



DIGITAL SOUND STUDIES

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ETHNODIGITAL SONICS AND THE HISTORICAL IMAGINATION

RICHARD CULLEN RATH

I raised my hand, uncertain but determined. The professor, Africanist John Thornton, had asked if anyone knew music. I hesitated. It was 1988 and I was an adult scholar newly returned to school to pursue my BA. I was uncertain whether I was qualified for anything at that point. I had been playing guitar for about fifteen years and had a basic understanding of music theory, but I was not formally trained. But I thought, “I’m paying my tuition, so . . .” I raised my hand, narrowly beating out another student who later told me she hesitated a moment longer than I had. The decision set off a chain of events that profoundly affected my trajectory through life and career.¹

The document Thornton gave me was just three or four photocopied pages from an old book that he had found on a research trip. The book was Hans Sloane’s *Voyage to the Islands* (1707), a natural history of the islands off the west coast of Africa and in the Caribbean, where he focused most of his attention on Jamaica.² The pages in question contained a paragraph or so of text describing the music and dance taking place at a gathering of enslaved Africans on a Jamaican plantation in 1688; an engraving of a pair of stringed instruments and some vines used to clean teeth (and perhaps used as strings); and two pages of music described and transcribed by Sloane and

his musician friend Baptiste that fell under three headings—Angola, Papa, and Koromanti.

Over the course of the next two-going-on-three decades, my interest in ethnographic history and the emerging field of sound studies was transformed by the introduction of digital sound to personal computers. This article traces that trajectory and its evolution into what I am calling “ethnodigital sonics,” a term that emerged from a conversation with David A. M. Goldberg at the University of Hawai‘i Digital Arts and Humanities Initiative over what it was exactly that I did with sound in my research and my music as well as in our collaborative work in the initiative.

“Ethno” refers to the expanded interdisciplinary approaches that ethnohistorians and ethnomusicologists follow to understand histories and musics that are otherwise somewhat incomprehensible through traditional single-disciplinary approaches. In this case, I have drawn on linguistics, history, anthropology, and musicology to arrive at conclusions not available had I taken any single approach in isolation. In contexts other than the one used in this chapter, I have employed this “ethno” approach to western subjects, so the label describes the approach, not who or what is studied. Uncertainty is inherent to this project, given that in this sort of work, the sum of the source material still adds up—according to ethnohistorian Patricia Galloway—to fragmentary, multiply biased, partially understood glimpses.³ By making the “ethno” prefix characterize the method rather than the object of the study, I hope to bypass the justifiable criticism that ethnohistory replicates colonial power relations by offering different types of history for colonial actors than are offered for their “others.” I think the methodological innovations of the approach are too substantial to warrant simply jettisoning the term. It shares this ecumenical approach with cultural studies and its related fields, so perhaps the prefix will end up being irrecoverable. I don’t want to lean too heavily on it when the thing can be named in other ways.

While much ink has been spilled and many bits flipped on the subject of method in ethnomusicology, my reading has always been specific and goal-oriented: understanding a fragment of music or a snatch of transcription in the context of a particular time and place. For the African music in Jamaica project, my key sources from ethnomusicology are the foundational work of J. H. Kwabena Nketia on the music of Africa and Ken Bilby’s groundbreaking work on the music of Maroons in Jamaica.⁴ Although I am aware of the many limitations inherent in Western musical transcription, the fact remains that

in history the fragmented glimpse is often all we get. I cannot, as one ethnomusicologist suggested, “go back out into the field” for more. Galloway’s warnings to interpret cautiously and suspiciously and the historian’s stance of uncertainty are the talismans here, since the questions do not vanish just because the methods are inadequate.

