

ANALYSIS OF RHYTHM IN RAP MUSIC

by

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THESIS ABSTRACT

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Title: Analysis of Rhythm in Rap Music

Although the analysis of popular music has become widely accepted by theorists, rap and related genres are still relatively unexplored. The small body of existing literature suggests several promising analytic methods, such as the discernment and comparison of rhythmic layers within a song. This thesis reviews the current state of rap research and synthesizes a comprehensive theoretical model out of previously published sources and the author's original ideas. This model is then used to investigate several case studies of varying complexity, revealing a number of previously undocumented musical devices and promising avenues for further research.

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CHAPTER I

INTRODUCTION

This research project investigates the interaction of rhythmic layers in rap music. Although analysis of popular music has become more common, rap and related genres are still relatively unexplored and underrepresented in music theory literature. As other authors have pointed out, rap resists conventional analytic methods for a number of reasons.¹ Harmonic progressions are rarely more complex than simple four-chord loops, and often seem to operate using different logic than the functional harmony found in the classical canon. Furthermore, relationships between the text of the rapping and the underlying beat are usually of a completely different type than those found in classical music or even other forms of popular music. Additional challenges are created by the way the underlying music, or beat, is created; musicologist Robert Walser goes as far as to suggest that “sampling is a strategy for producing music outside the logic of ‘trained’ musicians,”² hinting at why rap has proven difficult for theorists to understand and explain. Despite these obstacles, there is a small but growing body of literature that develops new techniques for analyzing rap, and reveals a number of promising avenues for further investigation. These developments are, of course, welcome additions to the field of music theory, but they are especially warranted given rap’s increasing

¹ Kyle Adams, “Aspects of the Music/Text Relationship in Rap,” *Music Theory Online* 14 no. 2 (2008): [2-3], <http://www.mtosmt.org/issues/mto.08.14.2/mto.08.14.2.adams.html>.

² Robert Walser, “Rhythm, Rhyme, and Rhetoric in the Music of Public Enemy,” *Ethnomusicology* 39 no. 2 (1995): 198.

prominence in other disciplines such as musicology, ethnomusicology, sociology, linguistics, and ethnic studies.

Most of the existing music theory literature that discusses rap does so from a purely sonic perspective, largely disregarding the meaning of the lyrics. Although the results of this type of analysis are perfectly valid, more holistic approaches have the potential to expand our field and bring it into dialogue with the other disciplines mentioned above. This is particularly true since many commentators who discuss the social and cultural significance of rap never attempt to examine its musical details, perhaps influenced by the outmoded view that its musical aspects are overly simple and transparent. One way this project expands upon previous theory literature is by incorporating various types of lyrical analysis, and by doing so aims to bridge the gap between musical details and the cultural aspects of rap that make it so important for other disciplines.

Existing literature suggests that one way to analyze rap music is to examine the interactions between different layers within a song.³ This is a fairly intuitive conclusion when discussing rap beats, given that they are often created by a producer whose compositional process is to literally layer different looping samples on top of one another. However, theorists such as Kyle Adams and Mitchell Ohriner have demonstrated that rapping itself typically creates, or inflects, a number of rhythmic sublayers, and that these

³ Adams, “Aspects.”

layers can interact self-referentially⁴ or with layers from the beat.⁵ The three main goals of this paper are as follows: 1) to review the existing literature on rhythm and rhythmic layers in rap music, offering small refinements and expansions along the way, 2) to synthesize ideas from the literature into a generalized theoretical model, and 3) to use this model to analyze several short case studies, highlighting interesting and unexplored musical relationships. Each chapter, and how it relates to these goals, is briefly outlined below.

Chapter II sets the stage by reviewing some of the literature on rap music. It includes practically every source that discusses rapping from a strict music theory perspective, as well as several musicological sources that offer notable analyses of specific musical devices.

Chapter III contains in-depth commentary on Kyle Adams's article "On the Metrical Techniques of Flow in Rap Music," which has guided further research through its categorization of rap techniques. Brief examples are deployed throughout the chapter in order to argue for the analysis of previously neglected musical elements and rap techniques. The main objective of Chapter III is to demonstrate some ways to logically expand the work of Adams and others into more comprehensive, inclusive systems of analysis.

⁴ Kyle Adams, "On the Metrical Techniques of Flow in Rap Music," *Music Theory Online* 15 no. 5 (2009): <http://www.mtosmt.org/issues/mto.09.15.5/mto.09.15.5.adams.html>.

⁵ Adams, "Aspects."

Following the call in Chapter III for the analysis of rap to incorporate a greater number of musical elements, Chapter IV exhaustively discusses potential ways that artists can manipulate various parameters and create rhythmic layers. Throughout Chapter IV I present a kind of theoretical model of rap music using a series of diagrams to visually represent the relationships between different musical elements, the techniques of rapping that manipulate them, and the rhythmic layers they are capable of creating. At the end of that chapter I contextualize the previously discussed literature by showing how other sources fit within my own theoretical model.

In Chapter V I present numerous short case studies, or analytic vignettes. These examples are sorted by their complexity as well as their position within the model from Chapter IV. I begin by discussing examples, like those in Chapter III, that involve only one or two musical elements, but progress to more complex analyses, in which intricate webs of rhythmic layers interact with themselves and other musical forces.

Finally, Chapter VI provides concluding thoughts, including a number of suggestions for future research.

Clarification of Terms

Before continuing, it will be useful to review some common terms associated with rap music and to offer some preliminary definitions, consistent with the language used throughout the remainder of this document. It is important to note that many of these terms do not have widely agreed-upon definitions, and that significant space in the literature reviewed below is devoted to debating their meanings. The definitions below are largely my own, and thus may disagree with some of the published literature; this

conflict is largely unavoidable, given the lack of scholarly consensus. I will also provide some brief commentary on pairs of words that are often confused or used interchangeably by some authors but not others. For the most part, I am unconcerned with debates over definitions, and attempt to present analyses in ways that do not rely on singular interpretations of specific words.

Rap music: music in which a typically cyclical beat provides the background for words that are performed in a stylized kind of speech, usually with deliberate rhythms and an emphasis on rhymes and other sonic devices.

Rap vs. Hip-Hop: Hip-hop is used by many to denote the larger, black cultural movement of which rap music is a part; “hip-hop” or “hip-hop music” may be used interchangeably with “rap music.”

Rapping vs. Singing: Singing involves the use of discrete, well-defined pitches, whereas rapping often does not. However, the line between the two modes of text performance is often blurry, particularly in music produced since the advent of autotuning software. In some ways rapping may be understood as a sort of middle ground between regular speech and traditional singing, not unlike *sprechstimme* in the classical canon.

Rapper vs. MC: MC, for “master of ceremonies,” can be used synonymously with rapper.

Beat: the layers of a rap song that don’t involve rapping; the background instruments/samples/etc.

Beat vs. Music: Music can also refer to the beat of a song. This is counterintuitive since rapping itself is clearly also musical, but synonymous usage is widespread in the literature.

Text: the words of the rapping, independent of how they are performed. Reading a rap song's lyrics, as opposed to listening to the actual song, is sufficient for assimilating its text.

Performance: I use this term to refer to all of the musical and other sonic content that an MC imparts onto a text by rapping it; rhythm, pitch, articulation, dynamics, etc.

Flow and Delivery: Both of these terms are usually used to refer to some subset of the aggregate group of musical elements that comprise *performance*. The meaning of *flow* has been the source of much scholarly, as well as non-academic, debate, but generally refers to the rhythmic aspects of a rapper's performance, and sometimes includes other elements such as articulation. *Delivery* has not been actively debated, but the word nevertheless seems to be used in subtly conflicting ways throughout the literature. A standard definition, provided by dictionary.com, is "the utterance or enunciation of words," suggesting musical parameters such as articulation, which I believe is consistent with the way many rappers and rap fans conceive of delivery.

Microtiming: used to discuss the way the onset of a syllable may be slightly earlier or later than some audible aspect of the beat, or the underlying metrical grid implied by the beat.

Rhythmic Layer: this term will generally be used to refer to some subset of the aggregate of all the rhythmic features of an MC's performance. Consider a hypothetical,

rhythmic transcription of rapping, that shows the onset and termination of every syllable.

If we were to highlight the syllables that are related to one another by rhyme, accent, pitch, or some other element, these would form their own rhythmic layer.

CHAPTER II

RECENT SCHOLARSHIP ON RAP MUSIC

This chapter provides a summary of the theoretically-oriented scholarship on rap music. This scholarship comes from a variety of sources, including music theory journals and presentations, musicology journals, and books. The content of this chapter is organized chronologically, beginning with the earliest published sources and ending with the most recent paper presentations. This should allow the reader to comprehend both the overall state of music theory research in rap, and the logical progression from one source to the next that I wish to continue and expand.

Most sources covered in this chapter are those that reveal interesting musical relationships in rap. For instance, Adams's article "On the Music/Text Relationship in Rap Music" discusses how MCs can incorporate rhythms from the beat into their rapping. Adams's later article, "On the Metrical Techniques of Flow in Rap Music," and Mitchell Ohriner's presentation "Groove, Variety, and Disjuncture in the Rap of Kanye West, Eminem, and André 3000"⁶ both discuss self-relational aspects of rappers' rhythms. Articles in this style usually demonstrate, using transcribed examples, how a rapper can manipulate the relationship between certain musical elements in order to achieve some basic musical goal, such as an articulation of form, alteration of mood, or depiction of lyrics.

⁶ Mitchell Ohriner, "Groove, Variety, and Disjuncture in the Rap of Kanye West, Eminem, and André 3000" (draft copy of paper presented at the annual meeting for the Society of Music Theory, Charlotte, North Carolina, October 31st - November 1st, 2013).

The sources I have included here are not always primarily focused on these kinds of relationships; sometimes they simply mention them in passing. An example of this is Robert Walser’s “Rhythm, Rhyme, and Rhetoric in the Music of Public Enemy.” Although Walser’s aim is not to offer an in-depth exploration of text depiction, he nevertheless touches on some interesting ways rappers can choose rhythms that relate to and support their lyrics.

A second important category of source are those that explore a single musical element in greater depth. An example of this is Christopher Segall’s presentation, “Rap and *Sprechstimme*: Analyzing the Pitch Content of Hip-Hop.”⁷ Another is Oliver Kautny’s book chapter “Lyrics and Flow in Rap Music,”⁸ which mostly contains discussion of microtiming.

By focusing on these two general types of sources, avenues for further research are easily elucidated. For instance, some types of relationships discussed by Adams, such as coherence between rapping and the beat, may be formed or enhanced by a musical parameter not attended to in the original source, such as pitch. Generally, the theoretical articles that discuss musical relationships do not consider lyrical content; combining analysis of these relationships with other authors’ suggested text/music devices will prove to be quite fruitful in Chapter V. Keeping these two broad categories of sources in

⁷ Christopher Segall, “Rap and *Sprechstimme*: Analyzing the Pitch Content of Hip-Hop” (reading version of paper presented at Music Theory Midwest, Minneapolis, Minnesota, May 15–16, 2009).

⁸ Oliver Kautny, “Lyrics and Flow in Rap Music,” in *The Cambridge Companion to Hip-Hop*, ed. Justin A. Williams. (Cambridge: Cambridge University Press, 2015), 101-117.

mind throughout the remainder of this chapter will help frame the analysis that follows as a logical continuation and combination of existing research.

Chapter II concludes with a brief discussion of the rhythmic theories of Harald Krebs. Krebs's book *Fantasy Pieces: Metrical Dissonance in the Music of Robert Schumann*⁹ contains examples of a number of rhythmic devices similar to those described by rap theorists.

Historically Important Musicological Writings

Robert Walser's "Rhythm, Rhyme, and Rhetoric in the Music of Public Enemy," published in 1995, is one of the first articles to discuss the musical details of rap in an academic context. This primacy manifests in a number of interesting ways throughout the article, such as Walser's several page argument that hip-hop music is in fact music. He also asserts the value of transcription, saying that it is "a way of opening up for discussion the musical details of a style that many people do not think *has* musical details."¹⁰

Walser goes on to analyze the Public Enemy song "Fight the Power," transcribing musical layers from the beat, and some of the rapping. The rap transcriptions are done in traditional musical notation, on a one-line staff, showing the rhythm of the lyrics. Walser offers commentary in the following style: "in the last two measures of this example, he (the rapper Chuck D) sticks more closely to the beat, first presenting an idea, 'People,

⁹ Harald Krebs, *Fantasy Pieces: Metrical Dissonance in the Music of Robert Schumann* (New York: Oxford University Press, 1999).

¹⁰ Walser, "Rhythm, Rhyme, and Rhetoric," 200.

people, all the same,’ then rejecting it: ‘No, we’re not the same cause we don’t know the game.’ The emphasis on the beat in these measures helps portray the first idea as a simplistic platitude and makes Chuck’s dismissal seem inevitable. The rhythms thus support his textual argument.”¹¹ In another example, Walser writes that “his precise, undeviating triplets [...] articulate an anger that draws upon the power of every beat but relentlessly clashes with every subdivision of the groove. Exploiting the rhetorical power of parallelisms, he rolls past the stopping point he had implied in order to deliver a longer, weightier line of text: an indictment of four hundred years of racism.”¹²

Walser’s commentary is valuable, not only because it provides specific insight into a well known song, but also because it demonstrates some of the possible types of musical relationships that can be found in rap. In the first quote above, Walser argues that the MC moves from rhythmic conformity to rhythmic divergence, in relation to the underlying metrical pulse, in order to reinforce the message of the lyrics. The second quote demonstrates how some other musical parameters, such as beat subdivision and the rhythmic duration of semantic units, can be related to the song’s lyrics. These observations are impressive because Walser made them at a time when rap was almost completely ignored by academic musicians, and likely inspired a great deal of the scholarship that exists today by shedding light on some of the complex and subtle interactions between words and music.

¹¹ Ibid., 204-205.

¹² Ibid., 205.

Another important musicological source that contributed to hip-hop music's initial acceptance by academics is Adam Krims's book *Rap Music and the Poetics of Identity*, published in the year 2000. Krims discusses the role rap plays in shaping the identity of both performers and listeners. Although the focus of this book is largely sociological, Krims creates and applies a variety of theoretical tools and analyses to support his claims. One aspect of this is the creation of a number of different systems for categorizing rap music. For instance, Krims proposes that there are three types of flow: sung, speech-effusive, and percussion-effusive, and four main rap subgenres: mack rap, reality rap, party rap, and jazz/bohemian rap.¹³

Krims utilizes a unique system for the transcription of rapping. This technique involves the creation of a table 16 columns wide, in which each column represents a single 16th note and each row represents a single measure of music. Krims provides lyrics beneath the table, and places X's in the table itself, representing the position of lyrics within the 16th note grid. In some respects this system may seem inferior to Walser's transcriptions using standard Western music notation, but it also confers a number of advantages. For one, it is compact, neat, and easy to read, particularly for those who do not have formal training in music. Additionally, some rhythmic relationships are easier to visualize within this system, since corresponding metrical locations from measure to measure appear in vertical alignment.

¹³ Adam Krims, *Rap Music and the Poetics of Identity* (Cambridge: Cambridge University Press, 2000), chapter 2.

The later chapters of *Rap Music and the Poetics of Identity* involve in depth case studies. Here Krims applies his theoretical tools and argues that rap lyrics and beats are intimately connected. He claims in chapter three, which discusses Ice Cube's song "The Nigga Ya Love To Hate," that "the musical organization of the song, particularly the musical tracks, outlines processes inseparable from the semantic reference of the lyrics."

¹⁴ Generally, Krims focuses more on ways in which instrumental tracks within rap beats are added and removed to correspond with aspects of the lyrics, and less on the specific rhythms present within rapping itself.

Kyle Adams's Writings and Responses

The writings of theorist Kyle Adams in many ways logically follow from the observations of Walser and Krims. Adams's first relevant article, "Aspects of the Music/Text Relationship in Rap," published in 2008, is largely devoted to exploring instances of rhythmic unity between rapping and the beat, much like the example discussed by the first Walser quote above. Whereas Walser's discussion includes semantic content, Adams purposefully distances his analysis from the meaning of the text, which in his view "is often secondary to the way in which it (the text) interacts with the underlying music."¹⁵ Adams supports his claim by presenting lyrics from a verse that "has neither an overarching theme, nor an identifiable plot, nor a systematic and

¹⁴ Ibid., 15.

¹⁵ Adams, "Aspects" [5].

consistent use of imagery,”¹⁶ and argues for the utility of analyzing rap simply as a string of sounds rhythmically placed in time.

A brief aside that will hopefully prevent confusion: if given the chance to rename this article, taking into consideration the lack of scholarly consensus on terminology discussed in the introduction, I would suggest something along the lines of “Aspects of the Beat/MC Relationship.” One reason for this is that I do not believe the article’s focus on the rhythm of rapping is conveyed to most readers by the word “text.” Additionally, for some readers the words “music” and “text” together may imply a discussion of text painting, which is a completely different device than what is discussed by the article.

One of Adams’s key insights is that music theorists studying repertoire from the Western classical tradition have been trained to search for the ways in which the music supports the text, and that this relationship must be reversed for the analysis of rap.¹⁷ In other words, composers of classical music have traditionally started with complete, pre-existing texts, and then fit the music to them, leading to an array of well-known compositional techniques, encompassed by the term “text painting,” that theorists seek to notice and explore. Adams claims that the compositional process of rap music is nearly the opposite; rappers begin by listening to a complete or nearly complete beat, on loop, and then compose their raps to fit with the music in terms of both rhythm and overall mood.¹⁸ Adams presents a brief history of rap, tracing its development back to various

¹⁶ Ibid., [4].

¹⁷ Ibid., [1].

¹⁸ Ibid., [10].

forms of African music in which there is simultaneously a cyclic, unchanging rhythmic layer, and a variable rhythmic layer,¹⁹ in order to further his case that the interactions between the repetitive beat and relatively fluid rhythms of rapping are of analytic interest.

Adams goes on to specifically examine rhythm, and claims that MCs respond to the rhythms present within beats in three distinct ways. First, they can directly incorporate rhythms from the beat into their rapping, for example rapping in rhythmic unison with a hi-hat or synthesizer part. Secondly, they can respond to pitch groupings. To demonstrate this, Adams shows an example where rhyming syllables align with chord changes. Lastly, rappers can use rhythmic motives from the beat.

Throughout this article, and his subsequent articles, Adams makes use of the transcription technique first devised by Krims. Whereas Krims places X's in the table, representing syllables, Adams simply writes the syllables themselves. This saves a significant amount of space and makes reading the lyrics in time extraordinarily easy, since the lyrics and their metrical positions within the measure are displayed with a minimal amount of redundant information. Adams also incorporates additional information into the charts, using a bold typeface to represent syllables that are accented, and coloring cells of the table to highlight rhymes and other sonic devices.

Shortly after Adams's first article appeared, Justin Williams published "Beats and Flows: A Response to Kyle Adams, 'Aspects of the Music/Text Relationship in Rap.'" Adams in turn published "'People's Instinctive Assumptions and the Paths of Narrative': A Response to Justin Williams." These two articles debate a number of relatively minor

¹⁹ Ibid., [6 - 12].

points, including the definitions of some of the words discussed in the introduction. In general, Williams agrees with most of Adams's case studies and conclusions, but reacts against some of the strongly worded, basic assertions. For instance, he cautions against regarding rap beats as fixed, unchanging loops, and argues that many rappers work together with their producer to conceive of both the beat and lyrics simultaneously.²⁰ Additionally, Williams challenges many of Adams's statements about rap history, for instance, arguing that "a description of earlier African Diasporic oral traditions seems insufficient justification for and evidence of current rap compositional process,"²¹ and that the evolution of rap style in the late 1980's was multidirectional rather than linear.²²

Williams makes two critiques that are particularly relevant to this document. First, he points out that all of Adams's musical examples are from the jazz/bohemian rap subgenre, as defined by Krims, and that therefore Adams's conclusions may not be applicable to rap music in general.²³ One reason this may be important is that Adams's disregard for lyrical content, something I argue against in Chapter III, may make more sense in this subgenre than in others. While purely rhythmic analysis certainly can be applied to any rap song, analyses of songs in subgenres that commonly feature vivid lyrical narratives or impassioned political pleas may warrant the incorporation of more

²⁰ Justin A. Williams, "Beats and Flows: A Response to Kyle Adams, 'Aspects of the Music/Text Relationship in Rap,'" *Music Theory Online* 15 no. 2 (2009): [3], <http://www.mtosmt.org/issues/mto.09.15.2/mto.09.15.2.williams.html>

²¹ *Ibid.*, [5].

²² *Ibid.*, [20].

²³ *Ibid.*, [17].

information from the text. Adams concedes that as a listener he favors certain types of rap music,²⁴ but points out that Williams clearly does the same,²⁵ and suggests that clearly defining “rap music” and discussing its generalized characteristics is a challenging endeavor.²⁶

Williams’s second critique is that Adams places too much weight on the concept of unity, both within the lyrical narrative (or lack thereof), and between the rhythms of the rapping and the beat.²⁷ He suggests that “consonance” might be a better term for the kinds of rhythmic unisons Adams discusses, but that mapping out areas of rhythmic dissonance could be just as fruitful,²⁸ as rappers and rap audiences often seem to celebrate moments of rhythmic disjuncture or fragmentation.²⁹ Adams offers a satisfying response to this critique, stating that “my inquiry into text/music relations in rap was motivated by the observation that some rap lyrics seemed to integrate [...] well with their accompanying musical tracks.”³⁰ In other words, Adams did not begin his analyses presupposing that unity is necessary for rap to have value, but rather he sought to explain

²⁴ Kyle Adams, “‘People’s Instinctive Assumptions and the Paths of Narrative’: A Response to Justin Williams,” *Music Theory Online* 15 no. 2 (2009): [3], <http://www.mtosmt.org/issues/mto.09.15.2/mto.09.15.2.adams.html>

²⁵ *Ibid.*, [4].

