ON THE BOUNDARIES OF MULTIVALENT MUSICKING: A STUDY ON THE POLITICS OF COMMUNITY-STUDIOS

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ABSTRACT

This dissertation is an ethnographic project about the politics of community-studios—recording studios that prioritize working with artists from "underserved" communities (poor, black and Latinx youth) as well as women and non-binary artists; and that exist to provide these groups with free and low-cost recording services and education. I pursued my fieldwork from 2013–2019 at community-studios in Upstate New York, Pittsburgh, PA, Goma in the Democratic Republic of Congo, and a hip hop education program in Brooklyn, NY.

The dissertation begins by outlining the sociotechnical history of community-studios as modern assemblages, detailing the conditions that enabled the studio to become a social intervention for a host of socioeconomic, racial, and gender disparities. It then presents the dissertation's central premise that the demands of honoring the proposed commitments of multivalent recording studios require its stakeholders to shift between constructing such spaces as either "professional" studios on the one hand or radical community resources on the other. These stakeholders are comprised of the

funders, musicians, and other community members who bring such spaces into being, as well as the sound engineers who operate each studio and work closely with the third group, the artists.

Using the concept of "boundary-work" to describe the process through which stakeholders arrive at a particular framing of their space, the dissertation then considers not only what is at stake for members of a community when they frame their spaces in terms of the logics that govern either successful commercial studios (like time-based productivity and protection of trade secrets) or radical community spaces (like publicly accessible knowledge), but also how these decisions are reflected in every level of the studio's operations, from the kinds of sonic interventions prioritized by the engineers to the lyrical stylings of their clients. Ultimately this project highlights both the organizational dissonance inherent to operating a sustainable community-studio, and the importance of community-studios in illustrating how a studio can serve civic needs beyond providing space for tracking and mixing songs, particularly in an age when any artist can produce professional mixes on a laptop and in a bedroom.

BIOGRAPHICAL SKETCH

Enongo Lumumba-Kasongo attended Cornell University for her undergraduate degree where she double majored in science and technology studies and sociology. Under the guidance of Trevor Pinch she completed a senior thesis about digital music software production, tacit knowledge, and gender. After graduating in 2008, she completed a two-year appointment in the national teaching program Teach for America, through which she taught third and fourth grade math and science in Houston, TX. In 2011 she returned to Cornell to pursue graduate work in the Department of Science & Technology Studies. Throughout her experience as a PhD student she has also maintained a full-time career as a rapper and producer under the moniker Sammus. Following the completion of her PhD she will be working as a postdoctoral fellow at Brown University through a two-year joint appointment between the Music Department and the Cogut Center for the Humanities.

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Dedicated to my family, my loving partner Lanre, my countless friends and supporters, and all the very dope artists I know who are just trying to be heard and make the world better.

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INTRODUCTION

I remember the first time I walked into a professional recording studio. It was the summer of 2009 and I had booked four hours at a small studio in Jersey City with the hope of completing two songs. Although I was racked with anxiety about the thought of performing *a cappella* in front of a stranger for the first time and the $75-an-hour rate felt a bit out of budget, I considered it a necessary step towards building a professional career as an artist. Amidst the backdrop of a professional audio recording industry supposedly in free-fall at the hands of cheap and widely accessible recording means, rising studio rents, and online music pirating services like Napster (Marshall, 2017, p. 77), I was still very convinced at the time that the only place to produce a professional sounding record was at a commercial studio.

Three years later, I recorded my first full-length album in my bedroom during my first year of graduate school at Cornell University. I produced my beats on a $1300 Apple iBook laptop using the much cheaper "express" version of the music production software Logic, recorded my vocal takes on a $99 Logitech USB microphone I purchased at the campus store, and mixed each song in the speakers of my 2006 Toyota Corolla. After sending the 13-track album off to be mastered for $200 by an engineer in Los Angeles whom I had found on the social networking platform Twitter, I uploaded the project to the

music-sharing website Bandcamp, where it subsequently became a bestseller and launched my career as a rapper and producer under the name *Sammus*.

Although my story is fairly unique, in many ways it reflects popular cultural myths about the flow of consumer technologies through societies; expensive tools that require highly specialized knowledge trickle down to the masses through economies of scale wherein they become black boxed, hacked, or repurposed until the next iteration of tools moves down the pipeline and catapults them into obsolescence. As it relates to the history of studio technologies, these stories often focus on wide scale artistic shifts away from employing audio engineers seated at mixing consoles with analog outboard equipment for recording, mixing, and mastering in specially designed studio spaces. Increasingly artists seem to be able to produce high fidelity, widely distributed music using free and relatively low-cost digital audio workstations and equipment that can be utilized by anyone, anywhere, from bedrooms to public spaces (Porcello, 2004, p. 736; Théberge, 1997). This was certainly the case for Prince Harvey, a rapper I met on tour in 2015 who had gained international attention for recording an entire album using the free digital audio workstation GarageBand on the computers at a Soho Apple store (Beaumont-Thomas, 2015). Even the highly specialized audio engineering skills involved in mastering—the process of refining an edited and mixed song to maximize standardized playback across different systems and formats—are now under threat from algorithm-

based mastering tools like LANDR, a web-based app found at landr.com that allow users to drag and drop an unmastered audio file into an online repository and receive a download link to an AI mastered "professional" version of the track minutes later (Inglis, 2016).

As science and technology studies (STS) scholars have been arguing for decades, we must resist the kinds of technologically deterministic myths that tend to emerge from stories like mine or Prince Harvey's—myths that gloss over the importance of "relevant social groups" (Pinch & Bijker, 1984; Jarzabkowski & Pinch, 2013) in shaping what technologies mean. In the context of recording studios, these accounts often end up overlooking the ways that lesser recognized sonic technologies and social configurations can accrue and retain their own forms of symbolic and social capital. While it is true that recording in a commercial studio is no longer a necessary option for creating high-fidelity widely distributed music, the abandonment of the commercial studio model in favor of more personalized, private, and DIY recording practices represents just one possible outcome of the proliferation of low-cost, high fidelity audio recording equipment.

I was not aware how much these myths had influenced my thinking, until the summer of 2013 when I found myself at Sankofa Studio, a small grant-funded recording studio in Syracuse, NY that had been operating since 2007 in a room at a community center in the city's oldest historically black neighborhood (I have

changed the name of the studio and the city in which it is based as many of the actors are still involved within the community). After learning about the space through a fellow artist, I had initially envisioned using the studio as a site to explore issues of gender, tacit knowledge, and music production for my dissertation project. However as I began making weekly visits to the studio, I became less concerned with examining the space to think specifically about gender and beat-making practices and grew more fascinated by the general phenomenon of a space designed to provide marginalized community members with access to particular kinds of music production technology and knowledge. I wondered how the white audio engineer negotiated his status as an authority in a primarily black space that was explicitly designed to subvert the racial and class-based power dynamics that the attendees felt in other spaces. I also became intrigued to learn that some of the artists had viable home studio set-ups that were comparable to the one at Sankofa Studio as well as the requisite knowledge to, at the very least, record themselves. I began to wonder why they would spend so much time and sometimes money coming to Sankofa Studio; why they wouldn't just record themselves and then send their tracks to an engineer to mix and master independently as I had done. In those moments I recognized that studios are more than the artifacts they bring together, that formalized recording studio spaces could serve other needs beyond simply providing a means to track vocals, write new music, and mix tracks. There were ways in which the very

demarcation of the space as a studio, was playing an important symbolic role in how the artists saw themselves and their work.

I have since developed my initial observations into the topic of my dissertation, a multi-sited ethnographic research project about the politics of "musicking" (Small, 1998, p. 8) in *community-studios*—a term I use for fixed and mobile studio sites that exist to provide underserved or "at-risk" communities and new recording artists with access to free and low cost professional music recording equipment, services, and education.[1] The educational component is often in the form of tutorials or classes about specific technical skills, but it is also sometimes infused with teachings about the histories of different musical forms of expression. I use quotations to bracket the word "at-risk" because this is often the kind of language employed in grant applications and marketing materials to refer to some of the black and poor populations served, although it is not the language that these communities would necessarily use to describe themselves.

I use the term "musicking" to draw on the work of ethnomusicologist Christopher Small (1998) as well as sound studies scholars Tia Denora and

[1] I had already begun using the term "community-studio" before I saw it on the website for one such space, the Youth Entertainment Studios (YES) in Chesapeake, VA. The website describes the philosophy behind their "Multimedia Motowns" with the tagline "Community Studios Reach Teens Where They Live," although its website yesamerica.org/studios has since become inaccessible online.

Trevor Hagan (2012), for whom musicking is defined as "the (social) activity of making music and musical meaning" (Denora & Hagan, 2012, p. 441). Specifically, it is Small's development of the term as a way to foreground the set of relationships that intersect in order for a piece of music to exist that resonates the most deeply with the subject of this dissertation. By using the term "musicking" I wish to suggest that making music at a community-studio (and all of the attendant assumptions, practices, and sonic styles of the associated actors) reflects a very different set of social relations and therefore experiences than might exist at a traditional commercial studio or in a more do-it-yourself (DIY) recording setting like a home studio.

In using the word "politics," I am drawing on the social constructivist programme first proposed by Pinch and Bijker (1984) as a theoretical approach for examining the trajectories of emergent and popular technological artifacts. Rather than accepting that the most widely adopted technologies proliferate because they're inherently "better" (more efficient, cost-effective, etc.) than other proposed models, as has often been argued by scholars in innovation studies and historians of technology, the social constructivist approach situates the "success" of all technological artifacts within the politics of a variety of orbiting actors—"relevant social groups"—and their historically and culturally contingent valuation models. As Bijker (2001) notes in an essay on social constructivism and technology, "[T]he stabilization of an artifact is a social process, and hence

subject to choice, interests, and value judgments—in short, to politics" (Bijker, 2001, p. 27).

In many ways the social constructivist model expands and challenges the ideas of historians and sociologists of technological systems like Langdon Winner (1980) for whom the term politics has been explicitly tied to institutions of state power as well as concepts like democracy, freedom, and social justice (a distinction I later refer to as "upper-case P" Politics). As Winner (1980) argues, scholars in the latter tradition have often espoused a form of "naïve technological determinism" (p. 121), through which innovations, from radio and television to the space program and nuclear power, are said to "impact" the socio-political order of a given society or even bring certain forms of power (authoritarianism, democracy, etc.) into being, without giving critical attention to the social forces that coproduce these technological systems and their patterns of use. To challenge this deterministic perspective while still accounting for the sociomaterial affordances of technological artifacts, he proposes two distinct yet interconnected ways that artifacts might be said to have politics: (1) "instances in which the invention, design, or arrangement of a specific technical device or system becomes a way of settling an issue in a particular community" (p. 123), like a freeway structure that is designed to prevent the free passage of people that use public transportation (who are more likely to be poor and black); and (2) those of "inherently political technologies, man-made systems that appear to

require, or to be strongly compatible with, particular kinds of political relationships" (ibid), like the atomic bomb, which requires an authoritarian-like internal social system of management as a practical necessity of its safe use (p. 131). Conversely, the social constructivist approach towards technology locates politics within the design and the use of artifacts, which in turn reflect systems of power both on the state level and on the level of the interactional and the "mundane" (Latour, 1992). Thus in drawing on the social construction of technology (SCOT) framework, my dissertation focuses on unpacking the politics that shape the types of recording equipment and software the actors utilize as well as the kinds of music they write, record, and produce with the goal of understanding studios more broadly.

My research is also concerned with the *ways* in which community-studio actors write, record, and produce sound—their artistic and technical practices—as well as how they share knowledge and ideas about these practices. Specifically, this project seeks to examine how the institutional status of a studio as both a commercial space and a community resource might inform the norms and daily technical work conducted by its inhabitants. As many historians of technology have long argued, technologies are both material artifacts and forms of human activity (Lerman et al., 2003). A meaningful cultural exploration of technological artifacts and apparatuses should therefore operate largely at the level of practice. In the context of the sound engineers who manage and operate spaces like

Sankofa Studio, such an exploration means carefully examining their ideas about what counts as an appropriate technical intervention for the kinds of issues one encounters in a recording studio (off-key singing, "thin" sounding vocals) and in a cash-strapped community space (less than ideal acoustic treatments, cheap and unreliable equipment). This also means examining their daily discursive techniques with other actors and with themselves.

Community-studio engineers must not only be able to perform the technical work of recording and mixing music, but they must also educate the artists about what they are doing in order to empower them to be able to do the same, switching expertly between what Porcello (2004) calls different "registers" or linguistic techniques for relating sounds and effects to technical outcomes. Each of the engineers with whom I interacted expressed a deep awareness about the traditional studio power dynamics that their space was supposed to be circumventing and they often expressed solidarity with new artists about the fact that studios can be intimidating places. Still, some of these engineers struggled to abandon their professional training and personal aesthetic preferences when they conflicted with the stated mission of the space. Others simply recast their recording and mixing decisions using the language of community work and social justice wherever such conflicts may have arisen. By examining the engineers' ideals and interventions at the level of technique and conversation, this project attempts to articulate how the multivalent nature of these spaces requires

constant "boundary-work" (Gieryn, 1983)—the process of demarcating the norms and practices that are in this case appropriate in a "real" community-studio from those that are not—for those who must work out the technical and philosophical details.[2]

A practice-oriented methodological approach also offers a useful angle for exploring how the ontological status of community-studios shapes the identities of the actors that they are supposed to serve. As Judith Butler (1991) has famously argued in relation to identity and gender constructs, "[i]dentity categories are never merely descriptive, but always normative, and as such, exclusionary" (p. 160). What I eventually came to see was that the framing of a studio's target population as being "at-risk" both in informal conversations and in official documentation shapes not only the discourse surrounding the studio and its role in the community but also the specific technical and musical practices therein. Many of the young black artists I interviewed at Sankofa Studio reflected on biases that they felt were unfairly projected onto them and their work by local residents and college students living outside of their community. I often think about an interview I conducted with a local rapper during my first summer of

[2] It is perhaps worth noting that the form of boundary-work referred to throughout the dissertation is not the kind ideological boundary-work that Gieryn articulates in his 1983 article regarding competing systems of knowledge. Instead the boundary-work I describe here is moored in the everyday practical actions of the sound engineers and artists, whose performances of boundary-work directly establish organizational routines and determine what kinds of artistic and technical practices are acceptable or unacceptable in the space.

research in which he remarked, "[p]eople at [the local college]…should come down here and see what we're about. It's not all negative…We're not just making auto-tuned pop garbage over trap beats. We're really talking about things." For him, the lack of attention given to the artists at Sankofa Studio by the broader, predominantly white community was tied to their cultural beliefs about the kind of music, and therefore the people, it produced. In turn it became important to him that he craft his artistic identity in opposition to what he felt were the vapid ideals signified by audio tools like auto-tune software and Southern-style synthetic-sounding trap beats. As this project will illustrate, this kind of self-awareness on the part of many artists was often quite pervasive in each decision they made about their desired musical output and image.[3] In many ways his response offers a perfect illustration of the importance of diving deep into technical practices to make sense of complex technological apparatuses like community-studios; through artists articulating and enacting their desired pre-

[3] The term "artist" is in many ways an analyst category I have imposed on my actors; they did not typically describe themselves as artists nor discuss their music as "art"; instead they referred to themselves as singers, emcees, rappers, guitarists, punk rockers, etc. I have chosen to use this term as a catch-all to describe the actors who make and record music because of the seriousness with which they approached conversations about their music. Particularly at Sankofa, each of the rappers I interviewed articulated a greater vision for their musical work than just the completion of a particular song. The songs that they recorded were often intended to be parts of EPs, full-length albums, or mixtapes that they hoped would find distribution in the community through performances or radio-play. At Inclusive Recording, even the musicians who did not have lofty goals of fame for their projects still approached their craft with a high degree of intentionality and enthusiasm. In that regard I use the term artist as a way of stating that I also take seriously the musical work that my respondents have created beyond its popular reception and circulation.

and post-production needs they also offer unique insights into their "listening formation" (Faulkner, 1994, in Devine, 2013), the larger "context of audition" within which their historically specific ideas exist.