As for the “digital” component of the term, digital audio was slowly emerging as an accessible technology in the 1990s. The Musical Instrument Digital Interface standard (MIDI, introduced in the previous decade) became available, for better or worse, on every personal computer with a sound card, and it opened up new music-making opportunities along with the cheesy game tunes. By the mid-1990s relatively inexpensive full duplex sound cards came to market that brought the recording of CD-quality digital audio within reach on personal computers. Macs became the tool of choice for musicians, but I could never quite afford one, and PCs—first running Windows and then much later Linux—slowly caught up while offering more choice, complexity, and ways to go wrong at a cheaper price. Somewhat reluctantly, I became caught up in the latter two systems. By the end of the decade, audio-file compression made the storage and exchange of music feasible for professional sound artists and musicians, with the unintended side effect of setting off a revolution of sorts on the consuming end when the algorithms broke free.⁵ In the first decade of the twenty-first century, digital synthesis and recording moved seriously into the realm of the personal computer with the maturing of consumer-priced digital audio workstations (DAWs) and the introduction of the VST and AU plugin formats that they hosted. Professionals also had another, costlier format for the Pro Tools DAW called RTAS. In particular, software brought samplers—a high-cost piece of hardware in the 1980s and 1990s—within range of any budget. By using a sampler, a MIDI pattern editor, and a player called a sequencer, I have been able to create and play instruments that would have otherwise been impossible on one or the other front.

I use the term “sonics” to signify the full range of thinking about, listening to, feeling, and making sound, including but not constrained to the field of sound studies as it emerged in tandem with these digital innovations.⁶ Historians working within sound studies should note that hearing comes into play in two ways. First, hearing has a history: the senses are culturally and temporally shaped, and soundscapes of previous times are recoverable. One could take the paragraphs above as a personal, somewhat technology-driven version of this, as dozens (if not hundreds) of books and articles of

wider scope have appeared over the past fifteen or twenty years. Second, we can hear history: that is, we can use our ears to understand the past, which is the topic of the remainder of this essay.

Early on in this journey, before sound cards were available and somewhat affordable, I puzzled obsessively over the few pages Thornton had given me and tried to imagine the sounds. I concocted instruments to test ideas, one of which I have kept around to this day. Putting my fingers to homemade or adapted sound makers and playing the written music made it clear that certain instruments were used on particular parts of the score—a kind of embodied sonic knowledge that I could not get from the text or images. In the Angola piece, the two-stringed banjo-like instrument shown in the engraving was played in the bass register because of the fingering it demanded. The upper register of that piece was almost certainly played on the eight-stringed harp, as it had eight notes in total, and they sounded somehow better when they rang out harp-like than when muted by left-hand fingering on a neck. (The upper register probably indicated the vocal melody as well.)

My task in interpreting Sloane's pages was to exercise what I call the historical imagination. I was not trying to reconstruct "authentic" performances, then or now. I was learning through the combination of touch and hearing that is fundamental to much music making. The interesting dynamic of the emic (roughly, the insider listening out) and the etic (the outsider listening in) came into play, since obviously I was in the latter, outsider position (which is of course my emic).⁷ I was trying to imagine my way into the sounds and the history, not only from reading and thinking but also through doing and making. My idea was to make sounds using the principles that I thought the musicians Sloane and Baptiste used rather than create an "accurate" reconstruction, the latter a task too fraught to even begin. Some of the principles were aesthetic, others were implied by the constraints of Atlantic slavery, and one was discovered in the failings of the transcriber but not the transcription. A sampling of the principles would include: the choice of one scale over another in music deriving from a particular region; improvisation in the making of instruments using the materials at hand rather than a free selection; microtonal tunings, syncopation and polymeter; and choices about particular timbres.⁸ While I can make no claims to have achieved insider understanding, I found much to value and learn from trying.

The music I have made for this project over the years requires as much imagination on the listener's part as on mine. I do not know how the night sounds and fire crackling in the background of my most recent digital

attempts are made. Ultimately, I ended up getting closest to the sound of a live setting from an utterly artificial set of processes—sampling and sequencing—but that waited until the hardware and software had come within my reach. The setting on the Jamaican plantation in 1688 was obviously different from the conditions of reception, whether reading or listening, and layers of meaning exist in the distinction between audience and performer that would have been foreign to the Africans playing the music, although such distinctions are intrinsic to current understandings.

