

The ‘*ENDT*RODUCING’ of Sampling:
A Comparative Study and Critique of Hip-Hop Sampling Techniques from the 1990s-2000s
to late 2010s-2020s

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“I have neither given nor received, nor have I tolerated others use of unauthorized aid.”

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Abstract

Sampling practices in Hip-Hop have undergone a transformative journey from the 1990s-2000s to the late 2010s-2020s. Delving into whether this transformation has positively or negatively impacted the quality and crux of what Hip-Hop music constitutes is rather ambiguous. Critiquing the artistic interpretation of a producer's sample-based song is rather subjective. However, analyzing the practical elements, such as sampling techniques, production processes, and critical reception, allows for an enhanced academic perspective. While researchers have heavily discussed ethical, legal, and economic considerations of samples through qualitative analyses and quantitative studies, this study provides a hybrid framework to critique the practical applications of the effectiveness of sample utilization and uncover the strain, coherence, and integrity of the composition itself. This study also reveals the influences and techniques that have crafted the contemporary rules of sample-based production in Hip-Hop. This exploration not only unveils the technological advancements from analog to digital, but also explores the importance of contemporary artistic freedoms, modern legality restrictions, and cultural changes that interweave to birth new standards and shift the dynamics in the art of sampling. Through a comprehensive analysis and critique of key producers, Madlib (1990s) and Metro Boomin (2010s-2020s), my research contributes to a deeper conversation of how sampling techniques of the 1990s have influenced and cultivated the creative process and key narratives in the 2010s-2020s Hip-Hop landscape.

I. Introduction

Since hip-hop's birth into the musical world, it has been built upon the collaboration and efforts of many key elements and stepping stones to come to fruition. It has a special relationship with sampling, as it is the built-in foundation of the beats, blending and marrying into other sounds and elements of the track. Sampling is defined as taking a section of audio from another source and reworking it to create new sounds. In hip-hop, sampling is the foundation; however, not all hip-hop productions contain sampling. According to Tracklib analytics, in 2019, approximately 32% of the top 100 Hip-Hop songs contained a sampled track, whether it's the vocals, the drums, or another element.¹ It is often the “wow” factor of the production, and standard sampling techniques include looping, slicing, splicing, and manipulating. How a producer manipulates the sound can vary, and many have been innovative in creating new sampling techniques that have pushed sampling even further.

Of course, you don't need to sample to make iconic and true hip-hop tracks; however, the significance of sampling goes deeper than that. It is essential to understand sampling not just in a practical sense but in a cultural, economic, and legal context. The freedom of taking pre-configured sounds and recreating them into a novel form is all about creativity, technicality, and the continuity of discovering new ways to enjoy familiar content. Many issues have become more prominent in maintaining the musical integrity of the track and the sample. Issues include technological constraints, legal restrictions, shifts in cultural preferences, imitation vs innovation, and many other factors. As technology rapidly advances, producers have begun to over-rely on pre-packaged sound loops AI musical software, overusing popular samples in search of a quick, viral hit. With the emergence of YouTube and other digital platforms that offer a vast global

¹ Tracklib. 2019. “Tracklib Presents State of Sampling 2019.” Tracklib.com. <https://www.tracklib.com/blog/tracklib-presents-state-of-sampling-2019>.

culture at the touch of a button, the art of crate digging has not become completely lost but, rather, obscure. Over recent years, many critics and hip-hop connoisseurs have argued that the quality of hip-hop sampling has declined; however, this perspective can be subjective. My research aims to objectively analyze this through an academic, practical, and technical lens. As the legendary music icon, Prince said, “Sampling is getting to the point it’s out of hand too. I mean, pretty soon, we’ll be sampling the sample that was already sampled.”² This is the crutch that 2020s sampling faces in maintaining the sample’s integrity and respect for the craft in a fluctuating market.

II. Background on Sampling in Music

Musique Concrète and Modern DJ Experimentation

Although the foundation of hip-hop was created from sampling, it did not originate within hip-hop, as the genre was not “officially” recognized. In the contemporary context, sampling emerged during the 1940s with Halim El-Dabh and Pierre Schaeffer. Being some of the first pioneers in modern sound manipulation, their sampling techniques were very similar, adopting a style that would come to be known as musique-concrète, which is an experimental electro-acoustic technique used to modify pre-recorded sounds, coined by Schaeffer himself in 1948. Schaeffer’s recordings utilized techniques such as using magnetic tape to splice and loop, which introduced several new inventions: a three-track tape recorder, a 10-head delay, the loop machine, and several amplification systems used for spatial experimentation with sound.³

² Complex. 2023. “Is Hip-Hop Sampling Lazy? The History of Sampling Is The Same Arguments Over and Over Again.” Complex. <https://www.complex.com/music/a/insanulahmed/hip-hop-sampling-2023-interview>.

³ Jonathan Patrick. 2016. “A guide to Pierre Schaeffer, godfather of sampling.” Fact Magazine. <https://www.factmag.com/2016/02/23/pierre-schaeffer-guide/>.

Predating Schaeffer's technique, in 1944, El-Dabh was the first known to record, compose, manipulate, and layer sounds to create modern sampling techniques with his piece "The Expression of Zaar." It featured techniques such as reverberation, echo chambers, focusing on isolating the high overtones, and many other innovative methods through the use of an electronic tape recorder.⁴ His purpose was to "find the inner sound...eliminating fundamental tones of the harmony, seeking to change the quality of the music for that hidden material, the inner part of the voice."⁵ Although both of their contributions aided in the development of contemporary sampling, it is important to note that El-Dabh was an African-American composer, directly linking his innovative techniques for inspiration in hip-hop development.

III. Techniques and Equipment Used in Hip-Hop Sampling

The Art of the DJ to the Art of the Producer

The very early primitive and tedious way of sampling had transformed into a new domain with the creation and commercialization of turntables and mixers. This was analog, but in a novel way, and it worked better than ever. However, building up industry credibility as the new standardized method took some time. Shifting perspectives and methods help the music evolve and constantly push the sonic boundaries of what can be created from pre-existing tracks. In the decades following the work of El-Dabh and Schaeffer, inspired Hip-Hop DJs to bring the art of sampling to popular genres and experiment. Black Americans in inner-city urban communities took it and made it their own, experimenting with different sonic profiles, using it as an outlet, a

⁴ Blucode Studio. n.d. "Halim El-Dabh – Wire Recorder Piece – Sound Art Zone." Sound Art Zone. Accessed May 6, 2024. <https://soundart.zone/halim-el-dabh-wire-recorder-piece/>.