Finally, this project is a story about the "upper-case P" Politics of community-studios—specifically the agendas of the economic and political actors and institutions that coproduce community-studio developments at the local, state, and federal level. Spaces like Sankofa Studio have proliferated globally over the past 25 or so years, thanks largely to significant funding from government agencies, non-governmental organizations, educational institutions, and private grant funding bodies. While some community-studios are independently run, many of the sites I learned about through my research are operating as non-profits. For these studios, granting agencies can thus wield quite a bit of power, not only in terms of shaping the kinds of equipment used in the studio but also presumably what counts as acceptable artistic practice (Ndaliko, 2013). The first time I went to Sankofa Studio I saw a sign taped to the door advising studio-goers to "use clean language" in their lyrics or risk being kicked out. Nobody ever clarified to me whether the term "clean" referred to specific words or "regressive" themes and implications. Regardless, I was struck by how antithetical this directive seemed to the ethos of the space as far as personal and artistic exploration. And although the warning seemed innocuous enough at the time, it represents a systemic challenge that my research uncovered about

managing a community-studio. As Christina Dunbar-Hester (2014) has shown in her work on activist use of government issued radio licenses as a vehicle for 21st-century civic and political engagement, it can be difficult to reshape technological apparatuses as forms of resistance against the same powers that oversee them. In the immortal words of Audre Lorde, "The master's tools will never dismantle the master's house" (1984, p. 110).

In the recording studio, these tools are part of a history of recording practices that has prioritized the expertise and contributions of white men, as studios morphed from engineering laboratories in the late 19th and early 20th centuries to assemblages of the corporate and computing cultures of the mid-20th century (Schmidt-Horning, 2013). Set against this backdrop and working with earmarked funds, it is hard to imagine many community-studios finding the latitude to create truly revolutionary spaces for the people they aim to prioritize. So, while the proliferation of community-studio sites over the past decade is in many ways a cause for celebration, it may also be an indication of how much those in power recognize the recording studio as a "critical site for the production and reproduction of our assumptions about what counts as appropriate, good, or real in music and people" (Lumumba-Kasongo, 2014). In 2015, news outlets revealed that the US government organization, USAID had funneled thousands of dollars to Cuban hip hop artists between 2009 and 2011 in the hopes of sparking youth-led demonstrations against the Cuban

government of President Raul Castro (Weaver, 2015). The political stakes may not always be that overt, but they are always high enough to warrant reimagining possibilities for how radical community resources can be ethically sustained.

Selfishly, this project has offered me a way to explore what access truly means for the communities I care most about; but the dialogue it is part of extends far beyond my personal interests. Without fail, every single time I have mentioned my research project among friends and acquaintances, somebody brings up a new community-studio program for me to check out, often remarking how important such spaces are in the face of nationwide budget cuts for arts programs and education. I would argue that as the popularity of these kinds of spaces grows, it is important that we are also critically examining their limitations.

I pursued my fieldwork between 2013 and 2019 at three community-studios and with one music educational program across four sites—Syracuse, NY; Pittsburgh, PA; Goma, the capital city of the North Kivu province in the eastern Democratic Republic of Congo; and Brooklyn, NY respectively. As I have already mentioned, I have pseudonymized the name and location of the first site as well as the names of the Pittsburgh studio and the engineers and artists involved in both locations unless indicated otherwise because I do not want my research to disrupt some of the fragile and complicated relationships described in the following chapters. My fieldwork primarily took place at the

Syracuse, NY site I have renamed Sankofa Studio, which I began undertaking in the summer of 2013. I spent two months shadowing the studio's audio engineer, whom I have called Dan, as well as conducting participant-observation and 10 semi-structured interviews with studio attendees and staff members who worked at the community center within which the studio is located. I continued to visit Sankofa to conduct additional interviews and participant observation on a bi-monthly basis from fall 2013 until the summer of 2014 when I took a step back in order to study for my qualifying exams.

After completing my qualifying exams I set about trying to make inroads with sites that could offer an international perspective on the politics of such studio spaces. Eventually I connected with Pierce Freelon, a lecturer at UNC Chapel Hill whose course entitled Beat Making Lab (taught collaboratively with music and technology scholar Mark Katz and hip hop producer Apple Juice Kid) had grown from being a hands-on class on hip hop composition to becoming an Emmy-Award-Winning PBS-partnered web series documenting the development of youth-centered mobile studios—beat making labs—in cultural centers around the world (Beat Making Lab, n.d.). I conducted two semi-structured interviews with Freelon and skyped in to observe two meetings that he held with attendees at a community-studio in Durham, NC in the hopes of joining him at one of his next international site visits; I was able to do so in July 2015 when he invited me on a trip to visit the Yolé!Africa cultural center in the

city of Goma in the Democratic Republic of Congo. I spent roughly two weeks observing and interviewing attendees at the music studio in exchange for helping to lead three beat-making workshops, participating in the concurrent Salaam Kivu International Film Festival, performing at the festival's closing ceremony, and judging a dance competition.

Figure 1: Photo of the author leading a beat-making workshop at the Yolé!Africa studio in Goma (Freelon, 2015).

Although my trip was by all accounts a success, progress on my research stalled upon returning from Goma. For one, my music career had begun to take off considerably and I was finding it increasingly difficult to manage the demands of life as a graduate student and as a traveling artist. Additionally I was galvanized by my time in the Congo, much of which I spent talking and listening to Pan-African scholars, activists, community leaders, youth organizers, and artists in

addition to watching Congolese films and dance performances that reflected the interconnectedness of black liberation struggles globally. That summer also marked the one-year anniversary of the Battle of Ferguson, in which activists and protestors in Ferguson, MO were confronted by a fully militarized police force following the fatal shooting of unarmed black teenager Michael Brown by white police officer Darren Wilson (Buchanan et al., 2015). It had always been difficult to stay focused on my graduate work when faced with violent national reminders of the scope of anti-black racism in the US, but this time I felt inspired to do more than emotionally retreat. I spent the next year working with a committed group of residents, students, and professors to establish an Ithaca chapter of Black Lives Matter. Ironically we often met at a community center similar to the one that houses Sankofa Studio. Being back in that kind of space reinvigorated my thinking about my earlier fieldwork and eventually I picked up the project again after establishing relationships with two new ethnographic sites. Thanks in large part to the Public Humanities Fellowship, which I was awarded in 2016, I was able to move to Brooklyn to conduct participant observation with staff and instructors at Building Beats, a non-profit that provides knowledge, and resources around music production to underserved youth in NYC. During that time I conducted six semi-structured interviews with staff and shadowed an instructor and roughly 10 early teenage students at the Friends of Crown Heights community center in Brooklyn, NY.

Finally, in fall of 2017 I conducted participant observation and four semi-structured interviews at a community-studio I will call Inclusive Recording in Pittsburgh, PA that is owned and operated by an audio engineer and friend of mine, pseudonymized here as Claire. I initiallyshadowed Claire for two recording sessions and one consultation with a potential new client as well as observing her as she mixed tracks. I also tagged along with Claire for two informal meet-ups with friends and one community poetry reading as both a friend and a researcher invested in making sense of the concerns and issues within the community attached to the studio (objectives which I disclosed to her and the individuals with whom we engaged). I returned to the studio at the beginning of 2019 to observe another session and conduct one additional interview.

These sites were selected largely because of the access afforded me by my status as a producer and rapper of some small note. Since I began releasing music in 2010 and touring nationally in 2014 I have organically cultivated a network of artists, community organizers, studio owners, scenesters, and sound engineers, many of whom have become my good friends and worked with me in some professional capacity to organize shows, record a song or an album, or collaborate on a piece of music. This network became invaluable to me as I set about pursuing my research. As I mentioned, I learned about Sankofa Studio through a friend and fellow musician whom I met at a show; I was invited to Yolé!Africa in exchange for leading a beat-making workshop at their annual arts

festival; I connected with the program director for Building Beats through an instructor I had befriended years prior at a conference I helped organize for women producers; I first learned of Inclusive Recording after staying at the owner's house during a tour. Using "friendship as a method" (Tillman-Healey, 2003, p. 734; in Rodgers, 2010, p. 3) I have been granted access to spaces and conversations that I suspect I may have had trouble entering otherwise. According to Tillman-Healey (2003), friendship is itself a form of fieldwork as it requires gaining entrée into new communities, learning new codes of behavior, navigating challenges and conflicts, and negotiating ones boundaries, among other important relationship skills (p. 732); further, she argues that adopting "friendship as a method" is important because it can provide a "level of understanding and depth of experience we may be unable to reach using only traditional methods" (p. 737). For me, employing Tillman-Healey's methodology has meant being committed to building relationships with my respondents that prioritize the pacing, transparency, and mutual respect and care that I would expect of a friendship in any other context. Beyond the interesting research I have been able to conduct, I have connected deeply with several of my respondents and I am grateful for those connections, many of which remain strong to this day. I often recall an interaction with a singer and frequent attendee at Sankofa Studio with whom I'd performed a few times; upon learning that I was a graduate student at Cornell, she joked, "I thought you was one of us!"

Being so intimately connected with the communities that I observed also presented me with some unfortunate ethical challenges on a personal and professional level. A few years after I returned to Sankofa to follow up with respondents, one of the community's most prolific artists and a leader for many local young men was implicated as the assailant in a domestic violence situation. Because of my involvement with one of the organizations that implicated him, I no longer felt comfortable following up with him, and my emails to other artists in his crew regarding the music they had created at Sankofa went unanswered. Additionally in some circumstances, the artists with whom I sat down to interview and observe had less of an interest in talking about their work and more of an interest in pursuing a relationship with me or seeing how my music career could benefit their work. These examples represent just a few of the challenges I had to navigate as I became more involved in the personal lives of my respondents.

That said, I was lucky to conduct a total of 25 illuminating interviews with a wealth of incredible artists, engineers, and administrators. This study is also supplemented by financial and demographic data I retrieved from copies of grant applications and budgets to which I was generously given access. I conducted four additional interviews with audio engineers, volunteers, and artists between the same period who work in community-centered sonic spaces with similar missions such as the Women's Audio Mission in the San Francisco Bay Area, A1

Modular Synthesizer Library in Portland, OR, and Creative Impact Studios in Philadelphia, PA. I did not change the names of these sites or the individuals involved as the information pertaining to them is not highly sensitive.

Literature Review

As a sound studies scholar in a science and technology studies department, the disciplinary influences for this project are quite far ranging. Still, my research is primarily indebted to a few foundational STS works, which I will briefly discuss here. As previously mentioned, I have fashioned my theoretical approach in the tradition of the social construction of technology (SCOT). I have also drawn inspiration from the wealth of critical laboratory studies that emerged from sociologists in the 1970s. These scholars were primarily interested in challenging the putative epistemological primacy of scientific knowledge by unpacking the daily practices that constitute "normal science" (Kuhn, 1962), the research undertaken by scientists to reinforce (rather than challenge) the theories of a given scientific paradigm. In particular I am drawn to the ideas of scholars like Latour and Woolgar (1986), Lynch (1982, 1985), and Knorr-Cetina (1983, 1995) who have argued that laboratories are not sites of "discovery" in the ways that it has traditionally been (mis)understood—as a heroic endeavor by a single individual who uncovers a fact of nature through an ascetic commitment to the scientific method—and they instead posit that laboratories are better understood

as systematically organized institutions that enable forms of knowledge to advance through collective work and the use of ordinary and technical practices and tools. As Knorr-Cetina (1995) argues, "[We must] consider the possibility that laboratories exemplify features also present in organized settings such as the clinic, the factory, the garden, the government agency" (p. 163). Viewed through this lens the laboratory becomes a site through which scientists construct rather than "discover" reality, which can now be more practically understood as the knowledge system with the strongest relations and widest reaching networks of use. These networks can be further extended and strengthened through the production of literary inscriptions, the employment of discursive rhetoric, and the materialization of theoretical frameworks through the technologies of the laboratory. In turn their success is contingent on the support of grant-funding institutions and the symbolic capital possessed by the players involved, among other factors. Using a similar approach, studios can fruitfully be understood less as sites that exist to "document" an artist's unique creative expressions and more so as technologically mediated settings that facilitate the expression of a shared vision between artists, engineers, and producers, the success of which is contingent on a multitude of factors outside the studio (promotion, audience reaction, etc.).

The use of the laboratory to make sense of the recording studio is part of a long academic and cultural history. In Antoine Hennion's (1989) essay on music

producers and recording studios, he argues:

> In the popular music studio, we are in a room that merits the name laboratory both for producers and for sociologists. Producers work up their musical experiments there…We would like to take this double laboratory, which at present has the status of a mere metaphor, seriously (Hennion, 1989, p. 407).

And as historian of technology Susan Schmidt-Horning (2013) illustrates in *Chasing Sound*, the laboratory-studio comparison has also maintained deep resonances for studio actors since the days of Edison's Recording Laboratory; many of the audio engineers that are interviewed throughout her work conversationally refer to studios as labs and in some cases even describe taking on the trappings of laboratory life, such as in the case of maintenance engineers in EMI studios in the 1960s who donned white laboratory coats while working (Schmidt-Horning, 2013, p. 205). In my own experience as a producer and recording artist I have frequently used the term "lab" interchangeably with "studio" and have witnessed other artists and engineers do the same. Like ethnomusicologist and sound engineer Eliot Bates (2012), I believe that there are certainly limitations to the studio-cum-laboratory framework. As he argues, laboratories represent an archetypal workspace "where the building is often intended to recede from attention and would be typically regarded as comparatively inconsequential on the nature of products produced within" (Bates, 2012) although as Bates himself later notes, scholars like Thomas Gieryn (2002, 2008) have illustrated "the importance of the design of the place itself for

facilitating scientific experimentation and innovation" (Bates, 2012). STS scholars have certainly called attention to the importance of situatedness and contingency in understanding the proceedings of "normal science" (Knorr-Cetina, 1995) as well as more controversial moments surrounding the interpretation of experimental results (Collins & Pinch, 1993), but these perspectives are presented as challenges to the dominant ideology of science. In the case of recording spaces, the intentionally unique character and material properties of studios are often heralded as their strengths. The *sound* of a particular studio is intended to reflect not only the acoustic characteristics of the space but also its broader cultural and historical meaning (Bates, 2012; Schmidt-Horning, 2013).

