearances in singles and videos released by his label).³¹ This collective-centric atmosphere pervasive in the early 1990s produced distinct stylistic homogeneity among its various exponents, especially in the realm of beat production: The RZA produced all of the Wu-Tang Clan's albums as well as many solo releases by its members, Dr. Dre produced many of the major Death Row releases in the early to mid-1990s, and Easy Mo Bee was associated with Bad Boy's flagship releases by MCs Craig Mack and The Notorious B.I.G. While most hip-hop music still relates strongly to cultural, economic, and social aspects of urban life, tropes of braggadocio, dissing, rivalry, and one-upmanship still exist, and despite the Industry-based genre status of hip-hop music today, this genre was arguably at its most regional point until the late 1990s. Three main lenses through which this can be viewed have been discussed here; what follows are summaries of the main regions themselves.

²⁹ Touré writes that the extreme local has led to the "family-like structure behind the three biggest entities in hip hop today: the Wu-Tang Clan, Death Row, and the Biggie Smalls clique" (1995, 49).

³⁰ This was something of standard practice for the Wu-Tang Clan members and affiliates in the 1990s.

³¹ In this capacity, Combs was the target of a now famous diss by Death Row founder Suge Knight at the 1995 *Source Awards*. See Cantor (2015).

2.3 Regions of American Hip-Hop Music, Pre-2000

Having established several reasons *why* early (pre-2000) hip-hop music was regional, I now turn to *where* this regionalism was located. While the New York area served as the main center for hip-hop culture in the genre's earliest years, the West Coast—first Los Angeles and then Oakland—became the second important region with the rise in popularity of gangsta rap in the late 1980s. In the 1990s, the South and Midwest emerged as the third and fourth important regions, with the South arguably becoming the most dominant region for hip-hop music after 2000, dictating the stylistic pace and direction of hip-hop with unmatched influence. The following section provides a stylistic overview of these four main regions, summarizing their activity in the 1980s and 1990s.

2.3.1 East Coast: Beginnings, Early Dominance, Decline, and Renaissance

As the original crucible of hip-hop music and culture, New York City's five boroughs, and eventually also its environs, produced much of the most well-known and innovative hip-hop music of the 1980s.³² The New York borough of the Bronx is commonly considered to be the birthplace of hip-hop culture—an assemblage of four related activities: DJing, rapping (MCing), breakdancing (b-boying/b-girling), and graffiti art.³³ This culture gradually emerged and took shape through the 1970s, but hip-hop music would not become known to the wider world until the single "Rapper's Delight" was recorded by the Sugarhill Gang in 1979. Thus, while the culture had been alive and well in the Bronx for years, the release of this record marks the birth of hip hop as a recorded musical genre. The New York-based hip-hop music that was released

³² Other local regions of note during this decade included the Miami Bass scene and the electro-infused dance hip-hop of early 1980s Los Angeles.

³³ Greenburg (2009) notes that among early exponents of hip-hop, New York-based DJ Afrika Bambaataa (born Lance Taylor) was influential in uniting the genre's four artistic practices through the parties he threw as far back as 1977.

after this point can be divided into two broad but approximate categories: old-school hip hop (1979–1986), and Golden-Age hip hop (1987–1996).

Through their innovative DJing techniques, the so-called “holy pioneer DJ trinity” of Afrika Bambaataa (Lance Taylor), Grandmaster Flash (Joseph Saddler), and DJ Kool Herc (Clive Campbell) contributed greatly to the cultivation of old-school hip-hop music.³⁴ These artists pioneered and popularized the practice of looping breakbeats—drum-only grooves found on old funk and soul records—and creating funky, repetitive beats that were both danceable for audiences and sparse, giving room for MCs to rap over these beats. As the name suggests, the MC (shortened from master of ceremonies) assumed the task of energizing or charging up the dancing audience. In hip hop’s earliest days, DJs might have done this themselves, but eventually the MC duties were assumed by a frontperson. This verbal hyping of the crowd gradually assumed a more formal, rhythmic structure, setting the template for what has constituted rapping ever since. The New York trio of Run-DMC burst onto the scene in 1984 with their eponymous debut album which, along with its top-selling 1985 (*King of Rock*) and 1986 (*Raising Hell*) follow-up albums, transformed hip hop from a danceable funk-oriented music to a separate genre in its own right by utilizing more sparse, stripped-down beats and promoting street fashions. Also, in 1986 New York group the Beastie Boys released their debut album *Licensed to Ill*, which shattered sales records for a hip-hop album and raised the genre’s profile around the United States.³⁵

The 1986 releases by Run-DMC and The Beastie Boys have been retrospectively viewed

³⁴ This term surfaces, among other places, in Kabango’s interviews with Taylor, Saddler, and Campbell (2016).

³⁵ Part of the legacy of *Licensed to Ill* concerns its bringing of hip-hop to a newfound, largely white audience. Though hip-hop music was not completely unknown to white audiences at this time, albums such as *Licensed to Ill* (Beastie Boys, 1986), *Please Hammer, Don’t Hurt ‘Em* (MC Hammer, 1990), and *The Chronic* (Dr. Dre, 1992) were all pivotal in growing the genre’s white fan base. Stratton (2008) opines that in fulfilling this role, the Beastie Boys followed a long-standing tradition of American Jews (assimilated into the white American demographic) “reworking black music for white American audiences” (413).

as ushering in the Golden Age of hip-hop music.³⁶ The Golden Age is a loosely defined historical period that bore witness to an unprecedented flourishing of diverse creativity in hip-hop music, and also the rise in prominence of West Coast hip-hop music (discussed below). Important New York-based artists of this time include Eric B. and Rakim—the latter’s lyrical dexterity almost single-handedly raised the bar for greatness in flow and influenced scores of rappers over the following decade and beyond—and Public Enemy, whose hard-hitting, politically charged rap was pivotal in re-situating hip-hop music as a revolutionary social force (in addition to being a party-based genre, which it also continues to be). Equally as socially conscious and Afrocentric as Public Enemy in their lyrics, the Native Tongues (the Jungle Brothers, A Tribe Called Quest, and De La Soul) produced a more laid-back, jazzy, and positive style of hip-hop music in the late 1980s and early 1990s.

Despite the long-standing hegemony of New York hip-hop music, the burgeoning of West-Coast gangsta rap led by groups such as N.W.A. (Niggaz Wit Attitudes) and their debut full-length album *Straight Outta Compton* (1988) momentarily dethroned New York as the leading hip-hop region. Eventually, a series of monumental album releases in 1993–1995 reasserted the East Coast’s profile as the heart of hip-hop music. The first of these was *Enter the Wu-Tang (36 Chambers)* (1993) by the Staten-Island-based Wu-Tang Clan. This album’s free-associative lyrics, gritty production techniques, and diversity of lyrical approaches (given the group’s large membership of nine MCs and producers, much larger than normal in hip-hop groups) created a sonic landscape that can be heard in the work of later East-Coast artists. Chief among these later artists are Nas, whose 1994 debut *Illmatic* is still cited as one of the most influential hip-hop albums of all time, and Notorious B.I.G., who also debuted in 1994 with

³⁶ For a more detailed survey of the Golden Age, its artists, and dates, see Duinker and Martin (2017).

Ready to Die, an album that regularly receives similar levels of acclaim as *Illmatic*.³⁷ First with Wu-Tang, and later with Mobb Deep (particularly with their 1995 debut album *The Infamous*), New York began to be known not only for socially-conscious rap but also equally for a more hardcore brand of hip-hop music, with a darker grittier sound and lyrics to match. The close of the 1990s saw many other New York-area hip-hop artists rise to fame, among them Jay-Z, Mos Def, Lauryn Hill, and DMX, as well as artists and groups from further afield, such as the Roots (Philadelphia).

2.3.2 West Coast: Gangsta Rap, G-Funk, and Underground Currents

By the late 1980s, hip-hop music boasted two regional hubs: New York on the East Coast and Los Angeles on the West Coast. Although thriving regional hip-hop scenes already existed in Los Angeles and Oakland by the mid-1980s, this region's rise to dominance came mainly from two stylistically disparate sources: Compton's N.W.A. brought a controversial but influential style of rap music to the mainstream with their 1988 debut album *Straight Outta Compton*, and Oakland's MC Hammer—reaching the height of his fame with his 1990 release *Please Hammer, Don't Hurt 'Em*—proved to be a massive crossover success. Contrary to the socially conscious, generally positive, and steadfastly Afrocentric lyrics of late 1980s East Coast hip-hop music, N.W.A.'s lyrics were profanity-laden, combative, confrontational, and delivered in an aggressive style. This hard-hitting and abrasive lyrical style, often centering on topics such as police brutality, racial profiling, street and gang life, and drugs, was the most well-known iteration of what had come to be known as gangsta rap. Gangsta rap's West Coast roots extend further back than *Straight Outta Compton*. In 1986, rapper Ice-T released “6 in tha Mornin’”, one

³⁷ Marriott (2013) summarizes how *Illmatic*'s influence has cast a long shadow over hip-hop music, especially that based in New York, since 1994.

of the earliest examples of West-Coast gangsta rap.³⁸ Over a heavy, sparse, and slow beat, Ice-T's lyrics chronicle his evasion of the police while living his gangsta-infused lifestyle of crime, drugs, and womanizing. The following year, Ruthless Records founder (and N.W.A. member) Eazy-E released "Boyz-n-tha-Hood", featuring similar day-in-the-life lyrics about gang living, atop a similarly sparse, slow, and heavy beat. Both of these tracks, along with many on *Straight Outta Compton*, use beats mainly produced by drum machines and sequencers, rather than samples from existing tracks, as had been common on the East Coast at the time.

Despite significant public backlash, including censorship from many radio stations, N.W.A.'s hard-hitting sound became immensely profitable, and catapulted several of the group's members to individual fame.³⁹ Having been responsible for most of N.W.A.'s lyrics and many of its most impressive vocal performances, rapper Ice Cube's string of critically and commercially lauded albums in the early 1990s perpetuated the stylistic and commercial success of gangsta rap. The West Coast's complete dominance of the hip-hop industry came, however, with another former N.W.A. member Dr. Dre's 1992 album *The Chronic*. The laid-back, instrument-driven beats combined with less aggressive vocal performances ushered in the G-Funk style of hip-hop music.⁴⁰ Almost exclusively a West-Coast phenomenon, the G-Funk style can also be heard on Snoop Dogg's *Doggystyle* (1993) and Warren G's *Regulate...G Funk Era* (1994). Early 1990s Los Angeles also boasted a thriving underground hip-hop scene, from which artists such as the Freestyle Fellowship and The Pharcyde achieved critical and eventually commercial acclaim.⁴¹

³⁸ But this track is arguably not the earliest example of gangsta rap overall: Philadelphia MC Schooly D's "PSK What Does it Mean?" (1985) predates "6 in that Mornin'" and pioneered the narrative/gangsta lyrical trope that Ice-T and later N.W.A. popularized.

³⁹ Ice Cube and Dr. Dre went on to have successful solo careers, while Eazy-E became instrumental in propelling the Cleveland-based Bone Thugs-N-Harmony to fame.

⁴⁰ By 1992, sampling had come under increased legal scrutiny and was therefore largely avoided by some producers.

⁴¹ The level of commercial success these artists achieved was somewhat smaller than that of the Death Row artists, and as a result these groups occasionally get overlooked in favor of the more sensational East-West feud of the early 1990s. The underground Los Angeles rap scene, however, cultivated a jazz/rap style that later figured prominently on albums released by Kendrick Lamar.

The West's chart dominance continued with the rise in fame of Tupac Shakur (born Lesane Parish Crooks), culminating with his final two albums *Me Against the World* (1995) and *All Eyez on Me* (1996). Its decline in prominence was heralded by Shakur's shooting death in 1996 and Death Row Records' founder Suge Knight's incarceration that same year (Death Row was responsible for launching the careers of Dr. Dre, Snoop Dogg, and Tupac Shakur), as well as N.W.A. founder Eazy-E's succumbing to AIDS in 1995.⁴²

2.3.3 The South: Miami Bass, Atlanta Hip Hop, Crunk, and the Beginnings of Trap

Hip-hop culture in the American South flourished throughout the late 1980s and early 1990s, mainly as a collection of local scenes in centers such as Atlanta, Miami, Houston, New Orleans, and Memphis, scenes whose commercial clout and stylistic influence generally (with a few exceptions) did not extend far beyond local borders.⁴³ Each of these local regions purveyed unique styles of hip-hop music. The Miami Bass sound, popularized by artists such as 2 Live Crew, and represented in this dissertation by L'Trimm's "Cars That Go Boom" (1987), is known for its uptempo danceable rhythms (usually in the range of 120-130 beats per minute (bpm)), bass-heavy but clear-sounding beats (aided by the use of drum machines and sequencers in place of sampling), and declamatory, sexually charged, party-oriented lyrics. In several of these ways the Miami Bass sound runs parallel to the crunk music popularized by Lil' Jon and other Atlanta artists around the year 2000. The Houston area's biggest names in hip-hop music from this period include the Geto Boys, whose slower-tempo beats evoked a gritty sound, and whose darker lyrics were delivered in a more languid free-flowing style quite unique to the time, and UGK from Port Arthur, TX, whose collaborations in the early 2000s brought their downtempo style to wider audiences.

⁴² This decline loosely coincided with the aforementioned albums by Nas, Wu-Tang, Mobb Deep, and the Notorious B.I.G. (who was later also shot and killed), which re-cemented the New York scene as dominant.

⁴³ Miller (2004) offers a concise overview of the early development of hip-hop scenes in the South, in the context of the evolution and meaning of the term "Dirty South".

In Memphis, a uniquely dark style of hip-hop music emerged, mainly through the pioneering and relatively underexposed (at the time) work of Three Six Mafia (known in the 1990s as Triple Six Mafia). Despite not reaching widespread commercial success until much later, through their 2006 Academy Award for best original song “It’s Hard out Here for a Pimp”, this group’s influence on hip-hop music of the past 10–15 years cannot be overstated. The first key aspect of this influence concerns the slower, grimmer (more DIY-sounding) beat-production method used by Three Six Mafia’s main producers, Juicy J and DJ Paul. These beats often run at around 65–80 BPM—significantly slower than contemporaneous coastal hip-hop music—and the flow features heavy use of triplet flow (the use of triplets as the base rhythm of rapping). While Three Six Mafia’s downtempo, triplet-laden sound did not penetrate the mainstream in the 1990s, it resurfaced in another Southern-bred genre, trap music, in the early 2000s, eventually becoming a household sound in mainstream commercial hip hop.⁴⁴

OutKast’s debut album *Southernplayalisticadillacmuzik* (1994) and Goodie Mob’s debut *Soul Food* (1995) were instrumental in exposing the Atlanta brand of Southern hip hop to wider audiences, and as such were harbingers of the increasingly influential role the South would eventually play on the development of hip-hop music. OutKast was awarded “Best New Artist” at the 1995 *Source* Awards; amid boos and jeers during their acceptance speech, OutKast member Andre 3000 uttered the now famous line “the South got something to say”.⁴⁵ OutKast’s sound in particular was a marked departure from the prevailing East Coast and West Coast releases of 1993–1995, incorporating soul- and funk-influenced beats complete with horns, slap bass, wah-wah pedals, and other sonic throwbacks to the 1970s, supplemented with drum machines. Southern flow tended to contain more ornately decorated rhythms (including, in OutKast’s case, frequent use of triplets) combined with a sing-song delivery (especially in André

⁴⁴ Duinker (2019) traces triplet flow’s development into a ubiquitous feature of contemporary hip-hop music.

⁴⁵ See Cantor (2015).

3000's case). By the end of the decade, OutKast had become an important player in the hip-hop industry, and continued this ascent with their multiple Grammy-winning 2003 release *Speakerboxx/The Love Below*. Around the end of the 1990s, Atlanta's Lil' Jon and his party-oriented crunk music also became a major force in hip hop. Crunk music originated in the 1990s amid the Memphis hip-hop scene; this scene produced music that used sparse, synth-laden beats (often slower in tempo than contemporaneous hip hop) and repetitive, chanting vocals, often on one particular word or short phrase.⁴⁶ The beat production in crunk in particular also shares marked similarities to the earliest trap music (discussed below), which would become the dominant sound of Southern hip-hop music in the new millennium.

2.3.4 The Midwest: Chopper Rap and Eminem

Large urban centers in the American Midwest—Detroit, Chicago, Cleveland, and St. Louis among them—supported active local hip-hop scenes through the 1990s, but only a few artists from this region enjoyed national mainstream success during that time. The first of these were Bone Thugs-N-Harmony (henceforth Bone), whose 1995 sophomore album *E. 1999 Eternal* earned the group several Grammy nominations and one win, for their single “Tha Crossroads”. Bone's mixture of gangsta-rap tropes, G-funk influenced beats, and croon-style harmonizing—the group was one of the first to intricately mix singing with rapping in their flow—was relatively unheard of at the time. While the G-funk influence can clearly be construed as an extension of the West Coast production sound popularized by Dr. Dre (indeed, former N.W.A. member Eazy E was Bone's manager and producer of two of their albums), Bone's rapping style was anything but. Featuring fast, densely rhythmic cadences and frequent passages of triplet flow, this flow style bore more in common with Three Six Mafia and budding chopper rappers of the Midwest, among them Chicago's Twista, and (slightly later) Kansas City's Tech

⁴⁶ Sarig describes this assimilation in the context of Lil' Jon and the East Side Boyz' 1996 single “Who U Wit” (2007, 286–287).

N9ne. While initially a Midwest and West Coast phenomenon (in the practice of artists associated with the Good Life Cafe in Los Angeles), many traces of the dense, on-beat, and complicated rhythmic nature of Chopper rap eventually formed a large part of Southern-style flow after 2000.

At the close of the 1990s, Detroit-based rapper Eminem burst onto the national scene with his sophomore release *The Slim Shady LP* (1999). Produced in part by Dr. Dre, the beats on this album also constitute an extension of the G-Funk style, but are topped with Eminem's distinctly conversational, fast-paced, nasal, and rhythmically nuanced flow. The lead single from the album, "My Name Is", demonstrates these attributes well. The sparse, slow beat affords Eminem significant space to convey shocking lyrics in a stream-of-consciousness style of flow that simultaneously respects and subverts the metric confines of the beat. By calling his flow style conversational, I mean to highlight Eminem's respect for the natural rhythmic, stress, and pitch inflections of spoken English, subtly altering them to work with the beat. Jay-Z and OutKast's Big Boi are other well-known MCs who regularly use this style of flow.⁴⁷

These four regional centers—East Coast (mainly New York), West Coast (mainly Los Angeles and Oakland), the South, and the Midwest—characterized hip-hop music and culture through the late 1990s. Old-school hip-hop music bore the inter-borough conversations of New York, the Golden Age saw the rise of the West Coast and a resurgence in the East, while the mid-to-late 1990s saw the national scene expand to accommodate rising stars from the South and Midwest. Many of the regionalism-generating factors described above still existed by the late 1990s: African-American people still overwhelmingly lived in concentrated urban areas and hip-hop culture still contained tropes of competition and one-upmanship. But by this time the genre had become increasingly commercial, with its top stars enjoying massive crossover, mainstream

⁴⁷ Bradley (2009, 29) describes conversational flow as "one that falls comfortably into conventional speech rhythms".

success: hip-hop music had fully entered its Industry-based phase in the AgSIT trajectory. This entrance, combined with the development and eventual ubiquity of the internet, would bear long-standing consequences on regionalism in hip-hop music in the new millennium.

2.4 American Hip-Hop Music as a Post-Regional Phenomenon

A prevailing argument in discourse surrounding recent hip-hop music is that it has become less regional in style, identity, and overall scope.⁴⁸ *Maclean's* contributor Adrian Lee writes that “It’s never mattered less in rap where you’re from” (2014), citing scholars such as Forman and Hess to support this stance. Lee’s and other writings that discuss post-regionalism in hip-hop music point to the same source to explain this phenomenon: the internet.⁴⁹ The internet’s influence on post-regionalism is manifested in four main ways: as a facilitator of placelessness in general, as a collaborative tool, as a media platform, and as a place to build and cultivate community.

Before exploring these internet-driven developments in hip-hop post-regionalism, it should be stressed that hip-hop music’s continuous commercial breakthrough through the 1990s (as occasionally referenced above), was no doubt also instrumental in ushering in its post-regional era. In the mid-1990s, when artists such as Tupac Shakur and The Notorious B.I.G. were constantly topping the mainstream pop charts (not to mention the Rap and Hip-Hop charts), hip-hop music had firmly reached the Industry Stage in their AgSIT trajectory (see pp. 25–26). The coastal rivalry that erupted around these two hip-hop artists was as commercially lucrative as it was morally devastating. In a sense, the East-West feud played out as both a fulfillment of mainstream society’s dismissive/apprehensive view of hip-hop music and culture, and their appetite for it. But in the wake of Tupac and Biggie’s deaths (in 1996 and 1997 respectively),

⁴⁸ Sigler and Balaji (2013) contend that the commercialization and corporatization of hip-hop music has been a main driver in this phenomenon.

⁴⁹ See Weiner (2012) and Setaro (2016).

and as more and more hip-hop artists and labels were catering to a widespread mainstream audience, the commercial mechanisms sustaining and propelling hip-hop music had decreasing need for the regional rivalries it contained.

2.4.1 The Internet and Placelessness

Forman has observed that “the internet has facilitated a sense of placelessness” (quoted in Lee, 2014). As our shopping, banking, and other commercial necessities become increasingly virtual, the sense of place associated with those activities vanishes; the endpoint of this process can be seen in banks such as Tangerine (which, in Canada, has no bricks-and-mortar locations) and retailers such as Amazon (which is just beginning to build such locations after decades as an online-only company). McClay sums up this phenomenon as follows: “as we have become ever more mobile and more connected and absorbed in a dense web of electronically mediated relations ... our actual and tangible places seem less and less important to us, more and more transient or provisional or interchangeable or even disposable” (2011, 36). In a sense, then, the idea of “place” is not vanishing, but being redefined as virtual, existing anywhere for anyone with a WIFI- or cellular-enabled device. The recently emergent so-called “Soundcloud rap” subgenre has exemplified this well; artists instantly reach millions of followers by disseminating their music first and foremost on a social media site accessible to everyone with an internet connection.⁵⁰

2.4.2 The Internet as a Collaborative Tool

Collaborative music-making has traditionally necessitated the physical proximity of the collaborating parties. This is increasingly no longer the case: in the context of hip-hop collaborations, Mickey Hess states that “producers and rappers don’t have to be in the same room anymore” (quoted in Lee, 2014). But it was not always this way. A video posted to

⁵⁰ See Caramanica (2017) for a lengthier discussion on the emergence of Soundcloud rap.

YouTube documents Jay-Z, a New York-based MC, meeting with Timbaland, a Virginia-based producer, in the early 2000s, to work on some new music together.⁵¹ Timbaland shows Jay-Z several beats, ending with the beat that would eventually be used in Jay-Z's "Dirt off Your Shoulder" (*The Black Album*, 2003), and the MC's reaction is telling; he loves it. Jay-Z recorded the rap for that song shortly thereafter, and it went on to do well as a single. The success of this single resulted in the physically proximate collaboration between two artists; they were "in the same room". In a similar vein, the lyrics of Dr. Dre's 2015 single "Talk About It" recall his "selling instrumentals off of beepers".⁵² He would have been doing this locally, in and around Los Angeles, as the technology did not exist for him to easily send these instrumentals in any digital format.

To be sure, both Timbaland and Dr. Dre eventually attained sufficient status as producers whereby they could travel great distances to collaborate with other artists or incur the cost of transmitting their work as required. But with the internet's ever-increasing capability to efficiently communicate large quantities of data, physical proximity is no longer a criterion for collaboration for hip-hop artists at any stage of their careers. Everything can be done online: beats are typically created entirely on computers (even sampling need not be done using real vinyl anymore, although it still can be), and can be file-transferred anywhere in the world, all in a matter of minutes. This has resulted in more frequent and longer-distance collaborations between producers and MCs, especially in cases where multiple MCs rap on the same song. The sense of stylistic regionalism that might have pervaded Dr. Dre's 1990's beats circulating around the LA area, or Timbaland's early collaborations with other Virginia-based artists such as Missy Elliott and Ginuwine (Jay-Z, in New York, was only slightly further afield) was, in effect, a thing of the

⁵¹ See MisterTG (2015).

⁵² A beeper is an alternate term for a pager, a wireless device used for messaging in the 1980s and 1990s, eventually supplanted by the cell phone.

past by the early 2000s.

2.4.3 The Internet as a Place to Disseminate and Consume Music and Connect with Fans

The online dissemination and consumption of music is not limited to the hip-hop community but has perhaps taken on greater significance there, in part due to the proliferation of independently released mixtapes, even by established artists with major-label record deals. Belonging to a particular record label once meant belonging to a particular region or sound (think Death Row vs. Bad Boy, as described above). Bone Thugs-N-Harmony, despite being from Cleveland, developed a sound particularly close to the G-funk and gangsta rap styles cultivated on the West Coast after signing with former N.W.A. member Eazy-E's label Ruthless. In this era, the mechanisms of a major label were required in order to transcend local geography: independently produced albums stood less of a chance being widely heard beyond the locale in which they were created. Aided by the internet, artists could easily disseminate their work on mixtapes—with no limit to geography—expanding their reach beyond local scenes. This practice has surely cultivated more fertile ground for interregional stylistic blending.

The internet has also made it easier than ever for popular-music artists—hip-hop MCs and others alike—to develop and engage with communities of fans (and trolls, for that matter). The career of Atlanta-based artist Lil' Yachty (b. Miles Parks McCollum) exemplifies this phenomenon; Yachty was born after the advent of the internet and has spent his entire career in a social media-dominated world. Generating a following on social-media platforms like Instagram and Soundcloud has enabled Lil' Yachty and other artists of his generation to bypass the once-required step of building a local following before expanding beyond that step.⁵³ So while Lil' Yachty's musical style is partially rooted in the Atlanta-bred trap music of his original home base, his eclectic style of singing, mumbling, and rapping over sparse, synth-generated beats

⁵³ Ohlendorf (2017) describes in detail Lil' Yachty's rapid ascent to fame, and how he has developed a geographically dispersed fan base thanks to his skilled use of social media.

belongs to a subgenre commonly called “mumble rap” or “Soundcloud rap”—these names carry no local or regional affiliation, unlike nearly all subgenres of hip-hop music that existed prior to 2015 (including trap, which, as the next section discusses, has grown far beyond its Southern origins, yet still connotes an association with Southern hip-hop music).

2.5 The Stylistic Dominance of the South

The mechanisms underpinning hip hop’s ascent to mainstream commercial success included, in large part, the massive influence of the internet on the creation, dissemination, and consumption of recorded music. While hip hop undoubtedly became less regional as a musical genre, the question remains whether it has done so by becoming a potpourri of various regional influences, or by being stylistically dominated by one region in particular. Sarig believes the latter description to be more accurate, citing the early 21st-century rise in market dominance of hip-hop artists from the American South.⁵⁴ The South’s hegemonic status can be viewed as a confluence of its rise in prominence in the hip-hop industry following the initial successes of OutKast, Goodie Mob, and others in the late 1990s and early 2000s with the development of a series of musical techniques and styles that would come to heavily influence the sound of recent hip-hop music. These are: the chopped and screwed DJ technique, crunk music, trap music, and triplet flow.

The chopped and screwed technique describes a method of DJing developed in the 1990s by Houston-based DJ Screw. This technique involves slowing down the revolution speed of a record (which decreases tempo and lowers pitch) and skipping it, stop-timing it, scratching it, or adding effects such as delay. One notable technique developed by DJ Screw consists of

⁵⁴ See Sarig (2007): “In fact, Southern hip hop as a discreet [sic] phenomenon may simply have given way to a semi-permanent new order where the South is just home base of hip hop in general—less an exceptional development than a basic rule” (337), and Grem (2006): “by the time OutKast accepted their Grammys in 2004, the Dirty South was not only a banner under which a wide variety of Southern rappers now congregated. It was also a culture industry that had ‘Southernized’ what cultural critic Nelson George has termed the multibillion-dollar business of ‘hip-hop America’” (56).

simultaneously playing two copies of the same record (slowed down) out of phase by one beat, whereby crossfading between them would result in repeated beats without any interruption in tempo.⁵⁵ These effects can now be achieved via computer, but are still commonly used in the spirit of the chopped and screwed style of production. While many albums get re-released as chopped and screwed mixtapes, the techniques themselves have crept into the production of original releases as well, in singles such as “Versace” (Migos, 2013) and “Best Friend” (Young Thug, 2015). More importantly, the slow tempos of chopped and screwed remixes run at around 60 or 70 bpm, which has become somewhat normative in recent hip-hop music. (Slower tempos can also be attributed to the influence of trap music, discussed below.)

Following OutKast’s string of successful albums in the late 1990s and early 2000s, Atlanta’s next big moment came with the popularization of crunk music, through its most well-known exponent, Lil’ Jon.⁵⁶ Sarig writes that the unreleased 1991 track “Get Buck” (Pretty Tony, c. 1990) “has proven one of Southern hip-hop’s most seminal songs” (2007, 66) for its use of chanting vocals that would later become a staple of crunk music, popularized by the Memphis group Three Six Mafia. Despite its outsized influence, Three Six Mafia and other Memphis crunk figures did not gain widespread recognition. Crunk music as modified by Lil’ Jon, however, did. This modification led to a more upbeat, faster, and less menacing-sounding beat production, coupled with an even more aggressive chanting style than had been used in Memphis. Lil’ Jon and the Eastside Boyz enjoyed mainstream success with hits such as “Who U Wit” (2001) and “Get Low” (feat. the Ying Yang Twins, 2003), and eventually Lil’ Jon’s crunk

⁵⁵ Kabango (2016) explored the chopped and screwed technique in greater detail, travelling to Port Arthur, Texas in order to do so.

⁵⁶ Though highly influential in a variety of ways (flow, beat production, fashion, etc.) within OutKast’s legacy, singular stylistic tropes are perhaps more difficult to identify. More than anything, their legacy can be seen in the increased attention their success brought to other Southern hip-hop artists. Sarig (2007, 212–218, 239–240) explores OutKast’s legacy in detail, and Grem (2006) explains how OutKast’s success, along with that of Goodie Mob and other Atlanta-based artists of the time, represented the South’s move to embrace their own culture and carve out a unique voice for themselves in African-American society.

chanting style found its way into EDM (Electronic Dance Music) tracks such as “Turn Down for What” (DJ Snake, 2013). While this aggressive, party-oriented crunk of the early 2000s has slightly faded from mainstream consciousness, the chant-oriented rap style it popularized has not and is used by many MCs today.⁵⁷

After OutKast, crunk represents Atlanta’s second major stylistic incursion into hip-hop music, and trap music represents its third. Like both the Memphis and Atlanta brands of crunk, beat production in trap music relies heavily on synthesizers and drum machines, and less (than in Golden-Age hip-hop music, for example) on samples from soul, funk, and R&B records. Trap music borrows its name from the ghetto slang for “street life centered on dead-end hustles and other fast tracks to jail or the morgue” (Sarig, 210), and as a term, surfaces at least as far back as 2003 with Atlanta rapper T.I.’s album *Trap Muzik* of that year.⁵⁸ Trap beats are characterized by the deep sub-bass lines and 808 beats (produced by the Roland TR-808 drum machine) also found in Three Six Mafia’s 1990s releases, supplemented by synth-driven string lines, minor and diminished harmonies, even slower tempos, and spastic, inconsistent hi-hat patterns. (If they follow a more regular rhythmic pattern, the hi-hats are occasionally brought down in the audio mix relative to the kick and snare drums.) The texture of these beats is often quite sparse, and they normally have a relatively slow tempo range of approximately 60–75 bpm.⁵⁹

Sparse and slow beats provide a crucial template for accommodating another technique developed in the South that has influenced recent hip-hop music: triplet flow, the now-common practice of rapping in triplets. The slower tempos of trap beats—and beats influenced by the chopped and screwed technique—more readily allow for rapping in triplet flow, while still being fast enough to maintain listeners’ interest. Beat textures made sparse through the absence of

⁵⁷ One need not look far for evidence of this: chant-based rap hooks abound in songs such as “Versace” (Migos, 2013) and “Gucci Gang” (Lil’ Pump, 2017).

⁵⁸ Sanfiorenzo (2018) uncovers earlier, lesser-known uses of the term “trap” in hip-hop music.

⁵⁹ See Chapter 2 for a detailed discussion of how, for analytical purposes, I determine tempo in hip-hop music.

regular hi-hat patterns tend to lack a constant sub-tactus pulse. The regularity and consistency of triplet flow fills this textural gap quite naturally, resulting in a flow layer that not only facilitates the lyrics but regulates the temporal aspect of the entire song. Atlanta-based Young Thug’s “With That” (2015, Example 2.1) shows how triplet flow and trap beats complement one another almost naturally. The song has a tempo of 62 bpm, features a relatively sparse instrumental texture, and lacks a constant hi-hat pattern. On top of this beat, Young Thug sing-raps in a constant triplet flow, with ample freedom to establish different phrase structures over this sparse, slow beat. But while he is able to vary his phrasing, his triplet flow maintains enough consistency to be able to function as the primary sub-tactus pulse layer in this song, assuming the role usually filled by the hi-hat. While undoubtedly a popular recent trend in hip-hop flow, triplet flow does not appear with any frequency in either corpora studied in this dissertation, and is thus relegated to a sidelined role in the ensuing analytical discussions of Chapters 5, 6, and 7.

♩ = 62
(0:16)

Flow

8

hun - nid' bands hun - nid' bands dropped on the head of a - ny nig - ga want it man

Beat (synths)

Beat (drums)

Example 2.1: First verse of “With That” (Young Thug, 2015).

While the aforementioned techniques and styles were born and bred in the South and disseminated by that region’s recent dominance of the hip-hop charts since approximately 2000, they increasingly lose their identities as distinctly Southern phenomena; this trajectory circles back around to the broader discussion of post-regionalism. Since it ostensibly has “never

mattered less...where you're from" in the hip-hop genre (Lee 2014, quoted above), flow and production techniques, and the styles they borrow from, define artists less in a regional sense: many top-level hip-hop artists—Kendrick Lamar, Kanye West, and Dr. Dre among them—have utilized trap beat production, triplet flow, slower tempos, chanting, and/or other Southern-inspired traits in their music, often to positive critical response. The originality and innovation found in these and other artists' works suggests the question of whether the aforementioned Southern traits are really received as Southern at all anymore. Taken generally, such would be the reality when discussing style in any genre that both occupies the mainstream and exists in the post-internet era.

That said, not all recent mainstream hip-hop music "sounds Southern". Jay-Z and his producers have continued to develop the sound he became known for on his earliest releases: he avoids the use of auto-tune and triplet flow, and his beat production has sidestepped many of the common sonic signatures of trap. Eminem, especially in his work with Dr. Dre, initially continued in the sonic tradition that had catapulted him to fame and has since diversified his flow style. Drake incorporates musical influences from Afro-Caribbean sources. And Kendrick Lamar and Kanye West have constantly assimilated influences from a wide array of sources, producing some of the most eclectic-sounding mainstream hip-hop music of recent years. With the goal of exploring homogeneity, stylistic and statistical analysis of this dissertation's second corpus reveals the scope of the South's influence on recent hip-hop music, while also showing where its influence is less felt.

2.6 Questions Going Forward

So far, this chapter has explored aspects of pre-millennial regionalism and post-millennial post-regionalism that have permeated or influenced hip-hop music. The final section of the chapter connects regionalism and post-regionalism to the main questions at the root of this

dissertation, which are:

- 1) Given Krims's assertion of the increasing complexity of flow after 1990, and the widely held assumption that hip-hop music diversified during the Golden Age period and beyond, how is this increasing complexity and diversity expressed in the metric and rhythmic aspects of hip-hop flow?
- 2) If the hip-hop scene was regional, does this regionalism play any part in the diversity explored above?
- 3) In light of the factors described above (the internet's facilitating post-regionalism and the South's influencing the genre as a whole), how, if at all, have flow practices become more homogeneous in recent years?

While these questions will be explored over the course of the dissertation, two broader, more general questions stem from them that must be addressed first.

2.6.1 How Can Diversity in Flow Practice be Quantified or Qualified?

Diversity can be measured across any relevant parameter subject to quantitative (statistical) or qualitative (observational) measurements. Ecologists routinely measure biodiversity in ecosystems in order to better understand managing and preserving those ecosystems as well as assess the effects of the human footprint. Generally, ecologists take two measures of diversity into account: *richness*, which measures the number of distinct species in an ecosystem, and *evenness*, which measures the distribution of those numbers of species.⁶⁰ This framework can be translated to hip-hop flow in a number of ways, but for the moment it suffices to explain just one: the diversity of rhyme placement can be framed as a function of its richness, or how many different metric positions are used for rhymes, as well as by its evenness, or how many rhymes occur in each metric position. Using this metric, it follows that in order for a set of

⁶⁰ See Noss (1990).

flow performances to be considered diverse, reasonable levels of richness *and* evenness must be observed, otherwise the richness could be misrepresented by outlying flow performances that skew the data. In the corpora studied here, diversity can be measured according to artist: inter-artist diversity assesses flow practices among different artists (or, for that matter, labels, regions, years, or subgenres), whereas intra-artist diversity assesses flow practices of a single artist.

Combining concepts of richness and evenness with inter- and intra-artist datasets enables us to arrive at several possible scenarios pertaining to diversity, each expressing diversity in its own way. These scenarios preclude those with a low richness, as these would ultimately not be considered diverse. (This should not necessarily be seen as negatively valenced, as it might suggest heightened homogeneity in any number of rhythmic or metric aspects of flow.) Within an intra-artist dataset, a *rich but not even* scenario indicates that an artist employs a diverse array of flow techniques (colloquially known as “changing up one’s flow”), but likely uses a small subset of these techniques more often, perhaps reserving the less common techniques for unique affective circumstances. Conversely, a *rich and even* scenario suggests that the artist employs a wide variety of flow techniques in a relatively balanced manner. While the rich-and-even flow style can be seen as the most versatile, the rich-but-not-even flow diversity could be said to have a more distinctive individual style.

When considering an inter-artist dataset, a *rich but not even* scenario indicates that a small (possibly singular) set of approaches to a particular aspect of flow dominates the entire field at a given time, and that divergent approaches are outliers. Of course, these outliers might serve as harbingers of new flow techniques with the potential for future dominance, cultivated by pioneering MCs who are effectively ahead of their time. A *rich and even* scenario, on the other hand, indicates a balanced plethora of flow styles and techniques across a selection of leading artists. This scenario is the one we might expect to see in a time period understood to be

stylistically diverse, such as the Golden Age. Such diversity would reflect artists simultaneously exploring a number of different flow styles while remaining firmly within the critical and commercial norms of the industry. All four diversity scenarios, however, have limitations. For example, intra-artist diversity is only a useful metric for MCs who appear a number of times in either corpus; this eliminates almost all MCs except for Jay-Z, Eminem, Snoop Dogg, Notorious B.I.G., Tupac Shakur, Lil' Wayne, T.I., and several others. This and other limitations will be duly considered where relevant throughout the dissertation.

2.6.2 How Can Flow Diversity be Connected to Regionalism and Post-Regionalism?

A keen sense of place—both intra- and inter-urban—characterized the communities responsible for the invention and development of hip-hop music and culture. This has led to hip-hop music being characterized as a regional phenomenon, especially up to the mid-1990s, when the East-West feud reached its climax with the shooting deaths of Tupac Shakur and the Notorious B.I.G. How was this regionalism manifested in the flow styles of the MCs that contributed to that regionalism? In the late 1980s, did the flow styles of the West Coast gangsta rappers differ markedly from those of the Native Tongues musicians? Did the G-Funk-accompanied rhymes of Shakur, Snoop Dogg, and Dr. Dre play out differently than those by Nas, Mobb Deep, or members of the Wu-Tang Clan? What about the flow of Houston's the Geto Boys, or Atlanta's OutKast, two important exponents of 1990s Southern hip-hop music?

To identify a relation between regionalism and musical practice, some sort of accepted set of musical characteristics must be attributed to a region.⁶¹ But this task is at best difficult and at worst incomplete and disingenuous. David Brackett writes at length about the permeability of genre boundaries, observing that specific musical and social attributes might easily participate in

⁶¹ Connell and Gibson equate this to “a process of mythologizing place in which unique, locally experienced social, economic and political circumstances are somehow ‘captured’ within music” (2003, 14).

more than one genre, and at times unrelated genres.⁶² It is slightly easier to search for the lack of particular characteristics, such as “West-coast flow rarely or never uses internal rhymes” (a hypothetical and certainly inaccurate example). But again, this is difficult to concretely ascertain due to the size limitations of any manageable corpus (in the context of dissertation research). The presence or absence of stylistic attributes would address whether regionalism dictates, or influences, flow practice. The inverse relationship may, however, be easier to unpack: flow practices themselves influence a sense of stylistic regionalism. In the pre-internet era, stylistic cohesion based on regionalism was far more plausible, since only the highest-selling releases circulated beyond local settings. Even then, artists might have been hesitant to copy or lift flow techniques from artists in other regions, especially in the era of regional or local pride. Considering these challenges, my work here focuses less on elucidating a unifying stylistic traits of flow styles in order to characterize a region than on understanding how prominent flow performances in specific regions may have had stylistic influences on subsequent music from that region.

The same lines of questioning apply to post-regional hip-hop music. Does post-regional flow sound more stylistically homogeneous, given the aspects and drivers of post-regional hip-hop described above? With the diminution of associations with any particular geographic “place”, do the musical characteristics of those “places” also vanish? I have already put forward the hypothesis that many stylistic traits of mainstream hip-hop music today owe their origins and development to Southern hip hop from the past two decades; does that also indicate that Southern flow styles are all that we currently hear? To some extent that might be true; I and others have argued that triplet flow originating in the South has become one of the most readily heard flow styles in mainstream hip-hop music today.⁶³ But any sense of stylistic homogeneity

⁶² See the introductory chapter of Brackett (2016).

⁶³ See Caswell (2017), Duinker (2019), and Gomez-Peck (2019).

might be attributable to other factors such as tempo, beat-production methods, or lyrical content—all factors that are, at most, only tangentially associated with any particular geographic region. And finally, assuming that the South's hegemony over hip-hop music has contributed to a sense of stylistic homogeneity, such homogeneity would also have to be locatable in Southern hip-hop music alone; this itself is already an eminently debatable stance. Going forward, then, the limitations and pitfalls of marrying regional characteristics to stylistic coherence will be considered in the subsequent chapters of this dissertation.

2.7 Summary

The foregoing discussion has introduced the concepts of regionalism and post-regionalism as they relate to the hip-hop scenes at large of pre- and post-2000, respectively. In doing so, I have proposed several factors as drivers of regionalism and post-regionalism in this genre and surveyed the regions that played important roles in establishing these concepts. In the 1980s, the New York area dominated the hip-hop music industry, gradually complemented and challenged by the West Coast (mainly in Los Angeles), then the South (mainly in Atlanta), and the Midwest. In the new millennium, the South has arguably played the largest role in shaping hip-hop music and culture. These regions and their timelines have been introduced in order to better contextualize the questions at the root of my research: how did hip-hop flow diversify and become more complex amid the region-based expansion of hip-hop music in the late 1980s and majority of the 1990s, and has any sense of stylistic homogeneity become established in the post-regional hip-hop landscape of late? The next two chapters lay the analytical groundwork required to address these questions. Chapter 3 describes the development of two song corpora and the transcription and annotation of the flow in these songs. Chapter 4 outlines how these annotated transcriptions were analyzed according to my adaptation of the rhythmic and metric aspects of flow developed by Adams, as explained in the introduction.

3 Corpus Development and Encoding

3.1 Overview

This chapter outlines various issues inherent in the development and encoding of popular music corpora, before exploring how these issues specifically relate to the two corpora used in this dissertation. I first discuss the benefits of and necessity for popular-music corpus studies and the importance of aligning analytical goals with corpus size, objectivity, and selection criteria. I then summarize the development of the two corpora used in this dissertation in light of the points raised at the beginning of this chapter. The ensuing sections of the chapter shift the discussion to matters of transcription and annotation, otherwise known as music encoding. I outline specific challenges concerning the transcription of flow, namely rhythm, microtiming, pitch inflection, vocal accent, and interpretive latitude of the encoder. I then address these challenges through brief summaries of my encoding process for “It Ain’t Hard to Tell” (Nas, 1994). The contents of this chapter set up a more detailed discussion in Chapter 4 concerning the annotation and preliminary analysis of my transcriptions.

3.2 Issues in Corpus Studies

3.2.1 Corpus Studies in Popular Music

Corpus studies have become an increasingly common type of research project in the discipline of music theory. In a sense, the proliferation of corpus studies can be understood as an outgrowth of the music theory discipline’s evolution beyond the *werktreue* ideal, which Goehr (1994, 1) states can be traced back in musical thought as far as E.T.A. Hoffmann. The *werktreue* ideal is a philosophical position that identifies true meaning and identity in the composed musical work itself, as opposed to its realization in performance. Such a position has not been without its critics (Goehr being one of the most notable ones), yet has cast a long shadow over music analysis as it has been practiced by musicologists and theorists in the 19th and 20th

centuries.⁶⁴ A through-line in music analysis has been the treatment of the work as an autonomous object, worthy of detailed scrutiny in the pursuit of extracting meaning from it. As I stated above, however, recent currents in music theory have generated areas of this discipline that distance themselves from the *werktreue* ideal. One such area has been corpus studies, in which individual works are assessed for their relationship to other works rather than their own intrinsic features.

A corpus typically consists of a large body of repertoire drawn from a single source, but it may also be drawn from multiple sources, ideally following a selection method that typically is as objective as possible. As Trevor de Clercq (forthcoming) summarizes, the goal of a corpus study is normally a methodological investigation into the corpus repertoire, which typically involves computational statistical analysis. Many, if not most, recent corpus studies published in music-theory journals have focused on repertoires from outside the Western classical canon, commercially successful popular music being a notable example.⁶⁵ Why are corpus studies an appropriate tool for studying popular music? I consider four possible reasons below: the abundance of pre-existing corpora, pop music's overall lack of a clearly defined canon, the ease of encoding methods for most popular music, and fortuitous timing of popular music and computational analysis emerging as popular areas of research in music theory.

3.2.2 Abundance of Pre-Made Corpora

Many recent corpus studies of popular music draw their repertoire from either sales- or streaming-based statistics (such as *Billboard* magazine's lists) or from mass-media publications

⁶⁴ Goehr devotes a chapter to the emergence of the *Beethoven paradigm*: a historical shift around 1800 toward "a musical practice in which the focus was on the production of complete, discrete, original, and fixed products" (abstract, chapter 8).

⁶⁵ Corpus studies of repertoire from within the Western classical canon have also been published. For example, *Empirical Musicology Review*'s double issue on corpus studies (11, nos. 1–2, 2016) represents diverse repertoires ranging from Classical to Renaissance to hip-hop. *Music Perception*'s special issue on corpus studies (31, no. 1, 2013) features more articles on Western art music than any other repertoire. Popular-music corpus studies perhaps have a higher visibility because the overall quantity of pop-music scholarship in music theory is smaller than for Western art music.

proffering critically-acclaimed “best of” lists (such as in *Rolling Stone* magazine). Studies using these two types of source corpora include de Clercq and David Temperley’s ongoing work with subsets of *Rolling Stone*’s “500 Greatest Songs” list and the growing collection of studies using data generated by the McGill Billboard Project led by that institution’s Distributed Digital Musical Archives Lab (DDMAL).⁶⁶ Corpora for other studies have been developed through consulting multiple critically-acclaimed lists.⁶⁷ While the options for source corpora available to the popular-music scholar are many, corpus selection and development must always be considered in tandem with analytical goals, as will be discussed below.

3.2.3 Canon Formation

As an object of research, popular music occupies an increasingly large share of attention in the music theory community.⁶⁸ But since popular music (in a general sense) represents a still-evolving repertoire, its cultural canonization—the process of marking certain artists and songs as historically, stylistically, and above all artistically significant—is ongoing.⁶⁹ To use a comparative example, when research on a piece by Johannes Brahms is published in a leading theory journal, readers might give little thought to its inclusion in that journal; Brahms’s venerated oeuvre forms a significant part of the Western art music canon that has evolved over time through ongoing concertizing, recording, journalism, and academic research.⁷⁰ Scholars of Brahms need not be concerned with validating their object of study; they are freed from the

⁶⁶ Subsequent work with the corpus used in de Clercq and Temperley (2011), appears in Temperley and de Clercq (2013 & 2017) as well as Biamonte (2014). The McGill Billboard Project generated publications such as Burgoyne, Fujinaga and Wild (2011), Burgoyne (2012), and Léveillé Gauvin (2015).

⁶⁷ Ohriner (2016) used six critically acclaimed lists by various websites and magazines to generate a 75-song corpus that he claimed represented the hip-hop genre as a whole. Duinker and Martin (2017) used eight such lists to generate a 100-song corpus that represented “Golden Age” hip-hop music.

⁶⁸ Duinker and Léveillé Gauvin (2017) show that across four mainstream theory journals—*Journal of Music Theory*, *Music Theory Spectrum*, *Music Analysis*, and *Music Theory Online*—the share of published articles focusing on popular-music repertoire has risen steadily since approximately 2000.

⁶⁹ For example, Everett’s two volumes on the Beatles (1999, 2001) and Osborn’s recent monograph on Radiohead (2016) contribute to the canonization of these artists, at least in the music-theory community.

⁷⁰ Duinker and Léveillé Gauvin (2017) identified Brahms as one of fourteen composers (all male, all active before 1950) that represent the majority of focus in published research in *Journal of Music Theory*, *Music Theory Spectrum*, *Music Analysis*, and *Music Theory Online*.

burden of proving Brahms's music worthy of analytical scrutiny. When writing about popular music, however, music analysts are generally more hesitant to focus on a single song, or even a single album or artist. While part of this hesitation may stem from the discipline's ongoing need to establish broad theoretical systems and frameworks for analyzing popular music, for which large bodies of repertoire are appealing to use as supporting evidence, I suspect another part of it derives from popular music's relative youth: we are not yet fully aware of much of its historical significance, which in turn compels scholars to justify the importance of the repertoire they choose.⁷¹ How can generalized statements about popular music be made when it is still in flux, and what worth is there in focusing only on one or two songs when their historic, stylistic, and artistic significance is not yet adequately understood? Corpus studies offer an appealing way around these hurdles because they enable scholars to research repertoires that are accepted as significant without having to confront the significance of individual songs within that repertoire.

3.2.4 Relative Ease of Encoding Methods

In order to analyze a large corpus, its musical data must be encoded in a consistent format, normally one that can be read by a computer. Depending on the musical parameters involved, encoding can range from a straightforward task to a complex set of tasks. Since most popular music follows relatively straightforward textural, formal, and metric conventions, its encoding is perhaps more straightforward than other repertoires. For example, in order to transcribe and analyze the harmony of their 100-song corpus, de Clercq and Temperley (2011) developed a recursive notation that could be succinctly represented and easily read by a computer. By using integers to represent root pitches and measure numbers, their "chord lists" (2011, 58) plotted durations and root notes of chords throughout entire songs in a format

⁷¹ In his article on hybrid syntax in post-millennial rock music, Heetderks (2015) uses analyses of six recent songs by Radiohead, Grizzly Bear, and others to support his theoretical framework. His attempt to group these songs as historically, artistically, and culturally related falls short of its goal, and ultimately weakens the potency of his theoretical argument.

amenable to statistical comparison. In a similar way, Condit-Schultz's (2016) corpus study of hip-hop flow focused on musical parameters that remain largely stable over time in their format and deployment in hip-hop music. By highlighting these examples, I do not wish to oversimplify these scholars' projects, but rather to show that textural, formal, and other parametric consistencies across entire genres of popular music make these repertoires particularly amenable to statistical analysis.

3.2.5 Fortuitous Timing

As the appeal of empirical theory research into popular-music topics continues to increase, so too does scholars' ease of access to computer-driven statistical analysis methods. Programming languages amenable to statistical analysis such as R and Python are readily available, relatively easy to learn and use, and not cost-prohibitive (they can be run on any personal computer). Younger generations of music theorists are perhaps more likely to possess (or be more open to attaining) the requisite coding skills to undertake their own corpus studies.

3.2.6 Sample Size and Analytical Goals

Corpus studies produce the most impact when the researcher's analytical goals are optimized for the type of data the study generates. While this statement might seem obvious, it points to the potential variety of analytical goals suitable for a corpus study of popular music. I will illustrate this by summarizing three recent corpus studies of hip-hop music. Condit-Schultz (2016) analyzed the flow of 124 rap songs with the stated goals of "describ[ing] the 'norms' of rap flow, to determine how flow varies between artists and songs, [and] to describe changes in flow over time" (126). Ohriner (2016) used a corpus as a representative genre-wide sample against which he compared the metric idiosyncrasies of a specific rap performance. And Duinker and Martin (2017) used a corpus to describe the overall sound of a specific historical era of rap music (the Golden Age).

The common thread between these three studies involves their need to develop a genre-wide representative sample of repertoire, albeit for different goals. While Condit-Schultz intended to describe the norms of rap flow, doing so with a corpus of songs released 1980–2015 proved somewhat unwieldy. The type of stylistic norms that could be identified in a hip-hop corpus encompassing 35 years—almost its entire history as a recorded musical genre—would be very general, and not require a detailed study to identify; for example, one could say that a genre-wide norm of hip-hop music is that it usually contains both drums and rapped vocals. Furthermore, finding statistical means of specific musical parameters says little about stylistic norms: one could find the mean tempo of all the songs in Condit-Schultz’s corpus, but this statistic would not reflect the fact that most early hip-hop songs used faster tempos than do recent songs. In short, recent hip-hop music sounds so markedly different from its stylistic predecessors of the early 1980s that teasing out genre-wide norms from these two eras seems almost futile. Condit-Schultz’s corpus is, however, perfectly suited to work toward his other two goals. With rap verses recorded by hundreds of different artists over 35 years, Condit-Schultz was well-positioned to produce observations based on variance and changes over time.⁷²

Duinker and Martin (2017) encountered the opposite challenge to Condit-Schultz. Our corpus included 100 songs from a comparatively short ten-year span (1986–1996), of which we essentially asked the same three questions, seeking to identify trends of change, trends of prevalence, and trends of similarity. With a larger song-sample size per year, trends of prevalence had more empirical support—especially since the premise of their work was to establish the general parameters of the “sound” of a specific era of hip-hop music (the Golden Age). Conversely, notable trends of change were more difficult to isolate due to the compressed time period covered by the corpus: even with a fairly large corpus set over a short, defined period

⁷² This summary is not meant to undermine the value of Condit-Schultz’s work; rather, it serves to show which types of analytical goals are better suited than others for a corpus of the size and timespan he used.

of time, we encountered challenges in their attempt to isolate trends of similarity across the corpus and various subsets of it. Instead, we focused on similarity networks, where songs were grouped together according to common attributes with only one or several other songs.

Ohriner (2016) used his corpus as an experimental control to illuminate a non-normative metric situation found in OutKast's "Mainstream" (1996). In fact, he used three corpora to demonstrate this: a genre-wide representative corpus, and two smaller corpora of performances by OutKast member Andre 3000 and Goodie Mob member T-Mo Goodie (the guest MC on "Mainstream"). The benefit of using the two smaller corpora is obvious: by sampling a variety of other verses by Andre 3000 and T-Mo Goodie, Ohriner could highlight the unique metric aspects of each artist's performance in "Mainstream". But in using just 75 verses (one from each song in his corpus) to establish genre-wide conventions, Ohriner had to be careful as to which musical parameters he made generalizations about. In each of these three corpus studies, the authors' awareness of the need to tightly coordinate analytical goals with appropriate sample size enabled them to work efficiently and produce meaningful results that spoke directly to their stated goals.

3.2.7 Objectivity, Selection Criteria, and Analytical Goals

While the coordination between analytical goals and sample size is of primary importance in corpus studies, the relationship between analytical goals and corpus objectivity and selection criteria also warrants discussion. Furthermore, the analytical goals of the researcher go some way toward determining whether the research forms a corpus study, or a corpus-assisted study that uses corpora as evidential support for broader analytic arguments.

De Clercq (forthcoming) stresses the importance of maintaining objectivity during corpus studies. He advocates for the use of multiple persons working independently to transcribe and annotate the data, so as to minimize the effect of interpretive subjectivity. But interpretive subjectivity is unavoidable in human-based music encoding; even if the encoders use a rigorous

methodology, the choices they make regarding notation, theoretical foundation, and other fundamental aspects are already inherently subjective. For example, by using Roman numeral notation, de Clercq and Temperley (2011) imposed an annotation system onto the music they transcribed that allowed them to make observations about harmonic functions and progressions. Condit-Schultz (2016) and Ohriner (2016) each encoded vocal accents but did so with differing methods. The fact that their methods were unique reflects their personal habits and convictions as listeners and analysts. To be sure, there is nothing wrong with any of these subjective methodologies, so long as they are coupled with analytical questions they can adequately answer. It follows, then, that instead of avoiding the more subjective practices of analysis in undertaking a corpus study, tailoring analytical goals to account for the subjectivity of human encoding might be a better approach.

The very selection of corpora involves subjectivity, ranging from the most objective methods (using a defined set of songs measured by sales or other external criteria) to the most subjective (individually selecting each song). Again, this subjectivity does not pose major problems if it is addressed in the context of analytical goals. In her 2014 article on metric dissonance in rock music, Biamonte analyzed corpora of songs by the Beatles, Radiohead, The Rolling Stones, Led Zeppelin, Tool, Jimi Hendrix, and others. With the exception of her use of the corpus developed by de Clercq and Temperley (2011), Biamonte hand-picked these corpora; they were subjectively chosen to suit the purposes of her research. This being the case, her goal was not to make sweeping statements about the prevalence of metric dissonance in all rock music, but rather to demonstrate its relative levels in several prominent artists from various time periods.

But even when a corpus is developed objectively using an external source such as *Billboard*, *Rolling Stone*, or the Grammy Awards, subjectivity is already in play. De Clercq and

Temperley (2011), for example, used *Rolling Stone*'s "500 Greatest Songs of All Time" list as their source for developing a 200-song corpus. While they were able to reduce some subjectivity by selecting a fixed number of songs per decade, so as to minimize bias toward a particular era—although a genre bias toward classic rock persisted, they were still using a corpus that had been determined by a finite (and apparently undisclosed) group of industry insiders: musicians, producers, and the like. Each was asked to rate their top 50 songs, and these ratings were amalgamated via a weighting system, but there is no way to ensure that each individual rated songs in the same way, using the same criteria. Furthermore, by using the *Rolling Stone* list, de Clercq and Temperley were subscribing to a definition of rock upheld by that magazine—more specifically, by the people tasked with producing the greatest-songs list, which may not carry the same significance for all readers, especially those of younger generations.⁷³

Finally, corpus selection relates closely to whether the research comprises a corpus study or a corpus-assisted study.⁷⁴ The distinction here lies in the extent to which statistical methods can be viably used to generate results and support claims. Using an objectively generated corpus of *Billboard*-charting songs, Condit-Schultz (2016) used statistical analysis as the main driver for his findings; in this way his work is truly a corpus study. It succeeds as such because his corpus was not selected with the express purpose of proving a previously-held analytical viewpoint on this repertoire. In contrast, William Caplin's (1998) treatise on Classical form draws heavily on the instrumental works of Haydn, Mozart, and Beethoven. In a sense, Caplin derived his theoretical apparatus from an exhaustive analytical survey of these works, which are themselves a sort of hand-picked, subjective corpus. But Caplin situates his theoretical claims in a way that does not require statistical support; indeed, that is not the main thrust of his book. Instead, his

⁷³ In fact, the assumption that the songs on this list produced by *Rolling Stone* are indeed rock songs is never made explicit. De Clercq and Temperley are well aware of the issues and limitations inherent in their study, summarizing them in detail (2011, 50–54).

⁷⁴ I borrow the latter term from Ohriner (2016).

theory revolves around a set of norms or conventions that act as a template to understand the individual formal characteristics of any instrumental work by these three composers. In this way, Caplin's work is better viewed as a corpus-assisted study.

3.3 Corpora for this Dissertation

My initial goal for this dissertation was to use a single source (other than *Billboard*, for reasons described below) to produce a balanced, extensive song corpus from 1979 to 2017 (the latter year being when I began this research). This proved impossible, and the logical solution was to split the time period into two and to use separate sources to develop two corpora. I will now explain my methodology, as well as my tailoring of analytical goals to suit the size, objectivity, and selection criteria for these corpora.

3.3.1 *Rolling Stone* Corpus

The first corpus analyzed in this dissertation—the larger of the two—derives from *Rolling Stone* magazine's list of the "100 Greatest Hip-Hop Songs of All Time" (2017). The 100-song list is shown in the Appendix and includes songs released every year between 1979 and 2011 with the exception of 2005. In using a list produced by *Rolling Stone*, I am essentially running into the same questions described above for the study by de Clercq and Temperley. First, who are the industry insiders (37 in the case of this list) that have been tasked with creating this list for *Rolling Stone*? What are their aesthetic preferences? Where are they from? What other personal (read: subjective) baggage do they bring to their decisions on what songs to include? Where the *Rolling Stone* list used by de Clercq and Temperley included disproportionate levels of rock songs from the 1960s and 1970s, for example, the "100 Greatest Hip-Hop Songs" list includes more songs from the Golden Age (1986–1996) of hip hop than any other era and more East-Coast artists than from other regions, not to mention its heavy bias toward male artists. Do these subjective shortfalls of the *Rolling Stone* list disqualify it as a worthy source for producing

a corpus? I believe they do not, so long as I am careful with what claims I make from the data procured from this corpus.⁷⁵ I do not endeavor to make claims that “all hip-hop music” espouses this or that stylistic feature, or follows a particular trend over time. But I do feel comfortable enough with the fact that 37 industry insiders—with a knowledge and familiarity with hip-hop much deeper than my own—chose these songs based on their cultural and commercial impact on the hip-hop community and beyond, and for that reason I see an importance in paying them attention in this study.