²⁶ *Ibid.*, [5].

²⁷ Williams, “Response to Adams,” [8 - 11].

²⁸ *Ibid.*, [9].

²⁹ *Ibid.*, [11].

³⁰ Adams, “Response to Williams,” [1].

some musical effects that were particularly compelling to him as a listener.³¹ Regardless, future analysis should consider Williams's point, and begin to search for interesting rap/beat relationships that don't rely on consonance, coherence, or unity, although it is unclear what these might be.

Whereas Adams's first article focuses on the relationship between the rhythms of rapping and the rhythms of the beat, his subsequent article, "On the Metrical Techniques of Flow in Rap Music," focuses on self-referential relationships within the rhythms of rapping. Adams frames his discussion in terms of flow, which he defines as "all of the ways in which a rapper uses rhythm and articulation in his/her lyrical delivery."³² Adams accepts Krims's assertion that there are three broad categories, or types, of flow, while aiming "to explore in detail some of the parameters manipulated by rappers in order to create different types of flow."³³ One of Adams's most important points is that "a rapper's flow creates its own new rhythmic layers that become an integral part of the musical fabric."³⁴ This assertion, that rapping creates and contains rhythmic sublayers, and that these layers can interact with themselves, with each other, or with the beat, is central to much of the analysis presented throughout this document.

Adams categorizes the different rhythmic and articulative aspects of flow and creates a chart, which is reproduced in its entirety in Table 1 below.³⁵

³¹ Ibid., [8].

³² Adams, "Metrical Techniques," [1].

³³ Ibid., [7].

³⁴ Ibid.

³⁵ Ibid., [8].

Metrical Techniques	Articulative Techniques
1. The placement of rhyming syllables	1. The amount of legato or staccato used
2. The placement of accented syllables	2. The degree of articulation of consonants
3. The degree of correspondence between syntactic units and measures	3. The extent to which the onset of any syllable is earlier or later than the beat
4. The number of syllables per beat	

Table 1: A reproduction of Adams’s chart of the techniques of flow.

The rest of the article focuses on the first three metrical techniques. Adams demonstrates that rappers can create and deploy rhythmic layers to provide unity and variety, articulate form,³⁶ or create rhythmic ambiguity.³⁷ The last example in the article, a Dr. Dre verse, is the most interesting, as it incorporates semantic content in addition to purely rhythmic analysis. Adams asserts that the verse contains some lyrics that relate to the narrator’s state of being, which are typically delivered with accents to create a four against three polyrhythm in relation to the beat, and some lyrics that relate to the actions the narrator is undertaking. Adams suggests that in one of the final lines of the verse, Dr. Dre applies the same pattern of accents to action-oriented lyrics, in order to show that the narrator’s actions, in this case running from the police, are the direct result of his state of being “confused” and “accused of poisoning young minds.”³⁸ This analysis is similar to

³⁶ Ibid., [15].

³⁷ Ibid., [16-25].

³⁸ Ibid., [31-32].

Walser's; Adams is able to relate various musical parameters, such as the metrical pulse and the syllables that are accented by the MC, and show how their interaction reinforces the narrative of the verse.

The chart of techniques from "On the Metrical Techniques of Flow in Rap Music" has inspired further research. Adams explores two of the articulative techniques of flow from his chart above in a chapter from the recently published *Cambridge Companion to Hip-Hop*, simply titled "The Musical Analysis of Hip-hop." This article begins with an overview of the challenges of hip-hop analysis, many of which have already been discussed here, and briefly summarizes some other analytic approaches. Adams then focuses on his first two articulative techniques, the amount of legato or staccato, and the degree of articulation of consonants, stating that his goal is to "provide a heuristic for studying articulation and its effect on the overall expressive state of a rap song."³⁹ Adams creates a diagram, inspired by a previous study of the relationship between song, speech, and sprechstimme, showing how the manipulation of staccato, legato, sharpness, and dullness, can convey anger, relaxation, authority, and playfulness.⁴⁰

One interesting point made by Adams is that articulation can augment the affect or mood of a song in two ways. First, it "can mimic certain types of instrumental articulation that listeners already associate with specific affective states," and second, "different types of articulation can suggest states of being that lead to those types of

³⁹ Kyle Adams, "The Musical Analysis of Hip-hop," in *The Cambridge Companion to Hip-Hop*, ed. Justin A. Williams. (Cambridge: Cambridge University Press, 2015), 123.

⁴⁰ *Ibid.*, 125.

articulation.”⁴¹ For instance, slurred delivery may suggest a state of intoxication or sleepiness. These observations may be relevant to our later discussion, as an MC can potentially use these articulative techniques to highlight portions of their text, creating a rhythmic sublayer. Since the rest of Adams’s chapter does not explicitly consider rhythmic layers, it does not require any further discussion.

Oliver Kautny also contributes a chapter to the *Cambridge Companion to Hip-Hop*, titled “Lyrics and Flow in Rap Music,” that seems to be directly inspired by “On the Metrical Techniques of Flow in Rap Music.” Briefly responding to Adams and echoing Krims in the introduction, Kautny argues that analysis should not disregard semantics, since “songs which seem to be incomprehensible and self-referential at first glance may be understood as statements about identity, e.g. representing politics, gender, or geography.”⁴² He goes on to state that his chapter’s main focus is “the rhythm of rapping, which is called flow,”⁴³ a definition essentially identical to Krims’s. Kautny goes on to “distinguish three different aspects of flow,”⁴⁴ the production, how an MC physically creates sounds and rhythms, the texture, how these sounds and rhythms fit together with the beat, and the reception, roughly corresponding to the affect or mood of the performance. Kautny urges theorists to consider all three of these dimensions during

⁴¹ Ibid., 124.

⁴² Oliver Kautny, “Lyrics and Flow,” 101.

⁴³ Ibid.

⁴⁴ Ibid., 103.

analysis,⁴⁵ and although they are not brought up again in the article, these categories will be relevant to my own general discussion in Chapter IV.

Kautny frames the rest of his chapter under the heading “styles of flow,”⁴⁶ and discusses how the use of certain rhythmic devices has evolved over time. For instance, he says that “on -beat flows are commonly associated with ‘old school’ US rap.”⁴⁷ Later he contrasts this style with that of Denyo, a modern German rapper, by presenting a transcription of a verse in which the rhythms are denser and accents are used to create polyrhythms against the underlying beat, in a manner similar to Adams’s Dr. Dre example discussed above. Kautny characterizes these polyrhythms as one kind of “metrical divergence,” which he says are “crucial for an effective (and pleasurable) perception of rhythm,” and relate to “the interplay of deviation and norm.”⁴⁸

Kautny’s most imaginative contribution to the literature is his treatment of microtiming, which in his view is another kind of metrical divergence.⁴⁹ Microtiming is another term for Adams’s third articulative technique, “the extent to which the onset of any syllable is earlier or later than the beat.” Regarding the three old school examples discussed throughout the chapter, Kautny says that “the vocal attacks of all three MCs

⁴⁵ Ibid., 104.

⁴⁶ Ibid.

⁴⁷ Ibid., 105.

⁴⁸ Ibid., 107.

⁴⁹ Ibid.

can be relatively precisely mapped within the metrical grid.”⁵⁰ This is contrasted with a transcription of the beginning of Eminem’s “Till I Collapse,” in which the rapper “plays microtemporally around very steady rock beats.”⁵¹ Kautny adapts Krims’s chart transcription method, visually representing micro-durations by placing the X’s slightly before or after the vertical lines representing the 16th-note grid. Horizontal arrows are drawn above the X’s to show key points where syllables occur before or after the beat. Kautny concludes that the overall effect of Eminem’s use of micro-durations in this verse is “a permanent and quick alternation between accelerating and slowing down,”⁵² and that “this kind of locally unsteady delivery [...] is very common in rap music.”⁵³ This analysis suggests that examining microtiming is important for understanding historical trends and differences between individual rappers or styles, and also for drawing analytic conclusions about specific rap songs or verses.

Review of Paper Presentations

The next two sources to be reviewed are unpublished presentations from Society for Music Theory conferences, which have been graciously provided by their authors. The first presentation is by Mitchell Ohriner and is titled “Groove, Variety, and Disjuncture in the Rap of Kanye West, Eminem, and André 3000.” This source is similar to Adams’s “On the Metrical Techniques of Flow in Rap Music” article in that it deeply

⁵⁰ Ibid., 105.

⁵¹ Ibid., 109.

⁵² Ibid., 112.

⁵³ Ibid., 113.

explores a few selected aspects of the rhythm of rapping. It is also similar to Kautny's chapter in that it tackles the tricky issue of microtiming.

Ohriner frames his discussion of the rhythms of rapping with the concept of grooves: repeating, layered patterns that involve both pitch and rhythmic content.⁵⁴ Most rap beats obviously qualify as grooves, given their cyclic repetition, but Ohriner argues that rapping itself can “project a groove with as much repetition and specificity as the beat.”⁵⁵ Although rapping usually does not contain pitch content in the traditional sense, it does inflect multiple layers, and is thus capable of creating patterns that essentially adhere to the definition of groove adopted by the article.

Ohriner discusses a kind of musical paradox that is probably familiar in some way to composers and improvisors in all musical styles: on one hand, repetitive grooves make the music easier to listen to or dance along with. On the other hand, too much repetition gets tiresome. Additionally, rappers can be faced with a unique challenge when they run out of rhyming words and are unable to continue an established musical pattern.⁵⁶ Ohriner is primarily interested in the ways rappers deal with this musical problem, and the transitional methods they use to move from one groove to another.

Ohriner begins his analytic examples with the first verse of Kanye West's “Gorgeous,” which begins with a groove. This groove is defined by rhyming words near

⁵⁴ Ohriner, “Groove, Variety, and Disjuncture,” 1.

⁵⁵ *Ibid.*

⁵⁶ *Ibid.*, 2.

beats one and three, and rhythms that cause beats two and four to sound like pickups.⁵⁷ Ohriner shows that this pattern is disrupted in the middle of the verse; one instance of the vowel sound that we are expecting to hear on beat three is delayed until beat four, and omitted from the following downbeat, implying a pattern three quarter notes in duration, the same kind of polyrhythmic effect that has been demonstrated by two of the articles discussed above. Additional instability is caused by the fact that some other rhyming syllables, previously heard only on beat four, are moved up to occupy beat three, implying another rhythmic pattern that is three beats in length and offset from the first. Ultimately, the main groove returns in the ninth measure of the verse, and it ends with rhythms and rhymes that are similar to those at the beginning. Ohriner concludes that Kanye can sustain a single groove throughout the entire verse, without losing listener interest, by briefly disrupting it in the middle.⁵⁸

For his next example, Ohriner analyzes the opening of Eminem's song "Lose Yourself." In this case, he identifies two distinct grooves, one at the beginning of the excerpt and one at the end.⁵⁹ There is no smooth transition between these grooves; one simply ends and the other immediately begins. Ohriner explains the abrupt transition by relating this disjuncture to the meaning of the lyrics. In this case, the groove changes because the tense of the text changes, and the abruptness is further explained as a sort of text-painting for the phrase "back to reality," which suggests a quick shift in the rapper's

⁵⁷ *Ibid.*, 4.

⁵⁸ *Ibid.*, 5.

⁵⁹ *Ibid.*, 6.

state of mind.⁶⁰ This analysis is extremely valuable because Ohriner demonstrates another possible type of interaction between the text and its performance. For his last example, Ohriner transcribes the André 3000 verse from the Outkast song “In Due Time.” This verse also contains two grooves, but Ohriner argues that André 3000 creates a smooth transition between them, in contrast to the startling rupture in the previous example.⁶¹

Ohriner’s discussion successfully demonstrates the analytic utility of thinking about rap in terms of grooves. The analysis of rap can seem daunting because of the wide variety of musical parameters manipulated by MCs, but a groove-based approach allows many elements, including rhythm, accent, rhyme placement, and perhaps even pitch inflection, to be grouped into units that are both musically meaningful and analytically useful. Furthermore, this approach is compelling because it allows for some flexibility when dealing with slight metrical disruptions, which are relatively common in groove-based music.

Ohriner also addresses microtiming and devises an innovative approach to transcription. These diagrams are similar to Krims’s and Adams’s charts, as they also rely on a grid with 16 vertical columns, representative of each measure’s 16th notes. Lyrics are displayed simultaneously in English and in the International Phonetic Alphabet. Ohriner discusses the rhythmic onset of syllables, one of the most challenging aspects of microtiming and rap transcription in general. Unfortunately, the field of linguistics does not offer conclusive research regarding syllables’ “perceptual centers,” or “p-centers,”

⁶⁰ *Ibid.*, 8.

⁶¹ *Ibid.*, 9.

which may result from vowel sounds alone or vowel sounds in conjunction with any preceding consonants.⁶² Ohriner generally uses the “first pulse”⁶³ of sound from the vowel (the vowel waveform’s first minima or maxima) to determine a syllable’s p-center,⁶⁴ and then marks this location on the grid, above the corresponding lyric, with a dot.

The transcriptions that result from this technique are incredibly precise. Ohriner’s method of visualizing the results has another important benefit, which is that it does not make any implicit claims regarding how MCs conceive of rhythm. Although traditional notation may be capable of representing microtiming with complex beat subdivisions and tuplets, it is unlikely that many rappers think of their own performances in these terms.

Ohriner’s transcription diagrams also allow for the visualization of other musical elements. Like Adams, Ohriner is able to color code lyrics and their corresponding dots in order to represent sonic connections such as rhymes. Ohriner also stacks multiple dots vertically as a means of displaying syllables’ degrees of emphasis in relation to one another. Although this transcription technique produces remarkable rhythmic detail, it also involves extreme technical challenges. It requires software to visualize rapping as a waveform, and thus cannot be performed aurally. Furthermore, this visualization is not helpful unless the recording is of the rapper alone, without the beat. Even if music studios maintain this kind of a cappella recording after rap songs are completed, their release to

⁶² Ibid.,3.

⁶³ Ibid., 4.

⁶⁴ Ibid.

the public is relatively rare. Despite these challenges, Ohriner's method allows for extreme rhythmic precision, and should therefore be utilized when possible.

Another interesting SMT presentation comes from Christopher Segall, titled "Rap and *Sprechstimme*: Analyzing the Pitch Content of Hip-Hop." Segall begins by pointing out that most of the existing theoretical discussion of rap music focuses on rhythm, and that most "transcriptions render rapped lines in rhythmic notation only," which has the effect of "implying that any pitch variation is merely incidental."⁶⁵ He then presents evidence to the contrary, citing repeated performances of a song's chorus that all occur at the same pitch level, suggesting that this parameter is deliberately and consistently manipulated.⁶⁶ Segall goes on to argue for including pitch content in the analysis of rap, and suggests transcribing verses using Schoenberg's *Sprechstimme* notation (x's through stems), indicating the fact that rap is closer to pitched speech than traditional singing.

Importantly, Segall suggests "in the attention that *Sprechstimme* notation draws to pitch, it can also help to isolate rhythmic features of the rapping."⁶⁷ This is essentially another way of stating that pitch inflections may be used to create rhythmic layers, much like the placement of rhymes and articulations. Segall provides an example in which an MC "accents certain syllables to create syncopated rhythmic patterns that counteract the main beat," clarifying that "he does not produce accents by rapping some syllables louder

⁶⁵ Segall, "Rap and *Sprechstimme*," 1.

⁶⁶ *Ibid.*, 3.

⁶⁷ *Ibid.*, 7.

than others, but rather by performing them at higher pitches.”⁶⁸ Another example demonstrates that Eminem consistently uses higher pitches to highlight syllables linked to one another by assonance, the repetition of a vowel sound.⁶⁹ This tendency of MCs to reinforce recurring sonic features like rhymes with recurring pitch inflections seems to be quite common, and is explored through the case studies later in this document. Overall, Segall’s presentation is an important contribution to the theoretical work on rap music because it makes a strong case for the inclusion of pitch during analysis, and also demonstrates several specific ways that pitch is used to create or highlight rhythmic layers within a rapper’s performance.

Harald Krebs and Metrical Dissonance

Throughout his book *Fantasy Pieces: Metrical Dissonance in the Music of Robert Schumann*, Krebs examines rhythm in an attempt to describe and analyze metrical relationships that are analogous to pitch-based consonance and dissonance. Although I will not use Krebs’s terminology throughout the rest of this document, his ideas are worth acknowledging since they are widely applicable to some of the devices found in rap music.

In the second chapter of his book, Krebs defines metrical consonance and dissonance based on the interaction of multiple “interpretive layers,” or series of pulses. If the attack points of a hypothetical first pulse all sound simultaneously with the attack points of a second, then these two layers are in alignment and treated as a consonance.

⁶⁸ Ibid.

⁶⁹ Ibid.,7-8.

Similarly, if some attack points of the first pulse occur on their own with no corresponding attack in the second layer, a metrical dissonance is created.⁷⁰

Krebs distinguishes between two basic kinds of metrical dissonance: grouping dissonance and displacement dissonance. Grouping dissonance occurs when two interpretive layers contain different numbers of pulses.⁷¹ Hemiolas and polyrhythms are two specific and familiar types of grouping dissonances. Krebs's description of this device is quite general and can be broadly applied. For instance, two instruments playing steady eighth notes in rhythmic unison can still create a grouping dissonance if, say, one instrument accents every third eighth note while the other changes pitch on every fourth.

Displacement dissonance occurs between two identical interpretive layers that are not metrically aligned.⁷² In other words, these two layers would sound rhythmically identical if played separately and alone, but in actuality do not occur in the same metrical position of the measure. Syncopation is a familiar kind of displacement dissonance.⁷³

Krebs goes on to offer further categorization of metrical dissonances, based on whether they are strong or weak, direct or indirect, simple or compound, and a number of other important distinctions. Since I will not be applying Krebs's terminology, summarizing these further categorizations is relatively unimportant. It is interesting,

⁷⁰ Krebs, *Fantasy Pieces*, 29.

⁷¹ *Ibid.*, 31.

⁷² *Ibid.*, 33-34.

⁷³ *Ibid.*, 33.

however, to consider how Krebs's basic categories can apply to the literature and examples we have seen so far.

First, we can note some similarities and differences between Krebs's interpretive layers and Adams's rhythmic layers. Whereas Krebs's interpretive layers are always a steady pulse, Adams's rhythmic layers can consist of practically any rhythm. Despite this difference, the two concepts are quite similar in that they both consist of a subset of attack points from the total rhythmic content, determined by accent, points of harmonic motion, or some other musical parameter. Furthermore, both authors are interested in how their respective layers can interact, creating areas of rhythmic alignment or conflict.

Krebs's grouping dissonance is extremely common in rap music, or perhaps simply in popular music in general. Walser, Adams, Kautny, and Segall all write about examples in which MCs place accented, rhymed, or specifically pitched syllables on every third 16th note, creating grouping dissonances against the underlying quarter-note pulse. Examples of displacement dissonance are rarer in the literature, but this concept is without a doubt also applicable to rap. One particularly related idea may be Adams's analysis of syntactic unit length. Many rappers use syntactic units that are approximately one measure in duration, but often these units begin on the upbeat of the previous measure, creating a basic displacement dissonance. Analyzing specific examples of this phenomenon, as well as applying Krebs's other concepts to rap music, is a promising path for further research..

This concludes our general overview and discussion of the literature. Throughout this chapter I have attempted to summarize each author's main points, and offered only

brief commentary in so far as it was necessary to relate the articles back to the main topic of rhythm and rhythmic layers. In the next chapter I engage more critically with Adams's articles, exploring ways to expand his ideas and combine them with the work of others, in preparation for the theoretical model produced in Chapter IV.

CHAPTER III

REFINING ADAMS'S "METRICAL TECHNIQUES"

The chapter focuses on Adams's "On the Metrical Techniques of Flow in Rap Music." Centering our attention on this article makes sense for several reasons. First, it has guided further research into rap, particularly through its categorization of techniques, which has served as a kind of theoretical model of flow. Adams's own chapter in the *Cambridge Companion to Hip-Hop* focuses on the first and second articulative techniques from his chart in "Metrical Techniques." The third articulative technique, microtiming, is explored by Kautny, as well as Ohriner, who says of his own presentation: "my construal of vocal groove is similar to and in some ways indebted to Kyle Adams's construal of flow."⁷⁴ Additionally and importantly, Adams's article was the first source to explicitly suggest the presence and analysis of multiple rhythmic layers within rapping, the topic that this document ultimately aims to explore.

My response to Adams will be organized into two sections. In the first, I address Adams's techniques of flow and their categorization, arguing that his model neglects some elements of rapping and should be reorganized. In the second section I focus on Adams's concept of rhythmic layers, suggesting that they can be created by musical parameters such as pitch and production techniques that are not traditionally associated with flow. I would like to make it clear that my goal is not to undermine Adams's research in any way; the field of rap analysis is highly indebted to Adams's articles, which contain vast amounts of innovative, creative thought. Rather, I am interested in

⁷⁴ Ohriner, "Groove, Variety, and Disjuncture," 2.

suggesting some minor refinements that build off of his research, incorporating ideas from other authors, in order to expand and further explore his analytic methods.

