



*Technics turntable used by Grandmaster Flash and a phonograph record of "Bustin' Loose Part 1" by Chuck Brown and the Soul Searchers. The arrow on the record label is an example of Flash's "clock theory." National Museum of American History, Smithsonian Institution.*

## The Birth of Hip-Hop: Innovation against the Odds

by Amanda Murray, Lemelson Center Project Assistant

Sometimes a culture of innovation blossoms as a product of its environment, nurtured by the physical and ideological elements of a place ... and sometimes innovation flourishes in spite of its surroundings. The hip-hop movement tells the latter story.

Parts of New York City in the 1970s were blighted places in beleaguered times. Documentarian Bill Adler called the Bronx of that era "the American poster child for urban decay." [1] Arsonists reduced block after block of buildings to rubble, and the poverty, corruption, and violence that pervaded the city were amplified in the Bronx.

Against this grim backdrop, inspiring proponents of problem-solving, risk-taking, and creativity appeared. Hip-hop artists and their fans pursued joy and self-expression despite the dire realities of their surroundings. Painful times for a city and a nation became times of discovery and experimentation for disenfranchised youth in the Bronx.

Four elements of the hip-hop movement—graffiti art, break dancing, DJing, and MCing (rapping)—emerged together, but the earliest hip-hop parties centered on the disc jockey. DJs Kool Herc and Grandmaster Flash were not the only pioneers, but they exemplify the drive, skill, and resourcefulness that created hip-hop.

Grandmaster Flash (Joseph Saddler) was born in 1958 in Barbados and grew up in the Bronx. From an early age, he loved music and electronics. He remembers "hopelessly taking things apart to try to figure out how they worked. I'd go mess around with burned-out cars, with my mom's stereo." [2] At Samuel Gompers High School (now the Samuel Gompers Career and Technical Education High School), Flash says he learned "the names of these pretty little red, purple, blue things on this brown board. I discovered what a capacitor was, a resistor, a diode, a transformer." [3] Flash thought of himself as a scientist first, tinkering and problem-solving in his bedroom or a friend's basement, and he applied that inventive approach to his musical career.

When Flash started going to local street parties, he "found himself immersed in a culture that was bubbling over with a creative energy that no sociological theory could ever explain or predict." [4] He studied the techniques of lauded local Kool DJ Herc, who used two turntables and a primitive mixer to sample and repeat the funkier, most crowd-pleasing elements of a song—then called the "get-down part," and now known as "the break." DJ Baron (Baron

Chappell) remembers going to parties in the mid-1970s when, he says, “Herc started with PA columns [public-address system speakers] and guitar amps. All DJs in the Bronx started like that. There was no mixer, no power amps—it was a guitar amp and speakers. He used to switch from turntable to turntable on a guitar amp, from channel one to channel two.” [5]

Kool Herc (Clive Campbell) and his family moved to New York from Jamaica in 1967. Herc’s sister launched his Bronx DJ career with the now-legendary back-to-school party she hosted on August 11, 1973, in a community room at 1520 Sedgwick Avenue. [6] DJ Disco Wiz (Luis Cedeño) recalls that Herc’s parties offered positive alternatives for many inner-city youth. Cedeño says, “We weren’t socially accepted at disco joints; we were pretty much segregated. I was looking for an outlet to express myself. I was young, thuggish, and just looking for something to do besides getting into trouble, so we used to throw house parties: one turntable, three-room apartment full of people.... When Kool Herc finally hit the scene, we started getting the buzz that something was different.” [7] Herc became known not only for having the biggest sound system and the hottest records, but also for creating a safe zone off the streets. At Herc’s parties, rival gang members called a truce. Hip-hop promoted a sense of community and its “crews” of fans, artists, musicians, and dancers provided non-violent protection.



*A recent photo of 1520 Sedgwick Avenue in the West Bronx, where Kool DJ Herc threw his first hip-hop parties. Photo by [Bigtimepeace](#).*

Grandmaster Flash resolved to do Herc’s act better. With no source of sophisticated turntables, needles, and mixers, Flash cobbled together components from abandoned cars and discarded stereos. He says, “I went to junkyards, abandoned car lots. I asked supermarkets for the big jugs they put pig guts in, to make cabinets for my bass speakers.” At block parties, Flash and other DJs hacked wires at the base of city streetlights for a power source. Even the slipmat (the removable turntable covering that enables DJs to stop or turn a record while it is playing) that today’s DJs take for granted did not yet exist. Flash says, “I needed a way to have the platter continuously spinning while I’m moving the record back and forth.... I went to a fabric store. When I touched this hairy stuff—felt—I found it. I rubbed spray starch on both sides and ironed it until it became a stiff wafer.” [8]



*B-Girl Laneski break dancing in New York City, 1985. National Museum of American History, Smithsonian Institution.*

Flash refined Kool Herc’s method of isolating and repeating the break using duplicate copies of a record, mixing and extending the break-beats more seamlessly, to eliminate what Flash called “disarray and unison.” “I noticed that if the crowd were into a record they would have to wait until [Kool Herc] mixed it, because it was never on time,” he recalls. “I could see the audience in unison, then in disarray, then in unison, then in disarray. I said: I like what he’s playing but he’s not playing it right. So I says: I want to do something about that. The thought was to have as little disarray as possible. Didn’t know how I was gonna do it.” [9]

To solve this and other problems, Flash applied his scientific approach and created new techniques that he called “theories.” His “quick mix theory” was a method of repeating a musical phrase sequentially,

back-and-forth across two records, as many times as he wanted. “Clock theory” let him locate a break quickly, without headphones and without lifting the phonograph needle, through marks on the record label or paper affixed to the record. He designed a “peek-a-boo system” that let him cue and preview music on one turntable while the audience heard only what was playing on the other. [10] With these new methods, Flash essentially reinvented songs on vinyl by making them longer, funkier, and better for dancing.