In producing this corpus, my main modification of the *Rolling Stone* list was to remove all songs released in 2003 or later.⁷⁶ The removal of later songs was done for two main reasons. First, since the second corpus used in this dissertation contains songs from as early as 2003, I found that the chronological overlap between corpora would have produced superfluous if not redundant data. Seven of the twelve songs (including all three Jay-Z songs from this part of the corpus) removed from the *Rolling Stone* list appeared in the Grammy corpus, and two of the additional five songs removed were from albums with other songs in the Grammy corpus. Furthermore, UGK, the lead artist behind one of the other three omitted songs, appeared on a different song in the *Rolling Stone* corpus. Thus, only two songs—and the artists that performed them—disappeared entirely from the two corpora: “Paper Planes” by M.I.A. (2007) and “B.M.F. (Blowin’ Money Fast)” by Rick Ross (2010).

The second reason for removing twelve songs from the *Rolling Stone* list concerned the balance of representation. Dividing the list into three equal time periods shows that 40% of songs were released in 1979–1989, 45% in 1990–2000, and only 15% in 2001–2011. Since this

⁷⁵ It should be noted here that if I had used a sales-based metric such as *Billboard*, I would have encountered the same disparity in gender representation, that is to say, far fewer women than men. This in itself does not excuse me from using an equally misrepresentative source list, but it does reveal an entrenched gender-based imbalance of power in the hip-hop community.

⁷⁶ In addition, the song “Lose Yourself” (Eminem, 2002) was removed from the first corpus because it appeared in the second corpus, having won the Grammy Award for *Best Rap Song* in 2004.

imbalance skews heavily toward the 1980s and 1990s, it makes more sense to statistically analyze songs from those decades. These two reasons helped make the decision to limit the *Rolling Stone* list to the years 1979-2002 inclusive a relatively straightforward one.

The reduced *Rolling Stone* corpus contains 88 songs released over a period of 23 years. This total produces an average of approximately four songs per year, slightly higher than Condit-Schultz's (2016) approximately 3.5 songs per year. Thus, chronological statistics, or changes over time, are reasonably easy to produce for the *Rolling Stone* corpus. But given the relative dearth of song representation from the earliest and most recent years in the corpus (see the Appendix), changes over time need still be scrutinized: for example, chronological statistics might be more meaningful if measured in groups of years, rather than by individual year. Given the large number of verses contained in the corpus, a more random cross-section of the hip-hop genre could have been produced by extracting, at random, one verse per song—as Ohriner (2016) did—which would, theoretically, have given me more time to explore more songs from this era (although this would have required more source lists than just *Rolling Stone*'s).⁷⁷ That said, I believe the representation of this corpus to be sufficient to make observations about genre-wide norms, provided the norms are well-distributed across the corpus.

After jettisoning the idea of creating a corpus from multiple source lists, my selection criteria consisted solely of *Rolling Stone*'s list. I decided against using Grammy Award statistics (for this corpus at least) because no rap category existed before 1989, and furthermore, rap/hip-hop categories at the Grammy Awards have undergone several changes since then.⁷⁸ I decided against using *Billboard* statistics for two reasons. First, Condit-Schultz had already recently used

⁷⁷ My initial methodology included consideration of the lead singles from the top 100 albums ranked at Acclaimedmusic.com. I ultimately determined that this would make the first corpus too large in scope for this dissertation, not to mention adding several layers of subjectivity to the corpus development process.

⁷⁸ In 1989, the Grammy Award for Best Rap Performance was introduced; it was split into two categories in 1991—Best Rap Solo Performance and Best Rap Performance by a Duo or Group—only to be reunited as Best Rap Performance in 2012. The Grammy Award for Best Rap Song was introduced in 2004.

them, and with the aim of developing a corpus different from his, I abstained from consulting *Billboard*.⁷⁹ Second, *Billboard*, like the Grammy awards, did not produce a chart monitoring rap/hip-hop music until 1989, when the Hot Rap Songs chart was introduced.⁸⁰ Furthermore, using statistics from *Billboard*'s Hot 200 song chart, as Condit-Schultz did, would not give me a corpus suitable to answer the main questions driving this dissertation, namely those about stylistic diversity, inter-artist stylistic influences, and geographical representation.⁸¹

The majority of the artists featured in this corpus were active in the New York City area, but substantial representation of West Coast artists begins with the appearance of N.W.A. in 1988, and smaller proportions of Southern and Midwestern artists appear beginning in the mid-1990s. These levels of representation are emblematic of the standard narrative of hip hop's history (as summarized in Chapter 2): that its most well-known artists were mainly from New York until the emergence of gangsta rap and G-funk on the West Coast in the late 1980s and early 1990s, and of Southern artists roughly half a decade later. Therefore, the most obvious subsection of the corpus to serve as a basis for comparing stylistic markers of particular locales is the 1990s, the decade in which geographic regions were arguably most pronounced in the hip-hop landscape.

3.3.2 Grammy Corpus

The second, smaller corpus studied in this dissertation consists of all nominated songs (including winners) in the Grammy Award category for Best Rap Song in the years 2004–2017 inclusive. This prize was introduced in 2004 and has been awarded every year since. The winning song is chosen from a pool of five nominees (except for 2012 and 2013, when six songs

⁷⁹ Hip-hop corpus studies in the music theory community are few; at this early stage a diversity of corpora represented in these studies can provide more analytical insight into the genre's stylistic properties.

⁸⁰ Before 1989, charting hip-hop music appeared on the Hot R&B/Hip-Hop Songs chart, previously known by many other names, including Hot Black Singles through the 1980s.

⁸¹ *Billboard* measures the success and influence of music at the time it charts, whereas the *Rolling Stone* list is retrospective, considering the influence and legacy of specific songs over a longer period of time.

were nominated); the corpus thus contains 72 songs. The songs themselves were released between 2002 and 2017, owing to the discrepancy between a song's release date and the year it is eligible for a Grammy Award. (In general, a song is released during the calendar year preceding the Grammy year in which it is nominated.) The Appendix at the end of the dissertation summarizes this 72-song corpus. As can be seen, Kanye West has all but dominated this award category, winning it six times out of nine nominations. Other prominent artists represented include Jay-Z, with two wins in six nominations, and more recently, Kendrick Lamar, with two wins in the most recent three years.⁸² No removals from this corpus were needed, as they were in the *Rolling Stone* corpus. As previously mentioned, several songs initially appeared in both lists, but were retained in the Grammy list. A small number of MCs appear in both corpora: Jay-Z, Eminem, Nas, Missy Elliot, Busta Rhymes, and Snoop Dogg. Unlike the *Rolling Stone* corpus, the Grammy corpus includes some (minimal) international representation through Canadian artist Drake.⁸³ The Grammy corpus features several instances of singing, notably in songs by Drake ("Hotline Bling", 2015) and Kid Cudi ("Day N Nite", 2009).⁸⁴ This sung flow style was used in the earlier *Rolling Stone* corpus in the song "Tha Crossroads" (1996) by Bone Thugs-N-Harmony.

The relationship between sample size and analytical goals is more stable in the Grammy corpus. While the *Rolling Stone* corpus contains just under four songs per year on average, the Grammy corpus contains slightly over five per year on average. Furthermore, the songs are distributed much more evenly in this corpus, as the Appendix shows. This evenness enables me

⁸² Lamar also won this award in 2018 with his song HUMBLE., making his win total three in the most recent four years (2015–2018). The 2018 nominees were not included in the corpus because the initial transcription and analysis for this study occurred before the nominees in this category were announced.

⁸³ While Slick Rick (who appears in the *Rolling Stone* corpus) was British-born, he emigrated to the United States as a teenager and has spent his whole life there, recently becoming an American citizen.

⁸⁴ Wong (2017) notes that Drake was chagrined when "Hotline Bling" was nominated for, and later won, the Grammy Award for Best Rap Song, since the song contains no rapping whatsoever.

to make observations regarding chronological patterns of change with slightly more certitude; it frees me from having to account for historical bias much as I have to for the *Rolling Stone* corpus in a way similar to de Clercq and Temperley (2011). Finally, the geographical distribution of artists in the Grammy corpus is much more diverse than in the *Rolling Stone* corpus. This is partly due to the recency of this corpus: in the 21st century artists from the American South and Midwest have occupied larger shares of the commercial hip-hop market, although still residing on the periphery of critical attention and acclaim. With midwestern artists such as Kanye West, Eminem, Chance the Rapper, Kid Cudi, and Lupe Fiasco, and southern artists such as Lil' Wayne, T.I., Soulja Boy, Young Jeezy, and Chamillionaire, the Grammy corpus exemplifies the more egalitarian geographic representation in the hip-hop landscape of late. At the same time, this equality contributes to a stylistic post-regionalism in recent hip-hop music.

While using a pre-made corpus without removing or adding songs qualifies as more objective than the *Rolling Stone* corpus, the Grammy corpus still bears traces of subjectivity, mainly regarding the Grammy selection process and criteria. According to the Recording Academy's Grammy website, the two-stage nominating and voting process (one stage to determine the finalists, and the second stage to vote on them) is open to any registered voting member of the academy in good standing.⁸⁵ The nomination and voting criteria are unfixed, thus ensuring the subjectivity of this list. Like the *Rolling Stone* list, then, the Grammy list is classed as a multi-author subjective list of valued hip-hop music. As with the *Rolling Stone* list, I cannot claim that the Grammy list serves as a representative sample of the hip-hop genre at large, but instead can claim that it exemplifies the hip-hop music that occupies the foreground of

⁸⁵ On the Grammy website (www.grammy.com, accessed June 22, 2018), the Recording Academy explains in some detail the nomination and voting process for each Grammy award. As a voting member of the academy, Kenner (2014) has expressed his frustration with the voting process, particularly regarding the potential ignorance a voting member may have of the music in certain award categories.

commercial sales and mainstream media attention.⁸⁶

3.4 Metadata and Preliminary Encoding

Armed with two corpora totaling 160 songs, my first task was to encode all metadata associated with each song: artist name, song title, verse-by-verse rapping credits, album title, release year, and artists' geographic region. For example, metadata for the song "The Choice is Yours (Revisited)" (1991) was entered as follows:

Artist: Black Sheep

Song Title: "The Choice is Yours (Revisited)"

Rapping Credits: Dres (all verses)

Album Title and Release Year: A Wolf in Sheep's Clothing (1991)

Geographic Region: Queens, NY

Metadata was collected from the websites allmusic.com and genius.com. Since genius.com is an open-source website containing user-generated content, some care had to be taken to ensure accuracy and thoroughness. For example, the annotated lyrics found here did not always indicate who was rapping at a certain point. This information could often be verified through watching the official music video for the song or live performances of it. Where different versions of a song were commercially released (long and short versions, radio edits, etc.), the metadata in the appendices reflects the version that I transcribed.

Once the metadata was collected, I undertook the first listening and preliminary encoding of each song. This preliminary encoding included determining each song's tempo and form. Tempo was established using the now-defunct website www.temptap.com. This website and others like it allow the user to enter keystrokes (usually by pressing the space bar) at any rate they wish, and the site constantly averages the time between strokes, generating an average

⁸⁶ Rys (2017) chronicles the hip-hop community's at-times tenuous relationship with the Grammy awards, while Orcutt (2017) chronicles many of the high-profile Grammy boycotts undertaken by hip-hop artists. McWilliams (2018) situates hip hop's relationship with the Grammys as being representative of America's relationship with blackness: "infatuation without acceptance". These boycotts were mainly of the awards ceremony itself and did not, to my knowledge, affect the nomination process in any way.

tempo. My method was to tap the spacebar along with the sounding song until an average tempo of within one bpm (beat per minute) was reached for ten or so taps. This typically took around 25 taps. With only one exception (“Alright” by Kendrick Lamar, 2015), my tap rate coincided with the structural kick-snare backbeat pattern underpinning each song. I believe this to be the most salient and reliable marker of tempo in hip-hop music.⁸⁷

Encoding each song’s form was a slightly more involved process. Before encoding form, I had to decide on a terminology for formal sections in hip-hop music. Beginning in the mid-1980s and continuing in large part to the present day, mainstream commercial hip-hop songs usually contain some combination of verse sections, hook sections (these may include rapping or singing, usually on some short refrain lyric), instrumental sections, bridge sections, and hype sections (those that “hype” the content of the song in a more free-flowing ad hoc fashion).⁸⁸ Since I only transcribed verses in this dissertation, my main concern was to qualify what constituted a verse: formal units containing rhythmically rapped lyrics, unique to that part of the song (i.e. not repeated elsewhere); oftentimes, the genius.com annotations had already determined verse sections accurately and consistently.⁸⁹ By contrast, hook sections often contain

⁸⁷ De Clercq (2016) defends the practice of determining measure length, and by extension song tempo, using absolute time as a determinant, citing perceptual studies that have shown a two-second timespan to be the ideal duration for experiential measures in subjects listening to popular songs. While de Clercq’s findings are compelling, two factors led me to part from them in my determinations of tempo and measure lengths in this dissertation. First, his chosen repertoire is pop and rock music. In general, these styles contain much more variance in phrase length of vocal lines, harmonic rhythm of accompaniment, and rhythmic variation of drum patterns than is found in hip-hop music. Second, the perceptual studies de Clercq cites mainly focus on tapping experiments. I posit that a more reliable indicator of tempo and measure perception would include a more embodied response to the aural stimuli, such as dancing. While I know of no studies that do this with respect to hip-hop music, I hypothesize that the results would show a more faithful correspondence to backbeat patterns as determinants of tempo and measure.

⁸⁸ This formal taxonomy is quite crude. Much more work on codifying formal aspects of hip-hop music can be done. For example, hook sections are remarkably diverse, sometimes containing one short refrain lyric, and other times containing involved choruses with singing. Duinker and Martin (2017) have made preliminary inroads toward establishing a formal system for classifying hip-hop song sections.

⁸⁹ Occasionally repeated lyrics are embedded in verses. For example, in Audio Two’s “Top Billin’” (1998), a refrain phrase punctuates, without pause, the single ongoing verse that this song contains. Since there are no textural changes or other indicators of a formal boundary, I chose to include these lyrics within the verse. Occasionally I disagreed with the formal annotations on genius.com. In these cases, I annotated formal sections in a manner consistent across the whole corpus, using the criteria for section types described above.

repeated lyrics, occasionally chanted or sung, especially in more recent years. Hype sections tend to serve a framing function in hip-hop music, though they occasionally occur in the middle of songs and even within verses.⁹⁰ Bridge sections are the least consistently defined in hip-hop music. According to the formal annotations on genius.com, bridge sections appeared more recently in hip-hop music (all but one that I identified occur in the later Grammy corpus), and may range from a sung interlude, a section functioning more like an alternate or second hook, or even a rapped section that is so short it does not function like a verse. Song form was encoded using abbreviations for song sections, with elapsed time indicating the beginning of each new section. For “The Choice is Yours (Revisited)” (1991), the encoded form reads as follows (hp = hype, vs = verse, hk = hook, bdg = bridge, inst = instrumental):

inst (0:00) vs1 (0:19) hk (1:01) vs2 (1:21) hk (2:03) bdg (2:23) vs3 (2:32) hk (3:09) inst (3:29) end (4:04)

3.5 The Transcription of Flow

Transcription—the transfer of information from recorded sound to notated score—is an essential part of encoding hip-hop flow, since hip hop is largely a non-notated, oral and recorded musical tradition.⁹¹ This section outlines some challenges and issues inherent in transcribing hip-hop flow.⁹² First I discuss notation strategies, weighing their benefits and drawbacks. Second, I address the issue of microtiming in hip-hop flow. Third, I discuss the role of pitch structures in

⁹⁰ Hype roles are occasionally assumed by specific members of hip-hop groups. For example, Public Enemy’s Flava Flav hypes almost exclusively, while Chuck D raps the verses and hooks.

⁹¹ Marrow and Baybutt (2012) and Edwards (2009, 67) both document the practices of MCs who use their own notation schemes as aids when recording. These notations may not resemble the staff-based musical notation of Western art music, but convey much of the same information, such as accents, rests, and rhythms. In a sense, these notated rap verses are analogous to composers’ sketches; in each case the music is represented during the compositional process, but the final forms of these two idioms differ: for hip-hop music, the recorded track rather than the written score constitutes the primary musical text.

⁹² Only issues that have direct links to rhythm and meter are discussed here, given the overall goals of this dissertation. Parameters such as vocal timbre, while intriguing and interesting to study, are not discussed for this reason. Heidemann (2016) has developed a preliminary descriptive system for analyzing vocal timbre in popular song based on vocal production techniques. Woods (2012) has conducted perhaps the most in-depth study of vocal timbre in hip-hop music, while Duinker and Martin (2017) considered broad categories of timbre as contributing to distinctly idiomatic “sounds” of each MC. Another parameter not discussed explicitly here, articulation, figures prominently in Adams’s work on flow (2009a, 2015).

hip-hop flow and explore how it can be notated. And finally, I explore the question of the transcriber's interpretive latitude and how it might be accounted for during the encoding process. This section thus summarizes issues that I and others have encountered during the transcription process, and the following one details my transcription methodology as it relates to these issues. Through this section I demonstrate that, although an inherently subjective act, transcription is a vital and informative part of the analysis of hip-hop music.⁹³

3.5.1 Notation

The process of transcribing hip-hop flow typically begins with deciding how to notate the flow. For most genres of popular music studied in academia—those in which the musical text comprises recorded sound—staff-based notation can usually represent the recording with sufficient precision for many analytical purposes.⁹⁴ Since hip-hop vocals are normally not sung, but rapped, their pitch content is not well represented by staff notation. Furthermore, since hip-hop flow engages with microtiming in relation to whatever metric and rhythmic regularity the beat layer imposes, standard music notation rarely can express these subtle variations. In light of these and other notational issues, two broad practices of notating hip-hop flow have emerged in recent scholarship: graph notation and staff notation.⁹⁵

Graph-based notation schemes were used as early as Krims's 2000 monograph *Rap Music and the Poetics of Identity*. For his close readings of Ice Cube's "The Nigga Ya Love to Hate" (1990) and Goodie Mob's "Soul Food" (1995), Krims developed a notational scheme that

⁹³ Winkler writes that "rather than seeing it as a way of distancing oneself from the music, transcription should be seen as a deep and intimate involvement in musical processes. The goal should not be an objective representation but just the opposite: transcription must be recognized as an intensely subjective act. And this should be recognized not as a fundamental weakness, but as a fundamental strength" (1997, 200).

⁹⁴ Pitch-based elements can be represented on conventional staff or tablature systems, although Winkler (1997) has shown that staff-based notation should still be augmented with glyphs and figures to account for the intricacies of, for example, vocal pitch inflections smaller than a semitone.

⁹⁵ Condit-Schultz (2016) and Ohriner (2017) have used encoding notations different from either of these two categories. Condit-Schultz encoded his verses of flow using Humdrum data spines (it is not clear whether he transcribed the flows using standard notation first) while Ohriner experimented with a graph-based notation oriented in a spiral so as to show the progressive micro-temporal movement of repeated syllables in Talib Kweli's flow.

divides a quarter-note tactus into four sixteenth notes, using the numbers 0, 1, 2, and 3 as placeholders. Below this framework, Krims inserted an *x* on each beat where a rapped syllable occurs. He notated each new measure below the last, so that the graph is interpreted much like a (Western) musical score or a passage of prose: left-to-right and then downward. Adams (2008 & 2009a) uses a modified version of Krims’s graph notation, replacing the *x*-marked syllables with the song lyrics (Krims included the lyrics beside the graph) and modifying the size of each cell in the graph as needed for rhythms that fall outside the sixteenth-note grid imposed by the graph. Examples 3.1 and 3.2 show how Krims’s and Adams’s graphic notation systems could represent the first few lines of the first verse of “The Breaks” (Kurtis Blow, 1980). Especially in Adams’s notation (Example 3.2), the poetic rhythm and rhyming structure of the lyrics is represented quite clearly in these graph forms.⁹⁶

1				2				3				4			
0	1	2	3	0	1	2	3	0	1	2	3	0	1	2	3
x		x	x	x			x		x		x	x			
x		x	x		x		x	x	x	x					
x		x	x		x		x		x		x				
x		x		x		x	x		x		x				

brakes on a plane, brakes on a car,
 breaks to make you a superstar.
 breaks to win and breaks to lose,
 these here breaks will rock your shoes.

Example 3.1: First verse of “The Breaks” (Kurtis Blow, 1980). The excerpt is notated using a graph system developed by Krims (2000).

⁹⁶ Adams highlights this attribute of Krims’s system, writing that his notation allowed him to “display [the lyrics] as poetry and to indicate their rhythm” (2015, 122).

1	x	y	z	2	x	y	z	3	x	y	z	4	x	y	z
brakes		on	a	plane			brakes		on		a	car			
breaks		to	make		you		a	su-	per-	star					
breaks		to	win		and		breaks		to		lose				
these		here		breaks		will	rock		your		shoes				

Example 3.2: First verse of “The Breaks” (Kurtis Blow, 1980). The excerpt is notated using a graph system developed by Adams (2008).

Staff-based notation schemes have been used by, among others, Walser (1993), Kautny (2015), and Komaniecki (2017). Depending on whether the notation seeks to represent pitch, single- or multi-lined staff systems may be used. Staff notation is useful for a music-educated readership (in that it poses little to no barrier against efficient comprehension) but can be alienating and prohibitive for readers who lack the necessary music-notational literacy.⁹⁷ For publications aimed at a non-music-literate readership, like “How to Rap” (Edwards 2009), graph notation is normally preferable. Another argument in favour of graph notation is that staff-based notation is far removed from how a flow’s rhythm is normally notated by MCs themselves.⁹⁸ Depending on how it is formatted, staff-based notation can, however, represent poetic structure as well as graph-based notation.

Four main issues arise with graph- and staff-based notations, and summarizing these will support my choice to use the latter approach in this dissertation. The first issue involves the drums in a song’s beat layer. Graph-based notation cannot efficiently account for the variegated instrumentation the drum part may contain. While each constituent element of the beat layer could be represented on an individual row in the graph, this would not only be visually

⁹⁷ Numerous scholars have stressed the importance of considering readership or “knowing your audience” when using staff-based notation to transcribe non-notated musics, including Schloss (2004, 12–15) and Danielsen (in Staynek et al., 2014, 131).

⁹⁸ Evidence of rhythmic and metric planning by MCs has been documented (see Edwards 2009 and Marrow and Baybutt 2012), and the notational systems used by these artists more closely resemble a graphic or dot-based notation than conventional staff notation.

cumbersome, but would separate elements of the beat that, musically speaking, function as a unit, as the various drum instruments used in most beats typically do. Especially in earlier hip-hop music, these instruments could all come from just one or two sampled loops; displaying them on individual lines thus makes little musical or analytical sense. Staff-based notation, on the other hand, can consolidate the drum parts into a standard format that is widely legible to musicians and music scholars.

The second issue involves microtiming variations in the flow layer. While microtiming poses challenges for any notational system not explicitly designed to represent it, the challenges it presents to graph-based notation are more pronounced. From a cosmetic standpoint, if a flow graph were to steadfastly represent all non-sixteenth divisions and any microtimings, as Adams (2009a, Example 5a) attempts to do with MF Doom's flow in "All Caps" (Madvillain, 2004), the graph quickly becomes cluttered. From the standpoint of accuracy, the issue is equally problematic. Take, for example, the passage from Big Daddy Kane's "Ain't No Half Steppin'" (1988) transcribed in Example 3.3. To my ear, the precise rhythm Big Daddy Kane raps lies somewhere between the two versions shown in staff notation. While this itself is problematic since neither represents exactly what Big Daddy Kane is doing rhythmically, the options at least vividly show how his flow can be approximately represented in a stricter metric context.⁹⁹ Hearing 1 prioritizes the perceived rhythmic evenness of the lyrics notated in quintuplets, while sacrificing the slight anticipation of downbeats. Hearing 2 reflects a different modelling, prioritizing the anticipated downbeats while sacrificing the evenness of rhythmic delivery. While graph-based notation could also represent these approximations, it would give the reader less of a concrete visual reference to highlight the uniqueness or markedness of Big Daddy Kane's rhythm in this passage.

⁹⁹ This is not to say that each notated version is equally convincing as a rhythmic approximation.

♩=101
(2:06)

Hearing 1

the best oh yes I guess sug - gest the rest should fess don't mess or test your high - ness un -

Hearing 2

the best oh yes I guess sug - gest the rest should fess don't mess or test your high - ness un -

less you just ad - dress with best fin - esse and bless the pa - ra - graph I ma - ni - fest

less you just ad - dress with best fin - esse and bless the pa - ra - graph I ma - ni - fest

Example 3.3: Two hearings of a passage from “Ain’t No Half Steppin’” (Big Daddy Kane, 1988).

The third issue involves the duration of each rapped syllable. Graph-based notation, in the forms that have been used thus far, only shows syllable onsets, while staff-based notation can also show syllable duration—though neither of these systems is adequately equipped to handle the subtleties inherent *within* syllables, such as the timing of vowel placement and final consonants. While MCs often tend to use shorter syllables, and thus the use of rests in notated transcriptions becomes important, occasionally longer syllables are used, and staff-based notation can show this fairly accurately. The fourth issue concerns pitch. As Adams writes, “although rap lyrics are spoken, MCs still manipulate pitch for expressive purposes, sometimes within single words” (121). Again, neither graph-based nor staff-based notation is adequately equipped to fully handle the intricacies of pitch movement in rapping, but staff-based notation has the potential to be modified to handle this task, if imperfectly. Kautny (2015) has accomplished this by using a single-lined staff with several note heights corresponding to local pitch inflections by MCs. Komaniecki (2017) uses a two-lined staff, indicating whether the MC is vocalizing higher or lower in their tessitura. While I chose not to represent pitch inflections

globally across both corpora, I do so in some of my close readings in Chapter 6. In summary, while Adams notes that “there is as yet no form of transcription that captures both the linear nature of the lyrics and the cyclical nature of the beat” (2015, 120), staff-based notation is at least capable of representing both the beat and flow layers in a manner that reflects the music’s organization reasonably well.

3.5.2 Microtiming

The rhythmic subtleties MCs use in their flow—for text painting, rhetoric, and other expressive purposes—are at times difficult or even impossible to transcribe using conventional music notation. These subtleties, which can be characterized by terms such as microrhythm or microtiming (used interchangeably in this dissertation), cannot be accurately depicted using commonly notated durations (though Ohriner 2017 and 2019b has successfully found other ways to represent it). Microtiming occurs more frequently and substantially in some MCs’ flows than in others’, and may be used on only some syllables or consistently throughout a whole song. Adams observes that the analyst using staff notation “must either transcribe the rhythms faithfully ... or decide to quantize the rhythm to some degree, thereby gaining clarity of notation but sacrificing the rhythmic intricacy that energizes so much of the music” (2015, 121). Kautny suggests that “in order to cope with microtiming, we need to engage with alternative methods of notating rap music” (2015, 113). Furthermore, if the analyst is concerned with faithfully representing flow in the finest rhythmic detail, they must dutifully consider where the perceptual center of each syllable is heard.

Transcribers have the choice of using modified staff-based notation or developing an alternate notation better equipped to handle microrhythm.¹⁰⁰ A number of approaches that use an

¹⁰⁰ Ohriner (2016, 2019b) has developed a custom notation for his transcriptions that graphically displays the temporal distance between the real placement of syllables and a normalized, referential metric grid. I experiment with a modified version of his method in Chapter 7.

augmented or modified staff-based system have been used outside of hip-hop research.¹⁰¹

Matthew Butterfield's (2006) investigation of anacrusis in groove-based musics demonstrates how Christopher Hasty's (1997) system of indicating continuational and anacrustic properties in rhythmic impulses can be used to explore how microtiming affects the directionality of rhythmic impulses. While Butterfield is able to capture the expressive qualities of microrhythm with this approach, he does not consistently show which particular beats are altered. Fernando Benadon (2006, 2009) and Alan Dodson (2012) have both augmented staff notation with graphs charting microtiming deviations measured in milliseconds (henceforth ms). This approach is useful when microtiming is present across a whole passage. Butterfield (2011) models the swing ratios in passages of jazz music using beat-upbeat ratios, showing numerical values above each gap between two swung eighth notes. Though Anne Danielsen (2013) rarely uses score-based notation in her examples from Michael Jackson's "Don't Stop 'til You Get Enough" (1979), she uses arrows and numerical values in milliseconds (ms) to identify which particular beats are inflected with microtiming. This approach is most useful for composite textures, especially drumbeats, where not all elements may be performed using microtiming.

Each of the aforementioned strategies could be effective for transcribing hip-hop flow, depending on the nature of the microtiming. Through the primary encoding and transcription process, prior to any detailed analysis of microtiming, I have identified three broad practices of microtiming in hip-hop flow, which I explore in detail in Chapter 7. One practice consists of anticipation or lag of syllable onsets in the flow, so that the flow sounds consistently ahead of or behind the beat. This practice may occur throughout entire passages, as in the constant syllabic lag in Jay-Z's flow in "Money Ain't a Thang" (Jermaine Dupri and Jay-Z, 1998), but it can also occur only at key moments for added rhetorical emphasis. Examples of this can be found in

¹⁰¹ In Jason Staynek's Skype interview with them, Fernando Benadon and Anne Danielsen each reflect on their augmented or modified score-based notations. See Staynek et al. (2014, 130–137).

nearly every Snoop Dogg song in these corpora, but most notably in “Nuthin’ But a G Thang” (Dr. Dre and Snoop Dogg, 1992), where he regularly ends lines of flow by slowing down and displacing his last several syllables. Another practice involves swinging the eighth notes, similar to how a jazz drummer might keep time on the ride cymbal (as discussed in Butterfield 2010 and 2011). This practice appears in older songs, such as “Hold It, Now Hit It” (Beastie Boys, 1986), and also in more recent releases such as “It’s Goin’ Down” (Young Joc, 2006). Swung flow might sit atop a swung beat (as in “Hold It, Now Hit It”), or a comparatively straight beat (as in “It’s Goin’ Down”).

The third type of microtiming is the most difficult to capture in transcription and is best exemplified by Eminem. This practice involves the speech-like delivery of flow, where natural speech stresses create a rhythmic trajectory that might seldom interact or align with the underlying beat.¹⁰² An example of this practice can be heard in Eminem’s “Stan” (2000), where the lyrics are rapped in a free-flowing style that follows the rhythmic contours of Eminem’s speech inflections and vocal expression. Eminem does, however, lock in rhythmically with the beat on certain syllables, which are normally end-rhymes, and this practice enables him to create a flow that locks in metrically with the beat but stratifies it at the subtactus level.¹⁰³ Encoding microtiming for the flow of 160 songs in any of these systems would be impractical in light of the time constraints for this dissertation. I instead encoded each song using conventional notation, noting where any of the three aforementioned microtiming practices appear, and in Chapter 7, I return to several of these songs to undertake close readings of microtiming using my own modifications of the methods described above. As with other parameters discussed,

¹⁰² In earlier songs such as “PSK What Does it Mean?” (Schooly D, 1985) and Roxanne’s Revenge (Roxanne Shanté, 1984), flow-based microtiming sounds as though it is used partially by design, and partially by accident. Occasionally Shanté and Schooly D speed up and slow down in ways that do not seem particularly deliberate. I suspect that with improvements in quantization technology, audio engineers and producers began removing subtleties such as these in more recent hip-hop music.

¹⁰³ Kautny (2015) notes this phenomenon in the flow of MF Doom on the album *Madvillainy* (2004).

microtiming can be addressed in varying degrees of specificity depending on the notation scheme used, which in turn reflects the analytical goals of the researcher.¹⁰⁴

3.5.3 Pitch Inflection

As Adams (2015) and others have noted, pitch plays an important role in supporting the rhythmic and metric aspects of flow.¹⁰⁵ MCs use pitch inflections in two broad contexts: local pitch inflections on one or several syllables, and larger pitch inflections over a line of lyrics, a musical phrase, a verse, or even a whole song. The longer the trajectory, the less influence the pitch inflection has on the perceived metric aspects of flow. Local pitch inflections are closely related to performed accent, although this relationship is complicated and by no means consistent, as Ohriner (2016) has noted.¹⁰⁶ Condit-Schultz (2016) also considers pitch in his coding of accent, noting that pitch often combines with other parameters to produce markedness on certain syllables.¹⁰⁷ The effect of pitch on accent can be illustrated through a comparison of verses from “Fuckin’ Problems” (A\$AP Rocky et al., 2013), rapped by Drake and Kendrick Lamar, respectively. Example 3.4 uses Kautny’s method of notating pitch variations in a flow, showing that Drake’s delivery contains very little local pitch inflection, while Lamar’s delivery uses pitch to highlight strong beats in his triplet flow.

¹⁰⁴ A useful analogy to the challenge of microtiming analysis in hip-hop flow is that of mapping the earth on a flat surface. Since there is no way to map the earth’s surface on a flat plane without distorting the relative size of its continental landmasses, map projections such as the Mercator and Gall-Peters choose to distort different parts of the globe in order to reach a certain level of consistency (for an excellent summary of these projections, see Garfield 2012). Despite the inaccuracies these map projections purvey, the basic geographic information they display remains useful in many ways. Similarly, standard staff-based notation can tell us much about the metric and rhythmic intricacies of hip-hop flow. It is able to model an idealized or grid-based version of the flow we hear, and while it cannot always account for each microrhythmic inflection, abandoning it for a system of notation that can do so risks compromising all of the valuable musical information it does convey.

¹⁰⁵ See also Ohriner (2019a) and Komaniecki (2019).

¹⁰⁶ “Perhaps some set of phonetic features—pitch height, vowel length, loudness, etc.—influences accent... but these features do not map to accent in any deterministic way” (Ohriner 2016, 159).

¹⁰⁷ See Condit-Schultz (2016, 129).

♩=96

(1:00) Drake

drop down and get yo' ea-gle on or we can stare up at the stars and put the Bea-tles on all that shit you

talk-in' 'bout is not up for dis-cus-sion I will pay to make it big-ger I don't pay for no re-duc-tion if it's com-in' from a

(3:00) Kendrick Lamar

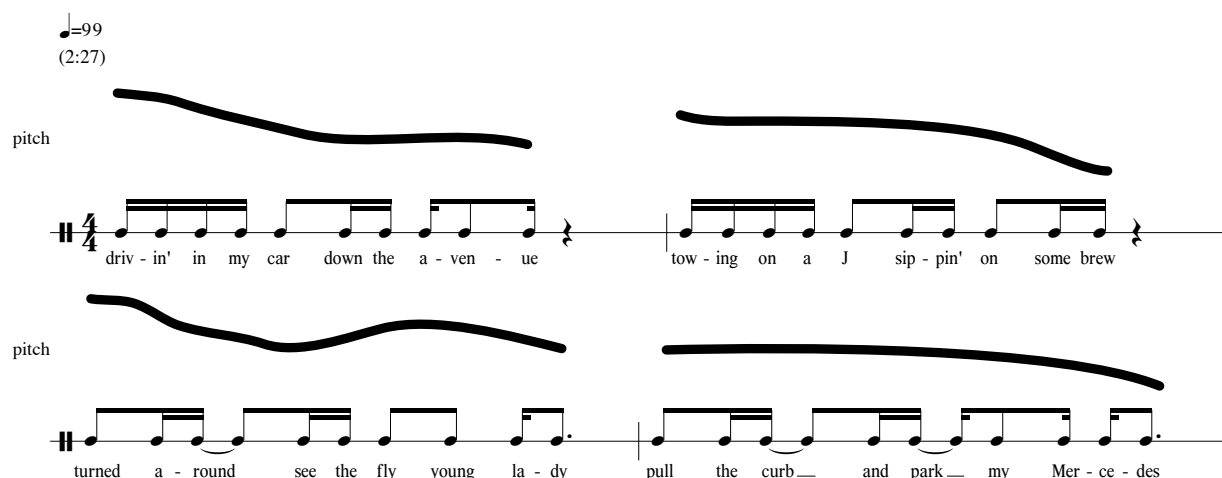
girl I'm Ken-drick La-mar A K A Benz is to me just a car

that mean your friends-es need be up to par see my stan-dards are pam-pered by three-somes to-morrow mmm

Example 3.4: Excerpts of “Fuckin’ Problems” (A\$AP Rocky et al., 2013). Vertical placement of noteheads are used to represent relative pitch in these passages.

Longer-range pitch inflection is used slightly less often than local pitch inflection, but it has a marked effect on phrase delineation or narrativity. Schooly D’s flow in “PSK What Does it Mean?” (1985) illustrates this aptly. As Example 3.5 shows with hand-drawn generalized pitch contours above the notated staves, Schooly D inflects pitch somewhat consistently across each line of lyrics, in a series of descents. This practice, compounded with a repeating rhyme structure, prosody, and syllabic density, creates a tightly organized phrase structure through each of his verses, emblematic of most old-school flow.¹⁰⁸

¹⁰⁸ Ice-T’s flow in “Six N the Mornin’” closely resembles Schooly D’s flow in this regard. Eminem’s use of longer-range pitch inflection in “Stan” (2000) extends across each verse and contributes greatly to the narrative aspect of this song. As the song’s protagonist, Stan, becomes increasingly agitated, Eminem’s overall vocal pitch rises, intensifying his ever-more complicated rhythmic structure through each successive verse. For a detailed discussion of narrative strategies in “Stan”, including consideration of pitch and accent, see Lacasse (2006).



Example 3.5: Second verse of “PSK What Does it Mean?” (Schooly D, 1985). The contour lines above each staff system represent the pitch trajectory of Schooly D’s flow.

The nature of pitch inflection in rapped flow makes it difficult to notate in a precise, absolute manner. The systems used by Kautny and Komaniecki are both relative: Kautny’s measures pitch inflection around a single-line staff that represents a central or average pitch height, while Komaniecki’s shows whether a high or low vocal tessitura is used.¹⁰⁹

3.5.4 Interpretive Latitude

I conclude this discussion of transcription with a brief survey of the interpretive latitude any transcriber encounters during the encoding process. A transcription represents, first and foremost, the transcriber’s perception and interpretation of the song. While innate or skill-based limits govern the perception process, limiting the level of interpretive latitude is the responsibility of the transcriber: for a transcription to be used to support an argument, interpretive latitude must thus always be considered. Below I briefly summarize three such latitudes present in my own transcribing process.

The first entails my use of staff-based notation—reflecting my training in the classical-

¹⁰⁹ This analytical technique was also used in Duinker and Martin (2017).

music tradition—for transcribing, modifying it as necessary to represent microtiming (see Chapter 7). Using this notation means I transcribe with a “snap-to-grid” procedure—the mapping of syllable durations onto notated rhythmic values of triplets, sixteenth, eighth, and thirty-second notes, and the occasional quintuplet—an operation that renders some passages of flow quite temporally divergent from how they actually sound. While I agree with Adams that this approach “sacrific[es] the rhythmic intricacy that energizes so much of the music” (2015, 121), my proclivity toward snap-to-grid notation enables me to represent flow patterns in the same rhythmic plane as the beat layer, foregrounding the way flow and beat are yoked together, and the tensions that can occur in their rhythmic relationship.

The second concerns how my background as a drummer informs my hearing of meter. I interpret tempo and meter in pop music by listening for a snare backbeat, almost without exception. For this dissertation, barline placement in my transcriptions is often influenced by the kick-snare backbeat pattern. Normally this procedure determines meter and tempo without any ambiguity, but in some recent songs, such as Kendrick Lamar’s “All Right” (2015), basing tempo on the snare backbeat produces a value so slow that the value twice as fast seems more convincing (I ultimately chose the faster tempo in my transcription). The third latitude involves how I construe flow as an entity. As noted in the introduction of this dissertation, numerous scholars have described flow in terms of its unification of music and poetry. I do not disagree with this position, but when transcribing, however, either the music or the poetry will be represented more accurately. By using musical notation and organizing my transcriptions mainly into two-measure staff systems, I aim to highlight the hypermetrical structure of the rhyme schemes commonly used in hip-hop lyrics (see Chapter 6 for more detail). In cases of poetic enjambment—the incommensurability between syntactic and metric organization of poetic text—staff-based notation accommodates the latter more efficiently.

The three latitudes described here naturally colour my transcriptions with interpretive predilections that not all others will share. As long as we remember that transcriptions serve as interpretive representation of recorded sound—an aid for better understanding what we hear in that recording—interpretive latitudes do not cause irreparable damage to our understanding of the music in question.¹¹⁰ Ultimately, as with corpus development, any transcription or other form of encoding is tailored to suit the analytical goals of the researcher and transcriber, and may produce far from comprehensive representations of the recorded sound.

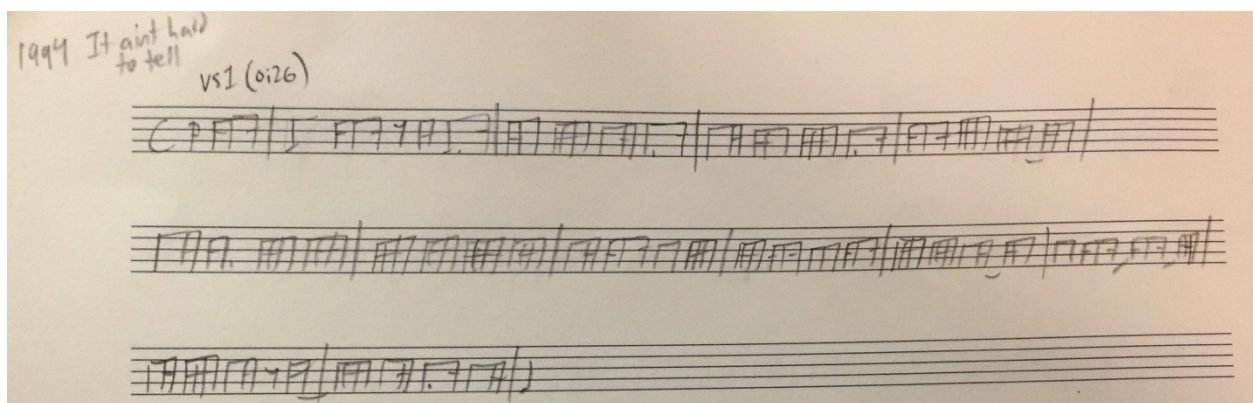
3.6 Encoded Examples

The final section of this chapter outlines the general encoding process I used for all 160 songs in the two corpora, demonstrated with examples from “It Ain’t Hard to Tell” (Nas, 1994). With the aid of the websites genius.com and allmusic.com, I used the first listening of each song to record the formal structure and song metadata. The second listening (undertaken with stops and starts) involved my transcribing the flow layer by hand, engraving the notation using Finale, and inputting lyrics, while the third listening included conversion to pdf and annotation using the software iDraw Graphic.

New York-based MC Nas (Nasir Bin Olu Dara Jones) was just 20 years old when he released his debut album, *Illmatic* (1994). This album’s legacy as leading the revival of East-Coast hip-hop music and its showcasing of Nas’s smooth, syncopated flow have imbued it with classic-album status in the hip-hop catalogue. “It Ain’t Hard to Tell” was the album’s second single, featuring three short rapped verses centering on themes of braggadocio and marijuana, among other topics.

¹¹⁰ Rusch et al. (2016, [1.14]) stress that “a transcription, like any form of musical notation, should ordinarily be thought of as a visual aid—an ancillary to the music, not a replacement for it—regardless of the type of music, the identity of the transcriber, the purpose of the transcription, or the techniques involved in the transcriptive act.”

Example 3.6 is an image of my initial hand transcription of the song. Using headless notation, my initial transcription deals only with note rhythms and rests, demarcated by barlines according to how I perceive meter in the song. Throughout both corpora, including the verse shown here, I was generally able to internalize and notate one or two measures at a time at normal track speed, which means I stopped and restarted the track constantly, but did not go back to verify my work at this stage. I would add question marks above certain measures that I was unsure I had transcribed accurately, as a reminder to check these measures in more depth later. At this stage, if I detected (by ear) a significant amount of microtiming in a particular verse, I noted it in a spreadsheet by indicating which verse and type of microtiming (according to my three-type taxonomy). I generally did three such transcriptions per day, to avoid fatigue. When engraving my transcriptions in Finale, I did not question my work—yet. When inputting lyrics (sourced from genius.com), any blatant errors I made during hand transcription would surface, often because the lyrics would not line up with the rhythms I had notated (occasionally I would miss an entire measure in the engraving process). I then formatted the Finale file so that each page contained whole verses (one or more as space permitted). In cases where one verse would not fit on a single page, I spread the staff systems over multiple pages. I never began a verse partway down a page if the whole verse could not completely fit on that page.



Example 3.6: Hand transcription of the first verse of “It Ain’t Hard to Tell” (Nas, 1994).

The third listening served two main functions: to make any necessary corrections to the transcription following the second listening, and to annotate parameters that would later be analyzed statistically. Beginning this stage with my engraved transcription of verse 1 as documented in Example 3.7, my first task was to check both my rhythmic and lyric transcriptions. For lyrics this often meant correcting small spelling errors, and also correcting improper divisions of multisyllabic words. For rhythm this meant listening to the song again and tapping along with my transcription in real time. When I noticed a discrepancy, I stopped and corrected my transcription in Finale. Fortunately, I usually only detected small errors in my initial transcriptions. Once I was satisfied with the transcription after these steps, I used Finale’s “count items” plug-in to determine the total number of syllables in each verse, a process I describe in more detail in Chapter 4. This step enabled me to quickly see which verses contained an odd number of measures, which in and of itself is not a problem, but is a potential indicator of an irregular rhyme or phrasing scheme (see Chapters 5 and 6).

♩=91
(0:26)

it ain't hard to tell I ex-cel then pre-vail the mic is con-tact-ed I at-tract cli-en-tele my

mic check is life or death breath-in' a sni-per's breath I ex-hale the yel-low smoke of bud-dha through right-eous steps

deep like The Shin-ing spar-kle like a dia-mond sneak an U-zi on the is-land in my ar-my jack-et lin-in' hit the

Example 3.7: Excerpt of the preliminary engraving of the first verse of “It Ain’t Hard to Tell” (Nas, 1994).

Since MCs generally rhyme in couplets, which usually translate into two-measure phrases, I wished to show this visually in my transcriptions by displaying two measures per staff

system. In cases where the MC departs from this technique, displaying one or three measures (most often) per system can highlight the rhyme scheme visually. As Example 3.8 shows, such an instance occurs in the third verse of “It Ain’t Hard to Tell”. As a result, I adjusted the layout of this verse to include a single-measure system that reflects Nas’s rhyme structure. Finally, I exported the Finale file to pdf, split the document into single-page files, and named each according to what verses they contained.

$\text{♩} = 91$
 (2:11)
 this rhy-th-ma-tic ex - plo-sion is what your frame of mind has chos-en I'll leave your brain sti-mu-la-ted nig-gas is fro-zen speak
 — with cri-mi-nal slang be - gin like a vi-o-lin end like Le - vi-a-a-than it's deep well let me try a-gain
wis - dom be leak - in' out my grape - fruit troop — i do - mi -
 - hate loops giv - in' mics — men - e - strual cy-cles street's — dis - ci-ple — I rock beats that's me-ga trif-le and

Example 3.8: Final annotation of the first part of the third verse of “It Ain’t Hard to Tell” (Nas, 1994). Shaded boxes indicate rhymes and underlined syllables represent lexical stresses.

I then opened each single-page pdf document using iDraw Graphic, a low-cost program that can perform a reduced family of tasks similar to Adobe Illustrator. In Graphic, I annotated two additional items in each verse: rhymes and multisyllabic lyrics. Since I chose to track rhymes across two main categories, end rhymes (couplets or rhyme chains) and internal rhymes, these are the only types of rhymes I tagged in this step. As shown in Example 3.8, Nas uses both end and internal rhymes, often using the same syllable or syllable group for both. On the second

system, the end-rhyme couplet “vi-o-lin” and “try a-gain” is decorated with an internal rhyme “(Le)-vi-a-than”. (The tabulation and categorization of these rhymes is discussed in Chapter 4.) Finally, I underlined all multisyllabic lyrics so that later I could analyze their metric placement: whether the stressed syllables of these words fall more or less often on stronger beats. In Example 3.8, in line 1, the lyric “ex-**plo**-sion” is oriented so that the stressed syllable “plo” falls in the strongest metric position, the downbeat of the first full measure. Conversely, in the second line the lyric “**cri**-mi-nal” is oriented so that the syllable “nal” occupies the strongest metric position, the second quarter-note beat of the measure. Since all other metric and rhythmic parameters are analyzed only in close readings (Chapter 6) and not statistically (Chapter 5), they were not annotated at this stage.

3.7 Summary

The goal of this chapter has been to summarize my corpus development, encoding, and annotation methodology, in the context of prior approaches to these tasks in both hip-hop and general music-analytic scholarship. In doing so, I justified the decisions I made with regards to corpus size, analytical goals, subjectivity, transcription notation, microtiming, and other issues inherent in the encoding process. I have summarized these tasks and decisions in order to provide a framework for the following chapter, which documents the musical analysis of the corpus in much greater detail with regard to accent and stress, rhyme structure, syllabic density, interaction between metric units of flow and beat, and characteristic rhythmic groupings found in different flow styles.

4 Musical Analysis

4.1 Overview

This chapter covers the techniques I used to analyze the annotated transcriptions. Some of these techniques focus on musical parameters that can ultimately be analyzed statistically (Chapter 5), while others focus on parameters that are more useful for close song readings (Chapters 6 and 7). I used the list of metrical flow techniques developed by Adams (2009a, [8]) as a template for my own list of parameters to analyze. Adams summarizes four such techniques (reordered from his original list to correspond with my expansions below):¹¹¹

- The placement of accented syllables.
- The placement of rhyming syllables.
- The number of syllables per beat.
- The degree of correspondence between syntactic units and measures.

I modified and expanded these techniques to develop my own list of metric and rhythmic parameters to analyze in this chapter (I analyze others, such as microtiming, elsewhere in the dissertation):

- The location of and interaction between performed accents (syllables that are stressed by the MC), lexical and prosodic stresses (stressed syllables in spoken language), and metric accents (accents implied by, but not necessarily heard in, the beat layer).
- The location of rhyming syllables (end, internal), their type (couplet, chain), and their metric correspondence with one another.
- The relationship between musical measures and various organizational aspects of flow (group, phrase, and line).

While all these parameters can and will be considered in close readings of hip-hop flow (Chapters 6 and 7), several but not all will be discussed in the context of statistical analysis (Chapter 5). These are: the syllabic density of verses, location and type of rhyming syllables, and

¹¹¹ Adams (2009a) orders these techniques as follows:

- The placement of rhyming syllables.
- The placement of accented syllables.
- The degree of correspondence between syntactic units and measures.
- The number of syllables per beat.

the lexical stresses of multisyllabic words. These features are analyzed statistically because they can be annotated with sufficient objectivity, while the others cannot, for reasons that will be explained in the following sections.

Earlier in this dissertation I summarized hip-hop music's main textural layers of beat and flow. I now briefly elaborate on how I measure the basic units of these textural layers. Naturally these units are interpretive, reflecting my personal biases, but they are nonetheless vital in exploring how various musical parameters of flow structure it in time, and how flow and beat interact on both structural and interpretive levels. The beat layer defines the organization of time in hip-hop music and defines the measures (and henceforth the meter) in my transcriptions. Any references to musical measures in my work thus refer to the basic unit of the measure implied by the cyclic nature of the beat—usually driven by a 4/4 backbeat rhythm.¹¹² Conversely, the flow layer organizes itself temporally in a succession of phrases, which can be thought of as similar (but not identical) to rhythmic groups.¹¹³ Phrases of flow are demarcated by a combination of factors, including rhythmic caesuras, end rhymes, breath points, and syntactical closure.¹¹⁴ As is previewed at the end of this chapter and explored in more detail in Chapter 6, the partitioning of phrases of flow is not always straightforward, and the metric interaction of flow phrases and measures of beat can be equally nuanced. Both these concepts—the beat-defined meter and the flow-defined phrase—are essential to the ensuing discussions of accent, rhyme, and syllabic density.

¹¹² Adams highlights the cyclic nature of the beat both explicitly (2015, 119) and implicitly in his analyses (2008, 2009a).

¹¹³ The idea of rhythmic groups figures prominently in the work of Cooper and Meyer (1960) as well as Lerdahl and Jackendoff. The latter authors write that “grouping can be viewed as the most basic component of musical understanding” (1983, 13), stressing that the fundamental essence of grouping is the understanding whether basic musical units belong together conceptually.

¹¹⁴ Ohriner (2016, 158) discusses the varied approaches to partitioning flow into what he calls “segments”.

4.2 Accent and Stress

One of the most prominent rhythmic characteristics of hip-hop flow is the relative stress or accent on certain syllables over others. Below I outline three types of accents and stresses that are inherent in hip-hop flow: performed accents, lexical stresses, and metric accents. The importance in describing each of these lies in observing how they interact in a flow performance. While quite often these accent/stress types line up, the instances where they do not line up—even counteracting one another—are notable and often quite salient to the ear. While ultimately only one such relationship is considered from a statistical perspective in this dissertation, I feel it important to discuss accent and stress at length here for the importance it has in shaping the rhythmic trajectory of a flow performance.

Cooper and Meyer write that an accent is “a stimulus (or series of stimuli) marked for consciousness” (1960, 8), a focal point against which unaccented beats are heard. Transferring that description to the domain of flow, we can understand accents as being marked syllables that punctuate and shape the trajectory and pacing of flow rhythm. A number of scholars have classified accents according to structural level, distinguishing between foreground accents that are performed and background accents that are felt but not always heard, created by the metrical and grouping structures of the music. Kramer (1988) calls these foreground accents “stress accents”, while Lerdahl and Jackendoff (1983) call them “phenomenological accents”. The interplay between such foreground or performed accents and the musical meter that supports them is a fundamental aspect of hip-hop flow, as Adams (2009a) has noted. In hip-hop flow, a similar but much less researched interplay exists between performed accents and the underlying syllabic stress structure of spoken language. This stress structure manifests in two contexts: lexical (within words), and prosodic (within syntactic units). I proceed in this section to examine flow accents in three categories: performed, lexical/prosodic, and metric, concluding with a

discussion on how these types interact. Note that while isolating these different accent types can help illuminate them for closer study, accent production in hip-hop flow always includes an intricate combination of each type discussed below.

4.2.1 Performed Accents

Performed accents in flow reside in the musical foreground: they are typically clearly audible, marked for listener consciousness, and are used for rhetorical emphasis, to reinforce musical meter, or to contradict it. Since flow concerns the phonation of lyrics, the ways in which MCs perform accents can be understood in the context of phonological stress. Ladefoged and Johnson (2015) and Brown (2013) each identify three main markers of phonological stress: pitch height, vowel length/duration, and loudness (perhaps accounting for articulation of initial consonants). While these markers of stress are usually all present in some quantity in spoken English, their relationship is by no means consistent and, as Ohriner writes, they “do not map to accent [in flow] in a deterministic way” (2016, 159).¹¹⁵ Because of the variety of factors influencing syllabic stress and performed accent in hip-hop flow, a systematic methodology that could later be used for statistical analysis would be near-impossible to produce.¹¹⁶ This does not, however, preclude a general discussion of how performed accents are created, leading to some points of departure for statistical analysis and close readings.

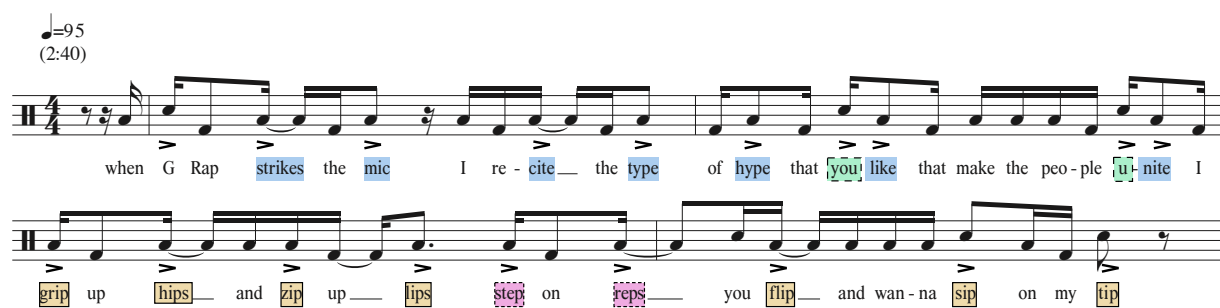
4.2.2 Pitch Height

In hip-hop flow, as in spoken English, syllables can be stressed through raising or lowering the pitch of one’s voice relative to surrounding syllables. Kool G Rap’s verse (the third of the song) in “The Symphony” (Marley Marl et al., 1988) demonstrates how a subtle use of relative pitch can elevate a line of lyrics into a three-tier setting of two levels of stressed syllables

¹¹⁵ Ohriner channels this idea from Hayes, who states that “the relation between stress and pitch/duration is both indirect and language-specific” (1995, 8).

¹¹⁶ I write “near-impossible” because Ohriner (2016) attempts just this. And while Ohriner’s system is consistent across his corpus, it replicates his own intuitions regarding performed accents.

as well as unstressed syllables. Example 4.1 details the line “when G Rap **strikes** the **mic** I **recite** the **type** of **hype** that **you** like that make the people **unite**, I **grip** up **hips** and **zip** up **lips** **step** on **reps** you **flip** and wanna **sip** on my **tip**” (hierarchical levels of performed accents are bolded and underlined in the text, while marked with an accent symbol in the example). While a standard accent symbol could be used (as in Example 4.1) to indicate where Kool G Rap places accents, this notation would fail to fully capture his layering of accents. Instead, the transcription uses a crude representation of relative pitch to illustrate Kool G Rap’s single-syllable rhyme chains (e.g. “strikes”, “mic”, “-cite”, “type”, “hype”) and multi-syllable rhyme groups (“you like”, “unite”).



Example 4.1: Third verse of “The Symphony” (Marley Marl et al., 1988). Multiple pitch levels correspond to performed accents in Kool G Rap’s flow. Performed accents are denoted using the accent symbol, and related rhymes are denoted using shaded, bordered boxes. The accents on the syllables “you” and “u” in the first system function hierarchically on a level higher than the accented syllables that follow them.

Kool G Rap uses several pitch layers to create accent: while the lyrics “strikes”, “mic”, “-cite”, “type”, and “hype” are all raised by approximately the same amount, the lyrics “you” (from “you like”) and “u-” (from “unite”) are raised yet higher, spotlighting the multisyllabic rhymes Kool G Rap uses here while also revealing a hierarchical layering of accents in this passage.¹¹⁷ Multisyllabic rhymes are again highlighted in “**grip** up **hips**” and “**zip** up **lips**”, but

¹¹⁷ See MWFR 3 (Lerdahl and Jackendoff 1983, 69).

here the pitch of each “up” is deliberately lowered, below Kool G Rap’s normal tessitura in this passage, adding more salience to the multisyllabic rhymes. While this passage features a nuanced interaction between pitch, rhythm, and rhyme to produce accent, the pitch-based factors described above are noteworthy in demonstrating how pitch and accent are related in hip-hop flow.

4.2.3 Syllable Duration and Caesuras

Brown (2013) suggests that vowel length is perhaps the most reliable marker of stress, and the easiest to grasp in the learning of English, given that it is classified as a stress-timed language.¹¹⁸ We might assume then that in hip-hop flow, syllables held for relatively longer durations or immediately followed by caesuras (rests) on the rhythmic surface might be intended or perceived as accented; this assumption likely informed Ohriner’s accent rule that “syllables longer than a sixteenth note are more likely accents than syllables a sixteenth note or shorter” (159). The late Ol’ Dirty Bastard (b. Russell Tyrone Jones) exemplifies durational stress in his one-verse song “Brooklyn Zoo” (1995). The first few phrases are shown in Example 4.2. Elongated duration is first used to accentuate the word “A-**son**”. Even though this word is not rhymed, the caesura which follows it imbues it with accentuated effect. The next two lines of lyrics rhyme “babies” with “crazy”. The accent Ol’ Dirty Bastard performs on word “**cra-zy**” receives the longest duration (and highest pitch) thus far. In addition to expressing accent, this long duration provides a sort of rhythmic closure to these first four lines of lyrics. As such, performed accents help to highlight important words and rhymed syllables, and to create rhythmic closure.

¹¹⁸ Ladefoged and Johnson (2011, 119) mention that the most reliable indicator of syllabic stress concerns elongated vowels on stressed syllables. A concept developed by Pike (1945), stress-timed languages are succinctly described by Patel (2008, 119–120) as being temporally organized primarily by stressed syllables, and not by all syllables, as in syllable-timed languages like Spanish.

♩=92
(0:27)

I'm the one man ar - my A - son I ne - ver been took - en out I keep M Cs look - ing out

I drop sci - ence like girls be drop - ping ba - bies e - nough to make a nig - ga go cra - zy

Example 4.2: “Brooklyn Zoo” (Ol’ Dirty Bastard, 1995). The two performed accents denoted with accent symbol correspond to elongated syllables.

4.2.4 Loudness

While musical accents produced by instruments are usually identified through an increased level of volume or amplitude, accents as changes in volume are the most difficult to isolate in hip-hop flow, because duration or pitch are usually more salient markers of accent. When Kool G Rap uses pitch to accent certain syllables, those syllables are also noticeably louder than the ones surrounding them. Similarly, Ol’ Dirty Bastard’s elongated lyric “crazy” is both louder and higher in pitch than the syllables preceding it. These two examples support the idea that performed accents in hip-hop flow very nearly always involve some combination of the parameters of pitch, volume, and duration, and that these parameters are ultimately inseparable, just as in spoken English.