Issues With Adams's Categories and Techniques of Flow

Adams's chart of flow techniques, presented in Table 1 of the previous chapter, contains three main problems. First, this chart seems to ignore the surface-level rhythms created by rapping. Adams states that he uses the term flow "to encompass all of the ways in which a rapper uses rhythm and articulation in his/her lyrical delivery,"⁷⁵ but his chart and article focus predominantly on the rhythms created by rhymed and accented syllables. The relevance of Adams's unexplored fourth metrical technique, the number of syllables per beat, is not entirely clear, but he says that it "is in direct proportion to the level of intensity of lyrical delivery,"⁷⁶ implying that it is more related to the overall rhythmic density than to any specific rhythmic features. Clearly, the rhythms created by non-rhymed and non-accented syllables contribute to a rapper's flow, and should be considered during analysis.

I will occasionally refer to the series of attack points created by the onset of every syllable, whether rhymed, accented, or regularly delivered, as the "surface" rhythmic layer. Briefly thinking in terms of set theory, this layer is a superset that contains all other rhythmic layers and points of interest within it. The fact that Adams's chart does not include this layer is particularly odd given that he attends to it throughout his articles. Adams frequently discusses surface rhythms in "Aspects of the Music/Text Relationship

⁷⁵ Adams, "Metrical Techniques," [1].

⁷⁶ *Ibid.*, [9].

in Rap,” for instance in example six, where there is nearly one-to-one correspondence between a rapper’s syllable onsets and the attacks of the synthesizer part.⁷⁷

Surface rhythm is also relevant to some of Adams’s analysis in “Metrical Techniques.” In his second example, the first verse of Blackalicious’s “Blazing Arrow,” reproduced in Table 2 below, the surface rhythm consists almost entirely of continuous 16th notes. Adams acknowledges this with reference to Timothy Parker’s “inclination towards even, regular rhythmic patterns,”⁷⁸ and “constant 16th-note delivery.”⁷⁹ One of Adams’s main points about this verse is that Parker’s “flow helps define the form of the song,” continuing that “most obviously, this occurs in his use of syllables rhyming with ‘arrow’ to mark the beginning and end of the verse.”⁸⁰ However, the surface rhythm is also important here, a fact that Adams does not incorporate into his analysis. Every word that rhymes with “allow,” as well as “arrow” itself, is followed by a rest. This is extremely noteworthy as these are the only four times in the verse we do not hear constant 16th note motion. To summarize, Adams’s main claim that the beginning and end of the verse are demarcated with certain rhyming syllables is true, but strongly reinforced by the only significant variations in the verse’s surface rhythm.

⁷⁷ Adams, “Aspects,” [24-25].

⁷⁸ Adams, “Metrical Techniques,” [11].

⁷⁹ *Ibid.*, [12].

⁸⁰ *Ibid.*, [14].

	1	x	y	z	2	x	y	z	3	x	y	z	4	x	y	z	
																	A-
1	ma-	zin'	phase	your	days	your	ha-	zy	ways	my	bla-	zing	ar-	row			The
2	rays	that	range	from	A-	sia	way	to	Ri-	o	de	Jan-	eir-	o			A
3	craze	you	crave?	but	work	to-	day's	the	day	that	in	a	ma-	jor	way		I'll
4	make	you	say	oh	look	he	saved	the	day	and	al-	so	paved	the	way		(hoo-
5	ray!)	Rock-	in	my	crew	like	ra-	zor	blades	to-	day	and	days	a-	way		from
6	now	o-	kay,	o-	kay	I'm	like	a	la-	ser	ray	keep-	in'	the	stage		a-
7	blaze	and	dan-	g'rous	ways	drop-	pin'	the	phrase	that	pays	all	things	just	ain't		a
8	phase	but	age-	less	ways	a	cage-	y	great	dis-	plays	yo	hey,	this	ain't		a
9	game	so	stays	a-	wake	'cause	if	you	came	to	play	you'll	all	be-	have		in-
10	sane	af-	ter	we	change	the	game	it	won't	re-	main	the	same	(I'll	fade		a-
11	way!)	So	make	your	disc	and	play	this	tape	in	your	Ca-	ma-	ro			A-
12	ma-	zin'	phase	your	days	your	ha-	zy	ways	my	bla-	zing	ar-	row			

Table 2: Reproduction of Adams’s Example 2b, the first verse of Blackalicious’s “Blazing Arrow.”

My critique that Adams does not consider surface rhythm to be a part of flow is almost self-evidently obvious. This, combined with the fact that he does actually discuss it, leads me to believe that there is probably some good reason he chose to not include it in his chart. Unfortunately, no clues are offered as to why this may be. In any case, I believe that considering the surface rhythms, in addition to the rhythms created by rhymes and accents, can broaden our analytic capabilities when discussing rapping and flow.

Another problematic issue with Adams’s chart of flow techniques is that his third articulative technique, “the extent to which the onset of any syllable is earlier or later than the beat,” seems to be more closely related to rhythm than articulation. This is another fairly pedestrian critique, but it will prove to be important in forming a new model of rap and rap techniques in the next chapter. Kautny implicitly supports this critique by focusing his article through the lens of flow, which he considers to be a purely rhythmic phenomenon,⁸¹ and then by discussing microtiming, synonymous with Adams’s third articulative technique, at great length.

⁸¹ Kautny, “Lyrics and Flow,” 101.

It is reasonable to assume that Adams, while aware that early or delayed syllable onsets could be explained rhythmically, decided to classify them as articulative, since they may have some role in articulating various moods or affects. Rappers may place their syllables slightly ahead of the beat in order to convey emotions like excitement, anxiousness, or anger. Delaying syllables can project calmness, indifference, or relaxedness. More varying and complex patterns of syllable placement are undoubtedly possible; perhaps alternating between early and late onsets can be used to convey nervousness or inebriation. Although these examples may illustrate Adams's thinking behind his classification of microtiming as articulative, they are not consistent with the way traditional forms of articulation are conceived of by most Western musicians. Furthermore, I believe it makes sense to treat microtiming as a rhythmic phenomenon particularly in light of Ohriner's new transcription method, which allows for the accurate representation of very small durations and deviations.

Adams', Kautny's, and Ohriner's different treatments of syllable onsets demonstrates that the distinction between rhythm and articulation is not always clear. This problem manifests in additional ways in Adams's chart of flow techniques. Adams's first two articulative techniques, the amount of legato or staccato used and the degree of articulation of consonants, seem naturally and consistently labeled. It is odd, however, that he considers the placement of accented syllables to be a purely rhythmic phenomenon, since accent is typically considered a kind of articulation just like staccato and legato. Adams demonstrates that MCs can create rhythmic layers by accenting certain syllables, but this same process should be possible with any other type of

articulation. In reality, most articulations probably do not serve to create rhythmic layers, but in theory most should be able to do so; this suggests that the division of rap techniques into strict rhythmic or articulative categories may not be the best, and that more subtle and accurate models may be possible.

My last critique of Adams's flow techniques relates to his treatment of the meaning of rap lyrics. In his earlier article, Adams says that when analyzing rap "the best approach is first to disregard the semantic meaning of the lyrics."⁸² The "Metrical Techniques" article, he claims, "engages in a similar treatment of rap lyrics."⁸³ Williams brings up a number of valid concerns regarding this analytic method and its implications about Adams's listening strategies,⁸⁴ although he finds the results "captivating" and "entirely valid."⁸⁵ The issue I take with Adams's approach is that it is inconsistent. On one hand, it incorporates the analysis of "syntactic units" as its third metrical technique, comparing their length with other rhythmic values such as the duration of a measure. On the other hand, it disregards all remaining semantic content. I argue that there are a number of other linguistic devices that may create emphasized points of interest or recurring rhythmic layers throughout a song, and that these must also be considered during analysis.

⁸² Adams, "Aspects," [12].

⁸³ Adams, "Metrical Techniques," [9].

⁸⁴ Williams, "Response to Adams," [8], [10], [19].

⁸⁵ *Ibid.*, [8].

This is an extremely complicated topic due to the nearly unlimited number of rhetorical devices available to MCs. It would be a monumental undertaking to even begin to compile a list of possible devices that lead to words having increased semantic prominence. Another challenging aspect of this topic is that the perception of this kind of accent likely varies between groups and individual listeners. For instance, particularly violent or graphic rap lyrics may seem shocking, and thus perceptually accented, to uninitiated listeners, but normal to those who frequently encounter them. Below I present two examples of lyrics in which various words seem to be emphasized through their meaning, but this should in no way be taken as an attempt to completely catalogue this type of effect. It is also important to note that although the examples below contain various moments of semantic emphasis, it is unclear whether these moments create significant rhythms or meaningfully interact with other elements. Analysis that combines these types of semantic effects with the other parameters of rapping can be found in Chapter V.

Rap lyrics often contain double entendres. Table 3 below presents a typical example.⁸⁶ Kanye West's first line, "superbad chicks givin' me McLovin," has clear double meaning. First, West is bragging that he is loved by women, a typical remark in many subgenres of rap music. In this interpretation of the line, the words "super bad" become an unusual but not unheard-of descriptor of the word "chicks," and the "Mc" syllable on beat four has no real meaning. Simultaneously, this line references the 2007 film *Superbad*, in which one of the underage protagonists attempts to purchase alcohol

⁸⁶ Drake ft. Kanye West, Lil Wayne, and Eminem, "Forever," 2009 by Interscope Records, OSTCDP1.

using a fake driver’s license with the last name “McLovin.” The key words for the creation of this double meaning are highlighted in Table 3.

1				2				3				4			
			su-	per	bad		chicks		giv-	in’	me	Mc		Lo-	
in’		you	would	think	I	ran	the	world		like	Mi-	chelle’s		Hus-	
band															

Table 3: Kanye West’s verse from Drake’s “Forever” (2:10). Words crucial for the line’s double meaning are highlighted.

Which syllables in this example seem emphasized? “McLovin” seems crucial, as it is this word that successfully and simultaneously concludes both trains of thought. It is probably not coincidental that West uses this word to begin to a new rhyme scheme, pairing “Lovin” with “husband” in the same metrical location in the next measure. What about the word “Superbad”? Here things are less clear. Although it is completely necessary for the second meaning of the line, it is less important for the first.

Additionally, an audience member encountering this excerpt for the first time would not necessarily be expecting or listening for double meaning, and would likely not notice the dual function of the word until after the entire phrase had concluded. There is no simple answer as to whether “Superbad” should be considered emphasized or not, and we must accept that this is one of the challenges of incorporating lyrical content into our analysis.

Another kind of semantic prominence may occur in songs with strongly defined themes or subject matters (recall that Adams presents example lyrics with neither of these during the introduction to “Aspects”). I would like to consider the song “Rewind,” by

Nas,⁸⁷ as an example. This short song consists of one sustained verse with no chorus. The complete lyrics may be accessed online at <http://genius.com/nas-rewind-lyrics>.

Throughout the song Nas tells the following story: first, the narrator is at home with his significant other; then, his friends call to inform him they've found one of his enemies; finally, the narrator and his friends track down and murder said enemy. Although the plot of this narrative is fairly simple, Nas makes it interesting by relaying it backwards, as is implied by the name of the song. Nas reverses the timeline and structure of the story in addition to its specific elements. For instance, when describing the murder, he says that "the bullet goes back in the gun," but we understand from the premise that this really means the narrator has shot his victim. Nas's motivation for writing this song was almost certainly not to discuss the details of the plot, which are fairly mundane, but to demonstrate his skill as a lyricist, by conveying a story backwards in a way that is still comprehensible.

Throughout this song, Nas uses many words that relate in some way to the reversal of time, and due to the premise, these words seem emphasized to some extent. For example, the word "back" appears many times in different contexts: "the clock went back from three to two to one," "jump out the van back first," "spinnin' records backwards," "spit a story backwards," etc. Other words are also used to reference the reversal of time, in phrases like "goin' reverse," "a VCR rewindin' the hits," and "left a nigga behind." Although all of these examples fairly obviously reference the song's premise, Nas also uses several pairs of words that more subtly bring to mind this theme.

⁸⁷ Nas, *Stillmatic*, 2001 by Columbia, CK 85736.

For instance, “this pretty young thing who *left*, she came *back*,” “caravan doors *open*, [...] and *close* it shut,” “it *starts* at the *end*.” Although this kind of imagery is not unusual and may pass unnoticed in other contexts, in this case it recalls the premise of the song by presenting an action, for instance, opening, and its reversal, closing.

Another interesting lyrical effect occurs at the beginning of the song. Nas implores the audience to listen to his story with the line “dog, whatever they call you, God, just listen.” Normally, the palindromic relationship between the words “dog” and “God” would be insignificant and go unnoticed, but in the context of a song where everything is backwards, the connection between these words is fairly evident. This causes the words to acquire some degree of additional emphasis in relation to their non-palindromic surroundings.

As with the previous example featuring Kanye West, it is difficult to know the degree of semantic prominence created by these effects. For me personally, both the repetition of “back” and the use of words like “rewind” are quite obviously connected to the song’s theme, and therefore these words seem quite emphasized. In contrast, the pairs of words and the “dog”/“God” retrograde are evident now, after several listenings, but I did not immediately notice them. Then again, even after these listenings, I do not feel as if I have intuited much information about the correspondence of syntactic units and measures, which suggests that, at least for the current combination of my listening strategy and this particular song, semantically prominent areas are at least as analytically valuable as Adams’s third metrical technique, if not more so. From a practical standpoint, I suggest examining as many semantic features as possible during one’s initial analysis,

with the idea of later focusing on any that interact in meaningful ways with other rhythmic layers or elements of the song.

Although this concludes the discussion of specific semantic devices that may create syllables or areas of increased emphasis, I would like to offer one other general argument for the inclusion of semantic content before proceeding. Adams's method purposefully ignores most semantic content and produces interesting, viable rhythmic analyses. However, rapping seem to contain many rhythmic features, of the type that interest Adams, that are only noticeable or significant when considered along with lyrical content. One previously discussed example is found in Walser's article, where he argues that Chuck D's unity with the beat in one passage adds an additional layer of meaning to the text, framing the rhythmically square "idea as a simplistic platitude."⁸⁸ In this case, the brief emphasis of the beat would hardly be noticeable if heard without the text, but is quite significant when considered in context. Although Adams does incorporate a close reading of the lyrics in his last example from "Metrical Techniques," (the Dr. Dre/N.W.A example covered in Chapter II) he only relates the text to some basic rhythmic features of the rapping. Thus there is still a great deal to explore regarding how rappers can use elements of their performance, in relation to itself and in relation to aspects of the beat, to represent, enhance, or purposefully undermine the meaning of their lyrics.

Expanding Adams's Concept of Rhythmic Layers

The second crucial part of this article that I wish to address is Adams's assertion that rapping creates multiple rhythmic sublayers. This claim is wonderfully supported by

⁸⁸ Walser, "Rhythm, Rhyme, and Rhetoric," 205.

the article's examples, which demonstrate a number of ways in which MCs can manipulate rhythmic layers to achieve musical ends. As Adams's article was the first source to explicitly discuss rhythmic layers, there are a number of logical directions in which his research can be expanded. For instance, because his article is focused through the lens of "flow," Adams ignores a number of musical elements that may create rhythmic layers.

One of these elements is pitch. Including pitch-based rhythmic layers in our analysis is a logical way to expand Adams's methodology. Adams does not consider pitch because neither he nor other commentators consider it part of flow. Despite this, the manipulation of discrete pitches and/or pitch inflections can clearly produce rhythmic layers, as is suggested by Segall's presentation summarized in chapter two. Regardless of whether or not we consider pitch to be related to flow, it is clear that it may be important for the comprehensive analysis of certain songs.

Another aspect of rap music that may create rhythmic layers is the application of audio effects to the MC's voice. A number of basic effects, such as chorus and reverb, are commonly used in a variety of different ways. As discussed above, Segall notes an Eminem song in which the rapper uses pitch inflections to highlight a number of rhyming syllables; heavy reverb is often selectively applied to end rhymes, similarly highlighting them. Adams notes a related effect, stating that "one other method (of creating rhythmic variety and articulating form⁸⁹) is the doubling of the vocal part on some of the rhymed

⁸⁹ Adams, "Metrical Techniques," [12].

syllables,”⁹⁰ and that the “hierarchy of accentuation created through these doublings also contributes to the flow.”⁹¹ Two simple examples of these types of effects are discussed below.

Table 4 below shows the chorus of GZA’s song “Liquid Swords” off the album of the same name.⁹²

1				2				3				4			
														when	the
M-		C’s		came			to	live	out		the	name			
and				to		per-	form			some		had			to
snort		co-		caine			to	act		in-		sane		but	be-
fore		Pete		rock’d		it	on			now		on		with	the
men-		tal		flame			to	spark		the		brain		with	the
build-		in’		to	be		born			yo		R-	ZA	flip	the
track		with	the	what		to	cut								

Table 4: The chorus of “Liquid Swords” (1:28), performed by GZA and RZA. Syllables are shaded green when they are clearly sustained by one of the rappers.

The rapping in the chorus of this song is interesting because it is heterophonic, one of the least common textures in all of Western music. The chorus features GZA and RZA, both of whom perform most of the lyrics and both of whom place their syllable onsets in the same metrical locations. However, one of the MCs frequently extends and

⁹⁰ Ibid., footnote 9.

⁹¹ Ibid.

⁹² GZA, *Liquid Swords*, 1995 by Geffen Records, GEFD-24813.

sustains certain syllables (shaded green). In addition to its rhythmic consequences, this effect also highlights the vocal doubling of the chorus, as the rappers briefly become rhythmically independent. Notably, this usually occurs on the rhyming syllables of beats two and four (“came,” “name,” etc., shaded brighter green above); thus the rhymes, metrical placements, longer sustains, and noticeable vocal doublings all combine to create and emphasize a rhythmic layer.

A more complex effect is achieved in the opening of Travis Scott’s “Impossible,” transcribed in Table 5 below.⁹³

1				2				3					4			
you	the	one		you	know	me	the	best								
you	the	one	I	call		when	I’m	stressed						this	the	
time		of	the	year	I	feel	a-	lone						this	the	
time		of	the	year	you	treat	me	wrong		yeah				this	the	
late		night			you	know	the	deal		deal				on	a	
late		night			no-	where	to	chill					yo	I’m	on	the
west				yeah	I’m	on	the	west		side						
off	the	drugs		no	I’m	not	the	best		guy						
but	you	know	I	al-	ways	get	it	done		yeah				you	done	
had	all	of	the	rap-	pers	I’m	the	one		yeah				ain’t	gone	
lie		I	re-	mem-	ber	how	it	feels		yeah				ain’t	gone	
lie		I’m	a	tell	you	this	for	real								

Table 5: Opening of Travis Scott’s “Impossible” (0:11). Colors represent studio effects applied to the rapper’s voice: blue = chorus, yellow = extreme reverb, green = chorus and reverb.

⁹³ Travis Scott, *Rodeo*, 2015 by Epic Records, 88875146722.

Throughout this excerpt, Scott's voice is modified with a number of studio effects. The two most prominent effects (other than autotune, which is clearly important but more related to the analysis of pitch, discussed above), chorus and reverb, are shaded blue and yellow, respectively, throughout Table 5. Green represents areas where both effects are applied simultaneously. I contend that this liberal application of effects, which covers roughly half of the syllables, is important for maintaining rhythmic variety and listener interest throughout the section.

Generally, the music is quite sparse. The beat at the beginning does not contain any drums, and Scott's rapping is only heard through approximately half of each measure. Additionally, he repeats a number of lyrics and rhythms, or close rhythmic variations, from measure to measure, creating a series of two-measure units. For instance, the first and second measures begin with the same lyrics ("you the one"), share eight out of nine syllable onsets, and have rhyming syllables in the same metrical location ("best" and "stressed" on beat three). Despite the sparseness, repetition, and the song's generally slow pace, listener interest is maintained by the unpredictable application of effects; heavy reverb is applied to the second measure so that it still sounds varied despite its similarities. This same pattern of repetition with added effects is followed in measures three and four, but then becomes less consistent and predictable towards the middle and end of the excerpt. Although this has been far from an exhaustive analysis of this verse, it is nonetheless sufficient to demonstrate that audio effects can be used to contribute to a rapper's rhythmic vitality, and thus should be included in our discussion.

This concludes my discussion of Adams's "On the Metrical Techniques of Flow in Rap Music." To summarize, I have engaged with Adams's work in two ways. First, I have critiqued his categorization of flow techniques, arguing that it contains a number of inconsistencies, such as its categorization of accent as rhythmic and staccato as articulative, and its inclusion of some semantic aspects (syntactic units) but not others (including emphasized words, double entendres, etc.). Second, I have suggested that broadening the discussion of rapping beyond the parameters of "flow," to include elements like pitch and audio effects, should allow for a deeper investigation of rhythmic layers, which is a logical expansion of Adams's original work.

CHAPTER IV

THEORETICAL DISCUSSION

The goal of this chapter is to synthesize previously discussed research and original ideas about rhythmic layers into a robust theoretical model. This is done through a series of hierarchical diagrams which can be used to visually represent relationships between rhythmic layers and other musical features. After their presentation and explanation, these diagrams are used to contextualize previously discussed literature and examples. Generally, this chapter features highly theoretical, and perhaps hypothetical, discussion, in preparation for the concrete analytic examples found in Chapter V. The first diagram is presented in Figure 1 below.

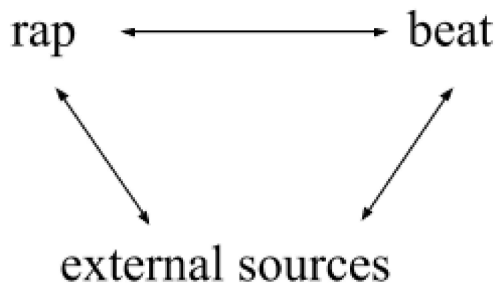


Figure 1: Highest-order hierarchical diagram.

