

*Add to
master refereeing*

The Scratch Is Hip-hop

Appropriating the Phonographic Medium

David Albert Mhadi Goldberg

Following are the opening moments from Kid Koala's "A Night at the Nufonia" (1999): "What is this? They come out, they-they don't even have any instruments, they-they got two record players, they go . . ." What follows is what is called a scratched deconstruction of scratch onomatopoeia. As you might imagine, Kid Koala is a hip-hop disk jockey (DJ). "Scratched" refers to a vinyl recording whose playback has been altered by hand in order to produce a rhythm. "Scratched deconstruction" is the theoretical and manual exploration of a recording's composition in terms of its pitch, tone, timing, content, and meaning. The scratch can subdivide a sound along its internal boundaries and rearrange its units, forming entirely new aural moments. Scratching the recorded voice or other discrete sound moves it from word, syllable, or phoneme to hand-driven sonic turbulence that can take on the characteristics of drumlike percussion, stringlike friction, and windlike pitch shifts. When Kid Koala deconstructs a comedian's voice, he is not only creating new rhythmic and sonic elements on a technical level, but is altering the narrative of the passage on a referential level. The comedian's spoken passage no longer refers to what it did in the original (a recorded instance of satire); it refers to a history of scratching techniques as well as the new context that Kid Koala has created for the listener. "Scratch onomatopoeia" refers to the types of sounds that the recorded comedian might have made had he been able to muster more than toothbrush shushings and loud hissing into the microphone. These are the vocal imitations of classic sounds of the scratch: "Shigga shigga," "chicky-chip chaw," "r-r-rock the be- be- be- be- beat with your hands." Kid Koala disrupts the audibly white speech of this comedian before it can spiral any further. "Scratched deconstruction of scratch onomatopoeia" is the real scratching of a voice imitating a scratch. In a

tightly wrapped recursive instant, Kid Koala silences the recorded voice and produces a new noise, generates new information, creates new meaning from this raw material, this data on the record.

As the microscopic ridges of “they go . . .” spin beneath the needle, Kid Koala—speaking with his hands—interrupts the comedian’s speech. He disrupts the sentence and answers the comedian’s question, “What is this?” with a barrage of activity that involves manipulating the speed and direction of the record with one hand while the other rapidly alters the playback volume. Kid Koala explains what “this” is by making a very complex statement in a very short amount of time. He demonstrates an understanding of how hip-hop is viewed by those outside its loop of consumers and producers, and challenges that view by seeking out, studying, possessing and reconfiguring its scornful voice. He does so with a steadily growing arsenal of techniques and a limitless archive of sounds developed in a tradition of sonic composition that for almost thirty years has been systematically refining a radical approach to modern media. This development started with the appropriation of the turntable or, to be more accurate, the phonographic medium itself.

This chapter attempts to provide a deeper investigation of hip-hop DJs and hip-hop producers as composers and authors, following the evolution of their sonic priorities through turntables, electronic instruments, and samplers. What follows are readings of influential hip-hop sonic “texts” by contemporary hip-hop DJs/producers and their predecessors Grandmaster Flash, Kool DJ Herc, and Afrika Bambaataa. These readings are supplemented by theoretical considerations that are intended to illuminate the cultural connections between hip-hop composers and the aural fragments with which they work. Along the way we will see and hear the scratch as a protean (post)modern gesture that, by taking hold of the phonographic medium, has deeply informed the use of digital storage and organization technologies as they are used for hip-hop sonic composition. For a digital sampler is nothing more than a simple computer that allows its user to sequence the order in which the contents of its memory are output. In this case the output is audio, but a sampler could just as easily be configured to store text, images, moments of video, or some combination of all three. The key to understanding hip-hop composition’s radical departure from “traditional” use of digital technology is understanding the underlying methodology that informs the sampler’s usage and is informed by scratching and mixing techniques developed by hip-hop DJs. Accomplishing this requires establishing better distinctions between hip-hop DJs and producers and the rappers that work with both groups.

“Rap music” has become a general designation for hip-hop production of audio and, with the introduction of the music video, visual content. Despite the difficulties inherent in representing its multiple layers of cultural practice as a monolithic form, it has become a site for critical engagements with the mechanisms of white supremacy, issues of class mobility in the postindustrial urban landscape, and the mass distribution of violent, misogynist, and homophobic narratives. That rap vocals

have fueled these encounters is taken as a given. That this complex eruption of cultural criticism was made possible by the digital loops, juggled breaks, and cut-up mixes that were the medium of the rappers' messages to the global mediasphere goes overlooked. The extrication of the rapper's ego and role as media avatar from the sonic backdrops that support them is a delicate operation that this chapter attempts to carry out. It attempts to identify the more deeply flowing structures of hip-hop sonic composition that can ultimately appropriate any rap vocal and turn "real" rappers into surrogate content generators. By presenting hip-hop composers' relationships with the recorded voice, the sound fragment, and previous forms of black musical expression as moments that can be taken and manipulated, I hope to establish grounds for claiming that their tactics and strategies are essential for meaningful cultural production in our emerging era of total digital storage, retrieval, and cross-reference.

The Phonographic Medium

The technology that evolved into the modern turntable has undergone a steady increase in sonic and mechanical precision since its invention over 150 years ago. Though the word "phonograph" was originally applied to the tinfoil cylinder system, I use it broadly to characterize the entire phylum of "sound-writing" devices based on the concept of etching sound waves onto a surface. What started with Frenchman Leon Scott de Martinville's write-only technology for representing sound on smoke-blackened paper (the "phonautograph")¹ went through several stages, using etched tinfoil (as Edison did in 1877), wax cylinders, and eventually metal disks whose etched surfaces could be used as a matrix for mechanical duplication.

The phonographic medium has been part of popular culture since the founding of Edison's Speaking Phonograph Company in 1878, and it has fluctuated between the functions of recording dictation, recording/archiving the past, and entertaining. By 1891, however, the success of coin-operated phonographs installed in public places such as drugstores and cafés cemented the phonographic medium in its role as entertainment and advertising platform. In a "phonograph parlor" a user could sit at a desk fitted with two audio horns and a speaking tube and request one of 150 songs to be played by a proto-DJ located elsewhere in the building.² Meanwhile, phonographs "mounted in conspicuous places" could be activated at the touch of a button and deliver music seasoned with brief spoken advertisements for products such as baking powder and soap.³ Emile Berliner's gramophone (1893) was the first disk-based phonograph. With its improved sound quality, mechanical reliability, and media replicatability via the production of "master" recordings, its disk would eventually dethrone the cylinder as the popular format.⁴ The cylinder would disappear as a medium largely due to the Gramophone Company's "artist and repertoire" efforts spearheaded by one Fred Gaisberg, who traveled throughout Europe and Asia recording a wide variety of performances.⁵ Gramophone was at that point able to offer a global audience of recording enthusiasts a far greater range of recordings.

With the phenomenal success of the first recorded jazz records in the United States in 1917, the phonographic medium secured its place in day-to-day life. During the same period, record companies like Okeh would target market black communities with “race records” causing jazz, the “improvised sound that inspired a passion for dancing in some and puritan rage in others[,] to burst across geographic and racial borders and leave its mark on all forms of popular music.”⁶ Pertinent to this discussion is how this original tactical economic maneuver that, via media, crossed the no man’s land of segregation would plant the seeds for the unique approach that black people would eventually take to the phonographic medium.

Mechanically, the phonograph has gone from the somewhat delicate contraption of Edison’s day to the sleek, minimalist metallic housings of the modern turntable. Without the increased durability of the phonographic medium, initially pushed by its use during World War I to “give our Soldiers and our Sailors music wherever they should be,”⁷ the hip-hop DJ would not have been able to pursue the paths of innovation that are discussed in this chapter. The basic features of the turntable preferred by hip-hop DJs—the Technics SL-1200Mk2—include the ability to start and stop rotation of the platter almost instantly, the means of altering the pitch of a record by plus or minus 8 percent, and a highly stabilized tone arm of adjustable weight. The durability and sound quality of its medium, a platter of inscribed plastic, has vastly improved since wax cylinders and thick shellac. The turntable’s sound is amplified by a stereo mixer that is frequently designed with DJ practices and techniques in mind. The cross-fader, a horizontal volume slider that the DJ uses to mix the sounds of records on two turntables, has become light and strong enough to survive the punishment it endures beneath the DJ’s fingertips. These are all very good things, as a dedicated hip-hop DJ pushes the limits of the phonographic medium. A DJ pushes the sonic boundaries by playing records at speeds that exceed their normal rates by several orders of magnitude, for incredibly short distances forward and backward beneath the needle. A DJ pushes the physical boundaries of the turntable itself in the sameway, threatening to cause the needle to leap out of the groove if a scratch or backspin is misapplied. The mixer’s volume controls are slammed back and forth, up and down, and toggled with blinding speed to produce a wide variety of variations in sound playback. It is not unusual to see the square head of a fader fly free of the mixing console if it is built too cheaply or the DJ is too careless. These stresses on the phonographic medium, the territory of hip-hop DJ practice, are within the “normal” performance range of a typical hip-hop DJ in a club or on MTV.

The DJs who come close to exceeding the limits of the equipment know that the Technics 1200Mk2 has withstood the full weight of an individual executing a break-dance move known as a hand spin on its platter. They know that the Shure brand of needle has been licked by another DJ in order to secure a victory. They are confident knowing that the Vestax brand of cross-fader has been slapped, kicked, tongued, elbowed, bellied, and otherwise manipulated by any body part that can serve as a prehensile appendage. These antics have emerged from the realms of head-to-head

DJ competition and from the global network of DJ battles sponsored by record labels, recording industry organizations, museums, and clubs. The DJs engaged in hip-hop battles turned the art of playing records into a sport, a form of entertainment, and an art. Special records with carefully created archives of sound effects, vocal fragments, and beats are pressed and distributed as "battle weapons." The best DJs, sometimes collaborating on multiple turntables, can guide and sustain the momentum of a party by carefully repeating any passage on vinyl that has a beat.

The best hip-hop DJs are, as a result of constant practice, highly trained and can create entirely unique compositions using just two records. They bring these recordings out of a dusty past with such respected artistry that the sampled loops in many contemporary rap recordings typically include the sound of the bass drum's being scratched in order to emulate the "live" feel of the DJ "juggling" the beat. At this point in the evolution of hip-hop composition, the sampling practices of the hip-hop producer include appropriating the techniques of the DJ for audiences that might know nothing of what it takes to make a beat "by hand." When the seams of a construction vanish in the distraction of representation, it is a good time to look behind the polish and apparent effortlessness of its stability.