The stakes in these historical imaginings are high. For example, I am unwilling to take on the voice of enslaved Africans myself, and I am equally queasy about making it a singalong with audiences of mostly white folk providing the handclaps and the “Alla, Alla” refrain of the Angola piece. In light of the long history of minstrelsy (a tradition that perhaps lingers in the form of white suburban consumption of hip-hop), such a performance would adumbrate the power relations of both historical and present-day race relations and elide cultural appropriation into feel-good, irresponsible pop history. I think we can learn as much from what is left undone, unsung, and unplayed as we can from what is not, and I will not give voice to singing that linguistic and musical evidence conveys as having been hauntingly spectral, the voices of a community carried far from home to a strange and brutal land.

I was game to try the music, though, encouraged in that direction by the way musicians constantly borrow across cultures without the same sort of constraints that arise with vocal performance. I also could learn from what was absent as well as from what was there—drumming is made mostly of patterned absences, after all. The drums were missing altogether in the Sloane music. He reported that the musicians’ use of drums “in their Wars at home in Africa” made them “too much inciting . . . to Rebellion, and so they were prohibited by the Customs of the Island.”⁹ In West African music, particularly that from the region that Koromanti designates, drums served as an immanent display of state power. They meant serious business in the Americas as well. Slave revolts, including a successful one in Jamaica a decade or so before Sloane’s visit, were often organized around a drumbeat, sometimes a particular one recognized by the rebels as both a signal and a sign under which they fought for freedom.¹⁰ Their absence is thus as meaningful and significant as the presence of other instruments.

I used a cheap nylon-string guitar to stand in for the two-stringed banjo-like instrument. I played the two top strings of it in a dropped tuning and wove a thin strip of torn paper between the strings to create a dull, buzzing

sound, a trick I learned as a teenager when I wanted a fuzzy electric guitar effect and only had an acoustic. I wanted the buzzing for three reasons. First, the image showed an instrument with no bridge, which would make it sound muted and buzzy. Second, the aesthetics of much West African music value this buzzing, a preference that not coincidentally can be found in the fuzzy, distorted guitars in modern music from early electric blues onward. Third, the instrument in the background in the images of African music and Jamaica, used for comparison, is either a South Asian *tanpura* (which also has a flat bridge that imparts a characteristic buzzy and harmonically rich sound called *jivari*) or, alternatively, it is a Native American instrument made by forced-labor immigrants sold from the Carolinas into slavery in Jamaica at a rate of two enslaved indigenous people for one enslaved African.¹¹ Either is possible, since Sloane collected instruments from India and was an ardent comparativist in his study of natural history with proclivities toward the “cabinet of curiosities.”¹² He just labeled the comparative instrument in the engraving as “Indian,” so it is impossible to determine with certainty what he meant. I opted to emulate the South Asian instrument because of the buzzing.

The eight-stringed harp, which played the eight-note upper register in the Angola piece, was another adaptation of what I had at hand. This time I took two acoustic guitars (one nylon string and one steel string, since that is what I had), wove in the paper strips, tuned eight of the open strings to the notes of the upper register, set the guitars next to each other, and picked out the melody. This captured the open, sustained sound of a harp as well as the characteristic buzzing. Again, as a reconstruction I have no idea of how it fared—I like to think reasonably well—but as a tool for figuring out which instrument played which part, it was a useful exercise in historical imagination that helped me understand the music and musicians.

