ヒップホップ音楽における叙情的なテクニックに関する一考察[*]

フレイク・リー[**]

A Study on the Evolution of Lyrical Techniques and Rhyme in Hip Hop Music

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1. Introduction:

Very much isolated from the urban culture and the hip hop movement in the U.S., the author was born and raised in the rural mid-west and reservation communities of the United States. When hip hop and rap culture made its way through the author's community in the mid-1980s, it was received with mixed attitudes of acceptance. The well-established "white culture" openly censored hip hop and rap music in an effort to purge it from the community. This censorship only served to amplify this author's interest as he found himself fascinated by the lyrical content and delivery of this new style of music. Hip hop culture was immediately labeled and associated with "city gang violence" or "black" culture by many rural "white" communities. Moreover a negative stereotype of hip hop music being uneducated, vulgar gibberish made it socially unacceptable for one to listen to, let alone "enjoy". Association with or acceptance of hip hop would also label the individual as uneducated and vulgar. As the author found out later in life, this attitude toward hip hop music also permeated academic communities at the university level. However, this cultural divide has dissolved over the years as hip hop has become mainstream and is culturally accepted and endorsed by communities and cultures both in the United States and abroad. Indeed hip hop is recognized as a world-wide phenomenon. Diversity of styles and the multi-ethnicity of hip hop artists has served to overcome cultural barriers. Hip hop culture is well-established as a musical genre that has been raised from social obscurity through the media and by fans of the genre.

Hip hop is divided into different "schools" that are generational and representative of specific styles. Early hip hop artists from the 1980s are labeled as "old school" with "middle school" and "new school" representing changes in the overall sound of hip hop in the 1990s and 2000s. Hip hop is further divided according to musical influences of funk, jazz, salsa, reggae, heavy metal, etc. Gangster rap, while very influential and domineering, it is often the hip hop style that many associate and generalize rap or hip hop music to be; however, gangster rap is merely one style of the genre. Lyrical flow, rhyme styles and delivery have evolved throughout the history of hip hop. For this paper, the author would like to focus on the evolution of rhyme and rhyming techniques.

2. Thoughts on Music—Beats and Rhythm:

Most popular music or *pop* music is designed to be listened *at* not listened *to*. Does the music take precedence over the lyrics or vici versa? Most pop music is designed to be recycled and the lyrics are intentionally played down in importance. It is the repetition of the song that makes it "likeable" as it is human nature to gravitate to what is familiar. Simplicity rules regardless of the genre. Music evolves and complexity fluctuates, but there are moments of retro movement for a "new" sound. The rhythm of music can be explained anthropologically as rhythm comes from

nature. Even before we are born we are aware of our mother's pulse while in the womb. Perhaps noticeable when one considers that the beat of a song is also known as the *pulse* of a song. In popular use, *beat* can refer to a variety of related concepts, including pulse, tempo, meter, rhythm, and groove.

As beats are combined to form measures, each beat is divided into parts. The nature of this combination and division is what determines meter. Music where two beats are combined is in duple meter, music where three beats are combined is in triple meter. Music where the beat is split in two are in simple meter, music where the beat is split in three are called compound meter. Thus, simple duple (2/4, 4/4, 2/2, etc.), simple triple (3/4), compound duple (6/8), and compound triple (9/8). Divisions which require numbers, tuplets such as example, dividing a quarter note into five equal parts, are irregular divisions and subdivisions. Subdivision begins two levels below the beat level and start with a quarter note or a dotted quarter note, subdivision begins when the note is divided into sixteenth notes.

Beats can also be further defined as downbeat, backbeat, cross-beat, hyperbeat. The *downbeat* is the first beat of the bar while the *upbeat* is the last beat in the previous bar which immediately precedes and hence anticipates the downbeat. Both terms correspond to the direction taken by the hand of a conductor when leading a musical score. A backbeat, is a syncopated accentuation on an "off" beat. In a simple 4/4 rhythm these are beats 2 and 4. The backbeat is prevalent in the *honky tonk* and *hillbilly* style of country music as well as rhythm & blues music (Tamlyn, 1998). Groups such as the Beatles employ a double backbeat pattern in which one of the off beats is played as two eighth notes rather than one quarter note. This has become the trademark sound for many of the Beatles songs such as "Please, Please Help Me" and "I Want to Hold Your Hand" (Cateforis, 2011).

Through the author's undergraduate studies on social anthropology, he was introduced to the anthropological history of music. This correlation between music rhythm and geography and culture were fascinating to the author. Lectures attended introduced how music rhythm can be influences by *island*, *peninsula*, or *continent* human culture. For example, island countries like Japan evolve to take rhythm from human steps. For this reason the traditional music of Japan is 2/2 time, or a duple meter with two beats per measure. Continental nations where larger animals such as horses are present provide the rhythm for traditional continental music. Horses have four legs, but when they run, a three-step pattern can be heard giving the rhythm of 3/3 time of three beats per measure to traditional music in countries such as the Korean peninsula. *Arirang* and other traditional Korean folk songs are all of the 3/3 time. In the West, the wheel used by wagons divided in half in both north to south and east to west directions is considered to have inspired the 4/4 rhythm or a quadruple meter of four beats per measure that has inspired much of Western classical and folk music.

The downbeat or what denotes to beginning of a musical frame is culturally determined. In most western music, each measure contains a fixed number of beats, and the downbeat gets the strongest accent. In music, the downbeat, or the foremost beat of the bar, is usually the strongest accent in the melody and the probable place for a chord variation, the third is the next strongest: these are "on" beats. The second and fourth are weaker which is called the "off-beats". Subdivisions for instance eighth notes that fall in the middle of the pulse beats are even weaker and these, if used regularly in a rhythm, can also make it "off-beat" (Shinmin, 2017).

In most Western music, the frame of music is consider to count from the number "1" and follow numerically as in "1, 2, 3, 4, 1, 2, 3, 4, …") However, in African music the downbeat comes at the end of the phrase as in "4, 3, 2, and 1". This play on the beginning of the frame

in African and Western music is what is considered the emergence of the reggae beat in Jamaican culture. The downbeat is repeated in a reflective or responsive sound that is characteristic of reggae music. In reggae music, the term *one drop* reflects the complete de-emphasis of the first beat in the cycle. The de-emphasis is exaggerated to the point of silence making the familiar 2/2 reggae beat.

In Japan the kanji 丸 for circle or ○ is based on the concept that the number ten completes a phrase. The kanji itself is the number nine or 九 with a line drawn through it creating the 丸 kanji representing the completion of 3 lines of 3 sets of numbers as in "1,2,3", "4,5,6", "7,8,9" and "10" as the single number that completes the phrase. This is a culturally imbedded and recognized rhythm for "banzai" clapping and certain cultural celebrations as in the pattern of "XXX, XXX, XXX, X" with the tenth clap completing the phrase.