Needle-Dropping

"Mediascape" Concept

The hip-hop DJ has redefined the relationship between recording and playback technologies and how people use them as a means of maintaining and practicing culture. In the hands of a hip-hop DJ, the turntable became a compositional tool, and record collections became archives. By appropriating the phonographic medium as it was entering its second twilight,⁸ the hip-hop DJ created a new "mediascape" (Appadurai 2000) based on bringing direct physical interactivity to what is essentially a storage medium. Genealogically hip-hop's sonic mediascape is made up of successive accumulations of commodified music, which includes the blues, rock 'n' roll, jazz, funk, go-go, soul, samba, salsa, mambo, and rumba rhythms found in the vinyl recording format. Historically this diverse recorded music from record collections and juke boxes was part of the sound track for young lower-class to lower-middle-class black and Latino New Yorkers in the 1970s... or, their parents

The club environment and the radio established the tradition of using two turntables and a mixing console as the means of segueing smoothly between records. But the Jamaican mobile sound system transplanted to the South Bronx established the "sonic priorities" of hip-hop (Rose 1994) and diverged from this tradition. The Jamaican sound system is a collective of both individuals and the equipment (speakers, amplifiers, and turntables) they set up in a wide variety of urban locations. Each sound system's tremendous volume and frequency range become the very stuff of its reputation, along with the quality of the records its "selector" (the Jamaican term for what Americans refer to as a "disk jockey" or "DJ") plays, and the excitement its "DJ" (who is understood in America as a "rapper") can elicit by celebratory exhortations directed at the crowd and the announcement of the next record. Hip-hop's earliest

parties (in the early to mid-1970s), embodying all of these originally Jamaican aspects, were held in parks, in the middle of streets as block parties, and in the auditoriums and flexible spaces of neighborhood schools and community centers. Here a new type of DJ who was not on the radio or in discos reconfigured the art of record playing to accommodate a new generation of listeners. A Jamaican immigrant named Clive Campbell, aka Kool DJ Herc, using his archive of vinyl recordings, a mixer, two turntables, and a deafening stack of speakers known as the "Herculords" (see Figure 6.1) would recombine sounds expressing African diasporic aesthetic concerns with bass, layered rhythms, oratory skill, and audience participation.

Kool DJ Herc began the practice of reducing recorded music to essential packages that excluded anything that did not work on the dance floor. Finding his American listeners unresponsive to the dub and reggae of his homeland, Kool DJ Herc switched to funk, soul, Latin, and jazz music. Like any good DJ worth his reputation, Kool DJ Herc closely monitored the crowd for their reaction to his selections. Noting that specific parts of these records elicited particularly enthusiastic responses, he was inspired to play them using a profoundly innovative strategy. Using two copies of the same record, he demonstrated the unprecedented ability to consistently lift the needle and replace it in any groove in the vinyl. Thus he could play part of a record on one turntable and, once a specific passage was over, set the needle down at the beginning of the same passage on the other record. By alternating this process, called "needle-dropping," between the two turntables, Kool DJ Herc could extend the preferred part of a record indefinitely, preceding the use of the digital sampler's capacity for looping recorded sound. Driven by the demands of his audience (Palmer 1982, 28),⁹ Kool DJ Herc invented a technique for isolating the "best" parts of records (see Figure 6.2). These favored parts of records, the ones that heightened the excitement of the crowd, became known as "breaks."¹⁰

*Herc = isolation of the break
Flash = using isolation to create loop*

The Break

The archetypal break in hip-hop composition is a part of a record where only the drums and/or bass is audible in the track's mix. The break as a concept, however, is a multifaceted articulation of African diasporic cultural production. In an African American context, "break" as a noun can be traced to the word "breakdown," which, according to blues researcher Stephen Calt "may have dated to the 1850s, when the term . . . entered American speech as a synonym for a black dance gathering" (Calt 1994, 41).¹¹ A "breakdown" in 1850s parlance echoes celebratory and performance traditions that began in Africa, where funeral processions, celebrations honoring ancestors, rites of passage, and royal events were accompanied by music and dance (Thompson 1974, 38–43). The term would later be used to describe an African American musical idiom characterized by rapid syncopated guitar-picking that was "popular fare at pre-World War One plantation dances" (Calt 1994, 41). However, the "breakdown" as a musical style would be eclipsed by the sound and form of the blues (Calt 1994, 41), which would go on to spawn jazz. Though the term "breakdown" as

a descriptor of a musical genre or social event would fall out of usage during the ascendance of jazz, its early meaning remained intact as a referent to music that fueled black revelry. In jazz, the breakdown—or simply “the break”—would become associated with “the soloist’s improvised bridge between stanzas” (Rose 1994, 194). By the time hip-hop DJs were digging through crates of the recorded past, the break, defined by jazz as a fundamental musical form, had spread rhizomically throughout

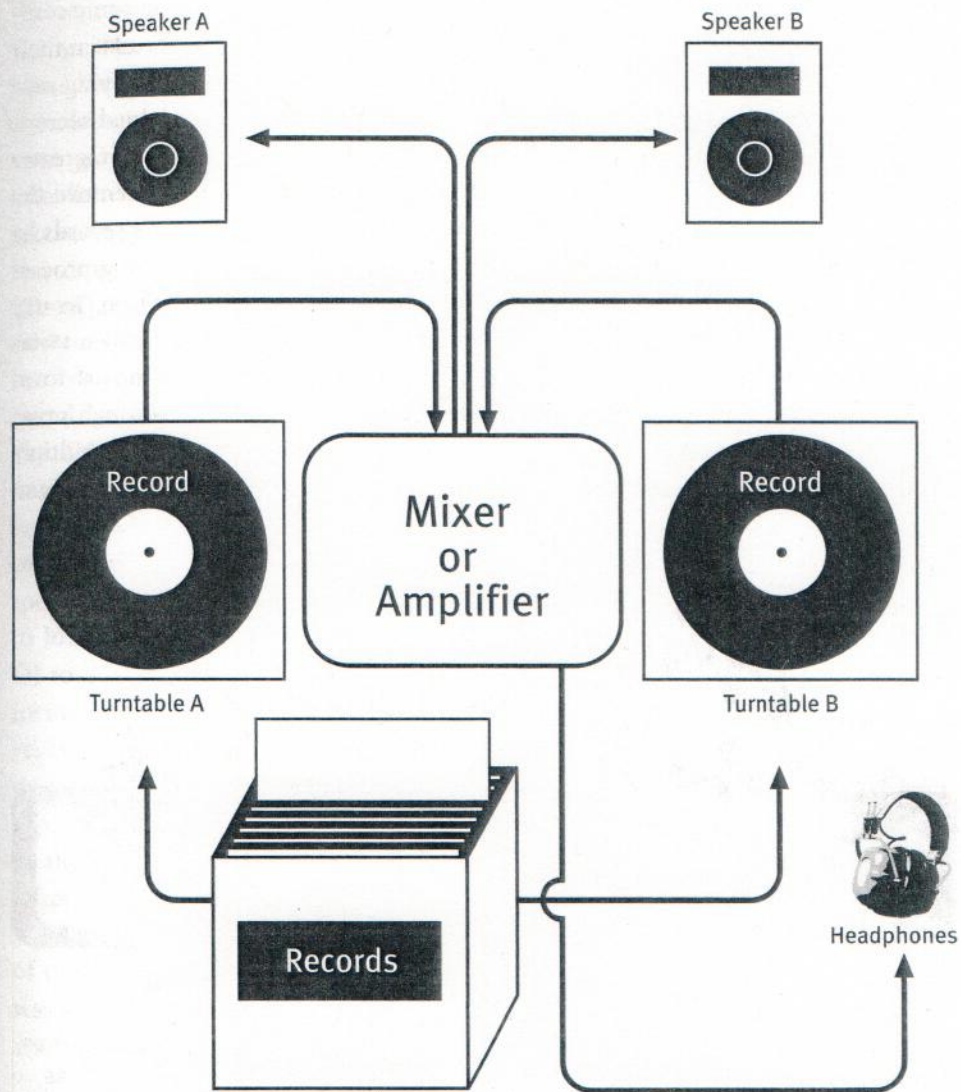


Figure 6.1. Basic DJ setup. Two turntables are connected to a mixer or amplifier, which allows the DJ to mix the volume levels of the respective turntables. Headphones allow the DJ to hear the record on one turntable before it is played through the speakers. Illustration by David Goldberg.

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all of the music that came after it—funk, soul, rhythm and blues (R&B)—all the rich ores of hip-hop composition. Falling into the performative stream initiated by the first black breakdowns, the hip-hop DJ's artful manipulation of the break elevated the spirits of the audience and inspired renewed commitment to the act of celebration.

A hip-hop DJ in the process of needle-dropping creates a form of sonic hyper-text where each break is a reference to the recording from which it came. As the cultural practice of hip-hop DJing developed, would-be DJs followed the references to their sources and were initiated into the art of "digging in the crates,"¹² or searching archives of recordings for choice passages of music to be used in hip-hop sonic composition. DJs were not only expected to have records with the popular breaks in their crates, but to provoke further celebration in audiences by finding and playing new ones. Break records and their sources came to be regarded as highly valued secrets. Pioneer hip-hop DJ Afrika Bambaataa (whose contributions are discussed in greater detail later) was known to soak his records in the bathtub in order to remove the labels so that competitors spying on him at parties would not know what records he was playing (Toop [1991] 1994, 65). Crate-digging created a self-sustaining process that formed one of the foundational practices of hip-hop sonic composition. To stay ahead of rivals, DJs constantly sought out new breaks that reflected their own tastes in music and those of their audiences as well. Some DJs approached the art form with an existing knowledge of recorded music; others built theirs up through practice. This required listening to a broad range of records, which resulted in multiple DJs carrying out a massively parallel investigation of the phonographic medium and



Figure 6.2. Looping breaks on two records (aka "beat juggling"). Needle-dropping involves physically lifting the needle and replacing it at the beginning of the desired passage. As mixer and turntable technology improved, this process became a matter of spinning (or cueing) one record back to the beginning of the passage while the other plays over the speakers. The DJ identifies the passage by listening through headphones, using specific parts of a record's label as visual cues, or marking the record with a piece of tape. Illustration by David Goldberg.

performing the results at parties. While trawling through this vast archive, DJs found more than breaks to work with. They found the musical riffs, stabs, choruses, shouts, and chords that seasoned the records they dug up. Another radical development in hip-hop mixing techniques would facilitate the exploitation of these new sonic resources.

The Cut

Once Kool DJ Herc established his reputation via the circulation of his mix tapes, the renowned quality of his sound system, and the popularity of this new sound, many other DJs emerged in the South Bronx. Some of them were collaborators, and some were competitors, but all of them continued to work with and build on the foundation established by Kool DJ Herc. A DJ by the name of Grandmaster Flash emerged as hip-hop's next major sonic innovator. Though Grandmaster Flash had established a loyal following in the nascent hip-hop community by playing the increasingly popular break-beat music in empty apartments around the borough, he was critical of his own inability to properly synchronize beats on two turntables (Toop [1991] 1994, 63).¹³ One of his contemporaries, a "sit-down" DJ¹⁴ by the name of Pete DJ Jones, was highly accomplished in the art of seamlessly blending two records playing simultaneously (Toop [1991] 1994, 63). Grandmaster Flash compared the "half-disabled" equipment he used to the technologically superior setup of Pete DJ Jones and wondered if the gear itself was preventing him from reaching the level of ability he desired (Toop [1991] 1994, 63). Jones apparently recognized the value of what Grandmaster Flash was doing in the community and, on the strength of the hip-hop DJ's reputation (Toop [1991] 1994, 63),¹⁵ eventually let him experiment with his setup after showing him how to use it. Flash discovered that the secret to Jones's beat-matching was a mixer equipped with a cueing feature that allowed a DJ to listen to a record *before* it was played over the speakers. Grandmaster Flash, incidentally, had undergone some training in electronics, which allowed him to reverse-engineer Jones' mixer and modify his own with what he had correctly deduced to be a single-pole double-throw switch (see Figure 6.3). Now that he could flip a switch to the left to hear one record, to the right to hear the other, and set it in the middle to hear both, Flash's increased mixing ability freed him to explore other territories of the turntable as his popularity in the Bronx increased.