The Papa piece was too short to make much of, and the three pieces subsumed under the Koromanti title did not fall neatly into instrumental patterns when played on my emulations of the two-stringed banjo and the eight-stringed harp. For the Koromanti pieces I returned to Sloane’s textual description of a musician playing on “the mouth of an empty Gourd or Jar.”¹³ Since the other instruments did not seem to fit these musical passages as well as in the Angola piece, I surmised, with no great certainty, that Sloane only saw the mouth of the gourd and the musician’s hands and had missed that it held a *sansa* (thumb piano) that used the empty bowl as a resonator. This is speculation, and it is possible to play the Koromanti pieces on a modern banjo, but they become much more difficult on the two-stringed banjo

because of the long ascending and descending passages, which are impossible on the eight-stringed harp.¹⁴ The sansa's keys, which sound consecutive notes in a scale on alternating sides, facilitate exactly such ascending and descending runs.

I thought about the constraints the musicians were under. They had the knowledge and principles of the sansa but an impoverished access to materials and tools. What could they make with what was at hand? Probably nothing with the metal keys of modern African sansas—the ones usually known as *mbiras*—as metal would be valuable and scarce. Plus, the instrument would need to make a sound too distinctive to be mistaken for percussion. I guessed that they used thin strips of wood or bamboo as the keys to a sansa-like instrument.

I wondered how to emulate the sound. At the time, I was working at a shoe store to pay for tuition, rent, and food. New shoes often came stuffed with paper in the toe and a thin, eight- or nine-inch-long strip of flexible but sturdy bamboo that held the paper in place. I began saving them. I checked their sound by holding one end to the edge of a desk and plucking the other end. Lengthening or shortening the overhanging distance changed the pitch recognizably, but it still had a satisfyingly woody, buzzing, percussive thunk. I collected eighteen of the best-sounding ones and with a strip of wood trim pinned them to the bottom of an old dresser drawer that a previous tenant had left in the basement of my apartment. The drawer had a nice resonant sound. A slim-diameter piece of dowel jammed under the bamboo strips on one side of the wood trim made a bridge. I suppose if I had been attempting a reconstruction rather than practicing historical imagination, I would have waited for fall and gotten a big round gourd rather than a dresser drawer.

Sliding the bamboo strips forward and backward, I could adjust the notes of my sansa, which I dubbed the “bamboomba,” to any scale I desired, including microtonal ones. This turned out to be quite important, because one of the three Koromanti pieces had an extra note in it that threw everything off kilter (fig 1.1). I guessed from playing around with the sansa that two of the notes in the Koromanti transcription actually indicated a single note that was a microtonal interval to its neighbors. Baptiste, the transcriber, could not parse the note through the filter of European notation, so he wrote the “off” note as two notes, flickering between them in his transcription. Changing the note to a microtone yields what is now called a “blue note,” one that would fall between the notes of piano keys and a sound familiar to anyone who has heard blues or rock guitar.

I recorded my guitar and bamboomba experiments on a bottom-of-the-



FIGURE 1.1 The bamboomba.
PHOTO BY THE AUTHOR.

line four-track cassette recorder but was never particularly happy with the outcome: although the treated guitars taught me a lot, they sounded more like treated guitars than the instruments I imagined. In contrast, the bamboomba sounded just like I imagined it. Unfortunately, I could not put in the time to learn the three Koromanti pieces in any but the most halting manner.

I finished an article on African music in Jamaica in 1993 and set the project aside during my first few years of graduate school. By 1995 I had saved up for a real treat—an early “full duplex” sound card that allowed the simultaneous recording and playback required for multitrack recording. This launched the digital part of my journey in earnest. I could record up to four tracks, though only one at a time. My first project was to create a multitrack recording of the two-register Angola piece, using a guitar with two detuned strings for the lower register and the same guitar played on all strings for the upper. A third track was devoted to a simple percussion line.