Instrumental focus in rock music served to increase the evolution of the music. Music came from the churches. Gregorian chants have led to hymns and gospel which in turn provided the platform to rhythm and blues and rock music. Rock has since evolved into heavy metal, punk, industrial, grunge. Gospel to rhythm and blues has evolved to soul, blues, jazz, ska, reggae and hip-hop. Dance music has become a variety of genres including trance, house, jungle, club, electronica. Reggae, hip-hop and rap have since become trip hop, dub and dubstep. Folk music and traditional ballads make their way into bluegrass, country, and modern folk. Folk music coincides with many nursery rhymes and traditional tales.

Among repetition, something that goes against the grain becomes noticed. Punk music, alternative rock and grunge are experimental and push the boundary in our day, Beethoven was punk rock in his day as classical music followed certain "rules" for its sounds. The four note motif of Beethoven's 5th Symphony was unheard of until he pushed the classic music world into new directions. Beethoven found beauty and perfection in silence. The pause of silence was the space for the audience to "feel" the impact of his music. This "pause" in music is still extremely important as trance and dub use pauses in music rhythm as part of its "sound". Likewise, an unfinished rhyme has greater impact than a complete and predictable rhyme phrase. The feeling of something being incomplete is mentally captivating. Red Hot Chili Peppers lyrics of "I trip over you/with the birds I share (this lonely view)" uses the incomplete phrase to subliminally grasp at one's attention. Hip hop artists such as TechN9ne and MF Doom likewise uses the incomplete phrases both for attention and to play with the listener to deliberately change rhyming words from what would be the obvious word choice. This can be seen in the MF Doom lyric, "And I wish they fixed the door to the matrix, there's mad glitches, spit so many verses sometimes my jaw twitches, one thing this party could use is more… booze". Following the rhyming words of "glitches" and "twitches" the obvious rhyming word that the listener would expect to follow is "bitches", but this was deliberately changed to "booze" setting up this word and accenting and drawing in attention by changing the rhyming word. The very next phrase is, "Put yourself in your own shoes". Lawyers use this tactic of attention grabbing to manipulate juries. "Did the man stepping on your foot make you mad, Mr. Smith? Mad enough to… *kill*?!, Mr. Smith?" A judge would hammer his mallet and proclaim "contempt of court" only to have the lawyer tell the judge and jury to "extract the statement". However, it is impossible to "unhear" something and to be told to "forget it" or have the statement "retracted" makes one remember it all the more. Moreover, to have the reputation of the person on trial already defamed makes an impression whether conscious of it or not those that heard the statement are subconsciously influenced by it.

Debate and negative attention will still serve as publicity. Kanye West and his rip on Taylor Swift during the 2009 VMAs gave him a bad reputation, but he is all the more famous for it.

The audacity of Kanye's rant "I'mma let you finish, but Beyoncé had one of the best videos of all time! One of the best videos of all time!" immortalized the musician as even negative publicity is publicity all the same. Likewise, negative publicity through FBI and police petitioning against the group is what pushed the hip hop group Niggaz With Attitudes (NWA)'s album Straight Outta Compton making the group one of the most influential hip hop groups for reinventing reality rap and pioneering gangster rap. Most people who were not fans of Kanye or NWA were influenced by the newfound notoriety by the media—no matter how controversial, controversy sells. Machiavelli wrote about this at length in his novel "The Prince" as those who are charismatic or known through their bad deeds are known and gain strength and make good leaders compared to those who are honest and unknown and perceived as being weak and viewed as not being capable of leadership. Shakespeare penned that "a coward dies a thousand times before their own death". One might be despised for being a bully, but is seen and known and therefore popularized. Charismatic people are popular and in an election, it is the charismatic candidate that often becomes chosen—both Hitler and Trump gained popularity through their campaigning and were ultimately elected by the people for their charisma.

In the art world, controversy is what put abstract and modern art in museums. The initial shock value of an art work is what captures the attention of the viewer. An incomplete portrait or a portrait deliberately damaged or torn has shock value. The standard for what is shocking is always being tested. Eventually a single black dot on a white canvas or a single white dot on a black canvas has been deemed as "art". An unpainted canvas with a single cut in it made by the artist has become an art style for abstract artist that the author will deliberately not mention here in order to not perpetuate his popularity. The style is hardly seen as art through most eyes, but it is impressionable and it is difficult to "unsee" something so absurd. The public seems willing to spend money on this absurdity as when in May of 2012, a London art gallery unveiled an *invisible* art exhibition (Barnes, 2012). This trend continued when a white canvas painted white by Robert Ryman fetched $15 million at an auction in 2014 (Bershidsky, 2014). Making something audacious, capricious, memorable, shocking, and have impact is a known strategy for selling.

3. The Evolution of Hip Hop:

To understand the evolution of rhyme in rap music, one must have an understanding of the history of hip hop. In the early 1900s, within African American culture, a lyrical word play called "signifying" was a skill that was admired for its entertainment value within culture. Signifying was also called "playing the dozens" or "toasts", were narratives recited in rhyme telling the date of defiant heroes. They were linguistically intricate, humorous, spirited and occasionally profane. The lyrical delivery of signifying was a skill that required excellent memory, a mastery of pace and timing, and the ability to inflect and gesture. One must also have the ability to summon the identities of different characters simply through the nuances of their voices. Some of the more infamous signifying poems include "The Signifying Monkey" and "Shine and the Titanic". The author was first introduced to signifying through watching Dolemite. "The Signifying Monkey" has numerous renditions and versions of the poem raising it to the realm of legendary. Each rendition gives different flavor to the poem. The more well-known renditions include those by Willie Dixon, Rudy Ray Moore, and Oscar Brown, Jr. The roots of hip hop are found in signifying. Rhyme scheme, delivery, vocal inflections are all part of the art of signifying.

The 1970 Rudy Ray Moore version of "The Signifying Monkey" begins with the following

verses:

　"Way down in the jungle deep/The badass lion stepped on the signifying monkey's feet/The monkey said, "Muthafucka, can't you see?/Why, you standing on my goddamned feet."/The lion said, "I ain't heard a word you said."/Said, "If you say three more I'll be steppin'/On your muthafuckin' head!"/Now the monkey lived in the jungle in an old oak tree/Bullshitting the lion every day of the week/Well every day before the sun go down/The lion would kick his ass all through the jungle town/But the monkey got wise and started using his wit/Said, "I'm going to put a stop to this old ass kicking shit!"/So he ran up on the lion the very next day/Said, "Oh Mr. Lion there's a big, bad muthafucka coming your way"

　[Source: Rudy Ray Moore, Signifying Monkey © Comedian Inc. Enterprise, 1970]

The context and braggadocio style and profanity found in signifying also represents modern hip hop in many ways. The lyrical influence can be readily heard in gangster rap. Hip hop artists—especially those of the old school, readily acknowledge signifying and its correlation and influence on hip hop. In 1988, Pennsylvanian hip hop artist Schoolly D recorded the song "Signifying Rapper" as a tribute to signifying.