Grandmaster Flash went on to develop "punch-phasing," the manual precursor of the digital sample as it is used in the context of hip-hop sonic composition. This was a mixing technique that allowed him to accent one record with elements from another (see Figure 6.4). With the introduction of punch-phasing, also known as "cutting" (for the abrupt introduction and silencing of a recorded sound), Grandmaster Flash gained a new measure of control over the records and began working beyond the parameters established by simply needle-dropping on the breaks. The cut introduced the possibility of including more orchestration in a mix, directly emulating the riffs and stabs that James Brown employed in records like "Get Up, Get

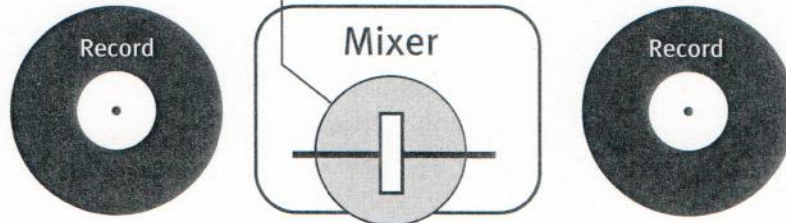


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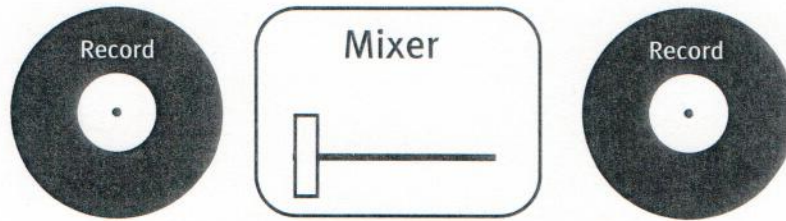


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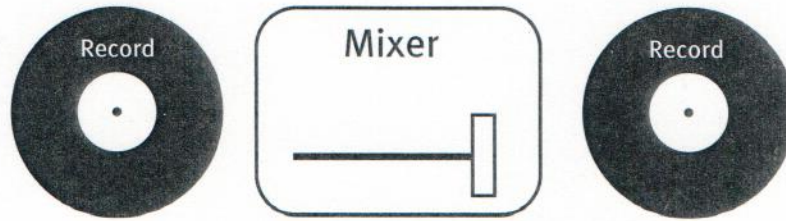
The cross-fader controls the volume levels of left and right on records.



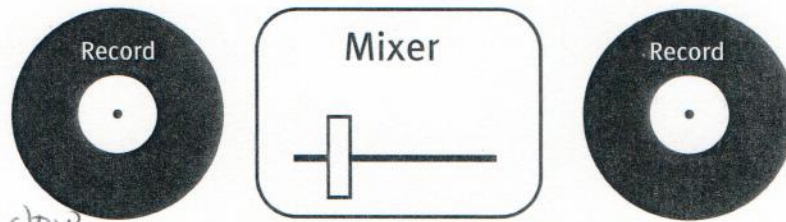
Fader in center position; both records equally audible.



Fader in extreme left position; only left record audible.



Fader in extreme right position; only right record audible.



only on slow curve setting

Fader in intermediate position; both records audible, left record louder. Grandmaster Flash's original mixer had a switch instead of a cross-fader, so the intermediate volume level was impossible to achieve.

*really? 217
No, upfaders on MX-8*

Figure 6.3. The cut. Physically, a cut involves moving the cross-fader toward full volume as an element on the record plays. In this case the cross-fader is quickly “cut” back all the way to the right when the element is done playing. All other scratches are derived from this fundamental manipulation. Mixers designed specifically for DJs have adjustable “fader curves” that make the volume transition from 0 to Max more or less abrupt. Illustration by David Goldberg.

into "It, Get Involved" (1986), where his calls of "Hit me" were met with powerful, skillfully orchestrated horn responses from the band (Rose 1994, 70; Toop [1991] 1994, 66). James Brown's music was already a profound cultural influence before the birth of hip-hop, and when DJs like Grandmaster Flash began experimentally manipulating "Brownian" grunts, cries, commands, and the elemental moments of the band's instruments, they made an interactive historical connection through the phonographic medium. This manual sampling and reconfiguration of previously recorded black music exceeds the capacities of what have become highly generalized post-modern conceptions of appropriated technology.

Framing the reemergence of older forms in a Frederic Jameson-based discussion of "revivals and remakes, comebacks and cover versions," Steven Connor in the "Post-modernism and Popular Culture" section of his *Postmodernist Culture: An Introduction to Theories of the Contemporary* (1997), folds hip-hop composition into a discussion of the technological development that describes how "the cultural evidence of rock music can be physically dismantled and reassembled in the form of pastiche and collage" (206). For Connor, "the present cult of 'sampling' . . . provides the clearest exemplification of the postmodernist aesthetic of the fragment" (207). With a passing nod to Dick Hebdige's *Cut 'n' Mix*, Connor goes on to mention that hip-hop composition's incorporation of recorded sound into live performance can serve to "decentre and redistribute cultural power" as it struggles against being "kept invisible and inaudible by official white rock" (207), a point that Tricia Rose has

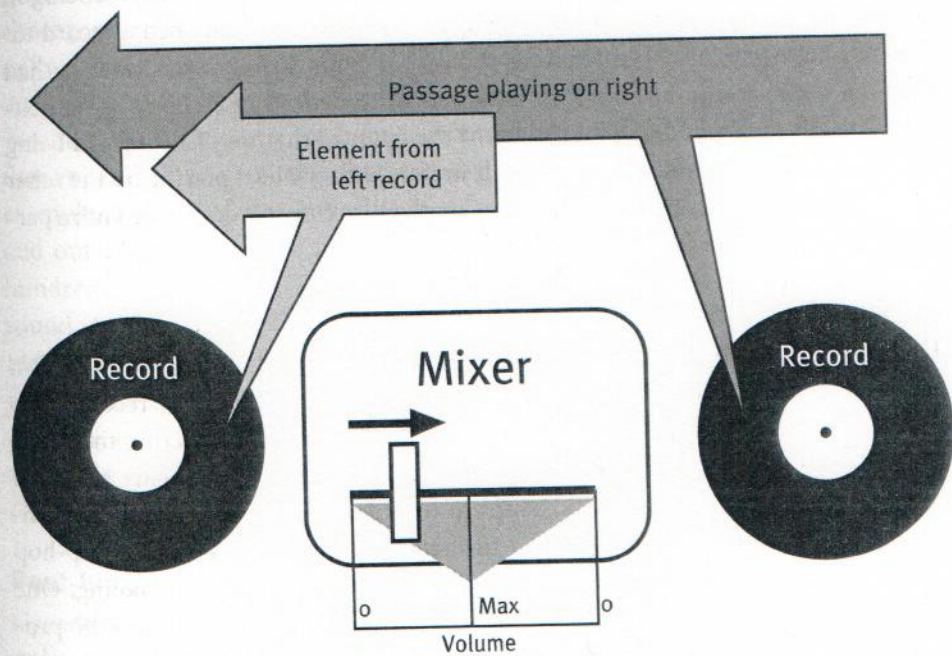


Figure 6.4. Cross-fader and mixing basics. Illustration by David Goldberg.

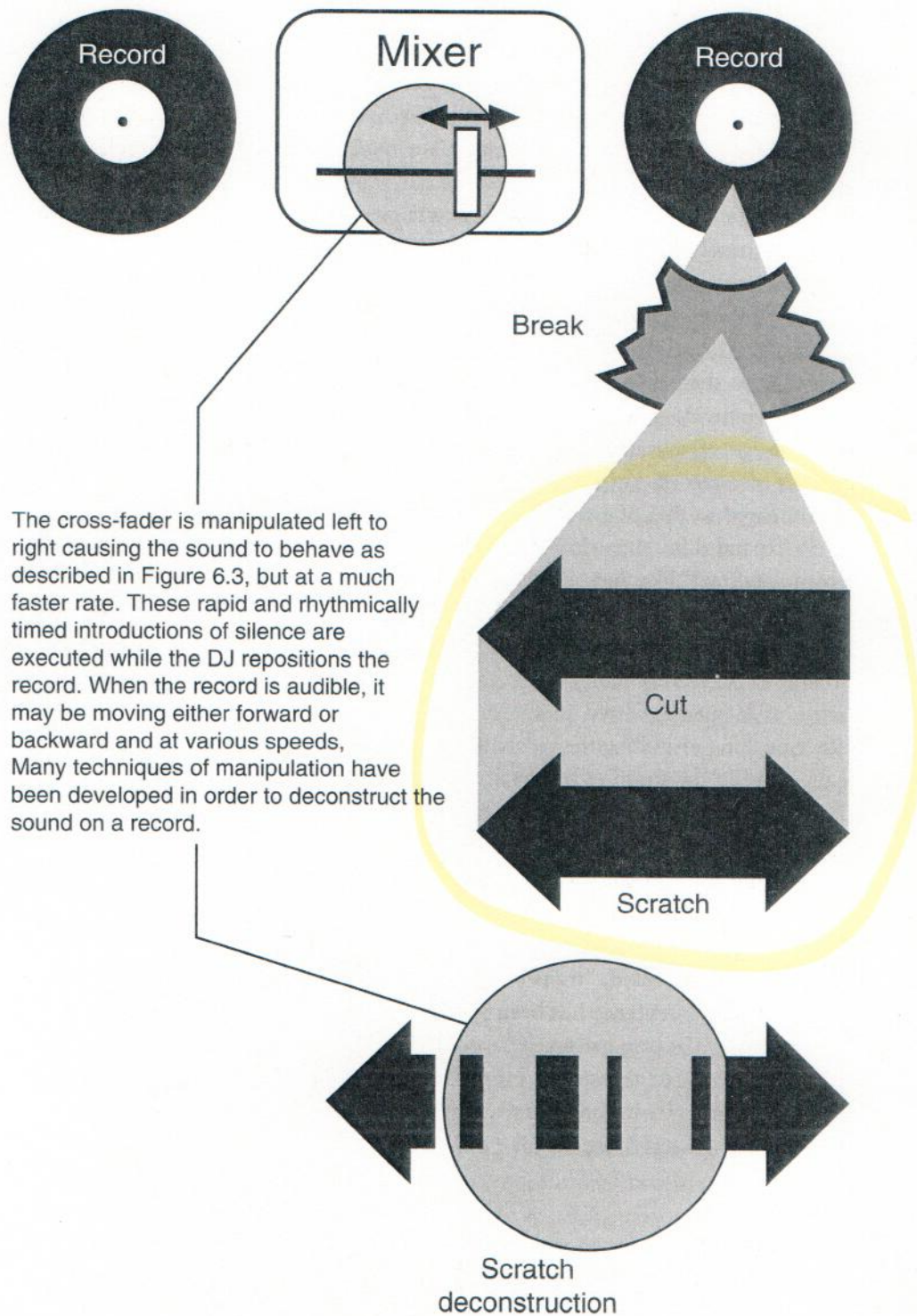
taken up and I discuss later. Though Connor attempts to give some credit to hip-hop sonic composition, he frames it within a broader investigation of white rock's transformations (largely influenced by hip-hop sonic priorities), and offers a generalized observation that is not too different from those of Kid Koala's comedian.

The DJ's cut is a profoundly compressed moment in itself that can be unpacked to reveal a long genealogy that is deeper than that of a "cult of sampling." The cut is a formal descendant of the response to Brown's call of "Hit me." In turn, James Brown's instants of flexible orchestration unfold to reveal the aural traces of the nimble, sectioned responses that Duke Ellington could call forth from his tightly integrated bands. Ellington's moments can be found to go even further back, to the sudden percussive slides that blues guitarists used to emphasize their vocals. These emphatic synthetic cries can be heard as an echo of numerous African vocal and instrumental techniques for dramatically accenting or disrupting musical momentum (Palmer 1982, 28).¹⁶ The cut is another elemental DJ technique that prefigured use of the digital sampler, allowing the DJ to catch any moment of a record and introduce it into the mix. The cut became the foundation of all future turntable manipulations, but the sonic possibilities that resulted from discovery/invention of its reversal would go ignored until a thirteen-year-old boy exploited it.