The soundcard also had a nice on-board MIDI synthesizer so that I could write MIDI sequences and play them back. I could load my own sounds into the card too, but it took forever and was not worth the trouble. It did

introduce me to sampling, though, which later would play a bigger role in my research when the technology became software based and fell within my reach in both price and ease of use. The General MIDI instrument specification provides for a *sansa* as one of its instruments, so even though it was a metal-keyed version that could not produce microtones, I programmed the Koromanti pieces in their full 1995 cheesy MIDI glory.¹⁵ I shared my recordings with a few people who used them for teaching or were just interested, and they achieved a little *samizdat*-style circulation. They became part of a CD hypertext project called *Migration in Modern World History*.¹⁶ When the MP3 format began to take hold, I posted them, along with many other pieces I had recorded, on my website and began using them in my teaching as soon as sound was incorporated into classroom computer setups.¹⁷

Sonic presentation clarifies sonic ideas. Learners do not easily grasp concepts like microtones and polyrhythm through language. They readily hear them though. Polyrhythm, for example, is much easier to teach through a simple clapping exercise in which one side of the room claps every third beat and the other side claps every fourth. Generally, some comedy ensues the first few tries, but then the audience hears it, and once that happens, they know it. And everyone has heard microtones in the bent strings of a lead guitar, at which point they cease to be something esoteric and become “oh that, of course.” Having classroom computers with sound cards has had a transformative effect (though perhaps not for the clapping) on being able to teach with sound.

This type of learning pays off by making more accessible the experiences of people who are not well represented in traditional documentary sources. Sound delivers affect and the ability to strike the nonrepresentational aspects of being. When working to document the lives of enslaved Africans, I seek to avoid one of the oldest and most patronizing ways of telling the histories of people underrepresented or misrepresented in the documentary evidence: framing them as emotional and implicitly irrational beings, perhaps lacking in powers of representation, and presenting them as a sort of foil to logical, rational, and often paternalistic textual representations. Perhaps the most thoroughly articulated versions of this type of patronization are the theories of orality and oral culture that posit a great divide between literate thinking and that of everyone else. Recently, though, affect studies—which attend to nonrepresentational forces, the embodied relational abilities to affect and be affected—have come to the fore in new ways, so maybe there is yet a role for affective histories that are not reducible to hoary generalizations.¹⁸ The practical part of sound’s presence is that students and audiences connect

to it in a different, perhaps more direct, way than to texts, a connection grounded in the body and experience as well as (and not in contrast to) the representational and the textual.

An oft-used trope in literary studies and historical work argues that since the source documents are biased to the core, we can tell nothing of the subjects they purport to describe, having only the psyche and fantasies of the white, usually male authors of the documents in question. Gayatri Spivak famously answered the question, “Can the subaltern speak?” (in reference to the practice of widow burning in colonial India) with a provisional, “Not really.” She argues that despite the damages of colonial oppression, or in fact because of them, all we can really know about the widows is what the British authors of the texts *thought* they were experiencing—but nothing of the women’s experience itself.¹⁹

In the Sloane materials, however, we have an interesting incursion. Sound is promiscuous, infiltrating and mixing freely without any attention to the intentions or desires of the listeners or even the producers. Sloane and Baptiste recorded the microtones, the polyrhythms, and the buzzing aesthetic without having a framework for doing so—the concepts were simply not present in Western music of their time. It was as if the Brahmin widows had been able to write through the mediumship of the British authors, who transcribed in a language they did not know and were not aware of writing. This hidden transcript in the Sloane materials only emerges when the sounds are rendered audible. While sounding them out does not offer unmediated access to the subaltern past (any more than do the texts for power holders), it does provide glimpses into the processes of cultural formation under the duress of slavery that move beyond models of resistance and accommodation, which are by definition always described in the terms of the master class.²⁰

The problems of bias extend beyond the text into the digital domain as well. Ethnodigital musicians battle an implicit Eurocentrism in music software and hardware. It can be overcome, usually via a workaround or a deviation from an implied norm derived from Western classical music. For example, rendering polyrhythms using sequencers (composing software that is something like piano rolls) is easy in some applications but harder in others, depending on whether the bars of the sequencer can be set to different lengths. Many drum sequencers favor powers of two, having fixed lengths of eight or sixteen beats, neither of which is divisible by three, of course. For the simplest polyrhythmic work of three against four, the length of the sequence needs to be twelve or a multiple thereof, but this is often not

an option. More complicated polyrhythms, which abound in non-Western music, are even less accessible. The bias, though not the rule, is toward a steady 4/4 meter, and the ethnodigital sonician has to improvise and make do in many cases.²¹