Figure 1 above displays the broadest, most zoomed-out diagram in the series. Arrows represent potential relationships between different aspects of rap music. I have divided rap into three aspects: the *beat*, the *rap*, and *external sources*. All of these aspects can be explored in far greater depth, although I am mostly interested in the rhythm of rapping itself and how it can relate to itself and the other categories. The construction and layering of rap beats is a complex topic beyond the scope of this research, so I will not go

into much theoretical detail on the subject. The examples in the next chapter will often involve the transcription of certain elements of the beat, and I will approach these transcriptions in as flexible a way as possible.

Although the *rap* and *beat* categories are fairly intuitive, the *external sources* aspect of Figure 1 requires some explanation. This categorization reflects my desire to visually represent relationships, in particular areas of unity, that occur between different rhythmic layers and other features of the music. MCs frequently make musical decisions with the aim of referencing other rappers, specific rap subgenres or locales, or other genres of music entirely. The *external sources* label in the diagram represents these potential relationships and allows them to be visualized when the diagrams are applied to specific analysis. These kinds of referential relationships between external sources and the beat are interesting to contemplate, considering that beats themselves are often made out of samples of other material, but this is not an area I will explore, since it does not relate to the theory of rapping. Having discussed the basics of Figure 1, we can now proceed to Figure 2, presented on the next page, which shows one of the possible ways to diagram the inner workings of the *rap* header.

Figure 2 is derived from Adams's flow techniques chart, but is expanded in a number of ways. I have maintained Adams's *metrical*, or *rhythmic*, techniques category on the left, but have simplified its contents. I believe that all of Adams's rhythmic techniques can be interpreted in relation to a single, fundamental technique, the distribution of syllable onsets and offsets through time. In other words, the analysis of rhythm in rap should begin with the transcription of every syllable, which allows the

analyst to then search for interesting rhythmic features within subsets of syllables related by groove, rhyme, motive, accent, pitch, or any other parameter or process. It may be argued that my single rhythmic technique is somewhat vague and non-descriptive, and this is true. However, I believe it makes up for this by being inclusive and flexible, and there is utility in the analytic method it suggests.

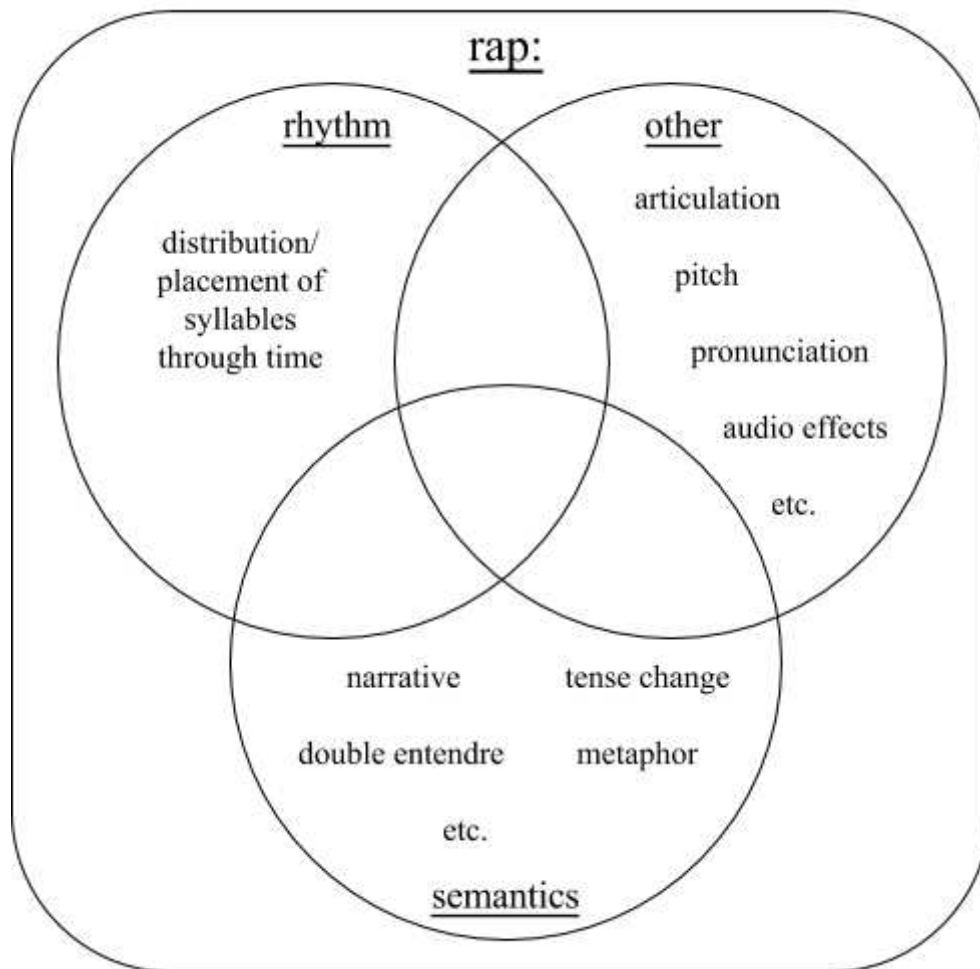


Figure 2: Division of rap into three types of techniques.

Since I am not focusing purely on the idea of flow, I have expanded Adams's *articulation* category into the *other* category, which encompasses additional musical

elements. Some of these elements have already been explored in the literature discussed in Chapter II; Segall, for instance, demonstrates the viability and utility of transcribing the pitch content of MCing. A number of techniques in the diagram such as *pronunciation* and *audio effects*, briefly explored above, have yet to be significantly discussed in other literature and are largely my own ideas. I have added a third major group of techniques, *semantic* techniques, as the bottom circle.

The *pronunciation* label requires some explanation, since the term, in the way it is regularly used, includes many separate elements listed in the *other* category, such as articulation. I have included this label in Figure 2 to account for a technique in which rappers alter the normal pronunciation of words, for instance, substituting long and short vowel sounds. A more general label that would be able to encompass this technique is *timbral manipulation*, although it is unclear what other vocal effects this would include.

Rather than analyze rap in terms of independent, self-contained techniques (i.e. those represented by Adams's two columns), the musical elements represented in Figure 2 are organized in a Venn diagram, showing that they can, but do not necessarily, influence and relate to one another. This addresses one of the issues raised in the previous chapter: the inconsistent way Adams treats some articulations intrinsically and others purely in terms of their possible effect on rhythm. In other words, if we were to visualize the articulative elements of a rap verse within Figure 2, most would probably fall solely within the *other* circle. Some, however, may be repeated in rhythmically significant patterns, and these would be placed within both the *other* and *rhythm* circles. Additionally, Figure 2 is capable of visually representing non-rhythmic musical

relationships. For instance, if a rapper were to use accents during particularly angry lyrics, this would be shown in the overlap of the *other* and *semantic* technique categories.

As discussed above, there are a near limitless number of semantic techniques available to rappers. Some of these may meaningfully interact with other musical elements and create their own rhythmic layers, as demonstrated with double entendres and thematically related words in Chapter III. In addition to these kinds of relationships, semantic content may influence the musical aspects of rap and rapping in other ways. For instance, Adams's exploration of the rhythmic interactions between MCs and beats is compelling as it is, but many meaningful interactions can likely only be found if they are considered in the narrative context provided by the lyrics. For instance, brief moments of rhythmic unity or discord may not seem musically significant on their own, but may actually be reflective of some aspect of the lyrics; Walser's analysis of Public Enemy, discussed at the beginning of Chapter II, is a prime example.

One large benefit of Figure 2 is its flexibility. Each of the three circles in the diagram has the potential to contain a large number of sub-techniques, and it is likely that more literature will continue to be published that argues for the inclusion of other musical elements in rap analysis. For the most part, these elements should be able to be seamlessly integrated into Figure 2 without changing its fundamental structure.

Earlier I hinted at the fact that I consider Figure 2 to be only one possible way, of many, to theoretically deconstruct rapping into its constituent elements. Of course, theorists can represent musical relationships in numerous ways, limited only by their imagination and their analytic goals. For instance, if one wished to use the diagram to

explore the element of pitch in greater depth, it would make sense to remove pitch from the *other* category and place it in its own, larger circle. Since I am primarily interested in rhythm, it makes sense that the current version shows how all other musical elements can relate to rhythm and create rhythmic layers; other theorists may focus on some other parameter and relegate rhythm to a subsidiary role in the *other* bubble if they wish.

Considering the relation of Adams's seven original parameters of flow to Figure 2 can help suggest alternative methods of categorizing and representing rap techniques. Adams's third articulative technique, the extent to which the onset of a syllable may be earlier or later than the beat, discussed at length above, does not readily fit into Figure 2. This is not particularly problematic, because, as I have already argued, I believe it makes the most sense to consider microtiming as a rhythmic relationship between the rhythm of rapping and the underlying metrical grid of the beat. One way to visualize microtiming in the above diagrams would be as a line connecting the primary rhythmic technique, the distribution of syllables, from Figure 2, to some subset of the *beat* aspect of Figure 1. This kind of visualization is returned to later in the chapter.

Adams's first metrical technique, the placement of rhyming syllables, presents more of a challenge for the diagram in Figure 2. Since my own diagram was created after extensive consideration of Adams's article, I began under the assumption that the placement of rhyming syllables should be considered a purely rhythmic technique, and that it would be adequately represented in Figure 2 as a subset of any data that might comprise the single main rhythmic technique. However, this seems somewhat inconsistent with the rest of the diagram, in which musical elements are capable of

interacting with rhythm, but do not necessarily do so. Although I have preserved Figure 2 above, as it is more obviously related to Adams’s original categorization of techniques, I believe the diagram below, Figure 3, may be more consistent.

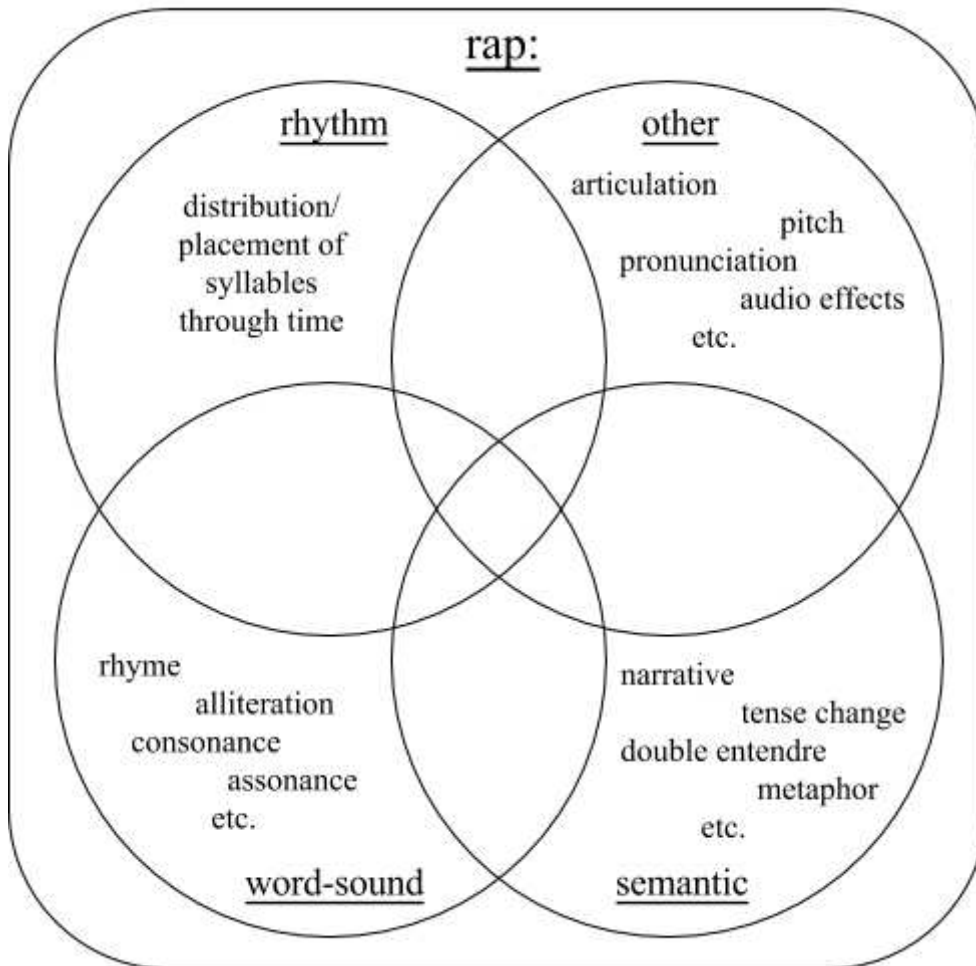


Figure 3: Modification of Figure 2, resulting in greater consistency.

In Figure 3 I have modified Figure 2 by adding an additional bubble, labeled *word-sound*. This circle contains techniques like rhyme, alliteration, consonance, etc. Rappers often refer to these techniques, collectively, as “rhyming,” and their distinction may be of little importance for most analyses. With this modification, Adams’s first

metrical technique, the placement of rhyming words, would be represented in the overlap of the *rhythm* and *word-sound* bubbles, mirroring the way his first technique, the placement of accented syllables, would be represented in the overlap of the *rhythm* and *other* categories.

One interesting implication of Figure 3 is that there may be elements of word-sound that do not relate to rhythm, i.e. the way rhyming is usually thought of in the context of rap music. This kind of isolated usage is fairly common and normal for most of the other techniques encompassed by the chart; rappers may unpredictably accent one syllable, or use a double entendre in a way that does not meaningfully relate to any other musical feature. Similarly, it is possible that rappers may choose certain words largely because of their sounds, even if these sounds do not fit into any previously established pattern of rhyming. Though interesting to consider, this concept is analytically frustrating because it is difficult, if not impossible, to demonstrate. A related idea is that rappers may repeat certain word-sounds in order to contribute to the timbral background of a song or verse, even if these repetitions are not perceptible as rhymes in any traditional sense. This may be possible to demonstrate, perhaps with statistical analysis, and I believe is worthy of further investigation.

To show the logical addition of one bubble, Figure 3 maintains the circles and their size from Figure 2. It is important to note that this format of four element Venn diagram is missing some areas of overlap, but that I believe practically all combinations of all four techniques can potentially interact in meaningful ways. Figure 4 below presents the technique headings from Figure 3 organized in a true Venn diagram. This is

one of the diagrams I will rely on in Chapter V to visualize relationships in actual examples.

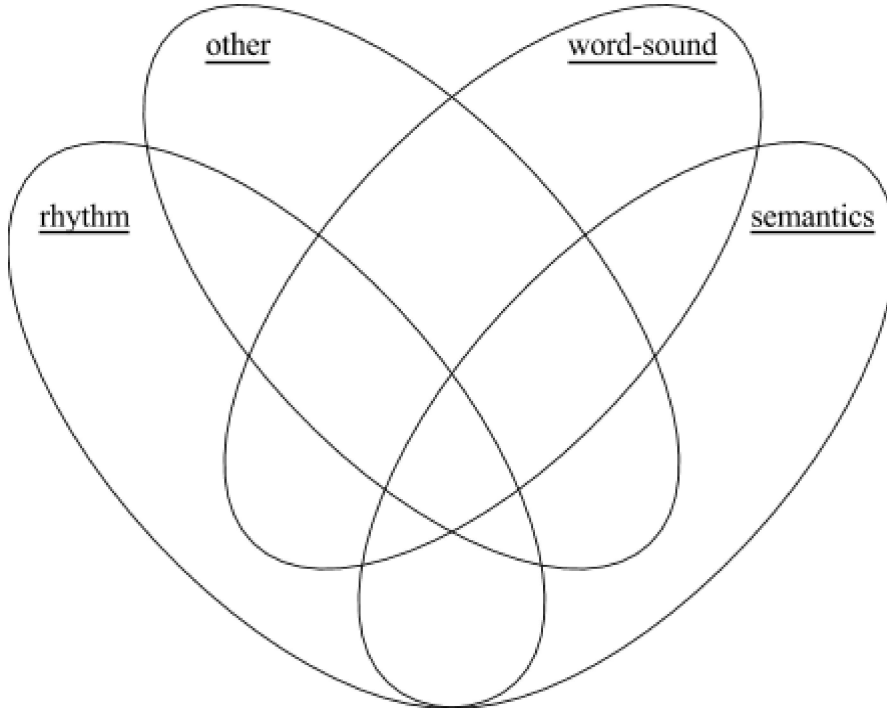


Figure 4: The four fundamental techniques of rapping organized in a true Venn diagram.

Contextualization of Existing Literature

Having presented some basic diagrams and variations on them, I will now use them to visualize and contextualize the previously discussed literature. One of the basic ways to use the above diagrams analytically is to simply note which musical parameters a rap device relies upon, and to label the device in the corresponding area of the Venn diagram. Since this can be visually cumbersome, one can also simply list the technique headings and then draw connecting lines to show relations. In this system, linking an object to multiple headings is equivalent to placing it in the headings' corresponding, overlapping ovals in the above diagram. The broader relationships from Figure 1, such as

those between rapping and the beat, can also be incorporated into the same diagram in this manner. Figure 5 below uses this procedure to visually represent Adams's seven flow techniques.

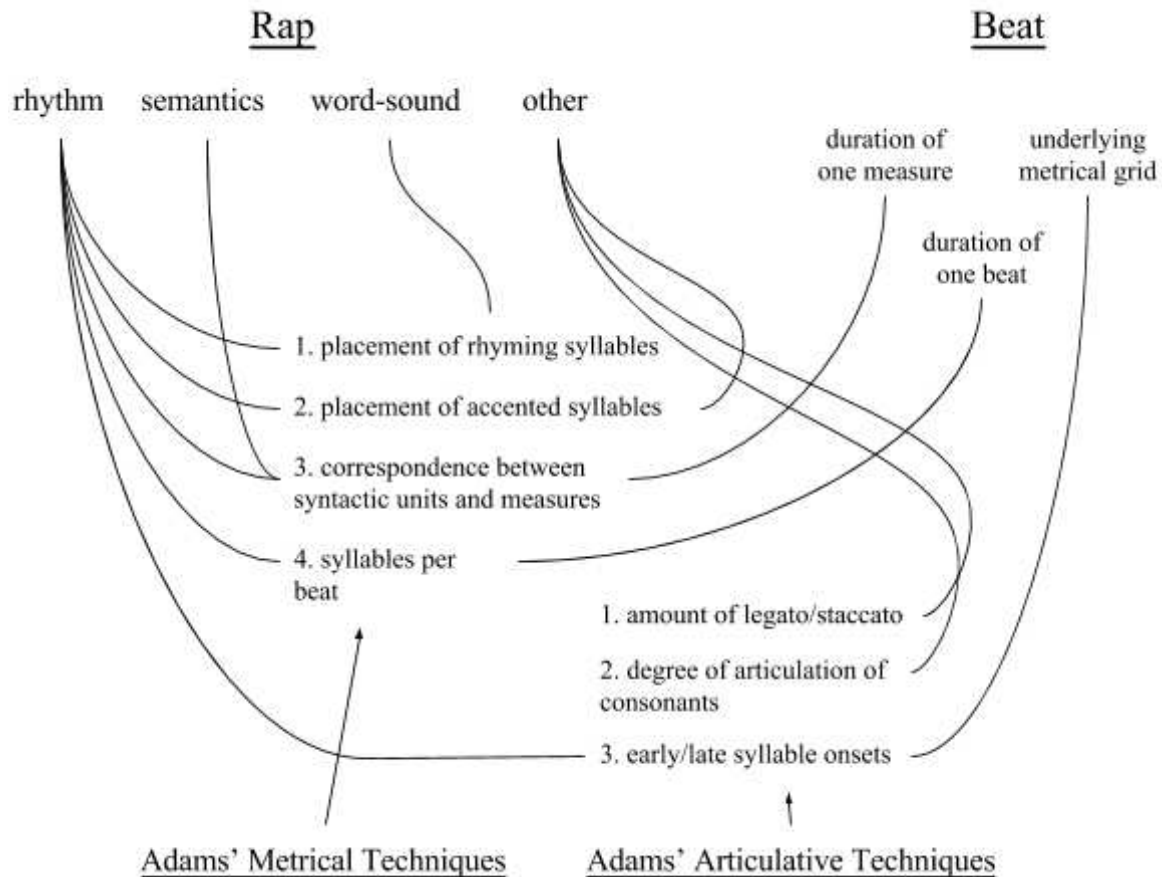


Figure 5: Visualization of Adams's seven techniques of flow within my own theoretical model.

Adams's metrical techniques are found in the list on the left side of the diagram, and his articulative techniques are found on the right. The way in which some of the techniques fit into the chart is fairly self explanatory. The placement of rhyming syllables, for instance, involves word-sound (rhymes), and how a particular word-sound may be repeated at different times (rhythm). Adams's first two articulative techniques are

represented in Figure 5 in the way they are presented in the article, relating only to articulation and not to rhythm. The inconsistency in the treatment of these parameters in relation to accent is visible in Figure 5, as these three techniques are all connected to the *other* heading, but only the placement of accented syllables is also linked to *rhythm*. As I contended in Chapter III, rhythmic layers can likely be formed by syllables that are repeated with uniform articulation, whether this takes the form of accent, staccato, tenuto, etc.

The *beat* heading on the right contains three subheadings. Whereas the elements within the *rap* label should encompass nearly every conceivable aspect of rapping, the subheadings underneath the *beat* heading were chosen only because they are relevant to Adams's techniques. The fourth metrical technique, the number of syllables per beat, clearly relates the surface rhythm, a purely rhythmic part of rapping, with the *duration of one beat*. Similarly, the third metrical technique, the correspondence of syntactic units and measures, links both *semantics* (syntactic units), *rhythm* (how long does it take an MC to relay a syntactic unit), and the *duration of one measure* (how does the previous duration compare with this one). Lastly, Adams's third articulative technique, the degree to which a syllable's onset is earlier or later than the beat, relates the surface *rhythm* to the implied *metrical grid* of the beat.