4.2.5 Lexical and Prosodic Stresses in Spoken English

Spoken English involves two main types of stresses: lexical stress (stressed syllables within words) and prosodic (stressed syllables or words in syntactic units). Since English is a stress-timed language, the relationship between syllabic and prosodic stresses and speech rhythm is intricate and complex. Wennerstrom states that spoken English contains three levels of stress: primary stress, secondary stress, and unstressed syllables (2001, 47–48). In the context of lexical stress, this means that single words can contain syllables of all three stress levels, yet most two-

and three-syllable words are pronounced without distinguishing between primary and secondary stress. While English is a Germanic language by origin, centuries of borrowing Latin and French words has led to a complex rule structure for stress in its multisyllabic words. Despite this complexity, stressed syllables in most multisyllabic English words remain more or less fixed, regardless of context. For example, it would sound jarring and incorrect to pronounce the word “**money**” with the stress on the second syllable, as “**money**”. In other words, however, the location of the stressed syllable distinguishes between what would otherwise be homonyms, such as “**incite**” and “**insight**”.¹¹⁹ And as mentioned, words with more than two or three syllables tend to exhibit two levels of stress. Wennerstrom uses the word “con**SER**vative” as an example, where “ser” and “tive” serve as primary and secondary stresses respectively.

While the location of lexical stresses in multisyllabic English words is more or less fixed, the relative level of prominence these stressed syllables receive in a sentence—their prosodic stress—may vary, depending on the intended meaning of the sentence. Take, for example, the following sentence:

“I called you yesterday.”

If “I” receives prosodic stress, as in “**I** called you yesterday”, it is meant to be understood that “I”—and not someone else—called you. If the sentence is spoken “I called **you** yesterday”, then we understand that it was not someone else that I called. Similarly, “I called you **yesterday**” distinguishes when this call took place, and “I **called** you yesterday” implies that I did not text you.

In other cases, the location of a word in a sentence can affect its lexical stresses. Consider the following two sentences:

“The dictator held **absolute** power over his countrymen.”

“The dictator’s power over his countrymen was **absolute**.”

¹¹⁹ Differing accents that distinguish between two meanings are particularly common when a disyllabic word operates both as a noun and a verb, such as **con**-test (noun), and con-**test** (verb).

In both sentences, the word “absolute” is an adjective for “power”, but when it changes position in the sentence, its lexical stress shifts from the first to the last syllable. The preceding examples display some of the possible means of wordplay MCs inherit when constructing flow, means that can inform the arrangement of performed accents in a line of lyrics. Consider the opening lyrics to Ice Cube’s verse in “Fuck Tha Police” (N.W.A., 1988), reproduced below, with lexical stresses of multisyllabic words in bold:

Fuck tha **police** comin’ straight from the **underground**
a young **nigga** got it bad ‘cause I’m brown
and not the **other** **color** so **police** think
they have the **authority** to kill a **minority**

Example 4.3 transcribes Ice Cube’s flow over these lyrics. In the transcription, lexical stresses are underlined, performed accents are notated using the accent symbol, and prosodic stresses are boxed. Ice Cube’s performed accents either align with a lexical stress or help amplify a prosodic stress. Furthermore, all other lexical stresses of multisyllabic words arrive on local strong beats—that is, stronger than the beats occupied by the word’s non-stressed syllables. While the pitch height and syllabic duration of Ice Cube’s performance could be used to demonstrate his performed accents alone, comparing these accents to the location of lexical stresses highlights how much the lyrics can inform the accent/stress structure in the context of flow.

♩=99
(0:31)

> fuck the po - lice com - in' straight from the un - der-ground a young nig - ga got it bad cause I'm brown
 and not the oth - er co - lor so po - lice think they have the au - thor - i - ty to kill a mi - nor - i - ty

Example 4.3: First verse of “Fuck Tha Police” (N.W.A., 1988). Lexical (underlined) and prosodic (boxed) stresses interact with performed accents.

4.2.6 Metric Accents

The idea that an underlying metric structure interacts with the musical surface of a composition by imbuing it with a patterned accent structure has received both support and criticism in music-theoretical scholarship. Lerdahl and Jackendoff (1983) proposed that rhythmic grouping and meter, while both hierarchical, are fundamentally different entities: grouping structure of the musical surface arises from rhythmic patterns, while metric structure consists of regular, idealized patterns that arise in response to periodicities in these patterns. For these scholars, the rhythmic surface of a piece of music informs both its grouping and metric structure, but in different ways: the surface's dialogue with grouping structure is ongoing, constantly changing, while its dialogue with metric structure is more fixed and unchanging, reflecting the constancy of notated meter. In contrast to this theory, Hasty's *Meter as Rhythm* (1997) centers on the idea that meter and rhythm are inseparable; both entities arise from the projective potential of one or a series of impulses. For Hasty, once a tone is sounded (i.e. when it is no longer sounding), it projects the potential for its duration to be repeated. The projection is based on what has come before the tone, and can be realized or unrealized. Consequently, a series of identical realized potentials work toward constructing meter. Hasty's projection model applies to both the rhythmic and metric levels, thus blurring any conceptual boundary between them.

While somewhat crude, this dichotomy serves as an appropriate starting point to discuss the nature of meter in hip-hop music. Each side of this dichotomy is useful for understanding meter in hip hop. First, Hasty's theory is predicated on the phenomenological aspect of musical meter; indeed, few examples of notated music are given in support of the presentation of his main model. Despite my widespread use of musical notation as a transcription aid in this dissertation, hip-hop music remains a non-notated musical genre at its root, and any discussion of meter pertaining to this genre must be understood as interpretive or attentional in

nature.¹²⁰ That said, Lerdahl and Jackendoff’s separation of metrical and grouping structure potentially applies to the fundamental difference between hip-hop music’s two main textural layers, flow and beat. As mentioned, the beat layer is responsible for establishing and maintaining a perceived meter, while the flow layer functions primarily—but not solely—as an agent of rhythmic grouping. There are of course exceptions to this theory, but in general the mapping of grouping and meter onto these two textural layers can be demonstrated (see Chapter 6 for further examples).

♩=97
(2:42)

Vocals

Synth

Drums

(quarter-note level: hi hat)
(half-note level: kick drum)
(measure level: repeat of drum beat)
(hypermeasure levels: synth and bass)

Su - per Nin - ten - do Se - ga Ge - ne - sis when I was dead broke man I could-n't pic - ture this

fif - ty inch screen mo - ney green lea - ther so - fa got two rides a li - mou - sine with a chauf - feur

Example 4.4: Third verse of “Juicy” (The Notorious B.I.G., 1994). The excerpt is annotated using Lerdahl and Jackendoff’s (1983) symbology for displaying metric accents.

This mapping is shown in Example 4.4, taken from the opening of the third verse of “Juicy” (Notorious B.I.G., 1994). The beat layer, transcribed below the flow, convincingly establishes a 4/4 meter at 97 bpm. (As explained in Chapter 3, my methodology for determining

¹²⁰ The word “attentional” reflects my conceptualization of meter as in London (2012): as a mental construction and entrainment to periodic stimuli.

bar length and tempo relies heavily on the presence of the kick-snare backbeat pattern.) As can be seen, the basic backbeat pattern repeats every measure. Atop the backbeat pattern, the synth and electric bass (not shown here), as well as other elements that come in and out of the texture, follow a four-measure loop. Using Lerdahl and Jackendoff's method of notating various levels of meter, we could identify a metric and hypermetric pattern of accents, as shown in the example.

The lowest level of metric accent follows the main pulse or tactus of the beat, expressed by the hi-hat. The next level of metric accent subdivides the measure and is amplified through the kick drum's presence. Finally, metric and hypermetric downbeats generate the higher levels of metric accents, mainly through the harmonic rhythm of the synth line shown in the transcription. In all levels we see a pattern of alternating strong and weak beats. Lerdahl and Jackendoff state that these "metric accents" (the strong impulses) are not explicitly heard, but felt, governing the musical surface. While they are easy to see in this notation, these orderings of the metric hierarchy in the music are perceived aurally. What does Notorious B.I.G. do atop this hyper-regular metric pattern? Across the first four measures, his flow fits neatly into rhythmic groups that line up with the metric structure; the only slight non-alignment comes with the anacrustic lyric "when I (was dead broke)". The second four-measure span proceeds slightly differently: here he does not place any attacks on the first, and strongest, metrical impulse, instead playing off its felt strength by beginning his lines either a sixteenth or an eighth note later.

The goal of this example is to show how a metric accent pattern is chiefly established and maintained in the beat layer. In the rare instance that the beat is non-existent, however, the flow layer is capable of establishing a similar metric pattern through the placement of accents and length of lyrical lines. This practice has obvious precedent in the millennia-long history of

poetry, most notably through the use of poetic feet and fixed line lengths and rhymes.¹²¹ Take, for example, the opening of “99 Problems” (Jay-Z, 2003), notated in Example 4.5. A number of aural clues in Jay-Z’s delivery suggest the meter notated in the example. To name just a few of these clues, the multisyllabic words “**hav**-in’” and “**prob**-lems” are placed so that the lexical stresses in each fall on the beat. The rhyming syllables “son” and “one” fall not only on the same beats of their respective measures, establishing some metric consistency, but in anticipation of beat 4, a common flow technique that has been used all the way back to one of the first popular hip-hop tracks, “Rapper’s Delight” (Sugarhill Gang, 1979; see Chapter 5 for more details). And finally, the slight performed accent on the word “ninety-nine”, by means of volume and pitch, suggests that the lyrics “I got” are anacrustic to this word. The tight organization of accent, rhythm, and phrasing in this excerpt are thus sufficient to establish a provisional meter that is confirmed with the arrival of the beat layer immediately following.



Example 4.5: Opening of “99 Problems” (Jay-Z, 2003). A sense of meter is established through the flow rhythm and accent patterning.

4.2.7 Interactions of Accent Types

Performed accents, metric accents, and lexical stresses interact in several ways in hip-hop flow, and the nature of these interactions should be considered in any detailed study of rhythm and meter in flow. Nearly every performed accent in a passage of flow exhibits some sort of two-way relationship with metric accents or lexical stresses.¹²² These relationships are often ones of

¹²¹ See Oliver (1994) and Lennard (2006) for extensive surveys of poetic form and structure.

¹²² By two-way relationship, I mean that one accent or stress type can be understood as influencing another in its placement. In the case of prosodic stresses, the relationship is more one-way in nature. Since prosodic stresses are by nature variable in spoken English, the performance of flow often determines the prosodic stress of a syntactic unit of lyrics through the performed accents used by the MC.

consistency: lexical stresses normally fall on relatively strong tactus or sub-tactus beats, MCs generally accent syllables that have lexical stresses, and thus most performed accents are deployed in a somewhat predictable metric pattern not unlike accent patterning in regular speech. But there are several notable departures from these conventions; these will now be summarized.

4.2.8 Lexical Stresses and Performed Accents

As discussed above, lexical stresses are mostly fixed in multisyllabic English words. In spoken English, observing these stresses can be crucial to conveying accurate meaning (consider the “insight” vs “incite” example previously described), but is principally important for the execution of regular speech rhythm. Since the added metric structure of the beat influences the rhythm of MCs’ flows, they usually orient their multisyllabic words in order to pair the lexical stresses with one of the three types of performed accents: raised pitch inflections, elongated syllables, and increased dynamic intensity. Countering this practice, the first verse of “Lost Ones” (Lauryn Hill, 1998) demonstrates how an MC can subvert the lexical stress of a word by accenting a normally unstressed syllable. As shown in Example 4.6, Hill ends each measure with an elongated syllable of one eighth note (plus a following eighth-note rest) in length. Throughout the excerpt, the syllable occupying this position is one that is normally unstressed. Thus, when rapping the words “situation” and “complication”, for example, Hill stresses their final syllables instead of the penultimate syllables—the ones that would normally receive the lexical stress. MCs can also eliminate the lexical stress of a word by deliberately not accenting any syllable. In Example 4.7 (“Hypnotize”, 1997), Notorious B.I.G. raps the lyrics “sixty” and “swiftly” evenly, almost completely without accent. This, combined with their equal durations by syllable, means they lose any sense of lexical stress in his performance.

♩=95
(0:10)

it's fun - ny how mo - ney change a si - tu - a - tion mis - com - mu - ni - ca - tion lead to com - pli - ca - tion

my e - man - ci - pa - tion don't fit your e - qua - tion I was on the hum - ble you on ev - ery sta - tion

Example 4.6: First verse of “Lost Ones” (Lauryn Hill, 1998). Hill’s performed accents fall on unstressed syllables (lexical stresses are underlined), but also function, if but weakly, as metric accents.

♩=94
(2:18)

I can fill you with real mil - lion - aire shit es - car - got my car go one six -

ty swift - ly wreck it buy a new one your crew run run run your crew run run I

Example 4.7: Third verse of “Hypnotize” (The Notorious B.I.G., 1997).

4.2.9 Metric and Performed Accents

While most flow involves a high degree of coordination between performed accents and metric location, two common exceptions have occurred since the earliest hip-hop releases: the delayed accented entry of a phrase of flow, and an anticipated accented end rhyme. A delayed accented entry can be seen in Example 4.8, in the opening line of “The Message” (Grandmaster Flash and the Furious Five, 1982). The lyric “broken glass” enters an eighth note later than the metric downbeat (and thus the metric accent). Melle Mel accents the syllable “bro” with raised pitch and increased volume. This delayed accented beginning of a vocal phrase stands out in contrast to the following several phrases, which enter in sync with the metric downbeats.

Anticipated end-rhyme accents are perhaps even more common, and are explored in detail in Chapter 5. Example 4.9 shows a portion of the first verse of “Hold It, Now Hit It” (Beastie Boys, 1986). The accented end-rhyme lyrics of “bail” and “time” anticipate by one sixteenth note the fourth beat of the measure, which is accented through the presence of the snare backbeat. This syncopation sounds markedly different from the corresponding accented end-rhymes of “ale” and “wine”, which fall on the fourth beats of their respective measures.

Example 4.8: First verse of “The Message” (Grandmaster Flash and the Furious Five, 1982). The vocal entry here is delayed and accented.

Example 4.9: First verse of “Hold It, Now Hit It” (Beastie Boys, 1986). This passage features accented anticipation rhymes.

4.2.10 Lexical Stresses and Metric Accents

MCs tend to accent multisyllabic words according to their lexical stresses. In doing so, MCs occasionally perform multisyllabic words in a way that is faithful to the lexical stresses but runs counter to the metric accent structure. I call these interactions of lexical stress and metric accent *lexical syncopes*, because their combination creates a sort of syncopation even when the MC does not deliberately effectuate a performance accent on the syllable in question. This syncopation is inherent in the tension between where we expect a multisyllabic lyric to be

stressed in utterance, and where we expect a metric accent to occur, usually by way of the beat layer’s periodic and hierarchical metric structure. When such lexical stresses and metric accents do not line up—that is to say when a lexical stress is performed on a locally weak beat class, a lexical syncope occurs.

One such example of a lexical syncope comes from the first verse in “California Love” (Dr. Dre and Tupac Shakur, 1995), reproduced in Example 4.10. When considered out of time, the lyrics “lean mean **money makin’ machine**” exhibit clear, obvious lexical stresses. But when Dr. Dre raps these lyrics, he continues a pattern set up with “lean, mean”, where the lexical stresses fall on offbeat sixteenth notes and because he preserves the lexical stresses of these words through performance accents, his lexical stresses are syncopated in relation to the metric structure provided by the beat. The stresses in the lyrics “money” and “makin’” thus continue a pattern of rhythmic displacement that resolves when the second syllable of “ma-chine” arrives on the following strong beat.

♩=92
(1:00)

pimps be on a mis-sion for them greens lean mean money makin' ma-chine serv - in' fiends I

been in the game for ten years mak - in' rap tunes e - ver since ho - neys was wear - in' sas - soon

Example 4.10: First verse of “California Love” (Dr. Dre and Tupac Shakur, 1995). Performed accents occur on lexical stresses that fall on weak beats.

In other instances, the lexical stress patterning of multisyllabic words creates a sense of syncopation even when the MC does not add performed accents to those stressed syllables. In “NY State of Mind” (Nas, 1994), reproduced in Example 4.11, such a situation transpires with the lyrics “**younger niggas pullin’ the triggers bringing** fame to their name”. Here, as the

example shows, the stresses “young”, “nig-”, and “pull” sound on offbeat sixteenths, and although Nas does not accent them, the conflict of location between these stresses and the metric pattern underpinning them creates a salient sense of syncopation or dissonance in this passage, which is resolved with the onbeat occurrence of a lexical stress in “triggers”.

♩=85
(1:31)

it's like the game ain't the same got young-er nig - gas pul - lin' the trig - gers bring - in' fame to their name and claim

Example 4.11: First verse of “NY State of Mind” (Nas, 1994). Lexical stresses fall on weak beats here, creating a sense of syncopation or dissonance.

4.3 Rhyme

Rhymes feature in the flow of nearly every MC, past or present. The practice of rhyming is highly variegated; certain MCs pioneer and use idiosyncratic or unique rhyme techniques, while other, more common techniques are used by many artists. Regardless of the technique, a rhyme—in both its type and metric position—can fuse or separate lines of lyrics, working to both form and demarcate rhythmic groups. As such, analyzing rhyme is a fundamental part of understanding the rhythmic and metric aspects of hip-hop flow. I begin this section by summarizing the characteristics of rhyme in hip-hop flow, which I divide into two categories: qualitative (*how* the rhyme sounds), and chronological (*when* the rhyme sounds). Ultimately my approach will consider chronological aspects of rhyme more closely, but qualitative aspects of rhyme do also provide a rich source for analytical inquiry.

4.3.1 Qualitative Aspects of Rhyme

Bradley states that “rhyme is the concordance of sound” (41). This concordance manifests itself in the similarity or relatability of two like-sounding syllables or syllable groups. Qualitative aspects of rhyme thus mainly concern assessing the level of this similarity between

rhyme pairs and chains. According to Bradley's summary, the principal qualitative types of rhyme include the perfect rhyme, slant rhyme, apocopated rhyme, and mosaic rhyme.¹²³ Perfect rhymes occur when the syllable pair contains the same vowel sound as well as the trailing consonant sound, if present. For example, the words "should" and "would" form a perfect-rhyme pair. Slant rhymes include the same trailing consonant but slightly differing vowel sounds, or vice versa, such as "card" and "start". Both perfect and slant rhymes can be deployed over several syllables, such as "bingo" and "Ringo" (perfect), or "dangerous" and "blaming us" (slant). The latter two of Bradley's rhyme types concern the pairing of multisyllabic and monosyllabic words. Apocopated rhymes pair a monosyllabic word with one syllable of a multisyllabic word, such as "grain" and "explain". Mosaic rhymes pair several monosyllabic words with one multisyllabic word, such as "history" and "is to me". While the practice of how these rhyme types are used in hip-hop music would provide a wellspring of information to study, such an inquiry lies beyond the scope of this dissertation. I summarize these qualitative aspects of rhyme, however, to discuss the important analytical question of what constitutes a rhyme in hip-hop flow. While there is little ambiguity in perfect rhymes (they are clearly rhymes), ambiguities can exist with slant or other imperfect rhymes. For example, the lexical stresses of the words "**dripping**" and "**clicking**" technically do not rhyme, but their respective metric placements in the opening of Ghostface Killah's verse in "Ice Cream" (Raekown et al., 1995) might suggest to some listeners that they are meant to be heard as a rhyme pair. Often, these slant rhymes, however dissimilar they may be from one another, are rapped on identical rhythms, which binds them together as a related pair. I therefore consider these instances alongside perfect rhymes in terms of their ability to shape and segment a passage of flow.

¹²³ Lennard (2006) provides a more exhaustive taxonomy of rhymes used in poetic forms.

4.3.2 Chronological Aspects of Rhyme

The chronological aspects of rhyme in hip-hop flow concern its metric placement and the number of rhymed syllables that group together. In poetry, rhymes often end lines of text and are thus known as end rhymes. Rhyme pairs that end successive lines in poetry are typically called couplets, or rhyming couples, while rhyme groups of more than two are normally called chains, or chain rhymes.¹²⁴ Rhyme pairs and chains that appear within the scope of a poetic line are normally called internal rhymes. A quick recourse to a well-known nursery rhyme exemplifies the difference between end rhymes and internal rhymes:

Little miss *Muffet* sat on a *tuffet*, eating her curds and **whey**,
Along came a *spider* and sat down beside *her*, scaring miss Muffet **away**.

Here, the bolded syllables represent an end-rhyme couplet, while the italicized syllables represent internal-rhyme couplets. When these lines are said aloud, each component of each rhyme pair falls on the same metric location.

The concepts of rhyme quantity and metric location translate relatively easily to flow analysis, but slight reconfigurations of their definitions are required. The nature of rap lyrics as poetry—their poetic meter, poetic rhythm, rhyme, and form—is fundamentally changed when they are performed as flow.¹²⁵ Bradley succinctly emphasizes this, writing that “the rhythm of rap’s poetry ... is defined by that fundamental relationship between the regularity of the beat and the liberated irregularity of the rapper’s flow” (28). When rapped, the lyrics no longer carry the burden of establishing poetic meter. Because they normally line up metrically with the beat layer in some way (as discussed in Chapters 5 and 6), rapped end rhymes punctuate phrases of flow as

¹²⁴ In his close reading of Pharoahe Monch’s rhyming techniques, Alim (2003) distinguishes one-, two-, and three-syllable rhymes as masculine, feminine, and triple rhymes, respectively.

¹²⁵ That is to say, such a change occurs when the lyrics are written down in an organized structure to begin with. This cannot be taken as a given in the compositional process, as many MCs possess sufficient skill to either spontaneously improvise lyrics in the recording studio or on stage (“freestyling”) or to produce a recording of a complete song from unorganized, incomplete written lyrics.

well as lines of lyrics. (The term *phrase* is unpacked later in this chapter and in Chapter 6.)

4.3.3 Rhyme Analysis Methodology

I now describe how I annotated and analyzed rhyme across the two corpora, and what I hoped to observe in doing so. Using the software iDraw Graphic, I began by highlighting all rhymes that I interpret as *phrase-structural*—those that contribute in some integral way to the structure of a phrase or flow. All end rhymes as well as most internal rhymes are considered phrase-structural.¹²⁶ Once all the rhymes were highlighted, I documented their type (couplet, chain, internal) and metric location, and calculated the overall rhyme density per measure.¹²⁷ Example 4.12 illustrates how I annotated and tabulated the phrase-structural rhymes found in the third verse of “Kick, Push” (Lupe Fiasco, 2006). Internal rhymes, couplets, and chains are all used in this short verse. In the first two-measure phrase, Lupe Fiasco rhymes “knew” and “crew” as well as “punk” and “dunks”. The first pair forms an internal rhyme on beats 1 and 2 of the first measure, while the latter pair forms a couplet on the last sixteenth of beat 3 in each of the first two measures.¹²⁸ In the next three measures, a rhyme chain unites the words “skate no more”, “safe no more”, and “chased no more”. I interpret the first word of each of these groups as the strongest, and so have marked these rhyme-chain elements as falling on beat 3 of their respective measures. This system of tabulation (also shown in Example 4.12) generates data that aids in surveying rhyme density, frequency of rhyme type, and metric placement of rhymes.

¹²⁶ Internal rhymes that do not convincingly subdivide the phrase were discarded on the grounds of their not contributing to the internal partitioning of the phrase.

¹²⁷ If the rhyme encompasses more than one word or is multisyllabic, I documented it according to the metric position of its strongest syllable, which I inferred by ear from the recording.

¹²⁸ I tabulate this metric position as beat .375, because the fourth sixteenth of a quarter-note beat is three-quarters of the way (in duration) to the next downbeat. This annotation system is discussed in detail in the description of Example 5.17 (p. 149).

♩=94
(2:58)

be-fore he knew he had a crew that wasn't no punk in they Spit - fi - re shirts and S B dunks they would

push 'til they could - n't skate no more of - fice build-ing lob - bies was - n't safe no more and it

wasn - n't like they wasn - n't get - ting chased no more just the free - dom was bet - ter than breath - ing they said

Tabulation of rhymes:

“knew/crew” (1.1, 1.2) - internal

“punk/dunks” (1.375, 2.375) - couplet

“skate/safe/chased” (3.3, 4.3, 5.3) – chain

“freedom/breathing” (6.1, 6.275) – couplet (slant)

Example 4.12: Third verse of “Kick, Push” (Lupe Fiasco, 2006). Rhymes that are related and thus form couplets or chains are similarly colored and bordered. The lyrics “freedom” and “breathing” do form a slant rhyme. The numbers in parentheses indicate the beat-classes on which these rhymes fall: see example 5.17 (p. 149) for a detailed explanation.

4.3.4 Rhyme Density

By tabulating the total number of single- and multi-syllable rhymes, I can determine the rhyme density of any verse in the corpora. While nearly all songs in these corpora use end rhymes fairly regularly at either one- or two-measure intervals, and slightly fewer songs use internal rhymes fairly regularly, some verses (notably those by Eminem) are so saturated with rhymes that non-rhymed words become the minority. The third verse of “Kick, Push”, as excerpted in Example 3.12, features a relatively typical number of rhymes for its length. For the first six measures, the tabulation shows that 9 phrase-structural rhymes occur over 6 measures (multi-syllable rhymes are each counted as one rhyme instance in this measurement). In addition to measuring rhyme density per measure, we can measure the density of rhymed syllables among

total syllables in the verse. Discarding the anacrusis measure (containing the lyrics “before he”), this verse (including the part not shown above) features 122 rapped syllables, 29 of them rhymed, for a proportion of approximately 24% rhymed syllables. While a saturation of rhymed syllables such as that described for Eminem’s flow might be construed as a sign of genius craftsmanship and virtuosic flow, the converse should not be taken as a marker of amateurism or lack of skill. Density is but one attribute of rhyme usage in flow, and listener expectation can be subtly manipulated with the careful metric placement of rhymes, regardless of how sparse they may be across a verse of flow.¹²⁹

4.3.5 Frequency of Rhyme Type

Within the tabulated data measuring rhyme density, I extrapolated the type of rhymes used, and how often they appear. As I mentioned earlier, the sense of phrasal closure offered by end-rhyme couplets and end-rhyme chains can differ in effect. The first verse of “Jesus Walks” (Kanye West, 2004), as detailed in Example 4.13, aptly demonstrates this. West, who often uses long rhyme chains in his verses, raps chains of related two-syllable rhymes 19 times over 14 measures. He then abruptly changes the rhyme syllable for the verse’s final two measures, using a slant-rhymed couplet on “act a fool” and “packs to move”. During the chain-rhymed measures, West’s sense of phrasing assumes a cyclic quality, as though he has set up a two-measure prototype that he keeps repeating, never fully concluding. Thus, when we arrive at the last two measures of the verse, they retrospectively ascribe a conclusive effect to the two measures immediately preceding them (those using the rhymes “Avis” and “save us”); we now realize the rhyme chain has been broken. The final phrase of the verse thus sounds, and functions as, post-closural.

¹²⁹ A classic example of manipulation of listener expectation with regards to rhyme comes in the song “Great Day” (Madvillain, 2004). Here, MF DOOM rhymes the lyrics “wishes”, “glitches”, and “twitches”, before rapping the lyrics “what this party needs is more ... “. The listener expects the lyric “bitches” but receives the lyric “booze” after a pregnant pause. “Booze” then becomes the rhyme syllable for the next phrase of flow.

♩=88
(0:28)

you know what the Mid - west is? young and rest - less where rest-less might snatch your neck - lace and

next these might jack your Lex - us some - bo - dy tell these who Kan - ye West is I

walk through the val - ley of the Chi where death is top ____ floor the view a - lone will leave you breath - less

try to catch it kind - a hard get - ting choked by de - tec - tives yeah yeah now check the me - thod they be

ask - in' us quest - tions ha - rass and ar - rest us say - in' "we eat piec - es of shit like you for break - fast" huh?

— y'all eat pie - ces of shit? what's the ba - sis? we ain't go - ing no - where but got suits and cas - es a

trunk full of coke ren - tal car from A - vis my ma - ma used to say on - ly Je - sus can save ____ us well

ma - ma I know I act - a fool but I'll be gone 'til No - vem - ber I got packs to move I hope

Example 4.13: First verse of “Jesus Walks” (Kanye West, 2004).

4.3.6 Metric Placement of Rhymes

The metric placement of rhymes can be analyzed with little difficulty, and the data these analyses generate can aid in the procedure of segmenting or partitioning phrases of flow. As

might be expected, rhymes tend to fall closer to the ends of phrases than the beginning; phrases, in turn, tend to end in relative proximity to a metric or hypermetric boundary. It is perhaps not surprising then, that Condit-Schultz (2016) found that rhymes occurred more often on beat 4 and the last sixteenth of beat 3 (beat n.375 in my decimal notation) than any other metric location. An example of rhyme's shifting location at the end of phrases and metric units can be observed in the first verse of "South Bronx" (Boogie Down Productions, 1987, Example 4.14). When the rhyme spacing becomes twice as long at the lyrics "party people", the metric location for the rhymes changes, even though they still conclude each phrase of flow: the rhymes in the first two couplets fall on beat 4, while the rhymes in these last two longer couplets fall just before beat 3.

Rhyme can also occur at the beginning of a metric unit, even when ending phrases (such as in "Can I Kick It", A Tribe Called Quest, 1990). Similarly, it can occur close to the middle of a metric unit while still ending phrases (such as in "In Da Club", 50 Cent, 2003). We can also annotate and analyze the distance between related rhymes that form a couplet or chain, by quantifying the metric difference between related rhymes. In the first verse of "Money Maker" (Ludacris, 2006, Example 4.15), for example, each couplet features rhymes that are located on identical beats, so that the metric difference of each rhyme couplet is zero. By contrast, the first verse of "Mass Appeal" (Gang Starr, 1994, Example 4.16), features rhyme couplets with significant metric differences as well as those with no metric differences (not shown).

♩=95
(0:36)



ma - ny peo - ple tell me this style is **ter - ri - fic** it is kind - a dif - ferent but let's get **spe - ci - fic**



K - R - S One spe - cial - ize in **mu - sic** I'll on - ly use this type of style when I **choose it**



par - ty peo - ple in the place to be K - R - S One **at - tacks**



you got dropped off M - C - A cause the rhymes you wrote **was whack**



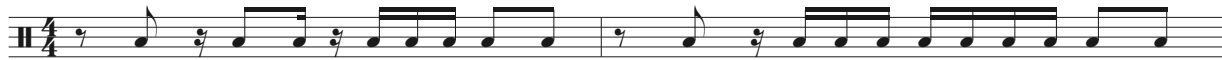
so you think that hip hop had its start out in Queens **bridge**



if you pop that junk up in the Bronx you might not **live**

Example 4.14: First verse of "South Bronx" (Boogie Down Productions, 1987).

♩=84
(0:35)



shake shake shake your mo - ney **mak - er** like you were shak - ing it for some **pa - per**



it took your ma nine months to **make ya** might as well shake what your mom - ma **gave ya**

Example 4.15: First verse of "Money Maker" (Ludacris and Pharrell Williams, 2006). Each rhyme falls on the same beat class.

♩=97
(0:20)

no way you'll ne-ver **make it** come with the weak shit I'll **break it** step in - to my zone mad rhymes will **sti - fle ya**

lines like **ri - fles go** **blast** when I kick some **ass** a lot of rap - pers be like one - time **won - ders** could - n't

say a fly rhyme if there was one right **un - der** their **nose - s** I hate those mo - ther - fuck - ing **po - sers** but

Example 4.16: First verse of “Mass Appeal” (Gang Starr, 1994). Rhymes fall on a variety of beat classes.

4.4 Syllabic Density

Syllabic density can be measured in two ways: per musical measure, or per unit time. When comparing the syllabic density of verses from different songs, the per-unit-time method is more robust, as this method does not rely on song tempo, which may diverge between the verses being compared. The per-measure method, however, is appealing for certain contexts: namely, for measuring intra-verse syllabic density, or for measuring syllabic density in songs with near-identical or identical tempos. In these contexts, the per-measure method is preferable because it is a more inherently musical measurement, less abstracted from the musical surface than time-based measurements can be. For example, an MC might increase or decrease syllabic density over the course of a verse for narrative or rhetorical purposes. If the verse is notated, its partitioning into measures makes for a simpler and visually salient object against which to measure syllabic density. Even if the verse is not notated, iterations of the loop imposed by the beat, rather than elapsed time, form the most salient temporal unit for evaluating syllabic density (regardless of whether they are interpreted using measures). Verses from songs with near-identical or identical tempos (within 5-10 bpm) can also be evaluated with the per-measure

method. For example, if the syllabic densities of two verses drawn from songs with near-identical tempos differ widely from one another, we might consider looking to the beat layer for clues as to why this is so. Since the rhythmic and metric nature of flow is so closely tied to the beat layer, examining flow densities in per-measure units (units normally defined by the loop structure of the beat layer) makes musical sense. Comparing syllabic densities in songs using markedly different tempos cannot be done accurately with the per-measure method. Here, we turn to the unit-time method.

4.4.1 Methodology, Analysis, and Tempo Profiles

My methodology for annotating syllabic density involved using the “count items” plugin offered by Finale 2014 (not available in the most recent version of the software). Discarding partially filled measures that mainly comprised anacruses and end-trailing verse material that bled into hook or instrumental sections, I performed a “count notes” operation on each verse, and subtracted from this total the number of ties used in the transcription.¹³⁰ This action gave me the number of measures and number of notes that coincided with a new syllable, from which I could determine the average syllables-per-measure for the verse. Then, using the song’s tempo, I could determine the length of each measure in seconds, and from that value, the syllabic density per second.¹³¹ The first verse of “Empire State of Mind” (Jay-Z, 2009), for example, has a tempo of 87 bpm, and contains 196 syllables over 16 four-beat measures. The syllable/measure rate is thus 12.25, almost exactly midway between 8 (which a measure of constant eighth notes would produce) and 16 (which a measure of constant sixteenth notes would produce). The tempo is converted from 87 bpm to 1.45 beats per second, meaning that a four-beat measure lasts 2.76

¹³⁰ Occasionally I departed from this omission of partial measures, especially when I felt the that phrasal flow structure was displaced from how I oriented measures in the transcription. For example, in “Hotline Bling”, Drake’s flow is displaced from the beat as follows: each phrase begins with an anacrusis, but always concludes mid-measure, making room for the ensuing anacrusis. In this case, with the early ending of each phrase, I felt it more accurate to include these partial measures that resulted.

¹³¹ I calculated this value to two decimal places (hundredths of a second).

seconds. Finally, dividing 12.25 by 2.76 yields an average per-second syllabic density of 4.44 across this verse.

Determining the average per-second syllabic density for each verse in the corpus enables interrogation of the general relationship between tempo and flow speed (essentially what is assessed through syllabic density). This relationship could be characterized by something I call “tempo profiles”: loose assemblages of songs within a window of tempos where the average syllabic density of each verse in these songs closely corresponds to all the other verses in the assemblage.¹³² To put it simply, a tempo profile characterizes a tempo range where MCs normally rap at the same speed (as characterized by syllabic density). In the same spirit, tempo profiles may also illuminate outliers: MCs who rap much slower or faster than others in the tempo profile. I explore the idea of tempo profiles in this corpus in order to seek out tempo thresholds between flow speeds. For example, rapping in a sixteenth-note-based flow (where the normal smallest level of subdivision is sixteenth notes) at 100 bpm may be comfortable for most MCs, giving them options for rhythmic and phrasal variety, while not so at 130 bpm. At a slower tempo like 70 bpm, sixteenths may sound slow and boring, so thirty-second notes or triplets are used more often. As a result, MCs may actually rap faster in slower-tempo songs, which the per-unit time density measurement helps illustrate. Furthermore, within tempo profiles, per-measure density comparisons can show the variegated approaches to flow rhythm. For example, a closer look at verses by T.I. (“Dead and Gone”, 2008), 50 Cent (“Ayo Technology”, 2007) and Soulja Boy (“Crank That”, 2007) reveals syllabic densities per measure of 21, 15, and 12, respectively, despite those songs all running at tempos within 1 bpm of each other. Analysis of syllabic density will be discussed in more detail in Chapter 5 and related in more depth to tempo profiles in Chapter 7.

¹³² Bradley (2009, 32) proposes the idea of an optimal syllable load for a given tempo.

4.5 Metric and Syntactic Interaction of Flow and Beat

The final section of this chapter assimilates several of the analytical strategies outlined above in order to briefly illuminate how flows are partitioned across full verses. The section concludes with a preliminary analytical investigation of how phrases interact with the syntactic structure of the lyrics as well as the metric structure of the beat layer. The analytical techniques assimilated here thus serve as a precursor or template for the in-depth close readings presented in Chapter 6. I first summarize the discernment of groups of flow rhythm, syntactic units of lyrics, and metric units of the beat, and then discuss how they intersect in the first verse of “Shook Ones, Part II” (Mobb Deep, 1995).

4.5.1 Discernment of Rhythmic Groups

As mentioned, I prefer to use the terms *group* and *phrase* as the basic musical unit of organization in the flow layer. Groups and phrases are defined using a set of parameters that remain consistent in their definitions, but that are flexible and varied in their combinations. Accents are an integral part of the rhythmic content of a group, but do not necessarily define its boundaries. End rhymes—be they couplet- or chain-based—often, but not always, punctuate the ending of a rhythmic group and are an integral aspect of what imbues the group with phrasal qualities (which will be explained in Chapter 6). Internal rhymes do not normally contribute to group boundaries but can shape the internal structure of the phrase both rhythmically and in its accent structure. Rhythmic figures that occur with heightened frequency across a verse might signal the beginning or end of a group based on this recurrence alone. And finally, rhythmic caesuras, whether musically motivated or for practical reasons (such as for the MC to take a breath), play an important part in delineating group boundaries.

4.5.2 Discernment of Syntactic Units

The initial discernment of syntactic units of lyrics can be done without reference to the

flow. Since syntax refers to the rules and principles that govern the construction of sentences in a language, a syntactic unit refers to an ordered collection of words that subscribe to these rules. In hip-hop lyrics, these rules are occasionally violated or subverted for the sake of rhyme or rhythm. This may come as no surprise, given that lyrics are often written independently from the beat they may eventually be united with in performance. It should be noted that, while general rules of syntax are well defined in linguistics, the idea of what comprises a complete, standalone syntactic unit is fluid and subjective. Therefore, anywhere I interpret a syntactic unit as such, this interpretation is my own and not the only possible one. With these thoughts in mind, let us examine the following lyrics from “Shook Ones, Part II” as they are laid out on the website www.genius.com:¹³³

1. *I got you stuck off the realness, we be the infamous*
2. *You heard of us, official Queensbridge murderers*
3. *The Mobb comes equipped for warfare, beware*
4. *Of my crime family who got ‘nough shots to share*
5. *For all of those who wanna profile and pose*
6. *Rock you in your face, stab your brain with your nose bone*

Each pair of numbered lines forms a syntactic unit. For example, lines 3 & 4 easily read as a complete two-part sentence: “The Mobb comes equipped for warfare; beware of my crime family who got ‘nough shots to share” (punctuation added). But here the line break is in a different place from the internal syntactic break. The line breaks after *beware*, while the internal syntactic break arrives after *warfare*. The internal syntactic break in lines 5 & 6 aligns with the line break, and the sentence reads thusly: “for all of those who wanna profile and pose, [we’ll] rock you in your face ...” (punctuation and implied subject added). The first line pair (lines 1 & 2) projects a more complicated syntactical structure: “I got you stuck off the realness, we be the infamous (you heard of us, the) official Queensbridge murderers” (parentheses added). The

¹³³ This, of course, does not mean that the lyrics’ author necessarily structured them that way. Their representation on genius.com reflects the apparent poetic structure of the lyrics based on the location of rhymes and syntactic breaks.

parenthesized words are somewhat superfluous in syntactical terms—they do not comprise an essential component of the verse—but they complete the rhyme couplet, namely “heard of us” and “murderers”. The syntactical organization of these lyrics would thus read as follows:

I got you stuck off the realness, we be the infamous—you heard of us—official Queensbridge murderers / The Mobb comes equipped for warfare, beware of my crime family who got 'nough shots to share / For all of those who wanna profile and pose [we'll] rock you in your face, stab your brain with your nose bone

These observations show the potential complexity of interaction between syntactic units and lines of lyrics, a complexity that intensifies once the rhythm of these lyrics is considered.

4.5.3 Discernment of Musical Measures and Hypermeasures

In my transcription method, musical measures are determined by the cyclical nature of the beat layer in question. This approach nearly always implicates the backbeat pattern—itsself a fundamental part of hip-hop beat construction, whether sampled or otherwise—as the determining factor for measure length.¹³⁴ While the backbeat pattern establishes the basic metric cycle, the hypermetric structure of the beat layer is usually determined by some other factor, such as harmonic rhythm or textural shifts. Hypermetric organization in hip-hop beats is important to consider if the end goal is to compare phrase organization in the flow to metric organization in the beat. Because phrases of flow normally last longer than one measure, it is useful to compare them to the aspect of the beat layer that is roughly equivalent in length to these phrases. It is not always the case that the harmonic rhythm and flow phrases map onto each other with equivalent metric lengths, so observing where and how these textural layers organize themselves is also an important component in the analysis of metric interaction between flow and beat.

¹³⁴ Schloss (2004, 154) also suggests that the snare backbeat contributes prominently to meter in hip-hop beats.

4.6 Analysis

To demonstrate how musical phrases, syntactic units of flow, and metric units of the beat interact, I use the first verse of “Shook Ones, Part II” (Mobb Deep, 1995), rapped by Mobb Deep member Prodigy. In Example 4.17 (pp. 123–26), the end of each line is marked by a small red reverse “L” bracket, while syntactic units are delineated with a vertical black line. As in earlier examples, rhymes are marked with blue boxes. In mm. 1–2, the beat layer is organized in one- and two-measure units: the drum loop follows a one-measure cycle, while the sampled harmonic and melodic content follows a two-measure cycle.¹³⁵ In the transcription, each two-measure cycle occupies its own system.

I will segment the verse into shorter spans, considering the interactions among metric placements of musical, poetic, and syntactic boundaries for each. In the first eight measures, these placements match quite closely; each syntactic unit roughly corresponds to a single staff system—meaning that the syntactic units of the flow line up with the metric units of the beat—and contains within it two poetic lines. The endings of these lines are normally marked with a rhyme: for example, “beware” and “share” in mm. 3–4. Occasionally the rhymes diverge from the ends of lines (such as with “heard of us” beginning the second line instead of ending the first), or internal rhymes are added (such as “those” and “pose” both occurring in the same line in m. 5). These divergences are small, however, and do not play a significant role in the overall metric structure of this part of the verse. This structure can be thus summarized: two-measure syntactic units of lyrics correspond closely to two-measure metric units of beat and are bisected by pairs of lines of lyrics that are punctuated with rhymes. The last six measures of the verse (mm. 27–32) also subscribe to this tightly organized framework.

¹³⁵ I interpret the two-measure harmonic loop as beginning with the Gb in the bass, as shown in Example 4.17. I hear it as beginning here because the lyrics of each verse and hook section begin over this moment in the loop.

In the second eight-measure group (mm. 9–16), the coordination among lines, syntactic units, and rhymes in the flow layer remains relatively tight, but the metric location of these units begins to stray from the beat layer. In mm. 9 & 10, the lines, rhymes, and syntactic units end in sync with each barline. The next four lines of lyrics also align with bar lines (mm. 11–14), but only three syntactic units are present here. The lines “cowards like you just get they whole body laced up” and “with bullet holes and such” form one complete sentence. Within this sentence, the words “laced up” are structurally significant, because the vowel sound of “laced” relates backward to “face” and “place”, while “up” relates forward to “such” and “touched”. While in the middle of a syntactic unit, these words subtly transition beyond the line they end, in that “up” both ends the line and connects it to the following line by virtue of its rhyming properties.

The third eight-measure group contains two non-alignments that are slightly rarer across the verse. First, the line “don’t make me have to call your name out” (m. 19) is the only occurrence of a coordinated syntactic and line break without an end rhyme occurring simultaneously. (The next line, however, makes up for this lack of rhyme in possessing two: “featherweight” and “levitate”.) The second non-alignment occurs in mm. 24–25. Following a rhyme chain of “old” “cold” and “told”, the line “it ain’t nothin’ really ayo Dun spark the Philly” contains an internal rhyme pair, “really” and “Philly”. But the syntactic organization here differs markedly: “it ain’t nothin’ really” is the conclusion of the syntactic unit “another nigga deceased, another story gets told; it ain’t nothin’ really”. The lyrics “ayo Dun spark the Philly”, though concluding the rhyme pair and poetic line, are in fact syntactically related to the following line, forming the unit “ayo Dun, spark the Philly so I can get my mind off these yellow backed niggas”.¹³⁶ The lyric “niggas” here projects forward as a rhyme, coupling with “figure” in m. 26.

¹³⁶ According to genius.com, “Dun” is Queensbridge slang for “homeboy” (Queensbridge is the New York housing project that the members of Mobb Deep are from), and “Philly” refers to a Philly blunt, a type of cigar commonly gutted and refilled with marijuana.

These non-alignments show how the interplay between syntax, rhyme, and line—not to mention musical meter—creates a musical surface on which grouping and segmentation can become unclear. The verse opens and closes with relatively straightforward segmentation, in that the grouping boundaries generally align with each other and with the meter, but resists such easy partitioning in its central section. It remains to be seen whether this tight-loose-tight patterning, or any similar schema, is widespread in a specific era or subgenre of hip hop (this will be discussed in Chapter 7). But if 1990s hip-hop flow is indeed characterized by its diversity, we might expect to see at least several different approaches to segmentation in the music of this decade. The ideas presented in this analysis are all explored more fully in Chapter 6, where they are formalized into theories of segmentation and phrasing as they relate to meter, and are illustrated through numerous examples.

4.7 Summary

This chapter has outlined the assumptions, approaches, and methodology for the metric and rhythmic analysis of flow used in this dissertation. In doing so I have developed definitions of meter and phrase as they apply to hip-hop music, and discussed in detail the musical parameters that contribute to these definitions. These parameters include accents (performed, lexical, and metric), rhymes (couplets, chains, end, and internal rhymes), and rhythmic similarity or motivic parallelism. In addition, I presented a methodology for assessing syllabic density by measure and by unit time. While certainly not exhaustive, this collection of musical parameters provides a foundation for detailed analysis of the rhythmic and metric aspects of flow. In Chapter 5, statistical analysis is conducted in conjunction with those musical parameters amenable to numerical processing. These parameters include metric placement of rhymes, syllabic density, lexical syncopes, and the presence or absence of microtiming (lag- or anticipation-based, swung, or conversational).

(example 4.17 appears on next four pages)

♩=94
(0:26)

Flow

Beat

I got you stuck off the real - ness we be the in - fa - mous you heard of us of - fi - cial Queens-bridge mur - der - ers the

Mobb comes e-quipped for war - fare be - ware of my crime fa - mi - ly who got 'nough shots to share for all

— hose who wan-na pro - file and pose rock you in your face stab your brain with your nose bone

you all a - lone in these streets cou - sin ev - ery man for they self in this land we be gun - nin' and

9

keep them shook crews **run - nin'** like they sup - posed to | they come a - round but they ne - ver come **close to** |

11

I can see it in - side your **face** you're in the wrong **place** | co - wards like you just get they whole bo - dy

13

laced **up** | with bul - let holes and **such** | speak the wrong words man and you will get **touched** | you can

15

put your whole ar - my a - gainst my **team and** | I guar - an - tee you it - 'll be your ve - ry last time **breath - in'** | your

17

sim-ple words just don't move me | you're mi-nor we're ma-jor you're all up in the game and don't de-serve to be a

19

play-er | don't make me have to call your name out | your crew is fea-ther-weight | my gun-shots will make you le-vi-tate | I'm

21

on-ly nine-teen but my mind is old and when the things get for real my warm heart turns cold | an-oth-er

23

nig-ga de-ceased an-oth-er sto-ry gets old it ain't no-thin' real-ly | a-yo Dun__ spark the Phil-ly so

25

I can get my mind off these yel-low backed nig-gas | why they still a-live? | I don't know go fig-ure | mean -

27

while back in Queens the real-ness and foun-da-tion | if I die I could-n't choose a bet-ter lo-ca-tion | when the

29

slugs pe-ne-trate you feel a burn-in' sen-sa-tion | get-tin' clos-er to God in a tight si-tu-a-tion | now

31

take these words home and think it through | or the next rhyme I write might be a-bout you |

Example 4.17: First verse of “Shook Ones, Pt. II” (Mobb Deep, 1995).

5 Statistical Analysis

5.1 Overview

This chapter covers the statistical analysis, including preliminary findings, of the data from the two corpora. Data for syllabic density, metric non-alignments, and microtiming were gathered for all 472 verses across both corpora. Due to the labour-intensive nature of its collection, data for lexical syncope and rhyme were gathered for a 249-verse subset of both corpora. This subset was determined by taking all verses rapped by a unique MC in each song; where an MC rapped multiple verses, the first verse was used.¹³⁷ For example, since Snoop Dogg raps all the verses in “Gin and Juice” (1993), only the first verse of this song is retained in the subset. By contrast, all seven verses in “Protect Ya Neck” (Wu-Tang, 1993) were retained, as they are all rapped by different MCs. The following discussion proceeds first through the parameters analyzed across all 472 verses and concludes with the parameters analyzed across the 249-verse subset.

5.1.1 Personnel

Across the 472 verses, more than 150 MCs are represented, with many rapping more than one verse. Example 5.1 presents the most-represented MCs across both corpora by total verses and by total songs. Jay-Z and Kanye West sit atop both lists, having rapped in 28 and 27 verses respectively, while appearing in 13 and 14 different songs respectively. West has achieved these numbers over 12 years, from 2004 to 2016. Jay-Z achieved his representation over a slightly longer period, from 1998 to 2013. Other entries on both lists include Eminem (18 verses in 6 songs), Snoop Dogg (15 verses in 7 songs), Drake (13 verses in 7 songs), Missy Elliott (11 verses in 4 songs), and The Notorious B.I.G. (10 verses in 4 songs). Earlier MCs such as Run

¹³⁷ The one exception to this rule occurred in verse selection for “Stan” (Eminem, 2000), where Eminem adopts the persona of the fictitious character of Stan for the first three verses, before rapping as himself in the fourth. Since his flow style changes drastically between these two characters, I decided to include one verse rapped by “Stan” and one by Eminem as himself in the corpus subset.

and DMC (of Run-DMC), Chuck D (of Public Enemy), LL Cool J, and Melle Mel (of Grandmaster Flash and the Furious Five) appear on the verse list but not the song list, because the songs they appear in contain large numbers of verses. Furthermore, they were active before the mid-1990s, an era of hip-hop’s history where multi-MC collaborations were less common, meaning that they typically rapped all the verses in their songs. By contrast, artists such as Lil’ Wayne (7 verses in 5 songs), Dr. Dre (5 verses in 4 songs), and T.I. (9 verses in 4 songs) more frequently collaborate with other MCs. Lil’ Wayne constitutes the best example of this: he is the lead MC in only one song (“Lollipop”, 2008), but raps guest verses in four other songs.

MC (number of verses)	MC (number of songs)
Jay-Z (28)	Kanye West (14)
Kanye West (27)	Jay-Z (13)
Eminem (18)	Snoop Dogg (7)
Run (16)	Drake (7)
Snoop Dogg (15)	Eminem (6)
DMC (14)	Lil’ Wayne (5)
Drake (13)	Missy Elliott (4)
Chuck D (11)	The Notorious B.I.G. (4)
Missy Elliott (11)	T.I. (4)
Melle Mel, LL Cool J, The Notorious B.I.G. (each 10)	Dr. Dre (4)

Example 5.1: The most-represented MCs across both corpora. The left column measures representation by total verses; the right column measures representation by total songs.

Ten MCs appear in both corpora; of these, several (Busta Rhymes, Dr. Dre, Snoop Dogg, Lil’ Wayne, and Nas) make appearances across nearly 20-year spans, highlighting the longevity of their careers. Women MCs make up a dramatically small portion of the corpora: only nine are represented, and of these only Missy Elliot appears in more than one song—and never as a guest

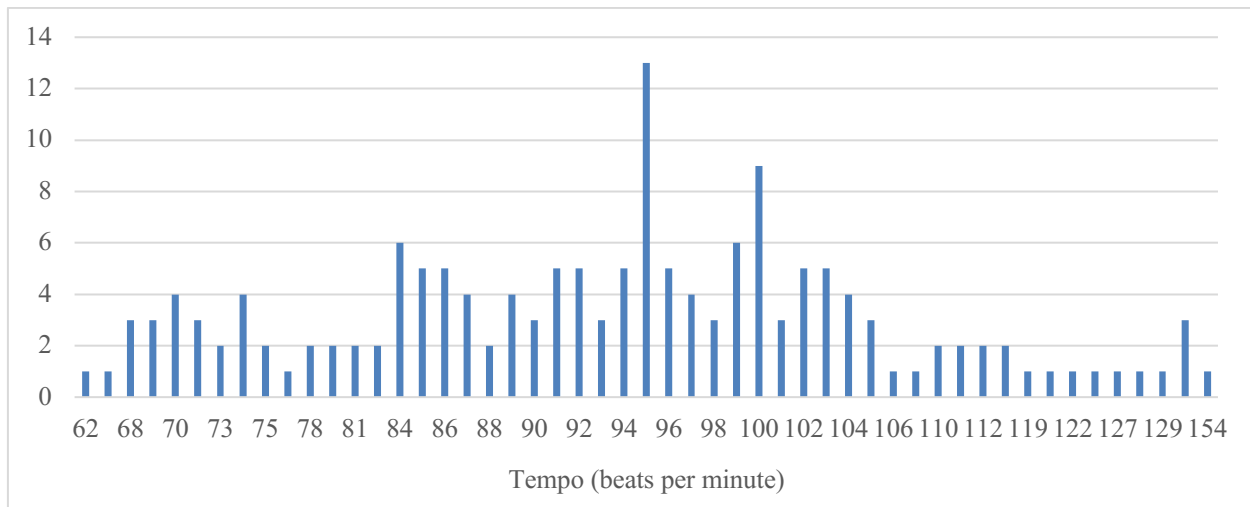
MC.¹³⁸ The MCs in the corpora hail from a variety of locations across the United States and Canada, but in the *Rolling Stone* corpus a disproportionate number of them are associated with the northeastern United States, with 62 of the 88 song artists hailing from that region, compared to just 15 from the West Coast, 3 from the South, and 3 from the Midwest.¹³⁹

5.2 Song Tempo

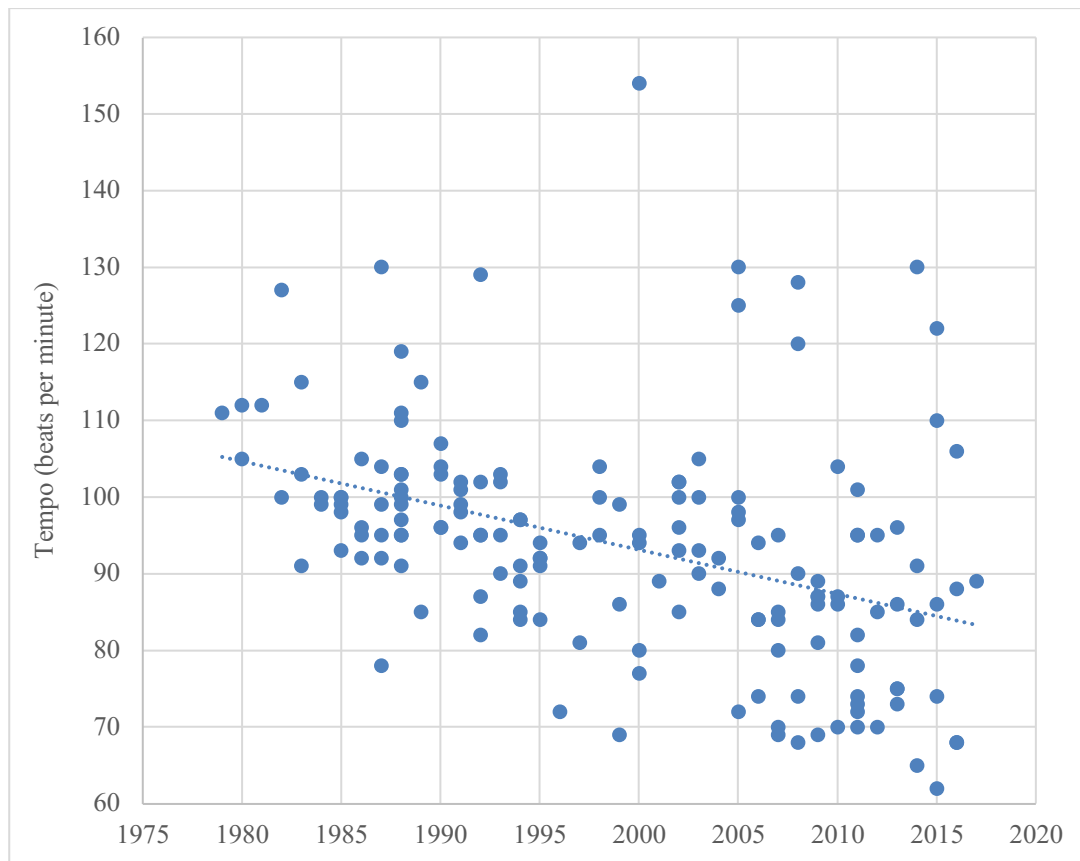
Song tempo varied widely across the corpora. The slowest song was 62 bpm (beats per minute) while the fastest was 154 bpm, and as Example 5.2 details, tempos between 84 and 105 bpm are most prevalent. The tempos of 95 bpm (13 songs) and 100 bpm (9 songs) have the greatest representation in the corpora. Example 5.3 demonstrates that song tempos have, on average, decreased over time, as the line of best fit shows. This observation confirms the findings of Condit-Schultz (2016) and those of Duinker and Martin (2017), who also observed global decreases in tempo over time. Ultimately, these observations will aid in elucidating whether *tempo profiles* exist in hip-hop music—tempo ranges in which statistical parameters such as syllabic density, rhyme density, and rhyme metric placement appear to follow something of a “standard practice”. These are discussed at length in Chapter 7.

¹³⁸ These observations are of course not meant to suggest that women rappers play an insignificant role in hip-hop music’s history. Some of the most legendary MC performances (e.g. “Roxanne’s Revenge” 1984, the quintessential diss track of the 1980s, was recorded by 14-year old Roxanne Shanté) and best-selling hip-hop albums (e.g. *The Miseducation of Lauryn Hill*, 1998) have been released by women artists, but many other meritorious performances by women MCs have perhaps not been given the credit they deserve via the mechanisms that generated these corpora. It should be noted, however, that recently Cardi B (a woman) has garnered several Grammy Award nominations, including 2017 Best Rap Song and 2018 Album of the Year.

¹³⁹ See Chapter 1 for more precise definitions of which urban areas define these regions. These geographic data could only reliably be calculated for the *Rolling Stone* Corpus, because in the Grammy Corpus the level of inter-regional collaboration makes it prohibitively difficult to determine where a song “is from”: for example, an Atlanta-based producer might make a beat over which Los Angeles and New York MCs collaborate in rapping.



Example 5.2: Song tempo distribution across both corpora. The vertical axis represents the number of songs at each tempo indicated in the horizontal axis.



Example 5.3: Tempo distribution of songs, arranged by release year. The single outlying song above the gridline for 150 bpm is “B.O.B.” (OutKast, 2000). I interpreted the tempo of this song at 154 bpm due to the speed of the backbeat (kick-snare) pattern, consistent with my method of determining tempos for all songs.

5.3 Syllabic Density

Syllabic density was measured by taking the total number of rapped syllables across a verse (excluding incomplete measures at the beginning and end of the verse) and dividing it by the duration (in seconds) of each measure. Over the two corpora, the mean syllabic density was 4.24 syllables per second, and individual verse densities generally tended to fall between 3 and 5 syllables per second. The National Center for Voice and Speech estimates that the average native English speaker speaks at a rate of approximately 150 words per minute, and that words in English have 2–3 syllables on average.¹⁴⁰ As such, we can crudely estimate that conversational English proceeds at a rate of roughly 6 syllables per second, which is considerably faster than the mean density above.¹⁴¹ Does this mean that MCs rap slower than they might speak in conversation? Likely not, because these measurements are averages: the syllabic density calculation does not account for rhythmic caesuras: gaps during which no rapping occurs. This means that an MC might rap a passage of flow very quickly and then pause for one or even several beats, and these pauses factor into the density calculations. A more telling way of comparing syllabic density between speech and flow would be to estimate an average syllabic density based on the most prevalent rhythmic unit in a particular passage of flow. Consider Nicki Minaj’s flow in the first verse of “Anaconda” (2014), transcribed in Example 5.4. While her two verses in this song exhibit syllabic densities very close to the corpora mean of 4.24 syllables per second, a closer look at her flow reveals that half of each verse is rapped comparatively slowly (much slower than normal conversational pace), while half is rapped very quickly (much faster

¹⁴⁰ This is, however, not a weighted average. Considering that words with fewer syllables are used more frequently, a weighted syllable average that accounts for usage would likely yield a number lower than 2–3 (as mentioned in-text).

¹⁴¹ See <http://www.ncvs.org/ncvs/tutorials/voiceprod/tutorial/quality.html> (accessed 2019). In a comparative study of seven spoken languages, Pellegrino et al. (2011) found an average speech rate of 6.19 syllables per second for the English language.

than normal conversational pace). This is because partway through each verse, Minaj switches her flow from an eighth-note-based style to a sixteenth-note-based style.