That boy was Grand Wizard Theodore, and he is credited with the earliest recognized use of the sound produced by pulling a record backward after cutting it. With the serendipity that is a hallmark of hip-hop composition's development, Grand Wizard Theodore introduced the world to the scratch. As Theodore himself tells the story in the documentary video *Battle Sounds*,¹⁷ while he was practicing in his room one day his mother began talking to him just as he had cued a record for a punch-phase or a mix. Not wanting to lose the point in the record that he had found, he began to move the record back and forth beneath the needle as he half-listened to his mother. Meanwhile he heard the counter-rhythm of the record being pulled back and, inspired, began moving it in time with the beat playing on the other turntable. This was the serendipitous occasion that has come to define the entire paradigm for hip-hop sonic composition.

The Scratch

The hip-hop scratch is a sound of pure f(r)iction. Conceptually, the scratch is fiction because it is wholly invented through the reorganization of a sound recorded on vinyl. Physically, the scratch is friction because it is produced by altering the interaction of the phonograph needle and the groove of the record (see Figure 6.5). The scratch explodes all previous relationships to recorded sound because it fundamentally violates the original intent of the turntable-record interface. Before hip-hop DJs, the vinyl recording was almost fetishized by virtue of its ritual handling. One was not supposed to sully the surface of a record with one's skin oils, and the prohibition against touching a moving record is so deeply ingrained in people's behavior that they are sometimes afraid to stop its rotation, let alone spin it backward.¹⁸



The cross-fader is manipulated left to right causing the sound to behave as described in Figure 6.3, but at a much faster rate. These rapid and rhythmically timed introductions of silence are executed while the DJ repositions the record. When the record is audible, it may be moving either forward or backward and at various speeds. Many techniques of manipulation have been developed in order to deconstruct the sound on a record.

Figure 6.5. Cuts, scratches, deconstructions. Illustration by David Goldberg.

By combining his knowledge of the established traditions of break music, the freedom offered by working in a recording studio, and the flexibility provided by the scratch, Grandmaster Flash crafted early hip-hop's first masterpiece of turntable storytelling. Called *The Adventures of Grandmaster Flash on the Wheels of Steel* (1981), this mix demonstrated the height of the hip-hop DJ's skills at the time. In *Adventures* Grandmaster Flash acted as a composer, a percussionist, and an artist who fully understood how to push the boundaries of his medium. Grandmaster Flash's megamix presented the majority of the scratch and mixing vocabulary in use by DJs today, creating the framework in which they demonstrate their virtuosity in live competition and recorded composition.

Adventures is widely recognized as a hip-hop classic and is discussed in David Toop's *Rap Attack 3* (1999),¹⁹ Bill Brewster and Frank Broughton's *Last Night a DJ Saved My Life: The History of the Disc Jockey* (2000), and Ulf Poshardt's *DJ-Culture* (2000). These examples situate *Adventures* in the historical context of hip-hop composition (Toop) and the DJ as a cultural figure in general (Brewster and Broughton, Poshardt). Tricia Rose, in *Black Noise: Rap Music and Black Culture in Contemporary America* (1994), reads *Adventures* a little bit more deeply, using it as a historical reference amid her larger project, which looks at hip-hop sonic composition and rap as acts of cultural resistance by black people. Rose quotes a "poetic" description of *Adventures* by Nelson George that describes several examples of Flash's turntable mastery (Rose 1994, 54). However, in light of the vastly expanded role that appropriated simulacral, cut-up, juxtaposed and collaged media plays in contemporary audiovisual culture, *Adventures* deserves a rereading that addresses the record on a technical and referential level.

Technically, *Adventures* introduces "beat-juggling," the technique by which DJs create entirely new rhythms by mixing syncopated passages from identical or tempo-matched records. *Adventures* also makes use of a wide range of highly creative scratched rhythmic and imitative accents, as well as the act of appropriating the recorded voice that becomes an important critical and narrative element in hip-hop DJ practice. This use of the recorded voice, what I have termed "scratch ventriloquism," is one example of the referential techniques that hip-hop DJs work with. By performing this rereading with a more DJ-oriented emphasis, I hope to establish *Adventures* as a critical sonic text that demonstrates the multiple levels on which hip-hop composition, even at an early stage, was operating.

The record opens with Flash cutting a contemporary rap vocal from Sequence and Spoonie Gee's "Monster Jam" (1980), which references black jive of the 1950s: "Y'say one for the trouble, two for the time, c'mon girls let's rock that . . ." Before this record can continue, the call to the girls is met by a response from Blondie's "Rapture" (1980). Essentially possessing Deborah Harry, Flash endorses himself with her rhyme—"DJ spinnin' I say my, my / Flash is fast . . . [cut] Flash is fast . . . [cut] . . . Flash is fast, Flash is cool . . ."—and then cuts back to the rap vocal that opened the track. Continuing this hip-hop version of Ray Charles calling for his Rayettes,

Adventures

Loren B
Analysis

the response comes from the chorus of Chic's "Good Times" (1979), whose bass line forms the foundational break and reprise for the entire track. Not only was "Good Times" the backing track for the hugely successful "Rapper's Delight" (1979) by the SugarHill Gang, but as Grandmaster Flash goes on to point out in *Adventures*, it inspired Queen's "Another One Bites the Dust" (1980).

This point in the record is a profound moment of condensed criticism. After building the tension with two cycles of the famous break from the Incredible Bongo Band's "Apache" (1973), just to keep the dancers excited, Flash punch-phases the opening bass from "Another One Bites the Dust" and quickly mixes it into "Good Times" itself. The first three bass notes of both songs are very similar, and the tempo and feel are so close that, side by side in Flash's mix, Chic's influence on Queen is obvious. During his transition between the two records, Flash apes Queen's bass line with cuts of the word "good," toying with Queen before releasing the Chic record. Having pegged Queen as imitators while simultaneously acknowledging their track as worthy of rocking a party, Flash moves on to self-promotion, continuing with another moment of scratch ventriloquism similar to his use of Deborah Harry's vocal.

Grandmaster Flash cuts the recorded voices of his own rappers, the Furious Five, repeating the quote "Grandmaster, cuts faster" several times, to the beat. After a brief pause, Flash cuts from "Good Times" the violin riffs that also happen to have two snare-drum licks behind them, sustaining *Adventures'* rhythmic momentum. The mix moves into "Birthday Party" ([1981] 2000), where he works a call-and-response between his cuts on one record and the voices of the rappers on the other. They ask the crowd to count off the number of cuts Flash should make,²⁰ and he scratches the crowd's answer with the word "good." This "intertextual" dialogue between prerecorded moments via live manipulation is as subtle as a blues musician consciously slipping a teacher's riffs into an otherwise original composition and using those riffs to answer sung lyrics. Flash builds another level of dialogue into the track by using vocals (which may or may not be live) to simulate the atmosphere of a party, a "breakdown" in the old sense of the word. This call and response between audience and rapper was an original and important aspect of hip-hop parties that Flash carried over onto this record. This simulation represents the "party vibe" in hip-hop that still dominates the culture in the same way that it dominates the remainder of *Adventures*.

Returning to "Good Times" on one record, Flash announces the MCs of the Furious Five on another, stating their names and zodiac signs. After a drum roll executed by scratching the sound of a single bass drum, Flash brings in the voices of two children asking a man to tell them the story of his life. In another moment of hip-hop ventriloquism, Flash makes what is an audibly white voice speak for him. Though Flash was not "born in Adams, North Dakota, a long time ago, see," he definitely felt he was "lucky enough to be here with you," the listener. When the children ask "what happened in between," Flash answers, "Well, it went pretty much like this," and launches into the horn progression from "8th Wonder" by the Sugarhill Gang.

Named after the break that inspired it, “8th Wonder” was as notoriously inspirational as “Apache” (1973), and known to send breakers into fits. “8th Wonder” breaks down into audience hand claps and party background noises that, with Flash cutting a beat with the word “good” again, creates the sonic atmosphere of an old ring shout.²¹ Releasing “Good Times” back into the mix, he deftly catches one of the claps from “8th Wonder” and continues the syncopation, this time inverting the rhythm so that Chic forms the bass and the claps double up in counterpoint. The organ chords from “Good Times” fade in with party call and response (“All the ladies in the house say owww . . . somebody, anybody, everybody, screaamm . . .”) but not before Flash slips in one last-minute “station identification” in the form of a voice announcing “the official adventures of . . . Flash [Gordon].” The remainder of the record consists of party chants and Flash’s virtuoso scratching as he juggles “Good Times” back and forth on two turntables. By the time an accented voice makes a brief appearance and says, “Hey bro, I got something could blow your mind, man,” the Grandmaster has definitely earned his name, proving that, just as he scratches it, “Flash is good . . . Flash is good . . . Flash is giwa giwa giwa giwa giwa giwa good . . .” By turning his experiences playing parties into a refined narrative and recording it, Grandmaster Flash proved that what hip-hop DJs did could stand on its own. Though it would be a long while before hip-hop DJs were respected on their own terms, with *Adventures* hip-hop sonic composition literally reflected itself, establishing the path that all subsequent DJs would follow as their art form developed.

By collecting and organizing the assorted musical and vocal elements that went into *Adventures*, Grandmaster Flash created the blueprint for the DJ’s “battle record.” According to Brewster and Broughton, Grandmaster Flash produced *Adventures* with three crates of records that he sorted by their functionality. One crate held popular breaks, another had records with elements that he would cut into the mix, and the third was filled with sound effects, vocal records by comedians (e.g., Richard Pryor), and the like. Grandmaster Flash’s organization of his records, and the way in which he sequenced elements from them for *Adventures*, prefigured the scratch DJ’s “battle records,” which are long-playing vinyl records filled with break beats, sound effects, and vocal samples used exclusively for composition. In the future hip-hop DJs would build entirely new tracks out of these vinyl fragment archives, but before returning to the phonographic medium they would follow another path of sonic composition, crafting the remix by use of electronic instruments.

The Remix

Before anyone could compose a response to Grandmaster Flash’s genius collage, hip-hop sonic composition would be transformed by the adoption of two pieces of audio technology: the drum machine and the synthesizer. The drum machine introduced the synthetic booms, cavernous thuds, ultra-crisp claps, and merciless ticking that would join hip-hop’s characteristic sonic elements. Early drum machines, also known as “beat boxes,” emulated and extended DJs’ powers by freeing their hands to

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apply layers of scratched rhythms and fragments from other records to the mix. The incorporation of the beat box into hip-hop composition was like a miniature post-industrial shift, a subtle manifestation of the "information age" that caused not only the total displacement of the session drummer who played live music for early rap hits, but also a realignment in the relationship between DJs and the breaks on their records. Though drum machines had already been put into use by contemporary black musicians such as Stevie Wonder and Sly Stone (Toop 1994, 126), when Grandmaster Flash became the first DJ to *play* a drum machine at a party (Toop 1994, 127, 128) (quite possibly over a Wonder or Stone break) he confounded his listeners by blurring the source and organization of his breaks. However, one of Flash's Bronx contemporaries would, by using the drum machine and the synthesizer, become hip-hop's first electronic music composer.