Adam Bradley and Andrew Dubois in their Yale University Press published work on the Anthology of Rap describes the different schools of hip hop as follows:

Table 1. Description of the schools of hip hop

Title of school	Date
The Old School	1978–1984
The Golden Age	1985–1992
Rap Goes Mainstream	1993–1999
New Millennium	2000–2010

[Source: Bradley, A. & Dubois, A., *Anthology of Rap*, Yale University Press, 2010]

This description is currently the most accepted, but is not inclusive to hip hop after 2010. Hip hop in the 1990s was labeled as being of only three schools: *old school, middle school*, and *new school*. However, as the genre of hip hop continues to grow older and the definition or division between the schools of hip hop has evolved as the "new school" soon becomes the "middle school". As all genres of music evolve, elements of "new" and experimental factors to be appealing is constantly being introduced. Dance music is often less complex in its lyrical content as the lyrics are secondary to the overall sound of the music. Lyrical music and poetry have evolved to become rap music as the emphasis is predominantly on the lyrics. Nevertheless, there are instances of cleverness in lyrical world play in the lyrics of popular music of the past as in the 1950s (reference) the song, *"mares eat oats, does it outs, but little lambs eat ivy, kids eat ivy, too, shouldn't you."* and the non-lyrics of jazz were popularized in the 1950s and 1960s until the doo-wop sound and *"oh-ee-oh-ahh-ah-ting-tang-walla-walla-bing-bang"* gained popularity for its fresh non-lyrical approach.

Most every hip hop enthusiast is familiar with the hook *"I said a hip hop, the hippie the hippie, to the hip, hip hop you don't stop, rock it to the bang bang boogie, say up jump the boogie to the rhythm of the boogie, the beat"*. This was the hook to the 1979 hit "Rapper's Delight" by the Sugarhill Gang. This hook is considered to be the most influential in hip hop as it is readily recognized by most everyone familiar with the hip-hop genre and is ingrained in hip hop culture. According to genious.com commentator Jeff Chang (2020), this is the first time the syllables "hip hop" appear on a record marking an appropriate start for the first successful hip hop song. This hook was far from just being a random ad-lib, the term has roots that stretch

back to at least the 1950s, when teen dance parties were called "hip hops" or "hippity hobs," particularly by disapproving parents. The name stuck and the South Bronx parties where modern DJing and rapping were invented were called "hip hops". The "godfather of hip hop" Afrika Bambataa further coined name of the genre of rap music from the DJs chants of the time. In Dan Charnas' 2011 publication The Big Payback: The History of the Business of Hip-Hop, he writes "The hip-hop rhyme was Cowboy's. It had started as a joke, Cowboy making fun of the sound a drill sergeant makes while marching his troops—*"Heeeyip-hoppp-heeeyip-hoppp"*. Cowboy being one of the band members of pioneering rap group Grandmaster Flash and the Furious Five promoted the legacy of this hip hop phrase.

This hip hop phrase popularized in Rapper's Delight could also be interpreted as the first *holo-rhyme* using multi-syllable rhyming phrases. This holo-rhyme rhyming style is emulated in modern hip hop in lyrics such as those of MF Doom *"Sickest ninja injury this century, enter plea, lend sympathy to limper Simple Simon rhyming emcees"*. In MF Doom's hip hop song "Meat Grinder" he flexes his holo-rhyming skills with the lyrics *"The worst-hated God who perpetrated odd favors, demonstrated in the perforated Rod Lavers, in all quad flavors, Lord save us"*. Eminem, who has also mastered holo-rhyme and internal rhyme in his lyrics has become the most recognized hip hop artist as of this date.

4. Rhyme Scheme and Lyrical Content of Hip Hop:

When one considers hip hop music and songwriting techniques in general, it is important to have an understanding of the concept of rhyme. The most common example of a rhyme is called a "perfect rhyme" where two words correlate by sound. A perfect rhyme comes in *masculine* forms such as p**ick**/tr**ick** and *feminine* forms, where the second to the last syllable will rhyme as in p**icky**/tr**icky**. Any rhyme that does not fit in as a perfect rhyme is a *family rhyme, general rhyme,* or a *near rhyme.*

Family rhyme becomes complex by further divisions including *assonance, consonance, symbolic, imperfect, semi-rhyme, half rhyme, holo-rhyme, internal rhyme, oblique,* and *eye rhyme.* Each of these categories within family rhyme represent a specific rhyming based on either phonetics, spelling, or meaning of the correlated rhyming words. Without a detailed explanation of each of these rhyming styles, I will explain *assonance, consonance,* and *eye rhyme* patterns. *Assonance* is also called "slant" and this category examples include long vowels sh**ake**/h**ate**. *Consonance* category is focused on the rhyming consonants as in **r**a**b**ies and **r**u**bb**ers. An *eye rhyme* is a relatively newly recognized rhyming pattern that is focused more on spelling than sound or pronunciation. An example of an *eye rhyme* would be the words l**ove** and m**ove**. Moreover, *identity* rhyme and *additive* rhyme are also recognized as rhyming patters within family rhyme. Identity rhyme includes **you can**/**we can**. Additive rhyme example would be **can/soda can**.

Rhyme *scheme* refers to the rhythm of the rhyme. For example, the nursery rhyme, *"Miss Mary Mack/all dressed in black/had silver buttons/all down her back"* would represent an "a/a/b/a" pattern, since the third phrase end would not be a rhyming words "Mack, black, back". Pop music provides further examples of basic rhyme scheme. The Backstreet Boys, *"You are my fire/ my one desire/believe what I say/I want it that way"* would be an example of an "a/a/b/b" pattern. This pattern is also known as "rhyme couplets" and is an extremely common pattern used in popular music. Rhyme couplets can be broken apart as a "through written" pattern as in the Spice Girls rhyme, *"You just walk in, I make you smile/It's cool but you don't even know me/You take an inch, I run a mile/Can't win, you're always behind me"* is an "a/b/a/b" pattern. Emphasis can be added through rhyme style as in the lyrics by the Police, *"Every breath you take/every move you make/Every bond you break/every step you take/I'll be watching you"* is an "a/a/a/a/b" pattern. The deliberate non-rhyme ending stands out and is what makes the listener seek for reason. This

kind of deliberate or abstract rhyme is used by many bands, including the Red Hot Chili Peppers. Hip hop artists like Tech N9ne and MF Doom take this further by switching set-up rhyming words to deviate and manipulate expected content. One's talent as an emcee goes beyond the rhyme but also focuses on the story being told. Vivid story-telling and imagery are an important element in the art of rhyming in hip hop music.