Still, there is value in examining studios through the lens of laboratory studies. Like Hennion, I believe that the laboratory can be more than a "mere metaphor" for thinking about how studios function. For starters, the laboratory framework offered by critical lab studies invites one to think about the studio in terms of the system of relations that are produced therein and outside. For Latour, it is the laboratory context that most effectively allows the relative importance of different nodes in the network of scientific knowledge to grow weaker and stronger. In his study on Louis Pasteur's mid-19th century laboratory, for example, Latour argues that Pasteur's ability to isolate a causal agent of illness within the laboratory context allowed him to "interest" farmers,

statesmen, and a sick public to buy into his ideas and the associated infrastructural, legal, medical, and social changes required to do so (Latour, 1983). According to Callon (1986), "To interest the actors is to build devices, which can be placed between them and all other entities who want to define their identities otherwise" (p. 208). Thus for Latour, the laboratory is effective in part because it allows for such devices to be built and utilized in such a highly efficient way that it renders the facts "discovered" therein tremendously costly to challenge (financially, professionally, etc.). In a similar way, studio actors harness the specialized tools of the recording studio and the isolated/isolating nature of the space to produce widely-distributed, technologically mediated "performances"[4] that have the power to reify and disrupt our cultural agreements around identity formations like gender and race (Douglas, 2004; Stoever, 2016), as well as concepts like "liveness" (Porcello, 2005; Théberge, 1997, pp. 229-231) and "emotion" (Marshall, 2017) for example.

Additionally, the methods espoused by laboratory studies offer important analytical tools, particularly as it relates to ethnomethodological approaches. For analysts in this tradition, discursive activities that take place between actors like scientists or engineers, serve professional and technical functions. Through the

[4] I put the word "performance" in quotes because the surgical nature of the modern recording process means that a singular performance as it is experienced in a mixed and mastered song is often the result of several "takes" and performances from a range of actors, recorded at different times and sometimes in different studios.

careful observation of conversations between scientists in situ, scholars like Lynch (1982) have revealed the ways in which discursive practices constitute much of the technical work of the laboratory. Viewed through a similar framework, the different "registers" and shorthand utilized by audio engineers can also be seen as performing technical work (Porcello, 2004). At the community-studios I visited, this included conflating a particular effect (like auto-tune) with an entire genre of music, in the same way that consumers use words like "Motown" or "Wall of Sound" to stand-in for an array of engineers, artists, musical styles, studio practices, and recording technologies. In this way their discursive activities become constitutive of production values themselves. These ethnomethodological approaches have helped me greatly in opening up a new set of theoretical concerns around the ways that "technical" work is defined as an analyst category as well as the ways in which engineers project technical understandings to frame their own identity.

In order to theorize about the identity of the studio itself, I draw on the work of Gieryn (1983), Star and Griesemer (1989), and Marshall (2017). From the outside looking in, a community-studio appears to be the quintessential "boundary object," a term coined by (Star & Griesemer, 1989) to describe an object that takes on different meanings across different forms of life while remaining legible to a multitude of social actors and institutions. In community-studio contexts various funders, engineers, artists, administrators, and other

community members each interpret the words "community" and "studio" differently but they must wrangle these meanings into something coherent in order to keep these spaces financially and culturally alive. Yet a nuanced examination of daily community-studio dynamics reveals that the framing of the community-studio as a boundary object is quite flimsy. In practice, the administrators, engineers (primarily) and artists patrol the various boundaries around what constitutes a "real" studio and a "real" community organizing space leading to intentional and unintentional moments of illegibility to groups that might also have a vested interest in the space. Gieryn (1983) refers to such acts of demarcation as "boundary-work." In order to describe this kind of interplay between boundary objects and boundary-work, Marshall (2017) has advanced the concept of the "shibboleth" (pp. 251-292). Instead of describing a site of flexible coherence between different groups, as is the traditional understanding of a boundary object, a shibboleth is "a variety of boundary object which specifically does (or is specifically for doing) boundary-work" (Marshall, 2017, p. 253). For Marshall, vocal-tuning technology (among various other tools of the studio) operates as a shibboleth because its status as a boundary object that is legible in different ways to the engineer, the artist, the listener, and the software developer, ends up crystalizing the social boundaries between these groups, thus also performing a kind of boundary-work. As he further notes:

> Shibboleths are things that, by virtue of their being subject to interpretively flexible use, quietly enact and reinforce social boundaries. Where boundary objects are able to survive the passage from one group to another, shibboleths have the tendency to self-destruct along the way. Conversely, this process of self-destruction is productive of a boundary (Marshall, 2017, pp. 254-255).

Similarly I conceive of the community-studio as an imaginary/imagined boundary object, one that is presented publicly as a space that can function coherently as both a commercial recording studio and a radical community resource in order to invite various actors to become participants, but that in practice is actively made inflexible by those who define and manage the space.

In addition to Marshall (2017), whose work I also cite heavily in regard to the politics of vocal tuning, my research is indebted to several other sound studies works that utilize STS approaches. Of particular note are canonical texts like *Analog Days* (Pinch & Trocco, 2002), in which the authors focus on relevant social groups to chart the commercial success of the Moog Synthesizer in contrast to Buchla's contemporaneous synthesizer model; *The Audible Past* (2003), Jonathan Sterne's landmark cultural history of sound reproduction, which plots the emergence of sound (re)production technologies alongside massive socio-cultural, industrial, and medical transformations; and Susan Douglas' (2004) *Listening In*, a history of American radio that focuses as squarely on different kinds of listeners and modes of listening as it does on those who have produced and engineered radio since its inception. Other useful guides include Hennion (1989), Rose (1994), and Théberge (1997, 2004) who have each

reflected on the ways in which technologies of musical reproduction are deeply representative and constitutive of the social relations, cultural practices, and market forces of the music industry.

Within the specific context of recording studios and audio engineering cultures I draw primary inspiration from sound studies scholars like Porcello (2004), Meintjes (2003), Bates (2012), Schmidt-Horning (2013) and Marshall (2017), whom I have already mentioned. Porcello's work on audio-engineering discourse has been instrumental in helping me to broaden my ideas of what "counts" as technical practice within a recording studio. Meintjes' research on the politics of South African recording studios has been a useful guide for thinking about how local Politics and global demands are reflected in every level of the recording process. In asking (and attempting to answer) the question of "What Studios Do," Bates (2012) has aided me in working through the metaphorical, cultural, and acoustic properties that define recording studios. Schmidt-Horning's historical work on commercial studios has of course been indispensable for my research. In particular, I build on her central thesis that the recording studio represents a critical site for examining broader societal norms and social formations. And Marshall's recent history of recording studios as well as his thick descriptions of contemporary commercial studio life offer a critical backdrop against which to compare community-studios.

To think through the relationship between community-studio practices, race, and the politics of hip hop, I draw on foundational American studies texts like *Black Noise* (1994) and *The Hip Hop Wars* (2008) by Tricia Rose, *The Hip Hop Generation* (2002) by Bakari Kitswana, and selected articles from Ray Fouché (2006a, 2012). Beyond providing detailed historical accounts of different aspects of hip hop culture(s), which has been incredibly helpful in contextualizing the history of community-studios, each of these scholars has also offered useful frames for tying together hip hop musicking practices and the formation of modern racial identities.

Finally, my research draws quite heavily on Christina Dunbar-Hester's (2014) work on media activism in the context of low-power FM radio community organizers. Through an in-depth examination of the group's practices she reveals the inherent tension of building a liberation movement primarily around access to technical expertise. As she argues in the book's introduction:

> Though they valued technical practice as a means to demystify technology and create a political awakening in users, they struggled with the fact that patterns of inclusion and exclusion had already formed around electronics; historically practiced by elites, whites, and men, tinkering was not equally appealing to members of other groups (Dunbar-Hester, 2014, pp. x-xi).

These same dynamics were ever-present in my own research. Even a cursory glance at the marketing materials for many community-studios indicates the importance of such narratives around technology to justify their existence. Their websites and brochures stress their relevance, not only because they allow

children from so-called marginalized communities or young women and non-binary folks to give voice to their unique perspectives, but also (and in some cases, more importantly) because they introduce these kinds of populations to tools like tablets, laptops, and editing software. Music production with such tools will allow them to transfer those skills to other technical domains in the future (Reitmeyer, 2018). Building Beats is one of a number of community music programs I encountered that calls attention to its importance by citing the necessity of technological literacy to be competitive and stressing the program's ability to bridge children's technical gaps through the introduction of the latest musical hardware and software. While there are certainly merits to the dissemination of technical knowledge, particularly in the fight to liberate the most oppressed, Dunbar-Hester is right to ask that we consider whether this knowledge should instead be conceptualized as an end in itself, and conversely to consider what is at stake in pushing the development of these skills as a means to make underserved communities more "competitive." It is my hope that my work will also reflect these concerns.

Chapter Overview

The structure of this dissertation is as follows: Chapter 1 provides a broad overview of the historical and culture antecedents that have led to the framing of studios (and technologies of recording) as potential interventions for various

forms of social inequality. Rather than take for granted the idea that a recording studio makes sense as a site to tackle large-scale social problems, this chapter attempts to pin down some of the technological and cultural developments that have inspired this belief, including the "democratization" (Théberge, 1997) of production and recording tools throughout the 1980s and 1990s, the birth of the "hip hop generation" (Kitwana, 2002) between 1965 and 1984, and the late 20th-century marriage of "emancipatory politics" (Dunbar Hester, 2014, pp. x, xvii, 193) with the sophisticated digital platforms and tools that emerged in the late 20th century. The chapter concludes by outlining the specific histories and technical affordances of my primary research sites, Sankofa Studio and Inclusive Recording, in part to highlight the boundary-work that must be performed when managing a multivalent recording space even at the administrative level.

Chapters 2 and 3 examine the boundary-work performed by the engineers at Inclusive Recording and Sankofa Studio in regard to the kind of space they think their community-studio should be. Chapter 2 focuses on the discursive strategies utilized by the engineers at each studio to frame their space as being more or less an approximation of "professional" recording studios, depending on their understanding of the cachet this kind of association may or may not bring them with their desired clientele. Drawing on Porcello's (2004) concept of "professional audition" the chapter argues that community-studio engineers occupy a unique work environment in which they must not only translate their

client's creative demands into discrete production decisions (through their professional audition), as is the expectation of the engineer in traditional commercial studios, but they must also educate their clients about the technical choices they are making in order to demystify the recording process for said clients. At Inclusive Recording, this community-wide expectation fell right in line with the lead engineer's desire to fashion the space as a feminist intervention to the exclusionary environments of many traditional studios. But at Sankofa Studio, where the lead engineer expressed a desire to turn the space into a "real" professional studio (and believed that this framing was in the best interest of the community), his discursive strategies focused on socializing clients for success in "real" studio settings.

Chapter 3 moves "backstage" (Goffman, 1956) to examine how the engineers' production values also reflect important sites of boundary-work. In this case, the engineers must navigate the ethical dilemmas that emerge when their desire to provide an accessible and welcoming community space does not align with their aesthetic and technical beliefs about what sounds best and which methods should be employed to achieve this sound. At Sankofa Studio this results in a debate about whether it is more respectful to the community to preserve a more informal studio environment that enables particular forms of sociality but risks the sonic integrity of the recorded music (through the threat of background noise), or to create a more "professional" working environment

that reflects a symbolic and sonic commitment to high-quality music production, but in the process risks eliminating an important community space. As the chapter details, the implications of both perspectives are far reaching, and in this case tied to broader histories around racism within the music industry. At Inclusive Recording, this tension involves balancing the engineer's desire to remain as sonically unobtrusive as possible (to honor the clients vision and to reject the "fetishization" of gear that often takes place in male-dominated music spaces), with her commitment to produce high-quality mixes that reflect her extensive technical training. The chapter concludes with a vignette about the ways that this kind of dissonance has manifested around a new policy regarding microphone usage at Sankofa Studio.

Chapter 4 highlights the perspectives of artists at Sankofa Studio and Inclusive Recording to examine how they construct their identities as community-studio recording artists. At Sankofa the group of young rappers I observed and interviewed articulated a vision and sound for their identities as intellectual, anti-commercial emcees through their boundary-work around different production styles and mixing techniques. As the chapter details, these artistic sensibilities in part reflect their keen understanding that they have been categorized by their community and society at large as being "at-risk." In turn they (perhaps strategically) create music that tends to align with the brand of progressive politics shared by the studio's founders and the broader community.

At Inclusive Recording, the artists I observed were invested less in articulating a specific sonic identity, and more in using the newfound freedom they experienced when working outside of traditional commercial recording spaces to create music they truly felt reflected them. In so doing, these artists are also performing boundary-work around the space as it relates to what it means to operate a "professional" studio.

I use the conclusion to discuss the broader implications of my work and suggest possible directions for future research.

CHAPTER 1: What Community-Studios Do

In 2003, multi-hyphenate sound designer and educator Terri Winston founded the Women's Audio Mission (WAM), a non-profit recording studio based in Oakland, CA that calls itself the only professional studio in the world built and run entirely by women. Through the efforts of several volunteers, staff members, and an advisory board, WAM soon introduced a variety of programs that provided training and assistance for women sound engineers and designers at all levels of technical fluency. According to Winston, she first developed WAM as a response to the persistent question of why there are so few women in audio; in 2000 the Audio Engineering Society's (AES) women in audio committee roughly estimated that only 5% of those working in audio were women (Lazendorfer, 2017). In an interview with the music recording trade publication *Tape Op*, Winston shared, "It didn't occur to me that there weren't that many women in the field. I was in it — I was in the middle of it. I didn't think about the gender politics of it at all. I realized that I needed to have an answer for that" (Crane, 2010). In addition to offering professional recording sessions run by teams of women audio engineers and interns, WAM has since provided thousands of girls, non-binary youth, and adults with free and low-cost workshops as well as residencies, and job placements in everything from podcasting to live sound engineering. According to WAM's sponsorship webpage, the Women's Audio Mission currently receives over $1 million in annual funding from several

corporate sponsors, foundations, and individuals providing anything from $5000 to $100,000 (Supporters and Sponsors, n.d.).

In 2006 musicians Philip Gilley and Natalie Noone began meeting to discuss the idea of designing a local studio in Santa Barbara, CA that would provide underserved youth (6-18+yrs) with free and low-cost access to musical instruments, instruction, and recording services. Gilley, who was then a mentor in the Big Brothers Big Sisters program, had struggled with trying to find spaces to provide his mentee with free drum lessons beyond visiting music stores and justifying their use of the drum kits by purchasing guitar picks and strings. After learning that the Santa Barbara city council already had plans to build a teen center that included a studio, Gilley and Noone offered to equip and operate the studio as a fully functioning recording space in exchange for rent-free use of the studio. In 2007 after months of development, they opened the first Notes-for-Notes (N4N) studio at the teen center armed with hand-me-down gear and their own personal instruments (History, n.d.a). Eventually N4N would become a successful nonprofit and expand operations to include partnerships with Boys & Girls Clubs in different cities as well as massive sponsorships from corporate donors, with the goal of becoming the largest youth-based recording studio program in the country. As of 2018, the program has expanded to include 26 studios in cities like Los Angeles, Chicago, New Orleans, Atlanta, and Brooklyn and it boasted an annual budget and income of over $1 million respectively,

according to its 2017 annual report (Notes for Notes 2017 Annual Report, 2018, pp. 3, 10).