This DJ's name was Afrika Bambaataa, and he had already earned the title "Master of Records" for the incredibly eclectic sets he played at parties. Bambaataa enjoyed tripping up peoples' musical prejudices by playing breaks from records that they did not think they would dance to. For an audience that he had effectively trained to be receptive to rock, Latin, and other diverse breaks, it comes as no surprise that he played a unique rhythm-driven record by a German electronic band called Kraftwerk. The track was "Trans-Europe Express" (1977), lauded by Bambaataa as "one of the weirdest records" he had ever heard in his life and by Grandmaster Flash as the one record he would leave on for its entire duration (Toop 1994, 130).²² The crowd "went crazy" over the novelty of ten-plus minutes of haunting, strangely funky synthesized strings, cold machine chords, and electronic chugs. This virtual trip was narrated by a robotic voice that described passing moments at various stops along the railways of Europe ("In Vienna we sit in a late night café, straight connection T.E.E.") with the title of the song repeated as a refrain.

Afrika Bambaataa could have left the track alone and relied on it to keep rocking parties, but his diverse musical tastes, curiosity, and creativity drove him to experiment with Kraftwerk's ingredients, producing what would today be understood as a remix. Using a drum machine and synthesizers, Bambaataa transplanted several of the elements of "Trans-Europe Express" and another Kraftwerk record called "Numbers" (1981) into a ground-breaking track he called "Planet Rock" (1982). In collaboration with producer Arthur Baker and keyboardist John Robie, Bambaataa appropriated Kraftwerk's tempo and sonic palette and created a "localized" version with even greater dance-floor appeal. "Planet Rock" crosses a futuristic landscape propelled by the bluesy sounds of wheels over rail junctures and the longing synthetic strings of "Trans-Europe Express," to which Bambaataa added additional elements that reflected his hip-hop sonic sensibilities. "Planet Rock" is punctuated by immense stabs of compressed orchestral strings and a sweeping-grating scratch noise whose intensity almost drowns out the entire track, easing up just in time to let the drum machine syncopate with it. Along with versions of the digital percussion derived from "Numbers," the final accent of "Planet Rock" is an

adaptation of the “Trans-Europe Express” robot conductor’s vocal created with an electronic filter called a vocoder. Using a vocoder of his own, Bambaataa changed Kraftwerk’s plaintive refrain (“Trans . . . Europe . . . Express . . .”) to one that was a bit more motivating: “Rock rock to the planet rock / don’t stop,” encouraging one global metropolis after another to do so and ending up back home in the Bronx.

“Planet Rock” pioneered sonic hybridity that wouldn’t be fully explored until samplers allowed hip-hop producers to borrow and patch different individual musical elements into the same composition. Whereas Grandmaster Flash’s *Adventures* is a narrative composed of breaks, “Planet Rock” was destined to become a break unto itself, one that would quickly become part of other DJs’ phonographic archives. Taken together, “Planet Rock” and *The Adventures of Grandmaster Flash on the Wheels of Steel* pushed hip-hop’s boundaries so far ahead of “Rapper’s Delight”—the recording that marked the invention of “rap music”—that it would be almost ten years before hip-hop’s sonic priorities passed the milestones set by Afrika Bambaataa and Grandmaster Flash.

The Producer

The stepping-stone to the next stage of complexity in hip-hop’s mediascape was the incorporation of the digital sampler and sequencer into its array of production strategies. The sampler afforded hip-hop composers the ability to consume and (once again) recontextualize their own musical history as represented by their archives of recordings. The sampler allowed for the literal automation of the DJ’s production approaches, as old and newly discovered breaks could be transferred into digital memory for looping with unerring precision. With a sequencing sampler, chunks of music that are essentially cuts can be arranged in any order (see Figure 6.6). The hip-hop DJ’s pursuit of the perfect break or a flawless mix between them became a matter of programming. But before the compositional sophistication that digital technologies provided for hip-hop was fully developed, the process began with an entirely fortuitous accident at the hands of a New York hip-hop radio and party DJ named Marley Marl.

As recounted by Tricia Rose in *Black Noise*, Marley Marl accidentally caught a snare while sampling a vocal moment for a remix he was working on (Rose 1994, 79). As he played with the sample, appreciating the fact that the snare was there, he realized that he could sample *anything*, especially the individual drum sounds from classic break records. Like Grand Wizard Theodore’s encounter with the scratch, Marley Marl’s accident with the sampler triggered a period of rapid growth in hip-hop. Most producers can be seen as the hybrid offspring of Grandmaster Flash and Afrika Bambaataa who inherited a cohesive body of knowledge and techniques for the creation of hip-hop tracks. With Kool DJ Herc as the protean figure, Grandmaster Flash set the standard for weaving hip-hop loops and fragments into recorded metanarratives, while Afrika Bambaataa introduced the new technologies and the recombinant approach that made the entire tradition bionic. The digital sampler



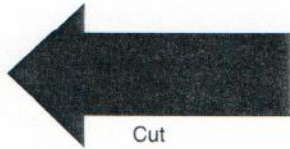
Record

Though CDs are a popular source of samples along with videotapes and audiotapes, the vinyl storage medium remains the preferred archival source of raw sonic materials.



Break

The DJ isolates breaks on a record. Taken broadly, a break can refer to any chunk of music, sound, or rhythm taken from a recording medium. Looped breaks form the foundation of hip-hop sonic compositions.



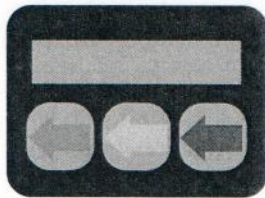
Cut

The cut is a sonic element that is not intended for looping and is typically used for rhythmic or narrative emphasis. Percussive moments, vocal fragments, and noises are generally employed as cuts.

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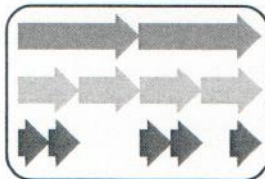
Digitization

Contemporary hip-hop sonic composition involves the use of digitizing systems that store breaks, cuts, and loops as binary files.



Sampler/sequencer

A sampler and/or sequencer is the computing environment in which digitized sounds are manipulated and organized over time. At this point there is no longer a distinction between cuts and breaks, and these sounds are treated as organizable sonic events.



Track of sequenced events

Hip-hop sonic compositions are built up out of sequenced and layered sampler events. They are recorded and subsequently distributed in vinyl, CD, tape, or digital music format.

Figure 6.6. The production process. Illustration by David Goldberg.

turned the creation of break loops into a cybernetic process that can be correlated with rap music's development into something that would eventually be understood as separate from DJing but tightly bound to the producer.

The sampler turned many DJs into producers who, driven by the increasingly lucrative recording contracts offered to rappers, caused a massive proliferation of new hip-hop tracks and a wide range of rap styles. Frankly, this boom was fueled by the wholesale looting of the James Brown archive in particular. The now-famous break from James Brown's "Funky Drummer" (1970) was dumped into hundreds of samplers (worldwide) and chopped up, slowed down, filtered, and remixed to form the foundation of 168 released rap records (as of May 12, 2001).²³ The use of the sampler triggered the development of all of rap music's diverse genres and fueled the rapid evolution of its wide range of lyrical styles. From celebratory party-oriented rap to incandescent political expressions, from introspective "abstract" rhyme styles to the rage and misogyny of the gangster, from bragging to the dozens to the battles recorded on vinyl, the many voices of rap music engaged the attention of listeners, promoters, recording executives, and politicians. As mass rap began to boom, individuals within the hip-hop community, such as Afrika Bambaataa and KRS-One, argued that aside from rapping, the other "elements" of hip-hop's mediascape (DJing, break-dancing, and graffiti) should not be marginalized if one claims to be authentically practicing hip-hop.²⁴

A rudimentary understanding of hip-hop's approach to sonic composition generalizes the relationship between the first dusty James Brown loops and the murder of Biggie Smalls. A more sophisticated conception separates "rap music" and "hip-hop music," making a distinction between the lucrative battles fought through and over the throats of rappers and hip-hop's creative—and often strategic—reassemblies of musical fragments. It is rap music as commodity that concerns us here, as the delivery of compelling vocals over sampled loops from relatively recent hits has made hip-hop producers like Sean "Puffy" Combs into highly successful entrepreneurs.

The commercial success of rap music has produced rappers who seem to be focused on audiovisual expressions that combine the aesthetics of upscale sophisticates, street pimps, and untouchable gangsters. These images and the oral texts that go with them circulate in a highly profitable loop between the consumers and producers of commercial hip-hop. This loop is controlled by the recording industry's marketing tactics (high-budget videos, sex-as-selling point, street-level promotions, saturation of media outlets, etc.) and the entrepreneurs who emulate them. In the global mediascape created by transnational entertainment corporations, these heavily promoted commercial rappers are the central, bizarrely heroic figures of an increasingly popular, mass-mediated variety of hip-hop.

Behind the spectacle of commercial hip-hop is a range of textures that go from the broken and uneven surfaces of war-torn streets to the cybernetic precision of future dance metropolises. In between are the party grooves, moments of recycled R&B, experiments with jazz and "abstract" sounds, and the all-too-easy targets that

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are already popular tracks from previous hip-hop compositions. In the context of mass rap, a sonic composition created with a sampler carries the voice and personality of the rapper. The rappers who come to occupy these soundscapes are supported, sustained, and prefigured by what are, in essence, *representations* of the DJ's practices. The hip-hop producer's tracks represent the DJ by using the same raw materials DJs use: records; appropriating the techniques: the loop, the cut, the narrative jumps in the progression of the mix; and reversing the original relationship between the rapper and the soundtrack. With the introduction of the digital sampler the hip-hop DJ was displaced, and Grandmaster Flash's adventurous integration of the voices and the music that fueled a hip-hop party was split into two distinct yet tightly bound systems of communication. With separately produced automated background tracks, rappers were freed from their original role of promoting the selection skills and reputation of a DJ. Though they retained and extended the qualities of showmanship, charisma, vocal character, and lyrical dexterity that were originally dedicated to maintaining the catalytic loop between DJ and audience, rappers began to use the hip-hop soundtrack to express their egos, opinions, fantasies, and desires.

Rap proved to be so compelling, so antagonizing, so seductive as language and narration, so *marketable*, that it crossed the boundaries of hip-hop-specific territories and, among controversy, social protest, and violence, came to stand for all of hip-hop in the popular and commercial imagination and, as I discuss next, in the academic imagination.

The Voice

Rap Rage

Yo! Street rhyme has gone big time.
But are those sounds out of bounds?

—*Newsweek magazine cover (19 March 1989)*

You can put words about anything on top of a backbeat, and the music
will still be about the backbeat.

—*Wynton Marsalis, Sweet Swing Blues on the Road (1994)*

When rap vocals broke the surface tension of hip-hop, the writers and cultural critics took notice. David Toop's *Rap Attack* ([1984] 1999) remains one of the best historical and genealogical accounts of rap music's evolution. Much of the information about early hip-hop practice presented in this chapter is based on Toop's research. Toop traces the roots of rap's orality backward through the wordplay of radio DJs, street slangers, preachers, and blues singers, all the way back to Africa. He keeps the music that has accompanied this evolution in the foreground so that the roles of blues, R&B, and soul (for example) are not neglected, particularly in terms of their

influence on hip-hop DJs. Toop, a musician himself, describes hip-hop sound and its roots in great detail, effectively, and often, but it is rap's voice that ultimately shapes the story. Houston A. Baker's *Black Studies, Rap, and the Academy* (1993) has an excellent fourth chapter (that begins by citing Toop) outlining the technological aspects of what Baker generalizes as "rap" even as he recognizes the separate roles played by vocals as text and by *sound*. That chapter originally appeared in Constance Penley and Andrew Ross's *Technoculture* (1991), while the rest of the book is dedicated to exploring the cultural ruptures that resulted when rap as blackness intersected mainstream sociopolitics. From the street perspective of a graffiti-writing white boy, William "Upski" Wimsatt's excellent *Bomb The Suburbs* (1994) rolls writings and interviews about graffiti, break-dancing, and rap into an incendiary and critical mix of race politics and hip-hop's own internal struggles. It is a collage that is not intended for academics or those who care about what academics think about hip-hop.