Creating microtones in MIDI presents different challenges. Part of the difficulty stems from the fact that MIDI is a Eurocentric language, the “nouns” of which are equal-temperament notes that must be bent and shaped by the “adjectives,” in this case pitch-bending messages that modify the notes on an individual basis. Equal temperament is the norm, and microtones are temporary deviations. This can be countered in some software through tuning files that change the values of the “nouns” at the outset, mostly by adjusting the pitch-bending deviations behind the scenes. Until recently, though, the software has been fiddly and difficult or prohibitively expensive, and writing the tuning files remains a challenging enterprise. My goal of rendering MIDI files that sound more accurate, both in timbre and in tuning, took a long time and many false starts to realize.

Ethnomusicologists have dealt with these constraints in Western music notation for years, but they take on a different valence when they are built in to the composition process rather than the analysis of the music. It would be interesting to see what sort of musical language MIDI would have been if it had been designed by a consortium of musicians from around the world rather than a panel of music industry representatives. A newer protocol has emerged in recent years; called open sound control (OSC), it addresses some of the issues raised here from the ground up, but its adoption both in software and by musicians has been slow.

Despite this slow and uneven development, word about the musical versions I made of the Sloane transcriptions did circulate. Someone from a public television documentary team approached me in 2006 about using the recordings for a special on Jamestown and the first Africans who were sold there in 1619. I shared my (nonmicrotonal) MIDI files of Koromanti and the treated acoustic guitar rendition of the Angola piece. After some back and forth, the team decided not to use the music because “it was too upbeat for the portion that we were applying it to! Beautiful music—but we were looking for something a little more ‘down.’” I was intrigued (and of course a little disappointed) by this rejection. I can see why a documentary that has a limited time to express a complex idea to people unfamiliar with it would not want any gray areas in the interpretation, especially when they could be construed as making slavery seem happy or as portraying the people within it as carefree, with no other thought in the world beyond their day off and

some music and dancing. Such positions arose from the work of Ulrich Bonnell Phillips and other southern historians from the early twentieth century, and the “carefree slave” trope haunted popular culture well beyond the 1960s.²² The documentarian’s rejection of the music was a prophylactic reaction to this older, decidedly racist strand of American historiography, the critique of which has, over the course of eight or so decades, seeped into the public consciousness at least as far as the television documentary.

But the sound and affect of the Angola and Koromanti music also raise an interesting question: Is there such a thing as absolute slavery? Can the soul of another human being be controlled so absolutely that we can reduce that person’s emotional range to nothing but sad songs and sorrow? I like to think of music as a release, an autonomous zone apart from the usual tropes of resistance and accommodation. I could sound the Sloane excerpts not necessarily in reference to slavery, but not necessarily discounting it either, attributing more to the human than just “the slave.” The musical pieces I was studying made a space where enslaved Africans could be sometimes fierce, sometimes joyous, sometimes lustful, sometimes sorrowful, and more fully human than was possible within the constraints slave masters both imagined and tried to realize. Here were several competing historical imaginaries: those of the Africans, the masters, Sloane, the television documentary, Ulrich Bonnell Phillips, the audience, mine, and yours, as well as those of other audiences with whom I have shared this idea.

I think that the idea of total slavery with absolute slaves was ultimately the fantasy of the masters rather than a description of lived experience. The enslaved never became the comprehending-but-not-thinking working objects that their masters wished them to be, as brutal as the institution was. Nor were they all and only “down.” I would posit that the full range of emotions that can be culled from these pieces—everything from the ghostly sorrow of lost and wandering human communities to “too upbeat”—is evidence of such. The affective power of sound to change the ways people experience things even before and long after they have thought about them means that it matters.