One interesting thing to note is that all three of the elements beneath the *beat* heading in Figure 5 are extremely general. In his article Adams says that he “will not be comparing rhythmic features of the lyrics with surface features of the accompaniment,”⁹⁴

⁹⁴ Adams, “Metrical Techniques,” [9].

(in contrast to his previously published “Aspects”) which is true, since he only discusses the rhythm of rapping in relation to itself and to omnipresent musical features that may not even be audibly articulated.

Some specific examples from Adams’s previous article, “Aspects of the Music/Text Relationship in Rap,” are visualized in Figure 6 below.

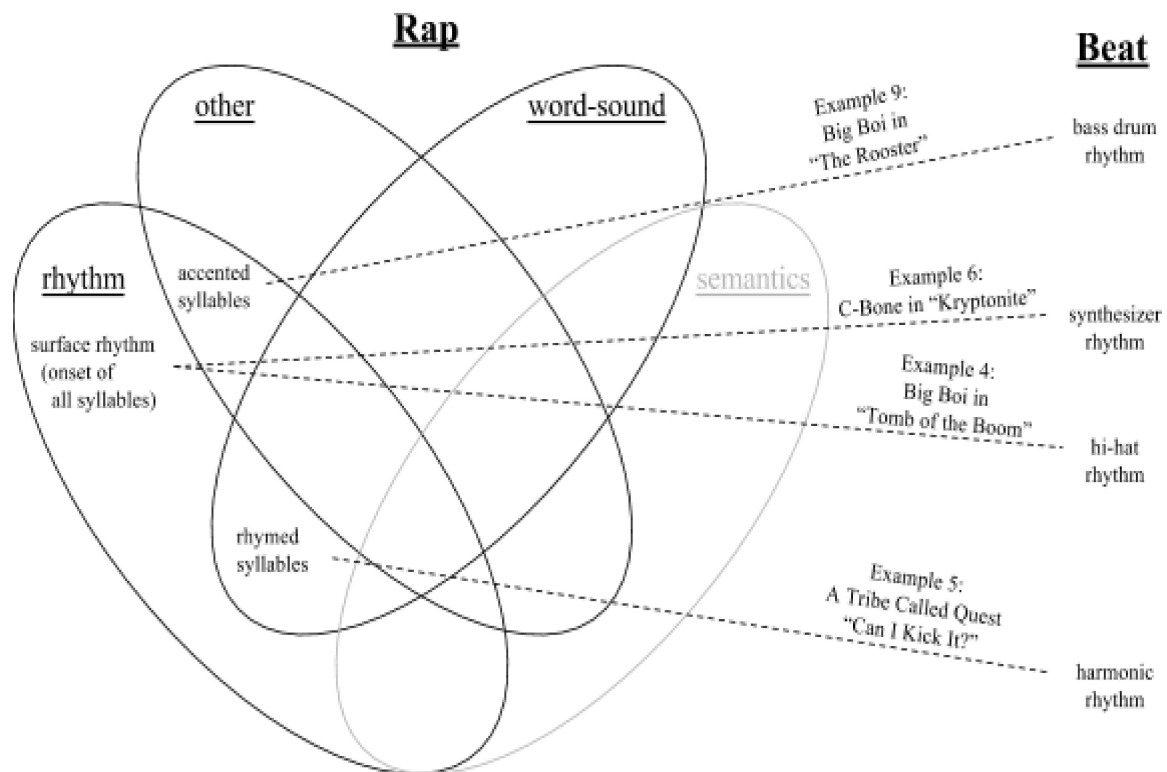


Figure 6: Adams’s examples of rhythmic alignment between rap and beat (or “text” and “music”).

Most of Adams’s examples from “Aspects of the Music/Text Relationship in Rap” are instances of rhythmic unity, or alignment, between some part of the rapping and some part of the beat. Four of these relationships are visualized above with simple connective lines, which are dashed to set them apart from the oval technique categories. In this case,

as in most of Chapter V, I have placed additional information inside of the technique categories to more precisely describe what musical elements are involved in each relationship. Similarly to the previous diagram, the *beat* column contains only elements that are relevant to the examples being discussed, rather than the broad sub-model of *rap*. Since Adams is primarily interested in the ways rapping can rhythmically relate to the beat, it is unsurprising that all four examples in the above figure include one point within the *rhythm* technique category.

CHAPTER V

ANALYTIC EXAMPLES

This chapter presents a number of short analytic examples. Some of these are extremely concise, involving only one or two measures from a song. Some songs provide multiple, unrelated examples. I have focused mostly on examples involving the rhythm of rapping, but there are a few that exclusively involve other parameters. Examples placed earlier in the chapter are simpler, involving interactions between fewer musical elements, and later examples are longer and more complex. I have also tried to group examples that focus on similar aspects of rapping. Unfortunately, these organizational systems interfere with one another, and therefore must be employed somewhat loosely.

I have tried to draw excerpts from as many different styles of rap as possible, but my own listening habits have undoubtedly influenced the selection process to a large degree. Many of the examples below were chosen simply because I heard some kind of interesting musical device during recreational listening. However, I also spent time carefully listening for specific types of musical relationships in order to utilize all of the parts of Figure 4 from Chapter IV. In a way the overarching goal of this chapter, beyond the case studies themselves, is to demonstrate the wealth of possible connections between the four basic categories established by Figure 4: *rhythm*, *word-sound*, *semantics*, and *other*.

Throughout this chapter I employ a number of transcription techniques, all of which have been used by other authors. I also use the diagrams from the previous chapter to visually represent musical relationships. In some cases I explore ways of combining

the diagrams with traditional transcription in order to demonstrate how different musical elements interact through time.

Example 1: Added Syllable Alters Pronunciation, Continues Rhythmic Layer

The first several examples involve rappers altering the pronunciation of one or more words, a common and widespread technique. The first is taken from Twista’s verse on Tech N9ne’s song “Worldwide Choppers.”⁹⁵ This song features a number of guest MCs, all of whom rap in fast and technically virtuosic styles. The beginning of Twista’s verse is transcribed in Table 6 below.

1				2				3				4			
												like	I	got	to
fo-	cus	up	in	my	rhy-	thm	and	loo-	sen	the	ve-	nom	and	hit	em’
and	give	em’	a-	stig-	a-	ma-	ti-	sm	and	then	I’m	a	spit	em’	some
thin	so	full	of	...											

Table 6: The beginning of Twista’s verse from “Worldwide Choppers” (2:55).

The rhythm of this verse is extremely consistent, and features an unwavering stream of steady 16th notes.⁹⁶ Adams analyzes a similar verse from Blackalicious’s “Blazing Arrow,” and claims that “the lack of a consistent and predictable pattern of rhymed syllables is Parker’s main method [...] of creating rhythmic variety.”⁹⁷ Twista

⁹⁵ Tech N9ne, *All 6’s And 7’s*, 2011 by Strange Music, SMI-87.

⁹⁶ It may be argued that these are actually 32nd notes and that the tempo is half as fast as is implied by my transcription. From a practical standpoint, it is significantly easier to notate and discuss when using 16th notes in the faster tempo.

⁹⁷ Adams, “Metrical Techniques,” [12].

uses a similar technique to enliven his otherwise rhythmically regular flow. There are no rhymes that recur in the same metrical positions from measure to measure, and, more importantly, the internal rhymes usually undermine the metrical pulse, a common technique that has been documented in several sources.⁹⁸ The rhythmic variety imparted by this technique is perceptually highlighted by the extreme sparseness of the beat, which features only brief pulses of sound on beats one and three.

Twista's internal rhymes and smallest syntactic units often emphasize groups of three 16th notes. In the first full measure of Table 6 a pattern begins in which a two-syllable word is followed by a one-syllable word: "rhythm and," "loosen the," "venom and." Although this pattern is immediately broken by a string of one-syllable words, the same three-16th-note grouping is reestablished by a multisyllabic rhyme: "hit em" followed by "give em." The second syllable, "stig," of the next word, "astigmatism," lands three 16th notes away from "give," and thus continues the pattern, albeit in a somewhat weaker form.

Here, Twista alters his pronunciation, adding an extra syllable to "astigmatism" to create the word "astigamatism." The primary effect of this alteration is that the last two syllables of the word, "ti" and "sm," are pushed back by a single 16th note, which continues to reinforce the polyrhythmic groups of three. Since these syllables rhyme with "hit em" and "give em," Twista intentionally adds a nonsense 16th note to delay them and continue the pattern of placing sonically related syllables three 16th notes apart. The

⁹⁸ Ibid.; Kautny, "Lyrics and Flow," 107; and Segall, "Rap and *Sprechstimme*," 8.

words “spit em’” at the end of the measure are also consistently placed within this pattern. Key elements from this analysis are transcribed in Figure 7, below, which displays the first two full measures of Twista’s verse.



Figure 7: Transcription of rhythmic layers in Twista’s verse.

The bottom staff of Figure 7 contains the surface rhythm, the constant stream of 16th notes, with the lyrics underneath. The “word onsets” staff shows the attacks of each individual word, i.e. the smallest scale syntactic and semantic units, and the staff above displays the onset of each group of syllables that rhymes with “hit em.” Finally, the top staff represents a freely formed combination of the two beneath it, demonstrating that combining both rhythmic layers results in a steady cross rhythm emphasizing every third

sixteenth note. The penultimate note in this layer is the least emphasized, as the syllable in this position neither rhymes nor reestablishes the syntactic pattern from before. However, we do still hear it as part of the polyrhythm, as the pattern has been firmly established for some time. Additionally, the syllable is preceded by the word “and,” which has come one 16th note before the emphasized groups of three in three previous instances (“and loosen,” “and hit em,” “and give em”). Figure 8 below demonstrates one way to use the diagrams from Chapter IV to visualize the musical interactions in this example.

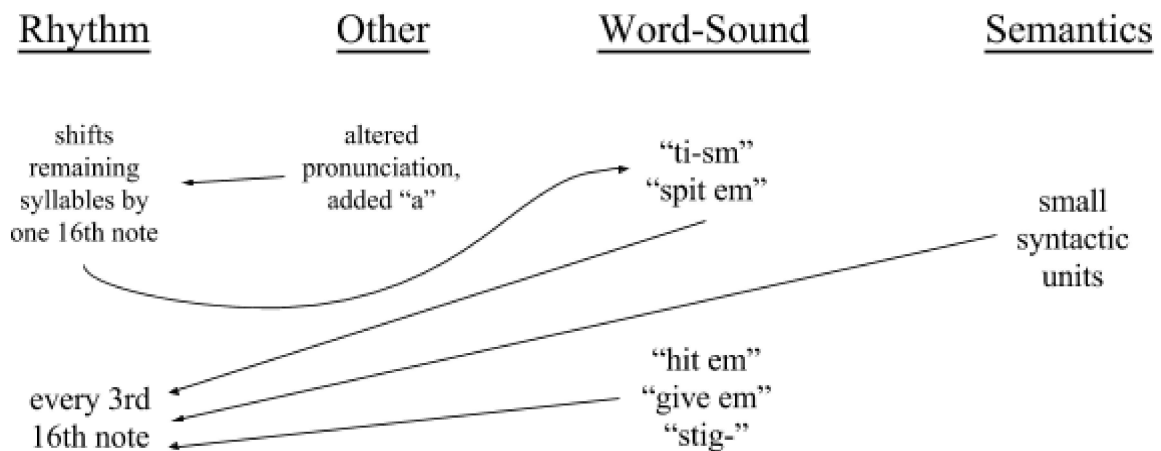


Figure 8: Interaction of elements that emphasize every third 16th note.

At the top of the diagram are the four categories of rap techniques. Since my claim is that Twista manipulates a number of musical parameters to reinforce every third 16th note, the diagram uses a series of arrows that all eventually lead to the “every 3rd 16th note” label in the *rhythm* column. The simplest relationships are represented in the lower portion of the figure; the rhymes “hit em’,” “give em’,” and “stig,” in the

word-sound category are directly connected the “every 3rd 16th note” label with an arrow. The same goes for the “small syntactic units” label in the *semantics* column.

The more complex pronunciation-based relationship is visualized with the series of three higher arrows. This sequence begins when Twista adds the “a” syllable to “astigmatism.” This change in pronunciation is labeled in the *other* category. This has the effect of shifting subsequent syllables one 16th note later, so the materials in the *other* and *rhythm* categories are linked with an arrow. This rhythmic shift is particularly important because of the way it pushes back the rhymes “tism” and “spit em’,” so the corresponding elements in the *rhythm* and *word-sound* columns are connected. Finally, these word sounds are now aligned with the rest of the elements that occur on “every 3rd 16th note,” so these parts of the diagram are linked with the last arrow.

Example 2a: Modified Vowel Pronunciation Continues a Rhythmic Layer

Table 7 on the next page shows the first four measures of Kendrick Lamar’s verse from A\$AP Rocky’s song “1 Train,”⁹⁹ another song which features a number of guest MCs. Throughout his verse, Lamar consistently uses a triplet subdivision of the beat, so the chart in Table 7 is horizontally divided into 12 cells, one for each triplet eighth note, rather than the usual 16 found in the publications of Krims and others.

Beginning on the second beat of the first full measure, Lamar sets up a pattern of recurring assonance corresponding to the quarter note pulse, shaded above in light blue. The long “o” sound (“o” in IPA) occurs naturally in the syllables placed on beats two, three, and four of the first measure, and beats one and two of the second measure. Beat

⁹⁹ A\$AP Rocky, *Long.Live.A\$AP*, 2013 by Polo Grounds Music, 88765-43696-2.

three features the noun “projects,” which should contain a short “o” sound (“a”), but Lamar substitutes this out in favor of the previously heard long vowel, altering his pronunciation and adopting the British English version of the word. This effectively extends the pattern of assonance for an additional consecutive beat. The first syllable of “projects” is shaded a slightly darker blue to show its similar yet different relation to the preceding shaded syllables. Figure 9, below Table 7, depicts the relationship described above.

1			2			3			4		
											we
out-	laws	then I	bo-	gart	any	pros	that	got	poached	at	with a
toe	tag	get	broke	off	in the	pro-	jects	with a	skate-	board	I
roll	past	and I	blaze	y'all	like	do do		I	hate	y'all	
beef	cooked	I	ate	y'all	like	m m		let's	play	ball	in a

Table 7: Beginning of Kendrick Lamar’s verse from A\$AP Rocky’s “1 Train” (0:58), with key assonance highlighted in shades of blue.

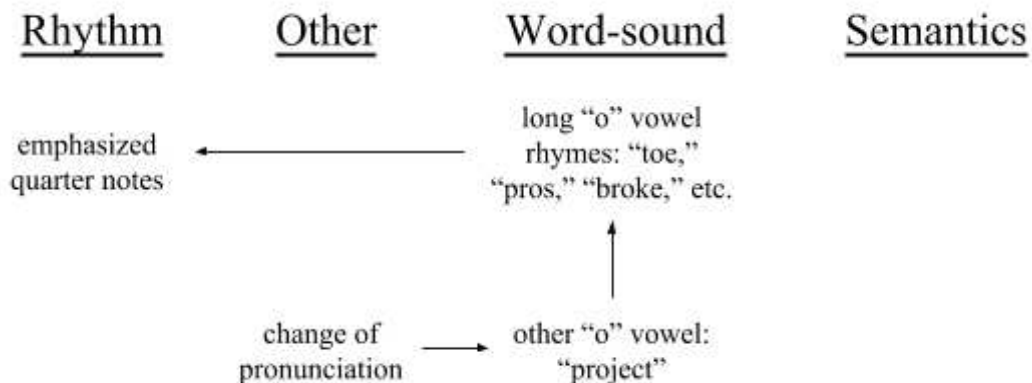


Figure 9: Visualization of example 2a.

The above figure is fairly straightforward, as the musical device it depicts is quite simple. Lamar's change of the "o" sound in "project" relates the *other* and *word-sound* categories. In particular, it causes "project" to become sonically related to the preceding string of rhymes. These causal connections are again visualized in the diagram with arrows. The end result is that Lamar is able to extend the pattern of rhymes on consecutive quarter notes, so the final arrow links the connected *word-sounds* to the *rhythm* column.

Example 2b: Modified Vowel Pronunciation Facilitates Transition Between Grooves

Applying Ohriner's groove-based thinking to this simple example yields interesting results, as the change in pronunciation may help facilitate a smooth transition between grooves. Although the overall syllabic density of Lamar's performance remains fairly constant throughout his verse, the third and fourth full measures seem to form a different groove than the first two. Several elements contribute to the groove of the rapping in the first two measures: the recurring assonance, discussed above, the silences that often occur on the third eighth note triplet of the beat (somewhat hard to see in the transcription above), and the rapid syllables that occur directly before the quarter note pulse.

Measures three and four contain similar but significantly varied elements. Lamar now employs a different pattern of assonance, utilizing the vowel "a" instead of "o." These syllables are only found on beats two and four, rather than on every strong beat as in the preceding two measures. Although it occurs roughly half as often, this repeating sonic unit is now a multisyllabic rhyme that contains two vowels, first a long "a" ("e" in

IPA, as in “play,” shaded light green), then a short “a” (ə, as in “ball,” shaded darker green) on the following triplet eighth note. Additionally, Lamar places the rapid rhythms of the onomatopoeias “mm mm” and “do do” on beat three of measures three and four (shaded orange in Table 7), in contrast to the first two measures where these kinds of rhythmic values are only found as pickups to the strong beats.

Ohriner’s main focus is on how rappers transition from one groove to another.¹⁰⁰ Looking at the chart in Table 7, it is evident that Lamar has loosely threaded the two rhyme schemes together, creating a relatively smooth transition. Although the first pattern of assonance is broken on beat four of the second full measure, its long “o” sound returns once on the downbeat of the next measure. This beat four, which sounds unrelated to the first groove, is the first time we hear one of the new vowel sounds that will subsequently be repeated on beats two and four of the following measures.

In addition to this kind of interlocking rhythmic effect, Lamar’s change in pronunciation helps weaken the first groove and prepare for the arrival of the second. Since the “o” sound in “project” is modified to be the same as previous “o” sounds, the word strikes the listener as somewhat odd. A similar effect occurs with the word “board” on the second triplet eighth note of beat four in the second full measure. The vowel sound in this word is similar to the previously heard “o” sound, as is its metrical position within the measure, being shifted slightly from where we are expecting to hear returning assonance. The effect of this is that the listener is not quite sure if this syllable relates to the previous pattern or not. When the original long “o” sound returns on the downbeat of

¹⁰⁰ Ohriner, “Groove, Variety, and Disjuncture,” 2.

For this example I have used an adapted version of Ohriner's transcription method, because it is extremely difficult to rhythmically quantize Wayne's performance, and since an a capella version of the track is readily available. Table 8 is somewhat simpler than Ohriner's original diagrams. I have disregarded accent, since my argument does not involve articulation, and have therefore placed only a single dot above each syllable in order to represent its metrical position. Furthermore, I have left out the IPA, except for where non-standard pronunciation occurs.

Although Wayne has held a prominent position in commercial rap music for over ten years, he has drawn frequent criticism on many fronts. One common complaint is that his music lacks lyrical depth.¹⁰² Taking Adams's approach to largely disregard semantic content is an easy way to skirt around this debate and meanwhile demonstrate that there are some interesting musical devices at work in the above example.

In the previous two examples, MCs altered their pronunciation of a single word in order to reinforce or continue a rhythmic layer, such as a pattern of rhyming syllables. The technique used by Wayne here is the same as the one used by Kendrick Lamar in example two; he changes what should be a long "i" vowel ("ar") to a long "e" vowel ("i") in the last syllable of the first instance of the word "asinine." Despite the technical similarity, this effect is far more important and integral to the flow and structure of this verse than in either of the previous examples.

¹⁰² Ben Westhoff, "Top 60 Worst Lil Wayne Lines on *Tha Carter IV*," *LA Weekly*, 2011, <http://www.laweekly.com/music/top-60-worst-lil-wayne-lines-on-tha-carter-iv-2406683>

The first purpose of Wayne’s mispronunciation is to create a rhyme between words where there would not be one naturally: “machine,” “mean,” and “asinine,” which occur in measures five and six of Table 8. This is similar to Example 2. Wayne’s usage of this technique becomes more interesting throughout the rest of measure six and into measure seven. First, he acknowledges his mispronunciation, clarifying “damn I mean asinine.” Then, he begins a new rhyming layer based on the last syllable of this correctly pronounced “asinine,” using the words “mine,” “nine,” and “Don,” which also has its pronunciation altered. The way Wayne uses his mispronunciation and repetition to link these two rhyming patterns is visualized with connective lines in Figure 10 below.

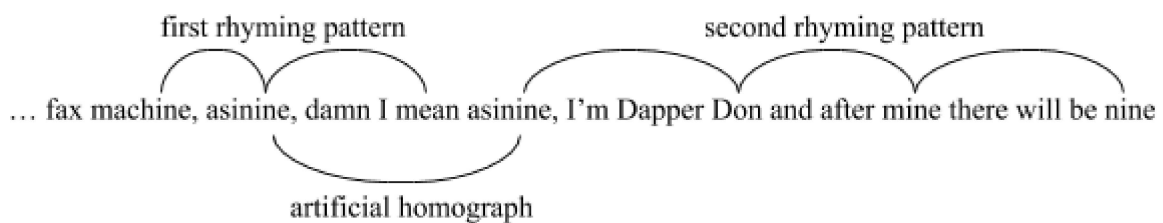


Figure 10: Visualization of rhyming layers connected by altered pronunciation device.