In many ways these vignettes are exceptional stories that do not reflect the challenges experienced by most *community-studios*, a term I use to describe recording studios that prioritize working with and educating clients from underserved communities as well as women and non-binary artists. But in other ways these stories provide key insights into the politics that shape community-studio life more generally. For one, they illustrate how the framing of each space as a particular kind of social intervention by its founders speaks to their assumptions about the needs and motivations of their target community. As it relates to N4N, a quick perusal of similar community-based arts programs reveals that the value of their studio spaces is often articulated using the language of social control. Many of the sites that make reference to the "underserved" or "inner-city" youth that might benefit from their programs, lean heavily on the idea that community-studios can help keep kids off the streets and out of trouble. For example, included in N4N's annual report from 2017, is a quote from an N4N recording artist who highlights the studio's effectiveness in challenging the allure of "the streets" for urban youth like the speaker:

> When I was growing up I could have easily slipped into a lot of bad things with a lot of bad people. What music did was give me that outlet to where I could still be from the streets, do my thing, but people are going to respect you because…you're actually progressing…you know creating (Notes for Notes, 2017 Annual Report, 2018, p. 6).

According to the speaker, recording at a Notes-for-Notes facility has enabled them to not only avoid getting caught up in potentially dangerous situations taking place outside the studio but to also become a "productive" member of society through their creative output, which in turn affords them the respect of their community. This same kind of language appears in the marketing materials and historical accounts of several other community arts programs geared towards underserved youth. The website for the Music Resource Center (MRC), a community-studio in Charlottesville, NC, notes that the initial planning around developing the site was "driven by the strong belief of MRC's founders that fewer students would get into trouble after school if they were [enrolled in] productive, high interest activities (such as music)" (Our History, n.d.); the MRC's "sister" organization in Cincinnati presents a similar origin story in which a local (white) musician made the observation that urban youth in the community needed an after-school activity to keep them out of trouble:

> While stopping at an art store in Over-The-Rhine, local artist Karen D'Agostino noticed that the streets were full of kids hanging out, appearing as [though] they had no agenda beyond loitering. She discussed with friends and family that there was a real need for after-school programs for inner-city kids. "If kids don't have something fun to do that would keep them busy, they're likely to get into trouble"…Karen decided Cincinnati needed an MRC [Music Resource Center]. After further talks…it was decided that Cincinnati would be MRC's first "sister" organization – using their name, philosophy and programs (Our History, n.d.).

This kind of language takes on a particularly troubling character, when it is cast against the backdrop of federal and local policies that have been enacted over

the past 50 years to prohibit black and Latinx youth from moving freely throughout public spaces in their own localities. As Michelle Alexander (2010) illustrates in her seminal book *The New Jim Crow*, a significant factor in the rise of mass incarceration among African-Americans in the US has been the enforcement of legislation like the *Terry v. Ohio* decision in 1968 through which the Supreme Court ruled that a police officer can conduct a "limited search" if the officer observes "unusual" conduct by someone they consider to be dangerous (p. 63); and the 1981 passage of the Military Cooperation with Law Enforcement Act, which provided local, state, and federal police with access to military bases, weaponry, intelligence and other paramilitary tools to fight the so-called "War on Drugs," waged exclusively against poor, black and brown communities (p. 77). According to Alexander, it is now typical "for a young black teenager living in a ghetto community to be stopped, interrogated, and frisked numerous times in the course of a month or even a single week, often by paramilitary units" (Alexander, 2010, pp. 124-125). Other examples of this kind of codification of racial profiling include the 1992 passage of an anti-gang loitering ordinance by Chicago lawmakers through which "[p]olice were given the authority to order loiterers to move on if they suspected that one was a gang member. Nearly 40,000 youth were arrested under the law within a two-year period" (Kitwana, 2002, p. 16). Given this context of nationwide surveillance of black youth, it is unsurprising, if disturbing, to find that the language of social

control is quite prevalent throughout the marketing materials and websites of so many community-studios geared towards underserved black and Latinx communities.

Alongside these kinds of narratives, many programs also discuss the common goal of teaching attendees transferable entrepreneurship skills through workshops and on-the-job training as "real" recording artists (Building Beats, n.d.; Lelievre, 2010; Read, 2010). The Orpheum, a community-studio in Ann Arbor, MI emerged in 2010 as an extension of a teen-run record label that was established in part to engage youth with an interest in business, marketing and entrepreneurship (Lelievre, 2010). In discussing the importance of The Orpheum for the community, music coordinator Chris Bathgate shared, "It's not just engaging youth in music, it's engaging them in business and entrepreneurship" (ibid).

Finally, a tertiary goal that sometimes appears in the marketing materials of more contemporary community music programs is the introduction of cutting edge hardware and software as well as STEM (science, technology, engineering, and math) concepts like "coding" and "open source" to underserved communities through engagement with the tools of modern music making (Building Beats; Reitmeyer, 2018). As Building Beats states on its homepage, "Technological literacy is important in today's world. We use the latest hardware and software to teach students crucial tech skills" (Building Beats, n.d.).

Conversely programs like WAM that focus heavily on achieving gender parity in audio work and other related STEM fields, tend to make similar aims around demystifying technology the primary framework through which they discuss the intentions of their community-based music initiatives (Lazendorfer, 2017). This has certainly been the case for organizations like Soundgirls.Org, which hosts week-long "Sound Camps" to provide audio training for girls in various cities, or the Girls Rock Camp Alliance, which is the parent organization for the nearly 100 Girls Rock Camps across the world that each focus on empowering girls by leading them through the process of forming bands, learning new instruments, and writing and performing original music among other activities (Brown, 2012; Lazendorfer, 2017; Member Organizations, n.d.). Rather than framing their studios and programs with the language of social control and productivity, as I have shown seems to often be the case for community-studios designed for low-income youth and youth of color, these sites envision the studio as a space that eschews the gendered evaluative frameworks that govern other technical environments. Ultimately, both of these framings are important to unpack because they reveal the assumptions that undergird the efforts of the multitude of actors who come together to bring community-studios into being, particularly in regard to understanding what they consider to be the needs of their target communities. Viewed through this lens, the vignettes that opened this chapter offer an ideal lens for beginning to critically

examine community-studio politics because these kinds of success stories force us to consider the scale of what is at stake for communities when assumptions go unchallenged.

Beyond the specific details of the Women's Audio Mission, Notes-for-Notes, or any of the other aforementioned community-studio programs, what this opening section has also revealed is the need for more thoughtful examinations of these kinds of spaces more generally. Despite their widespread cultural relevance, community-studios remain critically under-examined as sociotechnical phenomena distinct from other kinds of recording spaces. Unlike traditional commercial studios, which are guided in large part by the capitalist logics of time-based productivity and secrecy (as I will elaborate on in subsequent chapters), community-studio logics are shaped by the belief on the part of the individuals who conceive and manage such spaces that by providing members of marginalized groups with studio resources, they can effect systemic social change. In turn this belief not only drives donors and other community stakeholders into supporting the space but it also coproduces the aesthetic and technical norms that shape engineering and artistic practices therein, a point to which I continuously return throughout the dissertation. Just as commercial studios, and to a lesser extent home studios, have been the subject of thoughtful

analyses guided by the methodologies and ideas of the STS tradition[5], so too should community-studios, particularly as the most successful among them are now capable of raising millions of dollars in capital and in-kind donations.

This dissertation is an attempt to offer precisely this kind of sociotechnical analysis, starting from the bird's eye view of various community-studio programs and then zeroing in on the details of two specific studio sites. I begin this chapter by providing a recent history of community musicking programs (many of which I have already highlighted) and presenting some of the technological and cultural developments that have overlapped over the last 30 years in order to render the recording studio as a legible site of repair for particular kinds of social problems. As a producer and consumer of hip hop music, it is admittedly easy for me to accept the notion that a recording studio can serve as a powerful intervening force for disenfranchised people, particularly disenfranchised youth. Beyond my personal experience as a black woman who has carved out a successful rap career through my recorded music, the history of the music industry is brimming with rags-to-riches stories of far more commercially successful artists coming from

[5] To learn about the history of home recording in the age of digital music production see Théberge (1997, pp. 231-241); for a breakdown of several texts that utilize STS approaches in thinking about the politics and histories of commercial studios see pages 28-29 of the literature review of this dissertation. The review makes reference to the following texts: (Bates, 2013; Hennion, 1989; Marshall, 2017; Meintjes, 2003; Porcello, 2004; Schmidt-Horning, 2013). Additional texts that are cited elsewhere in the dissertation include (Diamond, 2005; Greene, 2005; Farmelo, 2014; Kealy, 1979; Meintjes, 2005, 2012; Neuenfeldt, 2005; Porcello & Green, 2005; Schmidt-Horning, 2004).

far less privileged backgrounds. Yet as hip hop scholars like Rose (2008) and Kitwana (2002) have argued, the success of rap music that has in many ways enabled a number of poor black and Latinx artists to move away from the economic margins, has not only been achieved through the widespread packaging and selling of extremely harmful stereotypes about these same groups by global corporate entities, but it also reflects a socioeconomic reality that is unavailable to most black people in the US and abroad (Kitwana, 2002, p. 11). Thus even if it may seem obvious in many ways that recording studios would find civic support as sites for producing positive social change, it is worth interrogating the basis of the notion that simply providing access to a studio (and education about how to use its tools) can offer a substantive intervention to the social inequality experienced by the US's most vulnerable populations.

I conclude this chapter by outlining the origin stories of my primary research sites: Sankofa Studio, a studio housed within a community center with a focus on Afrocentric musicking; and Inclusive Recording, an explicitly feminist recording studio built on the premise that recording spaces should be accessible for artists at all levels of technical proficiency and financial means. Through grant documents and budgets to which I was given access, as well as interviews with the people who brought these spaces into being, I illustrate how the multivalent nature of a community recording space presents challenges even for those who have a very clear vision for the space and the community it is supposed to serve.

A Brief History of Community-Studios

I begin this section by constructing a recent history of community-studios as they are described in written and oral histories, as well as the marketing materials of the sites themselves. Because there is a lack of formal research on community-studios, the documentation of their histories is relatively limited. It is my hope that the presentation of this brief history will serve as a springboard for other scholars who are invested in telling similar stories. Partially because of the thinness of this historical record, I follow this recent history with a richer account of the preconditions that have enabled community-studios to exist.

Prior to the early 2000s there were only a handful of community organizers and music professionals across the country who had begun to approach music studios as distinct sites that should prioritize the amplification of marginal voices beyond the sole pursuit of commercial interests. In Whitehead III and Kitzrow's (2010) research on youth-led community building practices, they name the Youth Entertainment Studios (YES) in Hampton Roads, Virginia as an early example of a community-studio that gained traction in the 1990s:

> One program, Youth Entertainment Studio (YES) empowers inner-city youth to become leaders of character, vision, and action in their communities by challenging their creativity and equipping them with practical confidence-building media production and marketing skills. This program was born in 1991 when youth leaders challenged a group of teens from a public housing community to work together to make a music video with a positive message. The teens' music video, "Steppin' into the Light," was so powerful that it aired on Black Entertainment Television, the Family Channel, and other national networks. Shortly after this, YES was born. Today, through digital multimedia

> studios and summer camps, teens have a way off the streets (Whitehead III & Kitzrow, 2010, p. 101).

Throughout the rest of the decade a few other notable community music programs emerged with a focus on teaching underserved communities media production skills, although they were still in limited number and were not necessarily focused specifically on recording practices. In an interview with Tara Rodgers, the composer and sound artist Pamela Z makes mention of leading experimental composition and audio design workshops for "at-risk" youth in San Francisco at a community space called LAB beginning in "1993 or 1994" (Rodgers, 2010, pp. 224-225). In 1995, a Chicago-based organization called Street-Level Media became one of the first nonprofits to offer technology access and media arts training to urban youth after securing a storefront and populating it with donated computers (History, n.d.b); that same year in Charlottesville, North Carolina a number of local musicians came together to erect the Music Resource Center, a recording studio that provides local youth with free access to instruments, lessons, and recording time, after the space was donated to the community by the national touring act the Dave Matthews Band in 1994 (Our History, n.d.). In 1998 the nationally recognized arts organization AS220

founded the Delgado Studio in Providence as an entirely free recording site for Rhode Island youth ages 14-21.[6]

It wasn't until the mid-2000s that community-studio sites began consistently emerging in big cities and small towns across the US and globally. I have included a list below (Table 1) that highlights some of the most notable US-based community-studios along with their founding year, although it is by no means exhaustive. Some sites like the S1 Synth Library in Portland, OR were founded in similar ways to WAM, with the goal of demystifying audio technology for women and non-binary people (although S1 is primarily focused on educating people about analog synthesizers rather than recording gear). Other sites like Arts Greenhouse in Pittsburgh reflect a story more similar to N4N through their investment in studios as sites to help underserved youth share their stories, access cutting edge technology, and receive training in entrepreneurship by learning how to promote their music online and book shows, among other entrepreneurial skills (G. Silva, personal communication, December 19, 2017). And a few others were founded around entirely different social causes, as was the case for a community-studio based in Boise, Idaho called the Hive, which emerged in 2014 as an all-ages volunteer-run studio that prioritizes mental health and sobriety as part of its mission. The site offers its attendees mental health

[6] I do not have a searchable source regarding the founding date of the Delgado Studio as this information was provided to me by an administrator working at the studio via email.

services through one-on-one counseling and group meetings run by trained facilitators in conjunction with workshops about recording, mixing, mastering and even financial management in the music industry (The Hive, n.d.).

Name of Community-Studio	Location	Year founded
Youth Entertainment Studios (YES)	Chesapeake, VA	1991
Music Resource Center	Charlottesville, VA	1995
Street Level Youth Media	Chicago, IL	1995
The Delgado Studio at AS220	Providence, RI	1998
Arts Greenhouse	Pittsburgh, PA	2002
Women's Audio Mission	Oakland, CA	2003
Rhymes4Reasons Program	Newark, NJ	2006
Notes-for-Notes	20+ US cities, founded in Santa Barbara, CA	2007
Unity Studio	Ithaca, NY	2007
Music Resource Center	Cincinnati, OH	2007
IDEAWerks Indigenous Creative Academy	Minneapolis, MN	2009
YOUMedia Chicago	Chicago, IL	2009
The Orpheum	Ann Arbor, MI	2010
Music Resource Center	Duluth, MN	2011
Building Beats	Brooklyn, NY	2013
Educated Little Monsters	Brooklyn, NY	2013
The Hive	Boise, ID	2014
Blackspace Chapel Hill	Chapel Hill, NC	2014
S1 Synth Library	Portland, OR	2014
Blackspace Durham	Durham, NC	2016

Table 1: A list of several US-based community-recording studios that are still active, with the exception of YES, which is no longer publicly searchable online.