♩=130
(0:23)

real real real gun in my purse bitch I came dressed to kill who wan-na go first? I had them

push - in daf - fo - dils I'm high as hell I on - ly took a half a pill I'm on some dumb shit

by the way what he say? he can tell I ain't miss - in' no meals

come through and fuck him in my au - to - mo - bile let him eat it with his grills and he tell - in' me to chill and he

Example 5.4: First verse of “Anaconda” (Nicki Minaj, 2014). Beginning on the third system, Minaj switches flow styles, rapping mainly in sixteenth-note rhythms. Rhymes are shaded and lexical syncopes are underlined.

As Example 5.5 shows, the performance with the greatest syllabic density (7.9 syllables per second) is by Busta Rhymes in the song “Look at Me Now” (Chris Brown, 2011), and the performance with the lowest density is Kanye West’s verse (1.9 syllables per second) in “Mercy” (Kanye West, 2012). These two performances are outliers; when they are removed, the densities range from approximately 2.5 to 6.9 syllables per second. As Example 5.5 also suggests, even if a song features multiple MCs, the general style of rapping remains consistent, at least where density is concerned. For example, three of four verses in “Look at Me Now”—each rapped by different MCs—contain densities in the highest 20 verses of the corpora. All three verses in “Ridin’” (Chamillionaire, 2005), which are rapped by two MCs, are included in this list, as are two of three verses from “O.P.P.” (Naughty by Nature, 1991) and both verses from “Dead and

Gone” (T.I., 2008). Perhaps most stunningly, six of seven verses in the corpora rapped by OutKast members André 3000 and Big Boi appear in this subset, suggesting that these two MCs have some of the most syllabically dense flow styles in hip-hop music.

Verses with highest syllabic density (syl/sec)	Verses with lowest syllabic density (syl/sec)
“Look at me Now” (Busta Rhymes) – 7.908	“We Dem Boyz” (Wiz Khalifa) – 3.047
“Ridin” (Chamillionaire) – 6.850	“Mama Said Knock You Out” (LL Cool J) – 3.004
“B.o.B.” (Big Boi) – 6.457	“Get Ur Freak On” (Missy Elliott) – 2.998
“Ms. Jackson” (Big Boi) – 6.399	“Lose Control” (Missy Elliott) – 2.995
“Look at me Now” (Chris Brown) – 6.388	“Top Billin” (Milk Dee) – 2.964
“Ridin” (Chamillionaire) – 6.225	“Cars with the Boom” (Tigra) – 2.913
“Ms. Jackson” (Big Boi) – 6.135	“Day N Nite” (Kid Cudi) – 2.911
“Ridin” (Krayzie Bone) – 6.000	“Hotline Bling” (Drake) – 2.833
“Alright” (Kendrick Lamar) – 5.930	“The Rain (Supa Dupa Fly)” (Missy Elliott) – 2.827
“Dead and Gone” (T.I.) – 5.918	“The Bridge” (MC Shan) – 2.750
“B.o.B.” (Andre 3000) – 5.755	“Cars with the Boom” (Bunny) – 2.727
“Look at me Now” (Lil’ Wayne) – 5.722	“Hotline Bling” (Drake) – 2.727
“O.P.P.” (Treach) – 5.696	“Lollipop” (Lil’ Wayne) – 2.698
“Rosa Parks” (Big Boi) – 5.669	“We Dem Boyz” (Wiz Khalifa) – 2.686
“Rosa Parks” (Andre 3000) – 5.655	“The Rain (Supa Dupa Fly)” (Missy Elliott) – 2.633
“Bring the Noise” (Chuck D) – 5.643	“All of the Lights” (Kanye West) – 2.625
“Dead and Gone” (T.I.) – 5.630	“Day N Nite” (Kid Cudi) – 2.588
“i” (Kendrick Lamar) – 5.623	“Day N Nite” (Kid Cudi) – 2.552
“O.P.P.” (Treach) – 5.574	“Cars with the Boom” (Tigra and Bunny) – 2.541
“Big Pimpin” (Bun B) – 5.570	“Mercy” (Kanye West) – 1.974

Example 5.5: Verses exhibiting the highest and lowest average syllabic densities across both corpora.

By contrast, the sparsest 20 verses in the corpora (included below the high-density verses) include all verses from “Hotline Bling” (Drake, 2016), “We Dem Boyz” (Wiz Khalifa, 2014), and two of three verses from “Day n Nite” (Kid Cudi, 2009). This observation is notable because these three songs are completely sung, not rapped, perhaps suggesting that a relationship exists whereby MCs sing slower than they rap, or normally allow for more caesuras between

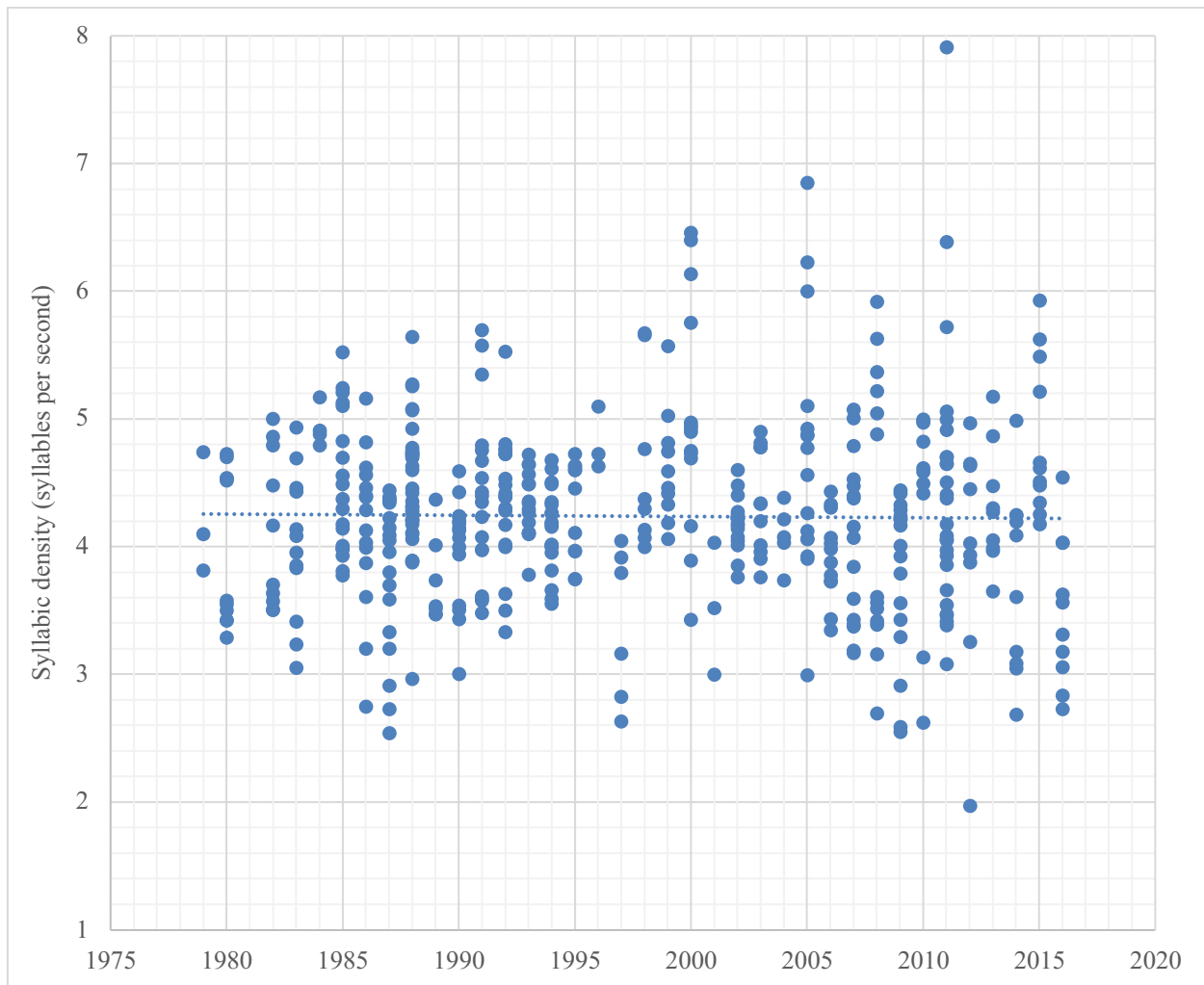
phrases. Other songs well represented in this list include “Cars with the Boom” (L’Trimm, 1988) and “The Rain (Supa Dupa Fly)” (Missy Elliott, 1996). In the case of the former, the song’s Miami Bass-driven beat (see Chapter 2, p. 35) and tempo are similar to “Anaconda”, and the MCs of L’Trimm employ an eighth-note-based flow similar to that which Minaj uses in the first parts of her verses. In the case of the latter, Elliott’s frequent long pauses between phrases likely contributes to the low overall syllabic density.

5.3.1 Syllabic Density v. Time

Condit-Schultz (2016, 134) found that syllabic density (which he calls “rap speed”) did not significantly change over time. My data suggest a similar result, as shown in Example 5.6, where the syllabic density of each verse is plotted against the year the song was released. The nearly horizontal trendline suggests that the change in average syllabic density over time is almost nonexistent. Furthermore, this trendline hovers almost exactly on the overall mean syllabic density of the whole corpus: 4.24 syllables per second, slightly below Condit-Schultz’s mean of 4.5 syllables per second.¹⁴² While the trendline in Example 5.6 suggests little overall change over time, the distribution of syllabic densities in each year shows that certain years exhibit more variance in syllabic density than others. While some recent years, such as 2005 and 2011, show greater variance in syllabic densities, other recent years such as 2002, 2006, and 2013 show a tighter cluster of densities within a smaller range.¹⁴³

¹⁴² See Condit-Schultz (2016, 133).

¹⁴³ For example, songs released in 2011 such as “Look at Me Now” (Chris Brown) and “Black and Yellow” (Wiz Khalifa) contribute to this increased variance, with the former expressing greater densities in its verses, and the latter the opposite.

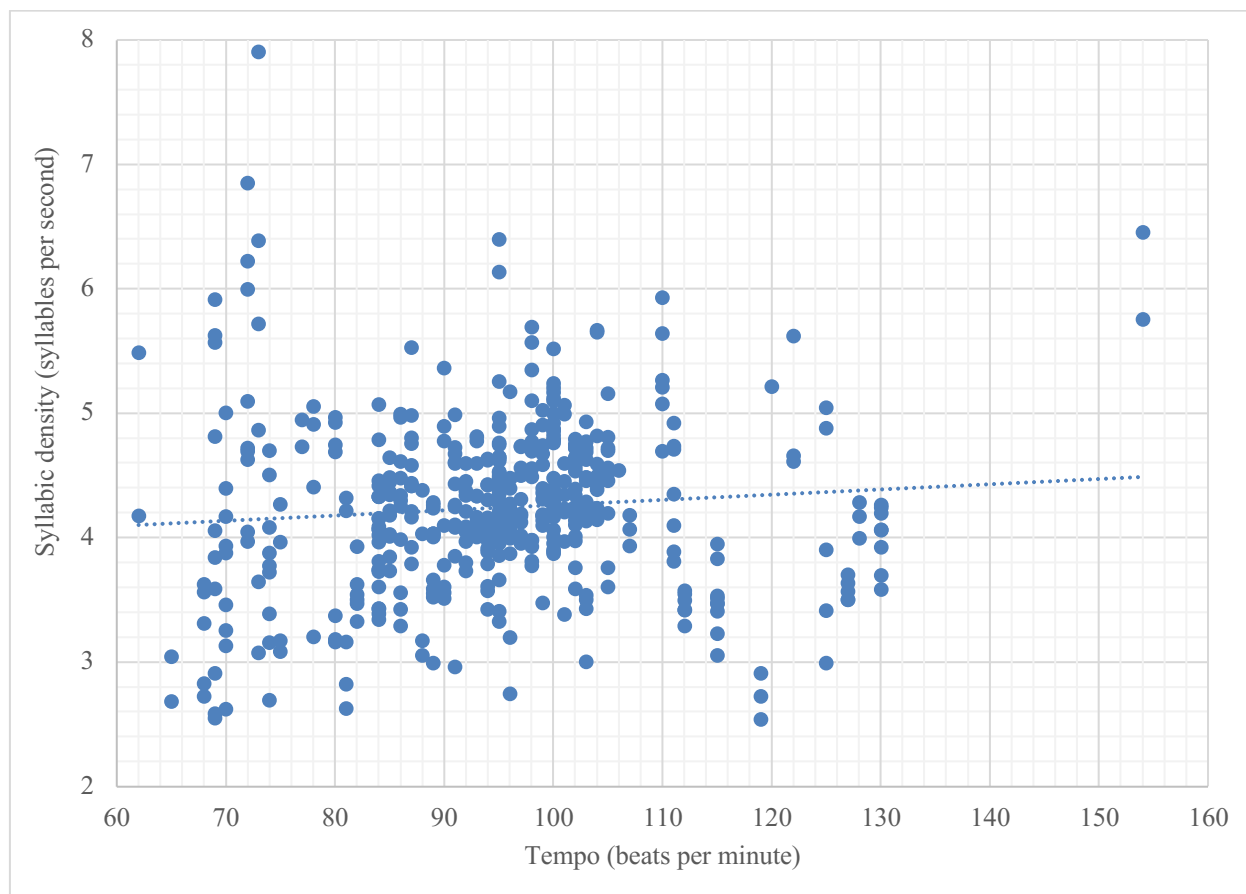


Example 5.6: Average syllabic density of each verse, plotted by release year.

5.3.2 Syllabic Density v. Tempo

When measured against song tempo, syllabic density data are more telling. Condit-Schultz (2016, 134–135) observed that while average song tempo decreased over time, average syllabic density remained the same; he did not inquire further as to how, precisely, MCs were achieving this balance through their rapping. My data exhibits a similar pattern overall, as seen in Example 5.7: the trendline shows a no major movement upward or downward, only rising 0.3 syllables per second across tempos ranging from 62 to 130 bpm. Many of the tempos within the range of 75 to 110 bpm show rather tight clustering of verses with respect to syllabic density. If

we focus on verses with tempos lower than 75 bpm, however, we notice a much wider range of syllabic densities used, as the scatter plots show.



Example 5.7: Average syllabic density of each verse, plotted by tempo.

Ranges of syllabic density (the difference between the highest and lowest density for each tempo) do not, however, tell us the whole story about syllabic densities for tempos higher and lower than 75 bpm. If we focus on how the plot points are distributed, we see a much wider and seemingly more random spacing of points for a tempo like 69 bpm than we do for 95.

Calculating the standard deviation of syllabic densities for like-sized samples of the corpora supports this observation: the standard deviation for the 27 songs in the tempo range of 86–88 bpm is 0.578, while for the 24 songs in the tempo range of 68–70 bpm, it is nearly double that value, 1.015. These observations all point to the suggestion that below approximately 75 bpm, a

general shift in practice occurs with respect to syllabic density, a concept that is explored further in Chapter 7.

5.4 Metric Non-Alignments

Metric non-alignments between the flow and beat layers were tabulated in three loose categories: anacrusic, conclusive, and irregular. Anacrusic non-alignments involve situations where the beginning of the verse functions anacrastically in relation to the metric organization of the beat (implied in my transcriptions by barlines). I thus consulted the beginning of each verse to tabulate these non-alignments, assuming that, in general, metric units of flow would follow a consistent pattern throughout the verse. Therefore, if a verse began with an anacrusis, similar anacrusis could be expected to occur with subsequent lines of lyrics. This pattern can be observed in the second verse of “99 Problems” (Jay-Z, 2003, Example 5.8): after an initial anacrusis of two sixteenth notes, a similar anacrusic pattern prevails through the rest of the excerpt, where line-ending rhymes (shaded in the example) typically fall on or before the fourth beat, leaving ample space at the end of each measure for subsequent anacrusis.

♩=93
(0:57)

the year is nine - ty **four** in my trunk is **raw** in my rear - view mir - ror is the mo - ther - fuck - in' **law** got two

___ choice - s **y'all** pull ov - er the car **or** bounce to the de - vil put the pe - dal to the **floor** and

I ain't tryin' to see no high - way chase with **Jake** plus I got a few dol - lars I can fight the **case** so I

pull ov - er to the side of the **road** I heard "son do you know what I'm stop - ping you **fo'** 'cause I'm

Example 5.8: Second verse of “99 Problems” (Jay-Z, 2003). In nearly all measures, Jay-Z places end rhymes on or before the fourth beat, using the ensuing space to begin the next line of lyrics in anacrusis against the metric structure of the beat.

Exceptions to this anacrusis paradigm do, of course, exist. In the first verse of “Lose Control” (Missy Elliott, 2005, Example 5.9), an initial anacrusis on the lyrics “I got a” yields to subsequent metric units of flow that correspond exactly with the beat layer. It remains to be proven whether the former or latter scenario is more prevalent in hip-hop music. In any case, I suspect that line-ending rhyme placement affects anacrusic patterning more than any other factor.

♩=125
(0:18)

I got a cute face chub - by waist thick legs in shape

rump shak - in both ways make you do a doub - le take

pla - net rock - er show stop - per flow pro - per head knock - er

beat scho - lar tail drop - per do my thang mo - ther - fuck - er

Example 5.9: First verse of “Lose Control” (Missy Elliott, 2005). In contrast to “99 Problems”, Elliott begins the verse with an anacrusis but does not continue an anacrusic pattern throughout.

Conclusive non-alignments refer to incomplete final measures of verses. The criterion for this parameter thus involved determining whether the last measure of each transcribed verse constituted a complete measure. Generally, if the measure contained rhythmic material on or beyond its third beat, it was considered a full measure, especially if this measure was a concluding portion of a symmetrical two- or four-measure phrase pattern in the verse. Of the 48 concluding measures in the corpora that were determined to be incomplete, only three included

material beyond the second beat; thus the majority of conclusive non-alignments (45 of 48) involved less than one beat's worth of rhythmic material. In fact, 22 of these 45 instances involve a refrain text, meaning that the true end of the verse occurred prior to this refrain.¹⁴⁴ The first verse of “Rock the Bells” (L.L. Cool J, 1985, Example 5.10) demonstrates this point: the line-ending rhyme of “fingernail” (verse 1) signifies the end of the verses, while the title lyrics “rock the bells” function as an end refrain.¹⁴⁵

♩=100
(0:30)

up E - Love down with the Cool - J force sym - bol - iz - in' in the rhym - in' for the re - cord of course I'm a

tow - er full of power with rain and hail Cut Cre - a - tor scratch the re - cord with his fin - ger - nail rock the bells

Example 5.10: First verse of “Rock the Bells” (LL Cool J, 1985). The end refrain attached to this verse, involving the title lyrics “rock the bells”, spills over the barline into a new measure.

In two other songs, “Can I Kick It?” (A Tribe Called Quest, 1990) and “Hotline Bling” (Drake, 2016), the conclusive non-alignments stem from a pattern of displacement between phrases of flow and metric units of the beat. As Example 5.11 shows, a beginning refrain characterizes the first verse of “Can I Kick It”, displacing the units of flow a beat later, so that each line-ending rhyme occurs on the first beat of each measure, following the measure where most of that phrase was rapped. Excluding these refrain- and displacement-based conclusive non-alignments from the total, we are left with only 22 instances of conclusive non-alignments across the two corpora, which is an insufficient quantity to identify any trend-based statistics.

¹⁴⁴ A *refrain* as used here is “a brief, recurring lyrical entity that typically appears at the end of a verse, and/or is interspersed throughout the period before the next verse begins” (Duinker and Martin 2017, 85).

¹⁴⁵ Biamonte (2019) distinguishes between refrains that are attached to the ends of verses and the beginnings of verses as end refrains and beginning refrains, respectively. In doing so she follows de Clercq (2012) and Summach (2012), who call these sections head refrains and tail refrains.

can I kick it? to all the peo-ple who can Quest like A Tribe does be-fore this did you real-ly know what

live was? com-pre-hend to the track for it's why cuz get-tin mea-sures on the top of the

Example 5.11: First verse of “Can I Kick It?” (A Tribe Called Quest, 1990). A beginning refrain involving the title lyrics “can I kick it?” displaces the rhythmic content of the verse, resulting in all subsequent line-ending rhymes initiating measures.

Irregular non-alignments were also insufficiently prevalent to identify any large-scale patterns among them. Irregular non-alignments refer to instances where the verse transcription contains an odd number of measures. Working on the assumption that hypermetric units of beat typically recur in 2- or 4-measure intervals and rarely stray from this pattern in a song, odd-measured verses might suggest the presence of some sort of internal metric irregularity in the flow layer.¹⁴⁶ Since only 26 verses contain odd-numbered measure counts, and some of these were discarded for a variety of reasons, not much remains to be discussed from a statistical standpoint about these verses other than that they appear to be outliers in the corpus. While all these types of metric non-alignments seem to be exceptions rather than rules in the corpora, their presence warrants an in-depth study of what musical and formal characteristics give rise to them. As such, further consideration of non-alignments between metric units of flow and beat, as well as a consideration of what musical factors determine these metric units themselves, forms part of my work in Chapter 6.

5.5 Microtiming

Chapter 3 summarized three main types of microtiming in hip-hop flow, along with a survey of suitable approaches to analyze it in greater detail. While I engage in microtiming

¹⁴⁶ The data collected for beat loop length in Duinker and Martin (2017) confirms this assumption, as do remarks made by Adams (2020).

analysis in more detail in Chapter 7, the present discussion focuses on a brief tabulation of the prevalence of each type of microtiming across the corpora. I hypothesize that MCs vary the rhythms of their flow at a micro-rhythmic level—that is, in durational increments too miniscule to succinctly or accurately capture with standard musical notation—in three main ways: with recourse to rhythmic patterns inherent in conversational speech that may not align with the metric grid imposed by the beat, by swinging the sub-tactus rhythmic divisions, and by lagging behind the beat. I define these techniques as conversational, swung, and lagging microtiming, respectively. Identifying their presence (or absence) in each verse was done by ear, which is hardly an infallibly accurate method of judgement, but the only one efficient enough (and sufficiently robust) to tackle all verses in the corpora. I listened to each verse with the goal of identifying whether the MC(s) used, with an obvious degree of salience, any of the three microtiming types. I mention salience because I did not count examples where it could be argued that perhaps one or two syllables fell “slightly” behind the beat. A majority of the verse, or a very obvious shorter section of it, had to be salient in one of the three types in order to be counted.

5.5.1 Microtiming Practices of Particular MCs

Using this methodology to determine microtiming across the 472 verses, I identified 56 as exhibiting conversational microtiming, 47 swung, and 96 lagging. Lagging was therefore by far the most prevalent. The charts shown in Example 5.12 reveal that no time-based patterns exist for any type of microtiming, other than that none of the three types were very prevalent in the earliest years nor the most recent years covered by the corpora. But other hip-hop songs from these eras could easily debunk any notion that microtiming was not popular in early or very recent hip hop, so such conclusions will be avoided here. Perhaps more interesting than microtiming practices over time are the microtiming practices of individual MCs. Of the MCs

represented on 10 verses or more in the corpora, four display tendencies to use certain types of microtiming.



Example 5.12: Prevalence of microtiming type by verse, plotted by release year. Various song titles are shown below each graph to give an approximate idea of the year. What appear to be thicker bars are in fact clusters of verses that exhibit microtiming.

Jay-Z and Kanye West, with 28 and 27 total verses respectively, both habitually lag in their flow, with Jay-Z doing so in 17 verses and West in 10. Furthermore, Jay-Z adopts a conversational flow style in 12 of his 28 verses. Eminem, on the other hand, hardly ever lags but adopts a conversational or swung style in each of 9 verses of his 18 in the corpora. In some cases, his conversational style supports the narrative of the lyrics; in “Stan” (2000), each of the song’s four verses represents a letter written by a fictitious fan (Stan) to Eminem, followed by a verse representing Eminem’s reply to the fan, and thus the conversational flow vividly represents the letters being read aloud. The MC with the most consistent and narrow (in terms of the three types) use of microtiming is Snoop Dogg, whose flow lags in 13 of his 15 verses, while only 1 verse each features conversational and swung microtiming. While far from being extensive enough to speak to overall trends across both corpora, the microtiming data presented here suggests that MCs may prefer to use certain types over others, sometimes so frequently that we may consider these techniques to be hallmarks of their individual styles.

5.6 Lexical Syncopes

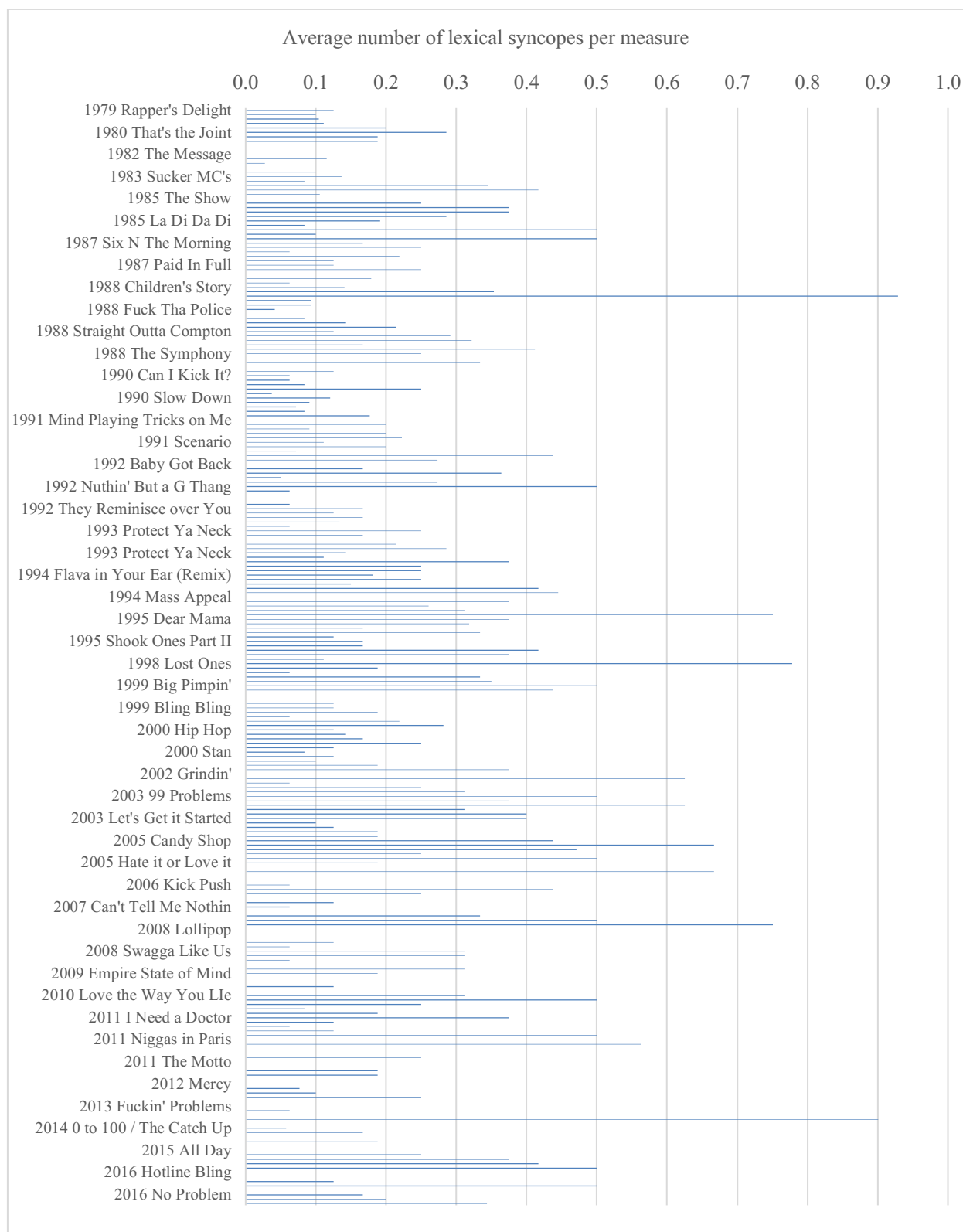
As mentioned in Chapter 4, data-gathering for accents was limited to lexical syncopes, as the process of annotating performed accents would have been too subjective and thus unsuitable for statistical analysis. Lexical syncopes were tabulated for the smaller, 249-verse subset and the totals were divided by the number of measures in these verses, yielding the data shown in Example 5.13. I define a lexical syncope as a multisyllabic word whose lexical stress—the syllable that is normally stressed when that word is spoken—is placed in a relatively weak metric position when rapped, that is, weaker than the one(s) occupied by the unstressed syllable(s).¹⁴⁷ Condit-Schultz defines syncopation as a “rhythmic attack on a metric subdivision which is not

¹⁴⁷ Disyllabic English nouns and adjectives generally receive their lexical stresses on the first syllable, while verbs receive it on the second syllable. This can be easily seen in examples of nouns and verbs with the same spelling, such as **contest** (a noun), and **contest** (a verb).

followed by an attack on the subsequent stronger subdivision” (2016, 138), where a “rhythmic attack” indicates a syllable of lyrics. This definition of syncopation is more wide-ranging than my definition of lexical syncope, but would not include all instances of lexical syncopes, namely those involving a word with a first-syllable stress that begins on a metrically weak beat, such as that found in Dr. Dre’s performance in Example 4.10 (p. 104).

There are, however, many other examples of lexical syncopes that Condit-Schultz’s definition does encompass, and I have observed these to gradually diminish in number over time, just as he found syncopations to diminish over time. The lexical syncopes I refer to here are exemplified by Example 5.14: when Sha-Rock raps the lyric “**neglect**” (shown on the fifth system of the example), the stressed second syllable occurs on the last sixteenth of the third beat, while the unstressed first syllable occurs on the stronger third sixteenth of the beat. Furthermore, this second syllable receives a slight accent by way of her vocal delivery. Contrast this with the lyric “**respect**” (earlier in the same measure), which occurs on beats 1 and 2, where the stressed syllable (both by lexical stress and through her performance) is placed on the relatively strong on-beat.

What Sha-Rock does here is not uncommon; as I show below, placing accented rhyme syllables on the fourth sixteenth of the third beat is common in old-school flows. In fact, lexical syncopes such as the one shown here seem to occur almost as a byproduct of other practices, such as the metric placement of rhymed syllables and the deliberate accentuation of these syllables by MCs in performance. It follows that since placing rhymed syllables on the last sixteenth note of beat 3 began to decrease in prevalence in later years (as shown below in Example 5.22), so too did this type of lexical syncope: indeed, the number of songs with no lexical syncopes of any kind increases in the more recent years of the Grammy corpus.



Example 5.13: Prevalence of lexical syncopes per verse, plotted by release year. Various song titles are shown below the graph to give an approximate idea of year.

♩=105
(2:20)

list - ed on the col - umn thats clas - si - fied I can be a nurse and I'm qua - li - fied to talk

a - bout re - spect I won't neg - lect my stra - te - gy is for you to see so don't

Example 5.14: First verse of “That’s the Joint” (Funky 4+1, 1980). The lexical syncope on the lyric “neglect” represents a type that gradually decreases in prevalence over time.

But what of the other lexical syncopes, those that do not occur in conjunction with accented rhymes on the last sixteenth of the third beat? Since there appears to be no discernible pattern regarding lexical syncopes across either corpus (other than the one discussed above), it is difficult to hypothesize any overarching theory regarding how and why these are used in flow. An easier way into understanding the function of these syncopes is to analyze outliers in the verse data. The first verses of “Lost Ones” (Lauryn Hill, 1998) and “Lose Yourself” (Eminem, 2002) both involve abnormally high numbers (as far as the subset is concerned) of lexical syncopes per total measures, and demonstrate one possible use.¹⁴⁸ Example 4.6 (p. 102) transcribes the opening measures of “Lost Ones”, where Hill raps the lyrics “situation”, “complication”, “**e**quation” and “**s**tation” (lexical stresses underlined in the example). The transcription shows that Hill places the ultimate syllable—not the lexical stress—on the strongest metric position: beginning with “situation”, she always puts the “tion” syllable on the fourth beat, imbuing the verse with a sense of rhythmic symmetry and setting up the expectation that subsequent rhymes will be rapped the same way.¹⁴⁹

¹⁴⁸ Similar examples include the second verse of “Roxanne Roxanne” (UTFO, 1984) and the third verse of “Ultralight Beam” (Kanye West, 2016).

¹⁴⁹ One possible reason for Hill’s shift in stress position could involve the Jamaican-English style of speaking (known as patois) she uses in this song; further analysis of this aspect of her rapping could reveal that these stress shifts are in fact not novel in patois.

The first four measures of “Lose Yourself” (Eminem, 2002), shown in Example 5.15, demonstrate the same phenomenon, on the lyrics “sweaty”, “heavy”, “already”, “spaghetti”, “ready”, and “forgetting”. Displaying Eminem’s fondness for long rhyme chains, these lexical syncopes contrast sharply with the later portion of the verse where two nested rhyme chains contain no such syncopes. In both these excerpts, we thus see how repeated rhythmic patterns and rhyme chains can cause lexical syncopes to occur at equally spaced intervals across a passage of flow, possibly generating a listener expectation that more syncopes may occur.

his palms are sweat-y knees weak arms are heavy there's vomit on his sweater already mom's spaghetti he's nervous
but on the surface he looks calm and ready to drop bombs but he keeps on forgetting what he wrote

Example 5.15: First verse of “Lose Yourself” (Eminem, 2002).

A final example of this technique shows how several types of lexical syncopes can be combined in a verse. Example 5.16 transcribes the second verse of “California Love” (Dr. Dre and Tupac Shakur, 1995), featuring 12 lexical syncopes across 16 measures. In addition to the frequent performed accents Shakur places on metrically weak sixteenth notes, the frequent presence of lexical syncopes—whether accented or not—contributes to the heavily syncopated feeling of the flow in this verse. After using several lexical syncopes across the first four complete measures of the verse, Shakur begins the fifth measure with the lyric “Cali”, which he then rhymes with “rally” and “Ballys”. But while the lexical stress in “Cali” falls on the downbeat of the measure, the stresses of the two rhymed lyrics fall on offbeat sixteenths, rendering them lexical syncopes. This effect is opposite to that in “Lost Ones” and “Lose

Yourself”, where the lead rhyme of the chain occurred on the beat, thus generating the expectation that following rhymes might do the same, only to have that expectation suppressed by the lexical syncope. (It could of course be argued that the lyric “Cali”, arriving within a chain of sixteenth notes and falling on the downbeat of the bar, does not generate a context in which we would expect it to serve as a rhyme, but once the first rhyme does occur on “rally”, it could be heard as arriving one sixteenth early.)

♩=92
(2:19)

out on **bail** —fresh out of **jai** Ca-li-for-nia **dream-in'** soon as I step on the scene I hear them hooch-ies **scream-in'** **fiend-in'** for

mo-ney and **al** - co - hol the life of a West - side play - er where **cow** - ards die and the strong ball **on** - ly in

Ca - li where we ri - ot not **fal - ly** to live and die in L A we wear - in' Chucks not **Bal - lys** dressed in

Locs and Kha - ki **suits** and **ride** is what we **do** **floss - in'** but have **cau - tion** we col - **lide** with oth - er **crews** **fa -**

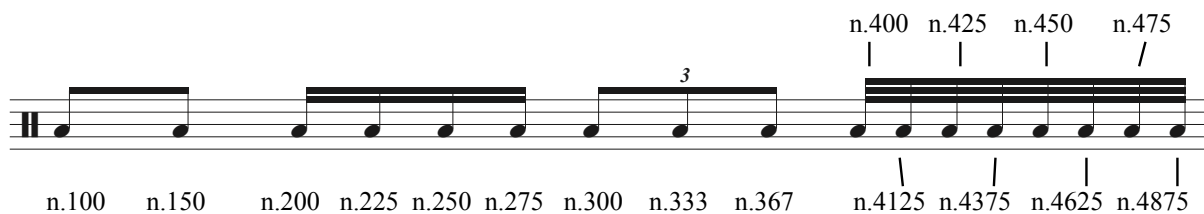
Example 5.16: Second verse of “California Love” (Dr. Dre and Tupac Shakur, 1995).

A particularly notable example of lexical syncope occurs on the fourth system of the transcription, where the lyrics “**Kh**aki suits”, “what we **do**” and “**oth**er crews” all fall in similar metric positions; in each case the syllable falling on the local on-beat is performed with the least amount of stress, either because Shakur uses performed accents (in this case both pitch- and articulation-based) or places the lexical stress of a multisyllabic word on a weak beat. The result, when heard against the beat, forms a heavily syncopated flow rhythm against the kick drum and

backbeat snare of the beat layer. In summary, lexical syncopes are difficult to study from a statistical standpoint due to a lack of trend-based data, but closer inspection reveals that they are used in a variety of contexts, as demonstrated by outlier verses with higher rates of occurrence.

5.7 Rhyme

Rhymes were annotated by shading the rhymed syllables in various colours, in order to show which rhymes were related to which. Across the 249-verse subset, further annotation included encoding the rhyme data in a beat-class format using a mod-4 subdivision of each beat, the framework of which is shown in Example 5.17. For instance, a rhyme on the downbeat of a measure would be encoded as $n.1$, where n represents the measure number according to the transcription (anacrustic measures were counted as $n=0$). A rhyme on the second sixteenth of the second beat would be encoded as $n.225$, because the second sixteenth falls one-quarter (hence 0.25) of the distance between the third beat and the fourth beat. Whether forming a couplet (two rhymes) or a chain (three or more rhymes), related rhymes—words or syllables that rhyme with each other—were demarcated by parentheses. Hence, two values enclosed by a parenthesis indicates a couplet, while more than two indicates a chain. (Distinguishing between internal rhymes and end rhymes involves further calculation, described below.) This method of encoding rhyme enabled me to analyze a number of parameters: rhyme density, prevalence of rhyme type, beat-class prevalence of rhyme, and beat-class variance of rhyme, or rhyme entropy.

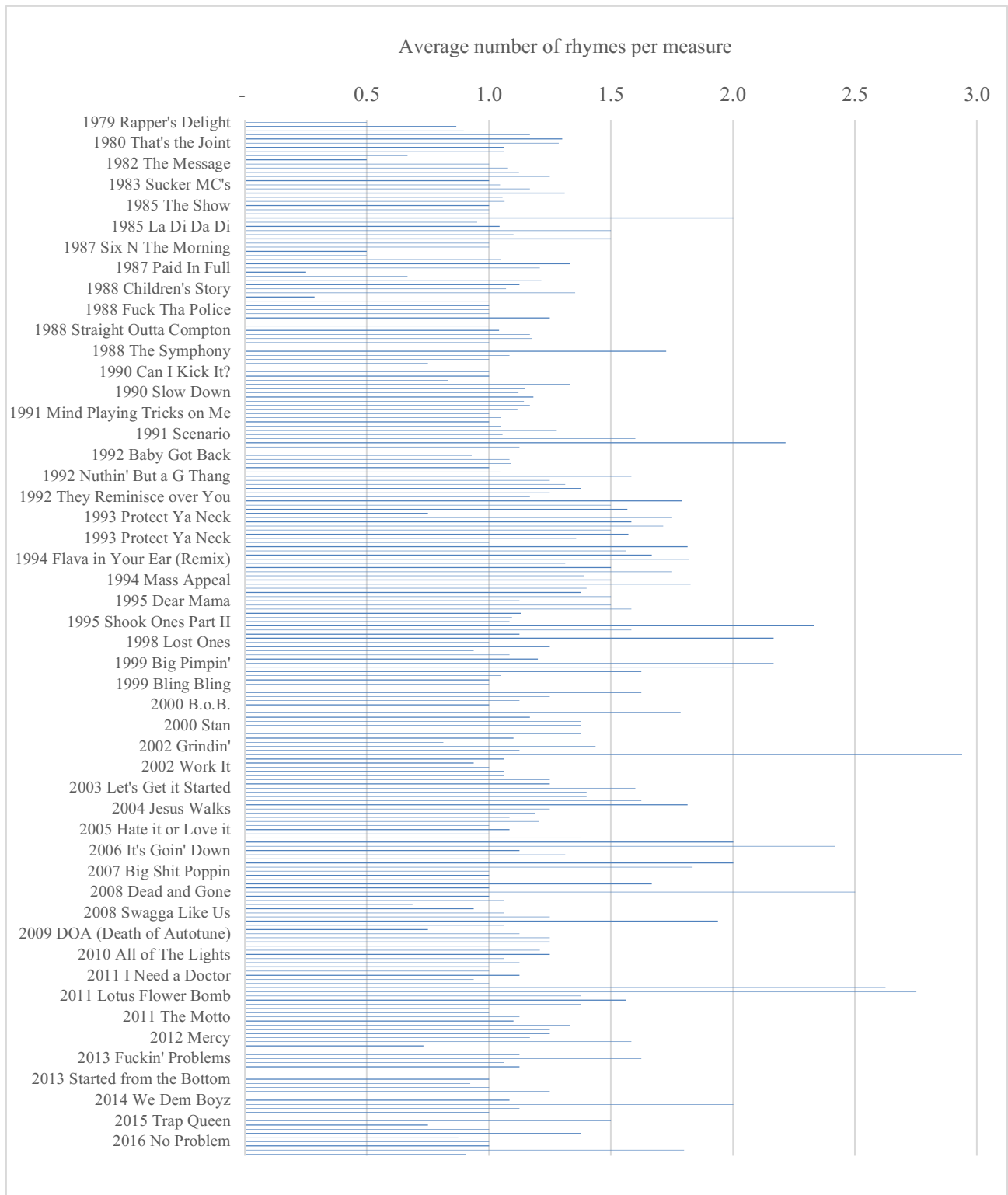


Example 5.17: Mod-4 beat-class scheme used for encoding rhymes, where n =measure number. Each beat of a 4/4 measure is represented by the first digit following the decimal point. All digits thereafter refer to the subdivision of the beat. The example shows how various sub-tactus subdivisions would be encoded.

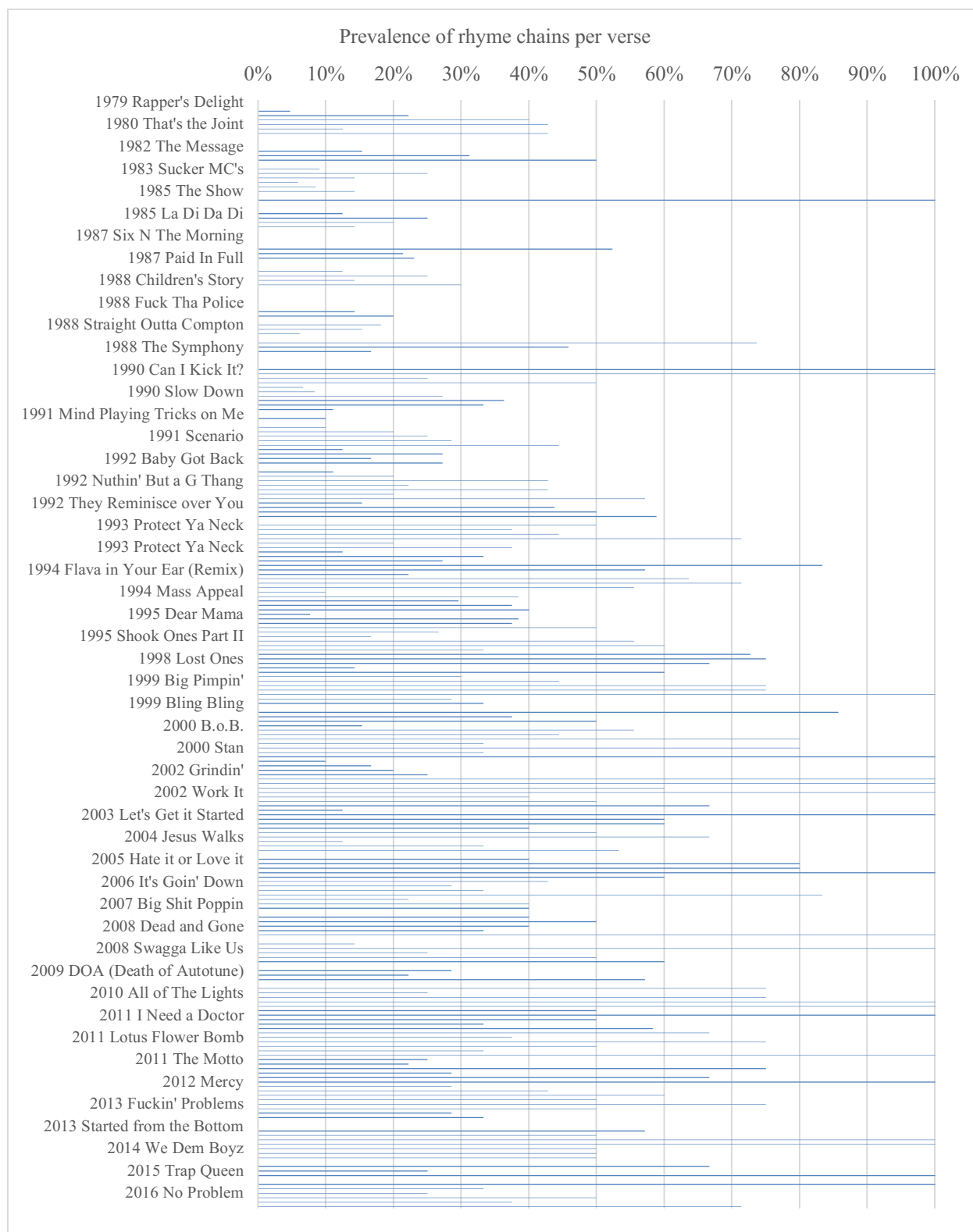
5.7.1 Rhyme Density and Prevalence

In his corpus, Condit-Schultz found that rhyme density increased over time, peaking in the late 1990s and early 2000s—after which an overall increase was still observed, but featuring values lower than those found in the peak period. His method of identifying rhyme, however, involved counting stressed rhyme syllables only, thus differing from my own. Furthermore, Condit-Schultz measured density in rhymes per total syllables, whereas I measured it per total measures. The reason I chose this method was that my annotations did not distinguish between single- and multi-syllable rhymes; multi-syllable rhymes were simply counted as one rhyme. Nevertheless, Example 5.18 suggests somewhat similar behavior in my rhyme density data, increasing around the mid 1990s and returning to a lower average rate by about 2000 (though not without some very high-density outliers such as “Lose Yourself” (Eminem, 2002)). Many of the values in Example 5.18, especially in earlier years, reside near the one-rhyme-per-measure mark, suggesting that rhymes might normally occur roughly one measure apart from each other, presumably around the end of each measure.

While Condit-Schultz measured average length of rhyme chains over time, he did not (to my knowledge) analyze the prevalence of couplets versus chains. To that end, Example 5.19 tracks the usage of chains and couplets in each verse. In the earlier years of the *Rolling Stone* Corpus, couplets were by far the preferred form, representing 100% of total rhymes in many songs before 1989. In fact, the chart divides rather subtly into three sections. In the section covering 1979–1989, couplets not only dominate in prevalence, but are used 100% of the time in a good number of the verses. During 1990–2001, and especially between 1992 and 1998, a greater mixture of chains and couplets occurred, with few verses exclusively using one or the other, but with couplets being more favoured overall. From 1999 onward, the overall balance of chains and couplets is more equal; an increased number of verses use only one or the other.



Example 5.18: Rhyme density (rhymes per measure) for each verse, plotted by release year. Various song titles are shown below the graph to give an approximate idea of year.



Example 5.19: Percent prevalence of rhyme chains and couplets in each verse, plotted by release year. Various song titles are shown below the graph to give an approximate idea of year.

5.7.2 Rhyme Beat-Class Prevalence

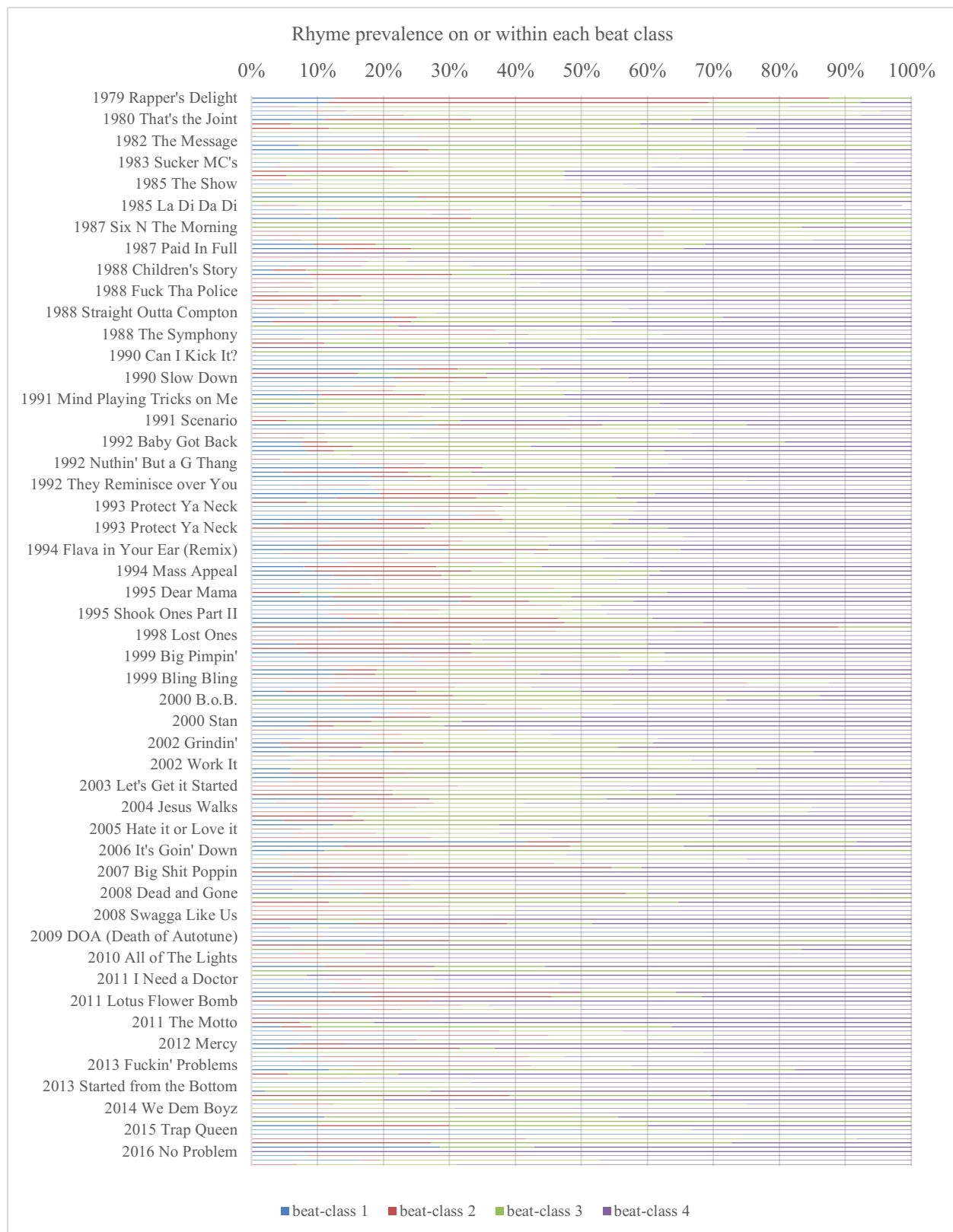
Since the decimal-trailing values in each encoded rhyme represent beat class, the prevalence of this attribute can be determined across the verse subset. Example 5.20 shows the percentage of rhymes in each verse that fall on or within beat-classes 1, 2, 3, and 4, without specifying whether these rhymes occur on the downbeat or any subdivision thereof. These percentages were calculated by summing the total number of rhymes containing decimal values beginning with .1, .2, .3, and .4 and dividing by the total number of rhymes in each verse. Beat-class 4 has a majority percentage for most verses, meaning that in general, rhymes tend to occur within beat-class 4 most often.¹⁵⁰ As with the data in Example 5.19, counting rhyme couplets and chains, distinct beat-class profiles for rhymes emerge according to year in Example 5.20. Among the verses before 1987, rhyme prevalence on beat-class 4 is generally quite low, unlike most of the rest of the subset. Between 1987 and 1996 (with several notable exceptions), beat-class 4 appears to be most prevalent, often followed by beat-class 3, and rounded out by the lower prevalence of beat-classes 1 and 2. After 1996, no discernible trend appears to exist with regards to prevalence; Kid Cudi rhymes exclusively on beat-class 1 in “Day n Nite” (2009), Mannie Fresh rhymes exclusively on beat-class 2 in “Bling Bling” (1999), while numerous other MCs prefer beat-class 3. This observation suggests that after 1996, rhyme placement becomes less of a general performance practice and more of an individual stylistic marker.

The decreased prevalence of rhymes falling on or within beat-class 4 in old-school flow does not fully explain rhyme practice in this period. Example 5.21 charts the prevalence of rhymes for three specific beat-classes: *n.375* (the third sixteenth of beat 3 of a measure) as well as *n.45* (the second eighth of beat 4). Beat class *n.375* is quite prevalent early on in the corpus but is only occasionally used in more recent years. I include *n.375* here because in old-school

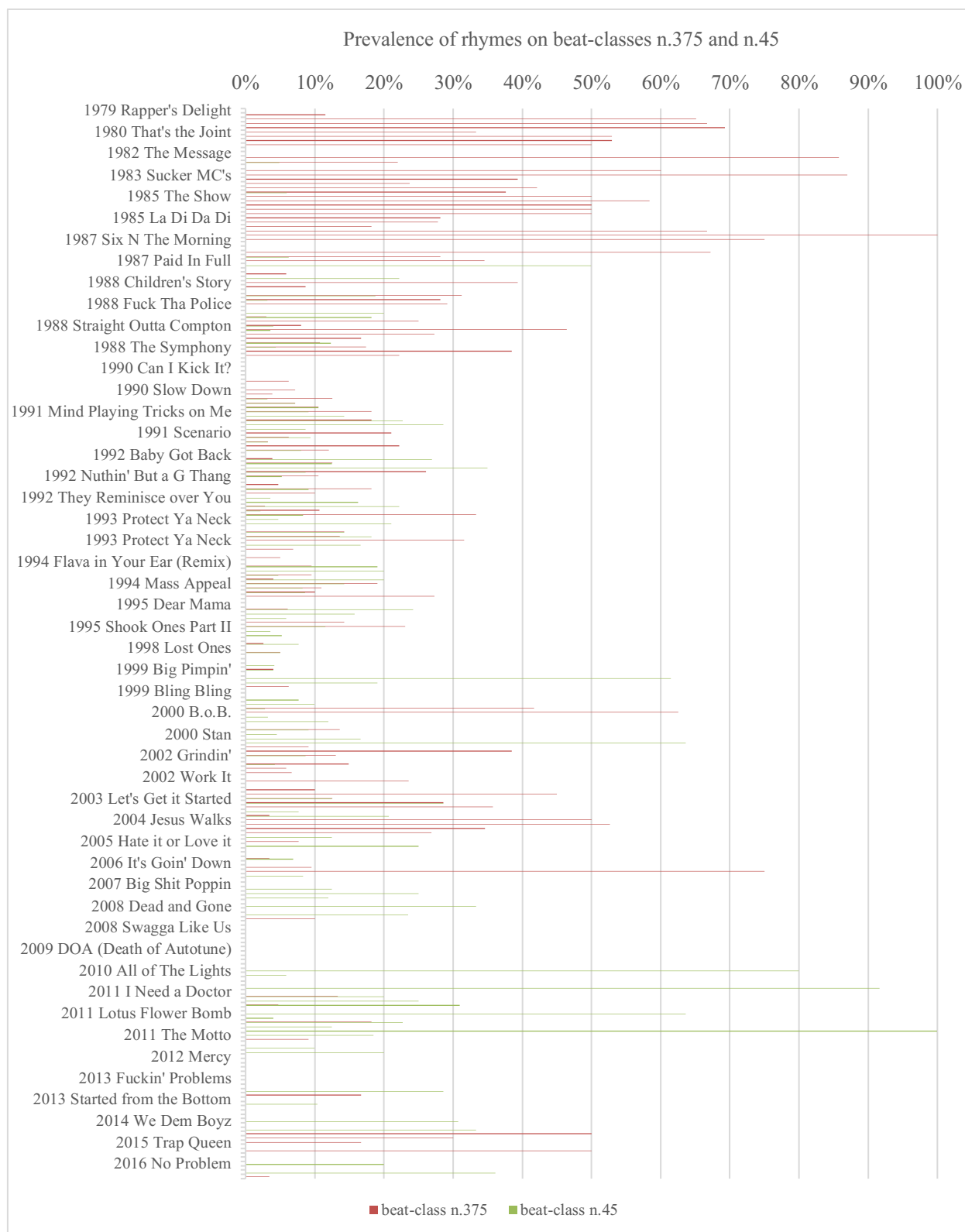
¹⁵⁰ This statistic echoes Condit-Schultz’s findings (2016, 139).

flow, rhymes falling on this beat class essentially function the same way as those falling anywhere in beat-class 4; they are merely anticipating this beat class, which leads to my designation of them as *anticipation rhymes*.¹⁵¹ Anticipation rhymes, therefore, appear to be a hallmark of old-school flow. The converse of anticipation rhymes are *delayed rhymes* that fall later than the fourth beat of the measure. Most often these rhymes fall on beat-class *n.45*, but they do not exhibit any significant time-based patterns like anticipation rhymes. The chart does tell us, however, that while delayed rhymes are rarely used in any great quantity, they start appearing with more frequency around 1987. Anticipation rhymes and delayed rhymes are defined based on the assumption that beat-class *n.4* is the preferred (and thus expected) location for rhymes in hip-hop flow. Indeed, the rhyme data in the subset suggest this is true: out of 5544 total rhymes in the subset, one third of them (1849) occur on beat-class *n.4* (the on-beat of beat 4), far more than for any other metric location.

¹⁵¹ This evocation of anticipation of beat 4 by rhymes on .375 follows Temperley's (1999) view that "in a syncopation, an accent that belongs on a *particular* [italics his] strong beat is shifted or displaced to a weak one" (1999, 20). In this sense, anticipation rhymes "belong" on beat 4 but are shifted one sixteenth note earlier.



Example 5.20: Prevalence of rhymes falling on or within beat classes 1, 2, 3, and 4, plotted by release year.




Example 5.21: Prevalence of rhymes falling on beat classes n.375 and n.45, plotted by release year.

5.7.3 Rhyme Beat-Class Distance

In the context of poetry, *end rhymes* conclude a line of text, while *internal rhymes* divide it, usually at equally spaced intervals. As demonstrated by Example 5.10, internal rhymes (such as “waitin’” and “debatin’”) often appear in pairs, within a line of lyrics containing an end rhyme that is paired or chained with other lines of similar length. I hypothesize that when this infrastructure gets translated from lyrics into flow, end rhymes (either couplets or chains) tend to correspond to measures; that is, they appear at roughly one-measure intervals, or (comparatively rarely) multiples thereof. Conversely, internal rhyme couplets (or chains, if they form part of one), tend to occur *within* measures. The first system in Example 5.10 details a scenario where these hypotheses hold true: the end rhymes occur once per measure, while the internal rhyme couplets occur within each measure. With this hypothesis, I can estimate the number of internal and end rhymes in each verse by taking the absolute value difference of each rhyme couplet. (I could not find an efficient way to perform this operation for chains.) For instance, if a couplet contains encoded rhymes on beat classes 1.4 and 2.4, the difference between the rhymes is 1, or exactly one 4/4 measure. If the couplet contains encoded rhymes at 1.375 and 2.4, the difference would be 1.025: one 4/4 measure plus one sixteenth. Determining the difference between each couplet thus allows me to estimate which couplets are end-rhyme couplets and which are internal-rhyme couplets. In both cases above, the difference values suggest a pair of end rhymes, because the distance between them is (or is near) one measure. In rarer cases, differences of 2 could also suggest end rhymes, especially in songs with faster tempos where the MC spreads a line of lyrics over two measures instead of one.¹⁵²

¹⁵² See “Rapper’s Delight” (Sugar Hill Gang, 1979), “Cars with the Boom” (L’Trimm, 1987) or “Anaconda” (Nicki Minaj, 2014) for examples of rhymes spaced over two measures.