In Example 2 I suggested that altered pronunciation could weaken a groove and help prepare a transition. This specific type of analysis is not applicable to this example, as the two different sets of rhyming words belong to the same groove, characterized by recurring surface rhythms and recurring placement of rhyming words near the third sixteenth note of each beat. Despite its irrelevance to any transition between grooves, the repeated use and altered pronunciation of “asinine” does similarly help link together and smooth the transition between the two sets of rhyming words. Although transitioning between different repeated word-sounds is clearly not necessary in rap music, in this

example it may help counteract the disjunct meandering of the lyrics and cause the verse to sound more connected.

Example 3a is noteworthy because it relates all four of the technique categories proposed in chapter four. The words “machine,” “asinine,” and “mean” are all related by *word-sound* (rhyme), but also *rhythm*, since they occur in roughly the same metrical position within the beat. The same applies to the second set of rhyming words. These two sets are related *semantically* since both of their rhyming sequences hinge around the word “asinine.” And finally, this hinging only works because Wayne alters his pronunciation for the first instance of the word. These relationships are displayed in Figure 11 below.

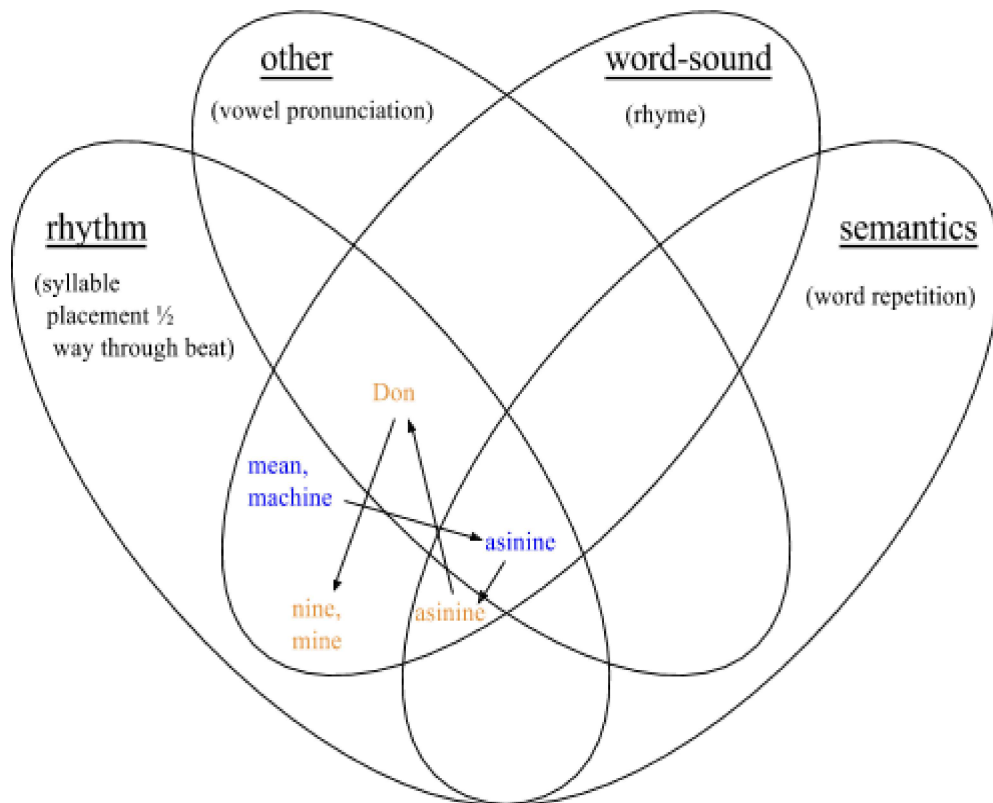


Figure 11: Additional visualization of relationships from Example 3a. Beneath the four general headings are brief descriptions of the specific techniques from the example, in parenthesis. Sets of rhyming words are distinguished by color.

In this diagram, arrows are used to show the progression of time as Wayne moves from one syllable to the next. Words that lie within the same oval are related through that oval's corresponding technique. Although it may initially seem strange that every syllable is connected via *rhythm* and *word-sound*, keep in mind that Figure 11 omits a number of less important words from the line (“fax,” “I,” “I’m,” “damn,” etc.), and that these words have little to no meaningful relation to each other or to any larger musical structure, except perhaps by their grammatical necessity.

Example 3b: Rhythm and Articulation Reference External Material

The portion of Wayne's verse transcribed in Table 8 contains some other interesting aspects that deserve attention. Similar to the way in which Wayne repeats and changes the word “asinine,” he also repeats and changes the phrase “take that” at the ends of measures two and three. Although the pronunciation of this phrase is indeed altered, in this case it is more accurate to describe the change in terms of other musical elements such as articulation. For his second utterance, Wayne adopts a softer articulation of consonants and more quiet, breathy tone. Additionally, the syllables are delayed substantially in relation to their metrical position within the previous measure. As suggested by his lyrics, these alterations are a reference to the rapper Diddy (originally known as Puff Daddy), particularly his background ad libs, such as those heard on Notorious B.I.G.'s “Hypnotize.”¹⁰³ These effects are visualized in Figure 12 below.

¹⁰³ Notorious B.I.G., “Hypnotize,” 1997 by Bad Boy Entertainment, 78612-79092-2.

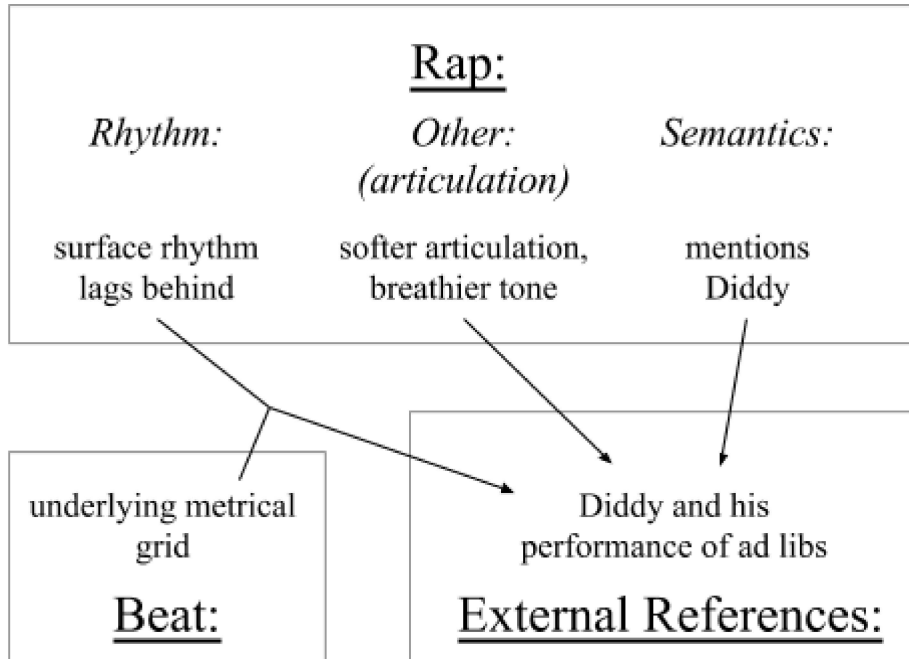


Figure 12: Visualization of elements involved in Lil Wayne’s reference of rapper Diddy.

Figure 12 uses an adapted combination of diagrams from Chapter IV to visualize the relationships involved in Wayne’s reference. Although it is impossible to prove that the metrical divergence from the underlying grid is a deliberate aspect of this reference, it is a reasonable assumption, since background ad libs are frequently performed in more of a speaking style that is less rhythmically deliberate than actual rapping. This device demonstrates some of the kinds of complex self-referential and intertextual relationships that are common in rap music; in addition to all of the specific musical elements that contribute to referencing another MC, the overall effect helps set up the previously discussed pronunciation change of “asinine,” since both devices occur in close metrical proximity and rely on a repeated yet altered word or phrase.

Example 3c: Rhythm of Semantic Layer Prepares Word-Sound Layer

The last aspect of this verse that warrants discussion is the wordplay in measures one and two. After deriding the listener's "city and town," Wayne says "I state facts." From this context the word "state" acquires two meanings, first as a verb in accordance with its literal usage, but also as a noun as a continuation of the geographic references. On its own this wordplay is rather uninspiring, and neither of its meanings relate to the rest of the verse in any substantial way.

However, the semantically related words "city," "town," and "state," actually create a short but meaningful rhythmic layer. All of these words occur approximately one 32nd note after the beat, on consecutive beats, thereby emphasizing the interval of one quarter note that occurs between them. The rhythmic relationship between these words is very similar to the one within the sets of rhyming words discussed at the beginning of this example ("mine," "nine," "asinine"), which are also all separated by a quarter note. This is particularly significant since measures one through three do not feature prominent rhymes in this rhythm, but are instead characterized by multisyllabic rhymes near beats two and four ("state facts," "take that," and "eight stacks" and others from before my transcription begins). Thus, it seems as if Wayne places the word with double meaning deliberately in order to create a rhythmic layer that emphasizes the quarter note duration that becomes more obviously prominent later in the verse. Although it is difficult to tell what features do or do not contribute to consistent grooves throughout this verse, the double meaning of "state" and its consequent rhythmic layer surely contribute to the smooth and surprisingly subtle transition between musical materials.

Example 4a: Pitch Reinforces Rhyme

Having explored three examples that deal with altered pronunciation, our focus will now shift to pitch, another musical element placed in the *other* category of rap techniques from Chapter IV. The importance and use of pitch in rap varies greatly between subgenres, artists, and songs. Although it would be impossible to catalogue and categorize every type of pitch technique here, I have aimed to provide a broad sampling of ways it is used, particularly in conjunction with rhythm.

Before proceeding it is important to briefly discuss the similarities and differences between rapping and singing. Although in many cases these two modes of vocal production can be easily distinguished, a large amount of MCing is done in a grey area between the two. This difficulty in discerning rapping from singing has caused some scholarly debate. In his response to Adams, Williams, attempting to show the prevalence of the minor mode in rap music, cites a number of songs, including Kanye West's "Heartless."¹⁰⁴ Adams responds by claiming that "Heartless does not contain any rapping at all."¹⁰⁵ A specific feature of "Heartless" that confounds this issue is the use of autotuning software. Although West may have originally been rapping, the application of autotune gives his performance a kind of definite and deliberate pitch content that has traditionally been associated only with singing.

¹⁰⁴ Justin A. Williams, "Beats and Flows," footnote 13.

¹⁰⁵ Adams, "Response to Williams," [5].

A similar problem exists for scholars of modern classical music, who continue to debate the performance practice of Schoenberg's *Sprechstimme* technique.¹⁰⁶ Segall's interpretation of *Sprechstimme* is that it "demands that the performer control her spoken voice such that she be able to say specific pitches."¹⁰⁷ Although he does not explicitly say so, Segall implies that rapping is also a kind of pitched speaking, despite the fact that in his view rapping and *Sprechstimme* are "by no means identical."¹⁰⁸ If this is true, then perhaps we must look to musical elements other than pitch to distinguish rapping from singing.

I will steer clear of debating whether specific examples are rapped or sung. One possible downside of this is that I may present analysis of some content that seems to be more sung than rapped; since it was an object of scholarly debate, I begin by discussing West's "Heartless."¹⁰⁹ Thankfully, whether an MC is rapping or singing doesn't significantly influence my analytic method or its conclusions.

The first four measures of the first verse of West's "Heartless" are transcribed in Figure 13 on the next page. This transcription uses standard Western notation in order to represent pitch. It also depicts the layers within the beat, since their pitches provide the sonic foundation with which the rapping interacts. The pitch content in this example is extremely limited. For its first three measures, the beat contains only three pitches: Bb,

¹⁰⁶ Segall, "Rap and *Sprechstimme*," [9].

¹⁰⁷ *Ibid.*, 2.

¹⁰⁸ *Ibid.*, 9.

¹⁰⁹ Kanye West, "Heartless," 2008 by Roc-A-Fella Records, KWHEARTCDP1.

Db, and F, which form the minor tonic triad. In the fourth measure, the repeating figure in the bass and the repeating chord in the flute are transposed down by step, forming a bVII triad that functions as a dominant. Similarly, West’s vocal part only utilizes two pitches, F (sol) and Gb (le).

♩ = 84

The musical score consists of five staves:

- Voice:** Melody line with lyrics: "how could you be so cold as the win-ter wind when it breeze yo just re- mem-ber that you talk-in' to me though you need to watch the way you talk-in' to me yo I mean".
- Pan Flute:** Chordal accompaniment consisting of repeating triads.
- Synthesizer:** Mostly rests, with some texture in the final measure.
- Snare Drum:** Rhythmic accompaniment with a pattern of quarter notes.
- Bass:** Bass line with a repeating eighth-note figure.

Figure 13: The first four measures of the first verse of Kanye West’s “Heartless” (0:21).

Despite these limited materials, West achieves a number of significant musical effects by manipulating the pitch of his voice. Most obviously, he uses the Gb as an upper neighbor tone to highlight the two-syllable rhymes that consistently occur within beat three. These syllables are also linked together by their eighth note durations, which contrast with the more prevalent 16th notes throughout the example. This effect is shaded blue in Figure 13. Traditionally, this style of once-per-measure rhyme occurs on beat four, in time with the snare drum or another recurring sound that emphasizes the backbeat. Since West's rhymes occur on beat three, accompanied only by the omnipresent flute chord, his Gb neighbor tone provides a nice musical anchor to accompany and emphasize the recurring word-sounds. Returning to the categories from Chapter IV, this example appears to be a simple invariance between pitch (neighbor tones), word-sound (two syllable rhymes), and rhythm (note duration and placement within the measure).

West's two-syllable end rhymes and corresponding neighbor tones combine with a few other musical features to project a consistent groove throughout the measures transcribed above. Beat four always begins with a rest but also always contains some kind of pickup into the next measure. The first half of each measure (except the first) contains a higher concentration of 16th-note durations, but also a single eighth note in every case. Given that the original definition of groove, adapted by Ohriner, included both rhythm and pitch, it is likely that rappers performing in noticeably pitched styles can easily create and manipulate grooves if they so choose, as is evident here. Particularly noteworthy is the way the strength of the vocal groove in this case seems to overcome the

harmonic motion of the beat, resulting in a slight dissonance in measure four, as West’s F conflicts with the underlying Ab major chord.

Example 4b: Pitch and Rhyme Patterns Reinforce Narrative Structure

This mild dissonance is part of a large-scale pitch structure created by West. One unusual feature of “Heartless” is that the first verse is 12 measures long. Figure 14 shows the fourth, eighth, and 12th measures, as well as their upbeats. These are the ends of each four measure phrase and the only three places in the verse where the underlying harmony changes from Bb minor to Ab major (note that Bb minor returns on the sixth eighth note of these measure with the entrance of the synthesizer, visible in Figure 13). West uses the pitch of his rapping to interact with these pseudo-cadential moments in three distinct ways that help articulate the verse’s form and relate to the lyrical content.

The figure displays three staves of musical notation for the voice part, each corresponding to a specific measure in the first verse. Above each staff, a chord symbol is indicated: Bb m for measure 4, Ab for measure 8, and Bb m for measure 12. The lyrics are written below the notes. Measure 4: 'you need to watch the way you talk - in' to me yo'. Measure 8: 'a - yo I did some things_ but that's the old me'. Measure 12: 'but in the end it's still so_ lone - ly'. The notation includes a treble clef, a key signature of three flats (Bb, Eb, Ab), and a 7/8 time signature. The notes are primarily eighth and sixteenth notes, with some rests and a final quarter note in each measure.

Figure 14: Comparison of measures 4, 8, and 12 of the first verse.

In general, West’s lyrics in this song depict a state of sadness and anger directed towards a former romantic partner. At the beginning of the first verse West seems accusatory, asking “how could you be so cold as the winter wind?” This culminates in measure four, when he admonishes “you need to watch the way you talkin’ to me.”

West's confrontational attitude in this line is musically embodied by his refusal to change the pitch of his voice, despite the harmonic change in the beat. Thus, measure four contains a mild but sustained dissonance between the Ab major harmony and the F in the vocal part. Of course, we could alternatively analyze this measure as an F minor seventh chord in first inversion, but the dissonance between F and Eb is quite noticeable regardless.

West's attitude seems to soften in the second phrase of the verse. Now he begins reminiscing about "all the things that we been through" and "all the things we got into." In measure eight he admits that he "did some things but that's the old me." He sings the first syllable, "did," on an F, as in the previous phrase, but then resolves down to an Eb, fitting into the harmony, for the phrase "some things but that's." West's attitude here is less confrontational; he allows himself to admit to some wrongdoing, and musically represents this by allowing the pitch of his voice to follow the harmonic motion of the beat.

The third phrase depicts another slight shift in attitude. West admits noticing that his former partner now ignores him ("so you walk around like you don't know me") and has moved on ("you got a new friend"). Although he affirms that he is still surrounded by friends ("well I got homies"), he admits in measure 12 that "in the end it's still so lonely." West again lowers his voice from F to Eb, this time arriving at the latter pitch on the downbeat of the 12th measure. After a brief upper neighbor that returns to F, West descends from Eb to Db twice before arriving on Bb with the return of Bb minor harmony in the synthesizer.

This slight increase in melodic activity can be read in several ways. Continuing to view the verse as a narrative of West's emotions and emotional changes, it seems as if the third phrase is the first instance in which the rapper truthfully addresses his own feelings of sadness. It makes sense then that this increase in lyrical expression is paired with the increase in musical expression that naturally accompanies a more lively melodic line. A slightly different interpretation is that West's increased melodic activity is a more literal kind of text painting for the word "lonely." Two notes in the melodic gesture of measure 12, Bb and Db, are not previously heard in the vocal line of the verse, making them literally alone in the gamut of pitches reached by West. Furthermore, the gesture itself is unlike anything else in the verse (unlike measure eight, for instance, which still contains the previously discussed upper neighbor on beat three), and its drooping contour is generally well suited for the depiction of more somber emotions. Lastly, this figure serves a clear formal function, helping to transition into the chorus, which is more melodically and harmonically active.

The large-scale structure described in the preceding paragraphs is also supported by West's rhyming. As we have seen, the most prominent word-sound effect in the first phrase is the repetition of two-syllable rhymes on beat three. These rhymes ("be so," "breeze yo," "me though," "me yo") begin with a long "e" vowel (i) and end with a long "o" vowel (oo). The middle phrase contains some similar word-sounds, for instance with "been through," where the first word relates alliteratively to the previously heard "be" and "breeze," but is generally less consistent and predictable. In the third and final phrase, West returns to the sounds of the first phrase but places them in the opposite

order. The long “o” vowel now comes before “e” in “show me,” “know me,” “homies,” and “lonely.” Just as West’s lyrics portray different aspects of a single emotionally traumatic event, his rhyme patterns at the beginning and end of the verse are created out of the same basic word-sounds, permuted so that the listener can hear and understand them in a new way. The semantic development of the verse and its corresponding musical consequences are shown in Table 9 below.

	first phrase:	second phrase:	third phrase:
pitch near cadence:	sustained dissonance	resolution of previous dissonance	similar resolution, increased activity/wandering
rhyme pattern:	i → oʊ	other	oʊ → i
lyrics:	anger, accusation	reflection, reminiscence	acknowledgement of feelings, loneliness

Table 9: Three musical parameters and their parallel trajectories through the first verse of “Heartless.” Vowels shown in IPA.

To summarize, West achieves a number of effects through the pitch of his voice. Consistent patterns of pitch are used to reinforce and highlight the two-syllable rhymes throughout the verse, in addition to occasional other word-sound elements. West also manipulates pitch in a unique way for each cadence to create a large-scale structure that reflects the emotional development taking place in the lyrics. Having briefly explored pitch in rapping, I will now move on to some other simple examples that involve other musical elements.

Example 5: Deviation from Metrical Grid Reinforces Text

The existing literature on rap music offers little discussion of microtiming. Although Adams includes it in his chart of flow techniques, none of his articles address it specifically. Similarly, Ohriner’s transcriptions offer an excellent way of representing slight deviations from the metrical grid, but this aspect of rhythm is not actually that important for his groove-based arguments. Kautny offers somewhat more in depth discussion of microtiming, but does so generally, framing it as a basic “interplay of deviation and norm [...], variety and stasis, excitement, and predictability.”¹¹⁰

Table 10 on the next page displays the first four full measures of the first verse of KRS-One’s “Love’s Gonna Get’cha.”¹¹¹ This example demonstrates one basic way rappers can use microtiming in order to support the content of their lyrics. Unfortunately, an a capella version of this track is not readily available, so a precise transcription using Ohriner’s method is not possible. Fortunately, KRS-One raps in an old-school style with relatively simple rhythms that typically cohere to the 16th-note grid, making his metrical divergence easy to hear and obviously intentional.

The onsets of the three syllables of the shaded phrase “don’t start it” occur substantially before the 16th-note boxes in which they are transcribed below. The first syllable in particular almost sounds a full 32nd note early. This highly contrasts with the rest of the verse; the only other syllable in Table 10 that does not occur on a 16th note is

¹¹⁰ Kautny, “Lyrics and Flow,” 107.

¹¹¹ Boogie Down Productions, “Love’s Gonna Get’cha (Material Love),” 1990 by Jive, 1367-2-JDJ.

“hit” in the second measure, which is heard roughly on the eighth 32nd note of the second beat. The early onsets of “don’t start it” are also made more apparent because the preceding syllables of measure four form a sustained string of even 16th notes.