Early hip hop and rap music was focused on the end rhyme or "a/a" pattern. This was a standard and perhaps the stereotypical pattern for rap delivery throughout the 1980s. Rap began as an "a/a" pattern. Run-DMC's rap is an example of this trend in early rap, "I'm the devastating mic controller DMC/and can't nobody mess around with me" or Run-DMCs famous rhyme *"My name is DMC, the all-time great/I bust the most rhymes in New York State."* Although rap evolved through its content and lyrical delivery introducing new styles such as the nasal, echo, repeats, deliberate stops, speed alteration, and switching speakers on the rhyming words, the ending rhyme or "a/a" pattern was a universal for early rap. Some rap groups have come up with challenging "a/a" rhymes by extending the pattern as long as possible. Many rap artists have gained notoriety for their ability to extend lyrics. As an example, UTFO's Educated Rapper became legendary in his day for his "very berry" rhymes on the song "Roxanne, Roxanne". The lyrics state, *"She thought my name was Barry, I told her it was Gary/She said she didn't like it so she chose to call me Barry/She said she'd love to marry, my baby she would carry/And if she had a baby, she'd name the baby Harry/Her mother's name is Mary, which is really quite contrary/Her face is really hairy, and you can say it's scary/She lives in Mt. Airy, her father's a fairy/His wife's a secretary, his son's in military/They forced him to enlist, I guess it wasn't voluntary/His daughter's name is Sherry, his sons are Tom and Jerry/Jerry had the flu but it was only temporary/Back in January or was it February?/But every time I say this rhyme it makes me kinda weary/It's only customary to give this commentary/Some say it's bad, some say it's legendary/*

You search it all you want, try your local library/You'll never find a rhyme like this in any dictionary" This rhyming sound challenge is extended to other languages as international rappers such as Japan's Rapper Q of the hip hop group *Rappagariya* ラッパ我リヤ in their song "Concrete Jungle Tokyo" (コンクリートジャングル東京) are known for their "en" rhymes in the lyrics, *"大変過激な意見や体験とサイレンがかき消す東京最前線／今日も込み合う道路と電話回線／財源ガタガタで慌しく開く会見／泣いてんじゃねぇ／外見は立派だが内面は改善の余地あり".*

Korean rapper Cho Joong-Hoon 조중훈, better known by his stage name 조PD is similarly popular for his "so" rhymes. These are examples this author is most familiar with; however, nearly all rappers have some play on words, sounds, or style of delivery that becomes their trademark.

The "a/a" pattern became a set standard for rap music. Hip hop followed this pattern throughout the 1980s and became the stereotypical pattern for rap music. Before rhyming techniques became more complex, the lyrics and delivery in rap music evolved into various styles. In the 1990s, many hip hop artists competed over their delivery and speech techniques. Originality and diversity made the genre unique and attracted fans from all walks of life. The spiritual rhymes of Speech from Arrested Development, the black power rhymes of Brother J from the X Clan, abstract rhymes of Dream Warriors, the politically conscious rhymes of Public Enemy and the ever-growing genre of gangsta rap within hip hop made the music lively and diverse.

Hip hop artists such as New York slang-speaking group 3rd Bass and jazz-slang oriented group Digable Planets' originality can be seen in their lyrics. 3rd Bass song "Steppin' to the AM" boast the lyrics *"Projectin the voice with this mic that I'm cuffin/You ain't my nucka, sucker I'm snuffin/The word of the 3rd stands true, so no panickin/Man verse man, you freeze up like a mannequin/Petrol, you let go, the wax for the new jacks/To dwell upon you're steppin on the trigger as the tune smacks/(Square in the butt) Pete gave me the cue/*

So I'mma put up or shut up until my jam is through/ But for now I wanna freak em, so I'll embark/To spark your mission posse, til way past dark". As a random sample of their lyrics, this does not do justice to their clever rhyme skills that is heavily laced with New York attitude and slang. Digable Planets jazz influence can be immediately recognized in their overall sound and music sampling as well as seen in the lyrics of "Cool Like Dat". Their lyrics state, *"We like the breeze flow straight out of our lids/Them they got moved by these hard-rock Brooklyn kids/Us floor rush when the DJ's booming classics/You, dig the crew on the fattest hip-hop records/He touch the kinks and sinks into the sounds/She frequents the fattest joints caught underground/Our funk zooms like you hit the Mary Jane/They flock to booms man boogie had to change/ Who freaks the clips with mad amount percussion/ Where kinky hair goes to unthought-of dimensions/ Why's it so fly cause hip-hop kept some drama/When Butterfly rocked his light blue-suede Pumas/What by the cut we push it off the corner/How was the buzz entire hip hop era/Was fresh and fat since they started saying audi/Cause funks made fat from right beneath my hoodie/The poobah of the styles like Miles and shit/ Like sixties funky worms with waves and perms/Just sendin' chunky rhythms right down ya block/We be to rap what key be to lock"*. Digable Planets sound and rhyme technique is unique to their group and remain a timeless example of a jazz-style hip hop group.

5. Introduction to Lyrical Complexity Calculation Formulas:

The author used the online source "Text Readability Consensus Calculator" available at the following URL: https://readabilityformulas.com/freetests/six-readability-formulas.php to calculate the average grade level, reading age, and text difficulty of selected old school hip hop lyrics to demonstrate the complexity of "intelligent rhyming". The lyrical complexity is tested through seven different readability formulas including the Flesch Reading Ease Score, Gunning Fog, Flesch-Kincaid Grade Level, Coleman-Liau Index, SMOG Index, Automated Readability Index, Linsear Write Formula as well as an Overall Consensus score based on the cumulative assessment score results of the seven readability formulas. The author will explain the detail of the each readability formula as follows.

5.1 Flesch Reading Ease

The Flesch Reading Ease score is the scoring system the United States Department of Defense uses as the standard test of readability for its documents and forms. In the United States, the State of Florida requires that life insurance policies have a Flesch Reading Ease score of 45 or greater.

If one were to draw a conclusion form the Flesch Reading Ease Formula, then the best text should contain shorter sentences and words. The score between 60 and 70 is largely considered acceptable. The following table is also helpful to assess the ease of readability in a document:

Table 2: Flesch Reading Ease Formula

Score	Readability
90-100	Very Easy
80-89	Easy
70-79	Fairly Easy
60-69	Standard
50-59	Fairly Difficult
30-49	Difficult
0-29	Very Confusing
(negative score)	Impossible to Comprehend

[Source: https://readabilityformulas.com/freetests/six-readability-formulas.php]

The specific mathematical formula for the Flesch Reading Ease Formula is RE=206.835 − (1.015xASL) − (84.6xASW). RE refers to the *Readability Ease*. ASL is the *Average Sentence Length*, which are the number of words divided by the number of sentences. ASW is the *Average number of Syllables per Word*, which is the number of syllables divided by the number of words.

5.2 Gunning Fog

The Gunning Fog index measures the readability of English writing. The index estimates the years of formal education needed to understand the text on a first reading. A fog index of 12 requires the reading level of a United States high school senior or an individual around 18 years of age.

The ideal score for readability with the Gunning Fog index is 7 or 8. Anything above 12 is too difficult for most people to read. For instance, The Bible, Shakespeare and Mark Twain have Fog indexes of around 6. The leading magazines, like Time, Newsweek, and the Wall Street Journal average around 11.

The Funning Fog Formula is the Grade Level=0.4 (ASL+PHW). ASL is the *Average Sentence Length*, which are the number of words divided by the number of sentences. PHW is the *Percentage of Hard Words*. Hard words denote words that are of three or more syllables and do not include proper nouns, familiar jargon, nor compound words. These words also do not include common suffixes such as -es, -ed, or -ing as a syllable.