Balancing Upski's street credibility with college knowledge, Mark Costello and David Foster Wallace's *Signifying Rappers* (1990) bursts at the seams with rapper bravado and DJ-style cultural and academic cross-references. While some parts of the work read as exercises in sheer cleverness, others are seriously researched and go a long way toward theorizing the nature of sampling as a method of composition and rapping as a method of crafting narrative. This can be summarized by the following statement: "Rap/hip-hop has been the first important American pop to use digital recording and mixing techniques in the music's *composition*, its *soul*, instead of as some heavy-art gesture" (Costello and Foster Wallace, 85). Slashing and unifying "rap" and "hip-hop," they establish the context of their analysis as American pop music and, by extension, culture. In this Costello and Foster Wallace were sharp enough to deliver a rapid-fire critique of the cultural mesh created by Jazzy Jeff and the Fresh Prince's "Girls Ain't Nothin' but Trouble" (1987a), which samples the theme of the *I Dream of Jeannie* TV show. They believe "Girls" marked a significant moment in rap's acceptance by American consumers and the recording industry, as well as serving as a symbol of hip-hop compositions' unique capacity to engage, appropriate, and recontextualize American culture/media (Costello and Foster Wallace, 60–61). However, they completely ignore Jazzy Jeff's seminal "A Touch of Jazz" (1987b) from the same album. "A Touch of Jazz" is a rapless track in the tradition of Grandmaster Flash's *Adventures*, built from cuts and deconstructions of works by Donald Byrd, Marvin Gaye, Grover Washington Jr., and Bobbi Humphrey, all significant moments in 1970s jazz that the authors failed to notice. Perhaps Jazzy Jeff's consciously constructed relationship with the music of his past is less important to Costello and Foster Wallace than the "clowning" he does with the *Jeannie* sample looped for the chorus of *Girls* (which was a highly successful rap cross-over). This oversight is odd because the appendix of their book includes a bar-for-bar transcription of British DJ duo Coldcut's epic remix of Eric B. and Rakim's *Paid In Full* (1987), complete with text for the moments where scratch deconstructions of vocal

passages cannot be represented by musical notation. Perhaps they were too cynical for their own good, too pleased with their self-conscious outsider academic stance. Maybe their intentionally offhand references to literary theory and semiotics, constant ironic play with rap/black slang, and persistent centering of the rap vocal as the primary focus of their analysis²⁵ caused too much feedback in their mix and ultimately immobilized their ideas.

Enter Tricia Rose's indispensable *Black Noise* (1994), which gives one of the most thorough academic readings of hip-hop's sonic priorities to date. Her theoretical project covers issues of economics, gender, and history and reports pioneering research into black repurposing of production technology and how it can be operated with specifically black intent. She includes excellent descriptions of how hip-hop studio producers "work in the red," can covet signal distortion, accommodate "sonic leakage," and sometimes prefer "obsolete" technologies to newer ones in order to achieve a specific sound (Rose 1994, 74–77).²⁶

In a particularly valuable example, Rose cites one engineer who said that, in violation of traditional studio mixing practices, the volume of hip-hop drums matches and sometimes exceeds that of the vocals (Rose 1994, 76).²⁷ These incredibly loud drums—when coming, for example, from a car stereo—change the atmosphere by reorganizing space according to hip-hop sonic priorities. Everything that people love and hate about rap music deployed at car stereo volume (where sound becomes gesture and impact) has to do with the spatial modification accomplished by hip-hop compositions. People are not necessarily referring to the voice of the rapper, which is frequently reduced to another rhythm in the track. Instead they are referring to the exploding kicks, the echoing snares, and the sometimes terrifying sonic manipulations of DJ scratches.

It seems as if Rose's analysis stops short of further exploring these ideas, as she focuses on the conventions of orality in hip-hop rather than on the underlying sonic product that supports and sustains it. After all, the linear narratives of rappers are most readily transferred into the analytic context of social theory, while manipulations of bass, treble, and timbre can be difficult to conceptualize as political moments or forces in and of themselves. However, a significant exception is Rose's superb analysis of Public Enemy's Bomb Squad production team, which navigated the ambiguity between the philosophies of sound and voice. Public Enemy's sound demonstrated an integration of lyrical content, vocal tone, sample density and layering, scratch deconstruction, and sheer velocity that rap music has never been able to recapture, and that hip-hop DJs and producers are still mining for gems.

Public Enemy's primary sonic forces, Chuck D (rapper), Terminator X (DJ), and Hank Shocklee (producer), collaborated on works of such massively interconnected political and sonic content that an album like *It Takes a Nation of Millions to Hold Us Back* (1987) can be considered a monument to the synthesis of sound and politics. Over tracks at a greater tempo than those of their contemporaries and sometimes composed of dozens of different sampled elements, Chuck D's powerful baritone

delivered narratives of black self-empowerment, critiques of white supremacy, and challenges to exploitation in the music industry. His "Caught, Can I Get a Witness?" (1987) directly addresses the issue of hip-hop sampling and copyright violation from a perspective that claims black ownership of the sounds in the first place, despite laws that grant corporations ownership of the "original master tapes" on which they are recorded.²⁸ Adding a sense of urgency to their message, Public Enemy frequently deployed some kind of shriek or wail, such as the endlessly repeating horn squeal from the JB's "The Grunt" (1972) for their seminal single "Rebel without a Pause" (1987)²⁹ to heighten the tension of the mix. Public Enemy's message was one of total resistance that was readily accessible through the lyrics transcribed on the record's sleeve, the confrontational sounds of bass, groove, and noise, and their extension into print and video. There is actually relatively little to analyze in Public Enemy's wall of spoken words that was not already part of the established, and sometimes problematic, context of black nationalist rhetoric. With this in mind, Rose goes "behind/beyond the voice," as it were, to expose the philosophy and technique behind Public Enemy's sonic production process. Though the rare interview with Shocklee gave some insight into Public Enemy's sound, Rose's phenomenal project successfully records the hidden struggles to connect that sound to larger themes of black sonic resistance.

Given that Rose ultimately positions hip-hop's aural production practices as acts of resistance against attempts to erase black authorship of these sounds, it was probably not her intent to privilege the voice as the primary force in hip-hop. Unfortunately, without a contemporary Public Enemy, locating black resistance in the philosophical approaches of producers and in the lyrics of the rappers themselves has not weathered well in the current media environment. Contemporary mass rappers' lyrical content has taken on the bloated and superficial aesthetics of a Hollywood blockbuster, and the producers of their backing tracks have been spotted in hot tubs, fully clothed and objectifying the champagne-sipping, mostly naked models. However, as we shall discover, the rappers do have their moments, notably when they are under the control of the DJ who preserves and redeploys fragments of those utterances—often to greater effect than that produced by their original delivery. The following section returns our attention to the hip-hop DJ, who, through another iteration of appropriating the phonographic medium, has reemerged to seize and reconfigure elements of rap's dominating narrative to create sonic texts that are more innovative and historically resonant than ever.

Sampled Loops

I can see my younger brother whom I both loved and hated and who,
before he could read, was able somehow to pick the tunes my
mother wanted to hear from stacks upon stacks of 78-rpm records.

—Stanley Crouch, "Images of Light in Dark Rooms" (1998)

Once upon a time the highly respected rapper KRS-One asked, "How many *real* hip-hopper's in the place right about now?" On another occasion he declared with authority that he was "still number one" with an echoing emphasis on the last word. Elsewhere he declared, "KRS-One specialize[s] in music." He also committed the following words to tape: "Party people in the place to be KRS-One attack . . ." Can you recite the next line?³⁰ Do you remember *Criminal Minded?* *Jack of Spades?* How about his warning that the sounds you were about to hear could be devastating to your ears? Whether or not any of these quotes occupies a place in your memory, when they were manipulated beneath the skilled fingertips of Brooklyn's DJ Premier they became *KRS-One Attacks*, a densely packed scratch retrospective and interpretation of some of the rapper's greatest lyrical moments. In this introduction to KRS-One's sixth studio album, *Return of the Boom Bap* (1993), DJ Premier demonstrated exquisite skills in all facets of the hip-hop DJ's appropriation of the phonographic medium. He built the backing loop by "digging in the crates" for choice breaks, repeated the process to select the right phrases out of thirteen years' worth of rhymes that KRS-One had recorded, applied his own improvisatory interpretations to these words via scratch deconstruction, and integrated the entire composition by using a digital sampler and multitrack mixing technology. In *KRS-One Attacks* DJ Premier created a remarkably powerful nexus for the organization of memory, improvisational practice, and political speech, all anchored in the pleasures of celebratory rhythms.

The track is based on two loops pulled from the Watts 103rd Street Band's "A Mother's Love" (1973). The first is the song's swinging beat with only the descending bass line; the second makes use of an organ phrase that plays against the bass. These moments from "A Mother's Love" looping in the sampler are pure blues spinning infinitely on the axis of its musical idiom: that irresistible head nod, foot stomp, knee pat, and melancholy happiness. When DJ Premier sampled it, "A Mother's Love" was over twenty years old, from a time when concerns with bass projection were different. Careful listening reveals that elements of the loop's rhythm section have been rebuilt and given bionic strength by an amplified kick and snare sample courtesy of late twentieth-century studio technology: an Emu SP-1200 sampling sequencer. On this foundation DJ Premier scratched assorted moments from previous KRS-One recordings, quoted earlier. He is only one man, so these moments were overdubbed in the studio, written onto the track in multiple passes. DJ Premier played quotations that he selected not only for their spoken meaning, but also for their cadence, which coincides flawlessly with the tempo of the backing track. Many of these passages are embedded with brief musical moments that accompany the vocals: three horn stabs emphasizing "KRS-One attack," echoes of the word "one" cushioned by a horn progression, distant organ notes floating behind "rockin' beats." As DJ Premier scratched these phrases in, the mix thickened with these additional percussive and melodic instants that complemented his subtly programmed alternation between the loop with the organ and the one without. To add the truly dynamic

aspects of the track DJ Premier scratch deconstructed KRS-One's vocals instead of simply playing them as Grandmaster Flash did those of the Furious Five in *Adventures*. Syllables were cut off, spun back, repeated, broken down into quarter notes (see Figure 6.7). Phonemes like the "s" sound were whipped into a hissing froth by deft manipulation of vinyl before completing the word "suddenly." A snare drum behind the word "criminal" in "criminal minded" fell neatly on the loop's snare as it was cut into the mix. Dub echo effects in certain passages were carefully blended into repeating sounds of distant gunfire³¹ over the scratch-deconstructed quote: "Party people in the place to be / KRS-One attack."