⁵ Maha El Nabawi. 2017. "On the vanguard: The life and work of Halim El Dabh." *The National*, September 19, 2017. <https://www.thenationalnews.com/arts-culture/music/on-the-vanguard-the-life-and-work-of-halim-el-dabh-1.629876>.

communal-gathering tactic, and interpersonal love. It created a movement that will forever flourish.

In hip-hop, DJs were the originators of sampling and more modern production techniques. Before using turntables and mixers, DJing was simply music curation, using an old-fashioned record player or using sound systems from Jamaican popular culture. It wasn't until the 1970s that turntables and mixers became standard equipment, even though 1927 dual turntables were invented⁶. Commercializing the turntable through American and Japanese manufacturers, the SP-10, created in 1970 by Japanese company Technics, made equipment more accessible for regular DJs. This created a new form of DJing, *turntablism*, which elevated a craft that was still simple in execution by experimenting with breaking and combining two tracks on the spot. Hip-hop's foundation was always collaborative, so it's difficult to pinpoint specific people, dates, and times in an extensive list of pioneers. However, in 1973, DJ Kool Herc, often credited as "The Father of Hip-Hop," developed an integral DJing technique, breakbeat, which used two turntables, two of the same records, and switched between each, repeating the song's climax and extending the song's break.⁷ He used the Technics SL-1100, which was created in 1971, for a direct-to-consumer release.⁸ A couple of years later, his technique was perfected by Grandmaster Flash, leading to the creation of the "quick mix theory," which refined Herc's technique by creating marker placements on the vinyl to indicate the breaks of the song to create a more seamless transition.⁹ In 1977, the commercialization of the GLI PMX 7000 Mixer, a US-made mixer marketed for the day-to-day DJ, allowed for smoother manipulation of tracks

⁶ Oakland Museum of California. 2018. "Two Turntables: A Hip-Hop Discovery." Oakland Museum of California. <https://museumca.org/blog/two-turntables-hip-hop-discovery/>.

⁷ Jillian Nguyen. 2021. "Two Turntables and a Mic: The History of DJing and Turntablism." Vinyl Me, Please. <https://www.vinylmeplease.com/blogs/magazine/turntables-mic-history-djing-turntablism>.

⁸ Panasonic Corporation. n.d. "SL-1200 – Heritage." Technics. Accessed May 6, 2024. <https://www.technics.com/global/home/sl1200/heritage.html>.

⁹ Oakland Museum of California, Two Turntables.

between records.¹⁰ It elevated the technique to become more streamlined for further innovation and experimentation. There were no creative limitations during this era, as records from Black and other cultures and equipment imported into stores were new to them. Innovative ideas and experimentation were innate; they just became easier to manipulate, and well into the '90s, sampling techniques evolved, becoming more refined and diverse.

The love of vinyl and record players was always prevalent in the average American household. In the 1960s and 1970s, Black American DJs were spinning Funk, Soul, Reggae, Dancehall, and R&B records of the time, which was music distributed in their local record shops. This also helped provide the production foundation for early hip-hop, and “crate digging” helped to find obscure records from local to worldwide in hopes of finding new sounds to experiment with. After sourcing records for their productions, some DJ techniques such as chopping, looping, slicing, and pitching, became rudimentary production techniques to transform the sample. With the emergence of the Akai MPC Series in 1988, it became an integral tool in Hip-Hop production, as it provided more streamlined ways for sequencing and sampling. Producers created more complex melodies, drums, and other musical elements more conveniently. Of course, these are not exclusively production techniques for the 90s-00s track; however, they are ever prevalent as old techniques tend to phase out, and new techniques emerge.

When DAWs were created in 1977, they were not the preferred method of hip-hop production and were also quite expensive. However, they became much more prominent in the 21st-century digital era with further commercialization and accessibility in price. By the late 2010s-2020s, digital sampling was the standard, and platforms such as Logic Pro, FL Studios,

¹⁰ Austin Mittelstadt, and Chanel Audio LLC. 2022. “The History of DJ Equipment.” Channel Audio. <https://www.channelaudiogroup.com/single-post/history-of-dj-equipment>.

and Ableton Live became the go-to for producers. During this era, hip-hop became more amorphous, allowing the track to breathe, creating more spatial awareness in the melodies and form structures. It began to re-introduce trends that were prevalent in previous eras, such as the heavy synth, bass, and filtering in Kanye West's "Yeezus" album to Travis Scott's "Astroworld". As digital technology rapidly advances, some future implications exist for the innovation of sample-based hip-hop production. Some artists are willing to take advantage of AI and collaborate with their fans using the method. This has already started to change how music progresses economically and legally, so learning to use it effectively can prove innovative in the upcoming years. However, it seems to undermine the authenticity of hip-hop's purpose, and utilizing human-made samples could become obsolete.

IV. Crutches of Modern Sampling

Cultural, Economic, and Legal

In the '90s, hip-hop became more cultivated and globalized as it merged into popular culture and was considered "*The Golden Age of Hip-Hop*." From its origin, hip-hop was used to unify, strengthen, and free the voices of Black Americans from centuries of oppression, violence, and injustice. This narrative only progressed stronger, and during this era, Hip-Hop also found itself intensely scrutinized and villainized in the eyes of the courts and the general public. Censorship, lawsuits, and struggles with sampling clearances found their way into burying the cultural heritage. Hip-hop is, first and foremost, Black-American culture at its core. Those who didn't understand the importance of Hip-Hop viewed it as dangerous, degrading, and evil, which was reminiscent of comments made about other secular Black genres of the past.¹¹ This harmed

¹¹ Rolf Potts. 2016. "The Great Rap Censorship Scare of 1990 | by Rolf Potts | Cuepoint." Medium. <https://medium.com/cuepoint/the-great-rap-censorship-scare-of-1990-115edc69a62f>.

even more of the artistic process; utilizing the samples in a cultural context amplifies the lyrical content, production process, and themes of resilience, creativity, and exercising one's right to freedom of speech and expression.