Because the after-decimal encoding of rhymes operates in a mod-4 system, the smallest difference between a pair of rhymes residing in *adjacent* measures can only ever approach 0.6 from above; in the hypothetical situation shown in Example 5.22, the difference is still 0.625, even though the notes are only one sixteenth apart. Conversely, the largest difference value between two rhymes residing in the *same* measure can only ever approach 0.5 from below. For example, if rhymes are one quarter note apart (a relatively typical scenario for internal rhymes), the difference between their encoded values would only be 0.1. This said, differences lower than 0.5 suggest internal rhymes, while differences above 0.6 suggest end rhymes.¹⁵³ By this logic, of the 1412 rhyme couplets identified in the 249 verses, exactly half of them (706) were spaced exactly one measure apart, making this by far the most prevalent distance between rhymes in couplets. A further 172 were one sixteenth note away from a one-measure distance (yielding difference values of 0.975 or 1.025). 279 of the couplets returned differences lower than 0.5, suggesting they are internal-rhyme couplets. Despite the potential for mischaracterizing rhymes via the arithmetical limitations of using a mod-4 encoding system, these numbers broadly suggest that end-rhyme couplets are far more prevalent than internal-rhyme couplets.



n.475 (n+1).1

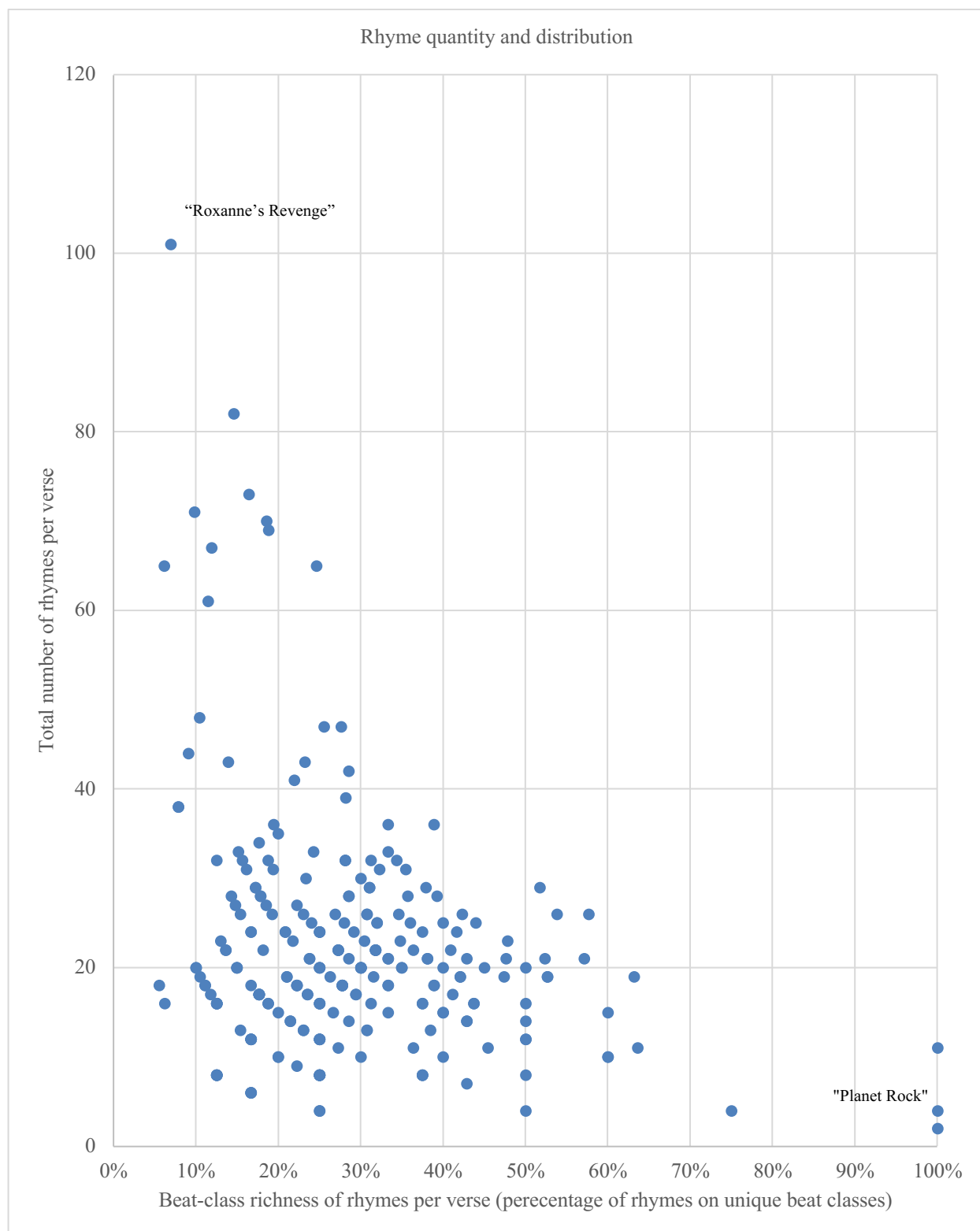
distance = 1.1 - 0.475
= **0.625**

Example 5.22: Beat-class distance between two adjacent attacks in different measures.

¹⁵³ Naturally there are some exceptions to this assumption—for instance, see the discussion of “Hypnotize” (The Notorious B.I.G., 1997) in Chapter 6 (pp. 186–89).

5.7.4 Rhyme Beat-Class Diversity and Entropy

The final measurements I made relating to rhyme concern beat-class diversity, which, as discussed in Chapter 2, can be measured in richness and evenness. Richness is the total number of unique beat-class locations for rhymes in each verse. Evenness is measured by calculating entropy, a measure of diversity that includes both the beat-class richness of rhymes in each verse and the beat-class distribution of each rhyme event. Measuring richness is fairly straightforward: I divided the number of unique beat classes used for rhymes in each verse by the total number of rhymes in that verse. But this operation has the potential to favour verses in which a relatively low number of rhymes are used, such as the first verse of Afrika Bambaataa's "Planet Rock" (1982), which has only four rhymes, each falling on different beat classes. This makes the richness look very high in this case. To mitigate the misleading effect this might have, I plotted beat-class richness of rhymes (as a percentage of total rhymes in the verse) against total number of rhymes in Example 5.23. As might be expected, the verses showing the highest ratio of locations to total rhymes are those with the fewest total rhymes, such as "Planet Rock". At the other end of the data set, as the total number of rhymes increases, beat-class diversity decreases: for example, across 101 rhymes, Roxanne Shanté uses just seven different beat classes in "Roxanne's Revenge" (1984). This comparison is not meant as a value judgement; at a certain point, the available beat classes on which to plausibly place rhymes simply run out.

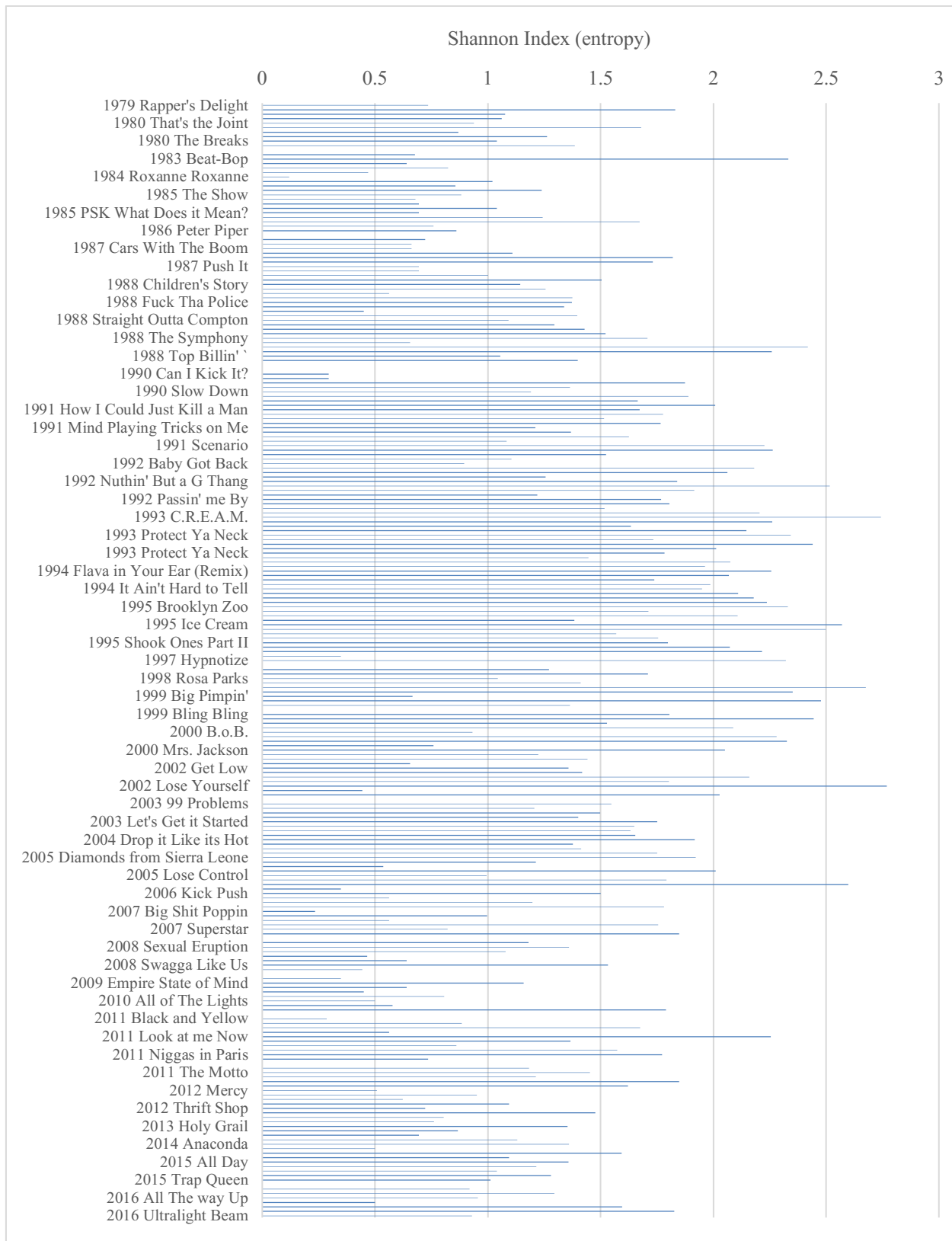


Example 5.23: Rhyme locations per verse. This graph plots total number of rhymes in each verse v. percentage of unique beat-class rhyme locations (richness).

Measuring beat-class entropy comes closer to achieving an accurate measure of diversity, because evenness is now considered in the calculation. I used the Shannon index (also occasionally called Shannon entropy) to calculate entropy, which is represented by the formula:

$$H = - \sum p_i \ln p_i$$

where H = the Shannon index, Σ = the sum of the calculations, p = the proportion of the total verse rhymes on beat-class i , and \ln is the natural logarithm of this proportion. For each verse, the value this function returns represents the diversity of beat-class locations for rhymes in that verse; higher values indicate greater diversity. If an MC used only one beat-class location for all their rhymes across a verse, the Shannon index would be 0. Within the subset, 12 songs returned Shannon indices of 0, while the mean Shannon index for the subset was 1.32. The highest values correspond to verses in “Lose Yourself” (Eminem, 2001) and “C.R.E.A.M.” (Wu-Tang, 1993), at 2.77 and 2.74 respectively. Example 5.24 shows that, over time, Shannon indices appear to be higher on average through the 1990s, and lower on either side of this decade, including a notable dip in values around 2006–2010. This is not surprising given Krims’s earlier assessment of the complexification of flow since 1990. While entropy does not measure complexity *per se*, a higher Shannon index for a verse means that a) more metric locations are used for rhymes, and b) the rhymes are distributed relatively evenly among these locations. These variegated and evenly populated rhyme locations interact with other markers of segmentation such as syntactic breaks, rhythmic patterns and groups, and the overall meter of the song (which is usually dictated by the beat layer). The way these elements coalesce to create complexity in flow is discussed in detail in Chapter 6, and examples from 1990s and early 2000s artists—many with flow styles featuring high Shannon indices—are used to support this discussion.



Example 5.24: Rhyme entropy by verse, plotted by release year.

5.8 Summary

This chapter has outlined the process of data collection across the 472 verses of both corpora and the 249-verse subset of these corpora. Data for syllabic density, metric non-alignment, microtiming, lexical syncopes, and rhyme were collected and analyzed. Throughout the two corpora, I observed a general downward trajectory in song tempo over time with syllabic density remaining generally constant. Microtiming was only measured with respect to its perceived presence in a verse, in one of three types: conversational (imitation of conversational rhythm), lagging (behind the beat), and swung (unequal division of the tactus, or pulse). Microtiming and lexical syncopes do not elicit any patterns over time, but their overall presence is elevated in songs released during the 1990s. The 1990s also see an elevated level of rhyme density (the average number of rhymes per measure in a verse or song), as well as a more balanced mixture of couplets and chains, and a more balanced distribution of rhymes on each of the four-beat classes in a typical 4/4 measure. My analysis of rhyme placement shows how “anticipation rhymes”—those that fall one 16th note before the fourth beat of a measure—were very common in old-school flow styles, but are in general a defining feature of hip-hop flow. My final measurement examined in this chapter concerns rhyme entropy: a combination of the richness and evenness of rhyme distribution across a verse or song. Again, entropy levels were observed to be higher in the 1990s. The goal of the preliminary analysis undertaken here was to lay the groundwork for the following two chapters. The observations and hypotheses outlined here inform how I proceed with developing a theory of flow phrasing, segmentation, and meter (Chapter 6) and how I present the concept of flow profiles (Chapter 7).

6 Segmentation, Phrasing, and Meter

6.1 Overview

This chapter takes observations and hypotheses from the previous chapters and secondary literature and uses them to generate theories of segmentation, phrase, and meter in hip-hop flow. In a sense, this chapter and Chapter 5 represent outcomes of the analytical work presented in Chapter 4. With the corpora data gathered and analyzed, Chapter 5 isolated trends, prevalences, and anomalies. The present chapter takes these prevalences as a starting point, showing how they can be used to propose a series of rules regarding segmentation, and hypothesizing how listeners may segment, or chunk, passages of flow into units that are meaningful for them.

After a brief outline of this chapter's background, I discuss the factors that influence segmentation of the flow layer: rhyme patterning, syntactic structure, lyrical subject matter, breathing patterns, and rapped rhythmic patterns used by MCs. In exploring these aspects of flow, I formulate five *segmentation rules* that I argue are some of the main possible factors influencing our perceptual organization of flow passages.¹⁵⁴ I then discuss how segmentation in flow patterns suggests grouping, but that the internal characteristics of such groups imbue them with a sense of directed motion, a fundamental criterion for calling these groups phrases. In applying the idea of directed motion to a discussion of phrase, I follow Westergaard (1975),

¹⁵⁴ These rules are conceived in the spirit of Lerdahl and Jackendoff's well-formedness and preference rules. Well-formedness rules concern "possible structural descriptions" (1983, 9), while preference rules "designate out of the possible structural descriptions those that correspond to experienced listeners' hearings" (1983, 9). My segmentation and phrasing rules encompass aspects of both these rule types: while I posit these rules as a general model of segmentation and phrasing possibilities for all listeners (akin to well-formedness rules), I also believe that, depending on a listener's level of experience, certain rules among these will be more important for their interpretation of segmentation and phrasing (akin to preference rules). While unfamiliar listeners might rely on one particular parameter (rhyme or syntax, for example), a listener familiar with hip hop and/or educated in music analysis might privilege other parameters, or several of them in tandem. Sears, Caplin, and McAdams (2014) have shown that different listening subjects grouped according to expertise rely on different musical parameters to evaluate the perception of a specific phenomenon: the authors observed that experienced musicians privileged bass-line motion to ascertain cadential closure, while nonmusicians relied more on melody. As a preliminary model, my rules have not been substantiated by perceptual studies, and particular listeners may rely on certain rules and not others in their perceptual segmentation of flow. I do not see this as problematic, as these rules represent a series of possibilities rather than determined outcomes in the segmentation process.

Rothstein (1989), Attas (2011), and Adams (2020). I conclude this section with three short analyses of songs by Roxanne Shanté, Eric B. and Rakim, and The Notorious B.I.G., in order to show how conflicting segmentation markers and ambiguous lyrics (in both syntax and semantics) can obfuscate identification of phrase boundaries.

I establish a working definition of meter as it applies to the beat layer, and proceeds to enumerate the four main ways phrases of flow and metric units of beat interact in hip-hop music. These interactions are drawn from Krebs's (1999) metric theory of consonance and dissonance, though ultimately, I discard that binary in favor of the terms *alignment* and *non-alignment*. Here I analyze songs by Brand Nubian and Missy Elliott to demonstrate how alignments and non-alignments manifest in hip-hop textures. Finally, I present a longer analysis of "Grindin'" (Clipse, 2002), a song that exploits the metric tension between flow and beat more thoroughly than is perhaps typical in hip-hop music. In this analysis I invoke Jackendoff's *multiple parallel analysis processor* model to hypothesize how listeners might perceive one layer or another as the primary agent of metric structure. The work presented in these four sections ultimately seeks to establish a broad theory of meter, phrasing, and form in hip-hop music by dissecting how this genre's main textural layers are organized temporally and examining their interactions in this domain.

Despite using standard score-based musical notation (as done elsewhere in this dissertation), I have chosen to focus especially on the perceptual aspects of flow analysis in this chapter. Even more so than other vernacular music genres, hip-hop music is conceived, recorded, and performed without the use of notated scores (save for unique orthographic strategies used by specific MCs). These creative acts are led by the ear; analytical interrogation into this music should thus also be aurally led. That said, based on the medium of publication used in our discipline, some form of notation must be used to represent the analyzed sound. While other hip-

hop scholarship has avoided using score-based notation (see Krims 2000 and Adams 2008 & 2009a for example), much of that scholarship is chiefly concerned with the flow layer, meaning they can depict it as lyrics in graph form.¹⁵⁵ Since some of my examples here also concern the beat, I require a unified mode of transcription to relate these two layers, which musical notation provides, despite its limitations regarding microtiming and pitch inflection.¹⁵⁶ I raise these issues to highlight that, however problematic any notation scheme might be in representing hip-hop music as heard, they are nonetheless useful as (approximate) representations of what we hear, especially with regards to macro-temporal structures such as meter, grouping, and phrasing.¹⁵⁷

6.1.1 Background

In a brief aside in his article on metric ambiguity in hip-hop music, Mitchell Ohriner observed that “analysts will differ on the weight they give one [segmentation] criteria [*sic*] or another”, and that “these criteria would suggest differing segmentations” (2016, 158). Ohriner is referring to the segmentation of flow, where segmentation refers to the partitioning of this flow into smaller units.¹⁵⁸ Although Ohriner’s observations on segmentation were made in passing,

¹⁵⁵ Krims (2000, 132) and Adams (2008, example 5) use variations of the same graph-based system for notating flow, which, in its vertical orientation (intra-measure content is graphed horizontally, but subsequent measures are placed below preceding ones), readily can show varying rhyme placement, for example. But in using a vertical orientation, this system lacks the capability of integrating the flow and beat layers in an efficient graphical manner.

¹⁵⁶ Even though MCs normally perform and record over beats that are either electronically generated or prerecorded, we might consider the interaction between MC and beat as a form of “participatory discrepancy” (Keil, 1987), whereby microtemporal divergences between flow and beat are jointly characterized by the agencies of MC, beat producer, and listener. Microtiming in hip-hop flow has been analyzed in the most detail by Ohriner (2016 and 2019b), who has developed a grid-style notation system that illustrates how far “ahead” or “behind” the metrically regulated beat each syllable of flow lies. A broader question remains, however; whether microtemporal differences between flow and beat layers suggest parallel, but distinct rhythmic planes, or an extended or augmented version of synchronized rhythmic patterns operating as single metric entity with multiple pulse locations, described by Danielsen (2018) as *beat bin metre*.

¹⁵⁷ These macro-temporal structures are complemented by those in the micro-temporal domain, such as the sub-rhythmic micro-timing used by MCs in ways that mimic speech patterns, swung rhythms, and slight temporal lags with respect to the metric patterning of the beat layer (which itself can be replete with micro-temporal elements).

¹⁵⁸ Hanninen defines segmentation as “a parsing of the musical surface that includes, at least, a set of segments and their supporting criteria” (2012, 11). In my work presented here, the musical surface constitutes the flow layer, and the supporting criteria for its segmentation are outlined accordingly. Hasty defines segmentation as “the division of a musical work into structural components” (1981, 54). While his definition highlights the “structural” aspect of a work—precluding any particular orientation to structure—Hasty’s analytical method foregrounds issues of perception as related to structural segmentation. I follow that approach here, where my main reasoning for exploring segmentation rests on modelling how listeners aurally partition flow.

they highlight a central facet of the rhythmic and metric organization of flow. Segmentation markers suggested by parameters such as rhyme, syntax, rhythmic similarity, breathing, and the metric aspect of the beat layer affect the grouping of flow, and influence our perceptual organization of it into meaningful musical units.

These units can be construed as rhythmic groups, in the sense of the term developed by Cooper and Meyer (1960) and refined by Lerdahl and Jackendoff (1983).¹⁵⁹ I propose a theory of flow phrasing that considers the way linguistic, syntactic, articulative, and corporeal aspects of an MC's flow together delineate these rhythmic groups. The manifold ways that indicators of segmentation, grouping, and phrase converge and diverge in various flow passages can subtly illustrate stylistic variances in the musical practices of different MCs, as well as speak to the general developmental trajectory of flow techniques over time.¹⁶⁰ While the rhythmic surface of the flow layer is segmented and organized into groups and phrases, the beat layer typically expresses a periodic (looped), highly repetitive texture against which these flow phrases operate. Because the beat constitutes the more rhythmically constant textural layer, and because hip-hop songs typically begin with the beat (and not the flow), it generates the primary marker of tempo and meter in hip-hop music. This does not preclude the notion that segmentation within a beat loop is possible: indeed, the boundaries of such a loop often constitute salient segmentation markers. I posit that the main difference in segmenting flow and beat lies in what the segmentations themselves are: in flow they are groups or phrases, while in beat they are metric or hypermetric units (represented here as measures in my transcriptions).

¹⁵⁹ Cooper and Meyer define grouping as “a product of similarity and difference, proximity and separation” (1960, 9). These binaries manifest in my work principally through rhyme similarities (and differences) and rhythmic proximities (and separations). Lerdahl and Jackendoff define grouping structure as “express[ing] a hierarchical segmentation of [a] piece into motives, phrases, and sections” (1983, 8).

¹⁶⁰ Krims (2000) wrote that “it is widely recognized and remarked that rhythmic styles of many commercially successful MCs, since roughly the beginning of the 1990s, have progressively become faster and, as it is often put, more ‘complex’” (49). One possible indicator of this complexity could be the divergence of segmentation markers in flow.

6.2 Segmentation and Grouping Strategies

When we listen to music, we tend to segment it—consciously and unconsciously—into graspable and meaningful units.¹⁶¹ In hip-hop music, a variety of interconnected musical parameters influence how passages of flow can be segmented.¹⁶² Chief among these are rhyme, syntax, narrativity, rhythmic similarity, breathing patterns of MCs, and the metric structure of the beat layer. I have developed five *segmentation rules* (SRs) that I find useful for segmentation analysis of flow. Three of these segmentation rules concern lyrics, and two concern musical aspects of flow. Points of segmentation in flow nearly always involve several musical and/or lyrical parameters. That said, isolating the ways in which these parameters influence segmentation is necessary in order to show how they also routinely contradict one another.

6.2.1 Rhyme

Rhyme occupies a central role in the organization of rap vocals. Rhymes possess the ability to both segment the rhythmic surface of flow and influence listener expectation regarding subsequent segmentations. Bradley writes that rhyme “works by establishing a habit of expectation in listeners’ minds, conditioning them to identify patterns of sound, to connect words the mind instinctively recognizes as related yet distinct. All rhyme relies on the innate human impulse to identify patterns and to anticipate what will follow” (2009, 41). Listeners’ ability to “anticipate what will follow” is generated by what music has just been heard as well as by

¹⁶¹ A substantial amount of research in music cognition has either found or operated under the assumption that listeners use a variety of means to extract phrase, segmentation, or other structural cues from musical stimuli, regardless of the type of music and the listener’s familiarity with it or with music in general. Though an exhaustive summary of this research—or even a detailed one—extends beyond the scope of this chapter, work by Palmer and Krumhansl (1987), Bigand (1993), Deliège et al. (1996), Knösche et al. (2005), and Bailes and Dean (2007) demonstrates that listener identification of phrases and segmentations is of ongoing interest in the music perception and cognition community. Peebles offers a practical reasoning for segmentation based on research in cognitive psychology, writing that “being able to chunk an interval of time together as a single event saves on cognitive resources, and ... improves comprehension” (2011, 73).

¹⁶² Hasty makes a similar declaration regarding twentieth-century art music: “these topics [PC sets, pitch relations, form, and other parameters] are interrelated to such a degree that it is impossible to reach an adequate understanding of one [with respect to segmentation] without dealing to some extent with all the others” (1981, 54).

knowledge of stylistic norms in the hip-hop genre.¹⁶³ Since rhyme is a fundamental and ubiquitous part of flow, most listeners, even inexperienced ones, are—or can quickly become—familiar with rhyme patterning in hip-hop music. Indeed, not only are rhymes abundant in hip-hop music, they typically involve some general features of positioning and recurrence. Most rhymes in this genre can be classified as either *end* rhymes or *internal* rhymes (see below), and their quantities are categorized either as rhyme couplets (two related rhymes) or chains (more than two related rhymes).¹⁶⁴

SR1 (end-rhyme rule): end rhymes generally function as segmentation markers, while internal rhymes generally do not.

In rap lyrics, just as in poetry, end rhymes normally *conclude* lines of lyrics—organizational units that are defined by parameters such as syllable counts, metric length, or poetic meter.¹⁶⁵ Although MCs generally amplify the conclusive effect of end rhymes by following them with caesuras or by aligning them with the ends of metric units in the beat layer, end rhymes may even evoke a concluding effect by themselves, regardless of context. Since end rhymes provide a sense of closure to their lines and are usually equally spaced across a song verse, sequences of end rhymes can generate expectations regarding the location of future, as-yet-unheard rhymes. By contrast, internal rhymes normally *intersect* lines of lyrics, and in so doing are not strong agents of segmentation.¹⁶⁶ In the first verse of “Rock the Bells” (LL Cool J,

¹⁶³ Levinson (1997) defines these concepts as “vivid remembering” and “vivid anticipation”, which form the past and future states in his “quasi hearing” model of musical perception. Levinson’s position that quasi hearing constitutes how we perceive and internalize musical stimuli is predicated on the idea that events in the immediate past and current moment are the main influences on our expectation of what will follow. Levinson as well as Bradley (quoted in the text above), are channeling the ideas of *retention* and *protention*, first proposed by Husserl (See Husserl 1983, 175).

¹⁶⁴ See Bradley (2009, 48–56) and Edwards (2009, 81–110) for more comprehensive taxonomies of rhyme types and placement in hip-hop music.

¹⁶⁵ All analytic references to lines of lyrics (such as annotations of line breaks in the transcriptions) are sourced from Genius.com, the leading website for annotated rap lyrics. Since rap lyrics are not typically printed in liner notes created by the artist, this website remains the most thorough and reliable source for discerning line structure in rap lyrics.

¹⁶⁶ I have yet to locate a convincing example where an internal rhyme serves as the main agent of a segmentation marker. Instead, internal rhymes function as agents of motion within a passage of flow, and contribute to the internal characteristics of flow phrases.

1985), excerpted in Example 6.1, the end rhymes of “long” and “song” emphasize segmentation (which is supported by other musical and lyrical factors as well), while the internal rhymes of “waitin’”, “debatin’”, “starvin’” and “Marvin” are situated within a continuous passage of flow.

♩=100
(0:20)

you've been wait-in' and de-bat-in' for oh so long just starv-in' like Mar-vin for a Cool J song if you

Example 6.1: First verse of “Rock the Bells” (LL Cool J, 1985). Related rhymes are shaded and bordered identically.

SR2 (final rhyme rule): the final rhyme in a couplet or chain creates a stronger segmentation marker than its corresponding non-final rhymes.

Because the leading rhyme of a rhyme couplet requires, by definition, another rhyme for completion, the sense of segmentation this leading rhyme creates is weaker than that brought on by the following or concluding rhyme. The expectation of this following rhyme defers strong segmentation until it occurs. Since they vary in length, rhyme chains present a slightly more complicated situation than couplets. Upon first hearing, listeners have little chance of determining when they might end and are thus left in a state of perceptual limbo: each rhyme (following the lead rhyme) bears the potential to be the final rhyme in the chain, meaning the segmentation associated with it might assume greater significance. But since in a first hearing this cannot be known by listeners until they are aware the chain has been broken, they are deferring their perceptions of segmentation until well after the chain has ceased operating.¹⁶⁷

¹⁶⁷ Naturally, repeated listening and increased familiarity would produce updated perceptions of segmentation. Though he does not specifically discuss segmentation or deferred listener expectation, Kautny (2015, 112) demonstrates how a rhyme chain can slowly morph from one phoneme to another one. His example, from Eminem’s “When I Collapse” (*The Eminem Show*, 2002), demonstrates how the syllable “till” evolves into “Eminem” over four measures of chained rhymes. The implications for segmentation here are that the evolving rhyme chain creates a sense of cohesion (Kautny’s term describing this passage) that may work against other segmentation factors.

6.2.2 Syntax and Subject Matter

SR3 (narrative rule): syntactic breaks and changes in lyrical subject matter can serve as segmentation markers.

This rule concerns lyric syntax and narrative, stating that possible points of segmentation exist wherever a syntactic break or subject matter shift occurs in the lyrics. Adams (2009a, [8]) treats such segmentation as a given, in that one of his stated metrical techniques of flow—correspondence between syntactic units and measures—assumes the importance of grouping flow into units according to syntactic breaks. In his 2020 article on flow phrasing, Adams further stresses the importance of syntactic organization, using Eric B. and Rakim’s 1987 song “Paid in Full” as evidence that syntax usually provides stronger phrase boundaries than rhyme. With this analysis, Adams succeeds in highlighting the importance of syntactic closure, or syntactic breaks, as potential segmentation markers. To these assertions I further propose that a series of syntactic units, even if all of them are complete and independent of one another, can evoke higher-order segmentation boundaries if they are all related to the same train of thought or lyrical topic.

In contrast to Adams’s analysis of “Paid in Full”, demonstrating that syntax could override rhyme in establishing convincing segmentation markers, the opposite effect can also occur. Example 6.2, excerpted from “Children’s Story” (Slick Rick, 1988), illustrates a series of lyric lines punctuated by end-rhyme couplets. Considering the lyrics on their own, the first 5½ measures (which include four rhymes) form a large, single syntactic unit, beginning with “Once upon a time” and concluding with “another little boy”. Here, the end of the syntactic unit occurs at a moment where the rhyme scheme does not suggest a segmentation point: the repeated lyrics of “boy” and “boy” are not accented, nor are they end rhymes. This example illustrates that although the boundaries of syntactic units are likely candidates for segmentation points, other musical factors (rhyme and rhythmic caesuras in this case) can contradict these boundaries.

♩=103
(0:32)

once u - pon a time not long a - go when peo - ple wore pa - ja - mas and lived life slow when

laws were stern and just - ice stood and peo - ple were be - hav - in' like they ought ta good there

lived a lit - tle boy who was mis - led by an - oth - er lit - tle boy and this is what he said

Example 6.2: Opening of “Children’s Story” (Slick Rick, 1988). The vertical line after “boy” indicates where the first strong syntactic break occurs in this passage.

Shown in Example 6.3, Remy Ma’s verse (the second of the song) in “All the Way Up” (Fat Joe and Remy Ma, 2016) demonstrates how continuity of subject matter can contradict rhyme location. She first raps about her time in prison (“Just left the big house”), rhyming “house” with “out”, but by the third and final rhyme in this chain, a repeat of the lyric “out”, she has switched topics and is rapping about her wealth, as shown in material gains. In this excerpt, the higher-order segmentation markers suggested by rhyme and lyrical subject matter are thus incongruent.

♩=89
(1:38)

just left the big house to a big - ger house ain't have a girl - friend but the bitch is out Cha -

nel croc bag shit ain't e - ven out with the gold chains Hi - ma - lay - an Bir - kin co - caine

Example 6.3: Second verse of “All the Way Up” (Fat Joe and Remi Ma, 2016). Remi Ma’s lyrics begin by referencing her time in prison and her sexuality before moving toward depictions of material wealth.

6.2.3 Breathing Patterns

SR4 (breath rule): breath points are often insufficient markers of segmentation when considered on their own, but may align with one or more other segmentation factors.

Breath points refer to the temporal locations where MCs pause, however momentarily, to breathe. Quite often these locations coincide with other musical factors that suggest segmentation, such as rhythmic caesuras. Other factors such as the breath-control abilities of individual MCs and the speed and density with which they rap determine where, and how often, they must breathe. Breathing in recorded performances is not always sufficiently audible to use as a reliable segmentation marker; this is especially the case in our current era of highly sophisticated recording capabilities (which could thus edit out breathing sounds if desired) as well as more frequent use of overdubbing by MCs.¹⁶⁸ A more productive way of analyzing breathing points involves identifying places where they audibly run counter to segmentation markers suggested by other parameters. Transcribed in Example 6.4, the opening of the fourth and final verse of “Passin’ Me By” (The Pharcyde, 1992) demonstrates how breathing patterns can align with some segmentation factors while diverging from others. The MC rapping this verse, Fatlip (b. Derrick Stewart), performs the material without breathing until the breath mark indicated on the second system after the lyric “walk by”, meaning he has essentially rapped straight through a number of other possible segmentation points, including the rhymes on “Ethiopian” and “motion when” and several syntactic breaks, indicated by vertical lines in the example. While this example demonstrates the importance of considering breath points in segmentation analysis, their usefulness is constrained by their sometimes limited audibility.

¹⁶⁸ It is for these reasons that I avoid using breath as a primary marker of phrase.

♩=87
(3:08)

now there she goes a - gain the dop - est E - thi - o - pi - an and now the world a -

round me be - gins mov - ing in slow mo - tion when - e - ver she hap - pens to

walk by why does the ap - ple of my eye o - ver - look and

dis - re - gard my feel - ings no mat - ter how much I try wait

Example 6.4: Fourth verse of “Passin’ Me By” (The Pharcyde, 1992). Breath points are indicated by apostrophes.

6.2.4 Rhythmic Patterns

SR5 (rhythm rule): *rhythmic similarities and differences in the flow layer can suggest segmentation markers independently of lyrical content.*

To the extent that the delivery of rap lyrics takes stylistic cues from patterns of speech, vocal rhythms that comprise flow can (independently of lyric syntax and rhyme) inherently suggest grouping patterns and segmentation points. Three main aspects of flow rhythm exemplify this suggestive power: caesuras (elongated syllables or rests following a lyric), rhythmic similarity, and group length similarity. These aspects often work together with other segmentation factors. Caesuras—breaks in the constant flow of rhythm—often suggest a natural segmentation point and are thus ideal locations for the closure of a syntactic unit, the placement of an end rhyme, and a moment for the MC to breathe.¹⁶⁹ Rhythmic and group-length similarities

¹⁶⁹ Indeed, Lerdahl and Jackendoff’s second Grouping Preference Rule (1983, 45), which suggests that greater distance between events more strongly suggests a group boundary (what I call a segmentation marker), parallels my assertion that rhythmic caesuras form natural segmentation markers.

can also serve as powerful factors in determining segmentation. Just as an end-rhyme couplet suggests a relationship between the two lines of lyrics that the couplet punctuates, similar rhythmic content can suggest a relationship between lines of lyrics set to related rhythms. Example 6.5 documents part of the second verse of “Alright” (Kendrick Lamar, 2015), where a string of rhythmic groups identical in both content and length, together with consistent rhyme placement, creates a predictable and unambiguous grouping and segmentation structure of this passage, one where breath points are built in via the rests.

♩=110
(1:03)

tell the world I know it's too late boys and girls I think I've gone cray

drown in - side my vice - s all day won't you please be - lieve when I say

Example 6.5: Second verse of “Alright” (Kendrick Lamar, 2015). Each measure contains a distinct rhythmic group, identical to all the others in this passage.

6.3 Segmentation, Grouping, and Phrase

These five segmentation rules aim to identify logical segmentation markers according to the parameters of rhyme, syntax, rhythm, breathing, and lyrical subject matter. Passages of flow are often punctuated with segmentation markers from multiple parameters: take, for example, LL Cool J’s rhythmic caesuras paired with end rhymes in Example 6.1. Considering the rhythmic domain alone, the caesuras he uses demarcate his flow into groups. Cooper and Meyer’s conception of grouping as “a product of similarity and difference, proximity and separation” (1960, 9) leads to their conclusion that both difference and distance between sounds, or groups of sounds, help establish their distinction from one another. These are useful concepts to apply to the flow layer, which is often quite rhythmically varied or replete with segmentation markers

such as caesuras. If grouping concerns the rhythmic surface of the flow layer, then phrasing accommodates both the rhythmic and textual aspects of this layer. Put another way, grouping concerns rhythmic activity alone, while phrase also engages with syntax, rhyme, accent, pitch, and microtiming. Taken together, these parameters encourage a definition of flow phrase that encompasses both boundary-based and internal characteristics.

Despite growing attention toward, and proliferation of published scholarship devoted to, musical aspects of hip-hop flow, the notions of phrase and phrasing have received very little attention. Most often, the term is either used in passing or avoided altogether. Krims (2000), Edwards (2009), and Connor (2018) do not mention the term much at all; Bradley (2009) and Ohriner (2016) use the term in relation to breath control, but spend little time discussing their decision to define phrase in this way; Condit-Schultz mentions it frequently but does not qualify its meaning in detail, save for noting that his approach for annotating phrases is “very simplistic, doing little justice to the complexity of phrasing in rap flow” (2016, 140). He does, however, mention that conceptualizations of flow phrasing must consider multiple musical parameters, and not be equated with, for example, structural patterns of poetry alone (although the influence of poetry undoubtedly does play some role in how flow has developed and evolved). Adams’s work (2020) on phrasing in hip-hop music represents the most substantial effort thus far on the topic. He declines, however, to offer a comprehensive definition of the term *phrase*, instead writing that “the perception of phrase relies on several interrelated parameters and is dependent both on which of those parameters is most active at any given point and on how that parameter communicates phrasal qualities to the listener” (2020, [1]). Adams’s approach is appealing in that it stipulates that whatever phrase *is*, it is so as a perception to the listener. Furthermore, its existence relies on the communication of “phrasal qualities”. I understand phrasal qualities to concern both boundary-based and internal characteristics. The boundary-based characteristics

have been described in the preceding discussion of segmentation markers and rhythmic groups, and lead to the first phrase rule.

PR1 (phrase boundary rule): flow-phrase boundaries conform to one or more segmentation points as suggested by rhyme, syntax, breath, or grouping structures.

That phrases are defined by boundaries (however salient and obvious to the analyst or listener) seems sufficiently commonplace to warrant no further discussion. But the internal characteristics of a phrase—those which are effectuated by rhyming and syntactic patterns, among other parameters—are essentially what distinguish it from a group. While Agawu’s *beginning-middle-end paradigm* (1991) is formulated to address larger musical units (such as complete works), Caplin (1998) and Schmalfeldt (2019) show that this paradigm is also relevant to phrase analysis.¹⁷⁰ Agawu writes that “there are specific attitudes to a work’s beginning, middle, and ending” (51).¹⁷¹ Applying this idea to phrase construction, we would understand a phrase as containing elements of beginning, middle, and end. Recasting those terms to represent phrasal motion, I propose the terms initiation, continuation, and conclusion. A phrase thus contains these three components in temporal order.

But what constitutes the motion of hip-hop flow phrases? For Adams, this idea chiefly concerns directionality in the tonal motion of the beat layer. In this way he follows Rothstein, who wrote that “if there is no tonal motion, there is no phrase” (1989, 5). While tonal motion is at best weakly expressed in hip-hop beats, and hardly ever expressed in flow, the idea of motion

¹⁷⁰ The beginning-middle-end trichotomy resembles Caplin’s (1998) categorization of initiating, medial, and concluding functions (a more specific version of the beginning-middle-end paradigm) found in his various theme types. Schmalfeldt highlights an excerpt of Horlacher’s (2011, 35–39) analysis of Stravinsky’s *Les Noces* (1922) wherein the latter scholar focuses on the phrase’s internal characteristics—illustrating how beginnings, middles, and ends become evident through repeated pitch sequences. This approach goes beyond defining a phrase via its mensural length alone, or by its tonal motion (which is at any rate problematic considering Stravinsky’s often post-tonal compositional language).

¹⁷¹ Agawu’s paradigm, as well as Rothstein’s (1989) conception of phrase, are predicated on harmony-privileging music from the Classical and Romantic eras. I reference these theories here to highlight their commonalities with mine: that phrase, regardless of the musical parameters that define it, possesses motional characteristics that relate to the beginning, middle, and end of its structure.

that Rothstein describes can be mapped onto non-tonal musical contexts. Attas does so by adapting the idea of motion to include other musical parameters, writing that “phrase in popular music [is] a musical unit with goal-directed motion towards a clear conclusion, created through the manipulation of text, harmony, rhythm, and melodic contour” (2011, [6]). Besides expanding the agency of motion to other parameters, Attas also includes the term “conclusion” in her definition. In focusing on tonal qualities, Rothstein’s conception of phrase has a built-in conclusion: a cadence. But in order to expand the phrase model beyond tonal characteristics, we must be explicit on what constitutes a conclusion.

The notion of conclusiveness can be expressed by a number of parameters in just about any musical context—hip hop included—but the most compelling aspect of concluding function for the present discussion is how it is generated by means of realized expectations of listeners. For further insight on the phenomenology of phrasing, Westergaard’s definition of the term is useful here. He states that “A phrase establishes one set of pitches and then moves to a second set of pitches in such a way that a) we expect those pitches b) we have some sense of when they are about to occur, and c) once they have occurred, we know the phrase has gotten where it’s going and that no further pitches are needed to complete that phrase” (1975, 311). If we divorce the notion of pitch from Westergaard’s description and generalize it, we arrive at the following rule, which also builds on the definitions supplied by Rothstein and Attas.

PR2 (phrase motion rule): the internal characteristics of a flow phrase imbue it with a sense of motion, generated by the creation and realization (or denial) of listener expectations in the domains of rhythm, harmony, lyrical syntax, and meter.

Just how this rule is manifested in each individual phrase can greatly vary, depending largely on what initiating and concluding attributes are present. Initiating attributes might include new subject matter, the opening of a syntactic unit, the concurrence of flow with the beginning of a metric or hypermetric unit in the beat layer, and others. Concluding attributes could include an

end rhyme, a syntactic break, a rhythmic caesura, a breath, or the like. It becomes problematic to identify the principal initiating or concluding agent in a phrase, however, because these can be conflated with segmentation markers. For instance: in “Rock the Bells” (Example 6.1, p. 170), do LL Cool J’s phrases invoke conclusion by virtue of completed syntactic units, or by the segmentation-invoking caesuras? In the three short analyses that follow, I first assess segmentation markers and phrase boundaries, before evaluating the internal motion of the phrase. Consideration of these attributes is given with regard to aural salience: clearly defined, audible segmentation points are required for phrase boundaries, and some sort of generation and realization or denial of listener expectation is required within the phrase. As I will demonstrate, different musical parameters can work with or against one another in these domains of phrase.

6.3.1 “Roxanne’s Revenge” (Roxanne Shanté, 1984/85)¹⁷²

14-year-old Roxanne Shanté (b. Lolita Shanté Gooden) recorded “Roxanne’s Revenge” (1984) as a diss-response to the song “Roxanne Roxanne” (UTFO, 1984).¹⁷³ The song features one long verse rapped by Shanté, in which she calls out each of the three MCs in UTFO—who each rapped a verse of “Roxanne Roxanne”—in turn. Example 6.6 excerpts part of Shanté’s response to UTFO member The Educated Rapper. The annotation system used here includes shaded boxes for rhymes, right-angle hooks for line breaks, vertical lines for syntactic breaks, commas for breath points, and brackets for metric units of the beat layer. The rhymes—both couplets and chains—follow a consistent pattern throughout the excerpt, usually falling on beat classes n.375 or n.4, the fourth sixteenth of beat 3 and the downbeat of beat 4, respectively.¹⁷⁴

¹⁷² “Roxanne’s Revenge” was recorded and released twice: the original “street” version was recorded and released in 1984, but the timestamps and transcription used here reference the re-recorded version from 1985.

¹⁷³ “Roxanne Roxanne” recounts the story of a fictitious girl named Roxanne, who snubs the romantic advances of all three members of UTFO. The lyrics position Roxanne as cold, rude, and ignorant of the MCs’ charm and sexual prowess. As a response, “Roxanne’s Revenge” depicts the UTFO members as rude and ignorant, unworthy of Roxanne’s attention. The song’s single lengthy verse features Shanté constantly dissing these three MCs.

¹⁷⁴ I adapt the idea of beat class from Roeder (2003), where he accords a beat-class number to each eighth note in a measure. In my system, *n* represents measure number (if required), the first digit following the decimal represents

Each end rhyme that falls on these beat classes also serves as a line break. Syntactic breaks occur concurrently with many of these end rhymes, often the final rhyme of a couplet. Shanté's breathing patterns, however, depart from the segmentation markers suggested by the other parameters. It seems that she occasionally breathes in concurrence with these segmentation markers, and occasionally simply when she needs to, resulting in breath points occurring mid-measure, such as after the lyric "Mother's".

These nonsyntactic breath points illuminate the potential problem with identifying phrases based on a single parameter: if only breathing were considered for phrase structure, what would we make of the other, more consistent (and more salient) boundary markers of rhyme, syntax, and line, not to mention their congruence with the beat's two-measure loop? The identification and labelling of phrases in this passage would have to account for this misalignment of breath points with other segmentation markers. One way of doing so involves considering the internal aspects described above. Are the mid-phrase breath points strong enough markers to contradict, for instance, the clear sense of conclusion created by the completion of each syntactic unit, or the expectation and realization generated by predictable rhyme patterns? My own inclination is that they are not, but ultimately, I hope to have shown here how both boundary and internal characteristics could be considered in a phrasal analysis of this passage.

the quarter-note beat, and any trailing digits represent the percent traversal of that beat. Therefore, n.4 represents the downbeat of the fourth beat, while n.375 represents fourth sixteenth (.075) of the third beat of a measure (n.3).

♩=99
(1:13)

Flow

"yeah you know your Mo-ther's ' a - name is Ma - ry and from what I heard your fa-ther is a fai - ry' but a

Beat

Flow

ev - ery time I see him he's say - in' some-thing new but let me ex - plain to him what he should do he should

Beat

Flow

be like me ' a fly M - C don't ne - ver have to bite we're al - ways right ' I have the

Beat

Flow

fresh - est rhymes that I do re - cite ' and af - ter that and you know its true well let me

Beat

The image displays four staves of music notation for the song "Roxanne's Revenge". Each staff consists of a 'Flow' track (top) and a 'Beat' track (bottom). The 'Flow' track contains the lyrics with various annotations: slurs indicating phrasal readings, right-angle hooks for line breaks, vertical lines for syntactic breaks, and commas for breath points. Rhyming words are highlighted with colored boxes: 'Ma - ry' and 'fai - ry' in blue, 'new' and 'do' in yellow, 'me' and 'C' in purple, 'bite' and 'right' in green, and 'cite' and 'true' in red. The 'Beat' track shows a drum pattern with brackets marking metric units. A tempo marking of ♩=99 and a time signature of (1:13) are at the top left.

Example 6.6: “Roxanne’s Revenge” (Roxanne Shanté, 1984). Rhymes are shaded, right-angle hooks indicate line breaks (annotated according to Genius.com’s line structure of these lyrics), vertical lines denote syntactic breaks, commas indicate breath points, and brackets mark metric units of the beat. The beat is represented here by a transcription of the drum pattern. Slurs indicate a possible phrasal reading of this passage.

6.3.2 “Paid in Full” (Eric B. and Rakim, 1987)

New York-based MC Rakim (b. William Michael Griffin Jr.) cultivated a free-flowing and boundary-defying approach to rhythm paired with relaxed baritone vocal delivery that set his

flow apart from that of other Golden-Age MCs, many of whom were rapping in more strictly segmented and rigidly organized flow patterns of the type seen above in “Roxanne’s Revenge”.¹⁷⁵ Part of Rakim’s verse in “Paid in Full” (Eric B. and Rakim, 1987) is transcribed and annotated in Example 6.7. Two signature elements of Rakim’s style include the varied metric placement of end rhymes and a variance in length of syntactic units.¹⁷⁶ He raps a long syntactic unit beginning with the lyrics “so I” and ending with “favorite dish”. This long unit gives the listener the impression that we are transported inside Rakim’s ongoing thought process or stream of consciousness: he’s walking down the street, deeply lost in his thoughts of what he misses for lack of money.¹⁷⁷

My phrasal reading of this passage (shown with slurs in the example) relies on several different segmentation markers. I hear a phrase break after the lyric “this”, due to comparatively long caesura following this lyric. I then hear a three-measure phrase, concluding with “fish”. The absence of a syntactic break after the line-ending rhyme “miss” defers conclusion; Rakim instead launches into describing what he misses. But rather than interpreting the lyric “plate of” as the end of the phrase, I hear phrasal closure on the longer duration of “fish”. Indeed, the syntactic unit continues with the lyrics “which is my favorite dish”, but these almost function as an afterthought, as if included with the express purposes of closing the rhyme couplet initiated by “fish”.

¹⁷⁵ The Golden Age of hip-hop music is commonly defined as the period roughly between 1986 and 1993. Complex.com (Ahmed et al., 2019) calls Rakim the greatest rapper of 1987 in their list of “The Greatest Rapper Alive Each Year”. This comparison is not meant as a value judgement. A prominent reason Rakim has received multiple “best of” accolades is that he innovated far beyond what can be considered as the standard flow practice of 1987. That said, his free-flowing and boundary-defying flow practice was not adopted by all other MCs of the time, and while the full scope of his influence on the genre is impossible to precisely ascertain, hallmarks of old-school flow styles, alongside Rakim’s innovations, are all present in contemporary flow practice.

¹⁷⁶ Rakim occasionally raps end rhymes on the first beat of measures, a rare occurrence in hip-hop flow in general, and certainly rare for 1987. Rakim’s rhymes fall on or right after the first beat 14% of the time in this verse, higher than any verse in the other 17 songs from 1987 and 1988 included in the corpora.

¹⁷⁷ This imagery contrasts sharply with the ensuing lyrics, where a tighter organization of syntax, line, and rhyme combine with a more active narrative image, wherein Rakim is finally doing something about his lack of money.

♩=99
(1:23)

Flow

so I walk up the street whis - tl - ing **this**

Beat

Flow

feel - ing out of place cause man — do I **miss** a pen and a **pa - per** a ste - re - o a **tape** of

Beat

Flow

me and E - ric B and a nice — big **plate of** **fish** which is my fa - vor - ite **fish** but

Beat

Example 6.7: “Paid in Full” (Eric B. and Rakim, 1987). The beat is represented by a transcription of the bass line, other instruments remain untranscribed for brevity.

In Example 6.8, the end rhymes “righteous” and “might just” belong to the same couplet, but to different syntactic units: “might just” is in the middle of an ongoing syntactic unit that concludes with “nine to five”. The lyric “five” subsequently begins a rhyme chain that continues in the ensuing syntactic unit. We thus encounter instances of line breaks, syntactic breaks, and end rhymes diverging from one another. Furthermore, these markers do not always line up with the four-measure hypermeter established by the beat layer: the syntactic unit containing the lyric “might just” (which functions both as a line break and an end rhyme) traverses the hypermetric boundary shown below the flow layer. Here Rakim has employed a poetic technique known as enjambment: the misalignment of metric and syntactic boundaries. Here again I interpret a multi-measure phrase that straddles a hypermetric boundary; to my ears, the cohesion of the syntactic unit “I feel great, so maybe I might just search for a nine to five” overrides the sense of rhyme

closure provided by the couplet-ending lyrics “might just”.

♩=99
(1:12)

Flow

now I learned to earn cause I'm right - eous | I feel great so may - be I might just

Beat

Flow

search for a nine to five | if I strive then may - be I'll stay a - live so I

Beat

Example 6.8: “Paid in Full” (Eric B. and Rakim, 1987).

Finally, the passage transcribed in Example 6.9 shows how divergence occurs between segmentation markers created by rhymes and elongated rhythmic values, and demonstrates how listener expectations can be created and denied through such divergences. An internal-rhyme couplet on the lyrics “roll up” and “hold up” is followed by an end-rhyme couplet on “funny” and “money”. The lyrics “roll up” and “hold up” are punctuated with longer durations on both iterations of “up”—these eighth notes help distinguish the internal rhyme from the surrounding flow, accenting the rhymes by virtue of elongation.

♩=99
(1:09)

roll up this is a hold up ain't no-thing fun-ny stop smil-ing be still don't no-thing move but the mo-ney | but

Example 6.9: “Paid in Full” (Eric B. and Rakim, 1987).

By contrast, the lyric “funny”, which as the listener eventually learns forms the leading

rhyme in the couplet “funny / money”, does not receive an elongated rhythmic value. Instead, the line continues to the lyric “smiling”, on which the ultimate syllable “ing” receives the same elongated treatment used for the “up” lyrics. This generates the expectation that Rakim will perform a similar internal rhyme couplet following “funny”. He instead continues onward to “money” which completes the couplet as an end rhyme instead. Since “funny” was not emphasized through elongated duration and “smiling” was, the final arrival at “money”, though a completion of the rhyme couplet, does not clearly realize this listener expectation. By virtue of rhythmic similarities, “smiling” was set up to sound as though it would form an internal rhyme in the same way that “up” and “up” did, but no such rhyme couplet occurs. Concurrently, the lyric “funny” was placed in the middle of a rhythmic group with little indication that it might eventually form an end-rhyme couplet, as it does with “money”.

These excerpts from “Paid in Full” both affirm and challenge the idea that a phrase might contain generated and realized expectations. In the initial part of this verse (not shown), the syntax, rhythmic groups, and rhyme patterns all generate an expectation of closure that is realized when the segmentation markers suggested by these parameters converge at two-measure intervals. Listener expectation is generated through the leading rhyme lyrics of “plan” and “spent”, themselves marked as important via their long durations, and realized when the closing rhyme lyrics of “hand” and “lint” occur. Syntactically, the listener learns that Rakim is “thinking of a master plan”, and they learn why when he informs them that he is broke. Since expectation is created and realized in these ways, and no divergence of segmentation markers occurs here, two-measure phrases (thus bisecting the four-measure beat loop) seem to me most appropriate. But when expectations are challenged either by disagreements between rhythmic groupings and rhyme structure, or by boundary-crossing syntactic units, a reading of phrase becomes more complicated, and no doubt much more idiosyncratic, varying from listener to listener according

to what they perceive to be the most salient internal and boundary characteristics of the passage.

6.3.3 “Hypnotize” (The Notorious B.I.G., 1997)

Throughout his short but storied career, The Notorious B.I.G. (b. Christopher Wallace, also known as “Biggie”) was active in an era of hip-hop music that witnessed some of the most varied and complex approaches to rhyme, phrasing, and syntactic organization hitherto seen. In the first verse of his 1997 single “Hypnotize”, released one week before his death, Biggie uses rhyme and syntax in such a detailed and idiosyncratic way that we must reconsider these parameters’ roles in forming groupings and phrases. Biggie’s rate of 2.17 rhymes per measure here is lower than only six other verses in the 249-verse subset of the corpora. Normally, rhymes occur once every measure or so, or once every two measures, as seen in “Roxanne’s Revenge” and “Paid in Full”. A rhyme density above two rhymes per measure might indicate the presence of internal rhymes (instead of end rhymes), which as detailed in Chapter 5 are understood to generally occur as a couplet within a measure rather than in successive measures. Though densely woven into his flow at a rate emblematic of this, Biggie’s rhymes do not function as internal rhymes. Indeed, the lines of lyrics in this verse are rarely long enough to contain internal rhymes. It may thus be advisable to discard the internal/end rhyme paradigm in approaching a verse such as this one, instead assessing each rhyme individually for its boundary-defining—or boundary-defying— characteristics.

Example 6.10 documents the opening of the first verse of “Hypnotize”, illustrating Biggie’s habits of blurring the distinction between end and internal rhymes, varying the beat-class location of his end rhymes, and placing end rhymes in the middle of syntactic units. Occasionally, one rhyme of a couplet functions as a line-ending rhyme where the other falls in the middle of a different line. This occurs at the outset, where the rhyme lyric “average” ends a line while its partner “cabbage” occurs in the middle of the next line (ending with “instinct”).

♩=94
(0:05)

Flow

hah sick - er than your av - erage | Pop - pa twist cab - bage off in - stinct | nig - gas don't think shit

Beat

Flow

stink | pink ga - tors my De - troit play - ers | Timbs for my hoo - li - gans in Brook - lyn | dead

Beat

Example 6.10: First verse of “Hypnotize” (The Notorious B.I.G., 1997). The beat is represented by a transcription of the bass line; other instruments are left out for brevity. The various slurrings indicate possible phrasal interpretations of the passage.

Where he does use line-ending rhymes consistently, Biggie does not always place them on beat classes one might expect. This phenomenon is evident where the lyric “instinct” occurs on beat-classes 2.2 and 2.25, while its related rhyme “shit stink”, rather than occurring on 2.4 and 2.45, is delayed, occurring on 2.45 and 3.1. The effect of this displacement into the next measure, coupled with the lack of rhythmic caesura separating “stink” from “pink” (the first lyric in the subsequent line) is compounded by the fact that “stink” and “pink” form a mini rhyme couplet themselves. Even when rhymes do fall on predictable beat classes, their position in the middle of syntactic units or lines diminishes their potency as end rhymes. Such a situation occurs in Example 6.11, where the rhymes “Jesus piece” and “with my peeps” are complements to “speak my piece” and “keep my peace” from the preceding measure. As the transcription shows, a line break follows “keep my peace”, and the four rhymes form a chain, but a new syntactic unit begins with “with my peeps”. These lyrics thus conclude a rhyme chain and line, but bridge the

narrative into the next line and rhyme unit: “with my peeps packin’, askin’ ‘who want it?’”.

♩=94
(0:35)

Flow

ev-ery M C ea-si-ly bu-si-ly | re-cen-tly nig-gas front-in' ain't say-in noth-in' so I

Beat

Flow

— just speak my piece keep my peace Cu-bans with the Je-sus piece with my peeps

Beat

Example 6.11: First verse of “Hypnotize” (The Notorious B.I.G., 1997). The frequency of shaded lyrics is testament to Biggie’s dense rhyming practice in this song. I hear the lyrics “Jesus piece” and “with my peeps” as rhymes in parallel with “speak my piece” and “keep my peace” even though they constitute an extreme example of a slant rhyme.

Rhyme complexity aside, Biggie’s flexible approach to syntax further complicates segmentation and phrase identification. Syntactic units are hardly ever completed, and without a close, informed reading of the lyrics, they are often difficult to concretely identify.¹⁷⁸ The opening four measures of the verse in Example 6.10 demonstrate this. Across these measures, Biggie raps five lines of lyrics that form four syntactic units of unequal length. Several of these units require extra words to complete them: while the lyrics “sicker than your average” do not form a syntactic unit in and of themselves, are the part of the ensuing lyrics? If not, and we interpret “Poppa twist cabbage off instinct” as its own syntactic unit, then the opening lyrics might constitute some sort of incomplete unit; indeed, the meaning here involves one of a number of possible concluding lyrics: Biggie could be stating that he is “sicker” than the average

¹⁷⁸ Genius.com, with its crowdsourced annotations to lyrics, helps greatly in this regard, though it must be scrutinized because of its open-source format.

“rapper”, “player”, or whomever.¹⁷⁹ An alternate interpretation could place the lyric “Poppa” within this opening syntactic unit—“Sicker than your average Poppa”.¹⁸⁰ The lyrics “sicker than your average” are thus complete in their open-endedness. The syntactic unit in the third and fourth measures of Example 6.10 requires clarification as well: “pink gators” and “timbs” refer to different styles of footwear, serving as a metaphor for Biggie’s ability to switch up his style (musical or otherwise) as the situation warrants; this is where the locales of Detroit and Brooklyn figure in to his lyrics. We could hypothesize that the completed unit would read “pink gators [for] my Detroit players, [and] Timbs for my hooligans in Brooklyn”. Understanding what the lyrics might mean, and which ones are potentially missing, thus helps us contemplate where their syntactic boundaries lie.

Clearly defined, audible segmentation markers aid in the identification of phrase boundaries, and the clear patterning of expectation and conclusion defines the internal content of these phrases. Yet as the foregoing analyses have shown, even simple divergences between segmentation markers can complicate how phrases are identified both in their boundaries and internal qualities. My observations have merely scratched the surface of the interplay between syntax, rhyme, and other parameters in these verses, and hardly anything has been said about rhythmic caesuras, groupings, or the metric structure imposed by the beat layer. What these analyses do show, however, is that in many cases, using a single parameter to define phrase in flow—breath, syntax, or even tonal motion—is often insufficient in describing the musical and lyrical factors at play in the flow layer.

6.4 Interaction Between Flow and Beat

In modern music theory, meter has traditionally been used to model the hierarchical,

¹⁷⁹ The annotations on [genius.com](https://www.genius.com) do not reveal any plausible completion to this sentence.

¹⁸⁰ The lyrics are interpreted as such by Kennedy (2012).

periodic, temporal framework of music.¹⁸¹ Cooper and Meyer's (1960) conception of meter, consisting of a (usually) regular pattern of accents superimposed on an underlying pulse (the authors do not specify whether this pulse is always heard on the musical surface), appeals directly to the loop-based texture found in most hip-hop beats.¹⁸² But hip-hop music is primarily a recorded genre, so its meter should be approached from a perceptual standpoint. London's perception-based definition of meter is useful in this regard; he writes that "musical meter is the anticipatory schema that is the result of our inherent abilities to entrain to periodic stimuli in our environment" (2012, 12). Hip-hop beats are precisely such periodic stimuli. And since beats often begin songs (before vocals enter), and typically remain metrically constant over the course of a song, they have the potential to function alone in encouraging listener entrainment to their periodicity.¹⁸³ I thus situate hip-hop music's meter in the domain of the beat layer, and its phrases in the domain of the flow layer, where rhythmic groups are but one of several musical factors that influence the construction of phrase in flow.¹⁸⁴

While Adams (2020) situates phrase in hip-hop music as a function of both the beat and flow layers, he does so out of a need to justify his lengthy discussion of harmonic rhythm and

¹⁸¹ This line of thinking follows the theories set forth in Cooper and Meyer (1960) and Lerdahl and Jackendoff (1983). London (2002a) provides an excellent summary of theories of rhythm and meter in the 20th century.

¹⁸² See Cooper and Meyer (1960, 4).