A History of Community-Studio Preconditions

Perhaps the most obvious factor in the rise of community-studios has been the proliferation of the same music production and recording tools that have played

the most central role in the "'democratization" (Théberge, 1997, p. 215)[7] of musical technology more generally since the 1980s—namely tools like MIDI (Musical Instrument Digital Interface), a protocol that enables different pieces of musical software and hardware to communicate information with each other (Théberge, 1997, pp. 83-88), as well as high speed computing processors and digital audio workstations. As the story goes, amateur and semi-professional musicians in the late 1980s and throughout the 1990s, now armed with these innovations, possessed the means to build relatively competitive alternatives to expensive and perhaps intimidating commercial studio spaces in the form of home studios, or in the case of this dissertation, community-studios. Yet to avoid falling into the trap of technologically deterministic arguments that portray low-cost digital technologies as having "arrived" *ex caelo* to revolutionize the modern recording landscape, I wish to foreground my discussion of these innovations with a brief accounting of the world of recording for the amateurs and semi-

[7] Théberge (1997) uses the term "democratization" to describe the proliferation of low-cost, widely-accessible tools of digital music production and recording in the 1980s and 90s, but he clarifies that the term actually collapses two theories of how democratic ideals are supposedly imbued in technological systems (the notion that liberal democracy is about the freedom of choice and the maximization of individual satisfactions versus the idea that the pursuit of creativity is an end in itself to be pursued outside of consumer demands) (p. 149). He also criticizes the term as an actor's category that mythologizes the supposed liberatory "nature" of digital music technology, a mythology that he links to discourses within other technical subcultures like those of ham radio operators and hackers (pp. 131, 135-137). To read more about democratization in the context of digital music production see Chapters 4 and 6.

professionals—the "relevant social groups" (Pinch & Bijker, 1984)—who also played a role in the emergence of new recording studio formations.

For much of the 20th century, amateur musicians had few options for producing low-cost, professional sounding records outside of a traditional commercial studio, particularly if they were musicians from black and poor communities like those often served by modern community-studios. Throughout the first three decades of commercial recording, studios were primarily owned by major record labels because they possessed the financial means to cover the costs associated with cutting records in the era of mechanical recording—namely "processing the wax master, making shellac pressings, and acquiring expertise for quality recording" (Schmidt-Horning, 2013, p. 50). At that time studios were actual laboratories in which recording experts, known as recordists, used "cut-and-try-experimentation" (Schmidt-Horning, 2013, p. 29) to assess a range of material properties regarding their cylinder phonographs or disc gramophones, such as the correct thickness of the diaphragm (the apparatus through which sound waves activate the motion of the wax cutting stylus), and the best size and shape of the recording horn to capture each session; as well as to perfect techniques like properly staging the artists for a balanced and audible mix (Schmid-Horning, 2013, p. 13). Consequently major label executives exhibited significant control over who and what would be recorded and distributed (although audience tastes obviously also drove these decisions). For black

recording artists, racist and classist fears of aural miscegenation on the part of major studios meant that for the first few decades of recording, black forms of music like jazz and the blues were primarily relegated to smaller independent labels like Okeh, Vocalion, and the now famous Gennett Records, with far less sophisticated recording operations. And although independent label owners opened their doors to black artists from these "niche" genres, their decision to record "race" records (Douglas, 2004, pp. 90-91; Schmidt-Horning, 2013, p. 30) prior to the major labels was driven more by the economic reality that it was lucrative to serve black and rural consumers who were being neglected by the dominant labels than an altruistic desire to provide a means of recording for the country's most vulnerable populations (Schmidt-Horning, 2013, pp. 27, 30).

The 1920s saw the electrification of the recording process through the development of tools like condenser microphones and tube amplifiers, which vastly improved the precision of recordists and the fidelity of recordings; such shifts also engendered the development of new home recording devices for the growing consumer market of amateur recorders, which had been dominated by white, middle- to upper-class men and boys who were drawn to technologies of sound as early radio hobbyists and tinkerers (Douglas, 2004, p. 58).[8] Home

[8] Douglas (2004) locates the relationship between men and boys, the practice of tinkering, and technologies of sound (re)production like the radio within a form of masculinity that emerged in the early 20th century rooted in the importance of technical mastery. I highlight this relationship between gender and radio tinkering practices on pages 137-139 of this dissertation

recording units and other portable recorders had certainly been commercially available since the era of mechanical recording at the turn of the 19th century, but they were difficult to operate and produced recordings with poor sound quality (Schmidt-Horning, 2013, p. 53). Early amateur recordists thus focused primarily on capturing "snapshots" of daily life and documenting original music compositions lest they be forgotten by the artist: "For them, the recording phonograph was a tool for study rather than a source of entertainment or object for tinkering" (Schmidt-Horning, 2013, p. 59).

With the development of electrical recording, several new avenues for amateur and semi-professional recording opened up outside the realm of preservation and documentation (although it also greatly expanded the recreational and professional practice of transcription and other forms of aural documentation). Beginning in the 1930s in cities like New York and later Cleveland and Los Angeles, many self-taught sound engineers, who had often studied electrical engineering or radio broadcasting in other formal and informal contexts, opened up small studios using lower-priced recording devices that often rivaled the professional quality recording lathes from Western Electric and Scully that were used by major record companies or those that were custom designed and built by their in-house engineers (Schmidt-Horning, 2013, pp. 62-

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as part of a discussion about community-studio sound engineers and their challenges navigating gender and racial disparities in technical domains.

63). These audio entrepreneurs "rented small two- or three-room suites in office buildings, recording programs and music off the air for artists or recording live in their studio for song-pluggers, advertising agencies, and singers or musicians who wanted to make demonstration records of their talents" (ibid). Over the next 30 years independent studios and small record labels addressed both niche and popular markets not served by the major labels while providing a pathway for aspiring performers and songwriters to enter the music business. As Schmidt-Horning (2013) argues, these sites were critical in changing the course of musical history "simply by opening the door to creative and talented musicians who may never have gotten even a foot in the door of major labels" (p. 168). Yet while smaller independent studios certainly lowered the barrier to access for amateur musicians looking to get their start as recording artists, the intention of such spaces was still primarily rooted in economic gain rather than the provision of a social good.

By the 1960s the role of the recording studio as a space to document musical performances, whether in the form of demonstration records (demos) for amateur artists or commercial recordings of industry veterans, was beginning to shift, in large part due to the advent of multitrack recording. Prior to the widespread adoption of multitrack recording by commercial studios, any given constellation of studio actors (artists, producers, arrangers, session musicians, sound engineers) focused recording sessions around capturing and enhancing

real-time live performances in the studio. Because post-mixing was not a possibility, engineers had to devise complex architectural interventions to produce the desired reverb and coloration in the mix, in combination with elaborate miking configurations to ensure that singers and instrumentalists struck the right balance in volume with each other (Schmidt-Horning, 2004). During the 1940s a small number of elite musicians and engineers had successfully produced overdubbed recordings using discs, a precursor to multitrack tape recording that also involves adding or redoing parts on an existing recording; but as Schmidt-Horning (2013) notes, this was generally "an exacting process that introduced excessive noise as each re-recording of the previous disc took place" (p. 173). Yet even with the advent of an 8-track recording device by the console manufacturer Ampex in the late 1950s, multitrack recording did not become a fixture in professional studios until the late 1960s when multitrack recording devices finally reached the commercial market (Schmidt-Horning, 2013, pp. 172, 174, 180).

In contrast to disc or early tape recording, which relied on artists executing well-rehearsed ensemble performances, multi-tracking enabled the recording of individual instruments and vocal takes, which could then be edited and mixed individually, as well as (re)combined in a variety of different sonic configurations before the final mix-down and mastering process (Schmidt-Horning, 2013; Théberge, 1997, pp. 215-217). Artists and engineers soon began to take

advantage of multi-tracking to not only exert greater control over the final mix of a song as it was intended to sound, but to also produce an ostensibly unlimited range of novel sounds and effects beyond their intentions. As professional formats expanded from 8-, to 16-, to 24-track capabilities during the late 1960s and early 1970s, the recording studio itself began transforming into a site for composition and experimentation through which artists now produced so-called "impossible music" (Théberge, 1997, p. 221), music which could never be performed live outside of a studio context. Particularly for rock 'n' roll artists who were eager to mess with the conventions of the genre, recording an album became a lengthy process through which they worked day and night in the studio with producers and engineers to explore the creative potentials of their instruments and the engineering hardware. Additionally, the advent of techniques like "punching in" allowed artists to replace any part of a recording that they disliked, from an entire recorded verse to a section "as short as a single syllable" (Schmidt-Horning, 2013, pp. 182-183) thus adding considerable time to an increasingly bloated and often tedious recording process. Rather than rack up billable hours while experimenting in the studio and working under the watchful eyes of their record labels in label-owned studios, many artists in the 1970s who possessed the financial means eventually opted to build home studios instead, sometimes spending tens of thousands of dollars on the latest gear (Théberge, 1997, p. 220).

Soon gear manufacturers began to recognize the economic potential of creating more affordable products for everyday consumers and music producers at the same time that amateur musicians and hobbyists began seeking new ways to bring high-end recording practices and equipment into their work spaces. As Théberge (1997) notes:

> Because of their own need to become familiar with the disciplines necessary to work in the multitrack studio, because of the growing, do-it-yourself, independent recording movement of the '70s, and because of the image of star performers with unconstrained access to these powerful technologies of creation, semi-professional and amateur musicians began to look for ways in which they, too, could construct their own studios (p. 221).

By the 1980s, growing consumer demand for low-cost yet sophisticated digital music production technology was reflected within the industry at large. Manufacturers like Roland and Oberheim Electronics soon began developing a range of affordable sequencers; for particularly tech savvy home recording enthusiasts Apple and UNIX began offering sequencing programs for their respective personal computing workstations (Manning, 2004, pp. 347, 349-350); home studio aficionados began authoring trade magazines like *Home & Studio Recording* (Théberge, 1997, p. 106); and industry expos now even included workshops devoted solely to outfitting the home studio (Jones, 1992, p.139, in Théberge, 1997, p. 221). In Los Angeles the increased competition posed by home studios was seen as such a financial threat to the viability of commercial studios that it led to the formation of an organization known as the Hollywood Association of Recording Professionals (HARP), which challenged the right of

home recordists to take on commercial work (Théberge, 1997, p. 233). Chief among their complaints was the fact that because home studios existed in residentially zoned neighborhoods they were not subject to commercial taxes and they were also in violation of building codes with which commercial studios had to comply. Through HARP's efforts, "it was reported that [by 1992] over thirty home studios had been shut down for violation of one kind or another" (ibid).

As Théberge notes, the real issue at hand was not the "violations" on the part of home studio operators, but rather the increasingly competitive sound quality of their relatively inexpensive digital synthesizers and MIDI sequencers. In particular MIDI, short for Musical Instrument Digital Interface, would become one of the primary mechanisms through which users troubled the primacy of commercial studios as production spaces as well as a foundational component of digital audio workstations (DAWs) that proliferated during the 1990s and 2000s. Although MIDI is not the primary feature of contemporary DAWs that specialize in recording live sound (like Pro Tools, the industry standard), it is important to include its history as central to the emergence of community-studios. Prior to MIDI, manufacturers of electronic instruments did not design their hardware using the same technical standards as other companies, with the exception of the unofficial one-volt-per-octave standard for pitch-control synthesizers (Théberge, 1997, p. 84). Instead most manufacturers developed proprietary systems that limited a musicians' ability to communicate

across different digital devices to their specific brands of keyboard instruments, sequencers, and drum machines (ibid). Consequently users often faced difficulty synchronizing drum machines and sequencers when connecting products from two manufacturers; and further the lack of standards meant that consumers often worried about purchasing gear due to fears of product obsolescence (Anderton, 1986, pp. 1-13, in Théberge, 1997, p. 84). MIDI, which was introduced to the marketplace in 1983, was thus conceived by an international panel of electronic music instrument manufacturers, as a nonproprietary standard that would allow musicians to connect their synthesizers from different manufacturers, and in so doing allay consumer fears of technical incompatibilities and obsolescence and boost industry-wide consumption.

I do not wish to go in depth regarding the history of the MIDI specification, but it is worth noting that initially the idea of MIDI was not universally celebrated within the industry, even by those who first proposed the need for some kind of industry-wide interfacing standard. Following the initial proposal to design a "Universal Synthesizer Interface" at the Audio Engineering Society fall convention in 1981, most of the American companies involved in these early discussions withdrew their involvement over qualms with Japanese manufacturers about the technical capabilities of the interface as well as the cost of its implementation (Théberge, 1997, p. 85). But within a few years of the introduction of the MIDI specification by Roland and Sequential Circuits in

1983, its success in helping to grow the industry around digital music production became undeniable. As Théberge (1997) argues, "It is now generally recognized that MIDI has been a major contributing factor in the growth of digital musical instrument sales to their current billion dollar levels worldwide" (p. 86).

MIDI's most important feature has been the storage of data about any given note played in a sequence–its pitch, location in time, duration, loudness, key pressure–and this information in turn can then be communicated with other compatible software and hardware, allowing crosstalk between sequencers and computers. But MIDI has also enabled artists to change other sonic qualities of a particular sequence, like the timbre of the instrumentation, without affecting the sequence itself. Using a keyboard interface musicians could thus play out and record a musical sequence, select a patch that emulates a different instrument from a preloaded library of sounds, and play it back to sound like the original sequence had been played using whatever instrument had been selected. Now amateur and aspiring musicians without access to "real" musical instruments and formal musical training could tap out and record drum beats and melodies and "play" these sequences back using any instrument they desired.

During the 1990s and 2000s electronic hardware and software developers continued to respond to the desires and habits of professional and amateur musicians by introducing affordable yet sophisticated music sequencing software that brought together MIDI, multitrack recording, and the range of effects

available on analog mixing consoles. The digital audio workstation Fruity Loops, which has since become the trusted DAW of celebrated hip hop producers like 9th Wonder and Lex Luger, developed version 1.0 in December 1997 as a MIDI only sequencer (FL Studio History, n.d.). Ableton, the company behind the popular DAW of the same name, was founded in 1999, releasing version 1.0 in 2001 (About, n.d.).

By the early 21st century, personal computers had become the primary technology for the music industry (Manning, 2004, p. 347). As it relates to the recording studio, this industry-wide turn towards personal computers and DAWs in place of mixing consoles and outboard analog gear (with some notable exceptions) further encouraged amateur and semi-professional musicians to abandon the commercial studio in favor of home studios and less costly independent recording spaces. For certain community leaders, artists, sound engineers, and educators this shift also represented an opportunity to empower disenfranchised youth, as well as women, girls, and gender non-conforming people with the modern tools of personal expression. Using the financial contributions and in-kind donations of philanthropists, government agencies, and benevolent community members, community-studio programs like those I named in the last section were now poised to set up media labs and studio spaces for underserved youth as well as other amateur and semi-professional artists in their communities to not only produce original art but to also learn the technical

skills that enable these productions. Roughly a century after the construction of the first studio laboratories, community-studios emerged in part as a distinct response to the affordances and constraints of modern musicking technologies.