Hip-hop’s pioneers—the DJs, MCs, dancers, artists, and their supporters—“imposed their creative will” on a marginalized landscape with minimal resources. [11] Before anyone considered making and selling a rap record, the early hip-hop movement appealed to youth who wanted to express their individuality and transcend a hopeless situation. The birth of hip-hop relied on shared, local experiences of a place and time that formed a surprising incubator for innovation.

*Notes:*

[1] Bill Adler, *And You Don’t Stop: 30 Years of Hip-Hop* (Bring the Noise LLC, Perry Films, and Reality Creations, 2004), television mini-series.

[2] “I Don’t Want to Be Folklore!: Grandmaster Flash Is Back!” *Pop Matters*, 16 June 2002. Accessed 21 October 2010: <http://www.popmatters.com/music/interviews/grandmaster-flash-020616.shtml>

[3] “Interview with Grandmaster Flash,” *DJTimes*, March 2003. Accessed 21 October 2010: [http://www.djtimes.com/issues/2003/03/features\\_03\\_2003.htm](http://www.djtimes.com/issues/2003/03/features_03_2003.htm)

[4] S. Craig Watkins, *Hip-Hop Matters: Politics, Pop Culture, and the Struggle for the Soul of a Movement* (Boston: Beacon Press, 2005), p. 26.

[5] Jim Fricke and Charlie Ahearn, *Yes Yes Y’all: The Experience Music Project’s Oral History of Hip-Hop’s First Decade* (New York: Da Capo Press, 2002), p. 28.

[6] “The Holy House of Hip-Hop,” *New York Magazine*, 28 September 2008. Accessed 21 October 2010: <http://nymag.com/anniversary/40th/50665/>. “Davey D Interviews Cindy Campbell,” GrandGood.com video, posted 11 March 2010. Accessed 21 October 2010: <http://grandgood.com/2010/03/11/davey-d-interviews-cindy-campbell-kool-hercs-sister-video/>

[7] *Yes Yes Y’all*, p. 26.

[8] “All Hands on Deck,” *The Guardian*, 27 February 2009, and “Hip-Hop: A Bronx Trail,” *The Guardian*, 17 June 2010. Accessed 21 October 2010: <http://www.guardian.co.uk/travel/2010/jun/17/hip-hop-tour-new-york-usa>

[9] Frank Broughton and Bill Brewster, “Grandmaster Flash: True Life Adventures,” 2002. Originally published as sleevenotes to *The True Life Adventures of Flash*; sections also appear in Frank Broughton and Bill Brewster, *Last Night a DJ Saved My Life: The History of the Disc Jockey*

(New York: Grove Press, 1999). Accessed 21 October 2010:  
<http://www.djhistory.com/features/grandmaster-flash-true-life-adventures>

[10] Ibid.

[11] *Hip-Hop Matters*, p. 28.



*Art Molella.  
Photo by  
Peter Badge.*

### Notes from the Director:

#### Caofeidian—China's City of the Future or Urban Laboratory?

by Art Molella, Jerome and Dorothy Lemelson Director

Last year [in this newsletter](#), I wrote about the development of Dongtan, China's planned eco-city near Shanghai. Once billed as the world's first fully realized eco-city—energy-efficient, sustainable, and aiming for a zero-carbon footprint—it was slated to open this year. But the project has run into difficulties and is now [reportedly on indefinite hold](#). China continues to charge ahead on other eco-fronts, however. With more than 15 million people a year relocating from the countryside to the city, China is urbanizing faster than any other nation and is experimenting with urban solutions.

Last week, I attended the China Binhai-Tianjin—International Eco-City Forum, where the Chinese government officially declared the eco-city as the country's new urban/ industrial strategy. Dongtan's failure notwithstanding, the strategy is rapidly becoming a reality. Besides a trip to the developing eco-city in Tianjin, one of our most eye-opening site-visits was to Caofeidian International Eco-City, about 50 miles south of the port city of Tangshan and somewhat farther from Beijing. Named after an imperial concubine called Cao, Caofeidian is being planned and developed by the Swedish firm [SWECO](#). Construction only began in 2009, but is moving forward at a furious pace toward a 2020 completion date.



*Wind farm at Caofeidian. Courtesy of [SWECO](#).*

The invented ecological city is rising out of seawater and mud being dredged from Tangshan Bay and hauled by endless lines of trucks to create the new land on which the city will rest. Caofeidian will eventually occupy a 45-square-mile coastal portion of a huge new industrial zone. Steel, mining, and oil industries are being relocated from Beijing and other industrial centers. Planners project that the eco-city itself will become home to more than one million residents who will manage and man the industrial sites.