KRS-One Attacks is a work of considerable organizational, narrative, and referential complexity, demonstrating a coherent compositional technique that with repeated listening reveals an emulation of the formal structure of classic blues verse. This blues structure has been a part of hip-hop sonic composition from its inception and can be found in any track that contains scratch deconstruction, and also in tracks that sample the blues-based loops found in soul, jazz, and funk records. I am focusing on this DJ Premier example for several reasons. First, DJ Premier is a highly skilled DJ who demonstrates a profound mastery of scratching and mixing techniques. Second, he is an accomplished producer who built his reputation by crafting startlingly innovative tracks as the DJ for the duo Gang Starr. Third, his compositions have a rare internal consistency that allows them to exist on their own terms, without rap narratives. The musical fragments that he works with to compose his tracks demonstrates his profound experience with exploring the recorded archive of black music, with a distinct emphasis on jazz and blues elements. DJ Premier makes the essence of his samples resonate throughout an entire track with such unity that it becomes apparent that he puts a great deal of thought and imagination into continuing the evolution of black music. Going straight to the point of contention over the authenticity of played black music versus sampled and reconfigured black music, DJ Premier's tracks stand up to widely respected critical voices like that of Wynton Marsalis.

The Battle

Marsalis, as someone possessing a vast knowledge of the black musical tradition, is easily one of the most intelligent and eloquent people to say anything negative about "rap music." But Marsalis's perspective is locked in the conflation of rap vocals and hip-hop sonics, and would benefit from a reassessment in relation to the latter. Following is an excerpt from a dialogue that Marsalis had with a young man:

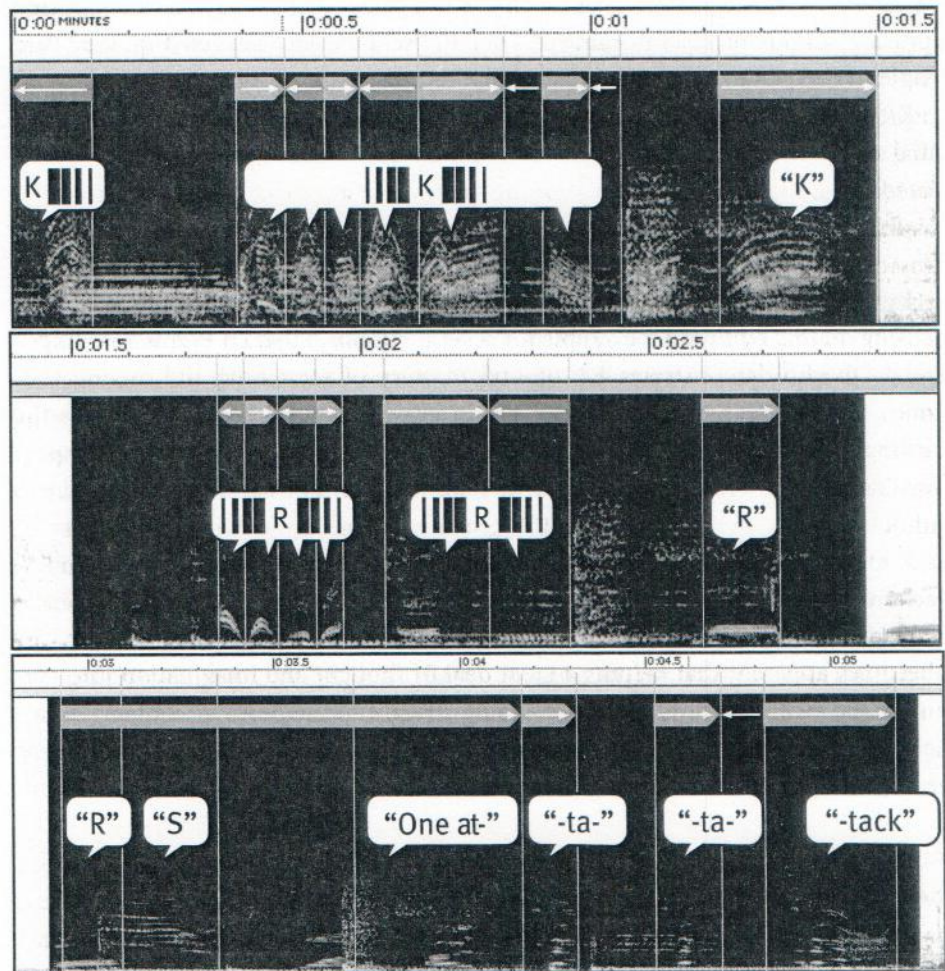
YOUNG MAN: "What do you think about rap music?"

MARSALIS: "Rappers have interesting haircuts."

YOUNG MAN: "But they're talking about what's happening today."

MARSALIS: "Yeah, like what?"

YOUNG MAN: "Racism and stuff."



Spectral analysis from sound edit 16 v2.0. The following frequency adjustments were made to enhance visibility:
 0-202Hz: -20db; 203-510Hz: -10db; 1.2kHz-3.2kHz: +10db; 3.3kHz-8.1kHz: +5db.

- | | | | |
|--|-------------------------------|--|--------------------------------|
| | Record moving forward | | Record audible moving backward |
| | Record moving backward | | Scatched passage |
| | Record audible moving forward | | Cut or played passage |

Figure 6.7. Spectral analysis of DJ Premier's scratching of the last passage from "KRS-One Attack." The direction, audible state, and actual transcription of the record are represented along with a timeline to allow the reader to visualize the dense application of rhythmic techniques that hip-hop DJs employ while scratching. Illustration by David Goldberg.

MARSALIS: "What solutions do they give you for that?"

YOUNG MAN: "That it's wrong."

MARSALIS: "That's a solution?"

YOUNG MAN: "What solution does jazz give?"

MARSALIS: "First, it teaches you to think across a longer than twenty-five-second form. Second, it teaches you how to communicate with others. Third, it makes you develop your personality through practice and contemplation. Fourth, it puts you into contact with some of the greatest musical minds of the twentieth century. Fifth, your ears don't ring after a gig. Sixth, you don't have to keep reaching for your pipe in public." . . .

YOUNG MAN: "Man, you ain't hip."

MARSALIS: "Hip to what? That corny slang, all that cussin', posturing, and whining, calling girls bitches, that monotonous beat, anti-social behavior, and a philosophy that doesn't include anyone who doesn't think and act like you?" (Marsalis 1994, 136)

By centering his critique on the voice, Marsalis misses the real complexity of the sounds that radiate behind it, reducing the track to an act of mechanical repetition. This is an interesting position to take in light of his understanding of the relationship between the backbeat and the voice: "You can put words about anything on top of a backbeat, and the music will still be about the backbeat." The "backbeat" in hip-hop composition would appear to be without craft, discipline, history, or effort when compared to Marsalis's conceptions of jazz music. Marsalis says, "Jazz is musical interplay on blues-based melodies, harmonies, rhythms and textures in the motion of an improvised groove. A groove is the successful coordination of differing parts—like a clock. That's a vamp" (Marsalis 1994, 149). Though I do not wish to hold Marsalis to a view he expressed in 1994, his ideas make an excellent point of departure from which to investigate hip-hop sonic composition in contrast to another well-documented, frequently discussed tradition. Let us now look at what this respected musician may have missed by going back to the beginning of both jazz and hip-hop sonics.

Following is a transcription of the lyrics of a verse from Skip James's *Indiana Blues*:

I gin my cotton and sell my seed. (x2)
 Done give my baby, everything she need.
 Everything she need; everything she need.
 Done give my baby, everything she need.

I assume that the reader understands that the transcribed lyrics in no way reflect how the song is actually projected and heard, or how the guitar accompaniment



om "KRS-One
 re represented
 f rhythmic
 oldberg.

sounds. Skip James delivers each line of the verse with distinct changes in tonal emphasis echoed by the sounds of the guitar, and follows the verse with an improvised guitar break. This layered, iterative process in the blues is all about revisiting something in order to understand it a little bit better, to feel its weight and texture a little more carefully. Compare this approach to that of DJ Premier in *KRS-One Attacks*. Following is a transcription of the vocal passages that DJ Premier works with toward the end of the track:

Party people in the place to be (×4)
 KRS-One attack (×4)
 KRS-One attack (×4)

As DJ Premier repeatedly scratch deconstructed the first line above, he did so differently with each iteration so that the backing track of bass, organ, and drum created a slightly different landscape. Already we see hip-hop DJing and the blues occupying the same functional space, with DJ Premier's track playing the role of Skip James's guitar and his scratching of KRS-One's vocals taking the place of the singer's breath. Just as Skip James physically varied the way in which he sang each line through an interplay of throat muscles, tongue position, emotion, and guitar playing, DJ Premier altered the vocal passage through interactions of wrist, shoulder, record velocity, fingertips, and cross-fader work on the mixer. A crucial difference between the two is that DJ Premier could reapply the methodology at increasing levels of the scratch's resolution. On his first pass through the phrase "KRS-One attack" he cut along the boundary between the sounds of K and R twice, manipulating the K with warbling repetitions punctuated by drops in pitch as he precisely brought the record to a halt for a split instant before letting the phrase complete. On the second pass he repeated the process, but with the R instead. On the third pass he doubled the K and then inserted pauses between letters before quadrupling the R and finishing by applying the methodology from the first two passes to the S. On the very last pass he applied the method to both the K and the R before letting the phrase play through to the syllable "tack," which he triple-cut and released into echo with one last gunshot in the background (see Figure 6.6). With another round of analysis it becomes apparent that DJ Premier's cut choices were informed by the horn note that hits behind the K and the R. By playing these letters he was playing the horn at the same time and setting up another layer of interplay between the scratch and "A Mother's Love" below. This entire scratched "verse" plays in the space of twenty-seven seconds with the vinyl rotating at thirty-three revolutions per minute, a significant compression ratio when compared to the fourteen seconds it took Grandmaster Flash to apply a less sophisticated but nonetheless blues-rooted scratch technique to half of the phrase "good times" in *Adventures*.

It seems appropriate that the technological acceleration that occurred between

the eras of Skip James and DJ Premier would produce a vast difference in execution time for blues algorithms. In the much shorter time frame of DJ Premier's cuts—characteristic of the peripheral impacts of digital technology—these fine-grained repetitions of syllables are reflections of the larger cyclical repetitions of the phrase; here is where a fractal structure in his composition reveals itself. “KRS-One attack” is the second part of the “party people” phrase that he also scratch deconstructed near the beginning of the track. Between these bookend phrases, DJ Premier inserted numerous other examples of blues repetition. There are several uses of the phrase “rockin’ beats” in conjunction with different passages, two of which include the word “remember” before the variable phrase. DJ Premier is asking if the listener remembers these famous KRS-One tracks, meanwhile asking if the listener remembers the simultaneous histories of rapping (via KRS-One’s voice), scratching (via his turntable skills), and black music (via “A Mother’s Love”), as well as the deep structure that informs all of them. Through DJ Premier we come to understand that in the physical sense the DJ is able to extract the formal structure of the blues and mechanically apply it to any instance of phonographic media. At the same time, this extraction is informed and influenced by the very recording that it is appropriating.