In regard to sites like Sankofa Studio, the emergence of community-studios must also be tied to the rise of hip hop culture as a global phenomenon beginning in the 1980s. Hip hop music, once a regional art form that was invented in the mid-1970s by poor and working class black and Latinx youth in the South Bronx, has since become the top-selling music format across the globe (Kitwana, 2002, p. 10, Rose, 1994, p. 2).[9] Scholar and former editor of the hip hop magazine *The Source*, Bakari Kitwana (2002), has even dubbed the group of black youth born between 1965 and 1984 "the hip hop generation" because of hip hop's centrality in the formation of their cultural, social, and political identities. Although black youth cultures certainly existed on the national level in the US dating as far back as the 1920s and 1930s, black youth in earlier eras were more likely to derive values from traditional community institutions like family, church and school than pop culture. Members of the hip hop generation, however, are marked by their deep and unwavering commitment to the language, sensibilities, and value systems established as being "authentic" within hip hop

[9] Rapping (emceeing) makes up just one of the four elements of hip hop culture, the other three being DJing, b-boying and b-girling (break dancing), and graffiti writing (Fouché, 2012, p. 508).

(through music, film, visual art, fashion, and dance among other forms). As Tricia Rose argues:

> No black musical form before hip hop--no matter how much it "crossed over" into mainstream American culture--ever attracted the level of corporate attention and mainstream visibility, control, and intervention that characterizes hip hop today. It is now extremely common for hip hop fans of all racial and ethnic backgrounds, especially black fans, to consider themselves more than fans. They're people who "live and breathe hip hop everyday" (Rose, 2008, p. 8).

In turn hip hop's global successes must be understood largely in terms of the massive forms of corporate consolidation of the 1990s, exemplified by the Telecommunications Act of 1996, which enabled companies like Clear Channel Communications to acquire ownership of more than 1200 radio stations, a 3000 percent increase from the former limit of 40 (Dunbar-Hester, 2014, p. 2; Rose, 2008, p. 18). White America has always maintained a fascination with black forms of expression and with unparalleled visibility for mainstream rap artists, pumped through fewer distribution channels, commercial hip hop became a billion dollar industry by 2003 (Watson, 2004). Corporate entities like Nike, AT&T, and The Gap began to capitalize on the cultural cachet of hip hop by enlisting rappers and drawing on hip hop signifiers to sell shoes, fast food, and whatever else could be peddled over a beat.

Beyond the commercial realm, the use of hip hop cultural signifiers as a means to communicate with youth has spilled over into educational realms, resulting in the emergence of a range of "hip hop-related products including

study guides, curriculum packets, educational music CDs, test-prep flash cards, children's videos, hip hop themed children's books, and web-based learning tools" (Gosa & Fields, 2011, p. 196) in recent years. This shift has been exemplified by the success of companies like Flocabulary, which was founded in 2004 by hip hop enthusiasts Blake Harrison and Alex Rappaport to create educational hip hop songs and related content as a supplement for learning outcomes among students in grades K-12.[10] The company soon found success with students as well as educators who were eager for assistance in the classroom and in April of 2019 Flocabulary was acquired by the $50 million educational technology (EdTech) company Nearpod (Shulman, 2019). The past five years has also seen the rise of other similar programs that focus on specific content areas; in the summer of 2015, I was asked to serve as a guest judge for a student-focused rap battle organized by "Science Genius," an initiative started by Columbia University Professor Chris Emdin and the renowned rapper GZA through which urban youth are introduced to science concepts through hip hop music (Leland, 2012). According to the site for Science Genius:

> The core message of the initiative is to meet urban youth who are traditionally disengaged in science classrooms on their cultural turf, and provide them with the opportunity to express the same passion they have for hip hop culture for science. The project aims to display the interests of science enthusiasts who have a passion for hip hop, and introduce both hip hop and science to a wider audience (Science Genius, n.d.).

[10] I was recruited by Flocabulary in 2017 as a freelance recording artist, through which I have written and recorded several rap songs about a variety of K-12 objectives.

As Gosa and Fields (2011) have pointed out, "hip hop based education (HBBE)" (p. 195) programs like Flocabulary, must be critically examined to ensure that their creators are not simply using the gloss of rap music and culture to engage youth without much thought towards the rigor and cultural sensitivity of the content particularly for underserved communities. The question of whether these kinds of programs and initiatives are honoring hip hop's legacy certainly looms large; still, their visibility highlights the cultural recognition that hip hop is a powerful marketing tool for a range of educational causes and ideas. Viewed through this lens it is easy to make the connection between the rise of hip hop after the 1980s, the coming of age of the hip hop generation in the 1990s, the proliferation of accessible digital tools for creative expression at the end of the 20th century, and the recent emergence of community-studios that are designed to provide underserved youth with a means to document their stories.

Finally, a less obvious factor in the emergence and success of community-studios, but one that I argue has also played a significant role, has been the cultural association of "emancipatory politics" with the digital tools of the 21st century. In regard to the perspectives that have dominated popular discourses about the Internet, Dunbar-Hester (2014) argues:

> Too often claims about what the Internet is or does unquestioningly locate values and politics 'inside' the artifact. Breathless exultations such as, 'Digital Technology can be a natural force drawing people into greater world harmony' (as stated by *Wired* magazine's Nicholas Negroponte in 1995) are ubiquitous across punditry (Dunbar Hester, 2014, p. xiii).

Winner (2009) has highlighted a similar kind of cultural enthusiasm around the use of large-screen SMART boards, the internet, laptops, and portable cameras among other technical systems to improve educational outcomes, arguing that since the early 20th century information technologies "have…been heralded as wellsprings of a marvelous 'revolution' that would change the basic processes of education" (p. 587). As it relates to the "democratization" of music making that has been attributed to the digital tools of music production, Théberge locates these kinds of narratives within the Western tendency to "equate simple technical improvements or increased distribution of consumer goods in capitalist society with greater levels of freedom and democracy" (Théberge, 1997, p. 72).

Consequently many community-studio sites propagate and benefit from this kind of optimism about the liberatory "nature" of modern music making software and hardware, particularly for underserved communities and other groups that have traditionally been cast out of technical domains. Armed with MIDI sequencers, USB microphones, laptops, and a Soundcloud account, the youth who enter into these programs will ostensibly develop transferable technical skills that enable them to be "competitive" in a world controlled by the tech elite. On its homepage, Building Beats states that among other important skillsets developed by the program: "Our students learn the skills necessary to thrive in the 21st-century workplace through music making" (Building Beats,

n.d.). Initiatives like the Coding Through Music program are increasingly being developed to "meet kids on their level, then show them how they can use technology to create and share ideas with others in any field of interest" (Reitmeyer, 2018). Beyond community-music programs, this same type of rhetoric has fueled the development of similar organizations like Black Girls Code, Hack the Hood, GirlsWhoCode, and YesWeCode, programs that empower black and Latinx children as well as girls and non-binary youth to design the digital tools of the future (Nicks, 2014). These programs have become increasingly relevant as the "achievement gap" between affluent white children and low-income black and brown youth, is now being framed by educators as a "digital divide" (Darling-Hammond et al., 2014; Rowsell et al., 2017; Weheliye, 2005, p. 2). According to Chris Stephenson, the executive director of the Computer Science Teacher's Association, "[Computer science] has become privileged knowledge. The haves have continued to get access and the have-nots, however you want to define that, have not" (Nicks, 2014).

In regard to community-music programs it remains to be seen how effective these sites might be in actually closing this gap. In 2017 Notes-for-Notes boasted a 95% graduation rate for its participants (Notes for Notes 2017 Annual Report, 2018, p. 9). And when I visited the Friends of Crown Heights community center in Brooklyn in December 2017 to observe a weekly afterschool production workshop organized by Building Beats, I felt the joy and

excitement experienced by a classroom of black youth as they huddled over iPads for two hours, using the music production app iMaschine collaboratively to produce original beats.[11] Yet many of the social inequality issues that these sites hope to address are multilayered problems that will require substantive changes in education policy, with a focus on eradicating the conditions that create racial, socioeconomic and gender disparities in tech fields and beyond.

In particular I am reminded of the failed promise of the School of the Future, a high school in West Philadelphia that was designed and built through a $63 million endowment from Microsoft to serve as an example of a sustainable, future-forward learning environment that provides underserved black and Latinx students with a world class education through the application of cutting-edge information technologies (Snyder, 2006, p. A01). After three years of planning and development, the LEED-certified school opened its doors in 2006 as a fully-wireless facility in which textbooks were not required because every student was equipped with a Microsoft laptop (Hertzeler, 2012) and other technologies within the Microsoft suite were made available to all faculty and staff to manage every aspect of classroom design, curriculum, professional development, and school administration (Microsoft, 2003). Yet despite having access to state of the

[11] Building Beats boasts an impressive repertoire of innovative digital production tools in their "toolbox" such as iMaschine as well as cloud-based digital audio workstations like Soundtrap and Ableton Learn Music, which enable users to access their beats on any networked computer (Building Beats Toolbox, n.d.).

art technology for every student and teacher, the school soon faced myriad problems. According to one report, "[l]earners weren't using technology efficiently, educators didn't understand how to incorporate the technology into the classroom, the school wasn't meeting the district's educational and assessment standards and perhaps the largest disappointment, the leadership roles were never consistent" (Hertzeler, 2012). The most recent data from US News & World Report, suggests that between 2016-2017, only 31% of the school's population was reading at a proficient level or above and just 19% were considered proficient or above in math (School of the Future, Test Scores, n.d.). Simply providing students and teachers with access to a range of cutting-edge information technologies did not suddenly make the school immune to issues that plague other schools in the same district like high levels of administrative turnover and a lack of proper training and tools for educators to adequately address prior gaps in math and reading literacy. As Winner argues:

> The time, energy, and money invested in planning for and implementation of new media in the schools is often justified as a serious attempt to enrich the learning experience of students. But in some ways these projects are little more than a distraction. As teachers, parents and policy makers focus primarily upon technological options, they are deflected from asking basic questions about the goals of education and how to realize them. What do students need? What kinds of knowledge and competence are truly essential? What is known about the kinds of settings, human relationships, activities, and materials that foster genuine learning? What counts as reliable evidence that the efforts of teachers are succeeding? (Winner, 2009, p. 588).

Similarly, community-studio programs must evaluate their propagation of solutions to the "problem" of the digital divide that do not treat disparities in

technical education uniformly. Without this attention to the sociopolitical and economic landscapes that undergird life for each studio's target population, such programs can never ensure that the groups they serve will receive the proper support outside the studio to translate these learning opportunities into lifelong engagements with tech beyond making music recreationally (as is the goal of many of these programs).

I will close this section by adding that there is a danger in using the language of capitalism—usefulness and productivity—to "justify" the pursuit of creative expression. Regardless of their personal beliefs, many community-studio administrators may understandably feel they have to use these discursive strategies to "interesse" (Callon, 1986, pp. 206-211) potential donors to support such spaces. According to the material-semiotic social theory known as Actor Network Theory, "interessment" is the process through which an actor, having identified a problem, convinces potential allies that accomplishing their mutual goals requires adopting the perspective of the actor, thus enabling the actor to become the expert or "obligatory passage point" (Callon, 1986, pp. 205-206) through which conversations about the issue must pass. In this case, community-studio fundraisers must convince philanthropists and other potential donors that their shared interest in empowering underserved communities is achievable through a financial contribution or in-kind donation to the program. Consequently, by framing the studio's social impact in terms of its ability to

engender "productive" members of society (through an emphasis on improving technical literacy or keeping studio-goers off "the streets"), many community-studio admins are assuring donors of a recognizable "return" on their investment. And while these discursive tactics may be necessary for the practical goal of sustaining community-studios financially, I still contend that it is important for those who manage and fund these spaces to balance this message with the knowledge that the music their clientele produces has value in itself. Switching gears to discuss my two primary research sites, I will now explore similar tensions that emerge at each site for community-studio administrators who must assess the value of every choice as a proper reflection of their respective communities' needs.

Building Out Sankofa Studio

The story of Sankofa Studio begins in the early 2000s at a community center I have called Community Center A (CCA), located centrally within the historically black "Southside" neighborhood of Syracuse, NY. Since the 1930s the center had operated as a community organizing space and safe haven for African-Americans living in the area, and it eventually grew to serve the local residents through after-school and summer programs, a food pantry, a senior shopping program, and a computer lab, among other community needs. The idea to develop some kind of arts programming at the CCA initially emerged out of

conversations between the center's administrators and parents from the Southside community, who were frustrated about the barriers to entry for formal musical training in the local public school system. In an interview with Clyde[12], who was a member of CCA's board from 2001-2011, a music professor at a local college, and one of the founding members of Sankofa, he shared:

> The key argument was that there was often a lack of resources around engagement and a whole range of arts activities but especially in music. Instruments, private instruction—those kinds of things. Obviously you can access instruments in public school instruction but to really own a nice instrument and get private instruction were off the table for lots of kids. And that came up a lot, not just in terms of music but also in terms of arts instruction and access to media and things like that.

Many community members were thus eager for the development of a program that could finally provide the local youth with formal arts and media training in the same way that many of their peers from more affluent neighborhoods received private lessons and school instruction. Additionally, many of the local parents and educators wanted to develop more Afrocentric arts programming that focused on forms of music that have been historically overlooked and undervalued in academic music environments such as hip hop, reggae, and R&B (in turn these discussions reflect the systematic dismissal of black forms of music as fundamentally unmusical by many Western music institutions, which I elaborate on in Chapter 3). Clyde continued:

> There was and certainly still is a justifiable perception that the curricula in these fields, meaning visual arts, and music, and media arts in the schools, were often

[12] His name has been pseudonymized.

> devoid of what certainly at the time was considered a more multicultural kind of content and perspective. And thus, we often heard the story from certain educators who were in sync with this kind of thinking and critique but also from parents and ultimately from kids that after two or three years of being in public school music, a lot of students lost interest despite their skills and their talent. They lost interest because of the repertoire.

After conducting a few informal surveys and learning about the success of other nascent community arts and media programs around the country, Clyde reached out to a local jazz musician who was also a public school educator, as well as a professor with a specialization in Afrodiasporic performance to see if they could begin to formalize some kind of Afrocentric music and media program. By 2004 they had developed an all-ages six-week music educational summer camp at CCA that provided free music instruction and activities for local youth, and was made possible with funds from grants that Clyde completed through his relationship to different departments on his campus. Eventually the program expanded to include an after-school program that provided education in everything from strings and voice to African percussion, guitar, and keyboard as well as video production courses. Many of the volunteer instructors they recruited were faculty and students from the local colleges.