This question of the destructive effects of slavery on African culture brings us back to an old but fascinating debate initiated in 1939 between the African American sociologist E. Franklin Frazier, who made a case for the utter destructiveness of slavery on a usable African past, and the white anthropologist Melville Herskovits, who argued the contrary position by cataloging hundreds if not thousands of Africanisms in American culture. Frazier got the better of the argument well into the 1960s. It became import-

ant enough that in 1965 Daniel Patrick Moynihan, an adviser to President Johnson at the time, framed it as his infamous “culture of poverty” argument, which became the basis of welfare policy for the next three decades. The Black Power movement shifted the momentum to Herskovits’s side, and responding to this politicization, anthropologists Sidney Mintz and Richard Price proposed a mediating approach using creolization as their theoretical frame. Unfortunately, this has more often than not meant a return to the Frazierian claim touting the destructive and innovative effects of slavery at the expense of African culture, so much so that some historians have mistakenly situated creolization in opposition to cultural continuities in the Americas, treating them as competing and antagonistic models.²³

What the music points toward is a more nuanced understanding of how all these tendencies—creation, destruction, and persistence—were and are integral to each other for anyone who thinks deeply about today’s multi-billion-dollar popular music industry. All are necessary ingredients to understanding the complexities of African—and European—life in the Americas. This understanding of creolization shows us how cultural continuities, destruction, and innovation were twisted together in a highly creative generative process that continues to have effects to this day.

But maybe it was the microtones. I found that time and new, less expensive sequencing and sampling software made it possible to play the missing microtones, even when I was not sufficiently adept to play the music on the *sansa* I had made. I tuned the *bamboomba* to Western scales and recorded for each of the keys a soft, medium, and loud pluck. I imported these into a sampler that could trigger the appropriate sample when notes were played, and I massaged the notes in the sampler to play the microtonal scales I needed (fig. 1.2). I am no better on keyboards than I am on *sansa*, so I tried triggering the MIDI notes through a guitar with a MIDI output on it. This was moderately successful, and I went on a mini tour of two conference performances in 2010 and 2012. The setup was awkward, bulky, and skittishly complex to prepare for a performance. After a particularly difficult second outing, I have put the live version on hiatus (unless you want to book me!), but it is quite fun to play a guitar and have a completely different instrument emerge from the speakers.

A better solution was to sequence the MIDI—I had already done this—and then use the tweaked samples to capture the microtones. Where Baptiste’s flickering notes occurred, I resolved them into a single microtonal note. This meant I could digitally separate what was played from the notation, which better resembles what I imagine the process to have been. After years



FIGURE 1.2 Recording of the bamboomba imported into a sampler.

of pondering the problem, I have a solution and a version—minus vocals and plus some night sounds and percussion—that approximates what I imagine the instruments and dancers sounded like on that night in Jamaica in 1688.

Using digital tools and a bit of historical imagination, both mine and my listeners', I have found inroads into understanding a bit more about the lives of Africans in seventeenth-century Jamaica as well as the processes, constraints, feelings, and creativity that went into building a distinctively new culture in the Americas under unimaginably harsh conditions. Although the trail of documentary evidence on this subject gives out if we limit ourselves to reading the texts, by setting aside the academic perquisite of *ex cathedra* certainty, whole new avenues of understanding open up when we listen. I have tracked my path through this process as constituting “ethnodigital sonics,” and I would offer that path as one way of undertaking the practice of it. I hope others will find this a useful road map for the practice and its possibilities.