With the emergence of social media, the 21st-century digital age has normalized sharing cultures more than in the '90s. Having digital access to a plethora of cultures enriches the sonic palette for further experimentation of using new sounds conducive to the music. However, it has also been harmful, as there have been many cases of appropriation, as non-Black Hip-Hop artists have failed to acknowledge the proper sources, inauthentically imitating the sonic profile that perpetuates stereotypes of what Hip-Hop is and exploiting Black American culture for personal gain. This diminishes the production and sampling integrity as it becomes insensitive and disrespectful to the artist's original intent. More importantly, it undermines and aids the cultural and source erasure of hip-hop will always be attached to.

In the 2020s, sampling has strained as new-age producers look to become the next biggest hit on social media, often overlooking the importance of the production's quality for industry validation. For producers signed to major record labels, their teams—not necessarily the artists themselves—have become analytically driven, focusing on streaming and revenue numbers instead of the integrity and respect of the production itself. This has become a great economical method for the label because they utilize more popular samples in their catalog, which cuts their costs. Still, this method is exploitative for the producers, as it compromises their artistic and personal integrity and leaves them splitting their revenues in multiple ways. Label owners found a way to successfully exploit Black culture since they control the major distribution and media outlets. Unethical industry practices forced artists and producers to abide by their label rules and undercut their royalty, credits, and artistic vision. What was once integrally Black culture became

a worldwide culture, and mainstream records had to shift contextual material to be more palatable for a broader audience, which, thus, gave more economic gain to the label and distributors, not the producers themselves.

The artists who are being sampled, if they own their masters, have a right to decline or approve the sample's usage, even if they don't know how it's being used in their likeness. This brings up many legal concerns, as the cost of sampling clearance can be expensive for the label, especially for independent artists who don't have an expansive budget and team backing them. This, of course, is a barrier to entry and can often force people to use samples without permission from the owner. If not obtained through legal channels, this is seen as plagiarism. Especially in recent years, many mainstream samples have not transformed substantially enough to differentiate them from the original work, and many lawsuits and copyright violations have appeared. According to producer Vinroc, if a producer wants to sample a famous recording without having to pay for a license, he must "completely chop it to pieces so it's unrecognizable."¹² This advice seems to convey a challenge for producers to be innovative during the creative process, which allows for better integrity of the sample. Nevertheless, sampling clearance continues to be a complex, confusing, and pocket-draining transaction, especially with AI sampling coming into the mix.

However, this issue is not new. In 1991, the first sampling lawsuit appeared in the U.S District Court of New York, with *Grand Upright Music Ltd. vs. Warner Bros. Records, Inc.*, in which Gilbert O'Sullivan sued rapper Biz Markie for sampling his song, "Alone Again (Naturally)."¹³ The court ruled sampling was theft and unlawful, even though many songs before

¹² Amanda Sewell. 2014. "How Copyright Affected the Musical Style and Critical Reception of Sample-Based Hip-Hop." *Journal of Popular Music Studies* 26 (2-3): 295 - 320. 10.1111/jpms.12078.

¹³ Kahron Spearman. 2015. "All Samples Cleared: The ramifications of *Grand Upright Music v. Warner Bros. Records - Music*." *The Austin Chronicle*.
<https://www.austinchronicle.com/daily/music/2015-01-06/all-samples-cleared/>.

this used samples without obtaining legal authorization. This case changed how sampling would be approved in the future, requiring that it be obtained from the original copyright owners. There is no set cost in obtaining samples, so owners have the right to charge whatever they want, with some even insisting on up to 100% of the publishing royalties.¹⁴ Record labels must decide what to prioritize in their budget for an artist. So, this has led to labels cultivating new ways to control and rewrite the producer's artistic narrative stoically. Caused much hindrance in the creativity and vision of the production, thus rewriting the crux of hip-hop's true power and purpose.

V. Methodology and Original Theoretical Framework

For this comparative study and critique, I proposed an original theoretical framework that objectively analyzes and categorizes sampling techniques in hip-hop. I selected tracks from the respective decades that spanned various subgenres and technological methods. I utilized qualitative and quantitative methods to assess the sampling techniques displayed in each track. There is still an opportunity for this theoretical framework to become more refined and statistically accurate, but this is an initial layout. My qualitative criteria included sample versatility, technical skills, integration and innovation within the composition, and artistic intent. My quantitative analysis included metrics such as sampling frequency, sample duration, reception, and compositional structure to provide more objective data. This criteria encompasses technical aspects, aesthetic considerations, cultural context, and commercial significance, allowing for a comprehensive evaluation of each sampled element. Remaining cognizant of a producer's ability and capacity to support the creative and practical process of sample production is significant.

¹⁴ Karl Fowlkes. 2020. "The Art of Clearing A Sample: Deciding If It's Worth It and How To Actually Do ." Medium.
<https://medium.com/the-courtroom/the-art-of-clearing-a-sample-deciding-if-its-worth-it-and-how-to-actually-do-e26fa56ad090>.

Hip-Hop Sampling: A Proposed Theoretical Framework for Objective Critique

<i>Technical Skills:</i>	<i>Artistic Integration and Vision:</i>	<i>Sample Integrity:</i>	<i>Commercial Success:</i>	<i>Impact & Reception:</i>
Quality of execution and manipulation techniques. <i>Rated 1-5</i>	Fit within the track and overall musical narrative. <i>Rated 1-5</i>	Originality of the sample application and the track innovation. <i>Rated 1-5</i>	Placement of the sampled track on mainstream charts, sales, and digital streaming data. <i>Rated 1-5</i>	Audience Reception, Critic Reviews, and Cultural Impact <i>Rated 1-5</i>

Categories:

<i>Innovative:</i> 16-25 points	<i>Variative:</i> 9-15 points	<i>Imitative:</i> 5-8 points
Maximal changes that create entirely new sounds.	Moderate changes that retain some original elements.	Minimal changes that maintain most original elements.

VI. Comparative Analysis of Selected Producers

Under the original proposed theoretical framework, I analyzed and categorized three tracks from each producer, Madlib and Metro Boomin.

A. Madlib:

1. Song: “Eye” (2004) - Madlib | Sample: “So Good” (1984) - The Whispers
 - a. Technical Skills (4):
 - i. Low-pass filters suppress the higher-frequency components to allow lower frequencies to pass through, creating more depth by making the track feel centered.

- ii. Subsonic effect reduces the intensity of low-frequency notes, creating a feeling that can intensify emotional responses to the music through its groove.
- iii. Reverse reverb inverting reverb and placing it before the original sound, adding a more spectral quality to the music, making it feel energetic and mystical.