5.3 Flesch-Kincaid Grade Level

The United States Army uses the Flesch-Kincaid Grade Level for assessing the difficulty of technical manuals. The commonwealth of Pennsylvania in the United States also uses the Flesch-Kincaid Grade Level for scoring automobile insurance policies to ensure their texts are no higher than a ninth grade level of reading difficulty. Many other States in the U.S. also use the Flesch-Kincaid Grade Level to score other legal documents such as business policies and financial forms.

The result is a number that corresponds with a grade level. For example, a score of 8.2 would indicate that the average United States student in 8th grade can read and understand the text. A score of 12.5 would indicate a student in the 12th grade or first year of college can read and understand the text.

The Flesch-Kincaid Grade Level Readability Formula is calculated in a process of 4 steps. Step one is to calculate the average number of words used per sentence. Step two is to calculate the average number of syllables per word. Step three requires one to multiply the average number of words by 0.39 and add it to the average number of syllables per work multiplied by 11.8. For step four, one must subtract 15.59 from the result.

The specific mathematical formula is FKRA=(0.39xASL) + (11.8xASW) − 15.59. FKRA refers to the *Flesch-Kincaid Reading Age*. ASL is the *Average Sentence Length,* where the number of words are divided by the number of sentences. ASW is the *Average number of Syllables per Word,* where the number of syllables is divided by the number of words.

5.4 The Coleman-Liau Index

The Coleman-Liau Formula usually gives a lower grade value than any of the Kincaid, ARI and Lesch values when applied to technical documents. The output approximates the United States grade level that readers need to comprehend the text. For example, if the output score is 10.6, then the text is appropriate for a 10th or 11th grade student.

While some readability tests use the number of syllables, the Coleman-Liau Index uses the number of characters in words. The formula for the Coleman-Liau Index is 5.89xACW − 0.3 x sentences / (100 x words) − 15.8 where ACW is the *Average Characters per Word* or the number of characters divided by the number of words.

5.5 The SMOG Index

The SMOG Index is widely used for checking consumer-oriented healthcare material. The SMOG Formula is also considered appropriate

for secondary age, 4th grade to college level readers. The output approximates the United States grade level that readers need to comprehend the text. For example, if the output score is 7.4, then the text is appropriate for a 7th grade student.

The SMOG Index is a readability formula that estimates the years of education needed to understand a piece of writing. The calculation of SMOG follows three steps. The first step is to count the number of sentences—at least 30 sentences are required. The second step is to count the polysyllables or words of three or more syllables found in those sentences. The third step is to calculate using the formula of 3 + the Square Root of Polysyllable Count.

5.6 Automated Readability Index

Unlike the other indices, the Automated Readability Index (ARI) along with the Coleman-Liau Index, relies on a factor of characters per word, instead of the usual syllables per word. ARI is widely used on all types of texts. The Automated Readability Index produces an approximate representation of the United States grade level needed to comprehend the text. As a rough guide, the U.S. grade level 1 corresponds to ages 6 to 8. Reading level grade 8 corresponds to the typical reading level of a 14 year-old U.S. child. Grade 12, the highest U.S. secondary school grade before college, corresponds to the reading level of a 17 year-old.

The Automated Readability Index is a readability test designed to gauge the understandability of a text. The formula for calculating the Automated Readability Index is $ARI = (AVL*4.71) + (AVW*.5) - 21.43$ where AVL is the *Average Number of Letters per Word* and AVW is the *Average Number of Words in sentences.*

5.7 Linsear Write Formula

Linsear Write is a readability metric for English text, purportedly developed for the United States Air Force to help them calculate the readability of their technical manuals. Linsear Write Formula produces an approximate representation of the United States grade level needed to comprehend the text. As a rough guide, U.S. grade level 1 corresponds to ages 6 to 8. Reading level grade 8 corresponds to the typical reading level of a 14 year-old U.S. child. Grade 12, the highest U.S. secondary school grade before college, corresponds to the reading level of a 17 year-old.

The Linsear Write Formula follows nine steps. The first step is to find a 100-word writing sample. The second step is to calculate the easy words which are defined as two syllables or less. The third step is to calculate the difficult words or words that are defined as three syllables or more. The fourth step is to multiply the number of easy words times "1" followed by the fifth step of multiplying the number of difficult words times "3". The sixth step is to add the two previous numbers together. The seventh step is to divide the total by the number of sentences. If the answer is greater than 20 then divide by "2" and this eighth step is the final step; however if the answer is less than or equal to 20, for the ninth step, one must subtract "2" and then divide by "2" for the final score.

6. Lyrical Complexity of Old School Hip Hop Lyrics:

In the early evolution of hip hop lyrical techniques "intelligent rhyming" was a well-established movement. This movement is most commonly attributed to the influences of recording artist T La Rock who is considered by many including this author as the pioneer of the movement. T La Rock as a master lyricist and the leader of the "intelligent rhyming" technique was not as renowned for this rhyming technique in his time. It was the recording artists who emulated his style that became famous rather than the author of its technique. Artists such as LL Cool J, Just-Ice, Kool Moe Dee, and MC Tee of Mantronix gained fame through T La Rock's example of complex and intelligent lyrics. The jazz rhymes, abstract rhymes, politically charged rhymes, gangster

rhymes were all on some level influenced by the roots that were planted by the early emphasis lyrical rhymes.

The author would like to expand on "intelligent rhymes" through the use of examples beginning with the author of this rhyming style T La Rock:

"My voice permanently is now disclosed/My disciple collaborated since the day I arose/I'm audible in speech, not hard to discern/I edit mistakes to relieve your concern/Discharge your negativity and listen good/Have you ever heard rhymes so clear and understood/No is the answer you must reply/I invested loyalty so it will never decline/And for you diabolical malevolent ducks/Who continue to imitate and won't give it up/It should be understood that if I could/Give you a whole lifetime you'll never write this good!"—T La Rock

[Source: T La Rock, Lyrical King (From the Boogie Down Bronx © Fresh Records, 1987]

Table 3: Lyrical Complexity of T La Rock, Lyrical King

Readability Formula	Grade Level	Reading Level/ Reader's Age
Flesch Reading Ease Score	-23.7	Impossible to comprehend
Gunning Fog	41.3	Extremely difficult to read
Flesch-Kincaid Grade Level	36.7	College graduate and above
Coleman-Liau Index	13	College
SMOG Index	24.3	Graduate college
Automated Readability Index	43.6	College graduate
Linsear Write Formula	48.5	College graduate and above
7 Formula/Overall Consensus	35	College graduate

[Source: https://readabilityformulas.com/freetests/six-readability-formulas.php]

T La Rock was in many respects the first to promote intelligent lyrics and has been referenced by hip hop artists that have emerged since his album "Lyrical King" became an underground classic. In 2012, Kevin Beacham wrote extensively on T La Rock's lyrical influence on rap music for the Fifth Element in an article titled "Microphone Mathematics". According to Beacham, "T La Rock as a pioneer for lyricism in hip hop… was philosophical and endeavored to elevate different forms of thought through his music." The originality of the lyrical style of T La Rock served as an influence for the directions that hip hop would take in the decades to follow.