1				2				3				4			
															I’m
in		jun-	ior	high		with	a	B		plus		grade		at	the
end	of	the	day		I	don’t	hit		the	ar-		cade			I
walk		from		school		to	my	mom’s		a-	part-		ment		I
got-	ta	tell	the	suck-	ers	ev-	ery	day	don’t	start	it				

Table 10: The first four measures of the first verse of KRS-One’s “Love’s Gonna Get’cha” (0:39). Shaded syllables are placed significantly before the 16th note grid and are also accented.

KRS-One performs these syllables substantially in front of the beat in order to support the meaning of the text. The third and fourth measures of the verse describe KRS-One’s daily walk home from school to his mother’s apartment, an activity in which he frequently encounters “suckers” (bullies, perhaps) who likely attempt to start fights with him. Trying to avoid such confrontations, KRS-One tells them “don’t start it.” On the most basic level, the placement of these syllables before the metrical grid helps depict the agitation in KRS-One’s statement. Such an encounter would likely cause a surge of energy and adrenaline, and KRS-One’s rapping helps to convey this state by nervously and pre-emptively anticipating the beat. These factors are reinforced by the fact that the three syllables are relatively accented compared to the rest of the verse. These musical relationships are diagrammed in Figure 15 below.

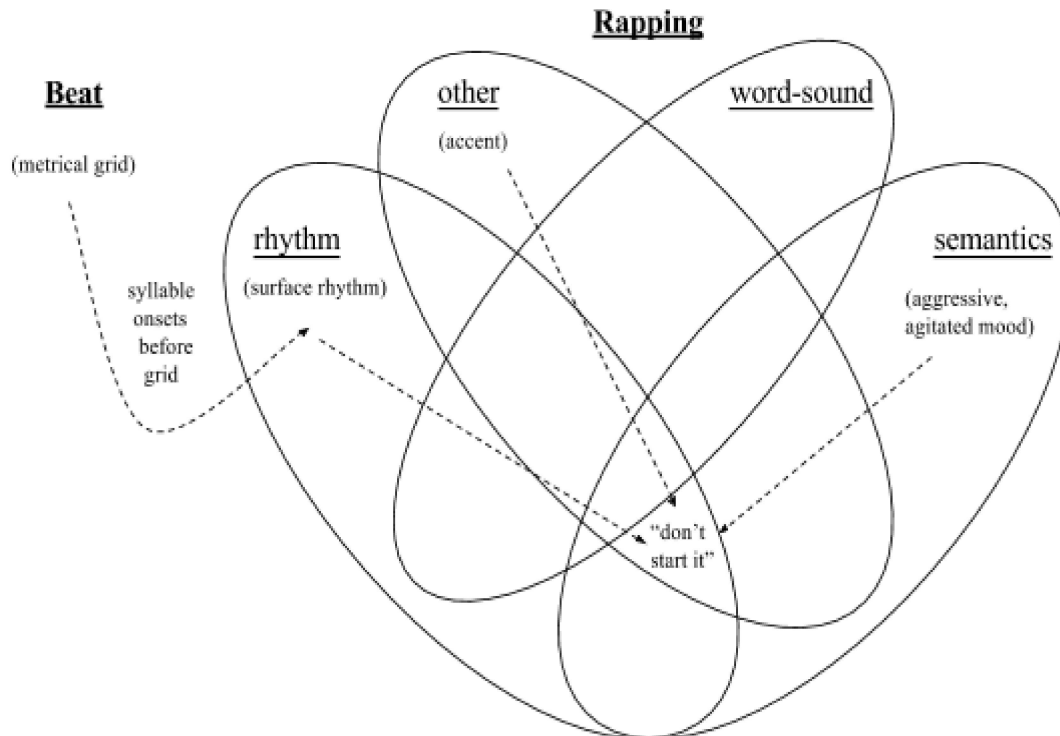


Figure 15: KRS-One’s manipulation of musical parameters to depict the agitated mood of the lyrics.

The primary relationship discussed in this example is the use of microtiming to support semantic meaning. Since my model considers microtiming a rhythmic relationship between rapping and the underlying metrical grid, or pulse, of the beat, it is shown with an arrow from the *beat* category connecting to the surface *rhythm*. This relates to the *semantic* category, which includes the aggressive mood of the text, and the *other* category, which includes the accentuated articulation of the phrase. Note that Figure 15 does not depict the way any musical element changes over time, but rather the simple connective relationship between the three elements of rapping and one element of the beat that are necessary for the musical effect achieved by KRS-One. Another noteworthy aspect of this example is that KRS-One’s deviation from the metrical grid is only

meaningful when taken in context of the lyrics; a purely musical analysis that ignores semantic meaning would find no justification or significance for this aspect of the MC's performance.

Example 6a: Extreme Coherence Between Rapping and Beat

The following examples are somewhat more complex than what we have seen so far. To begin, I wish to analyze a verse from Busta Rhyme's song "I'll Hurt You," featuring Eminem. Although it is difficult to find reliable information on this song's background, it was allegedly leaked online prior to the release of Busta Rhymes's 2006 album *The Big Bang*, according to the album's Wikipedia entry. However, the song does not appear on the actual album, and has yet to be officially released in any medium.¹¹² "I'll Hurt You" is interesting because both rappers' performances are highly unified with the underlying beat. Although many of the musical devices described below have already been discussed by Adams and others, this analysis is useful in order to help understand the applications of the model from Chapter IV.

Figure 16 on the following page shows a basic reduction of the two-measure loop that repeats, with variation, throughout the song. Other tracks are added sporadically throughout, but are largely insignificant for our current analytic purposes. Even within the two basic instrumental tracks shown above there are multiple rhythmic layers that correspond and interact to different degrees. The most notable feature of the beat is the constant 16th-note motion in the string part and its abrupt termination on beat four of the

¹¹² It can, however, be accessed many places online, for instance:
<https://youtu.be/WgEtUuEK-to>

second measure. The sudden release in this rhythmic layer is made more striking by the fact that it corresponds with the snare drum, and that the remainder of the fourth beat is typically silent. The string part implies a quarter-note harmonic rhythm, which is emphasized by the bass drum attacks on beats one and three and the snare on two and four. The rest of the bass drum rhythm doesn't seem particularly related or connected to much else; the beat would still work if the second bass drum attack was moved to the second or third 16th note of the measure or omitted entirely.



Figure 16: Reduced version of the beat of Busta Rhymes's "I'll Hurt You."

Both of Busta Rhymes's verses, as well as Eminem's, exhibit a high level of rhythmic unification with the underlying beat. The third verse, by Busta Rhymes, is transcribed in Table 11 on the next page. Beginning our analysis with the primary surface layer, we find that Busta Rhymes uses a nearly continuous flow of 16th notes. This creates a high degree of unity between the rapping and the string layer of the beat. Busta Rhymes enhances this effect by cutting off in unison with the strings on the fourth beat of every second measure (this occurs seven out of eight times). The only place where Busta Rhymes is reliably not rapping in rhythmic unison with the string layer is on the third and fourth 16th notes of the fourth beat of every second measure; new lines of text frequently begin here, and the rhythms function as pickups into the next two measure loop.

1				2				3				4			
														I'll	
		catch	you	nig-	gas	and	snatch	you	nig-	gas	you	bunch	of	bum-	ble-
in'	fools	who	got	me	rum-	ble-	in'	dudes	all	the	way	down	the	block	
keep	'em	stum-	ble-	in'	and	jum-	ble-	in'	ov-	er	their	words	and	vo-	wels
throw	in	the	to-	wel	see	you	nig-	gas	is	on	the	clock		and	you
run-	nin'	out	of	time	see	I'm	ti-	red	of	all	your	m-	m-	mum-	ble-
in'	m-	m-	mum-	ble-	in'	and	nig-	ga	I	got	it	locked		ev-	ery
sing-	le	time	you	put	my	shit	in	your	C-	D	pla-	yer	and	turn	up
the	vol-	ume	you	bang	your	head	be-	cause	your	shit	is	not		I	
	con-	ti-	nue	with	crum-	ble-	in	nig-	gas	and	tum-	ble-	in	nig-	gas
you	strug-	gle	while	I	hum-	ble	a	nig-	ga	with	the	glock		then	I
watch	you	while	I'll	keep	on	fum-	ble-	in'	while	I	got	you	tre-	trem-	bel-
in'	for	one	of	my	nig-	gas	bust	ya	head	with	a	rock			be-
fore	I	start	to	do	a-	no-	ther	thing	then	to	make	you	crown	me	the
king	with	such	a	but-	ter	swing	nig-	ga	fol-	low	the	flock			now
watch	my	bro-	ther	bring	all	my	dia-	monds	to	sum-	mer	bling		while	I'm
climb-	in'	and	fuck	her	then	tell	your	bitch	to	get	off	my	jock		

Table 11: Transcription of the third verse of Busta Rhymes's "I'll Hurt You" (2:30), with rhymes color-coded.

The unison cutoffs between rapping and string parts are further emphasized with the use of end rhymes, highlighted in green in Table 11. Busta Rhymes places the words “clock,” “locked,” “glock,” and others on the fourth beat of every second measure. In the eighth full measure, the word “not” creates assonance with the previously rhymed words, a somewhat weaker effect, but one that still sounds strongly connected, and the true rhymes resume in the next two measure cycle. In the limited context of the third verse presented alone, it may seem strange that the first rhyming syllable, “block,” is delayed one eighth note from the string cutoff. However, both the first and second verses begin with similar rhymes on every other fourth beat, so at this point in the song the placement of “block” simply sounds like a slight delay or variation.

We have already seen that the fourth beat of every second measure is a metrically emphasized point where many rhythmic layers overlap (the snare, the string cutoff, the rapper’s cutoff, the end rhymes). These points and the two-measure cycles between them are further emphasized semantically. Although the fragments of text that occur during each cycle are not necessarily grammatically correct sentences, they are for the most part complete thoughts that can stand on their own.

Figure 17 on the next page shows all of the rhythmic layers that overlap on the fourth beat of every second measure. This diagram simply connects all of the related rap parameters with lines, and links them to the simultaneously occurring features within the beat.

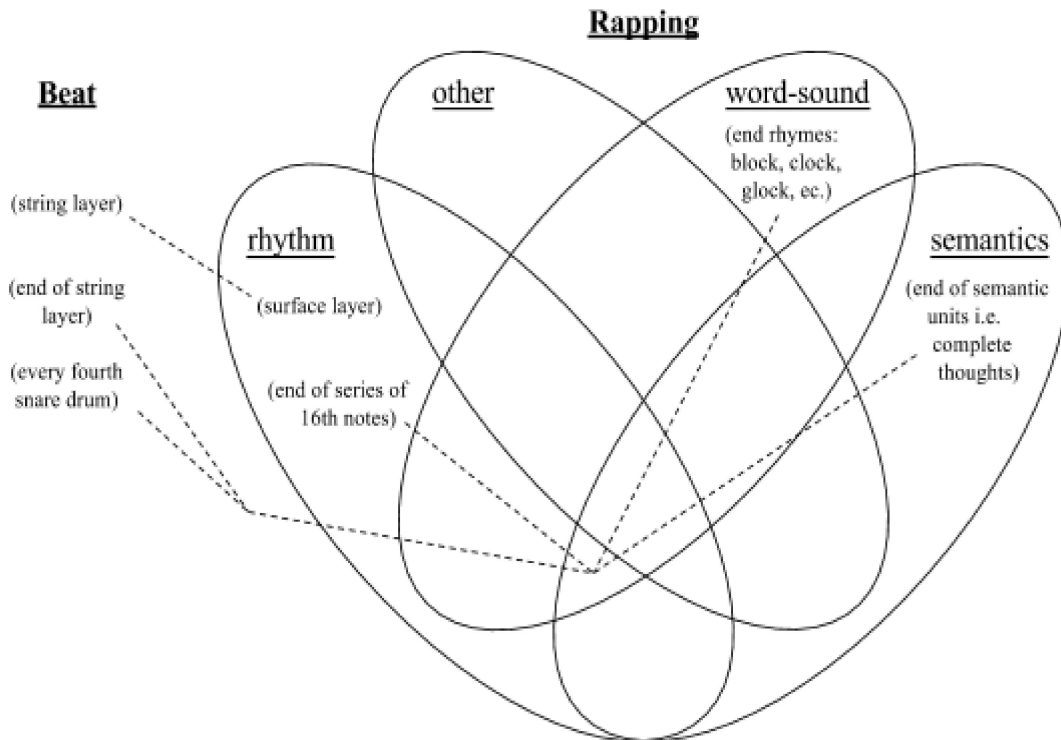


Figure 17: The alignment of musical elements on the fourth beat of every other measure.

Example 6b: Internal Rhymes Depict Text, Create Rhythmic Variety

The primary relationship visualized in Figure 17 arises with striking regularity at the end of every two-measure cycle. Similarly periodic is Busta Rhyme’s nearly constant stream of 16th notes. If these were the two most significant aspects of the MC’s performance, the verse would likely sound stylistically dated and overly predictable. As discussed before, Adams analyzes a similar verse from the Blackalicious song “Blazing Arrow” and says that “the constant sixteenth-note delivery [...] ensures that any rhythmic variety [...] must come from something other than the metrical placement of the syllables.”¹¹³ Instead, he argues that “the lack of a consistent and predictable pattern of

¹¹³ Adams, “Metrical Techniques,” [12].

rhymed syllables is Parker's main method [...] of creating rhythmic variety."¹¹⁴ Although "I'll Hurt You" does feature prominent and consistent end rhymes, Busta Rhymes similarly deploys a number of unpredictable internal rhymes.

The most common and noteworthy of these internal rhymes are shaded blue in Table 11. The first word in this sequence is "bumblin'," (pronounced with three prominent syllables: bum-ble-in') which occurs at the end of the first full measure. Busta Rhymes continues to weave in words that rhyme with "bumblin'" throughout the verse up until measure 11. Importantly, the metrical placement of these words never reinforces any of the regular, periodic relationships discussed above or found in the beat. For instance, the words are almost always an odd number of 16th notes away from their closest sonically-related neighbor: the onset of "rumblin'" occurs exactly seven 16th notes away from the first "bumblin'." Similarly, pairs of words that take place in neighboring measures are never placed in the same metrical location: "rumblin'" in measure two occurs on the sixth 16th note while "jumblin'" in the next measure occurs on the seventh. Thus, Busta Rhymes's deployment of internal rhymes seems to purposefully avoid and undermine frequently recurring rhythmic durations from the beat, such as the quarter note harmonic rhythm or the two-measure cycle of the string layer.

In addition to providing rhythmic variety, the internal rhymes relate to other parameters of the song through their performance and semantic content. In measure five, Busta Rhymes performs the word "mumblin'" in a literal, stylized mumble, by repeating the first syllable three times and the entire word twice. This is a kind of simple

¹¹⁴ Ibid.

text-painting in which the rapper modifies his performance to depict or represent some aspect of the lyrics. The five 16th notes between onsets of the word's repetitions, though typical of this verse's internal rhymes, also work particularly well with the contents of the lyrics, as it is highly unlikely that somebody uncontrollably mumbling would be able to successfully emphasize any regular rhythmic interval such as those found in the beat. Additionally, this mumbling device also relates to the removal of the bass drum and string tracks in the fifth and sixth measures of the verse.

The strings are removed after the onset of the fourth beat of measure five and briefly heard again, in unison with the snare, on beats two and four (where they would normally cutoff) of the next measure. This is also a kind of text-painting, as the stuttering strings are reminiscent of mumbling speech. Although this same fragmentation of the string sample occurs in the same metrical location in the other two verses, it still seems likely that Busta Rhymes mumbling is purposefully paired with it, as he performs a similar effect at the same time in the first verse. This is important to note because it implies that the MC chose his lyrics and how to perform them in response to some aspect of the music, rather than the reverse process familiar from classical music.

All of the aspects of the song that contribute to the text-depiction of the word "bumblin'" are visualized in Figure 18 below. Notice that almost every musical parameter contributes to or influences this effect in some way; it is strong because it the result of the manipulation of all four technique categories and of the beat.

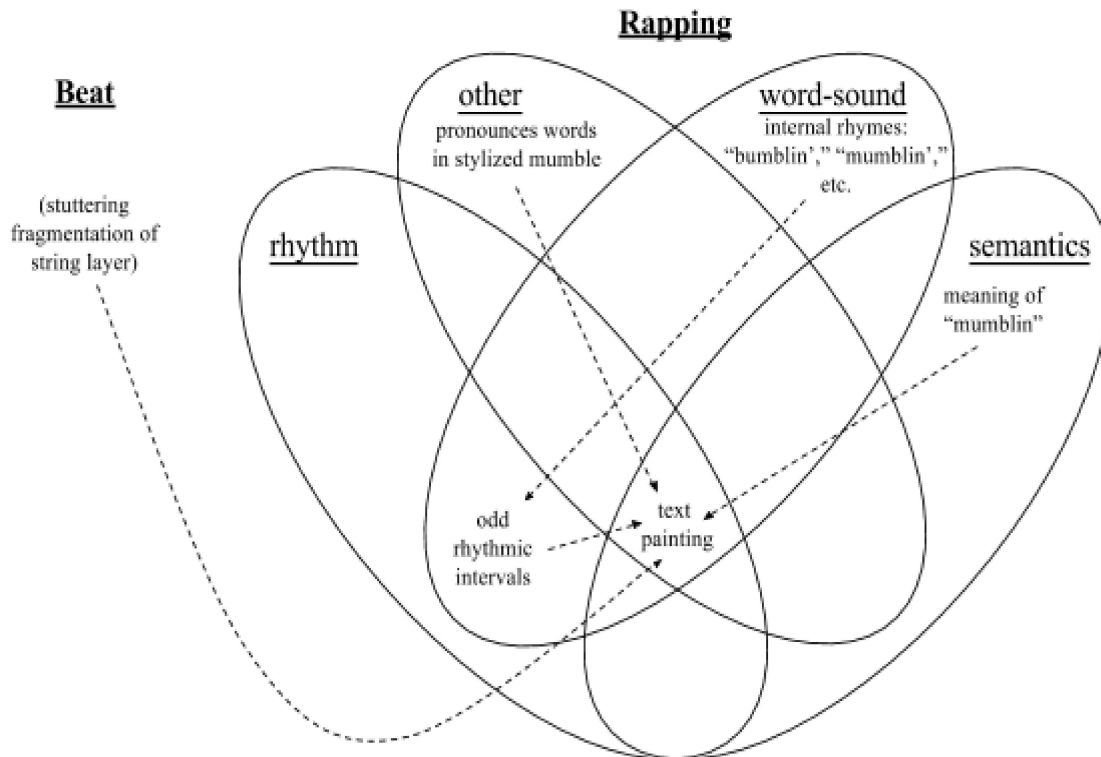


Figure 18: Musical depiction of “mumblin’.”

Example 7: Rap/Beat Convergence/Divergence Depicts Text

Next, I will analyze the beginning of KRS-One’s song “American Flag.”¹¹⁵ The musical effect I wish to explore in this example is interesting because it is easy to perceive, but somewhat difficult to describe and explain. In a way this seems to be typical of rap music and rap analysis; the message and affect of a song, even if they are immediately apparent to listeners, are created and influenced by an extremely large number of surprisingly subtle musical decisions.

“American Flag” is in a simple verse-chorus form, with extremely similar music during the verse and chorus. For our analytic purposes, the most important aspect of the

¹¹⁵ KRS-One, *Now Hear This*, 2015 by R.A.M.P. Entertainment Agency.

beat is the synthesizer, a two bar loop that repeats through all sections of the song, transcribed in Figure 19 below.



Figure 19: The two measure synthesizer loop in KRS-One’s “American Flag.”

The first chorus occurs after a short introduction. KRS-One raps in near rhythmic unison with the synthesizer throughout the chorus, which is transcribed in Table 12 below.

1				2				3				4			
sym-	bols	of	in-	jus-		tice	and	ha-	a-	tred					Con-
fed-	er-	ate		flag						(bring	it	down!)			
sym-	bols	of		hum-	an	en-		sla-	ave	ment					Con-
fed-	er-	ate		flag						(bring	it	down!)			but
what	ab-	out	the	red		white		and	the	blue					A-
mer-	i-	can		flag						(bring	it	down!)			
rac-	ists	flew	that	flag		when	they	cap-	tured	you					A-
mer-	i-	can		flag											

Table 12: Chorus of “American Flag” (0:29).

Comparing the first two measures of Figure 19 to Table 12, it is apparent that every attack point of the synthesizer has a corresponding syllable in KRS-One’s rapping. The only metrical divergence is extremely brief, occurring on the eighth 16th note of the first measure, when KRS-One says the word “and.” This alignment between the rapping

and the beat continues throughout the chorus and into the first measure of the verse, transcribed in Table 13 below.

1				2				3				4			
I	ain't	here	for	sel-	lin'	shit		me	I	came	for	tel-	lin'	it	I
tell	it	like	it	is		so	my	peo-	ple	stay	in-	tel-	li-	gent	we
end-	in'	it		ra-		ci-	sm	sla-	ver-	y	we	end-	in'	it	
this	is	why	we	bring-	in'	down	the	flag	of	the	Con-	fed-	er-	ate	

Table 13: Beginning of the first verse of “American Flag” (0:59).

Despite its higher level of rhythmic activity and more speech-like vocal production, the rapping of the first line of the verse still sounds related to the chorus. This is mostly because of the silence on the eighth 16th note of the measure, a pattern that was established in measures three and five of the chorus. The second line of the verse also begins in an established rhythmic pattern, emphasizing beat two with a rest on the sixth 16th note, similar to all but one of the measures of the chorus. The second half of the second line, however, is noticeably different than anything that has come before, as KRS-One’s rapping extends beyond the end of the synthesizer loop to fill beats three and four of the measure.