Things coalesced around building a formal studio space after Clyde became aware of the New York State Music Fund, a board that was convened by the Rockefeller Philanthropy Advisors to dispense a $35 million settlement awarded to the state of New York in 2005 as part of a class action lawsuit against music businesses that had profited from illegal "payola" practices (Future of

Music Coalition, 2009; Hirschman, 2008).[13] Among other categories, the board earmarked certain funds to provide one-time public arts grants for organizations that offered music-related training and workshops to "marginalized" communities. With the blessing of CCA's executive director and his collaborators from the summer and afterschool program, Clyde soon began working on a grant proposal to build out a fully functional recording studio in the community center by repurposing one of the unused rooms on the second floor. The proposal, which I requested and received a copy of when I began my research at Sankofa, begins by detailing many of the struggles experienced by the black and Latinx youth in the community citing the well-documented "achievement gap" between the white students, who had a 94% completion rate at the local high school in 2004, and the black students whose completion rate was hovering at just 50%. According to the proposal, Sankofa Studio could help to remedy this disparity in a multitude of ways:

> Many of the youth suffering this gap…live in [the] Southside and nearby neighborhoods. This program will engage some of these youth in exciting, culturally relevant learning activities and experiences we think will lead not only to music creation and then recording skills but to constructive personal, social, artistic, academic, political, and career development. We feel strongly that the program can help give these young people important communication skills and power -- i.e., voice -- that will allow them to express themselves effectively while pursuing positive futures and constructive change.

[13] Payola refers to the practice of record companies providing payment or other kinds of "incentives" to radio stations in exchange for airplay of their artists, without this monetary exchange being disclosed on air.

After making the case for why Sankofa offers an important intervention, they then lay out their plan to use the studio as a space to offer intensive courses through daily summer and after-school programs that would instruct 50 to 60 local youth on everything from the basics of recording and songwriting to the history of hip hop and other Afrodiasporic forms of music. The proposal is then supplemented with letters of support from an impressive array of locally and nationally prominent artists, engineers, studio owners, and educators, who each express their excitement about such a space existing and agree to provide resources for the program in some way or another.

In order to facilitate the kind of extensive programming and support necessary for Sankofa to meet its goals, the proposal calls for a detailed list of studio equipment: one main computer and six laptops with "substantial memory and processing power", seven digital interfaces with music production software (MBox audio interfaces, Pro Tools LE), a 16-channel mixing console, seven MIDI controller keyboards, eight microphones and stands, monitor speakers for the main computer and each laptop, LCD projector and screen, 14 pairs of headphones, a headphone amplifier, cabling and connectors, acoustic panels, and finally workstation tables and 15 chairs. The remaining funds would serve as the $34,000 salary for the program coordinator/sound engineer, $4,500 for guest instructor and consultant fees, $1,400 for program supplies, photocopying and postage, and $2000 for indirect administrative expenses. In 2007 Sankofa became

one of 371 projects that was funded that year in support of community-based music educational programs. Of the $65,600 requested by CCA, $65,000 was awarded (see Appendix A for a list of all the costs associated with each equipment request, copied directly from the grant application).

By September of 2007 Sankofa was open for business. Community engagement moved slowly at first but after advertising the free recording services in the local paper and on public transit, a few artists began to book sessions at the studio to record original music. During the first few years after opening its doors, Sankofa also maintained a steady rotation of programs, sound engineering and production courses, and guest-led workshops for local youth and interested adults about everything from songwriting to dance. From the outside looking in, Sankofa appeared to fulfill its stated purpose as an accessible recording space for the Southside community. However upon closer examination, the space was not living up to many of the promises articulated throughout the grant application. Most notably, by the time I began my research in the summer of 2013 much of the equipment that had been listed on the grant was nowhere to be found. The studio, a roughly 500-square-foot room located in the back corner of the second floor of CCA, contained just four iMac computers—one main computer at the workstation of the studio coordinator and soul engineer, Dan, and three additional computers on desks along the wall, each equipped with the digital audio workstations Pro Tools LE and Logic—four acoustic panels for

soundproofing, three Mbox preamps (devices that amplify weak microphone signals) and three MIDI keyboards at each of the public computers.

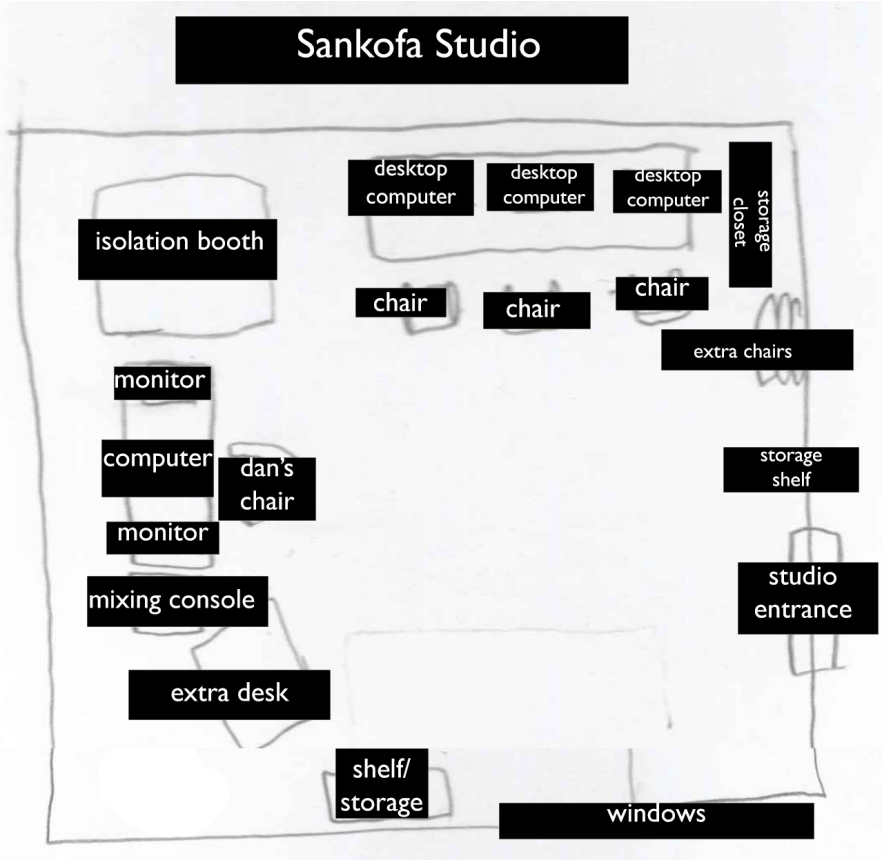

Figure 2: A rough sketch of the floor-plan at Sankofa Studio by the author.

The most expensive components of the studio were seated next to the main computer at Dan's desk—a mixing board with four preamps, two professional external hard drives, and two monitor speakers. A shelf close to the door stored cables, several pairs of headphones, and microphone stands. The wooden isolation booth in the corner next to Dan's desk, which had been built by a volunteer only at Dan's insistence, housed an MXL microphone, a stand, and a pop filter (a small screen that sits between the microphone and the

vocalist's mouth to protect against noise and distortion caused by the forceful delivery of certain plosive sounds) that Dan had brought from home.

When I spoke with Dan (who had begun working at Sankofa in 2012) about the status of the missing studio equipment, he implied that the funds had been misappropriated by whomever had been in charge of CCA and that much of the gear had never actually been purchased. He noted: "I feel like they put the money elsewhere to be honest with you. I looked at the grant. What they spent money on. And they didn't spend the money on the studio." He also expressed a deep sadness that the studio felt more like a home studio than the state-of-the-art media lab that was described in the grant application (a sentiment that will be revisited in further detail in Chapter 2).

Dan was not the only one who was disappointed with certain aspects of how the studio had turned out. When I asked Clyde to reflect on how the space measured up to his hopes for Sankofa, he spoke about feeling a dissonance between the "intention and the reality." In particular, he shared that the process of hiring the first studio coordinator had revealed a rather large ideological rift between himself, CCA's executive director, and other board members regarding whether to prioritize cultural knowledge or technical skills in a potential candidate. When the board initially advertised the studio coordinator position in early 2007, it was with the intention of finding a candidate who was a good fit for the space both technically and "culturally" speaking. Clyde noted: "Our

vision was that there would be a person of color with incredible audio-production skills running the studio. And in the early days that just didn't seem possible." As Clyde clarified, nobody with that profile ended up applying for the position. For one, he speculated that the wage of $11 an hour was far too low to attract any truly exceptional candidates. The lack of applicants of color also speaks to the historical legacy of sound engineering as a site of privileged access for white men, particularly given the early reliance of successful engineers on relatively informal networks to enter into studios as interns and professionals (Porcello, 2004; Schmidt-Horning, 2013). Of the two white male candidates who eventually made it to the final round of interviews, one was a well-trained engineer who had worked in many recording studios but did not have any experience working with underserved communities of color, while the other candidate admittedly did not have the technical training to run a studio (much less a Pro Tools session) but he was well known throughout the Southside community for his enthusiastic participation in other programs at CCA.

Although Clyde was of the mind that the first candidate was the best person for the job, the executive director and the rest of the board ultimately decided that the latter candidate was a better fit for the studio. He shared:

> So we had one guy who knew all the programs…He had worked as one of the lead engineers at Tony Bennet's studio in New Jersey. He had done a lot of R&B; he had done a lot of hip hop…And I remember sitting in on his interview and thinking, we'd be crazy not to hire him. But some people didn't feel he had the same experience with youth of color as the guy who had worked in some of the programs at [CCA], who definitely didn't have the engineering

> chops…We debated and decided to hire this young man who had a lot of connection to [the community]. He worked there a bunch and he was a musician but he really hadn't done a whole lot in the way of audio production.

Ultimately for Clyde, and the rest of the board, the hiring dilemma became an issue of boundary-work that was as much an immediate practical matter as it was an ideological concern regarding the broader purpose of the community-studio. Although the grant application was drafted with the goal of developing a semi-professional recording site that would enable local youth to learn industry standard production and recording skills, the practical realities of the hiring pool dictated that the executive director make a decision to work with someone he knew would not necessarily be technically suitable for the position but would be knowledgeable and sensitive to the concerns and needs of residents in the surrounding neighborhood. And even though the first candidate had acquired professional experience engineering Afrodiasporic forms of music like rap and R&B, this experience was not seen as sufficient for guaranteeing that he would be able to connect with the community in a meaningful way.

With time Clyde came to understand that it was best to let the hiring decision fly, although privately he remained dissatisfied with the choice. He even eventually joined with a few other CCA board members to secure free Pro Tools training for the studio coordinator and his successor, stating:

> I didn't want to come across as an outsider who comes in with a lot of concrete ideas and strategies. The white savior notion. I didn't want to be somebody who said okay we're going to set up a professional studio that looked like the professional studios I've been in. I mean for all sorts of cultural reasons that's

> a bankrupt notion, that's really the wrong strategy and it wouldn't serve the needs and purposes of a really solid, strong, engaging community-studio.

Part of Clyde's decision not to contest the hire, was based in his realization that as a white, middle-class man operating in a predominantly black, working-class environment, it was not only not his place to dictate what the priorities of the community should be, but it was also outside his purview to fully understand the personal experiences and histories that motivated their decisions. For him, the most important component in successfully managing a recording studio is helming the space with a well-trained engineer, whether the studio is community resource or not. Yet for the African-American administrators and other board members at CCA, many of whom lived in the surrounding neighborhood, they deemed that a proven commitment to Southside would carry more weight in terms of investing the community in the studio. Given the systematic dismissal and exploitation of black youth within the music industry (Kitwana, 2003; Rose, 1994), it is thus easy to understand why the board and executive director would desire to work with a trusted ally over a newcomer, no matter how in-the-know said newcomer was on paper.

At the same time, one cannot help but wonder what message was inadvertently being sent to local artists about the value of their music when the center opted to hire a studio coordinator who had never actually worked in a studio. I do not raise this issue to cast judgment on the executive director about

his hiring decision. Instead I pose this concern to highlight the ways in which boundary-work takes place at every layer of community-studio life. Throughout the hiring process, the board members and the executive director at CCA were being forced to decide whether the space should resemble a "professional" recording space or a community-centered resource. In turn, the outcome of this debate has important implications not only for how the space runs but what kind of music is produced and what kind of artist is prioritized. In the following chapters I will explore how these debates unfold in everyday studio work to shed further light on the dynamics that drive community-studio politics, but first I will provide the history of my second research site, Inclusive Recording.

Building Out Inclusive Recording

At Inclusive Recording, a feminist recording studio in Pittsburgh, PA, the primary goal of the space was to subvert traditional studio dynamics and corporate interests, from the moment that studio-owner Claire[14] first learned that she would be given her own studio space to the day she opened her doors to the public in May 2017. Prior to founding Inclusive Recording, Claire spent her time running sessions and mixing tracks as an engineer at Studio-A[15], a large commercial studio at which she'd been employed for five years, as well as

[14] This is a pseudonym.
[15] This is a pseudonym.

working part-time as a modular synthesizer repairwoman, serving on the board for Girls Rock Pittsburgh, and recording friends recreationally with a mobile rig. She had stumbled into the world of sound engineering after recording music with some friends in a band in high school. After arriving in Pittsburgh in 2010 to pursue an undergraduate degree in Music Technology with a concentration in cello performance (which she completed in 2013), she reached out to local recording studios to inquire about summer internships; one studio, Studio-A, got back to her and from there she was off to the races.

In early 2016 a friend connected Claire with the owner of a new business space that was opening close-by, and after a conversation, he soon offered her a 400-square-foot suite that she could use to set up her very own studio. Although she had not actively been looking for her own studio space, the timing was perfect as she had been growing dissatisfied with the fact that the rate to record at her current studio was prohibitively expensive for the local bands she valued the most:

> As I got more involved in the Pittsburgh music communities and got to know more local bands, I realized that by being at [Studio-A] I was just kind of cutting myself off from everyone that didn't have significant funding for their recording projects and most people in Pittsburgh don't. So I was basically just cutting myself off from a lot of my friends and a lot of the bands I love and a lot of the people I love.

The new space promised to bring her much closer to the artists and causes she cared about. Once a metal working factory, the building in which Inclusive Recording would come to be housed was purchased in 2016 by a concerned

neighborhood local who wanted to protect the community from further gentrification. The area had already become home to a few high-end car dealerships and soon after the factory had been listed on the market, local real estate developers began expressing an interest in converting the space into luxury condos. Shortly after purchasing the building, the new owner set about converting the factory into a low-rent, multi-suite office and event space for progressive local organizations and businesses. Alongside Inclusive Recording, the space eventually became home to a feminist maker-space, a community theater and live-show venue, and the headquarters for a black-owned media group for youth, among other tenants.

Claire's vision for Inclusive Recording was simple. She wanted to create a studio that enabled her to work with her friends, who largely could not afford to record at the commercial studio where she worked, as well as other populations that had faced systemic barriers to recording in any way:

> I just wanted to create a space, a safe space for anybody who's ever felt uncomfortable or unsure about recording. Recording can be so daunting. And people are sharing their most intimate thoughts and moments when they are recording. People should be able to do that in a space where they know they're welcome. In a space they can afford, where they don't have to be scared.