T La Rock seemed aware of the influence he would have through the confidence he had in his writing as the back cover of his 12" albums had the lyrics printed out—this was a practice that was certainly not common at the time. He would also relate his potential legacy in his lyrics on "Nitro" by stating, "I can verbally hypnotize, materially immobilize, rap I have advanced, hip hop I have epitomized." A similar remark for his self-described lyrical approach also hinted in the same "Nitro" song with the lyrics, "I'm on time with the rhyme because I'm the lyrical king, the evolutionary, vocabulary-user rapper" is nicely stylistic in the way the rhyme is delivered and the self-titled "vocabulary-user rapper" is the legacy that T La Rock made for himself.

Just Ice shared the production talent of T La Rock through Kurtis Mantronik and the proximity of the two artists also can be seen in the lyrics of their music. Although Just-Ice is more associated with the harder gangster-style image, his lyrics are on par with the template that T La Rock had established.

"It's a new conceptual, highly intellectual/For me only cos it is genetical/Cos now about to get loose, got gallons of juice/To pour, and more if you want to choose/Negotiable and sociable is done/But let's build and we'll all have fun so don't run/Cos if you leave you will be fooling yourself/You better go and seek some better help/It's time to stop being stubborn,

and so defiant/Just hear my words, acknowledge my science/…/Like a psychopathological syndrome/My beneficial words are gonna be known/Theoretical dilemma facts hard to pen/Just Ice Sir Vicious done *rocked it again" –Just-Ice*

[Source: Just-Ice, Cold Getting' Dumb © Fresh Records, 1987]

Table 4: Lyrical Complexity of Just-Ice, Cold Getting' Dumb

Readability Formula	Grade Level	Reading Level/ Reader's Age
Flesch Reading Ease Score	-220	Impossible to comprehend
Gunning Fog	118	Extremely difficult to read
Flesch-Kincaid Grade Level	112.8	College graduate and above
Coleman-Liau Index	12	Twelfth Grade
SMOG Index	40.4	Graduate college
Automated Readability Index	140.7	College graduate
Linsear Write Formula	188.5	College graduate and above
7 Formula/Overall Consensus	99	College graduate

[Source: https://readabilityformulas.com/freetests/six-readability-formulas.php]

Rick Rubin of the Def Jam label was speculated to have created a younger version of T La Rock through LL Cool J (Beacham, 2012). It is obvious to even the most casual listener that T La Rock was an influence on LL Cool J's lyrical style. The first LL Cool J album released titled "Radio" had the sound of T La Rock in both content and delivery.

"My volume expands to consume/And my structures emote a lyrical heirloom/Vocally pulsating, I initiate gyrating/Ya must respond to my bells, *there's no waiting/For the duration, there's no articulation/Receiving ovation for the bell association/The vocalization techniques I employ/ The voice of my shadow conducts a toy boy/The injection of bells into this beat/The result-enough energy to amputate your feet/Greater insulator microphone dominator/My name is Cool J, manipulator innovator" –LL Cool J*

[Source: LL Cool J, Rock the Bells © Def Jam Records, 1985]

Table 5: Lyrical Complexity of LL Cool J, Rock the Bells

Readability Formula	Grade Level	Reading Level/ Reader's Age
Flesch Reading Ease Score	-178.9	Impossible to comprehend
Gunning Fog	93.8	Extremely difficult to read
Flesch-Kincaid Grade Level	87.9	College graduate and above
Coleman-Liau Index	18	Graduate college
SMOG Index	47.5	Graduate college
Automated Readability Index	107.1	College graduate
Linsear Write Formula	169	College graduate and above
7 Formula/Overall Consensus	86	College graduate

[Source: https://readabilityformulas.com/freetests/six-readability-formulas.php]

Kurtis Mantronik also produced for the hip hop group Mantronix with rapper MC Tee. As a producer of T La Rock, the lyrical style with slightly less staccato delivery while keeping content based on the T La Rock template rhymed on the self-titled "Mantronix" album and "Music Madness" album in the 1980s. The latter is a personal favorite of this author as he finds this echo-style lyrical delivery mesmerizing.

"A little for the head/While the rest is to be fed/ Dred/For just a moment/And look at our component/ Who pull out what is fresh/For the fools who try to own it/Name it/Tame it/Claim it/Or try to blame it/ When they can't repeat/The feat/That's so unique/ Me, the originator/The vocal dominator/Persistent arbitrator/For the fools that know I'm greater/ Greater agitator/The first name is Tee/Me/As you can see/Mantronix is we…" –MC Tee

[Source: Mantronix, Music Madness © Sleeping Bag Records, 1986]

Table 6: Lyrical Complexity of Mantronix, Music Madness

Readability Formula	Grade Level	Reading Level/ Reader's Age
Flesch Reading Ease Score	-133.4	Impossible to comprehend
Gunning Fog	82.9	Extremely difficult to read
Flesch-Kincaid Grade Level	79.1	College graduate and above
Coleman-Liau Index	13	College
SMOG Index	32.9	Graduate college
Automated Readability Index	98.2	College graduate
Linsear Write Formula	128	College graduate and above
7 Formula/Overall Consensus	70	College graduate

[Source: https://readabilityformulas.com/freetests/six-readability-formulas.php]

As hip hop graduated the 1980s and moved on into the 1990s, the influence of T La Rock's template still existed through artists that kept the style alive. Kool Moe Dee, while also being an old-school artist, carried the torch in his lyrical delivery in his hip hop classic titled "I Go to Work".

"On the scene mean/I got the potential/To make you go/Then chill/I got the credentials/That is of which I chose/To make a rhyme/And chill/Then you know/I will fulfill/To make a couple of mill/As I build a guild/For all the rappers and skills/And kill the weak rappers and no thrills/Hang 'em an ephigy/ If he's a sucker/Hang 'em to the left of me/Cause my right hand man/Is my mic stand and/The microphone that I own/And my game plan/Is keeping at a steady pace/Ain't no need for a rush/It ain't no race" –Kool Moe Dee

[Source: Kool Moe Dee, I Go to Work © Jive Records, 1990]

Table 7: Lyrical Complexity of Kool Moe Dee, I Go to Work

Readability Formula	Grade Level	Reading Level/ Reader's Age
Flesch Reading Ease Score	-183.2	Impossible to comprehend
Gunning Fog	109.2	Extremely difficult to read
Flesch-Kincaid Grade Level	104.4	College graduate and above
Coleman-Liau Index	8	Eighth grade
SMOG Index	28	Graduate college
Automated Readability Index	131.2	College graduate
Linsear Write Formula	156	College graduate and above
7 Formula/Overall Consensus	85	College graduate

[Source: https://readabilityformulas.com/freetests/six-readability-formulas.php]