¹⁸³ Beats often contain some textural alterations throughout the course of a song, which serve to alter the composite texture of the "basic beat", a term used by Williams (2009) that can trace its origins back to Krims (2000) in his analysis of "The Nigga Ya Love to Hate" (Ice Cube, 1990). The extent of the impact these alterations have on analysis has been debated in the exchange between Williams (2009) and Adams (2009b) discussing, among other matters, general compositional practices of hip-hop music. At issue here is whether the beat of a song is normally composed and/or recorded before the flow. While both scholars agree that, generally speaking, components of the beat (if not the entire beat in its final form) are usually recorded first and rapped over second, Williams contends that the two textural layers of flow and beat influence and shape each other over the compositional process, and that generalizations regarding which one "comes first" in a song's conception can be misleading.

¹⁸⁴ Two additional points should be clarified here. First, it will be evident by now that my concepts of meter and grouping are what London calls "architectonic" approaches (2002a, 695). This is not to say I doubt the usefulness of other metric theories (one could no doubt apply Hasty's work on meter to hip-hop music, for example), but rather that, to my ear, hip-hop beats seem to provide exactly the type of recurring, periodic structure that the architectonic conceptions of meter set forth by Cooper and Meyer and Lerdahl and Jackendoff seek to model, and my joining of them with London's perceptual approach is well suited to encapsulate the periodic nature of hip-hop beats-as-heard. Second, while rhythmic groupings certainly exist in the beat layer, they can usually be subsumed by a discussion of the beat's meter, and are thus superfluous to investigate separately here.

tonal directionality, which for him constitute major components of phrase identity. By contrast, I understand the beat layer (and its various harmonic, motivic, and metric components) as providing possible segmentation markers for the flow, which ultimately may lead to phrase boundaries, but are not an inherent requirement for phrase boundaries. In most tonal music, it is fairly straightforward to incorporate both melodic and harmonic aspects into a definition of phrase, since they often work together to express the directed motion required for phrases. In hip-hop music, the beat and flow layer express directed motion in different ways—the beat primarily through its harmonic rhythm and the flow through its lyrical syntax and rhyme structure. As such, these layers may provide compatible clues in discerning phrase structure in the composite texture, but these clues are distinct, by virtue of the different musical parameters they rely upon.

6.4.1 Hip-Hop Beats

Hip-hop beats are created in a variety of ways, through analog and/or digital sampling, live manipulation of turntables, digital audio workstations and looping software, and with real instruments.¹⁸⁵ From the earliest production techniques involving turntables, beats have been inherently cyclical, or loop-based.¹⁸⁶ The boundary points of these loops—that is, where the sample ends and begins anew—provide clues regarding metric and hypermetric organization. Depending on the beat’s content, these clues may come from drum patterns, harmonic rhythm (specifically the total length of the chord progression, if present), textural shifts, and samples that point toward specific metric locations for potential segmentation markers. As I mentioned earlier, beats often begin songs without any structured vocals (there may be ad-lib “hype” vocals present in these introductory sections), meaning the listener becomes accustomed to the

¹⁸⁵ As beat production techniques have grown more sophisticated with the development of digital sampling technology, and eventually personal computers sufficiently powerful to run sequencing software, it became easier for producers to concatenate loops of differing lengths.

¹⁸⁶ See Schloss (2004, 135–137) for a more detailed summary of this point.

boundary points of the sampled loop before the flow layer begins.¹⁸⁷

When a song's beat contains multiple, discrete harmonies, its harmonic rhythm becomes a factor in determining hypermetrical organization. Example 6.12 shows how the length of the chord loop in hip-hop beats can vary. "Shook Ones Part II" (Mobb Deep, 1995) uses a two-measure loop, "Excuse Me Miss" (Jay-Z and Pharrell Williams, 2003), four measures, and "I Need A Doctor" (Dr. Dre and Eminem, 2012) traverses a lengthy eight-measure loop. Even in songs with long chord loops (such as "I Need a Doctor"), drum loops tend to be only one or two measures long. Indeed, drum loops alone go far in defining the mensural length of the beat in the first place. Beyond the basic kick/snare backbeat paradigm, the particularities of each drum beat—the placement of kick-drum attacks and flourishes in the hi-hat pattern, for example—tend to repeat at one- or (less often) two-measure intervals, meaning the recurrence of the drum loop en masse, particularities and all, usually functions better than harmonic rhythm as an indicator of meter.¹⁸⁸

¹⁸⁷ "Hype" vocals refer to the vocals that appear in a song's intro or outro sections, which are usually more ad-lib sounding, ametric, and usually set up the content of the song or introduce (occasionally self-introduce) the MC or MCs who will rap the verses and/or hooks. This practice of hyping can be traced back to The Kidd Creole, member of Grandmaster Flash and the Furious Five (see Jay Quan, 2002).

¹⁸⁸ To the listener, the constituent elements of a hip-hop beat jointly influence how the loop or cycle is perceived. For example, the drums may suggest a salient hypermetric boundary, such as the drum fill in the beat for "I Know You Got Soul" (Eric B. and Rakim, 1987), or the syncopated shots in "Grindin'" (Clipse, 2002; see below), or a melodic riff may determine the most plausible structure, as in "C.R.E.A.M." (Wu-Tang Clan, 1993), or perhaps the harmonic rhythm best expresses this structure, as in "Excuse Me Miss" (see Example 6.12).

"Shook Ones, Pt. II" (Mobb Deep, 1995)

Harmonic loop

Drums

"Excuse Me Miss" (Jay Z and Pharrell Williams, 2002)

Harmonic loop

Drums

"I Need a Doctor" (Dr. Dre and Eminem, 2012)

Harmonic loop

Drums

Harmonic loop

Drums

Example 6.12: Examples of two-, four-, and eight-measure harmonic loops in hip-hop beats. In each example, the drum loop is metrically shorter than the harmonic loop.

Regardless of how the meter and hypermeter of a beat is expressed and perceived, the phrase structure of the flow layer may or may not align with it. If meter and phrase do align, such a situation could be characterized by the term *metric consonance*; which Krebs describes as “involving the aligned or nested presentation of interpretive layers whose [metric lengths] are multiples or factors of each other” (1999, 30). Applying this description to hip-hop texture, we

can identify two types of metric consonance: instances where the metric length of flow phrase and beat loop are the same, and instances where one of these lengths is a multiple of the other, meaning the smaller unit is nested in the larger one. Such consonances tend to pervade hip-hop music. In comparatively rare situations, phrases of flow occur at lengths that are neither multiples nor factors of the metric length of the beat loop. Krebs uses the term *metric grouping dissonance* to describe these situations, where the “dissonance can be formed by the association of at least two interpretive layers whose cardinalities are different and are not multiples/factors of each other” (31).¹⁸⁹ The word “grouping” refers to the non-equivalent groups of pulses in each layer create the dissonance. Finally, in even rarer situations, phrases of flow occur at lengths that are the same as the metric length of the beat loop, but the start and endpoints of units in these layers are misaligned. Krebs refers to these situations as *metric displacement dissonance*. This construal of displacement and grouping dissonances carries a ramification for perception: as listeners, we are potentially confronted with deciding which layer we hear as referential, or “primary”, and which we hear as dissonant, or “antimetric”. But while such dissonances are often quite easy to identify by ear, deciding which layer is primary and which is antimetric is not always a simple task: the role of primary metric layer may fluctuate between flow and beat, or the situation may be prohibitively ambiguous. In the context of electronic dance music, or EDM, Butler (2006) has described this perceptual ambiguity between textural layers as “interpretive multiplicity”.

The semantics of the term “dissonance” in a musical context is inherited by the need, or tendency, to resolve; dissonance implies instability. Yet as the final analyses in this chapter

¹⁸⁹ Krebs adopts the terms *grouping dissonance* and *displacement dissonance* from Kaminsky (1989). In a more general sense, Krebs’s theory is predicated on various layers of motion, a concept also explored extensively by Yeston (1976). While the layers of motion in Yeston’s framework concern tonal, Schenkerian-oriented motion, the implications of studying meter as a function of various layers bears wide-ranging implications, far beyond Western classical music.

demonstrate, the cyclical nature of beat loops and the fluctuating—or even ambiguous—metric relationship between the flow and beat layers create anything but an unstable metric surface, even when they are dissonant according to one of Krebs’s two types. Just as Schoenberg sought to emancipate pitch relationships from a consonant/dissonant framework, metric relationships between hip hop’s textural layers rarely exhibit the patterns of tension and resolution that are implied by the term “dissonance”.¹⁹⁰ And so, while the concepts of consonance and dissonance formalized by Krebs are useful in enumerating the temporal relationships between units of flow and beat, the stability and instability implied by these terms is problematic in this context, because metric dissonances in hip-hop music are not unstable; they do not require resolution. For this reason, I part with these terms (as Butler did for his work on EDM).¹⁹¹ Instead I propose a fourfold terminology (with Krebs’s terms in parentheses for reference) that is detailed below and demonstrated with brief examples: exact alignment (consonance), nested alignment (multilevel consonance), grouping non-alignment (grouping dissonance), and displacement non-alignment (displacement dissonance).

6.4.2 Alignment

Exact alignment between the loop length of the beat layer and the phrase length of the flow layer occurs in abundance, occasionally across entire verses and even entire songs. In such instances, the phrases of flow typically follow a regularized pattern of rhyme, syntax, line break, and breathing. In the first verse of “Money Maker” (Ludacris and Pharrell Williams, 2006), excerpted in Example 6.13, segmentation markers created by rhyme, syntax, breath, and line break suggest a one-bar phrase structure atop a beat that uses a one-measure loop (not shown). As the excerpt shows, however, Ludacris’s phrases do not align exactly with the measures; they

¹⁹⁰ Butler relates non-resolutions of such metric dissonances in EDM to Arnold Schoenberg’s conception of pitch in post-tonal music, coining the term “the emancipation of metric dissonance” (2006, 166).

¹⁹¹ London (2002b) also questions the utility of the term “dissonance” with temporal structures.

end immediately before beat 4 of each measure. To be sure, MCs quite often intersperse brief caesuras between phrases; these typically appear at the end of a beat loop (represented here by a measure) where the phrase ends on or after the fourth beat.¹⁹² By contrast, Ludacris is using here what I call anticipation end rhymes: phrase-ending rhymes that occur before the more conventional fourth beat. Since the anticipation end-rhymes function like an end-rhyme on the fourth beat would function—concluding a unit of flow in sync with the conclusion of a measure of beat—the ensuing anacrusis is better understood as an outcome of the anticipation rhyme, and not as an agent of metric displacement.¹⁹³

Example 6.13: First verse of “Money Maker” (Ludacris and Pharrell Williams, 2006). Phrase markings are shown with slurs.

Since the length of beat loops is often a) highly regular across a whole song, and b) normally one measure or longer in duration, *nested alignment* between the flow and beat layer usually involves smaller units of flow nested within a longer unit of beat. The first verse of “Slow Down” (Brand Nubian, 1991; Example 6.14) features two levels of nested alignment; one wherein metric units of beat are nested in phrases of flow, and another wherein phrases of flow are nested within hypermetric units of beat. Complicating matters are the irregular and uncommon lengths of these hypermetric units—frequently in 5-, 6-, and 7-measure spans—as well as inconclusive phrasal boundaries onset by issues of rhyme and syntax. The one-measure

¹⁹² Condit-Schultz (2016) found the fourth beat of a 4/4 measure to be the most common metric location for rhymes.

¹⁹³ Technically, any phrase of flow beginning anacrustically (say, one beat before the barline) and concluding in a similar metric location could be classified as a displaced non-alignment with the beat, but as these are so common in hip-hop flow, and their distance of metric displacement is so small, I have chosen to exclude them from this category, on the grounds that perceptually, we understand these slight displacements as nothing more than brief aberrations from an exact or nested alignment between beat and flow.

metric units comprising the beat layer come from a sample of the 1988 song “What I Am” (Edie Brickwell and the New Bohemians). Pitch-shifted upwards a minor third from the original, this sample is underpinned by a drum loop of similar length, lifted from the breakbeat section of “Never Had a Dream” (Ohio Players, 1971). The hypermetric organization of this one-measure loop is controlled by a saxophone sample from “Kool It” (Kool and the Gang, 1970). The sax hit sample from “Kool It” follows an irregular hypermetric pattern in the first verse; as Example 6.15 shows, its recurrence suggests a hypermetric patterning of 6, 5, 5, 7, and 4 measures. In the absence of any other aural clues, this sax hit assumes greater salience as a marker of hypermeter.

general pitch contour for each phrase

♩=96 (0:10)

Flow

hey ba-by your hips was get-ting **big** now you're get-ting thin you don't care a-bout your **wig** now Wool-ie

Beat

* = sax hit (beat continues)

Wool-ie got a pair of my **sneak-ers** won-der where he got 'em cause I hid 'em be-hind my **sneak-ers** the

ob-ject of your af-fec-tion is the tree-top con-**nec-tion** where ba-sic-ally you love to smoke your wools the

Example 6.14: First verse of “Slow Down” (Brand Nubian, 1991). As demonstrated with the graphic, the general pitch contour of the flow layer trends downward for each phrase.

Measure number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Hypermetric grouping	[]	[]	[]	[]	[]
Phrase structure	[]	[]	[]	[]	[]	[]	[]	[]	[]

Example 6.15: Hypermetric and phrase structure of the first verse of “Slow Down” (Brand Nubian, 1991). The open and closed parentheses indicate where each hypermetric grouping or phrase begins and ends. Thus, a sax hit sounds each time a hypermetric group begins; in measures 1, 7, 12, 17, and 24.

Sadat X (b. Derek Murphy), the MC rapping the first verse of “Slow Down”, organizes his flow into phrases using rhyme placement, syntactic and line breaks, rhythmic caesuras, and extensive use of vocal tessitura—he raps with a descending pitch pattern, beginning phrases high in his register, and slowly descending in approach to his normal speaking register.¹⁹⁴ Many of these phrase-defining techniques complement one another: rhymes (both end and internal) appear at regular intervals, normally aligning with line breaks, and the syntactic breaks or topic shifts in the lyrics usually line up with a penultimate end rhyme from a rhyme pair, and are immediately followed by a rhythmic caesura. For the most part, Sadat X’s tessitura (and its descent) corresponds to the syntactic breaks and/or topic shifts. For instance, the endpoints for the three phrases shown in Example 6.14 (which transcribes the first hypermetric unit of the verse) each correspond to a combined syntactic break, line break, topic shift, and end-rhyme pair. In turn, Sadat X’s register “resets” to its highest tessitura after these endpoints. The third phrase shown here ends slightly ambiguously in that the last lyric, “wools”, has no rhyming partner. If the transcription were to continue onward, we might expect it to come at the end of the next two-measure phrase, but by then Sadat X has moved on to a new rhyme couplet (on the lyrics “door” and “for”). The “wools” phrase thus evokes a weaker sense of conclusion than the first two

¹⁹⁴ Kautny (2015) uses a notation scheme that accounts for relative pitch height in flow by placing note heads at varying heights around a single staff line. Komaniecki (2017, examples 2 and 3) uses a similar system, employing two staff lines representing high- and low-voiced rap deliveries. In Komaniecki’s dissertation (2019) he extends this system to three lines (high, middle, and low) and proposes a five-fold system of analyzing pitch in flow that focuses on rhyme, speech rhythms, rhythmic layers, and singing. Sadat X’s approach to pitch in “Slow Down” seems to evade categorization in Komaniecki’s system, as it is based primarily on rhetoric and phrase structure. Furthermore, the gradual, contoured change in pitch used by Sadat X is unsuitable for either Kautny’s or Komaniecki’s staff-system approaches.

phrases, and the inconclusiveness of this phrase weakens the hypermetric boundary that follows it (as shown, the next sax hit occurs immediately afterward). Instead of cleanly breaking off and concluding, this first phrase group is supplanted, or even interrupted, by the following one.

Later in the verse (Example 6.16), Sadat X performs only one vocal descent over a five-measure span, wherein his subject matter remains constant but syntactic and line breaks occur within the span, as do multiple rhyme couplets. The rhyme scheme begins conventionally, featuring an end-rhyme couplet on “vials” and “smile,” followed by an internal rhyme couplet on “swagger” and “stagger”. No syntactic break occurs after stagger, however, as the lyrics proceed “stagger from one spot on to the next spot....”; these lyrics do not appreciably contribute to the end-rhyme structure, instead simply trailing off, at which point a new phrase group begins on the lyric “bitch get a job”. The metric interaction between flow and beat layers here depends on how the phrase(s) are defined. If pitch and subject matter are prioritized, a five-measure phrase aligns exactly with a five-measure hypermeter. If syntax and rhyme are prioritized, however, unbalanced phrases of two and three measures are nested within a five-measure hypermeter. In either case, an inconclusive ending to this segment again weakens the hypermetric boundary. I have summarized this example to illustrate how even though the flow phrases demonstrate exact and nested alignment with the beat layer, their irregular internal characteristics, such as lack of definitive motion towards a conclusion, can upend any sense of concordance with the beat layer’s hypermetric structure. Where the first phrase group seemed to end prematurely (with the hanging rhyme “wools” left incomplete), the end of the third phrase group seems to lack any ending at all (with the repeated “on to the next spot” lyric). I have summarized these examples to illustrate how even though the phrases demonstrate exact and nested alignment with the beat layer, and not all of them consist of an odd number of measures, their irregular internal characteristics—such as lack of definitive motion towards a conclusion—can upend any sense of

concordance with the beat layer's hypermetric structure.

♩=96
(0:37)

*

damn it's a shame you're the might-y queen of vials with a wide-eyed look and a rot-ten-toothed smile used to

walk with a swag-ger now you sim-ply stag-ger from one spot on to the next spot on to the next spot on to the next

Example 6.16: First verse of “Slow Down” (Brand Nubian, 1991). The asterisk indicates the presence of a hypermetric marker (sax hit sample).

6.4.3 Non-Alignment

Turning now to the comparatively rare non-alignments, *grouping non-alignment* between flow and beat can be seen in both “Paid in Full” and in “Hypnotize”. Here again, the flow phrases tend to be shorter than the beat loops, but exceptions do occur: in Example 6.7 (p. 183), the phrase rapped by Rakim is much longer than the one-measure drum loop, and even slightly longer than the four-measure harmonic loop (effectuated by the bass line). Even if the listener does not hear this long passage as a single phrase, a number of plausible subphrases would still be longer than the one-measure drum loop. By contrast, in Example 6.10 (p. 187), the short, irregular phrases in “Hypnotize”—here overlaying a very clear two-measure beat loop—are often shorter than that loop. Any plausible phrasing scheme would render a metric non-alignment between flow and beat.

Finally, the least common metric relationship between flow and beat concerns *displacement non-alignments*, which involve equal-length phrases and loops with misaligned start and end points. Technically, any phrase of flow beginning anacrustically (within one beat of the subsequent barline) and concluding in a similar metric location could be classified as a displaced non-alignment with the beat, but as these are common in hip-hop flow (as shown in

Chapter 5), and their metric distance of displacement is so small, I have chosen to exclude them from this category on the grounds that perceptually, we understand these slight displacements as nothing more than brief aberrations from an exact or nested alignment between beat and flow.¹⁹⁵

Missy Elliott's 1997 single "The Rain (Supa Dupa Fly)" features displacement non-alignments between flow and beat layers. Example 6.17 outlines the opening of the second verse. The beat loop runs two measures in length, and given that it plays for nearly 90 seconds before this verse begins, its two-measure loop becomes very familiar to listeners.¹⁹⁶ This suggests that the beat will likely function as the referential or *primary metric layer*. As briefly explained above, I borrow this term from Krebs, who describes it as "the metrical interpretive layer [that] assumes particular significance for the listener, its pulses becoming reference points for all rhythmic activity in the given work" (1999, 30). This means that the metric and hypermetric boundaries of the primary metric layer constitute the points from which the displaced layer, which Krebs calls the *antimetric layer*, is measured.

In Example 6.17, the phrases of flow are relatively easy to discern: Elliott's rhymes, caesuras, syntactic breaks, and line breaks nearly always correspond with one another, making phrase demarcation (as shown with the slurs) quite straightforward. These phrases are displaced from the beat layer by two beats. The first phrase ends with the lyric "indo", and thus runs for six beats, ending two beats sooner than the beat loop. A first instinct might be to classify this non-alignment as grouping, but the subsequent phrase runs for eight beats, the same length as the loop. Therefore, the more plausible explanation for these two phrases is that they both begin on beat three, and the first phrase simply began late. This displacement pattern continues through

¹⁹⁵ In Chapter 4 I chose to classify anacrustic non-alignments by their metric length, for the express purpose of highlighting the rarity of displacement non-alignments of significant magnitudes (or than one or two eighth notes) in the corpus.

¹⁹⁶ Various versions of this single exist. In the music video version, the verse excerpted in Example 6.17 is the first verse; on the album version, it is the second.

the eight-measure verse, concluding with the lyric “D-low”. At this point we might expect a vacant half-measure before the hook begins, but instead, the hook itself also uses a 2-measure backward displacement, as shown in Example 6.18.

Example 6.17 shows the first verse of “The Rain (Supa Dupa Fly)” by Missy Elliott (1997). The notation displays two systems of music, each with a “Flow” (melody) and “Beat” (rhythm) layer. The tempo is marked as 81 BPM (1:28). The lyrics are: “when the rain hits my win-dow I take and cough cough cough me some in-do me and Tim-ba-land ooh we sang a tang-le we so tight that you get our styles tang-led sway on dos-ie”. The flow phrase is indicated by a bracket, showing it is displaced from the beat layer’s two-measure hypermeter, beginning two quarter-note beats earlier than the hypermetric boundary.

Example 6.17: First verse of “The Rain (Supa Dupa Fly)” (Missy Elliott, 1997). The flow phrase indicated is displaced from the beat layer’s two-measure hypermeter, thus beginning two quarter-note beats earlier than the hypermetric boundary.

Example 6.18 shows the first verse of “The Rain (Supa Dupa Fly)” by Missy Elliott (1997). The notation displays a single system of music, with a “Flow” (melody) and “Beat” (rhythm) layer. The tempo is marked as 81 BPM (1:43). The lyrics are: “play with my yo-yo I smoke my hy-dro on the D-low (I can't stand the rain)”. The flow phrase is indicated by a bracket, showing it is displaced from the beat layer’s two-measure hypermeter, beginning two quarter-note beats earlier than the hypermetric boundary. The hook melody is indicated by a bracket.

Example 6.18: First verse of “The Rain (Supa Dupa Fly)” (Missy Elliott, 1997). The displacement continues to the last lyric of the verse, “D-low”, before the anacrustic hook melody takes over.

Elliott’s abstract lyrics and idiosyncratic flow style come to the fore in the third verse (partially excerpted in Example 6.19), where her phrase structure exhibits nested and exact

alignments, as well as grouping non-alignments. Elliott begins her lyrics two beats into the two-measure beat loop but concludes that phrase in sync with the end of the loop. This grouping non-alignment yields to an exact alignment, where the phrase concludes with the end rhyme “pouring” (2:55, not shown in the example). The next measures (beginning of Example 6.19) may express a two-measure phrase to some listeners, but the isolated lyric “chill” could also be perceived as distinct from this third phrase, which would thus begin with “I got my umbrella”, making it another six-beat phrase. Regardless of its beginning point, this phrase concludes with the lyric “Humpty”. Instead of delivering a rhyme for “Humpty” at the end of the subsequent phrase, Elliott completes the couplet right away with the lyric “chumpy”. She then completes the verse with two short phrases, the first of which “I break up with him before he dump me” forms a grouping non-alignment (in its three-beat length), while the second of which “to have me yes you lucky” forms a nested alignment of sorts, in that its two-beat length is exactly one quarter of the length of the beat loop. This is but one possible interpretation of the phrase structure here. Even though it sounds like it belongs as a rhyme pair with “Humpty” and is musically isolated from its surrounding lyrics, the lyric “chumpy” syntactically belongs with the ensuing phrase “I break up with him before he dump me”. Perhaps a more robust interpretation of this passage is that we are dealing with a rhyme chain “humpty, chumpy, dump me, lucky”, and the phrase in fact begins *and* ends with a rhyme couplet, nested within the rhyme chain (as the slurs detail in the example). The fluid and inconsistent nature of phrase boundaries in this verse nevertheless contributes to the overall perception of the beat functioning here as the primary metric layer, as I initially suggested.

♩ = 81
(2:56)

Flow

chill I got my um - brel - la my fin - ger waves these days they fall like Hump - ty

Beat

Chump - ty I break up with him be - fore he dump me to have me yes you luck - y

Example 6.19: Third verse of “The Rain (Supa Dupa Fly)” (Missy Elliott, 1997).

6.4.4 Displacement and the Multiple Parallel Analysis Processor Model

The final song discussed in this chapter exploits—perhaps to the greatest degree thus far—the metric tensions inherent in displacement non-alignments between flow and beat layers. “Grindin’” was the lead single off Clipse’s 2002 album *Lord Willin’*. The sparse beat (containing very few pitched elements) used in this song sounded unlike the beats of other charting hip-hop music of this era. Conversely, the lagging microtiming, diverse rhyme placement, and speech-influenced flow rhythms used by Clipse members (and siblings) Pusha T (b. Terrence Thornton) and Malice (b. Gene Thornton) are emblematic of the early 2000s, when Jay-Z, Eminem, and Snoop Dogg were consistently topping the charts. The beat warrants further discussion, as its sparseness and long loop length affect the perception of displacement between it and the flow layer. Transcribed in Example 6.20, this beat loop is eight measures long, and while its hypermetric boundary points are unambiguous, two aspects of the song’s intro (or hype verse)

obscure the loop's eight-measure structure to the listener. Firstly, the song begins partway through the first measure of the loop (as indicated in Example 6.20), meaning the loop is not heard in its entirety until the beginning of the first verse. Secondly, the ametric hype vocals by Williams and Pusha T follow no clear formal patterning, and attract the listener's attention more than the beat.

intro

(song starts here)

Beat

verse 1 (0:20)

Flow

from ghet - to to ghet - to to back - yard to yard I sell it whipped un - whipped it's

Beat

(8-measure loop continues throughout)

3

soft or hard i'm the neigh-bor-hood push - a call me Sub - woof - er cause I pump base

Example 6.20: Opening of “Grindin’” (Clipse, 2002). The beat’s eight-measure loop is transcribed in full at the top of the example, but the song actually begins two quarter-note beats into the loop, as indicated with the dotted line.

♩=95
21a: Verse 1 (0:53)

Flow

Pee Wee Kirk - land plat - 'num on the block with con - sis - tent **hits** while Phar - rell keep talk - ing this mu - sic **shit**

Beat

hook

21b: Verse 2 (1:53)

Flow

filth - y the word that best — de - **fines me** i'm just grind - in' man — y'all ne - ver **mind me**

Beat

hook

21c: Verse 3 (3:14)

Flow

palm I'm **hold - in'** one - 'll leave you **fro - zen** the oth - er nod - din' and **doz - in'** I'm grind - in' Jack

Beat

hook

Example 6.21a, b, c: Ends of each verse in “Grindin’” (Clipse, 2002). In 21a, the flow directly abuts the synth melody in the hook. In 21b, a gap exists between flow and melody. In 21c, a similar gap prevails but is even larger when measured from the end of the final phrase of flow, concluding on the lyric “dozin’”.

The obfuscation of hypermeter in the beat, combined with the irregular hype vocals, presents the listener with an interpretive choice once Pusha T's vocals begin the first verse. As Example 6.20 shows, if the flow is transcribed according to the mensural structure of the beat loop it begins on beat 3, and his phrasing patterns generally follow a two-beat displacement from the beat layer. The listener's choice rests on which metric layer is interpreted as primary: flow or beat. If the former, the listener would understand the beat as displaced either forward or backward by two beats. If the latter, Pusha T's flow would be displaced forward (i.e. it would arrive "late") by two beats. These potential interpretations invoke the *multiple parallel-analysis processor* concept, first used by Jackendoff (1992) and later by Mirka (2009). This concept models possible interpretations of a musical passage by simultaneously entertaining several hearings and forward-projecting possible analyses for each. Human listeners are restricted in how many possible hearings they can maintain at one time (as opposed to Jackendoff's hypothetical processor), but in certain contexts they can presumably toggle between two metric hearings of a passage.¹⁹⁷

At the end of the first verse, Pusha T's flow concludes exactly sixteen measures after it began, thus ending in the middle of a measure of the beat. As shown in Example 6.21a (see previous page) the hook section of "Grindin'" adds a staccato synth melody. Had this melody commenced concurrently with the hypermetric boundary of the loop, we would finally receive a clue pointing toward the beat layer as primary, and the parallel processor entrainment model would cease to operate. But the staccato melody begins on an anacrusis to beat 3. This means that the processor may continue through the hook section; the flow-phrase structure of the first verse and the staccato melody in the hook section together propagate a textural layer that remains displaced from the beat layer. At the end of the hook section, the staccato melody and ensuing

¹⁹⁷ Jackendoff calls this the *selection function* (1992, 63).

vocals of the second verse collide. Malice (the MC rapping in the second verse) begins in alignment with the beat layer, meaning the staccato melody carries over by two beats into the beginning of his verse. Here the processor breaks down; since the beat has not changed, either the once-primary flow layer is adjusted to fit this beat, or the beat layer was always primary, and the flow merely now reflects this primacy in its alignment with the beat. Because Malice's phrase lengths in the second verse are consistent and regular, they form nested alignments with the beat loop, and since he concludes the verse at the end of its sixteenth measure, the delayed onset of the staccato melody creates a gap in the texture (shown in Example 6.21b) that did not exist following the first verse.

Both MCs rap in the third and final verse, each for eight measures, and the point of intersection between their passages again raises interesting perceptual questions. Malice's portion of the verse is first, and he begins in displacement from the beat layer. But unlike the displacement in the first verse, where Pusha T's irregular phrase lengths and varied metric locations of rhymes minimized any sense of regularity in the flow layer (thus diminishing its ability to function as primary metric layer), Malice raps in two-measure phrases punctuated by consistently placed end rhymes. As a result, the multiple-analysis processor resumes, and a case for hearing either textural layer as primary can be made with ease. On the one hand, the beat layer's hypermeter has remained constant. On the other hand, its primacy could be usurped here by the equally regular flow layer, established by Malice's phrasing and rhymes, despite the fact that he entered in displacement with the beat. Pusha T's entry overlaps with Malice's vocals for two beats (see Example 6.22). This is because Pusha T enters in alignment with the beat, meaning Malice's displaced vocals have yet to run their full eight-measure course. Pusha T's inconsistent phrase length and varied rhyme location do little to tip the parallel processor in either direction, toward flow or beat as being primary. The phrases involved in Pusha T's

opening rhyme chain (on the lyrics “cripple”, “Sniffles”, “nickel”, “whistle”, “hit you”, and “issue”) are of inconsistent length, and the rhymes fall alternately on beats 1, 2, and 4. The first rhyme, “cripple”, actually falls on beat 4 of the measure (assuming the beat layer is primary in this case), but because it directly follows Malice’s regular but displaced phrase structure, it does not necessarily sound like it does. That is, even though this phrase ending aligns with the beat cycle, entrainment to Malice’s competing metric structure could carry forward here, meaning the lyric “cripple” would sound as though it arrives on beat 2. In this way, even though we encounter a metric alignment between flow and beat, we may perceive it as a non-alignment based on how we were aurally primed for this event.

♩=95
(2:53)

Malice
gets in the way not to men-tion the hide - a - way that rests by the lake con - si - der my raw de - mea - nor the

Beat

Malice
i - cing on the cake I'm Grind - in'

Pusha T
I move 'caine like a crip - ple ba - lanceweight through the hood kids call me Mis - ter

Beat

Example 6.22: Third verse of “Grindin’” (Clipse, 2002). The transition between MCs in this verse reveals metric overlap. The open-ended brackets indicate that the eight-bar loop encounters a juncture between iterations at the beginning of the second system.

In any event, Pusha T’s subsequent phrase lengths fail to provide much metric organization to his flow; the first chain of rhymes (reprinted above) runs for five phrases over

roughly four and a half measures, while his final chain compresses four rhymes into two measures, arguably in one long phrase that ends not with a rhyme, but with the final lyrics “I’m grindin’ Jack”. Depending on how meter is entrained at this moment, these lyrics either fall on beat 1 or beat 3, neither of which seem likely as final beats for a sixteen-measure phrase of flow, given beat 4’s (and to a lesser extent, beat 2’s) more normative conclusive function. As Example 6.21c shows, the gap between the final lyric and the onset of the staccato melody is even longer than it was following the second verse; thus a progressive metric separation of verse and hook occurs over the course of the song.

6.5 Summary

My aim in this chapter has been to propose a framework for analyzing the temporal aspects of hip-hop music’s two principal textural layers: flow and beat. Inspired by Ohriner’s comments regarding segmentation, I proposed a set of segmentation rules that seek to model how flow is partitioned by listeners. These rules are predicated on the perceptual salience of rhyme, syntactic structure, breathing patterns of MCs, and lyrical subject matter; when any of these musical parameters are either ambiguous or conflicting with regards to segmentation, they may complicate the identification of groups, and ultimately also of phrases, in the flow layer. I used these segmentation rules to apply the concepts of rhythmic grouping and phrase to the flow layer, arguing that the variegated patterns and frequent caesuras commonly found in flow produce a rhythmic surface more amenable to assessment through the parameters that define groups: similarity, proximity, and variety. I described flow phrases as rhythmic groups delineated by segmentation markers, which also contain internal directed motion. This motion arises from listener expectancy; where the beginning of a phrase presents a particular content or pattern, it is expected to conclude accordingly (for example with an ultimate rhyme, syntactic closure, or rhythmic caesura).

Based on the beat layer's textural and rhythmic consistency as compared to the flow layer, I interpreted its temporal role in hip-hop music as the primary generator of meter as heard. This role is amplified by the beat's usual prominence at the outset of hip-hop songs, establishing meter well before the rapped vocals enter. This is not to say, however, that flow cannot generate or even maintain meter—for example, Jay-Z's solo vocals that begin his single "99 Problems" (2003) firmly establish the song's meter before the beat enters and confirms it (see Example 4.5, p. 100). Consistent grouping or phrasing in a flow passage can either align with the established meter of the beat layer (exact or nested alignments), or run counter to it (displacement non-alignment). By contrast, inconsistent grouping and phrasing structures are more likely to generate grouping non-alignments with the beat layer's metric structure. While most MCs tend to use consistent phrase patterns that align with the beat in some way (especially in old-school hip hop as well as in most contemporary mainstream hip hop), a number of MCs experiment with divergent flow patterning, sufficient to warrant mention of the songs discussed above.

Most mainstream hip-hop beats display standardized, unchanging metric patterning and most MCs rap in what could be called conventional flow styles—discrete (and complete) syntactic units, with consistent rhyme and breath patterning, leading to unchanging phrase length—but the above examples show that flow phrasing is far from uniform, and indeed displays tendencies of change over time. While some of these tendencies were described in a broad, statistical sense in Chapter 5, others are better illustrated through close readings of songs. So manifold are the factors that affect phrase, meter, grouping, and the interaction between these phenomena that their total unique combinations are well beyond the scope of this dissertation. That said, analyzing several examples in more depth shows how statistical analysis can generate theories of musical practice in hip-hop flow, and these theories in turn can be used to assess individual performances and how they are interpreted by listeners.

7 Flow Profiles

7.1 Overview

This final chapter addresses the two main questions that concluded Chapter 2, how to measure diversity in flow and how it relates to regionalism, by introducing the concept of *flow profiles*. I first outline four of these profiles based on the musical practices of MCs: tempo profiles, segmentation profiles, microtiming profiles, and rhetorical profiles. These profiles aim to address the first of my fundamental questions proposed in this dissertation: how can diversity in flow practice be quantified or qualified? I continue by outlining geographical and historical profiles, which speak to the second major question proposed here: how can diversity be connected to regionalism and post regionalism? Through these profiles, I propose an infrastructure within which stylistic diversity and consistency can be evaluated without recourse to a discussion of genre (the impetus for which is described below).

7.2 Diversity in Flow Practice

The first question I proposed at the end of Chapter 2 asked how diversity in flow practice can be measured. I discussed two means of measuring diversity that are commonly used in wildlife ecology: richness and evenness. Richness pertains to the number of different individual species in an ecosystem, while evenness concerns their distribution patterns. In Chapter 5 I analyzed statistical data from the corpora and discussed that analysis in terms of richness and evenness. Chapter 6 used this discussion as a springboard to formulate a theory of segmentation, phrasing, and meter in hip-hop music. The findings in these chapters help to address the first question posed in Chapter 2: how can diversity in flow practice be quantified or qualified?

The notions of richness and evenness essentially concern sameness and difference, which in turn connote generic classification. Indeed, genres are predicated on networks of similarities and differences between the elements (people, behaviour, and aesthetics) that define them. But as

Brackett writes, “genres are not empirically verifiable musical characteristics, but rather associations of texts whose criteria of similarity may vary according to the uses to which the genre labels are put” (2016, 3–4). A discussion of genre is therefore unsuited to the present task, even if a use to which genre labels were put involved assessing stylistic diversity. Since I *am* dealing—at least partially—with empirically verifiable musical characteristics, I prefer to categorize my analytical observations in terms of stylistic profiles of flow.¹⁹⁸ *Flow profiles* define commonalities among and variations between flow performances that embody a particular common characteristic: for example, flow performances over beats with tempos between 80 and 110 bpm, or flow performances in the time period 1979–1986. I stop short, however, of proposing all-encompassing flow profiles that seek to model some unifying characteristic across subsections of the corpora, like the examples posited above. Instead, I propose several types of profiles as a means of characterizing how a hip-hop song might converge with or diverge stylistically from any other song.

I begin with tempo profiles, which describe stylistic trends in flow practice according to different tempo windows as described in Chapter 5. Performances that fall into the slow and fast tempo profiles reveal some prevailing common characteristics, while performances in the medium tempo profile are much more variegated. This observation is perhaps interesting because it begs the question of why medium tempos seem to afford more variety on the part of the MC, but it also encourages further scrutiny of medium-tempo songs via a different musical parameter. In part because of this, I move next to segmentation profiles, which are based on the degree of alignment between various segmentation markers as described in Chapter 6. The discussion of

¹⁹⁸ In this dissertation I am essentially performing style analysis, not genre analysis. Moore provides a compelling and succinct differentiation between style and genre at the conclusion of his article on the topic, writing that “style refers to the manner of articulation of musical gestures and is best considered as imposed on them, rather than intrinsic to them. Genre refers to the identity and the context of those gestures. This distinction may be characterized in terms of ‘what’ an artwork is set out to do (genre) and ‘how’ it is actualized (style)” (2001, 441).

microtiming profiles that follows arises from my observations in Chapter 3 that three broad practices of microtiming prevail in flow practice. This section contains substantial analytical passages, as microtiming has not been discussed in analytical detail in this dissertation thus far. Finally, I propose a category of rhetorical profiles; rather than enumerating these, I offer a three-dimensional scale on which any flow performance can be situated, and various performances compared.

7.3 Tempo Profiles

Tempo profiles are based on musical attributes of flow styles in songs that occupy certain tempo ranges. As shown in Chapter 5, song tempos in the corpora ranged from 62 bpm at the slow end to 154 bpm at the fast end. The richness of song distribution within this window is measured by determining how many unique tempos (rounded to whole numbers) are represented.¹⁹⁹ Of the 93 possible tempos between 62 and 154 bpm, 51 are represented in the corpus, which amounts to 55% richness. But this representation is unevenly distributed: for example, of the 30 possible tempos between 80 and 109 bpm, 26 are represented in the corpora, a richness of 87%. This contrasts sharply with 59% richness at 62–80 bpm and 30% richness at 109–154 bpm. These imbalances reflect the uneven, bell-curve tempo distribution shown in Example 5.2 (p. 130), and influenced my tripartition of the corpora tempos to generate three tempo profiles.²⁰⁰

7.3.1 Slow Tempo (less than 80 bpm)

The 26 songs with tempos below 80 bpm represent a small portion of the corpora, but

¹⁹⁹ Naturally, these rounded values are a product of my own data-gathering of tempo for each song. Since tempo is not a discrete musical parameter—it is a continuous one—these richness measurements I make should be understood as a function of my own analysis of tempo. This limitation is, however, no more problematic than stating that two recordings of a song are in C major (for example), when one of the recordings is slightly sharper or flatter than the other. The fact is, many musical parameters—pitch, temporality, and dynamics, to name a few—are continuous, but we have used discrete frameworks to measure them throughout history.

²⁰⁰ The stylistic thresholds between tempo profiles are naturally somewhat gradual, so my choices of 80 and 109 bpm had to be made in a slightly arbitrary fashion in order to delineate these tempo profiles. I thus acknowledge and leave open the possibility that other tempos around those I chose as boundaries could be used.

possess some marked stylistic similarities as well as some wide-ranging variances. Firstly, 21 of these songs were released in or since 2005, suggesting that slow song tempos have only recently become stylistically significant.²⁰¹ Another similarity is that many of the most syllabically dense verses in the corpora come from songs in this tempo range (see Example 5.7, p. 136). But variance in syllabic density also persists within this tempo range. As Example 5.7 shows, even within the small tempo range of 69–73 bpm, a wide range of syllabic density prevails. This observation suggests one of the most marked stylistic traits of the slow tempo profile: the intermingling of extremely rapid and slow flow rhythms. While the data in Example 5.7 does not show this intermingling because it displays average densities per verse, a closer look at individual verses demonstrates this concept well. While Example 5.4 (p. 132) illustrated this phenomenon in a fast-tempo song (“Anaconda” by Nicki Minaj), Example 7.1 demonstrates how, over the course of the second verse of “Holy Grail” (Jay-Z and Justin Timberlake, 2013), Jay-Z gradually switches from a sixteenth-note-based flow to what is sometimes called “double-time flow”, where, amid tresillo groupings, thirty-second notes become the smallest and most common rhythmic subdivision in the passage. The second verse of “Dead and Gone” (T.I. and Justin Timberlake, 2006) also shows an intermingling of slow and rapid flow rhythms (Example 7.2), but here the two rates constantly alternate throughout the verse. Though not abundantly present in this corpus, songs or verses that feature triplet flow (a constant tripletized rhythmic surface) or stutter rap (a series of scotch snaps, or short-long groupings, on each downbeat) are also characteristic flow styles of songs with slow tempos. These characteristics are also, perhaps unsurprisingly, recent stylistic trends in hip-hop music.²⁰²

²⁰¹ Elsewhere (Duinker 2019) I have posited slower song tempo as facilitating triplet flow’s recent surge in popularity. Condit-Schultz (2016) notes a general decrease in song tempo over time in his corpus study, adding more support to my assertion that slower songs have recently become more stylistically significant.

²⁰² See Duinker (2019) for a general discussion of triplet flow and Komaniecki (2019) for a summary and description of stutter rap. While Komaniecki’s two examples of stutter rap—“Kill Jill” (Big Boi ft. Killer Mike, 2017), and “T-Shirt” (Migos, 2017)—are notated in tempos of 140 and 137 bpm respectively, they can also be

♩=73
(2:38)

now I got ta-toos on my **bo-dy** psy-cho bitch-es in my **lob-by** I got ha-ters in the pa-per pho-to shoots with pa-pa-**raz-zi** can't e-ven

(2:59)

fame hurt this **chain worse** I think back you asked the **same per** - son if this is all you had to deal with nig-ga deal with this shit **ain't work** this

Example 7.1: Excerpts of the second verse of “Holy Grail” (Jay-Z and Justin Timberlake, 2013). Shaded lyrics indicate rhymes.

♩=69
(2:12)

most of that shit did - n't e - ven have to **hap - pen** but you don't think a - bout it when you out there **trap - pin'** in a -

part - ments hand - in' smok - in' and **rap - pin'** nig - gas start shit next thing you know we **cap - pin'** get

locked up then don't e'en get **mad** now think a - bout man what a life I **had**

Example 7.2: Second verse of “Dead and Gone” (T.I. and Justin Timberlake, 2006).

7.3.2 Medium Tempo (80–110 bpm)

As mentioned above and in Chapter 5, the songs in the medium-tempo profile dominate the corpora and skew the overall tempo distribution toward the middle. Not only were these songs released relatively evenly throughout the corpora’s 40-year span, they also encompass a wide variety of geographic locations, lyrical/narrative tropes, and idiosyncratic approaches to flow. Indeed, the overarching feature of songs in this tempo profile is that they are stylistically

interpreted at 70 and 68.5 bpm when using the backbeat method (described in Chapters 2 and 5) to discern tempo, thus placing these songs in the slow-tempo profile.

heterogeneous; this tempo range forms something of a default template for hip-hop music.²⁰³

One possible reason for this is that the breakbeats sampled from funk and soul records that were commonly used as beats in earlier hip-hop music (especially tracks released before 2000) have tempos between 80–110 bpm. A potential physical explanation of these records' appeal to hip-hop music is that they fall in an eminently danceable tempo range, which is especially relevant given the large quantity of hip-hop music that has served this functional purpose.

Given the ubiquity of this tempo profile in the corpora, what can be said about its flow practices? As noted, in general they are much more variegated than those in the slow and fast tempo profiles. One practical explanation for this variety concerns the technical abilities of most MCs: in slow tempos, a convincing delivery of rapid, double-time flow rhythms is only achievable by the most technically proficient rappers, represented in the corpora by MCs such as Chamillionaire, T.I., and Busta Rhymes. But as shown above in Examples 7.1 and 7.2, the rhythmic patterns used in the fastest flow performances are often repetitive or continuous, lacking variety and engaging less with the natural rhythmic patterns of spoken English than slower performances. In the medium-tempo profile, much more rhythmic variety prevails. To be sure, general patterns of grouping and caesuras may persist in flow performances at this tempo range, and repeated rhythmic motives are also prevalent in this profile, but contrasting instances such as Raekwon's verse in "Protect Ya Neck" (Wu-Tang Clan, 1993, Example 7.3) show how flow rhythm can respect the stress-timed intricacies of spoken English, establish groupings according to syntax and rhyme, and be syncopated with respect to the beat layer, all simultaneously.²⁰⁴ In this performance, Raekwon almost never uses the same rhythmic pattern for more than one quarter-note beat at a time, and rarely repeats rhythmic motives, although in

²⁰³ In an interview from 1990, Chuck D of Public Enemy is quoted as suggesting that his own upper tempo limit was 128 bpm, because rapping over anything faster than that would become unintelligible (See Dery 1990, 478).

²⁰⁴ A notable example of repeated rhythmic motives against a medium-tempo beat occurs in Marley Marl et al.'s "The Symphony" (1988), excerpted in Example 4.1.

general, repeated rhythmic motives are also prevalent in the medium-tempo profile.

♩=102
(0:59)

way I make the crowd go wild sit back re-lax won't smile Rae got it go-in' on
pal call me the rap as-sas - si-na-tor rhymes rug-ged and built like Schwar-ze-neg-ger

Example 7.3: Second verse of “Protect Ya Neck” (Wu-Tang Clan, 1993).

7.3.3 Fast Tempo (greater than 110 bpm)

The fast-tempo profile is the most difficult to generalize about or distinguish from the others, because it is the least represented in the corpora and bears many similarities to the slow-tempo profile. Fast-tempo songs appear not to cluster in any particular time period. One might expect the syllabic density of these songs to rise concurrently with increased tempo, especially in the range that doubles the slow tempos. Put another way, there would seem to be nothing inhibiting an MC from rapping over a beat at 130 bpm the same way they could in double time over a 65-bpm beat. Yet apart from a few exceptions (“Sexual Eruption”, “I”, and “B.O.B.” among them), higher syllabic densities do not dominate the fast-tempo profile. Instead, as Example 5.7 (p. 136) shows, most verses in this profile have average densities *below* the trendline. One possible reason for this is that fast-tempo songs tend to use beats that are more texturally and rhythmically dense, thus leaving little room for a syllabically dense flow to interact with them.

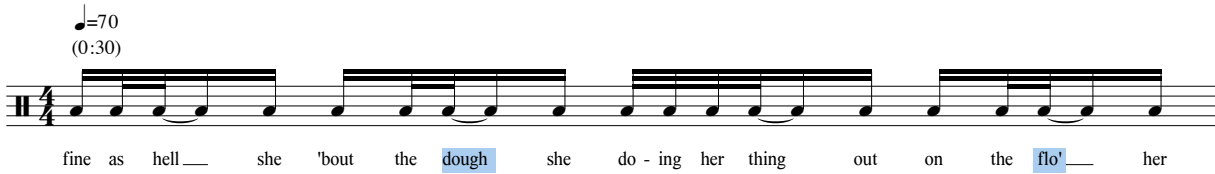
In summary, these tempo profiles reveal the distribution of corpus songs according to tempo, showing that songs in the mid-range tempo window are by far the most common, suggesting this window is something of a “natural tempo range” for hip-hop music. Indeed, many reasons for this could be surmised: breakbeats and funk/soul samples commonly used in

hip-hop music might also occupy this tempo range already, dance styles might favour this tempo range, or it could be that rapping is simply easiest and most natural—for many MCs—in this tempo range. Each of these theories can also easily be debunked, however. Producers can (and always could) slow down or speed up samples (although technical limitations in hip hop’s earliest days would have meant that the samples’ pitch was shifted along with its tempo—this is now circumventable). Dance styles can differ and evolve according to tempo. And as demonstrated by the slow and fast tempo profiles, MCs can innovate within their practice to become proficient and expressive atop beats of any tempo, it would seem. This all said, the ranges of syllabic density observed in the slow tempo profile and the range of rhythmic variance in the medium-tempo profile suggest that different musical parameters influence the diversity seen in these profiles.

7.3.4 A Commonality Transcending Tempo

While my goal thus far has been to distinguish flow practices in different tempo profiles, one distinct commonality exists across all three: anticipation rhymes, which were described and discussed in Chapters 5 and 6. In the examples of anticipation rhymes given earlier, the rhyme usually occurs on beat class n.375, but in slow-tempo songs, anticipation rhymes are usually found in double-time flow, thus occurring twice per measure, on beat classes n.2375 and n.4375. This practice is shown in Example 7.4, which details the opening measures of “Ayo Technology” (50 Cent, 2007). In the first measure of this verse, 50 Cent emphasizes all four iterations of this beat class—n.1375, n.2375, n.3375, and n.4375—even those that do not rhyme, on the lyrics “hell”, “dough”, “thing”, and “flo”. While such an emphasis pattern may be more common in slow-tempo songs, the anticipation rhyme paradigm is found in all tempos.²⁰⁵

²⁰⁵ Anticipation rhymes are present even in the fastest song of the corpora, “B.O.B.” (OutKast, 2000), which runs at 154 bpm.



Example 7.4: First verse of “Ayo Technology” (50 Cent, 1997).

7.4 Segmentation Profiles

Chapter 6 presented and summarized the ways in which various parameters of flow—such as rhyme, syntax, rhythmic groups, and others—can invoke segmentation markers in longer passages of flow. I supported Krims’s assertion that flow styles have become increasingly complex through the Golden Age with examples by Eric B. and Rakim (“Paid in Full”, 1987) and The Notorious B.I.G. (“Hypnotize”, 1997). But given the variegated styles and practices found in the flow performances in these corpora, generalizations that crudely pair segmentation characteristics with historical era or geographic region are at best tenuous. I instead propose a view of segmentation profiles that engages with the commercial standing of hip-hop music. The basic premise of this view is as follows: with the exception of a brief period in the mid- to late 1990s and early 2000s (roughly coterminous with the Millennial-era profile described below), the greater the commercial appeal of the song, the more likely it involves segmentation markers that align with one another in the flow layer and create a salient segmentation pattern that cleanly groups the flow into discernible phrases.

Since segmentation analyses are by nature detailed and time-consuming, I am unable to produce any statistical measurements of segmentation markers or phrase structure across the corpora. Furthermore, the analysis of phrasing is, at best, a subjective practice. I can, however, identify representative songs for distinct historical eras, and ruminate on why they might suggest straightforward or more complicated segmentation patterns, as the case may be. My analyses offer additional empirical support for Krims’s assertion of increased flow complexity after 1990.

Flow practices in old-school hip-hop music suggest straightforward, clear segmentation and phrase structures. When song lyrics are party-, hype-, or dance-oriented, as they are in many old-school hip-hop songs, they tend to follow phrase patterns that are repetitive and tightly organized. For example, the hype-filled, self-referencing lyrics of “King of Rock” (Run-D.M.C., 1984) progress through nine verses, each one displaying tightly organized phrases of one or two measures, with nearly no phrasal ambiguity. This tightness can be contrasted with the subtle traces of segmentation ambiguity in songs such as “Beat Bop” (K-Rob and Rammellzee, 1983), where the latter artist’s long, stream-of-consciousness second verse contains numerous obfuscations of phrase structure, or “Roxanne Roxanne” (UTFO, 1984), a narrative song that contains a segmentation-deferring rhyme chain in its second verse (1:18) that is untypically lengthy for old-school flow. While old-school hip hop generally features flow styles with more straightforward segmentation and phrase structures, the small bit of variety that does exist in this era’s songs may be connected to subject matter or rhetoric: songs with less clear segmentation patterns tend to avoid the most direct lyrical tropes of partying, braggadocio, or protest.

Golden-Age MCs such as Chuck D, Rakim, Ice Cube, Big Daddy Kane, and Slick Rick have earned lasting praise in hip-hop journalism and fandom as some of the pioneers that ushered in a new, more complex style of rapping in the late 1980s.²⁰⁶ This development, along with more sophisticated sampling techniques used by DJs, is a defining feature of the stylistic sea-change that separates old-school and Golden-Age hip hop. My analysis of “Paid in Full” (pp. 181–86) demonstrates how Golden-Age MCs used a variety of techniques to create flow performances that evade simple segmentation and phrasing analyses, and while this alone is notable, it should be considered in light of the commercial position of hip-hop in the late 1980s and early 1990s. For a large portion of the American public, the artists listed above (save perhaps

²⁰⁶ Ahmed et al. (2019) cites four of these MCs as “The Greatest Rapper Alive” in the years 1987–1990, and each of the MCs listed above routinely appears on other “best of” lists published online.

Ice Cube) were hardly known at all. Commercial hip-hop was, at this time, dominated by pop-rap artists like MC Hammer, Vanilla Ice, the Beastie Boys, and the Fresh Prince (Will Smith).

Excepting the Beastie Boys, these artists do not appear in the *Rolling Stone* corpus, possibly because their flow styles are not generally considered to be innovative or forward-looking, and their impact on posterity is not considered to be substantial. In many ways, the flow styles of the leading commercial artists of the Golden Age were, in fact, emulating techniques pioneered by old-school artists. In the Golden Age, then, two distinct approaches to flow segmentation emerge, largely distinguished by their practitioners' commercial status: clear segmentations by mainstream artists and more complex phrasing by less commercially prominent artists.

A major shift in commercial hip hop occurred with the mid-1990s rise to stardom of artists such as Tupac Shakur, Nas, and The Notorious B.I.G., and arguably continued through the early 2000s through Eminem, OutKast, Missy Elliott, and Jay-Z. For the first time in hip hop's history, MCs with markedly complex flow styles were the ones who topped the charts and dominated award categories at events such as the Grammys. As has been demonstrated, flow techniques not only became increasingly sophisticated through the 1990s, but these sophisticated developments were embraced by a wider audience. (A similar trend occurred with microtiming practices.) But by around 2005, songs with increasingly simplistic segmentation patterns gained more and more commercial attention, as artists such as the Black-Eyed Peas and Kanye West began to dominate both the charts and the Grammy Awards (as supported by data from the Grammy corpus). Even artists such as Jay-Z, who belonged to the cadre of ultra-complex MCs in the late 1990s, began to rap in a more easily delineated fashion, as evidenced by, for example, the comparatively regular rhythmic patterns in "Empire State of Mind" (2009, Example 7.5).

♩=87
(1:45)

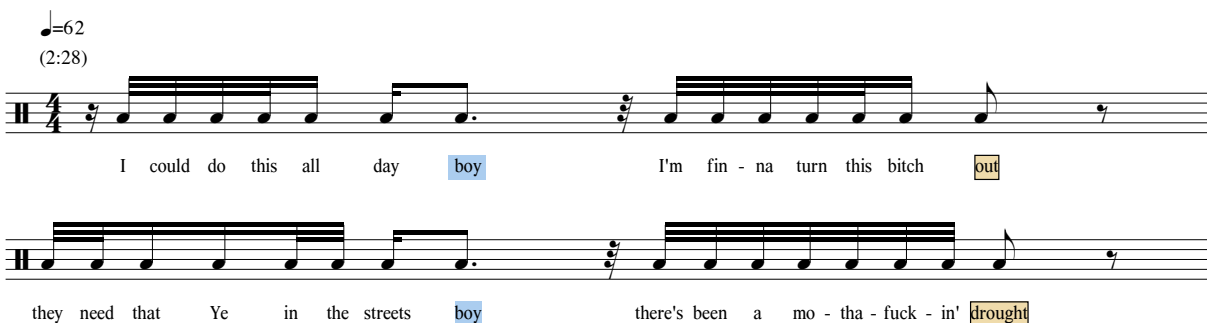
stor - ies out there in the na - ked ci - ty it's a pit - ty half of y'all won't make it me I got - ta

plug Spe - cial Ed "I Got It Made" if Jee - zy's pay - ing Le - Bron I'm pay - ing Dw - yane Wade three dice

Example 7.5: Second verse of “Empire State of Mind” (Jay-Z and Alicia Keys, 2009).

With the increased prevalence of triplet flow, rap-singing, stutter rap, and other techniques developed since approximately 2010, recent flow practices have generally leaned even more toward marked segmentation. Songs like “We Dem Boyz” (Wiz Khalifa, 2014), “Energy” (Drake, 2015), and “All Day” (Kanye West, 2015) feature unambiguous segmentation markers in their flow patterning, as Example 7.6 demonstrates in the last of these. Fewer examples of triplet flow and stutter rap are in the Grammy corpus, but these practices, too, exhibit clear segmentation patterns.²⁰⁷ One way of looking at the return to clear segmentation in flow practices of late is to characterize it as a move away from complexity or diversity, but this is a narrow view of flow practice in general. In other ways, recent flow is more diverse than older practices; this observation is discussed below. The type of flow pioneered by Golden-Age MCs and made commercially dominant in the mid to late 1990s by artists such as The Notorious B.I.G., Jay-Z, and Eminem, with intricate webs of segmentation markers, have largely been overshadowed by newer flow styles that rely less on segmentation complexity and more on devices such as greater sensitivity to singing or variations in microtiming.

²⁰⁷ See Duinker (2019) and Komaniecki (2019). Reasons explaining the general absence of stutter rap and triplet flow in the Grammy corpus can be no more than conjecture but may involve notions of highbrow or lowbrow hip-hop music, these flow styles perhaps being emblematic of the latter. Or, it could be that these flow styles will gradually appear more often in the various Grammy award categories associated with hip-hop music. Cardi B’s “Bodak Yellow” (2017) is a notable example of a song featuring both stutter rap and triplet flow that received two Grammy nominations in 2018.



Example 7.6: Second verse of “All Day” (Kanye West, 2015).

7.5 Microtiming Profiles

In Chapter 3 I proposed a system of describing microtiming in flow via three general types: lagging, swung, and conversational. After a brief review of these practices, I undertake close readings of passages exemplifying each one, to enumerate the characteristics that define these three practices as profiles. By “microtiming” I mean what is occasionally called microrhythm or expressive timing.²⁰⁸ Ohriner defines expressive timing as “variation in performed durations among notes represented in a musical score with a single rhythmic value” (2019b, [3]). An analogy for hip-hop flow might be the variation in attack point and duration of rapped syllables when performed in a quantized temporal environment.²⁰⁹

The question remains: what constitutes a quantized temporal environment? The beat? The

²⁰⁸ Ohriner (2019b) calls this phenomenon *expressive timing*, Benadon (2006) calls it *expressive microrhythm*, and The University of Oslo’s ongoing RITMO Centre for Interdisciplinary Studies in Rhythm, Time, and Motion (directed by Anne Danielsen) uses the term *musical microrhythm*.

²⁰⁹ Identifying the attack point of vocalized syllables is, as with any sound, a complicated and highly variable process that has been studied at length by Danielsen et al. (2019) and London et al. (2019). Attack-point identification involves locating the perceptual center of the sound (in this case a syllable), that is, “the specific moment when it is perceived to occur” (Danielsen et al. 2019, 402). My approach, though perhaps not the most accurate method, was at least consistent across each example I analyzed. I first slowed down the excerpt in Sonic Visualiser, annotated the sound wave for salient attacks in the beat layer (usually kick and snare drums) in order to establish a metric grid by which the lyrics could be measured, and then repeated the process for the lyrics. My chosen perceptual center for each syllable was the first vowel sound that occurred and that did not involve any preceding consonant sounds. This is because in order to make a lyric sound “on time”, vocalists are typically instructed to place any leading consonants ahead of the beat so that the vowel—the nucleus of the syllable—sounds on-beat.

listener's projection of meter based on perceived stimuli?²¹⁰ Ohriner's definition above deals with expressive timing in notated music, but hip-hop music lacks an authoritative, notated text. Therefore, whatever flow microtiming we seek to model must instead have one of two points of reference. If the beat is quantized—if its attack points are equally spaced—and it exhibits periodic hierarchy, then flow timing can be measured (and is no doubt perceived) against that quantized structure.²¹¹ But if the beat is not perceived as precisely quantized—if it exhibits unequal or inconsistent attacks or durations—then evaluating microtiming in flow becomes more nuanced; discrepancies in this regard can quite often be identified by ear.²¹² Danielsen (2018) has derived a method of dealing with these discrepancies, which she calls *beat-bin metre*. This term is predicated on Danielsen's theory that rather than hearing microtiming variations as approximations or deviations from a metronomically regular beat, listeners attend to these microtimings as equally valid representations of the beat. Instead of a metric groove containing discrete time points for beats, it comprises beat-bins: temporal windows in which any attack is understood as exemplifying that particular beat in the groove. As can be seen through this summary, a central issue in the discussion of microtiming in music lies in its temporal or metric reference point. Flow microtiming is referenced to the sounding beat as well as to one's internalized metric representation of that beat. Both these reference points are vital to consider, because beats do not always follow quantized timing, nor do they always possess sufficient

²¹⁰ London's 2012 definition of meter is relevant here: "musical meter is the anticipatory schema that is the result of our inherent abilities to entrain to periodic stimuli in our environment" (2012, 12).