He used only a portable turntable, a BOSS SP-303, and a small tape deck for most of this album's tracks. He showcased his creativity and respect for the craft by utilizing all analog equipment, creating a very versatile and innovative track with more advanced sampling techniques.

- b. Artistic Integration and Vision (5): This song includes themes of love in terms of obsessiveness through controlling one's actions. While Madlib's song contains themes of love, it's more for the yearning side, showcasing euphoric feelings while still being emotional and vulnerable. Each song represents love and its complexities, just in different ways.
- c. Sample Integrity (4): According to Who Sampled, only seven songs have utilized "So Good" by The Whispers through official releases.¹⁵ While working on this song and album, Madlib was in Brazil and made beats from obscure records in his hotel room, producing 200 beats. His vision was preserving the beat's integrity, and his samples were rarely tracked as he was in the zone. He felt the instrumentals were "too outside the box for any sort of practical application."

¹⁵ WhoSampled. n.d. "Songs that Sampled So Good." Who Sampled. Accessed May 8, 2024. <https://www.whosampled.com/The-Whispers/So-Good/sampled/>.

However, he also knew how he wanted them to sound and said, “he didn’t want people messing up the mix, take the beat or not. Once it’s done, it’s done.”¹⁶

- d. Commercial Success (3): Although the song did not chart, the album was critically acclaimed and peaked high on numerous Billboard charts. At 179 on the US Billboard 200, no. 80 on top Hip-Hop albums, no. 10 on top independent albums, and no. 9 on the top heatseekers albums chart.¹⁷ This blended traditional album sales, track single sales, and streaming equivalency. Since Madlib was signed to an independent record label, Stones Throw Records, promotional methods would not be as expansive as a major record label. The album was also leaked online, so Madlib and MF Doom feared a bad commercial performance for this project.¹⁸ Yet, the project was the label's most commercially successful rap album, so I considered that in my ranking.
- e. Impact and Reception (5): Madlib was underground then, so the initial audience reception was generally positive, with many calling it an instant classic. Peers marveled at the project's innovation and grittiness, finding much inspiration from the album’s beats and thought-provoking lyrics. As time progressed, the album became highly regarded. Critics revered it, giving it many high scores and boasting a spot on numerous Greatest Albums of All Time lists. Which received a 93/100 score on Metacritic¹⁹ and a 9.4/10 on Pitchfork²⁰. It was also ranked no.

¹⁶ Gino Sorcinelli. 2018. ““I Don't Remember the Samples I Use. Hell No.” — The Story of 'Madvillainy.'” Medium. <https://medium.com/micro-chop/i-dont-remember-the-samples-i-use-hell-no-the-story-of-madvillainy-e6b378d4689c>.

¹⁷ Billboard. n.d. “Madlib Chart History.” Billboard. Accessed May 8, 2024. <https://www.billboard.com/artist/madlib/chart-history/tlp/>.

¹⁸ Sorcinelli, “The Story of ‘Madvillainy.’”

¹⁹ Metacritic. 2004. “Critic Reviews for Madvillainy.” Metacritic. <https://www.metacritic.com/music/madvillainy/madvillain/critic-reviews>.

²⁰ Rollie Pemberton, and Nick Sylvester. 2004. “Madvillain: Madvillainy Album Review.” Pitchfork. <https://pitchfork.com/reviews/albums/5579-madvillainy/>.

411 on NME's list of the 500 Greatest Albums of All Time²¹, no. 365 on Rolling Stone's 500 Greatest Albums of All Time²², and no. 18 on Rolling Stone's 200 Greatest Hip-Hop Albums of All Time²³.

Based on my proposed framework, the track has a point value of 21/25, which categorizes it as an innovative sample.

2. Song: "Return of the Loop Digga" by Quasimoto (2000) | Sample: "Holy Are You" by The Electric Prunes (1968); "Tidal Wave" by Ronnie Laws (1975); "Stockyard" by Galt MacDermot (1970); "Supermarket Blues" by Eugene McDaniels (1971); "A Divine Image" by David Axelrod (1969); "Cussin', Cryin', and Carryin' On" by Ike & Tina Turner (1969); "Fragment of Fear" by Sight and Sound (1971); "On the Move" by The Impressions (1974); "Submission" by Tyrone Washington (1973); "Poo Too" by Oneness of Juju (1975); "Darkuman Junktion" by Sons And Daughters Of Lite (1978); "Behind the Wall of Sleep" by Black Sabbath (1970); "North, East, South, West" by Kool & the Gang (1972); "Styles, Crew, Flows, Beats" by Peanut Butter Wolf, Lootpack, and Quasimoto (1998)
 - a. Technical Skills (5):
 - i. Micro-chopping involves chopping the audio into very short and fragmented rhythmic portions; creating sudden stops in the music which adds to the overarching transcendental nature of the track.

²¹ Emily Barker. 2013. "The 500 Greatest Albums Of All Time: 500-401." NME. <https://www.nme.com/photos/the-500-greatest-albums-of-all-time-500-401-1426363>.

²² Sean McCabe, and Jonathan Bernstein. 2023. "The 500 Greatest Albums of All Time." Rolling Stone. <https://www.rollingstone.com/music/music-lists/best-albums-of-all-time-1062063/>.

²³ Rolling Stone. 2022. "The 200 Greatest Hip-Hop Albums of All Time." Rolling Stone. <https://www.rollingstone.com/music/music-lists/best-hip-hop-albums-1323916/madvillain-madvillainy-2004-2-1346621/>.

- ii. Looping involves the repetition of a short phrase or pattern, providing a sense of urgency, and commanding the attention of the listener before the lyrical content is introduced.
 - iii. Pitching alters the octave of the notes either up or down, creating more harmonic variety in the music.
 - iv. Mashup combines two or more tracks to create new sounds, creating a compelling juxtaposition in the lyrical narrative between the back-and-forth of the differently-pitched voices and serious lyrical content.
 - v. Isolation separates a specific element from the track to emphasize its spectral qualities, creating an introspective moment at the end of the track for the listener to focus on and reflect on.
- b. Artistic Integration and Vision (5): These lyrics are based upon the art and culture of sampling in hip-hop-based production. With lyrics such as “Some n***as be sampling the same ass shit. Some n***as be looping up them played-out hits.” and “We strive to create some way out other shit. That you ain't heard yet, we building up respect.”²⁴ Madlib is showing respect for the art of crate-digging by advocating the utilization of more obscure records to create something fresh and innovative within sample-based hip-hop production. He also touches on themes of remaining authentic during the commercialization of hip-hop and showing disdain for producers who opt for overused samples and loops instead of searching for innovation within their sampling practices.