The greatest modern movement in rap and the "new skill" that determines the merit of the rapper is one's ability to *internal* rhyme or create rhymes within each rhyming phrase. Within a standard "a/a" pattern, one would try to fit as many rhyming words as possible. MC Tee in the above example is one of the recording artists to master internal rhymes. Such rhyming has become highly competitive and complex. Writing rhyming words before the end of the phrase is a challenge on one's creativity. Early rap artists have evolved to maintain fan following by using this technique. MC Tee from the group Mantronix as a lyrical example of internal rhyme pattern include, *"If you honestly/Feel the need to feed what's probably/Bad, a habit/You gotta have it—the coke, the dope, the smoke, that broke the pockets of those who tried then died/Living the lives that lied and preys on pride you can call me the guide to steer you in the right direction/… Protection."* LL Cool J internal rhyme skill example includes, *"Jack the Ripper, a man not a myth/A.k.a. James Todd Smith/Hard, like penitentiary steel/Breaking necks while I flex my sex appeal."*

Many hip hop artists attribute the rapper Rakim as the one single artist who pushed lyrical innovation to new heights. Almost 30 years from the time he released "Paid in Full" his lyrics are still being perused over and studied by current hip hop artists in an effort to emulate his skill. In Ice T's 2012 "Something from Nothing: The Art of Rap" documentary on the origins and history of rap music, Rakim's "Lyrics of Fury" was voted by rap musicians as being the single greatest template for writing rhymes. The first verse to "Lyrics of Fury" is as follows:

"I'm rated "R"...this is a warning, ya better void/Poets are paranoid, DJ's D-stroyed/Cuz I came back to attack others in spite-/Strike like lightnin', It's quite frightenin'!/But don't be afraid in the dark, in a park/Not a scream or a cry, or a bark, more like a spark;/Ya tremble like an alcoholic, muscles tighten up/What's that, lighten up! You see a sight but/Suddenly you feel like you're in a horror flick/You grab your heart then wish for tomorrow quick!/Music's the clue, when I come your warned/

Apocalypse Now, when I'm done, ya gone!/Haven't you ever heard of a MC-murderer?/This is the death penalty, and I'm servin' a/Death wish, so come on, step to this/Hysterical idea for a lyrical professionist!/Friday the thirteenth, walking down Elm Street/You come in my realm ya get beat!/This is off limits, so your visions are blurry/All ya see is the meters of the volume/Pumping Lyrics of Fury!"

[Source: Eric B. & Rakim, Lyrics of Fury © 4th & B'Way, Island Records, 1988]

Not only was Rakim's emphasis on internal rhymes pushing hip hop to another level, but unlike previous rappers such as LL Cool J and Run-D.M.C., who delivered their lyrics with high energy, Rakim had a lyrical delivery that was relaxed and stoic. His delivery was sometimes slower, but each line was blunt and mesmeric perhaps as a reflection of Rakim's jazz influences. This was also the start of the "smooth" movement in hip hop with the emersion of artists such as Smooth Ice, Wrecks-n-Effect, Kwame, and eventually groups like Jungle Brothers and a Tribe Called Quest.

7. Internal Rhyme Scheme of Eminem's Lyrics:

Although "old school" and "new school" is somewhat polarized between both hip hop artists and fans, many of the old school artists remain a major influence on new school lyricism. Those that assume that it does not take talent to write rap music are perhaps ignorant of the complexity of the rhyming used by hip hop artists today. One of the best examples of internal rhyming is the rap song "Loose Yourself" by Eminem. Internal rhyming of Rakim is emulated and expanded upon in Eminem's lyrics. One can see the complexity of this rap song by separating words according to vowel sounds into rhyming columns. The first lyrics of the song are "His palms sweaty, knees weak" introduces the first three vowel sounds and as the song continues, rhyming words match these while new "rhyming columns" are introduced:

Table 8. An Analogy of Eminem's "Loose Yourself" Lyric Rhyme Scheme pt. 1

Primary rhyming vowel sounds			Secondary rhyming vowel sounds			
palms	**sweaty**	**knees**	nervous	wrote	down	
arms	heavy	weak	surface	whole	crowd	
vomit	sweater			goes	loud	
mom's	already			so	nothin'	
calm	spaghetti			opens	out	
drop	ready			want		
bombs	forgetting			chockin'	now	
on				jokin'	now	
				clocks	out	
				over	blaw	

[Source: Eminem, Loose Yourself © Interscope Records, 2002]

After this introduction to his song, Eminem continues by alternating between vowel sounds based on the introductory rhyme "Snap back to reality…" Table three illustrates this rhyme flow through the rhyming words of each phrase.

Table 9. An Analogy of Eminem's "Loose Yourself" Lyric Rhyme Scheme pt. 2

Short/Long vowel	"Y" vowel sound
snap back	reality
oh	gravity
oh, goes	Rabbit, he
chocked, so	mad, but he
won't	that easy
no	have it, he
knows	back's to these
ropes, don't	matter, he's
dope, knows	that, but he's
broke, stacked, knows	that he
back, mobile home	that's when its
back, lab	again
yo, whole	rhapsody, he
go	capture this
moment, hope, don't	pass him

[Source: Eminem, Loose Yourself © Interscope Records, 2002]

With this study, here is another look at the "Loose Yoursef" rap by Eminem in its entirety:

"His palms are sweaty, knees weak, arms are heavy/There's vomit on his sweater already, mom's spaghetti/He's nervous, but on the surface he looks calm and ready to drop bombs/But he keeps on forgetting what he wrote down/The whole crowd goes so loud/He opens his mouth, but the words won't come out/He's choking how, everybody's joking now/The clock's run out, time's up, over, blaw!/Snap back to reality. Oh, there goes gravity/Oh, there goes Rabbit, he choked/He's so mad, but he won't give up that/Easy, no/He won't have it, he knows his whole back's to these ropes/It don't matter, he's dope/He

knows that but he's broke/He's so sad that he knows/ When he goes back to his [Source: Eminem, Loose Yourself © Interscope Records, 2002]

In Eminem's lyrical delivery, he also uses *mosaic* rhyming techniques. "Rabbit, he" and "mad, but he" are an example of *mosaic* rhyming. This is a great advancement over the early "a/a" rhyming where currently nearly every word of the song has become a rhyming word.

Both rhyming and rap delivery techniques have become increasingly complex as rap has evolved. Of the many examples showcasing modern rap, the author would like to recommend readers to familiarize themselves with the hip hop song "Speedom" by Eminem, Tech N9ne, and Krizz Kaliko. As the title of the song suggests, the focus of delivery is on speed; however, the author feels that even the masterful delivery is secondary to the genius of the lyrics. The lyric video for the hip hop song "Speedom" can found on YouTube © at the following URL: https://www.youtube.com/watch?v=7bse3s3TgUM.

8. Introduction to Lyrical Density:

"Mumble Rap" is a rap style that has very little lyrical value and is scorned by traditional rap artists. Snoop Dogg famously made fun of mumble rap during an October 7 interview in 2018 followed by other hip hop artists such as 50 Cent and Eminem criticizing mumble rap. Lil Pump song titled Gucci Gang is an example of mumble rap where no effort is made in lyric writing. The "lyrics" are merely the repeating of the words "Gucci gang" a total of 53 times throughout the song. This author joins the ranks of hip hop fans and artists that view mumble rap's lyrical content reflects minimal talent and effort to create.