By examining the narrative progress of the song, we can see that this rhythmic divergence between the rapping and the beat strongly enhances the meaning of the lyrics. At the beginning of the chorus, KRS-One denounces the confederate flag, calling it a “symbol of injustice,” “hatred,” and “human enslavement.” Because the confederate flag is generally disliked, KRS-One is able to create an interesting parallelism by then asking

“but what about the red, white and the blue?” Although listeners are not likely to naturally associate the confederate and American flags, KRS-One makes a musical argument for doing so by discussing them both with nearly identical rhythms and pitches that also match the outmoded, frivolous sounding synthesizer. He makes a more traditional rhetorical argument by continuing: “racists flew that flag when they captured you,” pointing out that the American flag has been proudly flown by the perpetrators of many human rights abuses.

KRS-One begins the verse by claiming that the goal of his music is not to turn a profit (“I ain’t here for sellin’ shit”) but rather to convey a message (“me I came for tellin’ it”). In this case, KRS-One’s message is about thinking for oneself and avoiding blind nationalistic pride, a point he makes by comparing the confederate and American flags in the chorus. The second line of the verse begins with “I tell it like it is,” and then continues “so my people stay intelligent,” finally significantly diverging from the rhythm of the synthesizer. Since KRS-One has linked the discussion of confederate and American flags to this rhythm, and since we can tell that he is wary of overzealous patriotism, the metrical divergence greatly enhances the meaning of the line. If people are to stay intelligent, then they will act of their own accord and avoid formulaic groupthink, just as KRS-One avoids the rhythmic pattern enforced by the synthesizer and associated with nationalistic symbols. The different relationships between the synthesizer, surface rhythms, and semantic contents are summarized in Table 14 below.

Measure:	Synthesizer vs. Rap Rhythms:	Semantic Content:	Effect:
2, 4	metrical alignment	“Confederate flag”	semantic contents linked to each other and to synthesizer
6, 8	metrical alignment	“American flag”	
10	metrical divergence	“stay intelligent”	independent thought implied

Table 14: Variations in the rap/synthesizer rhythmic relationship and their effects on semantic content.

It may be objected that KRS-One’s deviation from the rhythm of the synthesizer is more indicative of the transition from chorus to verse than of any intentional text/music relationship. While it is certainly true that the rhythmic decoupling supports the song’s formal division, this does not weaken the effect of finally hearing KRS-One break away from the synthesizer for the first time in the song. The above text/music claim is also strengthened if we incorporate semantic unit length into our analysis. The sentence that begins in the first measure of the chorus (“symbols of injustice...”) continues into the second but stops abruptly, with the synthesizer, on the first 16th note of beat two. This pattern repeats throughout the chorus; semantic units never continue beyond the second beat of every second measure. In the second measure of the verse, however, the key phrase “so my people stay intelligent” occurs entirely in this previously empty metrical location, further highlighting the fact that it is musically, in addition to semantically, divergent from the previous material.

Example 8: Timbral Coherence Between Rap and Beat

Before concluding I would like to present one last analytic example, from Nicki Minaj’s verse on Kanye West’s song “Monster.”¹¹⁶ Although the musical relationships in

¹¹⁶ Kanye West ft. Bon Iver, Rick Ross, Jay Z, and Nicki Minaj, “Monster,” 2010 by G.O.O.D. MUSIC.

this example are relatively simple, their quantifiable demonstration requires non-standard analytic techniques. This makes the example worthy of discussion, since I believe the tools and ideas outlined below may be applicable to many future analyses.

The beat of “Monster” is fairly sparse and contains only four primary elements: a dense layer of medium/low drums, a bass drum, a synthesized keyboard sound, and an open hi-hat. The way these samples are organized over the course of Minaj’s verse, the third of the song, is displayed in Table 15 below. Consistency throughout this section is provided by the drum samples; the bass drum layer occurs constantly throughout the verse, and the higher, more active layer, is only removed during the last four measures. Variety is provided by the hi-hat and synthesizer, which are heard only during certain subsections, or phrases, of the beat. The keyboard sample is also modified to only articulate downbeats the second time it is heard, in measures 24 to 27. This verse has some unusual rhythmic features. The fifth subsection is seven measures long, rather than a more typical four or eight, and this results in the verse’s total length of 31 measures.

	1-4	5-8	9-12	13-16	17-23	24-27	28-31
synth piano				x		x'	
open hi-hat		x			x		
drums	x	x	x	x	x	x	
bass drum	x	x	x	x	x	x	x

Table 15: Formal aspects of the beat of “Monster” throughout Minaj’s verse (3:34).

I am interested in the fifth phrase of the verse, transcribed in Table 16 on the next page, because Minaj’s voice in this section seems to meld particularly well with the beat.

Phrase 4:

1				2				3				4			
lem-	me	get	this	straight		wait		I'm	the	rook-	ie			but	my
fea-	tures	and	my	shows		ten		times		your	pay			fif-	ty
K		for	a	verse		no		al-		bum	out			yeah	my
mon-	ey's	so		tall		that	my	Bar-	biez	got-	ta	climb		it	

Phrase 5:

hot-	ter	than	a	Mid-	dle	East-	ern	cli-		mate		vio-		lent	
To-	ny	Mat-	ter-	horn		Dut-	ty	Wine		it		wy-		lin'	
Nic-	ki	on	them	tit-	ties	when	I	sign		it			that's	how	these
nig-	gas	so		one		track		mind-		ed			but	real-	ly
real-	ly	I	don't	give	a	f		u		c		k			for-
get		Bar-		bie		fuck	Nic-	ki	'cause	she's		fake			she'
on	a	di-	et	but	her	poc-	kets	eat-	ing	cheese		cake			and

Table 16: Transcription of the fourth and fifth phrases of Nicki Minaj's verse from "Monster" (4:04). Relevant rhymes highlighted in green.

Minaj creates a rhythmic layer of rhymes, highlighted in green, beginning with the phrase “climb it.” This layer relates to the addition of the open hi-hat to the beat during the fifth subsection. Rhythmically, these layers are somewhat related yet clearly different: the hi-hat occurs on beats two and four of every measure, taking the rhythmic role usually fulfilled by a snare drum, while the rhyming words (climate, violent, etc.) usually occur on beats three and four. In other words, about half of the rhyming words are placed in unison with the hi-hat sound; this is not the most unified of rhythmic relations, but the two layers sound further connected because they both emphasize the quarter note pulse in an otherwise highly syncopated sonic environment.

More interesting is Minaj’s choice of vowel sound and pronunciation. These elements combine with the fairly normal amount of rhythmic coherence to produce a striking, unusually high degree of sonic unification between the rapping and the beat. The long “i” sound (“ar” in IPA), found in the rhythmic layer created by the rhyming words “climb,” “climate,” “sign,” and others, is quite similar to the sound of the open hi-hat, particularly due to Minaj’s accented delivery and pronunciation. This can be quantitatively demonstrated to some extent using spectral analysis, shown below.

Figure 20 on the next page displays side by side spectral analysis of two moments from the song. Frequency is represented by the y-axis and given in hertz, while the x-axis displays time in seconds. Each horizontal line represents one sine wave that the program SPEAR has used to reconstruct the original sound wave. The darker the line, the greater the intensity (loudness) of the partial. Note that these moments do not occur in close temporal proximity, but are displayed as if they do for ease of comparison.

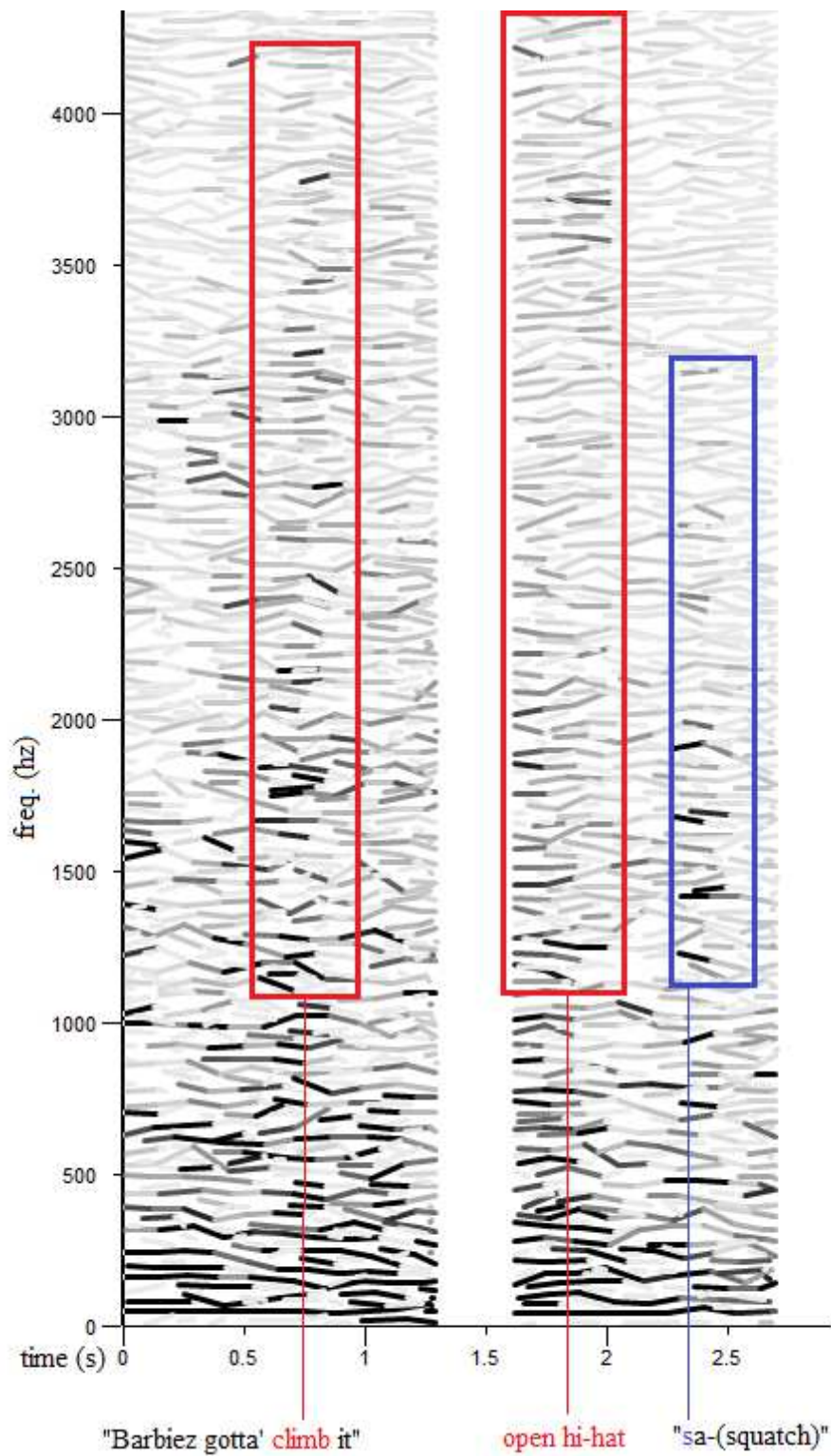


Figure 20: Timbral comparison, via Fourier transform, of two moments from “Monster” (left excerpt occurs at 4:15, right at 2:22).

Unfortunately, it is impossible to perform an accurate Fourier transform on any individual sound from the song, due to the fact that they are all mixed together in the final track. Fortunately, the sparseness of the beat allows us to glean useful information from the above spectral analysis of the entire sound file. Due to the fact that the two most steady layers of the beat, the drums and bass drum, are low, any analysis will appear quite muddy around and beneath 1000hz. Thankfully this frequency range is not that relevant to either vowel formants or to the hi-hat, but unfortunately the upper partials of the lower instruments do contribute to the confounding mass of partials in the upper registers.

The left column in Figure 20 represents analysis of Minaj's phrase "Barbiez (the rapper's term for her fans) gotta climb it." The red box encompasses the part of the excerpt in which the word "climb" occurs. The vowel sound of the long "i" is responsible for the increased energy in the higher frequencies, represented by the darker lines within the box. Particularly noteworthy are the clusters of intense partials around 2000hz and 3500hz.

The right column represents analysis of an earlier part of the song, during Jay Z's verse, in which the open hi-hat is heard without any simultaneous rapping. A red box is again used to highlight this area of the analysis. The noisiness of the cymbal results in an increase in partial energy across a wide range of the frequency spectrum, but again there are some particularly dark lines in the 2000hz and 3500hz areas. The fact that both Minaj's "climb" and the open hi-hat produce increased intensity in similar frequency ranges amounts to quantitative evidence that the two sounds are similar.

The right column also contains the beginning of the word “sasquatch” from Jay Z’s verse, which can be used to make a contrasting comparison that strengthens the above argument. Intuitively, the “s” consonant at the beginning of “sasquatch” seems to be similar to the sound of a cymbal. The partials of the “s” are contained within the blue box. Although this sound does result in an increase in energy around the 1500-2000hz range, it seems to have no noticeable effect near 3500hz. Thus, it is somewhat similar to the hi-hat, but much less so than Minaj’s long “i” vowel.

Figure 21 on the following page visualizes the relationships between Minaj’s rhythmic layer based on long “i” rhymes and the open hi-hat sample in the beat. As argued above, I believe these two features of the verse sound extremely cohesive due to the fact that they are related both rhythmically and timbrally. The rhythmic relationship is represented below with the series of red arrows. Minaj repeats the long “i” vowel sound to form a series of rhymes that emphasizes beats three and four and the quarter-note pulse. This relates to the rhythm of the hi-hat, which also emphasizes beat four and a square, quarter-note division of the meter. The timbral relationship is visualized in blue. The sound of the long “i” vowel is modified by Minaj’s accented delivery and stylized pronunciation, which causes it to timbrally meld with the sound of the hi-hat. Since it appears that Minaj is purposefully choosing rhythms and word-sounds that cohere with the beat, the arrows in Figure 20 are organized to display information flowing from the parameters of rapping towards the aspects of the open hi-hat sample that they match.

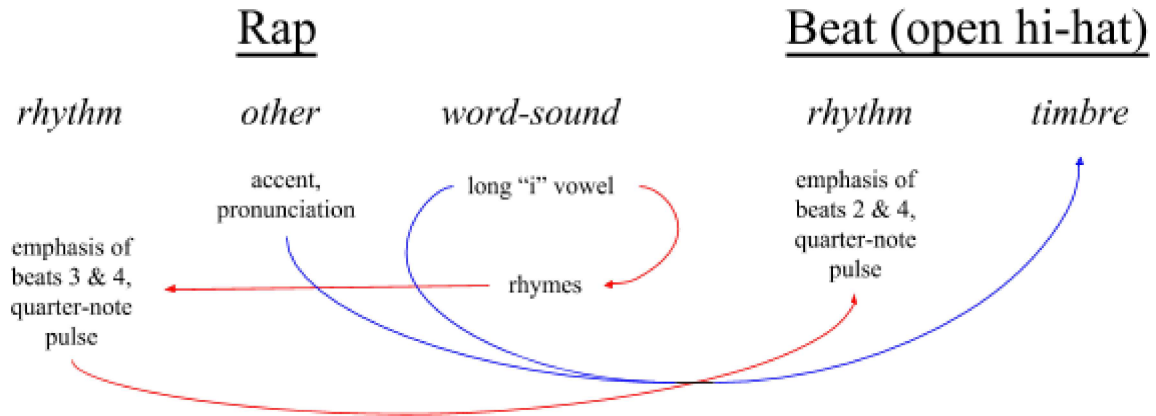


Figure 21: Rhythmic (red) and timbral (blue) coherence between rap and beat.

As discussed above, the application of spectral analysis to this example is somewhat limited, but the method itself has great potential to demonstrate timbral relations between rappers and beats, particularly for songs with readily available a cappella and instrumental versions. Importantly, my claim about Minaj's verse initiates exploration into an unexplored realm of rap/beat relationships that rely on timbre rather than rhythm. This represents another logical avenue that follows from the work of Adams: his ideas about the unity between rap and beats can be expanded to include additional parameters beyond the scope of the original discussion.

CHAPTER VI

CONCLUSION

The analysis of the eight examples in Chapter V has demonstrated a large number of ways in which MCs can manipulate different elements to achieve a variety of musical goals. Several examples have involved some kind of unity or coherence between rappers and beats, similar to the devices discussed by Adams. In Example 6 Busta Rhymes raps in rhythmic unison with a string layer from the beat, and emphasizes the termination of this layer with his placement of end rhymes. Similarly, Example 8 involved Nicki Minaj enhancing this same kind of rhythmic relationship by choosing a vowel sound that melds into a sample from the beat. Lastly, Example 7 showed KRS-One rhythmically diverging from the beat in order to musically enhance the message of his lyrics.

Other examples involved rappers depicting their texts through different means. Example 5 saw KRS-One employing a different kind of metrical divergence, this time straying from the underlying 16th-note subdivision of the beat in order to sound aggressive. Larger scale relationships were present in Example 4, in which Kanye West altered his rhyme schemes and use of pitch at cadences throughout the duration of his verse in order to mirror the emotional trajectory described by his lyrics.

Several examples from Chapter V involved changes in pronunciation. This is an aspect of rapping that has not been covered by other sources, but it seems to be a fairly common device. The changes in pronunciation analyzed above are all subservient to some other musical element or pattern. In the first example, Twista adds a syllable to a word not for its own sake, but to metrically shift subsequent content, bringing into

alignment with an established rhythmic pattern. In Example 2 Kendrick Lamar changes the pronunciation of a vowel in order to continue a rhythmic layer of rhymed words, and Example 3 demonstrates Lil Wayne executing a more intricate version of the same device.

Although certainly not exhaustive, the examples from Chapter V reveal many possible connections between various areas of the diagrams presented in Chapter IV. Most of the interesting relationships analyzed in Chapter V were initially discovered during casual listening. One of the benefits of the highly theoretical nature of the diagrams from Chapter IV is that it can suggest additional relationships that may be easily overlooked due to biases in personal listening habits. For instance, a connection between the *word-sound* and *semantic* categories is entirely possible, despite the fact that I have yet to personally notice it in any songs. In this particular case, pairing certain word-sounds with certain types of lyrics has been an established poetic device for centuries (for instance, John Donne paired plosive sounds with violent words in his *Three Holy Sonnets* from 1633), and is thus likely to occur in rap as well. There may be other interesting relationships, however, that have yet to be explored in other media. One direction in which to continue this research would be to seek and categorize examples that exhaustively connect different areas of my basic Venn diagram of rapping from Chapter IV.

Generally, I believe all of the diagrams can be subjected to further expansion and refinement, and of course there are many more ways they can be used to conceptualize and visualize interesting musical relationships in rap. This will be particularly true as

more theoretical scholarship on rap emerges. For the most part, I have used the diagrams to create static visualizations showing which elements are interacting during brief, specific musical devices. One logical way to expand their use would be to further incorporate time and create a more comprehensive way to visualize changes in the use of different parameters over the course of a verse, song, or even stylistic period.

Apart from the diagrams in Chapter IV, there are a number of other logical directions in which to continue and expand this research. Many of my examples involve interactions between musical and semantic content. It now seems obvious that the literature desperately needs an article that describes and categorizes the types of text depiction in rap music. This could include the kinds of musical reactions described by Krims, in which samples are added to the beat to respond to the MC, and the type described in this paper, where rappers alter some parameter of their performance to represent their lyrics. There are a number of other related devices that could be explored involving the addition of studio effects to the MC's voice; the Eminem song "Fine Line" contains some interesting examples, such as the addition of heavy reverb to the line "sealed off in my lair,"¹¹⁷ which creates a parallel between the simulated sonic environment and the fictional location described in the narrative. Although at the beginning of this project I didn't believe there to be much connection between lyrical content and the musical aspects of rap, I now suspect there are actually a far greater number of ways these elements can interact than in classical music, in part due to the collaborative way rap is created.

¹¹⁷ Eminem, *Shady XV*, 2014 by Interscope Records, 002228102.

Taking a more musicological approach to this type of research could also help expand and solidify it. Purely theoretical discussion runs the risk of focusing on unusual examples that may not be truly representative of normal rap practices. Although I strongly believe that the specific musical devices covered in Chapter V are perceptually valid whether or not they were consciously and deliberately executed, incorporating ideas from actual rappers could probably help steer further discussion towards some aspects of rap music that may be easily overlooked by trained theorists.

In this vein, one interesting aspect of rap music is that MCs often describe their musical values within their lyrics. This is perhaps particularly true in songs that involve bragging or boasting, common themes in many rap subgenres. For instance, Eminem, discussing his relationship to the other rappers featured on Drake's song "Forever," raps that "he could make them look like bozos, he's wondering if he should spit this slow." In this case, Eminem clearly implies that he values speed in rapping, and thus it would be logical to begin a musical analysis by examining the rate of lyrical delivery. An interesting project, combining theoretical and musicological approaches, would be to specifically analyze songs in which rappers boast they are better than their peers, and to see what kinds of musical arguments they deploy in order to support their claims.

In conclusion, there are a number of promising directions for theoretical research on rap music. Although the analysis of popular music is now widely accepted by theorists, rap still offers a large amount of unexplored territory. Traditionally, music theorists have been some of the most active maintainers of the classical canon, arguing for the inclusion of pieces and composers that uphold cherished principles and techniques

such as organic unity, classical form, and strict counterpoint. Today, the future of this role is as uncertain as ever, with funding for the arts and appreciation for classical music both precipitously low. Analyzing rap and other popular genres is fundamentally different, because these types of music are commercially viable and do not require our justification or support. However, we can perhaps ensure the survival of our discipline by expanding our focus and bringing our intense attention to musical detail, and the enriched listening experience it provides, to fans of other musical styles.

APPENDIX
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