²⁴ Musixmatch. n.d. “Return of the Loop Digga Lyrics.” Musixmatch. Accessed May 8, 2024. <https://www.musixmatch.com/lyrics/Quasimoto/Return-of-the-Loop-Digga>.

- c. Sample Integrity (4): According to WhoSampled, the samples utilized have been sampled a few dozen times.²⁵ I noticed that many of them take place after the release of this song solidifying Madlib's ability to influence and impactfully integrate each sample he uses. Each sample is used briefly throughout the song and further conveys the quest for significantly transforming the sample.
- d. Commercial Success (2): As mentioned previously, Madlib was signed to an independent label so neither the song nor the album charted. Currently, the song has around 116K views on YouTube.²⁶ At the time of its official release, Madlib was still underground at this point in his career, yet, he garnered real success on the streets, where Hip-Hop is continually evolving and authentically appreciated, beyond commercial success.
- e. Impact and Reception (4): The album is currently well-revered in hip-hop fans' and critics' hearts for its unconventional, quirky, and abstract sample utilization. Featured on Pitchfork album reviews, critic Sean Murray says, "'Return of the Loop Digga' is an engagingly funny paean to his mad production skills. Here, Madlib steps up to document his rise from stealing records from his auntie to laying down tracks for his man Quas."²⁷

Based on my proposed framework, the track has a point value of 20/25, which categorizes it as an innovative sample.

²⁵ WhoSampled. n.d. "Songs Sampled in Return of the Loop Digga by Quasimoto." WhoSampled. Accessed May 8, 2024. <https://www.whosampled.com/Quasimoto/Return-of-the-Loop-Digga/samples/>.

²⁶ Quasimoto. 2022. "Return of the Loop Digga." YouTube. <https://youtu.be/2LbYEopH9xE?si=lw-CV4pT6HVhpN7A>.

²⁷ Sean Murray. 2000. "Quasimoto: The Unseen Album Review." Pitchfork. <https://pitchfork.com/reviews/albums/6610-the-unseen/>.

3. Song: “Rhinestone Cowboy” by Madvillain (2004) | Sample: Mariana Mariana by Maria Bethânia (1971); Molambo by Maria Bethânia (1968); Making Love by Jack Margolis (1971); The Documented History of the Fabulous Villains (1989)

a. Technical Skills (5):

- i. Looping, previously defined, adds continuity to the themes discussed in the songs and creates a trance-life experience through other musical elements layered around the sample.
- ii. Chopping adds some textural and rhythmic elements, and this track creates a surreal atmosphere to match the lyrical content of MF Doom.
- iii. Pitching, previously defined, creates an intense emotional impact, making it more dramatic and signifying memorable moments within the track.
- iv. Filter + Drive highlights different sections of the samples, adding more depth and interest in the specific element being featured. (e.g., the violin sample conveys a commanding presence and regal tone).
- v. Vinyl Sim recreates the tonal qualities of a record player (e.g., the crackles and pops of the record), which provides the listener with a nostalgic feel and adds more texture to the track.

- b. Artistic Integration and Vision (5): This track is the last on the Madvillainy album, and he utilizes the vocal samples to add to the narrative of the lyrics. For example, the first sample we hear is from “Making Love”, the lyrics repeating “Great stuff. Yeah, this is— this is good. Great stuff. Ahh, Oh yeah”. This signifies the start of the beginning as this is the last track on the album. The last

sample we hear is from “The Documented History of the Cult Villains”, with lines such as:

- i. “Sometimes they were were comedic-or relentlessly horrifying. They were the foes of society, whether fighting the local sheriff or a secret agent. Frequently they mirrored our times: the gangster villains which rival real newspaper headlines of the present day.”²⁸

This encapsulates the crux of their collaboration and the album's overall message for the listener. Showcasing both Madlib and MF Doom’s roles and identity in hip-hop culture, often using their art to rival societal issues and fears of America.

- c. Sample Integrity (5): According to WhoSampled, “Mariana Mariana” has been sampled eight times, “Molambo” sampled six times, “Making Love” sampled five times, and “Cult Villains” sampled three times through official release.²⁹ Madlib utilized some of these samples in his other works, so there is a continuity in finding new ways to repurpose these obscure tracks, with the other sampled-based tracks released after Madlib’s initial release.
- d. Commercial Success (4): As of May 1st, 2024, the song has garnered 20.6 million streams on Spotify³⁰ and 4.5 million views on YouTube.³¹ The song did not chart, the album of which its featured on was critically acclaimed and peaked high on numerous Billboard charts as mentioned previously.

²⁸ Madlib, and MF Doom. n.d. “Madvillain – Rhinestone Cowboy Lyrics.” Genius. Accessed May 8, 2024. <https://genius.com/Madvillain-rhinestone-cowboy-lyrics>.

²⁹ Who Sampled. n.d. “Songs Sampled in Rhinestone Cowboy by Madvillain.” WhoSampled. Accessed May 8, 2024. <https://www.whosampled.com/Madvillain/Rhinestone-Cowboy/samples/>.

³⁰ Kworb. 2024. “Madvillain - Spotify Top Songs.” Kworb.net. https://kworb.net/spotify/artist/2aoFQUeHD1U7pL098IRsDU_songs.html.

³¹ Stones Throw. 2006. “Madvillain (MF Doom + Madlib) - Rhinestone Cowboy.” YouTube. <https://youtu.be/s4iR668Ki3I?si=X2D1dxg8d8VYRGU8>.

- e. Impact and Reception (4): This song has boasted a 96 user score on AOTY, which is a user-generated review platform for audiences to give their ratings.³² From the high engagement on streaming platforms, the track still has high engagement and influence amongst listeners, further solidifying the status of creativity and relevance.

Based on my proposed framework, the track has a point value of 23/25, which categorizes it as an innovative sample.

B. Metro Boomin:

1. Song: Feel the Fiyaaaaah (2022) | Sample: “Feel The Fire” - Peabo Bryson
 - a. Technical Skills:
 - i. Pitch-shifting, he pitched up the sample to sound more energetic, giving it a soulful, churchy vocal effect.
 - ii. Chopping, which takes smaller elements of the sample and reconfigures them in a different order, can give a disorienting feeling. However, this song gives a more powerful feeling as the repetition builds further anticipation.
 - iii. Looping, which repeats a specific section of the song creating a rhythmic or melodic pattern. In this song, it gives a nice feel so that listeners can enter a state of energetic momentum with the music.