²¹¹ This notion, of course, rests on the limits of what we perceive as quantized in a regular metric pattern, which relates to the issue of perceptual thresholds described above.

²¹² Schloss (2004, 140–144) provides an excellent summary of the question of quantization in hip-hop beats, and others' perception and valuation of it. A notable example of value judgement regarding quantization comes in Schloss's discussion of the Wu-Tang Clan's producer RZA, who is well known for producing beats that sound, to some, "sloppy" in their lack of quantized elements. But the main point Schloss wishes to make is that the accepted bottom line in the hip-hop community has become that if the beat "works", so to speak, its degree of quantization is irrelevant. Indeed, the beats created by legendary producer J Dilla possess microtimed elements that are difficult to accurately capture with notation. These "Dilla beats" are frequently reproduced live by drummers such as Ahmir "Questlove" Thompson of the Roots (see Stadnicki 2017, who discusses Dilla beats in relation to drummer pedagogy, Peterson 2017, who explores their "human" aspect, and Jonker 2019, who references their inherent instability in the music of Australian neo-soul group Hiatus Kaiyote).


information at subtactus levels to comprehensively express a metric grid against which the flow timing can be measured.

For the majority of hip-hop beats, however, a close approximation via notated transcription can serve as a suitable reference point from which to measure flow timing; this is the approach I use here.²¹³ Since I use standard score notation to transcribe flow and beat in this dissertation, I prefer to use supplemented forms of this notation to model the three main types of microtiming I have identified. As noted in Chapter 3, I draw on analytical tools used by Benadon (2006, 2009), Butterfield (2011), Dodson (2012), and Ohriner (2019b). Benadon (2006) proposes a *beat-upbeat ratio* (BUR) to quantitatively measure swung relationships between eighth notes, a strategy later used extensively by Butterfield (2011). I use BURs to model the degree of swing in MCs' swung microtiming performances. Benadon (2009) also proposes a twofold system of classifying timing deviations in 1920s jazz: the varying *Flux* (F) and the systematic *Shift* (S), both explained below). Dodson's graph-augmented notation, used to model expressive timing in performances of 19th-century music, can show subtle variance between rhythms that are shown as equal durations in score notation. And finally, Ohriner's method of graphically showing microtimed syllable onsets as yoked to a quantized version of them also represents the extreme, but nonetheless audible subtleties inherent in flow microtiming. These systems I use to evaluate various contexts for lagging microtiming—global and local—and how these microtiming practices engage with the rhetorical delivery of lyrics.

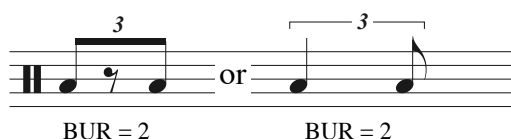
²¹³ The term “close approximation” warrants some clarification with regard to perceptual thresholds. Benadon discusses this issue at length, addressing the potential pitfalls of putting too much stock in microtiming measurements that are so small they are not perceivable by ear. He settles on a rule of thumb for his own study, which I follow in my work here: that “measurement magnitudes are significant only when they serve to support and articulate a ‘by ear’ explanation of the passage. This approach is purposely permissive of subjective interpretations of rhythm. Its logic rests on the understanding that an analysis which purports to explain expressive effects is fundamentally suspect if its measurements do not reflect appreciable sonic manifestations” (2009, 5). For Benadon, this generally means microtiming deviations below 50 milliseconds are imperceptible. In this section of the chapter, accordingly, I occasionally downplay the significance of (or ignore) certain microtimings on the grounds that I find them to be imperceptible.

7.5.1 Swung Microtiming

Swung microtiming characterizes performances where MCs subdivide the basic beat in unequal proportions. In jazz orthography, swung rhythms are normally either notated with triplets or left unnotated altogether, relying on stylistic familiarity with performance practice to understand that straight eighths will be swung in performance.²¹⁴ In my transcriptions, I continue this practice of leaving swung rhythms unindicated by notation for two reasons. First, the degree to which MCs swing their subdivisions is rarely consistent, as will be shown below: each swung rhythm is slightly different from the others. Second, the degree to which these subdivisions are swung is no more accurately modelled by triplet notation than by duple rhythms such as eighths or sixteenths. Instead of modifying my notated transcriptions to reflect swung microtiming, I augment them using the more precise *beat-upbeat ratio* (BUR) developed by Benadon (2006). BUR measures the durational proportions of different subdivisions of the same beat. For example, two equally spaced eighth notes would have a BUR of 1, since they are exactly the same duration. A triplet subdivision as shown in Example 7.7 would thus have a BUR of 2, since the first duration is twice as long as the second (counting the rest as part of the first note's duration), and a dotted-eighth/sixteenth pairing would have a BUR of 3 since the duration of the former is three times the duration of the latter.²¹⁵ In Benadon's (2006) and Butterfield's (2011) examples, most swung rhythms have BURs between 1 and 2, meaning that they fall somewhere between even eighth notes and triplets.

²¹⁴ Swung rhythms are often indicated at the beginning of scores with the marking .

²¹⁵ Benadon (2006, 75) provides a more detailed description of BURs, including a graphic example.



Example 7.7: Beat-upbeat ratios (BURs) for triplets.

To partially paraphrase Butterfield, why, then, do hip-hop MCs swing their eighth notes?²¹⁶ I propose three reasons, providing an example to support each. The first reason echoes Butterfield’s thesis that “varying the Beat-Upbeat Ratio ... enables jazz musicians to manipulate the flow of motional energy across a phrase” (2011, 3). Butterfield makes a distinction between the purposes of straightening and swinging eighth notes. Straight eighth notes maintain a sense of forward momentum (which Butterfield calls *motional energy*) without being impeded by any larger divisions of the beat, such as the quarter note. Conversely, swung eighths draw more attention to these larger divisions.²¹⁷ Example 7.8 excerpts part of the second verse of “Rosa Parks” (OutKast, 1998), which is rapped by André 3000. The excerpt reveals a high degree of swung timing in André 3000’s performance: each BUR between syllables resides in the approximate range of 1.5 to 2.75 (a BUR of 1.5 suggests a quintuple division of the quarter note into 3:2, while a BUR of 2.75 approaches a dotted-eighth/sixteenth subdivision).²¹⁸ Furthermore, the mean BUR in this passage is almost exactly 2.0, the same value as the triplet subdivision (see above).

²¹⁶ Butterfield’s 2011 article is titled “Why Do Jazz Musicians Swing their Eighth Notes?”

²¹⁷ See Iyer (2002, 404–405).

²¹⁸ To identify the location of syllabic onsets, I use the software Sonic Visualiser, which depicts sound files in soundwave format and allows for their annotation. I slow the sound files down significantly to be as precise as possible regarding my annotation of syllabic onsets. Following Benadon’s comments regarding the usefulness of precision measurements in microtiming studies, I only regard as significant what I can hear at the regular performance tempo.

♩=104
(1:26)

BUR:	2.7	2.3	2.2	1.7	1.6	1.6
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Example 7.8: Second verse of “Rosa Parks” (OutKast, 1998). The beat-upbeat-ratio (BUR) values represent the durational quotient between the first and second attacks in each space separated by the dotted vertical lines.

While the swung factor in this passage is thus undeniable, and eminently audible in the recording, I nonetheless hesitate to use triplets in my transcription. The BURs certainly suggest that these durations are not true eighth notes, but arguably, no more are they triplets. Since triplet flow is a widely acknowledged practice—one that is distinct from swung timing—I reserve triplets for modelling examples of that practice. In addition, it is often difficult to tell whether an MC truly intends a triplet feel unless all three triplets in a quarter-note beat are syllabified, which occurs quite rarely in instances of swung timing. Returning to Example 7.8, the rhythm of this passage is not anything that conventional notation can accurately depict.

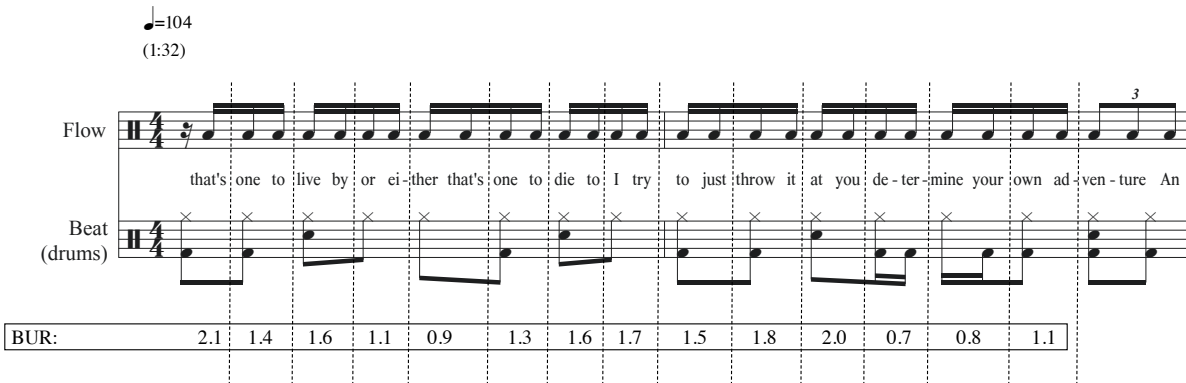
We could, perhaps, round the BURs to one or two decimal places and arrive at the hypothetical transcription shown in Example 7.9. But what would it represent? Is this how André 3000 conceived of the passage? Is this how we are meant to hear it? I am inclined to answer both questions in the negative, and prefer a transcription that I believe captures André 3000’s rhythmic intent behind this passage: the delivery of a somewhat even stream of swung syllables in sixteenths that accentuate the larger, eighth-note subdivision. When the excerpt is heard at regular tempo, neither triplets nor the intricate transcription included in Example 7.9 go far in modelling this intention.

♩=104
(1:26)

BUR:	2.7	2.3	2.2	1.8	1.6	1.6
Rounded:	2.5	2.5	2.0	2.0	1.5	1.5

Example 7.9: Second verse of “Rosa Parks” (OutKast, 1998). The same passage shown in Example 7.8 is transcribed differently here to more faithfully capture the microtiming in André 3000’s performance. The BURs (rounded to intervals of 0.5) are used to generate these rhythmic values. For instance, a BUR of 2 represents a triplet, while a BUR of 1.5 represents the ratio of 3/2, which can be most cogently represented in quintuplets.

Later in the verse, André 3000’s flow timing changes slightly across a similar passage of ongoing sixteenths, shown in Example 7.10. Here, the BUR values are on average much more varied; some are even below 1, meaning the downbeat syllable is actually shorter than the following upbeat. Indeed, when listening to this passage at performance tempo, any consistent notion of swing is almost imperceptible. With an average BUR of just slightly below 1.5 (the quintuple subdivision described above), we are even less likely to prefer triplet notation over eighth/sixteenth notation. I perceive the rhythmic function of this passage to align with Butterfield’s reason for straight eighths: a sense of forward momentum (motional energy) is maintained by André 3000 in this passage and leads convincingly to the MC’s declamatory uttering of his own name at the end of the excerpt. Across these two excerpts (and indeed the whole verse they are drawn from), André 3000’s subtle and tenuous straddling of swung and straight rhythms projects differing senses of motional energy into his performance, at times highlighting larger subdivisions through swing timing and at times propelling forward with straighter sixteenth notes.

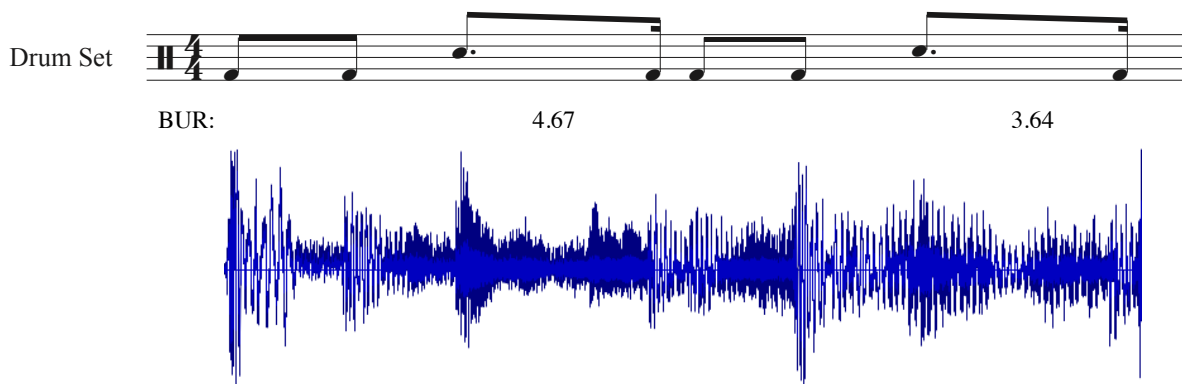


Example 7.10: Second verse of “Rosa Parks” (OutKast, 1998). In this excerpt, the BUR values vary widely, but many of the lower values (those close to 1.0) go by unheard as swung at performance tempo.

The second reason for swung timing is that hip-hop beats themselves contain swung subdivisions; this is unsurprising considering the presence of swung rhythms—to varying extents—in nearly all forms of vernacular music in the 20th century.²¹⁹ Many examples of swung-microtimed flow exist in songs that exhibit some aspect of swung timing in their beat layers. This presence of swing in the beat need only be fleeting, as in “Protect Ya Neck” (Wu-Tang Clan, 1993). The beat loop for this song is transcribed in Example 7.11. The only audible swung element of this beat are the kick drum hits at last sixteenths of beat 2 and 4 (n.275 and n.475). A listen to this song’s various verses—there are seven, each rapped by a different MC—reveals that swung timing is prevalent in some quantity in each verse. In highlighting this rhythmic relationship between flow and beat, I stop short of supposing a causal relationship. Short of possessing a detailed account of how these verses and the beat were conceived and recorded, we have little way of knowing which layer was created first, or, if the beat was

²¹⁹ Stewart (2000) investigates the gradual transformation of swung to straight subdivisions of meter in American vernacular music, pinpointing the root of this transformation in New Orleans R&B music of the 1950s. Regardless of the shift Stewart describes, and though not in a ubiquitous way, swung timing has pervaded various genres in the second half of the 20th century, notably blues, rock, and offshoot genres of these two.

recorded first, whether a final version was used when vocals were tracked in the studio.²²⁰



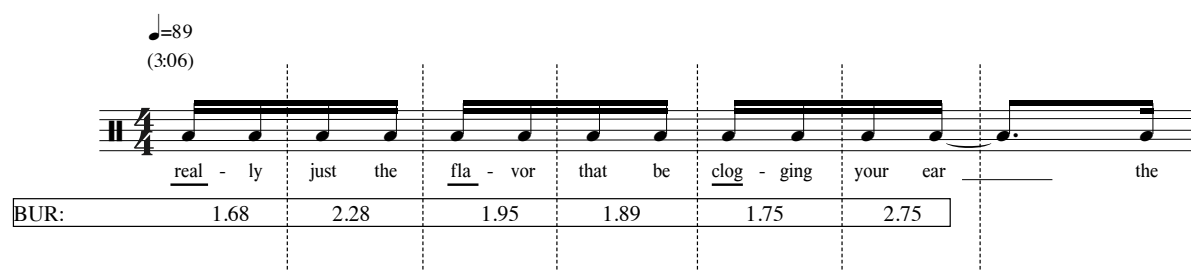
Example 7.11: Basic beat in “Protect Ya Neck” (Wu-Tang Clan, 1993). The sixteenth-note kick drum upbeats are swung so heavily the BUR they create is much higher than if they were true sixteenths, where a dotted eighth/sixteenth subdivision would yield a BUR of 3.

Beat and flow may relate in an opposing rhythmic context as well, where a passage of swung flow against a straight beat bears the occasional marker of explicitly straight eighths. Returning to Example 7.10, the two lowest BURs in each measure occur across eighth-note spans that contain a kick drum on the off-beat sixteenth. Because these BURs are lowest in these locations, we know that André 3000 places his off-beat syllables earlier than all others in the measure. One possible reason for this is to line them up more closely with the kick hits at these points, as suggested in the transcription. While we cannot be sure that is exactly what has been done here, and divergences in swung timing of this magnitude can hardly be heard at the regular song tempo, this excerpt does point out how closely synced rhythmic aspects of flow and beat can be.

The third reason for swung microtiming is language-specific. Since English is a stress-timed language—meaning that stressed words and syllables are sounded for longer than

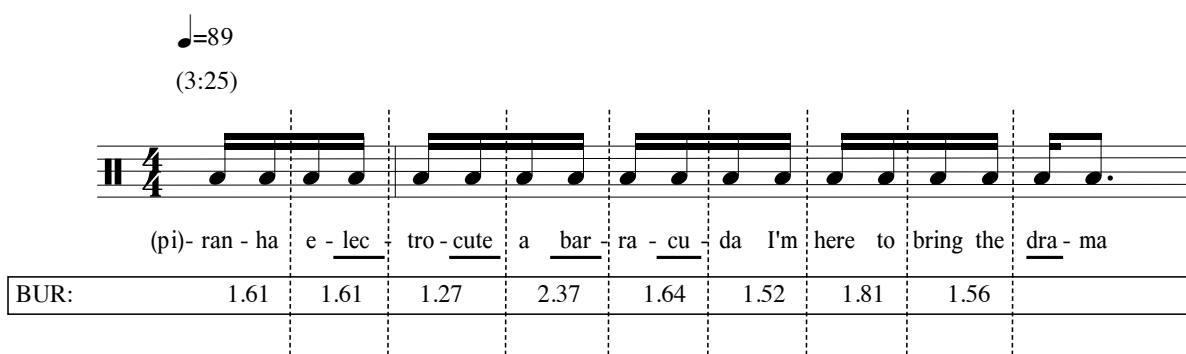
²²⁰ This question of compositional relationship between beat and flow, and by extension producer and MC, has been debated by Adams (2009b) and Williams (2009), as summarized in Chapter 5.

unstressed ones in speech—it seems logical that swung timing would be a useful device for communicating lexical and prosodic stress, perhaps just as important as accent derived from volume or vocal pitch. In “Flava in Ya Ear”, LL Cool J’s verse captures both aspects of stress, eventually pitting them against one another. In Example 7.12, his swung timing closely corresponds to the lexical and prosodic stresses of the syntactic unit, which are also enhanced through his vocal accents effectuated by tessitura, volume, and articulation. The lexical stresses on “**real**-ly” and “**fla**-vor” fall on-beat, and the rest of the lyrics follow a predictable pattern of stress. The lyrics “just” and “**clog**-ging” are important ones in the unit’s meaning, and “ear”, though arriving on an off-beat, functions here as an accented anticipation end rhyme (see p. 154). In this passage, the lexical and prosodic stress, performed accents, and swung timing all concur.



Example 7.12: Fourth verse of “Flava in Ya Ear (Remix)” (Craig Mack et al., 1994). Lines under lyrics indicate lexical stresses in multisyllabic words.

Later in the verse, however, the swung timing diverges from these other parameters. In Example 7.13, after the lyric “piranha”, the lexical stresses in “electrocute” and “barracuda” fall on swung off-beat sixteenths. Furthermore, these are both four-syllable words that have multiple stressed syllables at varying stress levels: **e-LEC-tro-cute** and **bar-ra-CU-da**. These stressed syllables in both words fall on offbeats, as the example shows. In faithfully accenting these lexical stresses through registral and volume changes, LL Cool J creates a profound sense of syncopation that is enhanced through the swung timing he uses.



Example 7.13: Fourth verse of “Flava in Ya Ear (Remix)” (Craig Mack et al., 1994). In this excerpt, the lexical stresses fall on off-beat swung rhythms.

Swung microtiming exists at some audible level in at least 47 of the 470 verses in the corpora: perhaps not sufficient representation to consider it a defining aspect of hip-hop flow, but sufficiently prevalent to warrant the foregoing discussion. Given its distribution over hip-hop’s history, swung microtiming has been, and continues to be, an integral part of some MCs’ flow styles, and is a useful tool for effectuating rhythmic concordance or contrast with the beat, or by emphasizing lexical and prosodic stress.

7.5.2 Lagging Microtiming

Lagging Microtiming, the practice of “lagging” behind the beat, is far more widespread in the corpora than swung microtiming; lagging is present in at least 96 verses, or 20% of the total. Connor underscores this prevalence, writing that “one of the defining aspects of the rap genre [is] its vocalists’ expressive rhythmic delays” (2018, 17). Connor’s method of analyzing lagging microtiming involves his system of “noctuplets”, which he states “should be understood as a redivision of the bar into eight eighth notes, with an extra one leftover [sic]” (17).²²¹ While

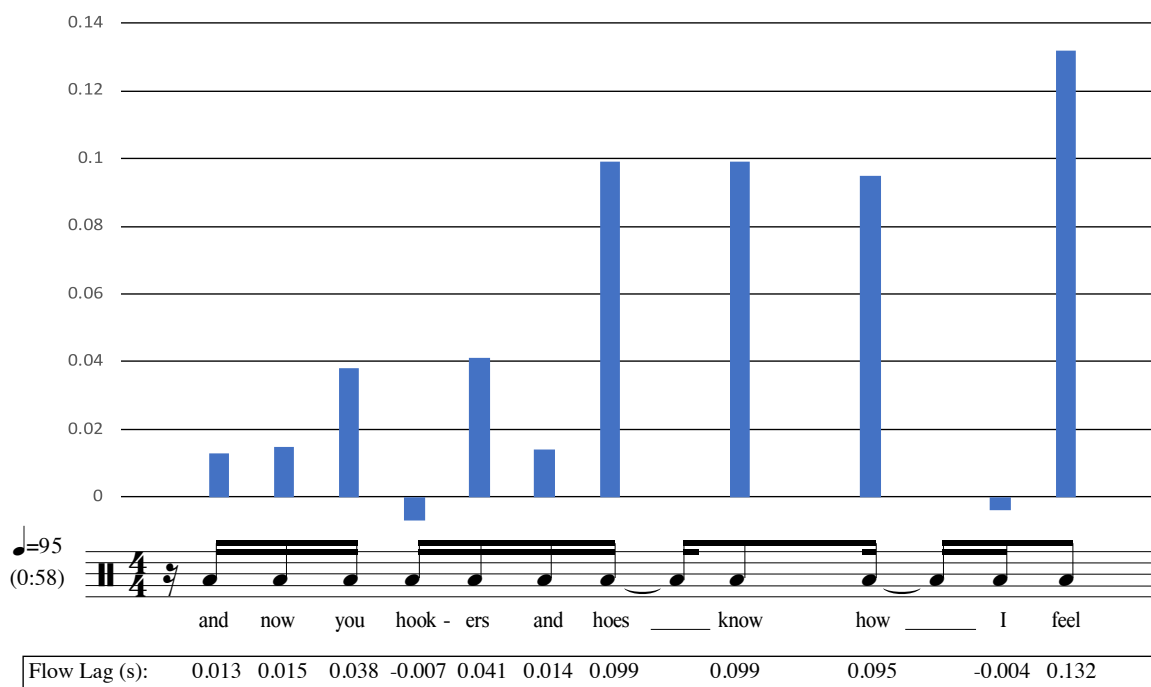
²²¹ Connor continues: “without noctuplets, the inclusion of such rhythmic trailing behind the beat is either too hard to capture accurately, or reduced to the inaccurate ambiguity of a performance indication” (2018, 17). This statement is problematic for two reasons. First, Connor’s noctuplets are no more accurate than any other system currently used to model lag microtiming; in fact, they are significantly less accurate than the system Ohriner used in his analysis of “Momma” (Kendrick Lamar, 2015). Second, Connor’s mentioning “inaccurate ambiguity of a performance indication” implies that a principal aim of transcribing flow performances is to render them possible for performance

Connor's system attempts to modify conventional notation to represent lagging, here again I choose to leave my notated transcriptions intact, instead augmenting them with supplementary data. I again turn to Benadon, who, in a 2009 paper on expressive timing in jazz, outlines a theory of "time warps": methods of elasticizing temporality through expressive timing (mainly through lagging). Benadon's first time warp is defined as "Flux" (F) transformation, which "distorts the original rhythmic template by molding it into an acceleration, a deceleration, or a combination of these" (2009, 1). Conversely, his "Shift" (S) transformation "changes the global tempo of the template" (1). Benadon's examples of F and S transformations involve solo instruments against an accompanying texture, making this system adaptable for use in the similar textural combination of flow against beat.

Below I apply the Flux transformation to local instances of lagging in flow, where the MC only momentarily lags. In these cases, graph-augmented notation can show the actual duration of a syllable as compared to its quantized duration in my transcription. This comparison thus measures the degree of lagging that occurs: the greater the lag, the further my transcription is from the actual sounding performance. In the excerpt of "Nuthin' but a G Thang" (Dr. Dre and Snoop Dogg, 1992) shown in Example 7.14, the graph above the notated score plots the lag of each syllable behind a quantized version of the measure (i.e. the transcribed version included in Example 7.14). The lag timings were determined in Sonic Visualiser. I first determined the absolute time of the measure's downbeat, and using the tempo of 95 bpm I interpolated the absolute time of each sixteenth note beat of the measure. Using Sonic Visualiser, I then identified the absolute time of each syllable and measured it against the quantized time to determine the lag. To make sure my quantized times were accurate, I projected them forward against the on-beat drum sounds in the beat layer, and the time difference between these drum

by others, but I would be hard-pressed to find any scholar in this field who would profess this aim for their transcription work.

sounds and my quantized beats were always within 0.05 seconds, the perceptual threshold used by Benadon (see above).



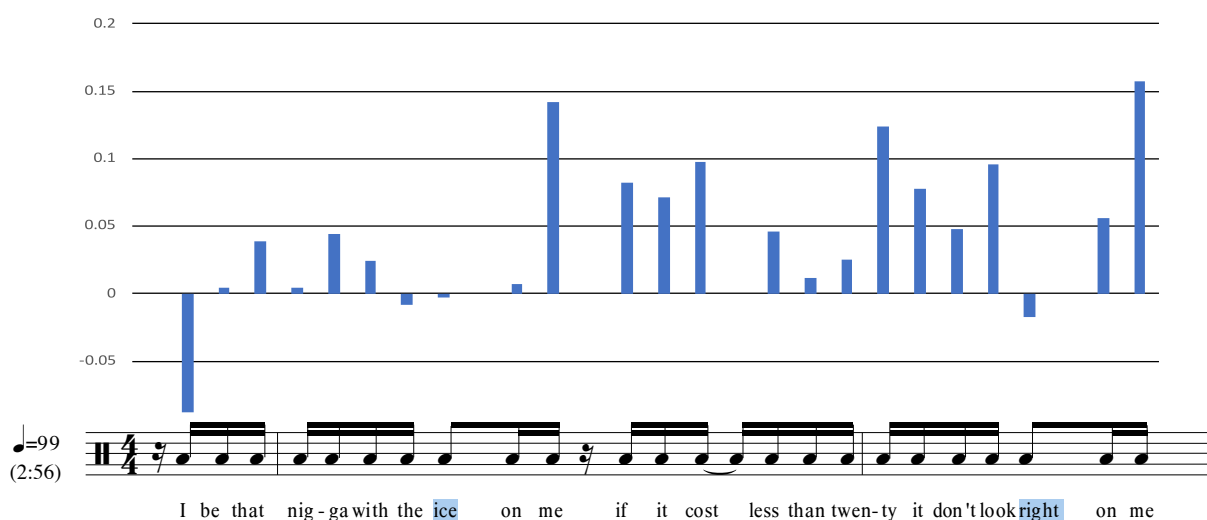
Example 7.14: First verse of “Nuthin’ But a G Thang” (Dr. Dre and Snoop Dogg, 1992). The lag timings listed below each note indicate how far behind (or ahead, for negative values) the beat Snoop Dogg is rapping. The graph above the staff plots this visually, illustrating how Snoop Dogg’s lag increases through the measure.

Beginning with the lyric “hoes” and continuing thereafter, Snoop Dogg’s syllables begin to lag noticeably behind the beat.²²² This practice of lagging toward the end of a phrase, or syntactic unit, is used frequently by Snoop Dogg, and I interpret it as a rhetorical device for expressing a declamatory delivery of the lyrics. Snoop Dogg’s performances rarely contain drastic fluctuations in volume and register, so this elongation and lagging of syllables becomes his main means of rhetorical emphasis. The Flux transformation thus manifests here as

²²² In this passage, Snoop Dogg introduces a complicating element: elongated diphthongs (the combination of two vowel sounds in a single syllable). When he raps the word “feel”, he pronounces it more like “fay-ul”, raising the question of whether this lyric is now disyllabic in Snoop Dogg’s performance of it. In my microtiming annotation, I used the location of the first “syllable” in his performance as a marker for the whole word, but I acknowledge that this could be interpreted differently by other analysts.

something of a deceleration from the beginning to the end of the passage.

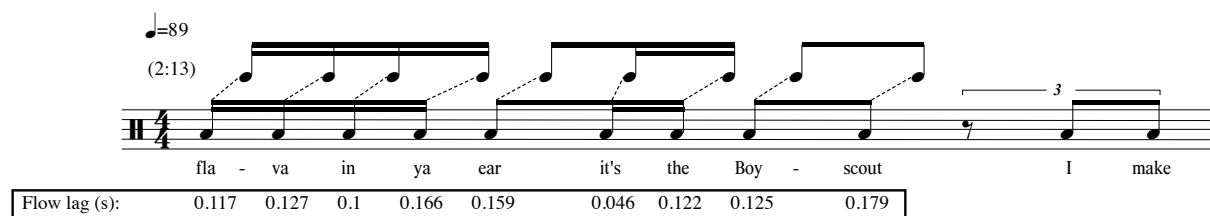
In the song “Bling Bling” (Baby Gangsta et al., 1999), interpreting the Flux transformation is predicated on anchoring syllables that do not exhibit any perceptible lag against the beat. In Example 7.15, the pseudo-rhymes “ice” and “right” line up closely with the snare drum hits that underpin them. But these lyrics are part of larger rhyme units: “ice on me” and “right on me”. The “on me” in each unit lags noticeably, as the graph above the notation details. Furthermore, the other syllables, especially those between these two rhyming units, are also noticeably delayed from their quantized representation in the transcription, suggesting a different type of Flux transformation, a reciprocal one wherein a combination of deceleration and acceleration prevail in between anchor points. This type of flux transformation appears to function as a grounding device negotiating the threshold between rhythmic rapping and free-flowing conversational delivery. In a sense, Baby Gangsta’s performance straddles this threshold: on the one hand, he is clearly rapping rhythmically to a steady beat and maintains this effect by lining up his rhymed syllables in close synchronicity with the beat. On the other hand, his noticeable (and audible) lagging between rhymed syllables departs from a rapped style and begins to border on a more rubato, perhaps even conversational (see below) approach to flow rhythm—comparatively less metric sounding than other parts of this verse.



Example 7.15: Fifth verse of “Bling Bling” (Baby Gangsta et al., 1999). Lag timings are indicated by the vertical bars on the graph. The two iterations of the word “me” are noticeably more lagged than their surrounding lyrics.

By contrast, the Shift transformation reflects occurrences of global lagging, where an MC lags for an entire phrase or longer. In these instances, it makes sense to look at the flow layer as either being in another tempo or functioning in a micro-polyrhythmic relationship with the beat layer. Rampage’s performance in “Flava In Ya Ear” (Craig Mack et al., 1994) illustrates a sustained use of lagging, as shown in Example 7.16. The lag values between the quantized beat and Rampage’s syllables are shown below the transcription. These values are then used to graphically orient a separate notation above the quantized one, connecting each related syllable with diagonal dotted lines. Rather than replicate the beaming and durational information used in the quantized staff, or to propose an alternate tempo (as Benadon would do for a Shift transformation), I prefer only to show graphically how much lag there is between quantized and sounding syllables. For an alternate tempo to be appropriate here, the syllable durations would have to be consistent, which they are not. Here I use a method of augmented notation inspired by the system Ohriner (2019b) uses in his transcription of Kendrick Lamar’s flow in the song “Momma” (*To Pimp a Butterfly*, 2015). While not explicitly expressing a different tempo, as in

Benadon’s Shift transformation, this lag arguably still functions in a shift-like manner against the beat in its systematic delay.



Example 7.16: Third verse of “Flava in Ya Ear (Remix)” (Craig Mack et al., 1994). Lags are represented visually (approximately) according to the percentage of their transcribed value by which they lag behind their quantized position. For example, the first syllable lags by 0.117 seconds, which is 68% of the duration of a sixteenth note at this tempo.

Why do MCs lag so often, and occasionally so profoundly? The answer does not lie in a lack of rapping technique: if anything, the opposite is true. As demonstrated through the examples discussed in this section, MCs who use lag microtiming do so as a result of highly personalized and complex flow techniques. Often, their lagging is interspersed with a more quantized flow in short spans of a measure or less. The answer to “why”, then, probably involves the musical relationships between flow and beat layers—as I proposed for swung microtiming—as well as overall notions of groove and feel. Danielsen (2013) has shown how local microtiming inflections affect the overall sense of groove in a musical passage, and individual components of a composite texture can be adjusted to sound not simultaneously but slightly microtimed, exuding a greater sense of textural thickness to listeners. Lag microtiming might also have something to do with lyric intelligibility. Ammirante and Copelli (2019) found that MCs generally use vowels with higher formants over on-beat percussion sounds and hypothesize that this practice allows those lyrics to be better heard and understood against the dominating percussion. They also acknowledge a shortfall in their study, namely that it fails to account for microtiming. I hypothesize that MCs also lag in order to be better understood: by delaying syllables, they circumvent the issue of their lyrics being overwhelmed and obfuscated by aspects

of the beat. As shown above for “Nuthin’ But a G Thang”, lag microtiming can play an important rhetorical role in an MC’s delivery. By using systems and theories proposed by Benadon and Ohriner, I have underlined the rhetorical and varietal aspects of this popular flow technique.

7.5.3 Conversational Microtiming

Conversational microtiming is perhaps the easiest method to explain and hypothesize the reasons behind its prevalence. This type of microtiming refers to MCs approximating (to varying degrees) the natural rhythms of speech in their flow. These rhythms are highly variegated from speaker to speaker, from dialect to dialect, and from rhetoric to rhetoric, and as such, conversational microtiming is much more difficult to systematize than swung and lagging microtiming. Since rhetoric and expressiveness play such a strong role in how we pace our speech, an ideal example to consider here is the song “Stan” (Eminem, 2000), where Eminem plays the role of the fictitious character Stan as well as himself over the song’s four verses. The first three verses are letters written and read by Stan, a devoted but troubled fan of Eminem’s in the song’s narrative. Over the course of these three verses, Stan’s demeanour becomes more agitated and volatile as he grows increasingly frustrated with Eminem’s lack of response to his fan mail; this trajectory ends with Stan committing suicide and killing his pregnant girlfriend in the process. (Eminem responds to Stan in the final verse.)

The reason I include this summary is because it is vital in understanding how Eminem (the rapper, not the song character) uses conversational microtiming to characterize Stan as growing increasingly irate. Example 7.17 transcribes the first several lines of the first verse. The impression we get from listening to this passage is that Stan is reading the letter he wrote to Eminem (although in the video he is not doing this). Below the transcription are each syllable’s quantized notated durations at the song’s tempo of 80 bpm, and above these values are the actual

timepoints of the syllables as Eminem (Stan) raps them. Finally, the difference between these two durations is shown at the bottom of the table. These data reveal two main aspects of Eminem’s conversational microtiming. First, that it is indeed microtimed quite heavily, as evidenced by the constant discrepancies between the quantized and actual vowel lengths that range above 0.05 seconds. And second, that the variation across vowel lengths in Eminem’s performance is quite pronounced. A quick survey of the actual durations of syllables transcribed as sixteenth notes (thus having quantized durations of 0.188 seconds) reveals this variance.

$\text{♩} = 80$
(0:49)

dear Slim I wrote you but you still ain't call - lin' I left my cell my pag - er and my home phone at the bot - tom I

sent two let - ters back in aut - umn you must not - 've got 'em there pro - bably was a prob - lem at the post of - fice or some - thin'

Lyric	dear	Slim	I	wrote	you	but	you	still	ain't	call-	ing					
calculated duration	0.342	0.383	0.132	0.268	0.138	0.174	0.167	0.131	0.181	0.305	0.37					
notated duration	0.375	0.375	0.125	0.25	0.15	0.15	0.15	0.15	0.15	0.188	0.188					
difference	0.033	0.008	0.007	0.018	0.012	0.024	0.017	0.019	0.031	0.118	0.183					
Lyric	I	left	my	cell	my	page-	r	and	my	home phone	at	the	bot-	tom		
calculated duration	0.145	0.196	0.181	0.247	0.167	0.254	0.138	0.152	0.153	0.275	0.189	0.123	0.146	0.21	0.472	
notated duration	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.25	0.25	0.125	0.125	0.188	0.375	
difference	0.042	0.008	0.006	0.059	0.021	0.067	0.05	0.035	0.035	0.025	0.061	0.002	0.021	0.023	0.097	
Lyric	I	sent	two	let-	ters	back	in	aut-	umn	you	must	not-	ve	got	em	
calculated duration	0.174	0.196	0.13	0.153	0.232	0.203	0.109	0.225	0.21	0.116	0.204	0.145	0.138	0.224	0.574	
notated duration	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.15	0.15	0.15	0.15	0.188	0.375	
difference	0.013	0.008	0.058	0.034	0.044	0.016	0.079	0.037	0.023	0.034	0.054	0.005	0.012	0.037	0.199	
Lyric	there	prob-	b'ly	was	a	prob-	lem	at	the	post	off-	ice	or	some-	thin'	
calculated duration	0.152	0.218	0.116	0.116	0.203	0.225	0.123	0.124	0.145	0.239	0.269	0.116	0.189	0.254		
notated duration	0.188	0.25	0.25	0.125	0.125	0.25	0.25	0.125	0.125	0.25	0.25	0.125	0.125	0.188		
difference	0.036	0.032	0.134	0.009	0.078	0.025	0.127	0.001	0.02	0.011	0.019	0.009	0.064	0.066		

Example 7.17: First verse of “Stan” (Eminem, 2000). Each syllable in the notated transcription is reproduced below, with its duration as calculated using Sonic Visualiser, its duration based on the transcription note values and tempo, and the difference between these two durational values.

But these qualifying factors need not even be consulted to understand what a performance featuring conversational microtiming sounds like. A quick YouTube search will

reveal isolated vocal versions of Eminem's performance in Stan, where the backing track has been mixed down (or out), thus removing any metric reference point for the flow. These versions of hip-hop songs can be found in quantity on sites such as YouTube and SoundCloud, and while they place the rhythmic intricacy of flow performances in greater relief, without the regulating influence of the beat, most of these versions still sound like the MC is rapping, and not merely speaking. The isolated vocal of "Stan", however, does not sound like this. Eminem seems to simply be speaking with a normal conversational cadence.²²³ Two of the main clues that he is indeed rapping come in his line-ending rhymes. First, because his end rhymes tend to fall on consistent beat-class locations in the first verse of "Stan", all his phrases are approximately the same absolute duration, which is not likely in normal spoken English. Second, since many of his end rhymes are multisyllabic, the rhythmic relationship they create is quite marked, and probably would not exist in a purely conversational rendering of these lyrics. (A third and more obvious indicator that this is indeed rap is the presence of the rhymes themselves.)

The foregoing observations encapsulate the essence of conversational microtiming: a flow practice that closely mirrors the natural rhythms of speech but anchors them in a musical grid in some way. For Eminem, this way was through end rhymes: even when Stan grows more and more irate in the second and third verses, Eminem's performance still respects a fairly consistent rhyme placement that anchors the increasingly out-of-control rhetoric put forward by the character. This is, after all, still rap. Rhyme placement may not be the anchor of choice for every MC who engages in conversational microtiming, but for the most part, some anchor must be present to yoke the flow to the beat in this practice. Indeed, the presence of this anchor is what distinguishes rapping from speech.²²⁴

²²³ See Brookes, "Eminem – Stan (Acapella)" (uploaded 2013) <https://youtu.be/BMF0cKw755s>.

²²⁴ British MC Mike Skinner, who goes by the stage name The Streets, is a notable exception to this assertion. He raps in a free-flowing beat-poetry style that bears almost none of the typical stylistic attributes of rapping.

As shown here, microtiming in flow occurs in a variety of contexts, quantities, and bears the potential for effectuating variegated rhetorical functions. I proposed that swung microtiming, measured here using beat-upbeat ratios, appears to be used either to maintain rhythmic synchronicity with the beat layer, to highlight (or subvert) lexical and prosodic stresses inherent in the lyrics, and to moderate the accumulation and/or dissipation of motional energy across a passage of flow. Lagging microtiming was measured using Benadon's Shift and Flux transformations, which I adapted to represent instances of global and local lagging, respectively. Lagging can be used to evoke a sense of swagger or calmness, to draw rhetorical attention to particular lyrics, or to cultivate a "feel" or "groove" along with, or in contrast to, the beat layer. Finally, conversational microtiming was discussed in terms of its narrative potential, in the context of Eminem's "Stan". For this song, conversational microtiming is used narratively, to convey the reading of letters written by the fictional title character Stan, and Eminem himself. My work presented here leaves much room for further study (some directions for which are already illustrated by Ohriner's work).²²⁵ My categorization of microtiming into three types has been based on rudimentary aural identification, and further explored using more precise means of identifying the timepoints of each flow syllable. But this work could be continued much more precisely with a rigorous approach to timepoint extraction (which could be automated, rather than done by ear) that is based on vowel onsets or some other acoustic feature. For example, studies could perhaps shed light on perceptual thresholds between the three types of microtiming. While such methodology would surely reveal new insight into microtiming, it lies beyond the scope of this dissertation; not only due to the time it would take, but also because it extends well into a realm of temporal precision that is beyond what the ear can detect. For all these types of microtiming, future research should also consider how they relate to rhythmic practices of

²²⁵ See Ohriner (2017, 2019b, and 2019c).

African and Afro-American musical traditions that predate—and thus influence—hip-hop music.

7.6 Rhetorical Profiles

MCs use expressive musical parameters such as rhythm, pitch, accent, articulation, and phrasing to convey and enhance the meaning of their lyrics. These devices thus contribute to each MC's rhetorical approach to rapping. The fourfold rap genre system that Krims proposed (2000, 46–92) relies to some extent on rhetorical aspects of rapping, integrating lyrical topics and types of flow for each of his genres of party rap, mack rap, reality rap, and jazz/bohemian rap. Duinker and Martin (2017) extrapolated 11 types of lyrical tropes from Krims's system that appear in Golden Age hip-hop music. Specifically, we found that Golden-Age rap lyrics generally subscribe to one or more of the following 11 topics: partying, sex, romance, humour, braggadocio/representation, dissing, the generation gap, stories/messages, social issues (including street life), reminiscence, and autobiographical.

But cleanly mapping rhetorical approach to lyrical topic is impossible, as Krims notes when he repeatedly stresses that his three flow styles—sung, speech-effusive, and percussion-effusive—do not correspond wholesale to any of his four genres, save perhaps for the overwhelming prevalence of sung style in party rap.²²⁶ It should come as no surprise, then, that many MCs also use a unified rhetorical approach in their rapping, regardless of the lyrical topic. For example, Snoop Dogg's breakout performance on the song "Deep Cover" (Dr. Dre, 2002) closely resembles his rapping on "Gin and Juice" (Snoop Dogg, 1993), "Beautiful" (Snoop Dogg and Pharrell Williams, 2003), and "Young Wild and Free" (Snoop Dogg and Wiz Khalifa, 2011), songs with diverse lyrical tropes such as killing police officers, drinking and having sex, and smoking weed while in high school, respectively. Snoop Dogg's style, however, while distinct and well-known, resembles that of other MCs closely enough that they can be grouped according

²²⁶ See Krims (2000, 48–51).

to rhetorical similarities regardless of lyrical trope. And while lyrical topic profiles are often discussed in hip-hop literature, generalized approaches to rhetoric are not.

Keith Gilyard's introduction to the book *African American Rhetoric(s): Interdisciplinary Perspectives* (Richardson and Jackson, editors, 2007) provides a comprehensive summary of scholarly work in this field. Notable in Gilyard's survey is his attention to Nommo, which he describes as "the African belief in the pervasive, mystical, transformative, even life-giving power of the Word" (2007, 12).²²⁷ In developing an Afrocentric model of rhetoric (though not specifically for function in hip-hop music), Ronald Jackson (1995, 154) gives structure to the activities that comprise Nommo: rhythm, soundin' (akin to signifyin(g)), stylin' (combining rhythm, excitement, and enthusiasm), improvisation (spontaneity), storytelling, lyrical code, image making, and call and response. Judging by Jackson's descriptions of these rhetorical elements, they all exist in a framework that affords the MC space to cultivate a sense of authority and convincingness with which to compel listeners. Take, for example, The Notorious B.I.G.'s (referred to here by his nickname, Biggie) performance of the first verse of "Hypnotize" (1997), excerpted in Example 7.18. Building on his three years of commercial success leading up to this release, Biggie's authority and credibility had been well established: he was known as a lyrically dextrous MC capable of a wide variety of technical approaches to his craft. So even though his performance here is rhythmically quite straightforward, it betrays a complexity in its dense, interconnected phrasings. The use of such an intricate phrasing structure allows Biggie to establish and maintain a sense of energy and flow through this verse despite rapping with a very relaxed and smooth vocal timbre.

²²⁷ In particular, Gilyard extracts the idea of Nommo from the work of Molefi Kete Asanta (b. Arthur Lee Smith), whose writings positioned Nommo as an antipode to the rhetorical act of persuasion—as developed by Aristotle and cultivated in Western rhetorical practice (See Smith, 1972).

♩=94
(0:05)

Flow

hah sick - er than your av - erage | Pop - pa twist cab-bage off in - stinct | nig - gas don't think shit

Beat

Flow

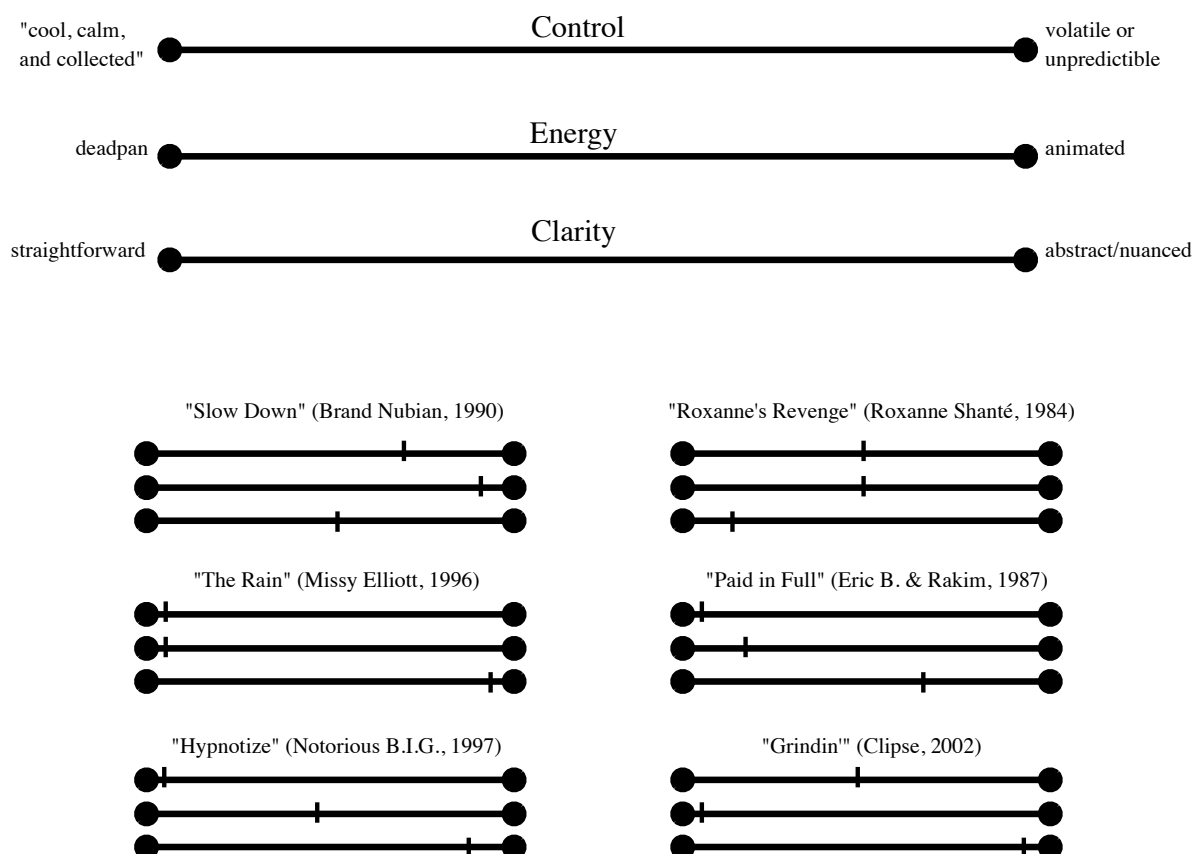
stink | pink ga - tors my De - troit play - ers Timbs for my hoo - li - gangs in Brook - lyn | dead

Beat

Example 7.18: First verse of “Hypnotize” (The Notorious B.I.G., 1997). Shaded boxes indicate rhymes, vertical lines indicate syntactic breaks, and right-angled hooks indicate line breaks (as per Genius.com).

While the rhetorical aspect of any flow performance involves lyrics and vocal delivery, at present I am concerned chiefly with vocal delivery itself. In Example 7.19 I propose a space in which the rhetoric of a particular performance—independent of lyrics—can be situated along three spectra, each of which I developed in response to Adams’s framework for evaluating articulation and affect in flow (2015, 25). Adams proposes a two-dimensional graph space, where the x-axis measures the degree sharpness (as opposed to dullness) and the y-axis measures the degree of staccato in the flow performance. Adams then connects these dimensions to increasing states of specific affects. While his suggestion that increasingly legato performances might evoke a greater sense of relaxedness in the MC’s affect (and the opposite—that increased staccato denotes playfulness) makes sense, his suggestion that increased authority is effectuated by a duller overall articulation, and increased anger by a sharper articulation warrants scrutiny. Firstly, I do not believe that anger and authority are not mutually exclusive affective states in hip-hop lyrics and flow. Secondly, I also do not believe that these two affective states have

unidimensional relationships to the sharpness and dullness of a delivery.²²⁸ In response, my tri-spectra system of evaluating rhetoric suggests that more than one musical parameter might evoke a particular rhetorical quality of a flow performance—indeed, multiple such parameters might work together to achieve this.²²⁹



Example 7.19: Tri-spectra rhetorical profiler for flow performances. The general system is shown at the top of the diagram, and six performances (songs discussed at length in Chapter 6) are evaluated on it below. For example, Rakim's performance in "Paid in Full" (1987) is tightly controlled, does not express much energy, and is somewhat abstract and nuanced in its rhythmic, metric, and phrasal complexity. By contrast, Roxanne Shanté's performance in "Roxanne's Revenge" (1984) expresses medium levels of control and energy while being quite straightforward and clear in phrasing and rhythm.

²²⁸ In fairness, Adams concludes this essay with the acknowledgement that his diagram—example 9.2 in his writing—is but a first step to exploring this relationship of articulation and affect.

²²⁹ This system recalls Mehrabian and Russell's (1974) three states of emotion: pleasure, arousal, and dominance, wherein any emotion can be situated along three spectra: pleasure/displeasure, arousal/nonarousal, and dominance/submissiveness.

The first spectrum plots the MC's control: one extreme describes performances where the MC sounds like they are in complete control, in a "cool, calm, and collected" sense, while the other extreme reflects volatility or unpredictability. The second spectrum plots energy level: on one extreme is a deadpan delivery, while the other extreme represents the most animated of flow styles. Finally, the third spectrum represents clarity, with the most straightforward and clear flow rhetoric on one end and the most abstract or nuanced on the other. Clarity—or avoidance thereof—can also be seen through the lyrics themselves, but on this graph, clarity is assessed through aspects of segmentation, phrasing, and the like. For example, in "Hypnotize", the Notorious B.I.G. certainly uses lyrics to create a complex web of metaphor and narrative, but his nuanced approach to phrasing also contributes to the complexity or lack of obvious clarity in his performance.²³⁰

Given the individuality of each song in Example 7.19, it should come as no surprise that this framework does not function to generate categories of performances with identical rhetorical profiles. In this way, my rhetoric profiles diverge somewhat from the other profile types presented in this chapter. These graphs highlight the diversity and individuality of approaches to rhetoric that pervade hip-hop music, something a top-down categorization scheme is less capable of showing. A second appeal of this graph type is its divorcing of MCs' vocal delivery from lyrical subject matter. To be sure, in many cases, strong links can be made between a specific flow style and lyrical subject matter, as Krims has shown. But at the same time, many MCs hardly change their flow style with respect to rhetoric regardless of what topics they rap about. A prime example of this is Snoop Dogg, whose oeuvre (as discussed above) is replete with verses about gang life, crime, partying, sex, and other topics (occasionally all in the same song or even

²³⁰ It should be stressed that my rhetorical profiles for the six performances in Example 7.16 are based on my own interpretations of these performances. Profiles by another listener would likely differ at least to some extent. The rhetorical profile system is not meant to elicit wholesale value judgements.

verse), yet he has maintained a remarkably consistent rhetorical profile across his whole career. The fact that rappers might maintain consistent rhetorical profiles while rapping about different topics exposes a problem with Krims's genre system, which unites lyrical topics, flow styles, and sociological factors and cites particular MCs as exemplars of each genre.²³¹

7.7 Flow Diversity, Regionalism, and Post-Regionalism

The second question I proposed at the end of Chapter 2 pertained to how the diversity of flow practices relates to the regional and post-regional eras of hip-hop music. This section addresses that question by revisiting observations made in Chapters 4–6 and developing historical (era) and geographical profiles. As with the other profiles described above, the goal here is not to determine a positivistic stylistic relationship between specific musical characteristics and a historical era or geographic location. Not only is the corpora data insufficient for this task, but stylistic outliers would likely outnumber stylistically coherent examples. Rather, my aim with these profiles is to communicate stylistic diversity by means of richness and evenness across four historical eras (old school, Golden Age, millennial, and contemporary) and four geographic regions (East Coast, West Coast, South, and Midwest).

7.8 Era Profiles

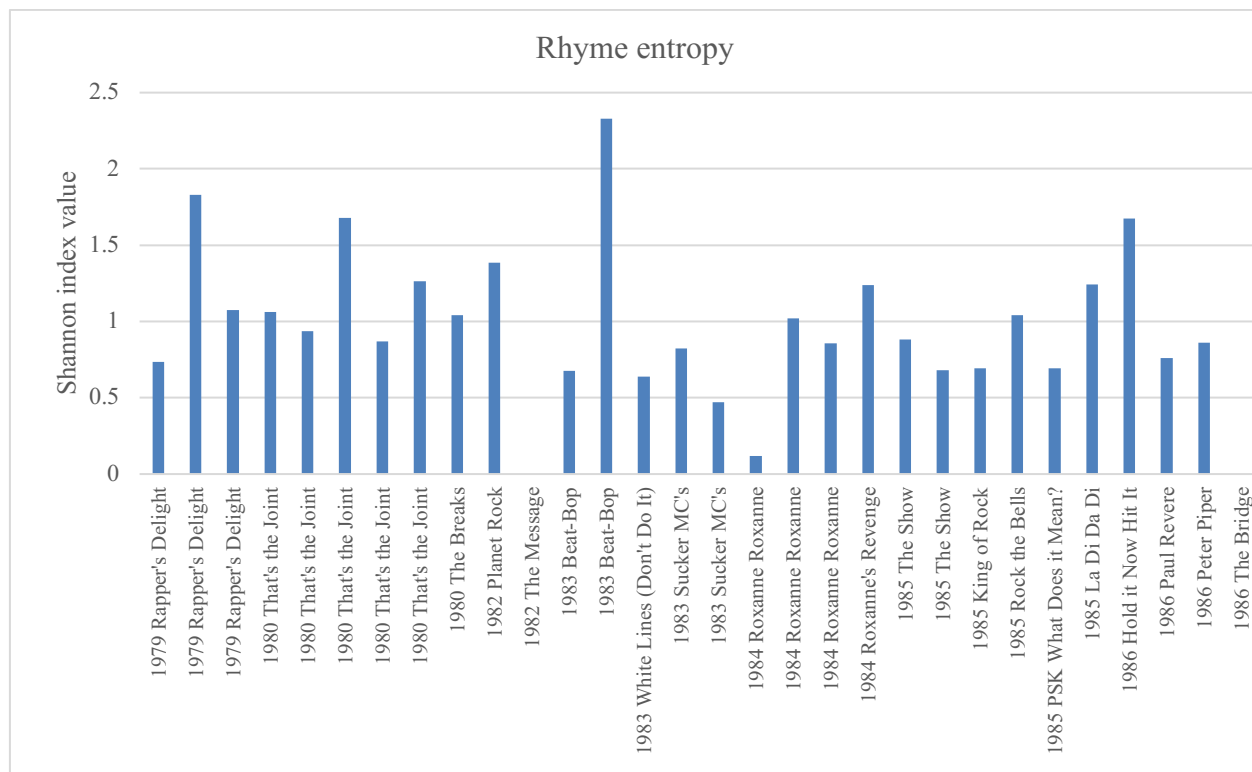
7.8.1 Old School (1979–1986)

In the context of this dissertation, old-school hip hop refers to music released before 1987.²³² Nineteen of the corpora's 160 songs are classified as old-school hip hop. The tempo richness of these songs is quite high, with 14 unique tempos represented, but 13 of these tempos are within the relatively small window of 91–115 bpm. This means that slightly more than 50%

²³¹ Connor (2018, 72–75) takes aim at Krims's flow taxonomy system for this same weakness. Specifically, Connor exposes the issue of using the general style of particular MCs to exemplify Krims's three flow styles, citing the MCs Twista and AZ, whom Krims describes as both exhibiting "speech-effusive" flow, but whom Connor opines sound nothing alike.

²³² Old-school hip hop generally is taken to encompass the music from this genre's earliest years, up to approximately 1986 or 1987 (see p. 20).

of possible tempos in this window are represented among these old-school songs. But this tempo window is notably smaller than the global tempo window represented by the corpora, so claims of diversity based on this richness statistic may be misleading. Rhyme entropy data gathered in Chapter 5 suggests that old-school flow is not very diverse in rhyme placement. As Example 7.20 shows, verses recorded before 1987 have a mean Shannon diversity index of 0.95, and very few verses have individual Shannon indices over 2. One verse from “The Bridge” (MC Shan, 1986) even has an index of 0, meaning all end rhymes in that verse occur on exactly the same beat class. These consistently low rhyme entropy ratings generate a standard deviation of approximately 0.5 over all the old-school verses. Thus, while rhyme entropy is itself quite low in each verse, its variance across all verses is also low. Other rhyme data indicates similarly low variances in this era, such as a general preference for couplets over chains (see Example 5.20, p. 155) and consistently low rhyme density (see Example 5.19). While rhyme entropy is low in these verses, meaning they have a relatively low number of unique beat-class locations for rhymes, these beat-class locations tend to vary widely among songs in this era (see Example 5.22). These observations all point toward a stylistic practice with little overall diversity, measured through low variance. This assessment is compounded by non-statistical observations pertaining to segmentation, such as that old-school flow tends to align segmentation markers across its parameters, and phrasing, such as that closed syntactic units and rhyming couplets, among other devices, lead to a predictable phrase structure.



Example 7.20: Rhyme entropy in old-school verses.