NOTES

- 1 The most recent versions of my performances of the musical pieces referenced in this chapter are available at “Ethnodigital Sonics Meets Maker Culture in Seventeenth-Century Jamaica” (accessed January 16, 2018, <http://way.net/AfMusicJam>).
- 2 Sloane, *Voyage to the Islands*, vol. 1. As I was revising this essay, an excellent new website that highlights the section of Sloane under consideration in this chapter came online: see Dubois, Garner, and Lingold, *Musical Passage: A Voyage to 1688 Jamaica*.
- 3 Much along the same lines found in Galloway, *Practicing Ethnohistory*, 27, and throughout.
- 4 Nketia, *Music of Africa and African Music in Ghana*; and Bilby, “Kromanti Dance,” “Caribbean as a Musical Region,” and “How the ‘Older Heads’ Talk.”
- 5 Sterne, *MP3*.
- 6 The best single-volume introduction is Sterne, *Sound Studies Reader*.
- 7 For the dynamic approach to the terms I have taken, see Hymes, “Emics, Etics, and Openness,” along with the other essays in that volume.
- 8 For the details, see Rath, “African Music in Seventeenth-Century Jamaica,” and *How Early America Sounded*, 8–9, 68–93.
- 9 Sloane, *Voyage to the Islands*, 1:xlvi–xlix, lii.
- 10 Rath, “Drums and Power.”
- 11 Galloway, *Indian Slave Trade*.
- 12 On cabinets of curiosities, see Kupperman, *Indians and English*, 21–22, 349n.13; for the specific context of Sloane’s collection (which became the basis of the British Museum), see Delbourgo, “Exceeding the Age in Every Thing.”
- 13 Sloane, *Voyage to the Islands*, 1:xlix.
- 14 For a video of the Koromanti piece played on banjo, see Burton, “Older than Minstrel.” David K. Garner plays several of the Sloane pieces on a fretless banjo on the Musical Passage website cited in note 2.
- 15 MIDI itself has no sounds, only instructions to tell a synthesizer to sound a certain note at a certain pitch and velocity (relative volume) for a certain time on a certain channel from a certain sound bank. The sound banks of the synthesizer can contain any arbitrary MIDI-capable synthesizer, including the ones built in to Microsoft and Apple operating systems. “General” MIDI is a specification implemented to bring some predictability to the sounds a MIDI file produces and includes a numbered set of 128 target instruments, of which number 109 in the “Ethnic” group is the kalimba, a metal-keyed sansa. The actual sound produced is still left up to the synthesizer, which used to be

a separate board on early soundcards. In the 2010s, as computers have grown more powerful, the synthesizer on a home-use personal computer is generally executed in software. The sound itself thus was built into my sound card in 1996, but it was specified by General MIDI program 106, hence the awkward wording of the passage. For details on General MIDI, see MIDI Manufacturers Association, "About General MIDI."

- 16 Manning et al., *Migration in Modern World History*.
- 17 Rath, "African Music in Seventeenth-Century Jamaica."
- 18 Gregg and Seigworth, *Affect Theory Reader*, and Goodman, *Sonic Warfare*.
- 19 Spivak, "Can the Subaltern Speak?" For an important rejoinder, see Mani, *Contentious Traditions*.
- 20 For hidden transcripts, see Scott, *Domination and the Arts of Resistance*. For alternatives to the resistance models and the ways the cultural formations took shape in North America and the Caribbean, see Rath, "African Music in Seventeenth-Century Jamaica," "Echo and Narcissus," and "Drums and Power." For hegemony, see Gramsci, *Selections from the Prison Notebooks*, ably critiqued in Lears, "Concept of Cultural Hegemony." A whole body of slavery studies from the 1950s to the present is based on the notions of resistance and accommodation but is beyond the scope of this chapter to review.
- 21 An internet search for "Euclidean Rhythms," itself a somewhat Eurocentric framing, will return a host of links to wonderful homemade software based on the research of Godfried Toussaint, but the inventions take the form of optional extensions to the major music creation platforms rather than being integral to any of them. See Toussaint, "Euclidean Algorithm." One iOS app, *Patterning*, from Olympia Noise Company, does manage to incorporate polyrhythmic possibilities by using a circle rather than a piano-roll model, with each of the rings that constitute the sequencer divisible into any number of steps.
- 22 Phillips, *Life and Labor*.
- 23 The Herskovits-Frazier debate is attended to in depth in Rath, "Drums and Power." For the mistaken notion that creolization is opposite to African continuities, see Lovejoy, "African Diaspora."

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