For most of the album’s songs, he utilized FL Studio and Pro Tools, with the occasional Akai MPC 2000X.³³ These are very rudimentary sampling techniques and don’t showcase much

³² Album of the Year. n.d. “Rhinstone Cowboy.” Album of the Year. Accessed May 8, 2024. <https://www.albumoftheyear.org/song/6213-rhinstone-cowboy/>.

³³ Paul Tingen. 2023. “Inside Track: Metro Boomin 'Heroes & Villains.’” Sound On Sound. <https://www.soundonsound.com/techniques/inside-track-metro-boomin-heroes-villains>.

innovation. However, he excels in the drums and heavy melodic bass motifs he layers on top of the sample.

- b. Artistic Integration and Vision: The song explores themes of desire in materialism, wealth, and greed through biblical references and society's values. The sample explores themes of desire and emotional connection within a romantic relationship. While both songs uncover the complexities of relationships and human desire, they do so differently. Metro Boomin said that “Feel The Fiyaah” is just nostalgic for me. I grew up listening to a lot of Dipset [The Diplomats], The Heatmakerz, that type of sh*t. That was my favorite sh*t in middle school, that reminded me of the essence of that, so that’s a personal favorite.”³⁴
- c. Sample Integrity: According to WhoSampled, Bryson’s song has been sampled nine times through public release.³⁵ The album on which the song is featured was originally supposed to be released on Nov. 4; however, due to sample clearance issues, it was pushed back to Dec. 2., it was unclear which samples were giving him trouble.³⁶ Metro did not want to rework and chose to withstand the complexities of sample clearance.
- d. Commercial Success: Throughout the Billboard charts, the song peaked at no. 23 on the Hot R&B/Hip-Hop Songs, no. 59 on Billboard Hot 100, and no. 83 on Global 200.³⁷ Because Metro Boomin is signed to a major label, the immense help

³⁴ Shirley Ju. 2023. “CUZ IT’S MEAN AND METAMORPHIC.” *THE COCOON ISSUE!*, no. 185 (March). <https://www.flaunt.com/post/metro-boomin-the-cocoon-issue>.

³⁵ WhoSampled. n.d. “Songs that Sampled Feel the Fire by Peabo Bryson.” WhoSampled. Accessed May 8, 2024. <https://www.whosampled.com/Peabo-Bryson/Feel-the-Fire/sampled/>.

³⁶ Tony M Centeno. 2022. “Metro Boomin Explains Why He Pushed Back The Release Of His Upcoming Album.” iHeart. <https://www.iheart.com/content/2022-10-27-metro-boomin-explains-why-he-pushed-back-the-release-of-his-upcoming-album/>.

³⁷ Billboard. n.d. “Metro Boomin Chart History.” Billboard. Accessed May 8, 2024. <https://www.billboard.com/artist/metro-boomin/chart-history/hsi/>.

of social media, and the star power of his features, A\$AP Rocky and the late rapper Takeoff, his ranking in this category is higher than Madlib's.

- e. Impact and Reception: Critical Reception was mixed; some loved the song, and others didn't. Critic and media scholar Charles Lyons-Burt noted how "Metro is often just going about recycling what's worked on tracks that he's produced in the past."³⁸ This is not necessarily bad; however, it makes the sample usage a bit underwhelming. Audience reception was mixed; many loved it because of Takeoff's verse, either loving or hating A\$AP Rocky's verse and talking about other production aspects, such as the bass grooves or the melody, rather than the sample.

Based on the proposed framework, this track would be categorized as more of a variation sampling, introducing slight changes but retaining original elements with a point value of 15/25.

- 2. Song: "Activist" by Waka Flocka Flame (2014) | Sample: Playa Hataz by Three 6 Mafia (1999); "2 Thick" by DJ Zirk feat. Tom Skeemask and Buckshot (Memphis Rapper) (1993); "Masterpiece" by Grover Washington, Jr. (1973)

- a. Technical Skills (2):
 - i. Chopped + Slopped, a manipulation technique that originated in Houston, slows down the track and chops it into smaller sections, adding a dreamy distortion for the listener, and conveying a relaxed mood.
 - ii. Low Pass Filter, previously defined, adds more of that relaxed sound creating an ambient tone to the music and plays a supporting role in highlighting other musical elements of the track.

³⁸ Charles Lyons. 2022. "Metro Boomin 'Heroes & Villains' Review: Beats by Committee." Slant Magazine. <https://www.slantmagazine.com/music/metro-boomin-heroes-and-villains-album-review/>.

- iii. Looping, previously defined, adds continuity to repetitive patterns also providing an ambient tone in the track.
- b. Artistic Integration and Vision (3): Both the song and main sample explore the themes of substance use and the actions that result from using it. The song focuses on more of the dreamy aspects of substance use, while the sample focuses on the dark and violent side that follows it.
- c. Sample Integrity (3): According to WhoSampled, Three 6 Mafia's song has been sampled seventenn times, Washington's song thirty-two times, and DJ Zirk's song thirty-five times through official release.³⁹ These are mildly popular samples, easily recognizable, and Metro doesn't do much to switch it up from the originals.
- d. Commercial Success (1): This track was released when Metro and Waka were still garnering the attention of the general public. The mixtape didn't gain much traction, with the song generating only 1.6 million views in the 10 years it's been uploaded to YouTube.⁴⁰
- e. Impact and Reception(2): For audience reception, as I looked through multiple sources, many listeners loved the homage to Three 6 Mafia homage. However, they strongly criticized the sample usage being imitative from the better-known versions.

Based on the proposed framework, this track would be categorized as more of a variation sampling, introducing slight changes but retaining original elements with a point value of 11/25.

³⁹ WhoSampled. n.d. "Activist by Waka Flocka Flame - Samples, Covers, and Remixes." WhoSampled. Accessed May 8, 2024. <https://www.whosampled.com/Waka-Flocka-Flame/Activist/>.

⁴⁰ BSMVevo. 2013. "Waka Flocka Flame, Ben G - Activist." YouTube. <https://youtu.be/CJW5BPfLhys?si=jiDxf8-cGpocd34>.