7.8.2 Golden Age (1987–1995)²³³

The explosion of creative diversity that characterized the Golden Age has been widely documented, and this explosion is often construed as a maturation of hip hop's musical aesthetic prior to its widespread, massive commercial dominance.²³⁴ This era also saw the rise in prominence of artists on the West Coast (see Chapter 2) and thus saw the proliferation of

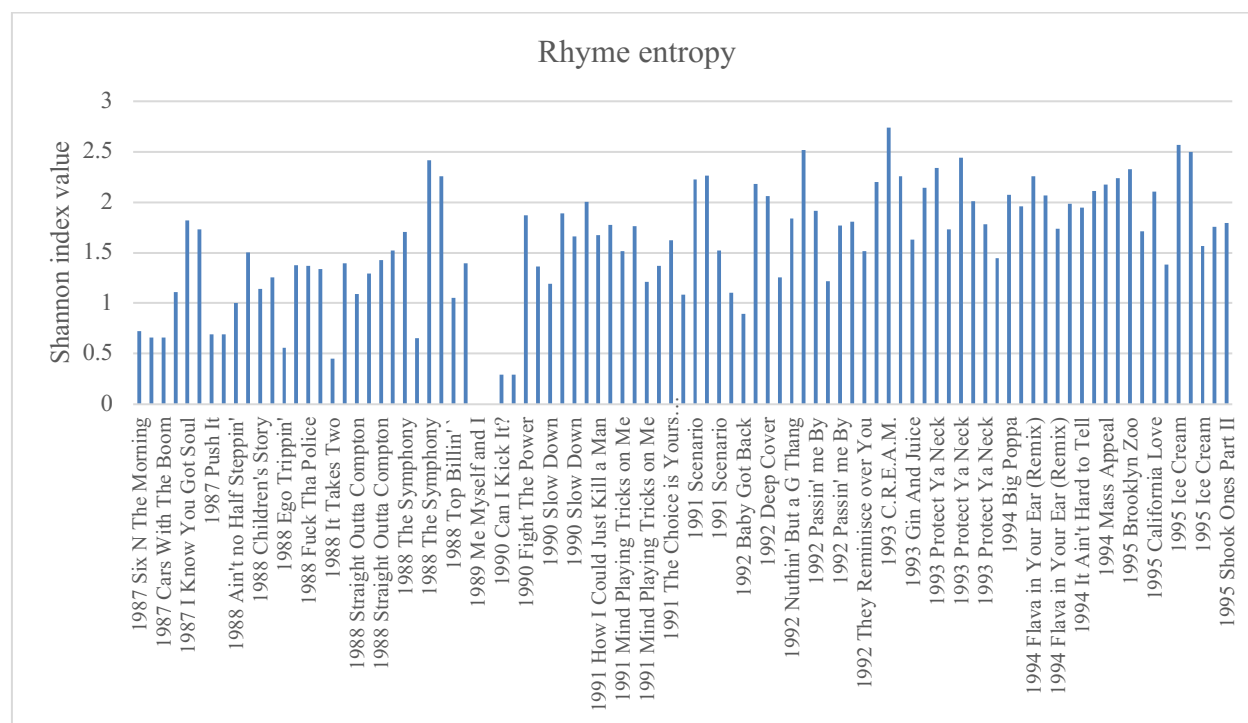
²³³ This dissertation takes the nine years between and including 1987 and 1995 as chronological boundaries. The *New York Times* (Caramanica, 2005) describes the Golden Age of hip hop as the late 1980s to early 1990s. McLeod and DiCola (2011, 5) refer to a "Golden Age of sampling", which extends from the late eighties to early nineties. Weinstein (2007, 341) suggests 1988–1993, and Steinberg et al. (2006, 361) suggest 1987–1993, citing this era as the period when the musical and lyrical elements of rap music began to overshadow other aspects of hip-hop culture such as breakdancing and graffiti art. Williams (2013, 47) suggests 1986–1993, interpreting gangsta rap's hegemony over other styles of hip-hop music as signaling the Golden Age's end. Regardless of which years or events define the Golden Age, the music produced during this time had a lasting impact on hip-hop's posterity. The constant flow of new (at the time), boundary-pushing Golden-Age album releases exemplifies this era's unprecedented stylistic fluidity.

²³⁴ Keyes (2002) makes no explicit reference to the Golden Age, but writes a chapter chronicling hip hop's explosion into the musical mainstream, focusing on the period from 1985–1989. This explosion can be seen through high sales and exposure of specific, individual hip-hop artists, but it was not until the mid-1990s that hip-hop music attained a commanding dominance over album sales and radio play.

nationwide regionalism in North American hip-hop music. I begin the assessment of diversity by looking at tempo. The 51 songs in the corpora released between 1987 and 1995 exhibit 27 unique tempos between 78 and 130 bpm (a range of 52 bpm). Discarding outliers, 49 songs exhibit 25 unique tempos between 78 and 119 bpm.²³⁵ Here, a slightly higher evenness prevails than in the old-school era, with 61% of the discrete tempos in this tempo window represented. That said, there are still areas of clustering, such as the 16 songs with tempos between 92 and 97 bpm. Rhyme entropy is graphed in Example 7.21. The mean Shannon index for Golden-Age verses is 1.58, markedly higher than for old-school verses, and as shown can be seen in Example 7.21, numerous verses contain Shannon indices over 1.5, to the point that by 1993 indices below this value become quite rare. These observations all point to a more diverse approach to rhyme structure and deployment in the Golden Age, in songs with tempos across a wider range and more evenly distributed across this range than in old-school hip hop. The three types of microtiming are also used with increasing consistency during the Golden Age (as Example 5.12 suggests), but not in such a substantial way that we could consider this a defining characteristic separating these two eras. Lagging microtiming shows the most significant increase, but instances of this type are limited to a few artists and songs and are better viewed not as a defining feature of Golden-Age flow, but rather as a distinct profile within it and subsequent historical eras. Finally, as supported through the analyses of “Paid in Full” and “Hypnotize” in Chapter 6, increasingly esoteric (and thus diverse and varied) approaches to segmentation and phrasing structure appears to be a feature of Golden-Age flow that distinguishes it from its stylistic predecessors (in the case of “Paid in Full”) and marks its influence on subsequent styles (in the case of “Hypnotize”). But only certain pioneering MCs adopted this approach, and in a lot of cases, tightly structured phrasing persisted through this era. The New York label Bad Boy’s

²³⁵ “Push It” (Salt-N-Pepa, 1987) and “Baby Got Back” (Sir Mix-A-Lot, 1992) were discarded for having outlying tempos of 130 and 129 bpm, respectively (including them here would distort the richness percentage substantially).

1994 single “Flava in Ya Ear (Remix)” offers an interesting example of how diverse flow practices coalesced and existed side by side in the Golden Age. As shown in Examples 7.12 and 7.13, LL Cool J (verse 4) maintains a swung-microtimed flow with straightforward segmentation. Craig Mack’s verse (verse 2) is similarly segmented but with a more conversational microtiming. The Notorious B.I.G.’s verse (verse 1) is arguably more simplistic than his performance in “Hypnotize” (1997), but displays his highly developed and complex approach to rhyme. Verses 3 and 5 (performed by Rampage and Busta Rhymes, respectively) display some of the most extreme examples of lagging and conversational microtiming in the entire corpora. From this summary we see that by the mid-1990s, even in one geographic region (New York in this case), a diverse set of flow practices can exist side by side rather comfortably.²³⁶



Example 7.21: Rhyme entropy in Golden-Age verses.

²³⁶ Comfortably, at least in a musical sense: Craig Mack and The Notorious B.I.G. allegedly had an ongoing beef with one another, including during the recording of this song.

7.8.3 Millennial Era (1996–20??) and Contemporary Era (20??–Present)

These two eras are the most loosely defined of the four, and therefore I have not selected a junction year between them. While many of the charts in Chapter 5 display a series of stylistic shifts in the late 1990s—around the end of the Golden Age or shortly thereafter—no similar cluster of shifts occurs later in the corpora. As far as the limited corpora statistics are concerned, then, we appear to enter a single large era after the Golden Age, but several external observations will aid in distinguishing between a millennial era and contemporary era.

Perhaps the most crucial defining aspect of the millennial era is the rise in prominence of artists from the South and Midwest. Beginning with OutKast and Eminem in the late 1990s and continuing with Kanye West’s rise shortly thereafter, performances featuring some of the most intricate microtiming, the longest rhyme chains, and the greatest syllabic density come from these artists, none of whom hail from the East or West coasts. And while the rise of the South and Midwest signals a shift to even more nuanced regionalism, increased inter-regional collaborations begin to mitigate this shift.²³⁷ In a sense, the millennial era is the historical crossroads between regionalism and post-regionalism in hip-hop music. If that is the case, is it represented by some shift in the corpora data?

Average song tempo continues to fall from its yearly levels during the Golden Age; this trend continues well into the 2010s. Example 5.6 (p. 135) suggests that the overall range of syllabic density from verse to verse grows wider from 1997 onward, but this trend could also be attributed to slower song tempos, where a greater range of density prevails. But other flow statistics from Chapter 5 show a similar widening of ranges. As shown in Example 5.13 (p. 145), the average number of lexical syncopes per measure begins to vary across an increasingly large span of values: some verses contain almost no syncopes (the first verse of “Famous”, Kanye

²³⁷ Two notable examples of interregional collaborations from this period include “Money Ain’t a Thang” (Jay-Z and Jermaine Dupri) and Eminem’s major-label debut *The Slim Shady LP* (1999), produced by Dr. Dre.

West 2016), while others contain nearly one per measure (the first verse of “New Slaves”, Kanye West 2013).

Rhyme data is similarly telling. Average rhyme density per verse tends to hover around one rhyme per measure after the Golden Age, but frequent outliers reveal densities far higher than this count. The mixture of couplets and chains in each verse also becomes more polarized, with verses more frequently only using one or the other rhyme organization. After 1996, verses with all (or nearly all) rhymes falling on one beat-class family (i.e. anywhere on or within one quarter-note beat) become more prevalent, which goes some way toward explaining the downward-sloping rhyme entropy after the mid 1990s. These statistics point to a prevailing trend: flow practices following the Golden Age continued to diversify. While part of this trend is driven by increased representation from diverse geographic regions, the trend of increased diversity continues into hip-hop’s post-regional era.

One noticeable, if peripheral, stylistic change occurs around 2005. Conversational microtiming, once a dominant trait of flow practice in general, becomes much less common in commercial hip-hop music, while other types of microtiming continue to be used somewhat frequently. A variety of possible reasons could explain this. Firstly, since swung microtiming already bears a marker of conversational microtiming in its elongation of lexical or prosodic stress syllables, there is perhaps a bit of overlap between these two profiles, and therefore aspects of conversational microtiming continue to be practiced, but only in a swung sense. Secondly, a gradual shift has recently occurred from organic- and natural-sounding vocal performances toward more mechanical-sounding ones. This shift can be seen through hip hop’s gradual acceptance (if not wholesale embrace) of production techniques such as autotune, punch-ins, and quantization, as well as performance techniques such as stutter rap and triplet flow, which

prioritize repeating, unvaried, and rigid rhythmic structures.²³⁸ Thirdly, it could be that the lyrical subject matter favoured by recent MCs is simply best expressed through other flow profiles. It may even be simply that conversational microtiming is less effective for chanted lyrics, lyrics about protest, or lyrics performed against beats at slower tempos.

We are perhaps not yet far enough removed from the hip-hop music of the last two decades to understand where stylistic boundaries could be placed. Furthermore, while much has been written about the divide between old-school and Golden-Age hip hop, literature proposing historical eras for 21st-century hip hop is scarce. For example, being now so far removed from the deaths of Tupac Shakur (d. 1996) and The Notorious B.I.G. (d. 1997) and possessing a wealth of media documenting the historical significance of these artists (in both life and death), we now understand 1996 and 1997 as watershed years in hip-hop history.

Another significant historical marker is the 1991 lawsuit *Grand Upright Music Ltd. vs. Warner Brothers Records Inc.*, which had massive implications for the way hip-hop beats were produced.²³⁹ Perhaps we will look back at the 2008 release of Kanye West's album *808s and Heartbreak* as a watershed moment for its outsized influence on the emergence of auto-tuned singing in hip-hop music.²⁴⁰ A variety of chart-topping singles between 2013 and 2016 could also be credited as impactful for bringing triplet flow to the fore.²⁴¹ Or perhaps Kendrick Lamar's meteoric rise, exemplified by his three consecutive Grammy nominations for *Album of*

²³⁸ Punch-ins, the act of recording small excerpts at precise timings, also contributes to why breathing patterns have become all but impossible to detect on recent hip-hop recordings.

²³⁹ McLeod and DiCola write that "the case *Grand Upright Music v. Warner Brothers Records* effectively ended the 'Wild West' period for sampling" (2011, 132). Demers (2006, 97) summarizes the factitious effect this lawsuit had on hip-hop production, as producers with major-label backing could afford to pay clearance costs for samples, while indie producers could not. McLeish's forthcoming dissertation (2020) will provide an in-depth study of the stylistic ramifications of this landmark case.

²⁴⁰ Non-autotuned singing has had a constant if peripheral presence in hip-hop music since the old-school era, but the degree to which singing pervades hip-hop music today is much more widespread. The role of singing in hip-hop music takes on an ironic meaning when one recalls that artists who sing nearly exclusively—like Drake has recently—are nominated for Grammy award categories for rap music.

²⁴¹ Duinker (2019) cites "Panda" (Designer, 2015) and "Versace" (Migos, 2013) as two examples of triplet flow that gained widespread attention.

the Year and more recently for his Pulitzer Prize win for the album *DAMN*. (2017), will mark a watershed moment.²⁴² Because we are simply still too close to this historical period, I have chosen to avoid definitively characterizing eras in post-2000 hip-hop music. This is not to deny that important stylistic developments have occurred during this period, but rather to state that we perhaps do not yet understand their full significance.

7.9 Geographical (Regional) Profiles

Making stylistic generalizations about hip-hop music according to region is, at best, disingenuous. Generalizations that rely on categories defined by positivistic attributes (such as the hypothetical and inaccurate “all West-Coast hip-hop is indebted to the G-funk sound”) nearly always reveal outliers. As such, geographical (or regional) profiles of hip-hop flow cannot be constructed with a set of positivistic qualities. To be sure, specific rapping and DJing techniques can be traced back to their local origin, but these techniques can rarely be said to represent a local scene as a whole, especially once that scene or locality gains wider commercial success and attention.²⁴³

Krims offered a useful point of departure for differentiating regions of North-American hip hop when he situated localized representation as an act of negation:

“It is important to recall how consistently geographic and localized notions of ‘representing’ generally are, and the extent to which establishing an identity may often become a process of negation. The presence of New York often becomes a matter of the effects of its absence for artists who arose outside the New York/Los Angeles axis ... have long imprinted their own authenticity as local, geographically based, and specifically in oppositional relation to New York” (2000, 124).

²⁴² Lamar’s Pulitzer win has arguably already achieved this, with The Los Angeles times writing that “this year’s prize for music has sparked a vibrant conversation about aesthetics, class, the division between so-called high and low art and whether giving one of the most esteemed prizes in American music to one of its most popular musicians represents a long-overdue corrective or an insult to non-commercial, so-called serious music” (Roberts, 2018).

²⁴³ This observation relates to the AgSIT theory of genres advanced by Lena and Peterson (see Chapter 1, pp. 25–26), where the idea of regionalism in generic rules or practices becomes less and less important as the genre transitions through Avant-Garde, Scene-Based, Industry-Based, and Traditionalist stages. While the authors state that performance conventions are the most highly codified at the Industry-Based stage (2008, 702), any sense of regionalism attached to these performance conventions is diluted due to the commercial demands of the genre.

We could follow this assertion with a question: can aspects of regional flow style be construed as negating or opposing stylistic practices from older, more established regions? From the limited perspective of the corpora, this question is difficult to definitively answer, because interregional stylistic similarities pop up nearly everywhere: Ice Cube's habit of placing an increased number of rhymes on beat class n.45, though later emulated by Dr. Dre and Snoop Dogg, is also practiced by Chuck D of Public Enemy, and can be found in performances by various members of the Wu-Tang Clan. All three types of microtiming are present in songs emanating from each major American hip-hop region. The relatively long caesuras between phrases in the verses of "Mind Playing Tricks on Me" (Geto Boys, 1991) are also found in "It Was a Good Day" (Ice Cube, 1992), "Otis" (Jay-Z and Kanye West, 2011), and "Hotline Bling" (Drake, 2016). Furthermore, these songs were released across a 25-year span and have widely divergent tempos. These examples suggest how futile it can be to identify stylistic markers of regional flow styles in and of themselves.

The foregoing discussion fails to address an even more fundamental question: what or who determines which songs, albums, or artists epitomize or are emblematic of a particular region? Does releasing several successful singles in the early 1990s—at the height of the West Coast's popularity—qualify Snoop Dogg to represent that region's style of rapping? Any argument for this question would have to account for Snoop Dogg's ancestry that traces back to the American South, where his parents grew up. In short, a positivist approach to regional profiles will not be useful.

7.9.1 Four Chart-Topping Singles

In lieu of this prognosis, I offer another approach to regional profiles that briefly compares the flow styles of four songs—one from each American region—that maintain several consistent criteria. "Hypnotize" (The Notorious B.I.G., 1997), "California Love" (Dr. Dre and

Tupac Shakur, 1995), “Tha Crossroads” (Bone Thugs-N-Harmony, 1996), and “Ms. Jackson” (OutKast, 2000) were released within four years of one another (thus they are from a consistent era), either won or were nominated for a Grammy Award (consistent critical acclaim), and each reached #1 on the *Billboard Top 100* (consistent commercial performance). In lieu of developing regional profiles, what can be said about the flow diversity across four chart-topping songs from different regions, released during a pivotal historical era that saw regionalism reach its most pronounced state?

Several statistics suggest that the flow performances across these four songs are divergent, while others suggest the opposite. The song tempos are quite similar, in the mid-90 bpm range except for “Tha Crossroads”, which is notably slower at 72 bpm. Only “Ms. Jackson” features substantial microtiming (swung and conversational). Rhyme entropy is highest in “Hypnotize” and “Tha Crossroads”, though all but one verse in “Ms. Jackson” exhibit higher-than average Shannon indices. Syllabic density is highest in “Ms. Jackson” and notably lower in “Hypnotize”. Lexical syncope is present in all verses of these songs, but notably more so in Tupac Shakur’s verse in “California Love”. From a purely quantitative standpoint, these statistics suggest both a significant degree of stylistic overlap and a diverse range of practices across the verses in these songs. Furthermore, flow diversity within songs is quite statistically pronounced: André 3000’s verse in “Ms. Jackson” is notably less syllabically dense (4.9 syllables/sec) than Big Boi’s two verses in that song (6.4 and 6.1 syl/sec), but his verse has the highest measure of rhyme entropy (2.05 Shannon index). In “California Love”, Shakur’s entropy (2.1 Shannon index) is higher than Dr. Dre’s (1.71), despite their verses being equally syllabically dense (4.6 and 4.5 syl/sec, respectively). The point I wish to make here is that there are simply too many quantitative relationships among flow statistics to generate even specific comparisons between single songs, much less groups of songs across the corpora. The best way to understand the

regional profiles exemplified by these songs may be instead to situate them stylistically in their respective regions, which I do below for “Ms. Jackson” and “Tha Crossroads”.

Big Boi’s two verses on “Ms. Jackson” are among the most syllabically dense across both corpora. As Example 7.22 shows, he frequently uses triplet rhythms, though not in the way that has come to characterize triplet flow in recent hip-hop music.²⁴⁴ Some of Big Boi’s triplets are an example of what Gomez-Peck (2019) calls *crushed triplets*: triplet rhythms that seem to exist for the purpose of “crushing” in as many syllables as possible. Big Boi has used crushed triplets at least as far back as OutKast’s debut album, *Southernplayalisticadillacmuzik* (1994), where his performances on “Players Ball” and “Southernplayalisticadillacmuzik” bear much in common with those of West Coast MCs such as Snoop Dogg (who, as mentioned above, has a connection to the South), and MCs from The Pharcyde (such as Fatlip, discussed in Chapter 6) and Freestyle Fellowship (such as Aceyalone).²⁴⁵ Big Boi’s high syllabic densities in “Ms. Jackson” are no more a trait of Southern flow than of Midwestern chopper rap. Because of his highly variegated rhythmic patterns and conversational microtiming, his flow in this performance sounds different from that of the MCs in the Midwestern group Bone Thugs-N-Harmony (henceforth Bone), who also use triplets and rap with high syllabic densities, and even more markedly distinct from the laid-back flow of The Notorious B.I.G.

²⁴⁴ Duinker (2019) describes three broad practices of triplet flow: mixed, phrasal, and total. Mixed triplet flow describes performances where triplets are liberally intermingled with duple rhythms, a practice that has largely disappeared from mainstream commercial hip-hop music of late. Mixed triplet flow is the type used by Big Boi in this passage.

²⁴⁵ While making note of these stylistic similarities, I stop short of hypothesizing that certain artists among these influenced the others in their triplet-flow usage.

♩=95
(1:05)

had fish fries and cook - outs for my child's birth - day I ain't in - vi - ted des -

pite it I show her the ut - most res - pect when I fall through

all you do is de - fend that la - dy when I call you

Example 7.22: First verse of “Ms. Jackson” (OutKast, 2000). Crushed triplets (Gomez-Peck, 2019) occur over the lyrics “Birthday I” (first system) and “do is de-” (third system).

Bone’s performance on “Tha Crossroads” (1996)—as well as their general flow style at this period—is prescient for its singing and for its high rhythmic and syllabic density despite a slow tempo. While singing by MCs did occur before “Tha Crossroads” was released, this song bears more similarities to recent sung performances by MCs such as Drake or Chance the Rapper than it does to anything that predates it. As Example 7.23 shows, the pitch trajectory used by Krayzie Bone in the second verse does not seem all that melodic: it almost bears more similarities to the practice of intoning a psalm than it does to singing a tonal melody. Such “intonation-style” singing is widespread in rap music today.²⁴⁶ Example 7.23 also displays the rhythmic variety in “Tha Crossroads”, and while visually this does not look much different than Example 7.22 (from “Ms. Jackson”), listening to these two excerpts side by side will reveal that, due perhaps to a number of ineffable elements of these performances, they sound markedly different. Using Krimsian categories, we might classify Big Boi’s performance as highly speech-effusive (closely replicating natural rhythmic habits of speech) and Krayzie Bone’s as

²⁴⁶ Komaniecki (2019, 100 & 135) provides examples of this intonation-style singing in hip hop from Kendrick Lamar and Chance the Rapper.

percussion-effusive (using more on-beat sharp attacks).

♩=72
(0:54)

ooh what could I do? it's all a-bout a fam-ily and how we roll can I get a
wit-ness let it un-fold we liv-in' our lives to e-ter-nal our souls hey-o

Example 7.23: First verse of “Tha Crossroads” (Bone Thugs-N-Harmony, 1996). This excerpt exemplifies Bone’s intonation-style sung rapping.

Bone’s use of triplets and highly rigid fast rhythms (both characteristic of Midwestern chopper rap) bears a relationship with the West Coast that is complicated and not fully documented. With ex-NWA member Eazy-E as Bone’s manager and the executive producer of their early releases, a Los Angeles influence can be heard in their music, notably through the production styles of DJ U-Neek, a West-Coast producer who has been closely associated with Bone throughout their career. Less certain is Bone’s relationship with other West-Coast artists from the early 1990s, especially those that were active in open mic nights at the now-closed Good Life café in Los Angeles. Ava DuVernay’s documentary *This is the Life* (2009) features interview testimonial that claims Bone crafted their early chopper-rap style after hearing artists such as Freestyle Fellowship perform at the Good Life Cafe.²⁴⁷ Regardless of the veracity of these claims, the depth to which interregional stylistic traits pervade hip-hop music of all eras nullifies the notion of autonomous, non-porous, geographically defined styles or genres.

²⁴⁷ DuVernay’s film speculates that Bone co-opted and popularized the flow styles of the L.A.-based Freestyle Fellowship in particular. Through an email conversation with hip-hop scholar Charles Sharp, I learned that among the Good Life community, the story of Bone Thugs-N-Harmony’s co-opting of Freestyle Fellowship’s style is widely believed and corroborated. Whether or not Bone did start using triplet flow after hearing it performed at the Good Life Cafe, the group’s innovative use of it on their records throughout the 1990s did much to popularize it and expose it to a wider audience.

Drawing connections and distinctions between songs emblematic of regions can show how musical ideas and practices are principally generated in one place but perhaps developed, matured, and popularized in another. And while giving credit where credit is due is usually respected—and nearly always expected—in hip-hop culture, stylistic borrowing in this music is generally everywhere, and easy to identify.²⁴⁸ But a conundrum exists, because while this borrowing is widespread, so too is the practice of defining oneself as different, or setting oneself in opposition to the prevailing stylistic or generic norms. Los Angeles artists strove for distinction from their East Coast rivals, and Midwestern and Southern artists from the New York – Los Angeles axis described by Krims. Indeed, “Ms. Jackson” and “Tha Crossroads” can be construed as prime examples of how Southern and Midwestern hip-hop sounded different from the prevailing East-West styles of the time. To summarize: regional flow profiles are not meant to be understood as a series of positives that define these flow styles in the abstract, or even against other regions, but rather as snapshots of a musical practice that connects to past practices and influences future ones.

7.10 Summary

In this chapter I have proposed the idea of flow profiles to illustrate how hip-hop songs can be compared and contrasted in terms of flow style when one musical or extramusical parameter is used as a measuring tool. Tempo, segmentation, microtiming, and rhetorical profiles are presented and used as tools to assess stylistic diversity across the corpora, answering the first major question underpinning this dissertation: how can flow diversity be qualified or quantified? Tempo and microtiming profiles were presented in tripartite fashion; in each of the three profiles for these parameters, a number of stylistic possibilities and consistencies were presented. Segmentation profiles were used to demonstrate how segmentation clarity and ambiguity have

²⁴⁸ Williams writes that “the fundamental element of hip-hop culture and aesthetics is the overt use of pre-existing material to new ends” (2013, I).

emerged in commercially successful hip-hop music over the genre's history. Finally, rhetorical profiles adopted a more individualistic method of assessing diversity, using a three-dimensional scale to position individual flow performances according to their rhetorical function.

The second part of this chapter addressed the second major question underpinning this dissertation: how can flow diversity be connected to regionalism and post-regionalism? By proposing era and regional profiles, I have attempted to show how discrete historical eras contain both stylistic trends of similarity and ones of change, an idea I first proposed with Denis Martin in 2017.²⁴⁹ I also have suggested that regional profiles should not be generated through a set of positive qualities. Instead, I compared four commercially and critically successful songs released between 1996 and 2000, each from a different geographic region, to better understand how at this moment in hip hop's history, a diverse palette of interconnected yet individual regional styles were co-existing in this genre.

The profiles I propose here are by no means exhaustive: more of them could be developed that pertain to rhyme, syllabic density, or production techniques. Rather than go further with profiles, however, my main goal in this chapter has been to demonstrate how the idea of flow profiles offers a glimpse into how stylistically diverse flow practice has become: each verse in the corpora exhibits some sort of unique combination of the flow profiles discussed here.

²⁴⁹ See Duinker and Martin (2017).

8 Conclusion

8.1 Overview/Summary

In this dissertation I investigated two aspects of flow in North American hip-hop music. I first explored how rhythm and meter in flow evolved and became more diverse over hip hop's earliest years as a recorded genre—its regional period (1979–2002). Second, I assessed whether rhythm and meter in flow have become more homogeneous during a more recent period (2003–2016), a time when the genre has become increasingly commercialized and less regional in scope. I developed and analyzed two song corpora in order to achieve these goals.

Chapter 2 detailed the background context of regionalism and post-regionalism in American hip-hop music, concluding with the presentation of my two main research questions. First, how can complexity and diversity in flow practice be quantified or qualified? Second, how can flow diversity be connected to regionalism and post-regionalism? This chapter provided an in-depth summary of hip-hop music's geographical origins in the Bronx and its spread, first around the boroughs of New York and eventually to other parts of the United States. The chapter is based on the premise that hip-hop music emerged from a period of regionalism—defined by distinct and discrete local centers where this music was produced—into an era of post-regionalism, where geographic location mattered less than it had in the past. I briefly discussed some reasons why this transition took place; many of these have to do with advances in technology and the rise in ubiquity of the internet. I follow Sarig (2007) in supposing that the American South's rise to prominence in hip-hop music coincided with this transition to post-regionalism, conflating stylistic traits that were originally marked as Southern with those that began to permeate hip-hop music as a whole.

Chapter 3 discussed the appeal and necessity of using popular-music corpora in the music theory discipline as well as the issues inherent in developing them. The alignment of analytical

goals with sample size and selection criteria is important in order to maximize the effectiveness of the corpus study. Through my selection, transcription, and annotation process of the two corpora used in this dissertation, I discussed issues such as notation choice for encoding, micro-inflections in pitch and rhythm, and interpretive latitude. My transcriptions focused on the musical parameters I could analyze statistically, such as rhythm, rhyme (type, quantity, and metric location), and tempo.

In Chapter 4 I outlined the analytical techniques and strategies used for my annotated transcriptions. These included parameters such as the location and interaction of accent types and rhymes, the syllabic density of verses, syntactic and metric relationships between flow and beat, and microtiming. I proposed that MCs accent their flow through vocal delivery in three ways (volume, duration, and pitch), and that these accents either align or misalign with lexical and prosodic stresses inherent in lyrics. Rhymes were analyzed according to metric location and correspondence with one another, while syllabic density was measured in syllables per second. Finally, microtiming was measured according to a tripartite classification system I developed (swung, lagging, or conversational).

Chapter 5 shifted the discussion to statistical parameters of flow, based on the analysis in Chapter 4. While song tempo trended downward over time, syllabic density did not. Syllabic density did, however, correlate with song tempo in a different way; a wider range of densities was observed in verses with slower tempos, particularly those below 75 bpm (beats per minute). Statistical properties of rhyme, such as density and entropy, increased markedly through the 1990s before tapering off in the 2000s. The 1990s also witnessed the most balanced proportion of chains and couplets used in rhyme patterning. Other parameters such as microtiming and lexical syncopes (misalignments between lexical stresses and performed accents) did not exhibit any marked time-based stylistic changes.

Using the statistics of Chapter 5 as a guide, In Chapter 6 I proposed a theory of flow segmentation, grouping, and phrasing, and related this theory to a parallel theory of meter in hip-hop music. I maintained that phrasing is largely a property of the flow layer, while meter is generated by the beat layer. In proposing this idea, I approached phrasing and meter from a perceptual angle: that these are heard phenomena. I stressed that this is an important distinction from notation-based musics, because hip-hop music is foremost a recorded genre, and our primary method of engagement with this music is through listening. (To that end, transcriptions of this music merely constitute out-of-time representations of the music, not a means for re-creating it.) In this chapter I proposed five segmentation rules and two phrase rules for flow, drawing on agents of segmentation such as rhyme and syntax. The phrase rules in particular are predicated on listener expectation and realization.

Chapter 7 used the statistical observations and close readings from the previous two chapters to generate a theory of flow profiles, which are assemblages of flow performances that are similar according to a particular musical, lyrical, or situational dimension. These included tempo profiles, segmentation profiles, microtiming profiles, and rhetorical profiles. These profiles respond to the first question in this dissertation, thus explaining how hip-hop flow became more diverse and complex. The remainder of the chapter tackled the second main question: how regionalism and post-regionalism relate to stylistic diversity. I focused on how specific changes in flow practice correlate with the transition between different historical eras. Through a brief case study, I also demonstrated how specific regional styles are identifiable—for a brief period at least—among the most commercially viable hip-hop music. With this chapter summary in place, I now proceed to briefly address the three questions posed at the conclusion of the first chapter.

8.2 Complexity and Diversity

At the beginning of the dissertation, I referenced a passage from Adam Krims's book *Rap Music and the Poetics of Identity* stating that "it is widely recognized and remarked that rhythmic styles of many commercially successful MCs, since roughly the beginning of the 1990s, have progressively become faster and, as it is often put, more 'complex'" (2000, 49). I asked, how is this increasing complexity [and also diversity] expressed in the metric and rhythmic aspects of hip-hop flow?

In a sense, complexity and diversity are inseparable qualities in flow practice. The observations I have made about rhyme entropy (Chapter 5) and segmentation (Chapter 6) aptly demonstrate this idea. I observed a marked increase in Shannon index values for rhyme entropy in the 1990s. This index measures the number of metric locations where rhymes occur (richness) and the distribution of rhymes across these locations (evenness). A higher Shannon value thus reflects a flow performance with highly variegated rhyme locations and relatively even distributions across these locations. We could thus call such a performance diverse with respect to its rhyme deployment. But this diversity also engenders complexity, because rhyme is but one tool an MC can use to segment their passage of flow into discernible units. Whenever rhymes fall on beat classes that do not align with other segmentation factors, such as the metric units of the instrumental beat layer, they add a layer of structural and cognitive complexity.

The observation of diversity and complexity regarding segmentation extends further than the parameter of rhyme. As I demonstrated in Chapter 6, a variety of musical and lyrical parameters influence how listeners aurally segment—and thus make sense of—a passage of flow. Though I did not measure segmentation statistically in this dissertation, my Chapter 6 examples of complex segmentation schemes in innovative performances such as Rakim's verse "Paid in Full" (Eric B. and Rakim, 1987), and quintessential 1990s performances such as

“Hypnotize” (The Notorious B.I.G., 1997) and “The Rain (Supa Dupa Fly)” (Missy Elliott, 1997) illustrate how diverse approaches flow can lead to almost impenetrably complex segmentation, grouping, and phrasing structures.

Chapters 5 and 6 explain how flow became more complex and diverse in the 1990s. In Chapter 7 I furthered this discussion by analyzing the microtiming practices in songs such as “Rosa Parks” (OutKast, 1998), “Stan” (Eminem, 2000), and “Nuthin’ But a G Thang” (Dr. Dre and Snoop Dogg, 1992). These microtiming-inflected performances also demonstrate how flow practices evolved and diversified in the 1990s. While my tripartite system of classifying microtiming may suggest that the diversity of this practice coalesces into three broad types, the reality is that each microtimed performance is unique and bears unique rhetorical consequences on the MC’s delivery of their lyrics. Quite often, microtiming is used as a means of rhetorical emphasis, but approaches are varied even within this realm. Snoop Dogg’s performance in “Nuthin’ But a G Thang” uses lagging microtiming for rhetorical purposes, while Eminem’s in “Stan” relies more heavily on conversational microtiming.

Increasingly complex and diverse approaches to rhyme, segmentation, and microtiming are hallmarks of 1990s flow. In turn, they represent a more nuanced, mature, and at times subtle embodiment of Black oral vernacular traditions. Signifyin(g) refers to the act of subversion through lyrical trickery and irony, and is thus commonly understood as a form of wordplay. Samuel Floyd Jr. extends the notion of Signifyin(g) into the musical domain, writing that “calls, cries, hollers, riffs, licks, overlapping antiphony, and the various rhythmic, melodic, and other musical practices of the ring serve as Signifyin(g) musical figures and are used as such in musical compositions and performances” (2002, 55). Some of these various other musical practices include the increasingly complex approaches to rhyme, segmentation, and microtiming in hip-hop flow. A necessary next step in my research, beyond this dissertation, will be to

explore these notions further.

8.3 Regionalism and Diversity

My second question branched off from the first, asking whether regionalism played any part in the increasing diversity and complexity detailed above and throughout the dissertation. My general response is that regionalism did play a role in this increase of diversity/complexity, but perhaps not in the ways we might expect. First and foremost, I have stressed here that it is counterproductive to frame regionalism as a type of categorization that can be defined by a series of positivistic qualities, such as “West-Coast flow uses more triplets than other flow styles, therefore the triplet is a defining feature of this regional flow practice” or similar. Instead, I propose that my statistics and observations in this dissertation be interpreted in a more dialogic, fluid manner.

Firstly, regionalism and diversity can be jointly assessed when the region/community of hip-hop music has not yet reached its commercial apex, but such assessments become problematic when the music has proliferated the commercial mainstream. I return to the genre trajectory proposed by Jennifer Lena and Richard Peterson (2008), discussed in Chapter 2 (pp. 25–26). Lena and Peterson suggest that musical genres move through different categories during their time-spans: Avant-garde (Ag), Scene-based (S), Industry-based (I), and Traditionalist (T). Industry-based genres, as West-Coast hip-hop had become through N.W.A. and Dr. Dre, have tightly scripted generic codes. In 1990s West-Coast hip hop music, these codes include—but are certainly not limited to—G-funk beats (e.g., Dr. Dre’s production sound), highly provocative lyrics coupled with flow styles that are both menacing but relaxed and nonchalant (MCs like Snoop Dogg or Warren G), and baggy, loose-fitting clothing and baseball caps (Eazy-E’s wardrobe). But these signifiers of West-Coast hip hop are not exclusive to these artists and thus cannot be effectively used as markers of a genre, style, or region.

A more productive way of connecting regionalism to diversity is to investigate subgenres and regions when they have not yet reached the Industry stage (indeed, some subgenres arguably never did). If we look to some of the earliest commercially successful West-Coast recordings by Ice-T, the members of N.W.A. (notably Eazy-E), and Dr. Dre's earlier group the World-Class Wrecking Cru (not included in the corpora), then we begin to see some musical elements that were cultivated on the West Coast and became ingrained in the sounds of its artists for years to come: stylistic elements such as the heavy and sustained use of the TR-808 drum machine (likely owing to Los Angeles's vibrant electro scene in the 1980s), the frequent sampling of funk records, and the laid-back style of rapping heard on early tracks like "6 in tha Mornin'" (Ice-T, 1987).

Another means of relating diversity to region concerns the hip-hop scenes in the American South and Midwest in the late 1990s. Songs such as "Tha Crossroads" (Bone Thugs-N-Harmony, 1996), "Rosa Parks" (OutKast, 1998), "Bling Bling" (B.G. et al., 1999), and "Big Pimpin'" (Jay-Z and UGK, 1999) all feature musical characteristics that germinated in the South and have since permeated a substantial portion of the hip-hop repertoire.²⁵⁰ "Tha Crossroads" popularized sung flow, "Rosa Parks" featured a soundscape of rural and country-esque elements, "Bling Bling" showcased particularly extreme examples of microtiming, and "Big Pimpin'" highlighted the use of double-time flow over a very slow beat: all elements that have become commonplace in hip-hop music today. Even though these songs participated in the commercial apparatus of mainstream hip-hop when released (perhaps with the exception of "Bling Bling"), and were all connected with established record labels, the regions these artists hailed from were far from established players on a national—much less a global—scale. As a consequence, these

²⁵⁰ Although Jay-Z is a New York artist, his collaboration with UGK, a Houston-based duo, indicates his intent to integrate with and capitalize on the success of burgeoning artists from the South. This intent can also be seen via Jay-Z's collaboration with Atlanta-based Jermaine Dupri on "Money ain't a Thang" (1997).

breakout successes for artists from the South and Midwest serve as harbingers of the stylistic influence that these regions eventually attained, thus demonstrating their contribution to the increasing diversity of hip-hop music during the 1990s.

I have shown in this dissertation that stylistic diversity is present through the ongoing musical reinvention of hip hop through the arrival and introduction of new North-American regions. These regions emerge and influence via new musical languages and techniques, and already-established regions evolve and adapt in turn. This process is somewhat of a microcosm for the global development of hip-hop music, where different socio-linguistic communities around the world have developed vibrant hip-hop scenes that owe their identities equally to the stylistic legacy of American hip hop and to the cultural fabric of these communities themselves.

8.4 Post-regionalism and Diversity

The final question I asked in Chapter 2 was whether flow practices have become more homogenous in recent years, a period that I and others have defined as post-regional.

Specifically, I asked whether the internet's facilitating a dissolution of regional identity in hip-hop music and the South's coming to influence the genre in an outsized capacity have contributed to a stylistic homogeneity in commercial hip-hop music. In brief, my answer is no: flow practices have not grown more homogeneous, nor have they grown less diverse. New methods of expressivity in flow have emerged to further perpetuate its diversity in the wake of stylistic stagnation across parameters such as rhyme or segmentation. As discussed above, the complexification of rhyme and segmentation appears to have reached something of an apex in commercial flow of the late 1990s, with performances such as "Hypnotize" (The Notorious B.I.G., 1997). More recent commercial hip-hop music may employ flow styles that are comparable to 1990s recordings, but they contribute to increasing diversity (if not always increasing complexity) in new ways. Firstly, singing and microtiming have continued to

permeate flow practices in recent years. The instances of sing-rapping in the corpora increase sharply following Kanye West's Album *808s and Heartbreak* (2009), with the professional debuts of Kid Cudi, Drake, and other sing-rappers. Since much of this singing is heavily autotuned—for aesthetic purposes—it constitutes a marked break from earlier aspects of singing styles in hip-hop music.

Another principal way this increased diversity can be seen is through the progressively wide tempo range used in post-2000 commercial hip-hop music. As described in Chapter 7 (pp. 214–15), slower and faster song tempos give rise to greater variances in syllabic density. As a consequence, songs like “Anaconda” (Nicki Minaj, 2014) or “Look at Me Now” (Chris Brown and Busta Rhymes, 2011) feature passages of both extremely slow and extremely fast rapping. (Example 5.4, p. 132, shows this dichotomy in “Anaconda”.) Another consequence on flow rhythm—beyond syllabic density—in songs falling in the slow and fast tempo profiles (below 80 bpm and above 110 bpm respectively) concerns the actual rhythmic content used. Recent hip-hop flow tends to favour rhythmic content that runs counter to the natural speech rhythms of spoken English, where long and short syllables normally follow lexical and prosodic stresses. In effect, this recent flow practice is more likely to utilize long strings of the same rhythmic value, as in Examples 7.1 and 7.2 (p. 216). These innovations in flow style are considered as markers of diversity because they have not supplanted old styles of flow. Indeed, as one of the defining characteristics of hip-hop music is borrowing or repurposing, it should come as no surprise that stylistic innovations in this genre do not supplant older practices, but rather complement them and perhaps eventually blend with them.

8.5 Contributions and Further Directions

The musical parameters I focus on have, for the most part, already been given attention in a variety of scholarly communities. Rhyme in hip-hop flow has been sensitively analyzed and

discussed by scholars in English, linguistics, music theory, and music cognition.²⁵¹ Microtiming and pitch in flow have also received increased attention very recently.²⁵² And a more general discussion of meter—both in the flow and beat layers—emerges as something of an analytical consequence in nearly all music-led analyses of hip hop. My dissertation contributes to the increased focus on these parameters by considering them jointly in order to better assess how they influence one another in the performance and reception of hip-hop flow. For example, my Chapter 6 discussion of how parameters such as rhyme, syntax, and breathing, and rhythm intersect through their ability to segment passages of flow led to a holistic approach to analyzing flow phrasing, an approach that considered the internal, expectation-generating characteristics these parameters possess alongside their potential to establish audible segmentation points for listeners. An appealing future research area for flow phrasing will be studying its cognitive aspect, particularly in relation to my theory that phrasing is predicated on the expectation and realization of listeners. Much work on musical expectation has already been done (Narmour 1990 and Huron 2006), with some specifically considering the role repetition plays in this process (Margulis 2013); takeaways from this research could eventually be applied to hip-hop flow.

The flow profiles I generated in Chapter 7, as a result of the statistical observations in Chapter 5 and close readings in Chapter 6, provided a new approach to comparative classification of flow practices in songs that share a common aspect. Such song pairings or groupings may have all been released in the same year, share a common tempo, or employ the same type of microtiming. The appeal of this scheme for comparison is that it does not operate in a “top-down” format of establishing fixed categories with which to compare or contrast songs—a problematic practice of shoehorning songs into impermeable categories. I have criticized the

²⁵¹ I summarize several of these publications in Chapter 1 (pp. 6–9).

²⁵² See Komaniecki (2019) and Ohriner (2019a).

shortcomings of this approach to analysis throughout this dissertation, but presently wish to add some clarification. Taxonomic analytical methods are not problematic *per se*; they offer valuable insight into genre-wide style analyses of a repertoire, and as such are regularly used in popular music scholarship. But when they are used as a means to an end—to construct a taxonomy against which outliers can be identified—analytical practice strays into exclusionary territory, and the temptation to extract value judgements from taxonomy becomes apparent. Instead, I plan to further develop my theory of flow profiles to be used as a starting point for musical analysis of flow, specifically to demonstrate how diversity in flow practice can be illustrated by highlighting divergences between performances that also share common musical characteristics, such as tempo. Flow profiles thus enable a realm of comparative assessments to be made about various flow practices while preserving a sense of inclusivity in the analytical process.

The data analyzed, observations made, and conclusions drawn in this dissertation build on work undertaken by Condit-Schultz (2016), Ohriner (2016), Adams (2020) and others, and also contribute new theories and approaches to the analysis of flow. Many avenues for future work remain, which are variegated in approach and scope. To my knowledge, no comprehensive studies of form in hip-hop music have yet been published. While both here and in my article on Golden-Age hip-hop music (Duinker and Martin, 2017) I annotated the formal sections of each song in these studies' respective corpora, I did not pursue further analysis of form in either project. At present, my preliminary observations on form include a general trend away from longer verses and abstract song forms toward tighter and more radio-ready song forms that feature a predictable alternating trajectory of verses and hooks. This trend is perhaps unsurprising considering the ongoing mainstreaming of hip-hop music since its inception as a genre. Any such work would be welcome in the music theory discipline, but should also respect several elements particular to hip-hop music, such as the modes of music production and

composition in this genre—sampling, looping, freestyling, etc.—and the oral vernacular practices of African American and Jamaican culture that hip-hop music grew out of.²⁵³ One example of these practices involves toasting: the oral recitation of long epic poems in African-American folklore. Toasting’s influence on hip-hop music can be seen, among other places, in the long-verse forms of early songs such as “Roxanne’s Revenge” (Roxanne Shanté, 1984) and “Paid in Full” (Eric B. and Rakim, 1987). Regardless of how research on hip-hop form might proceed, it will be most effective when avoiding the wholesale imposition of formal archetypes drawn from other musical conventions onto this genre.

A second area of further expansion of this research is geographical, undertaking case studies of hip-hop flow practices in languages and communities outside of those that have been discussed here. Beyond assessing flow in a sociolinguistic context in these studies, such research might ask: do languages with different timing schemes use different types of rhythmic patterns in rapping?²⁵⁴ For example, do stress-timed languages such as English generate different possible rhythmic patterns in flow than syllable-timed languages such as French? In-depth case studies of specific flow performances—by a single artist perhaps—from different languages would go far in speaking to questions such as these.

A final direction for further research in flow involves hip-hop music’s increasingly intertwined relationship with popular music. The boundaries between what is conventionally defined as “pop” music and other, more specialized styles of music have always been fluid: when

²⁵³ See Floyd, Jr. (2002) for a summary of these practices.

²⁵⁴ Research into hip-hop music in languages other than English is already plentiful, and would provide a solid foundation upon which music-linguistic research could build. Perullo and Fenn (2003) study hip-hop music from Malawi and Tanzania, where the colonial language of English offers a common linguistic element in these two countries, but where their identities are also tied to their respective native languages of Chichewa and Swahili. Manabe (2006) writes about the intersection of hip-hop music and the Japanese language. And Sansone (1995), Schneider (1997), Scholz (1998), Boucher (1998), and Androutsopoulos and Scholz (2010) research the appropriation and integration of hip-hop culture in various European linguistic communities. Amid their research on English-speaking MCs, Krims (2000), Kautny (2015), and Oddelkalv (2019) have discussed Cree and Dutch, German, and Norwegian flow, respectively.

Michael Jackson took over the pop charts in the early 1980s, his brand of disco- and funk-influenced pop elevated those two genres out of specialty niches and into the broad mainstream. Such a phenomenon is presently occurring with hip hop and EDM (electronic dance music): both these musical practices are increasingly informing the stylistic trajectory of the brand of popular music that dominates the commercial landscape. One example of hip-hop flow styles permeating popular music singing is given in Example 8.1, excerpted from Ariana Grande’s “God is a Woman” (2018). Grande’s vocal performance here follows several of the stylistic norms of trap rapping: a metrically displaced vocal entry, a constant stream of triplets (also known as triplet flow), and a chant-like focus on a single pitch. Further research into how pop vocal styles and recent hip-hop flow intersect might illuminate more relationships between these two practices, and further develop the argument that hip-hop music has become, in many ways, synonymous with pop music.



Example 8.1: Excerpt of “God is a Woman” (Ariana Grande, 2018).

In this dissertation I have shown that analysis of hip-hop flow provides a gateway into understanding hip-hop music’s journey through a marginalized, regional beginning to an interconnected web of actors participating—indeed defining—a nationwide, ubiquitously commercial genre, one less attached to region than ever before and one boasting a seemingly endless variety of musical approaches. I began this work with the intention of identifying broad stylistic trends and developments across hip hop’s history. I also searched for ways to decipher the dense web of interconnected musical parameters that make each flow performance unique in

some way, yet similar to others in different ways. The analytical observations and conclusions I arrive at throughout this dissertation have not always materialized as expected, but they have all been enlightening and instrumental in broadening my range of comprehension of this fascinating genre, an outcome I hope readers of this dissertation may share.

Appendix

<i>Rolling Stone Corpus</i>			
Song Title	Artist	Album and Release Year	Geographical Region
Rapper's Delight	Sugarhill Gang	Non-album single (1979)	Englewood NJ
That's the Joint	Funky 4 + 1	Non-album single (1980)	Bronx
The Breaks	Kurtis Blow	Non-album single (1980)	Harlem
The Adventures of Grandmaster Flash on the Wheels of Steel	Grandmaster Flash & the Furious Five	Non-album single (1981)	Bronx
Planet Rock	Afrika Bambaataa & the Soulsonic Force	Non-album single (1982)	Bronx
The Message	Grandmaster Flash & the Furious Five	Non-album single (1982)	Bronx
Beat Bop	Rammellzee & K-Rob	Non-album single (1983)	Queens
White Lines (Don't Do It)	Grandmaster & Melle Mel	Non-album single (1983)	Bronx
Sucker MC's	Run-DMC	Run-DMC (1983)	Queens
Roxanne, Roxanne	U.T.F.O.	U.T.F.O. (1984)	Brooklyn
Roxanne's Revenge	Roxanne Shanté	Non-album single (1984)	Brooklyn
The Show	Doug E. Fresh & the Get Fresh Crew	Non-album single (1985)	Harlem
King of Rock	Run-DMC	King of Rock (1985)	Queens
P.S.K. What Does It Mean?	Schoolly D	Schoolly D (1985)	Philadelphia
Rock the Bells	LL Cool J	Radio (1985)	Long Island
La-Di-Da-Di	Doug E. Fresh & Slick Rick	Non-album single (1985)	New York (multi borough)
The Bridge	MC Shan	Non-album single (1986)	Brooklyn
Hold It, Now Hit It	Beastie Boys	Licensed to Ill (1986)	New York (multi borough)
Paul Revere	Beastie Boys	Licensed to Ill (1986)	New York (multi borough)
Peter Piper	Run-DMC	Raising Hell (1986)	Queens
6 'N the Mornin'	Ice-T	Rhyme Pays (1987)	Los Angeles
Freaky Tales	Too Short	Born to Mack (1987)	Oakland
Push It	Salt-N-Pepa	Non-album single (1987)	New York
South Bronx	Boogie Down Productions	Criminal Minded (1987)	Bronx
I Know You Got Soul	Eric B. & Rakim	Paid in Full (1987)	Long Island
Paid in Full	Eric B. & Rakim	Paid in Full (1987)	Long Island
Cars With the Boom	L'Trimm	Grab It! (1988)	Miami
Ego Trippin'	Ultramagnetic MC's	Critical Beatdown (1988)	Bronx
Children's Story	Slick Rick	The Great Adventures of Slick Rick (1988)	Bronx
Bring the Noise	Public Enemy	It Takes a Nation of Millions to Hold Us Back (1988)	Long Island
The Symphony	Marley Marl et al.	In Control, Volume 1 (1988)	Queens
Top Billin'	Audio Two	What More Can I Say? (1988)	Brooklyn
Ain't No Half-Steppin'	Big Daddy Kane	Long Live the Kane (1988)	Brooklyn
It Takes Two	Rob Base & DJ E-Z Rock	It Takes Two (1988)	Harlem
Strictly Business	EPMD	Strictly Business (1988)	Brentwood NY
Fuck tha Police	N.W.A.	Straight Outta Compton (1988)	Los Angeles
Rebel Without a Pause	Public Enemy	It Takes a Nation of Millions to Hold Us Back (1988)	Long Island
Straight Outta Compton	N.W.A.	Straight Outta Compton (1988)	Los Angeles
Just a Friend	Biz Markie	The Biz Never Sleeps (1989)	Long Island
Me Myself and I	De La Soul	3 Feet High and Rising (1989)	Long Island
Slow Down	Brand Nubian	One for All (1990)	New Rochelle NY
The Humpty Dance	Digital Underground	Sex Packets (1990)	Oakland
Can I Kick It?	A Tribe Called Quest	People's Instinctive Travels and the Paths of Rhythm (1990)	Queens
Mama Said Knock You Out	LL Cool J	Mama Said Knock You Out (1990)	Long Island
Fight the Power	Public Enemy	Fear of a Black Planet (1990)	Long Island
O.P.P.	Naughty by Nature	Naughty by Nature (1991)	New Jersey
The Choice Is Yours (Revisited)	Black Sheep	A Wolf in Sheep's Clothing (1991)	Queens
How I Could Just Kill a Man	Cypress Hill	Cypress Hill (1991)	Los Angeles area
Scenario	A Tribe Called Quest & Leaders of the New School	The Low End Theory (1991)	Queens
Mind Playing Tricks on Me	Geto Boys	We Can't Be Stopped (1991)	Houston
Baby Got Back	Sir Mix-A-Lot	Mack Daddy (1992)	Seattle
Deep Cover	Dr. Dre & Snoop Dogg	Deep Cover soundtrack (1992)	Los Angeles
Passin' Me By	The Pharcyde	Bizarre Ride to the Pharcyde (1992)	Los Angeles
It Was a Good Day	Ice Cube	The Predator (1992)	Los Angeles
They Reminisce Over You (T.R.O.Y.)	Pete Rock & C.L. Smooth	Mecca and the Soul Brother (1992)	Mount Vernon NY
Nuthin' but a G Thang	Dr. Dre & Snoop Dogg	The Chronic (1992)	Los Angeles
93 'til Infinity	Souls of Mischief	93 'til Infinity (1993)	Oakland
Protect Ya Neck	Wu-Tang Clan	Enter the Wu-Tang (36 Chambers) (1993)	Staten Island
Gin and Juice	Snoop Dogg	Doggystyle (1993)	Los Angeles
C.R.E.A.M.	Wu-Tang Clan	Enter the Wu-Tang (36 Chambers) (1993)	Staten Island
It Ain't Hard to Tell	Nas	Illmatic (1994)	Queens
Mass Appeal	Gang Starr	Hard to Earn (1994)	Brooklyn
Big Poppa	The Notorious B.I.G.	Ready to Die (1994)	Brooklyn
N.Y. State of Mind	Nas	Illmatic (1994)	Queens
Flava in Ya Ear (Remix)	Craig Mack et al.	Non-album single (1994)	New York
Juicy	The Notorious B.I.G.	Ready to Die (1994)	Brooklyn
Ice Cream	Raekwon et al.	Only Built for Cuban Linx ... (1995)	Staten Island
Brooklyn Zoo	Of Dirty Bastard	Return to the 36 Chambers: The Dirty Version (1995)	Brooklyn

California Love	Tupac Shakur, Dr. Dre, & Roger Troutman	Non-album single (1995)	Los Angeles
Shook Ones (Part II)	Mobb Deep	The Infamous (1995)	New York
Dear Mama	Tupac Shakur	Me Against the World (1995)	Los Angeles
Tha Crossroads	Bone Thugs-N-Harmony	Non-album single (1996)	Cleveland
The Rain (Supa Dupa Fly)	Missy Elliott	Supa Dupa Fly (1997)	Virginia
Hypnotize	The Notorious B.I.G.	Life After Death (1997)	New York
Money Ain't a Thang	Jermaine Dupri & Jay-Z	Life in 1492 (1998)	Atlanta
Lost Ones	Lauryn Hill	The Miseducation of Lauryn Hill (1998)	New Jersey
Rosa Parks	OutKast	Aquemini (1998)	Atlanta
Bling Bling	B.G., Big Tymers, & Hot Boys	Chopper City in the Ghetto (1999)	New Orleans
My Name Is	Eminem	The Slim Shady LP (1999)	Detroit
Big Pimpin'	Jay-Z & UGK	Vol. 3 ... Life and Times of S. Carter (1999)	Brooklyn and Houston
Ante Up (Robbing-Hoodz Theory)	M.O.P.	Warriorz (2000)	Brooklyn
Ms. Jackson	OutKast	Stankonia (2000)	Atlanta
Hip-Hop	Dead Prez	Let's Get Free (2000)	Brooklyn
Stan	Eminem & Dido	The Marshall Mathers LP (2000)	Detroit
B.O.B.	OutKast	Stankonia (2000)	Atlanta
Get Ur Freak On	Missy Elliott	Miss E ... So Addictive (2001)	Virginia
Get Low	Lil Jon & the East Side Boyz	Kings of Crunk (2002)	Atlanta
Grindin'	Clipse	Lord Willin' (2002)	Virginia

Grammy Corpus

Song Title	Artist	Album and Release Year	Geographical Region
Lose Yourself	Eminem	8 Mile Soundtrack (2002)	Detroit
Beautiful	Snoop Dogg & Pharrell Williams	Paid tha Cost to Be da Boss (2002)	Los Angeles
Excuse Me Miss	Jay-Z & Pharrell Williams	The Blueprint 2: The Gift & The Curse (2002)	New York
In Da Club	50 Cent	Get Rich or Die Tryin' (2003)	New York
Work It	Missy Elliott	Under Construction (2002)	Virginia
Jesus Walks	Kanye West	The College Dropout (2004)	Chicago
Drop it Like its Hot	Snoop Dogg & Pharrell Williams	R & G: The Masterpiece (2004)	Los Angeles
Hey Mama	Black Eyed Peas	Elephunk (2003)	Los Angeles
Let's Get it Started	Black Eyed Peas	Elephunk (2003)	Los Angeles
99 Problems	Jay-Z	The Black Album (2003)	New York
Diamonds from Sierra Leone	Kanye West	Late Registration (2005)	Chicago
Candy Shop	50 Cent	The Massacre (2005)	New York
Don't Phunk With My Heart	Black Eyed Peas	Monkey Business (2005)	Los Angeles
Hate It Or Love It	The Game	The Documentary (2005)	Los Angeles
Lose Control	Missy Elliott	The Cookbook (2005)	Virginia
Money Maker	Ludacris & Pharrell Williams	Release Therapy (2006)	Atlanta
It's Goin' Down	Yung Joc	New Joc City (2006)	Atlanta
Kick, Push	Lupe Fiasco	Food & Liquor (2006)	Chicago
Ridin'	Chamillionaire	The Sound of Revenge (2005)	Houston
What You Know	T.I.	King (2006)	Atlanta
Good Life	Kanye West & T-Pain	Graduation (2007)	Chicago
Ayo Technology	50 Cent	Curtis (2007)	New York
Big Things Poppin'	T.I.	T.I. vs. T.I.P. (2007)	Atlanta
Can't Tell Me Nothing	Kanye West	Can't Tell Me Nothing (2007)	Chicago
Crank That	Soulja Boy	Souljaboytellem.com (2007)	Atlanta
Lollipop	Lil Wayne	Tha Carter III (2008)	New Orleans
Low	Flo Rida	Step Up 2: The Streets Soundtrack (2008)	Miami
Sexual Eruption	Snoop Dogg	Ego Trippin' (2008)	Los Angeles
Superstar	Lupe Fiasco	Lupe Fiasco's The Cool (2007)	Chicago
Swagga Like Us	T.I., Jay-Z, Lil Wayne, & Kanye West	Paper Trail (2008)	Various
Run This Town	Jay-Z	The Blueprint 3 (2009)	New York
Best I Ever Had	Drake	So Far Gone (2009)	Toronto
Day 'n' Nite	Kid Cudi	Man on the Moon: The End of Day (2009)	Cleveland
Dead and Gone	T.I.	Paper Trail (2008)	Atlanta
D.O.A. (Death of Autotune)	Jay-Z	The Blueprint 3 (2009)	New York
Empire State of Mind	Jay-Z	The Blueprint 3 (2009)	New York
Love the Way you Lie	Eminem	Recovery (2010)	Detroit
Not Afraid	Eminem	Recovery (2010)	Detroit
Nothin' On You	B.o.B.	B.o.B. Presents: The Adventures of Bobby Ray (2010)	Atlanta
On to the Next One	Jay-Z	The Blueprint 3 (2009)	New York
All of the Lights	Kanye West, Rihanna, Kid Cudi, & Fergie	My Beautiful Dark Twisted Fantasy (2010)	Chicago
Black and Yellow	Wiz Khalifa	Rolling Papers (2011)	Pittsburgh
I Need a Doctor	Dr. Dre, Eminem, & Skylar Grey	Non-album single (2011)	Detroit and Los Angeles
Look at me Now	Chris Brown, Busta Rhymes, & Lil Wayne	F.A.M.E. (2011)	Virginia
Otis	Jay-Z & Kanye West	Watch the Throne (2011)	New York and Chicago
The Show Goes On	Lupe Fiasco	Lasers (2011)	Chicago
Niggas in Paris	Jay-Z & Kanye West	Watch the Throne (2011)	New York and Chicago
Daughters	Nas	Life is Good (2012)	New York
Lotus Flower Bomb	Wale	Ambition (2011)	Washington DC

Mercy	Kanye West	Cruel Summer (2012)	Chicago
Young Wild and Free	Snoop Dogg & Wiz Khalifa	Mac & Devin Go to High School (2011)	Los Angeles and Pittsburgh
The Motto	Drake	Take Care (2011)	Toronto
Thrift Shop	Macklemore & Ryan Lewis	The Heist (2012)	Seattle
Fuckin' Problems	A\$AP Rocky	Long. Live. ASAP (2013)	New York
Holy Grail	Jay-Z	Magna Carta Holy Grail (2013)	New York
New Slaves	Kanye West	Yeezus (2013)	Chicago
Started From the Bottom	Drake	Nothing Was the Same (2013)	Toronto
I	Kendrick Lamar	To Pimp a Butterfly (2015)	Los Angeles
Anaconda	Nicki Minaj	The Pinkprint (2014)	Queens
Bound 2	Kanye West	Yeezus (2013)	Chicago
We Dem Boyz	Wiz Khalifa	Blacc Hollywood (2014)	Pittsburgh
0 to 100	Drake	Non-album digital download (2014)	Toronto
Alright	Kendrick Lamar	To Pimp a Butterfly (2015)	Los Angeles
All Day	Kanye West	Non-album digital download (2015)	Chicago
Energy	Drake	Non-album digital download (2015)	Toronto
Glory	Common & John Legend	Non-album digital download (2014) - from the movie Selma	Chicago
Trap Queen	Fetty Wap	Fetty Wap (2015)	New Jersey
Hotline Bling	Drake	Views (2016)	Toronto
All the Way Up	Fat Joe & Remi Ma	Plata O Plomo (2017)	New York
Famous	Kanye West	The Life of Pablo (2016)	Chicago
No Problem	Chance the Rapper	Coloring Book (2016)	Chicago
Ultralight Beam	Kanye West	The Life of Pablo (2016)	Chicago

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