In all likelihood Wynton Marsalis has never scratched a record (in the hip-hop sense) or programmed a sequencer, despite the fact that his vast musical knowledge would probably make him a phenomenal hip-hop producer. Thus he would have difficulty appreciating DJ Premier’s gift for cutting off his (mostly jazz-based) breaks at unexpected moments and reprogramming them in such a way that even without the breath of a rapper, they seem to live. Firmly anchored in the idea that a meaningful musical tradition can be produced only through live instrumentation, Marsalis’s perspective dismisses the blues guitars, Harlem piano strides, bowed bass, and sounds of Chinese water torture that DJ Premier has used as elements in his huge body of work. Perhaps Marsalis is simply unaware of how the “blues-based melodies, harmonies, rhythms and textures” that define jazz music have been appropriated by hip-hop sonic composition, particularly in the case of the underlying organic structures supporting DJ Premier’s tracks. Marsalis cannot reserve the “interplay in the motion of an improvised groove” for jazz when DJ Premier, as only one example, creates compositions with analogous characteristics. This is not to say that hip-hop DJs are jazz musicians. Far from it. But if individuals like Marsalis care about “American music,” they might play the instrumental versions of some hip-hop singles, or buy a copy of DJ Q-Bert’s all-scratch sci-fi epic *Wave Twisters* (1999), or study Presage’s conspiracy theory-wracked *Outer Perimeter* (1999), or listen to DJ Rob Swift create brand-new beats that literally swing (2000), or check out any of the DJ crews (Finger Bangerz, Space Travelers, S.W.O.T. Team, the Last Platoon, the Crash Test Dummies, Local 1200, Scratch Perverts, and others) that compose original pieces live on multiple turntables, and pay closer attention to the innovations that have occurred while jazz licked its wounds after Miles Davis plugged it in.

Take Me Out with the Fader

If the electrified industrial opportunities of the North physically drew a complex mass of black cultural practice out of the South a while back, the postindustrial opportunities created by the hip-hop DJ have drawn a complex black image-eye-nation into the hyperlinked transnational networks of satellite bandwidth, digital cable channels, music-on-demand services, peer-to-peer file sharing, and streaming media Web sites. The hip-hop sonic compositional approach is a global practice with analogs in other media, sometimes by direct influence, other times in parallel developments emerging from a shared matrix of digital technology. A Web user called xombi maintains a database that allows the user to search for breaks and samples used in contemporary music, and makes some of them available for download (xombi, 2001). DJ QBert has released a full-length movie that visualizes each chapter of his *Wave Twisters* album. This animated film appropriates graffiti images and science fiction graphics, blending them with original artwork. Because the *Wave Twisters* audio project is a full scratch sono-novella, the movie constantly attempts to reflect the sounds and pacing of the scratch deconstruction through editing and character animation.

Working along parallel interpretive lines, the Emergency Broadcast Network (EBN) creates audiovisual spectacles with streams of video imagery that are chopped, filtered, and effectively scratched. Their video samples are always political and are sifted from hundreds of hours of CNN, television news, advertising, archival, and found footage. Accompanied by percussive electronic soundscapes, EBN performances are part celebration, part call to arms that approach an audiovisual equivalent to the layered, chaotic production found in Public Enemy's tracks.

In the art world, Granular Synthesis creates visual chaos through Artaudian video installations of large-scale human heads accompanied by terrifying bass-driven soundscapes. The heads are captured going through relatively short movements (a nod, a turn) that are then shuttled, blurred, and chopped backward and forward in the smallest possible units of time. Granular Synthesis can turn the brief moment of a woman sneezing into a horrifying 144-square-foot deconstruction of overlapping moments where teeth mingle at the point on the face where the eyes should be. With three of these projections falling in and out of sync, the overwhelming visual rhythms of their interactions are analogous to beats that the X-ecutioners DJ crew juggles three at a time.

Popular cinema is not too far behind the aesthetic assaults of Granular Synthesis. The editors and directors of Hong Kong action films shoot events from multiple angles, particularly climactic moments in fights or chases.³² These action loops are repeated several times, each iteration establishing a slightly different visual timbre before the catharsis that is the explosion, or the car crash, or the flailing of wounded bodies. On the other side of the Pacific, the visual effects supervisor of *The Matrix*, John Gaeta, digitally appropriates actors in their entirety and stretches their cinematic time, weaving an artificial camera through the synthetic moments between bullets.

At the consumer technology level, Apple Computer is urging people to make their own digital movies and giving them the tools they need to edit, render, and distribute any audiovisual media that they choose to create or appropriate. Computers that burn DVDs are on the market now, but will we see technology that allows the consumer to play with such a medium as a hip-hop DJ plays with records? Maybe. Napster's sprawling, highly controversial music database built from the hard drives of the users themselves lays the infrastructure, and on top of that sit tools like Audion's MP3 mixer, dozens of cheap digital sequencing applications, and numerous sound-into-image software toys that are all geared toward the manipulation of bits and pieces. On the frontier of hip-hop's self-appropriation by digital technology, Matt Black of the Coldcut, mentioned earlier, has a beta version of a collection of software takes in an audio file and digitally reproduces the sonic effect of a hip-hop scratch with phenomenal accuracy and real-time interactivity.

What distinguishes hip-hop DJs as open media experts from emerging popular cultures of audiovisual appropriation is the strength of their history and the fact that they make excellent role models. Hip-hop sonic production practices are informed by a rich blend that includes competition geared to generate innovation, an ethic of dedicated practice and skill-building, and a concern with distributing recordings that is not exclusively informed by the strategies of mass entertainment. On top of it all, hip-hop DJs have the scratch, a means of working directly with their media and the standard by which all subsequent media practice should be judged. If you give an individual a piece of a medium, can this individual, by some form of interaction with this medium, create content that was not originally there while maintaining the basic stability of the original sampled moment?

The significant work of Malcolm McCullough may help answer this question. In his *Abstracting Craft: The Practiced Digital Hand* (1996) he explores what it will mean when digital production technologies catch up with the real-time feedback associated with traditional creative endeavors (McCullough 1996, 68, 88–89, 196–97, 252–53). McCullough describes scenarios of parametric modeling that are empowered by advanced interface conventions that include, for example, haptic feedback (the simulation of forces such as weight, friction, and resistance). With such a system, a user can rapidly manipulate and explore digital forms (databases, two- and three-dimensional representations, sonic fields, economic models) with a level of interaction that is analogous to the relationship between hand, carving blade, and wood. The scratch is a crafted sound drawn out of the "model" recorded on the vinyl. The real-time, hands-on relationship hip-hop DJs have with the bodies of information that are their records, or the possibilities offered to the hip-hop producer with rapid access to vast libraries of readily sequenced samples, already demonstrate some of the aspects of McCullough's digital craft.

Some of the necessary characteristics of emerging multimedia structures for shopping, entertainment, and employment are that they be surfable, searchable, customizable, and deliver their content on demand. Such actions are not in themselves

appropriative or radical, for this is the space that users/consumers will be expected to occupy. The question is whether a cultural practice suited to this new meta-medium will emerge that carries the political, transgressive, and innovative strategies of hip-hop composition. I am not sure if one can actually “scratch” a database or if the developing hypermedia of wireless devices, ubiquitous computing, and real-time communication will even be discrete enough to be treated this way. We may find that discovering a “hands-on” means of manipulating our flows of transnational media will be the only way to successfully navigate them. Fortunately, the methodology and cultural stance behind hip-hop composition can, in theory, be applied to any recording medium—including the imagination—in order to find out.

Notes

The first six notes and several others refer to an online encyclopedia of media technology, specifically a section dealing with the history of the phonograph.

1. www.digitalcentury.com/encyclo/update/phono.html#Leon_Scott, accessed 23 April 2001.
2. www.digitalcentury.com/encyclo/update/phono.html#Early_Rec, accessed 23 April 2001.
3. *Ibid.*
4. www.digitalcentury.com/encyclo/update/phono.html#Berliner, accessed 23 April 2001.
5. www.digitalcentury.com/encyclo/update/phono.html#Worldwide, accessed 23 April 2001.
6. www.digitalcentury.com/encyclo/update/phono.html#Jazz_Age, accessed 23 April 2001.
7. This statement comes from the Decca corporation’s advertisement of its equipment after its use during the war, available at www.digitalcentury.com/encyclo/update/phono.html#Innovations, accessed 23 April 2001.
8. The phonographic medium’s first “death” was caused by the stock market crash of 1930 (www.digitalcentury.com/encyclo/update/phono.html#Depression, accessed 23 April 2001). Its second twilight was brought about by the steadily increasing popularity of the compact disc format.
9. Palmer discusses some African approaches to music making that found their way into early blues: “Most music making is group music making, and in group situations the distinction between performers and audience that is so basic in Western music tends to blur or disappear entirely.” Due to the inherited interactivity between the DJs and the audience, they played a decisive role in what was played.
10. In the tradition of the black popular cultural conventions that caused “swing,” “stomp,” “jump,” “grind,” and “hop” dances to develop in response to music with analogous rhythmic components, it is no accident that the black and Latino dancers who displayed the most virtuosity while the DJ needle-dropped became known as “breakers.”
11. In his biography of the highly influential and enigmatic blues musician Skip James, Calt shares a good deal of his research into the roots of blues music and musicianship. Though he does not say so in the text, one imagines that these gatherings were called “breakdowns” because they resembled just that to white onlookers.
12. This is a vernacular phrase used in the hip-hop DJ/producer community. It comes from the practice of searching through stacks of records (usually stored in milk crates) in pursuit of a break. Sometimes these stacks are in attics or basements or record stores; other times they are the composer’s own archives of recordings. Progress through particularly large archives is a lot like digging, the searchers’ hands flipping through the records in rapid alternation.

what "sounds like a percussion ensemble, with hand clapping furnishing a crisp counter-rhythm to the thudding beat of feet on the floor." I have heard similar recordings and can attest to the similarity of this instance of Flash's cutting rhythms analogous to those found in a ring shout.

22. This is the highest compliment a DJ can pay to a record (Palmer 1982, 130).

23. Results retrieved from xombi (2001).

24. Commentary addressing this issue can be found at Afrika Bambaataa's Zulu Nation Web site (<http://www.zulunation.com>), as well as in the French hip-hop book *Freestyle* (Desse and SBG 1993). KRS-One frequently mentions the other elements of hip-hop culture in his raps and takes his name from what he wrote as an accomplished graffiti artist. The verdict is still out on whether the coexistence/development of graffiti, breakdancing, DJing, and rapping constitutes a culture by strict definition. Many individuals who practice one of these elements have had at least some experience in one or more of the others.

25. Costello and Foster Wallace (1990) refer to the sound behind the voice as "rap's sonic carpet" (135), a telling description.

26. It is important to note that a lot of these production techniques are similar to approaches employed not much earlier by producers of Jamaican dub, which is hip-hop sonic composition's closest technological relative.

27. For the purposes of our discussion this is a crucial detail. As hip-hop gave more and more energy to the MC and began to be played on better sound systems than a radio, the rhythms had to stay "up front."

28. Chuck D continues a different version of this battle by means of his endorsement of Internet distribution of musical content through channels such as Napster and MP3.com.

29. Hank Shocklee declared (in an interview from the 1980s that I cannot retrieve) that the wail from "Rebel" was meant to be a signature sound that could be identified from a distance. Whether coming through the walls of a club or from a passing car's stereo, this sound was meant to announce the track. The result was a reconfiguration of space that got a listener's attention. In the context of contemporary hip-hop compositions, the sound of "Rebel" was unmistakable. "Rebel" was also built from James Brown's "Funky Drummer" (1986).

30. "You got dropped off MCA cuz the rhymes you wrote was wack."

31. The shots and blasts simulate the Jamaican dance-hall tradition of saluting skilled musical selection by firing live ammunition into the air. It is important to note that in Jamaica the "selector" plays the records, while the "DJ" speaks over them. Thus, in the hybrid context of his mix, DJ Premier is saluting himself and KRS-One simultaneously.

32. A readily accessible example is John Woo's work in *Mission Impossible 2*, specifically the scene where Tom Cruise's character pirouettes his motorcycle while balanced on its front wheel, his handgun blazing until the target car's gas tank is detonated. We see the turnabout sequence several times, at slightly different rates of speed, from slightly different angles. This technique can be found throughout indigenous Hong Kong action cinema.

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