Lexical Density (LD) and lexical diversity rankings are another prevalent method of determining the complexity of song lyrics. Although the author has chosen not to use examples of lexical density for the formulation of the complexity of the above old school hip hop lyrics, it is a topic worthy of further research. The author has studied the lexical density differences between T La Rock and Lil Pump as a potential example of complexity differences between mumble rap and intelligent lyric rap content. The author was surprised to find that the data differences between T La Rock and Lil Pump served as an example of how data can be manipulated as the Lexical Diversity ranked Lil Pump high on the online AnalyzeMyWriting© site merely because the lyrics are almost entirely composed of the nouns "Gucci" and "gang". The online WebLingua© Text Inspector was more discerning of the differences through its VOCD and MTLD Lexical Diversity rankings resulting in something akin to an infant child's gibberish.

As an example of lexical density, imagine a text which keeps repeating the same few words again and again – for example: *manager, thinks* and *finishes*. Compare this with a text which avoids that sort of repetition, and instead uses different vocabulary for the same ideas, *manager, boss, chief, head, leader, thinks, deliberates, ponders, reflects, and finishes, completes, finalizes*. This second text is likely to be more complex and more difficult. It is said to have more lexical diversity than the first text, and this is why lexical diversity or lexical density is thought to be an important measure of text difficulty.

Case examples of lexical density were provided on the AnalyzeMyWriting© webpage. The first case example uses the following sentence: *The quick brown fox jumped swiftly over the lazy dog*. When the website calculates lexical density, it identifies each word as either a lexical word or not: **The quick brown fox jumped swiftly** over the **lazy dog**. The lexical words, which include nouns, adjectives, verbs, and adverbs are in bold text. There are precisely seven lexical words out of ten total words. The lexical density of this passage is therefore 70%. However consider the sentence: *She told him that she loved him*. Again, the lexical words in bold text: She **told** him that she **loved** him. The lexical density of this second sentence is two lexical words out of seven total words,

for a lexical density of 28.57%. The meaning of the first example sentence is quite clear. It is not difficult to imagine what happened when "the quick brown fox jumped swiftly over the lazy dog." On the other hand, it is not so easy to imagine the meaning of the second sentence. The reader is potentially confused by the use of vague personal pronouns of *she* and *him*, the second sentence has multiple interpretations and is vague.

Lexical density is a reflection of the above observations. The first sentence has a rather high lexical density of 70%, whereas, the second sentence has a lexical density which is quite low at 28.57%. The reason that the first sentence has a high lexical density is that it explicitly names both the subject (fox) and the object (dog), gives us more information about each one (the fox being quick and brown, and the dog being lazy), and tells us how the subject performed the action of jumping (swiftly). The sentence is packed with information and its high lexical density is a reflection of that.

The reason that the second sentence has such low lexical density is that it doesn't do any of the things that the first sentence does: we don't know who the subject (she) and the object (him) really are; we do not know how she told him (loudly? softly? lazily?) or how she loves him (intensely? passionately?); we don't even know if the first "she" and "him" mean the same people as the second "she" and "him." This sentence tells us almost nothing, and its low lexical density is an indicator of that. These examples illustrate that lexical density is a measure of how informative a text is.

The following table illustrates this example even further by starting with a sentence which is not very descriptive and progressively changing it to make it more and more informative and descriptive. The first sentence contains a vague personal pronoun which is changed in the second sentence to a name providing more information and increasing the lexical density. Continuing this process, we either add or change a single word at a time to make the sentence progressively more and more descriptive.

Table 10: Example of Lexical Density by Sentence

Lexical Words in Bold Text	Lexical Density
1 He **loves going** to the **cinema**.	50%
2 **John loves going** to the **cinema**.	66.67%
3 **John Smith loves going** to the **cinema**.	71.43%
4 **John Smith loves going** to the **cinema everyday**.	75%
5 **John Smith intensely loves going** to the **cinema everyday**.	77.78%
6 **John Smith intensely loves going** to the **huge cinema everyday**.	80%

[Source: http://www.analyzemywriting.com/index.html]

Lexical density is generally higher in written language than in spoken language. This is not surprising as written text is generally more detailed in nature and will naturally contain more information-bearing, lexical words, thereby increasing lexical density. Moreover, spoken language relies upon other non-verbal cues and can be highly context-dependent which reduces the number of lexical words required to communicate an idea.

According to AnalyzeMyWriting©, the typical lexical density of a Wikipedia article, based on randomly sampled articles is between 55% and 58%. Newspaper articles and other expository writing also follows this average. A random sample of an online collection of short fiction gave an average lexical density between 49% and 51%. Random interview transcripts of spoken language rank near 45%.

9. Conclusion—The Practical Applications for the Study of Hip Hop Lyrics:

The practical applications to this study on hip hop lyrics relate to the author's classroom instructions at Nagasaki Wesleyan University in that the author teaches rhyme scheme as a learning task in the Creative Writing courses. The challenge of writing a song, ballad, poem, or rap requires creativity and expression skill. Students who can create a rhyme in a target foreign language demonstrate a certain mastery of the target language. The auxiliary practical application for this study is as a lesson warm up activity to gain the attention of the students. The author often shows a typography or lyric video at the beginning of the lesson to create a mood for the class as well as to gain the attention of the students to further introduce the lesson. Following the well-known learning theories of Robert Gagne's "Conditions of Learning" model, the gaining of attention is an essential part of learning. For reference, the Gagne's 9-Step Model is in the table below:

Table 11: Robert Gagne's 9-Step Conditions of Learning

Step	Event	Cognitive Process
Step 1	Gaining attention of the learner	reception
Step 2	Informing the learning of the objective	expectancy
Step 3	Stimulating recall of prior knowledge	retrieval
Step 4	Presenting information	selective perception
Step 5	Providing guidance	semantic encoding
Step 6	Eliciting performance	responding
Step 7	Providing feedback	reinforcement
Step 8	Assessing performance	retrieval
Step 9	Enhancing retention and transfer	generalization

[Source: https://www.instructionaldesign.org/theories/conditions-learning/]

The typography warm up activity and the study of rhyme and song lyrics also has practical applications that extend beyond English language study in that it can be applied to the study of Japanese, Korean, Thai, Spanish, German and other languages.

Rap music and hip hop are well established as a music genre. The future of this form of music will no doubt continue to evolve. The author is interested in its future and hopes that it will continue to have an audience— especially an audience within the privileged academic community. Appreciation for this form of music comes from merely attentively listening. In the words of MC Tee from Mantronix, *"Before I can pour, what I'm sure you'll adore/Take a seat in the heat and repeat what is sweet/ Because understanding our language is not really hard/You got to listen, you gotta regard."* As hip hop continues to grow and inspire, surely the study of its lyrics will also make its way into academic journals.

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Hip hop songs mainly referenced:
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- Kool Moe Dee, I Go to Work © Jive Records, 1990
- LL Cool J, Rock the Bells © Def Jam Records, 1985
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