3. Song: “Like That” by Future and Metro Boomin ft. Kendrick Lamar (2024) | Sample: “Everlasting Bass” by Rodney O and Joe Cooley (1988); “Eazy-Duz-It” by Eazy E (1988)
- a. Technical Skills (3):
 - i. Chopping, previously defined, made the track more menacing and sinister in tone, which gave some excitement to the sounds and lyrics.
 - ii. Looping, previously defined, gave the track a sense of urgency in its message and themes, and provided some stability to the groove of the beat.
 - iii. Pitch-shifting, previously defined, added more energy to the song, as the vocal sample was raised in tone making it feel more dynamic and engaging in this narrative with the lyrical content.
 - b. Artistic Integration and Vision (4): As Metro is known for his bass-heavy melodies, utilizing the Rodney O sample signifies his impact on bass-forward beats in hip-hop production as one of the most iconic producers of new-school rap. The song explores the violence and glorification of street life in a boastful manner. The sample also explores the life of hip-hop artists through more celebratory and fun moments.
 - c. Sample Integrity (5): According to WhoSampled, Rodney’s song has been sampled 84 times through the official release.⁴¹ Metro directly sent the song to Rodney O and acquired the sample through his record label, and it was approved immediately.⁴²

⁴¹ WhoSampled. n.d. “Songs that Sampled Everlasting Bass by Rodney O and Joe Cooley.” WhoSampled. Accessed May 8, 2024. <https://www.whosampled.com/Rodney-O-and-Joe-Cooley/Everlasting-Bass/sampled/>.

⁴² Mark Elibert. 2024. “Rodney O Says Metro Boomin Approached Him to Clear Sample for 'Like That.'” Complex. <https://www.complex.com/music/a/markelibert/rodney-o-metro-boomin-cleared-sample-like-that>.

- d. Commercial Success (5): “Like That” was an instant success, simultaneously debuting on Billboard at no. 1 on the Hot 100, Global 200, Hot R&B/HipHop Charts, and many more.⁴³ According to Luminate, ““Like That’ ended up drawing 59.6 million streams and 5.6 million radio airplay audience impressions and sold 9,000 in the week ending March 28.”⁴⁴
- e. Impact and Reception (5): This song was an instant success, boasting many positive reviews from listeners and critics alike. With his star power features, Future and Kendrick Lamar, many were talking about Lamar’s verse. It contained a diss aimed at two rappers, J. Cole and Drake. The lyrical content was high and many praised the chopped-up snare of “Everlasting Bass” at the beginning of the song, signifying a strong start to a now iconic rap song.

Based on my proposed framework, the track has a point value of 22/25, which categorizes it as an innovative sample. As a bonus, Metro Boomin sampled the same song as Madlib however, this was utilized as an intro, rather than an expansive song.

VII. Impact of 1990s-2000s Sampling on 2010/2020s sampling

Trends, Innovations, and Differences

By analyzing the dynamic shifts of sampling trends in Hip-Hop, 1990s sampling is the blueprint for effectively utilizing the sample to elevate the track versus straining the track in 2020s hip-hop sampling. Through my analysis of Madlib’s other productions, I noticed that he is about creating entirely new sounds and takes a more innovative approach. Like many other

⁴³ Billboard, “Metro Boomin Chart History.”

⁴⁴ Michael Saponara. 2024. “Metro Boomin Reacts to 'Like That' Topping Billboard Hot 100: 'Hip Hop Is Alive & Well.'” Billboard.
<https://www.billboard.com/music/rb-hip-hop/metro-boomin-reacts-like-that-top-hot-100-1235646421/>.

producers of the '90s, sampling was often done with analog equipment such as the Akai MPC series, SP-1200, and Roland TR-808, to name a few. Inventing newer techniques was easier since the equipment was new. Madlib created his first sample at 11 years old, solidifying his strong sampling and production foundation from those analog methods of the '90s era. Since the '90s, he has sampled approximately 3,000 songs⁴⁵, including obscure jazz, indigenous folk tunes, electronic music, Indian, Arabic, and many other types of music. He has said, “Since the nineties, I’ve been digging for anything and everything; I don’t like to put barriers on any genres I use. I’ve touched almost every genre, but lately, I’ve been dipping into indie rock, industrial sounds, and many noise records. Anything strange or weird. I also have been using a lot of odd private press records.”⁴⁶ This mindset is of the old-school '90s frame of thought and showcases Madlib’s respect for foundational techniques and methods, even though he does not object to one specific sampling technique over another.

While Metro Boomin's sampling techniques seem fundamental, and almost imitative, his production style utilizes many original instrumentation elements in building his sonic landscape, which he excels at. When he was 13, Metro Boomin started his production journey using FL studios, saying, “My stuff is melodic and hits hard. I’m working to become more well-rounded.”⁴⁷ Currently, Metro Boomin has sampled approximately 373 songs⁴⁸, which feature mainly better-known Hip-Hop, R&B, and Classical songs rather than the vast range that Madlib showcases in his productions. This has worked in his favor as he offers more sample-free productions, offering some exciting moments regarding the heavy bass/drums and gothic

⁴⁵ WhoSampled. n.d. “Songs Sampled by Madlib.” Wikipedia. Accessed May 8, 2024. <https://www.whosampled.com/Madlib/samples/>.

⁴⁶ Sarah Kearns, Keisha Oleaga, Jack Lynch, Brycen Saunders, and Dylan Kelly. 2022. “Madlib on the Art of Sampling Sounds.” Hypebeast. <https://hypebeast.com/2022/12/madlib-producer-interview-beatmaking-process>.

⁴⁷ Naomi Zeichner. 2013. “Beat Construction: Metro Boomin | The FADER.” The Fader. <https://www.thefader.com/2013/08/14/beat-construction-metro-boomin>.

⁴⁸ WhoSampled. n.d. “Songs Sampled by Metro Boomin.” WhoSampled. Accessed May 8, 2024. <https://www.whosampled.com/Metro-Boomin/samples/>.

melodic themes while utilizing the features' star power to his advantage. With his unique ability to transform the listener into his sonic world, he has composed symphonic arrangements and blockbuster movie soundtracks with Marvel's Spider-Man: Into the Spider-verse Trilogy. He says, "he's felt frustrated by the reductive ways people talk about him as a "trap producer." After conquering not just southern hip-hop but the pop world, it felt like he was being brought in to do one specific thing, not to show off the breadth of his skill set and encyclopedic musical knowledge."⁴⁹

Beyond commercial success, the more transformative the sample is, the more its lasting impact pushes the innovation and the sample's integrity. With new technology and influences, sampling can be categorized into different methods. Madlib says, "It's hard to sample, and it's hard to make music...as long as you try to do both, it don't matter. They try to act like sampling is not music, but its hard to do correctly."⁵⁰ Throughout my research, some trends, innovations, and differences were revealed that further bridge the impact of the 1990s-2000s sampling on the late 2010s-2020s sampling.

In the '90s, many hip-hop producers began to sample more from movie and television clips than songs, boasting their vast cultural knowledge, and taking notice of more integral sounds and words to further convey their message. I think this indirectly led to hip-hop producers expanding into creating official film soundtracks in the 2010s-2020s (e.g., Metro Boomin for Spider-Verse). Instead of just using other cultural moments from the past, this creates original cultural moments beyond the music, but on the silver screen worldwide. Another trend of the '90s was interpolation, which:

⁴⁹ Grant Ridner. 2022. "Metro Boomin, the Architect of Atlanta Rap, Returns With 'Heroes and Villains.'" GQ. <https://www.gq.com/story/gq-hype-metro-boomin>.

⁵⁰ Otis Jackson Jr., Jeff Mao, and Red Bull. 2016. "Madlib Talks Sampling, Freddie Gibbs, J Dilla And More," Red Bull Music Academy. Lecture. <https://www.redbullmusicacademy.com/lectures/madlib-2016/>.

“involves taking part of an existing musical work (as opposed to a sound recording) and incorporating it into a new work. it does not involve using any of the actual audio sounds contained in a pre-existing recording. Instead, new audio is recorded.”⁵¹

Utilizing this method was cheaper for producers, than paying for the copyright access outright. Although sample clearance is still a very tedious process, producers in the 2020s utilize more samples from the 2010s, as it is the most popular decade to sample from.⁵² Even searching through Metro Boomin’s samples, when he does sample, he utilizes a lot of his productions from his decades and repurposes them in a newer context. As more artists' catalogs were purchased by the record labels, utilizing these samples lowered the cost for artists signed to or in partnership with that label.

Another trend of the '90s was live instrumentation, which directly influenced more interpolation usage. There is a different timbre and tone from using live instruments, as it gives the track more emotional depth and an authentic sound that can be difficult to replicate, adding more unique character to the sample. For the 2020s, digital instrumentation is the most utilized as it allows for more flexibility in execution and can be easily replicated, saving time and money. Although some producers utilize both live and digital, digital is more accessible as all you need is a computer, phone, or tablet to start sampling.

There have been innovations in pushing the boundaries of samples. For the '90s, crate digging was the basis for finding the sample and it took much skill, which led to experimenting more with obscure records. The more obscure, the harder it was to track the sample, and the producer had to completely chop it up to become unrecognizable in their tracks to avoid lawsuits.

⁵¹ United States Copyright Office. 2021. “Sampling, Interpolations, Beat Stores and More: An Introduction for Musicians Using Preexisting Music An Introduction for Musici.” Copyright Office. <https://www.copyright.gov/music-modernization/educational-materials/Sampling-Interpolations-Beat-Stores-and-More-An-Introduction-for-Musicians-Using-Preexisting.pdf>.

⁵² Tracklib. 2021. “Tracklib Presents State of Sampling 2020.” Tracklib.com. <https://www.tracklib.com/blog/tracklib-presents-state-of-sampling-2020>

It also allowed for worldwide cultural music to find its way into hip-hop music, with melodies, harmonic structure, and drums being integrated into songs from Arabic, Southeast Asian, and Indian cultures. Thus, creating a multicultural sound that respectfully and collaboratively pushes innovation and supports cultural and social reflection. In the 2020s, creating sample AI tracks has become more prevalent. As this is a positive trend in technological development, this causes more strain and uncertainty for ethical implications, historical accuracy, and authenticity in the creative process. Another innovation in the '90s was multilayered samples, as some hip-hop tracks contained one sample, and using multiple samples created a conglomeration of different parts to make a unique blend. On the contrary, in the 2020s, intense focus on social media is an innovation and driving force in choosing popular samples to garner attention and views which turn into monetary gain.

As much as the '90s influenced current sampling techniques, there are some differences between the two eras. In the '90s, there was more utilization of analog equipment, especially as hardware became more accessible and started to become recognized as actual musical instruments. It provided a more authentic sound and was very tactile. In the 2020s, utilizing DAWs became the industry standard as it is more sophisticated and efficient. Another difference is, that in the '90s there was mainly independent label support, as hip-hop was still somewhat underground during this era. Many artists and producers were independent, giving them full creative freedom and control over their artistic vision and narrative, and kept HipHop circulated in the communities that birthed it. However, this is a complete switch in the 2020s, as hip-hop is one of the most profitable and recognized genres, garnering much mainstream label support. This allows producers to focus more on the music, instead of all the business logistics that come along with it. This has both positive and negative effects because if the artistic vision of the track is not

the direction the label wants to take, it becomes overruled by those in charge. One last difference revealed through my research is the '90s had looser copyright infringement since there was no standardized method for tracking samples and their usage. However, with more accurate software to detect sample usage, the increase in copyright infringement happened in the 2020s. As time progresses, we will also see a shift in these dynamics. Especially with record labels, artists, and the US Congress cracking down on AI usage, it will spark many more movements going forward in hip-hop sampling and music as a whole.

VIII. Conclusion

By triangulating multiple data sources and perspectives, I aimed to provide a nuanced understanding of the evolution and diversity of hip-hop sampling techniques. The comparative approach allows one to identify trends, innovations, and differences in sampling practices across decades. These differences span across the broader socio-cultural, technological, and artistic implications. Through my critique, I remained mindful and unbiased in highlighting both the positive and negative aspects of sampling development by shedding light on the dynamic nature of sample methods. The '90s was the foundation for more contemporary sampling and is often showcasing greater utilization and integrity of the sample rather than in the 2020s. The original proposed theoretical framework contributes to deeper scholarly discourse, informs industry practices, and inspires further research in hip-hop studies and music production. My research aims to contribute to a deeper conversation about how sampling techniques from the 1990s-2000s influenced and cultivated the creative process and key narratives in the hip-hop landscape from the 2010s to the 2020s.

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