As she started to plan out the details of the studio, she reached out to other women in the sound engineering world whom she'd met online and in person to determine the best way to move forward with limited funds. In particular she wanted to avoid having to look for advice on Internet gear forums, which she

once referred to as "clusterfucks of men on the internet." One of her industry colleagues, a well-respected mastering engineer named Heba Kadry (who has mastered projects for Björk, Princess Nokia, and Suzanne Ciani among others), advised her not to waste money on so-called "specialty" studio items (like a studio desk or a studio door) that were advertised online and in gear magazines but could be purchased for much cheaper at regular furniture and home goods store. Another colleague, a studio owner and engineer named Catherine Vericolli, put Claire in contact with an audio dealer called Vintage King to help her select the most essential gear for a reasonable price. As Catherine shared in a separate interview, she, like many women in sound, maintained a contentious relationship with gear:

> We are in an industry that is incredibly gear forward. The gear sales and advertising propel pretty much the motion of the industry…It's difficult to separate gear in general from the craft of making records. It's impossible to do so. So every recording engineer, anybody in the industry or even producers, and I'm sure you do as well, have a certain relationship with gear even though we may, you know, be completely aware of how hyped a lot of it has become, especially since the advent of plug-ins and digital audio (C. Vericolli, personal communication, September 14, 2017).

For Catherine, the pressure to participate in the "fetishization of gear" (Farmelo, 2014) so identified by her close friend, collaborator, and fellow engineer Allen Farmelo, is an unfortunate part of the industry that she has actively tries to resist through her engineering practices and in her advice to young studio owners like

Claire.[16] She further noted, "I'm a huge proponent of making records as simplistically as possible with the most simplistic gear that I can." Like Catherine, Claire wanted to build a minimalist setup with high-end analog gear and must-have digital audio tools. As I will detail in Chapter 3, these decisions were in part guided by her financial constraints but they were also a reflection of Claire's feminist ideals about the proper role of gear and the sound engineer in facilitating good takes and a good mix.

After working with a representative at Vintage King and conducting some personal research, Claire finally began compiling a list of the things she would need (and could afford) in her studio: monitors, an 8-channel audio interface, compressors, various dynamic, ribbon, and condenser microphones, cables, an Apple desktop, and a number of cables among other essential gear (see Appendix B for a full itemized list of her purchases). To finance the acquisition of said gear and the studio build-out she applied for and received an $8000 interest-free loan in August 2016 from Kiva, a crowd-funding non-profit that connects personal lenders looking to fund specific causes (public health, education, etc.) or populations (women, refugees, single parents, etc.) with borrowers seeking loans to fund anything from the purchase of school supplies to entrepreneurial endeavors.

[16] See Chapter 5 of Théberge (1997) for a lengthy discussion of the history of music production periodicals from the 18th century to the late 20th century.

But even with the loan, Claire had to cover much of the expensive labor of building out the space by bartering construction from friends in exchange for future studio time, and free childcare among other services. The hardwood floors were installed by a friend in exchange for some housework; two friends built the wall and installed the door separating the two sections of the formerly one-room studio for a combined $1000 worth of recording time. And another friend helped her to treat the room by assisting in the assembly of 24 acoustic panels that they hung on the walls and the ceiling of the studio in order to reduce reverb and other unwanted noise.

Figure 3: A photo of the build-out at Inclusive Recording in-progress. Courtesy of Inclusive Recording (2016).

At the same time that Claire and her friends were attending to the material layout of the space, she was also committing ample time to thinking about how she could engineer her feminist ideals around accessibility and inclusivity into other aspects of her studio. In the end Inclusive Recording in many ways became the architectural and ideological embodiment of a rejection of "professional" studio culture as exemplified by her experiences at Studio-A. At Studio-A, the cost of tracking (the process of recording tracks) was $75 an hour and mixing costs varied depending on the engineer; Claire set her tracking rate on a sliding scale between $25 and $50 an hour to account for clients with different income levels. And to enable parents of young children to be able to record at her studio, she partnered with the Yellow Bridge Childcare Collective, a Pittsburgh-based volunteer agency that provides free childcare at a range of community events like protest actions and live shows in order to make these spaces more accessible to parents of young children. At Studio-A clients recorded in a separate tracking room, while the engineer monitored the session from the control room; Inclusive Recording featured an open floor plan through which artists primarily performed in close proximity to Claire's desk (although realistically she may have been too financially constrained to build out separate tracking and control rooms even if that had been her preference). At Studio-A, engineers were expected to be in the know at all times, particularly in regard to troubleshooting technical problems; at Inclusive Recording Claire planned to hold a series of educational workshops

that she called skillshares (which I discuss in Chapter 2), to invite community members at all levels of technical fluency to learn sound-related skills like podcasting or using a digital audio workstation. At Studio-A Claire was almost never around other women as she was the only woman employed by the studio, and women rarely even came in to record as clients; at Inclusive Recording Claire explicitly framed her space as a feminist studio both in online marketing efforts and through the inclusion of visible cues in the studio (a copy of Tara Rodgers' *Pink Noises* on a shelf, a large sign above the computer that reads "For a Feminist Reconstruction of the Commons," etc.). Unlike the boundary-work performed by the CCA board and executive director, which involved demarcating Sankofa from a more professional studio as a result of personnel shortcomings, Claire's boundary-work involved intentionally demarcating her studio from the trappings of so-called "professional" studios in every aspect of her space, programming, and recording practices.

At times running a community-studio presented Claire with unique challenges. On more than one occasion the sound from other tenants, particularly in the theater/venue upstairs, leaked into her studio space and forced Claire to cut sessions short. Because of the friendly and relaxed environment of the space in which her studio was housed, she expressed that she found it difficult to confront other tenants when they failed to update the calendar with the details of their potentially disruptive events (a conversation that might have

been easier in a more sterile business environment like Studio-A). She also struggled with making distinctions between what kinds of conversations in the studio counted as work and which counted as play. Because of the congenial nature of her studio, friends sometimes stopped by during other folks' recording sessions just to catch up, and at other times clients even engaged her in lengthy conversations while on the clock. Eventually she became more forceful in articulating when it was time to get to work but initially, drawing that line proved to be quite difficult:

> It was really hard trying to figure out what to do with that at first. You know I feel bad because sometimes people don't even realize they're doing it. And I don't want to charge them for having a conversation with me. But how do I remind them we're on the clock? I'm not doing this to make a ton of money but I still have to get paid.

For Claire it was difficult to establish boundaries with new clients and friends given that her space was framed as a community resource. Unlike in a traditional commercial studio where the primary relationship between engineer and artist is transactional (so their interactions, even when friendly, are understood within this framework), the studio space at Inclusive Recording was designed and outfitted in ways that emphasized Claire's role as a friend and confidante (which I will discuss in further detail in Chapter 4), particularly through the placement of small figurines, pictures, and books, as well as the vibrant backdrop of brightly colored walls and carpet. As Marshall (2017) notes, producing this kind of relaxed environment in the studio can be tremendously instrumental in getting clients to

produce a "good take" (p. 221); but for Claire it also greatly complicated her ability to run her business as efficiently as she sometimes desired. As I will discuss in the next two chapters, this early challenge around how to value her time in many ways foreshadowed other dilemmas that she would face in trying to manage a feminist recording site.

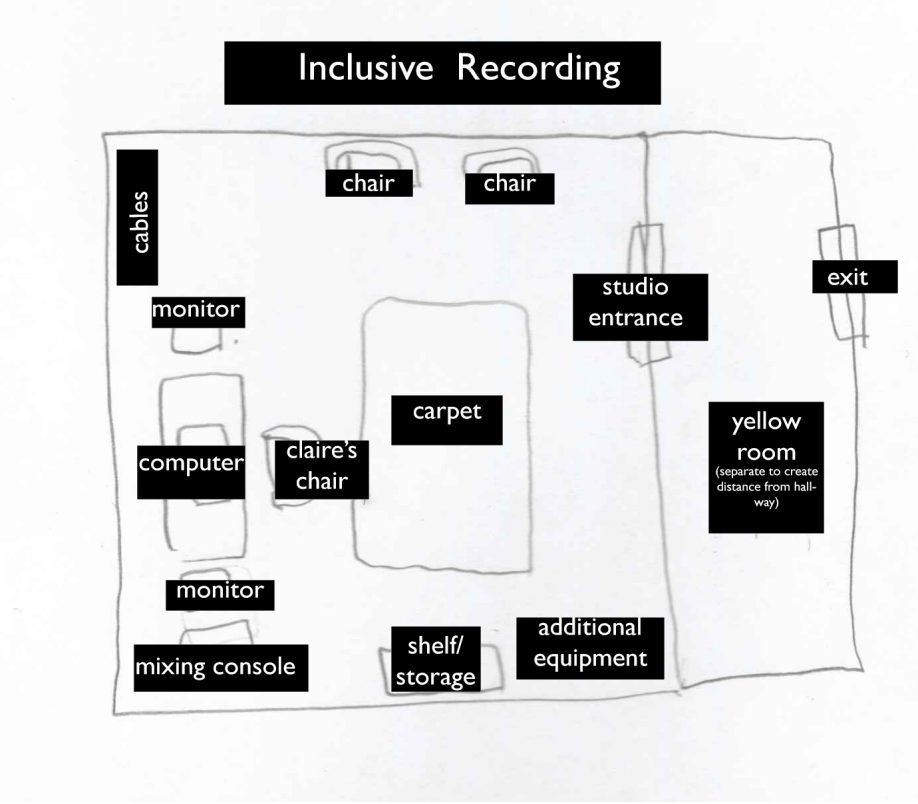

Figure 4: A sketch of the floor-plan at Inclusive Recording by the author.

Conclusion

In this chapter I have outlined some of the social and technical forces that have enabled the recording studio to emerge as a site of rehabilitation for certain societal ills. Specifically I have identified three threads that have engendered the

proliferation of community-studios over the last 25 years: (1) the development of high-fidelity, low-cost production and recording hardware and software beginning in the 1980s; (2) the global rise of hip hop as a cultural force, the language of which has increasingly been coopted by agents of social change; and (3) the marriage of certain "emancipatory politics" with the digital tools of the 21st century as a means of mobilizing progressive efforts to close the "digital divide" between affluent, white, men and just about everybody else.

This chapter then detailed the complicated process of bringing a community-studio to life through a close examination of the early days at Sankofa Studio and Inclusive Recording. At Sankofa, the multivalent nature of the space caused friction for administrators as they were forced to pick between two different kinds of studio engineers with different skillsets. And at Inclusive Recording, Claire did not deal with the issues that come with running a studio alongside several other invested parties, but she too faced challenges as she tried to carve out the norms that would make her studio both an accessible space and a sustainable business. In the next three chapters I examine similar kinds of dilemmas (and the boundary-work required to manage them) as they unfold through everyday studio life at these two sites.

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CHAPTER 2: Sound Engineering Discourse as Boundary-Work

In the last chapter I examined the "listening formations" (Faulkner, 1994, p. 165, as cited in Devine, 2013) that shaped the emergence of my research sites and community-studio programs more generally. Having situated their development within a broader social history, I will now zoom-in on the daily practices of the sound engineers who mediate such spaces. This section, which consists of this chapter and the next, explores how the technical work performed by sound engineers in community-studios might inform and be informed by the studio's imagined status as a "boundary object" (Star & Griesemer, 1989).

As I discussed in the introduction, the term "boundary object" refers to information that is flexible enough to be useful to stakeholders from different social worlds, with their varied and often competing goals, interests, and interpretive tools, and at the same time rigid enough to maintain a kind of coherence in meaning between these different groups. To illustrate how boundary objects are formed in practice, Star and Griesemer (1989) point towards the animal and plant specimens catalogued by various "sponsors, theorists, and amateurs" (p. 408) within the Museum of Vertebrate Zoology at Berkeley. Specifically Star and Griesemer argue that while these actors must "collaborate to produce representations of nature" (ibid) for the purposes of preserving California's natural habitat, their definition of "preservation" (and therefore the means by which to achieve it) varies from group to group. The

specimens emerge as boundary objects when interested parties from different worlds find that their "shared goals are lined up in such a way that everybody has satisfying work to perform in each world" (p. 409). Alternatively, when I suggest that a community-studio is an *imagined* boundary object, I am arguing that although community-studios are conceived as spaces that are supposed to be equally legible to various funders, engineers, artists, and other folks who make up the community, the practical realities of managing a multivalent space means that their legibility is often contested and at times rather inflexible.

As is the case with any examination of a contested audio space, part of this discussion involves an exploration of notions of fidelity. Kyle Devine (2013) argues that the concept of fidelity has typically been framed in one of two ways throughout the history of recorded sound: "either in terms of popular discourses that accept the notion of fidelity as real…or in terms of critical studies that debunk the notion of fidelity" (p. 160). Here I am hoping to invoke both framings. As I will detail in the next two chapters, one of the primary sound engineers I observed adopted the former framing in his public/professional studio interactions while adopting the latter framing in his private conversations with me; he initially spoke with me in explicit terms about distinctions between "real" studio spaces and the ones in which he was operating (as well as the ways that his space functioned as a "real" studio). Specifically, he insisted to me and other recording artists that what makes a studio legitimate is the quality and brand

of the gear that it houses. Yet privately he revealed a reticence to name any one definitive factor in achieving a high quality recorded and mixed performance. It soon became clear that he was instead pushing this narrative about the gear largely as a way to invest studio goers in his new studio policy, through which they could supposedly experience the joy of recording at a "real" studio simply by paying to use the higher-end gear that Sankofa offered. I therefore use the word fidelity to not only make an obvious gesture towards the sonic nature of this analysis but to also highlight the ways in which boundaries are fundamentally about positionality. In this case community-studio actors articulate the purpose and benefits of their studio by evaluating its "fidelity" to a host of other kinds of recording and organizing spaces that community-studios either challenge or replicate.

In that regard, much of the discursive and technical work done by community-studio actors might be fruitfully explained using the STS concept of "boundary-work" (Gieryn, 1983). Rather than focusing on a site of knowledge that brings together different groups of actors with certain shared investments, as in the concept of the boundary object, boundary-work highlights the range of activities and rhetorical strategies used by practitioners of emergent and contested knowledge to demarcate or align their fields of knowledge with other fields in the hopes of achieving some measure of "legitimacy." In her study on the boundary-work performed by practitioners of sonification, the

representation of data through non-speech audio, Alexandra Supper (2012) argues, "[i]n order to position their work and infuse it with legitimacy…researchers engage in negotiations of the boundaries of their field, attributing it with certain qualities to establish its cultural authority and demarcating it from other endeavors" (p. 251). For many of her subjects that has meant actively redefining sonification as a method of data display that is equally as "scientific" (reproducible, systematic, objective) as visualization, while rejecting its association with music despite its wide application and broader acceptance within art and performance communities. Ultimately this case study illustrates how professionals working in contested areas both inadvertently and intentionally make assessments about what is legitimate and illegitimate about the fields against which they are positioned (and actively position themselves). As it relates to community-studios, Supper's work highlights the centrality of the question "fidelity *to what*" not just in my work as an analyst but also in the work of the actors I am studying.

In this section I engage with precisely this question about fidelity, both in terms of how the engineers I observed evaluate and approach "musicking" (Small, 1998, p. 8)—the activity of making music—and the kinds of spaces against which their studios are being evaluated. Specifically, I argue that the demands of working in a multivalent community space push sound engineers to shift between constructing such spaces as authentic in relation to what are often

mutually exclusive notions of "professional" studios or community organizing spaces. These different framings of the space are significant in part because they enable and often require specific ways of working in regard to both the music and the social order that is produced therein. As ethnomusicologist and audio engineer Eliot Bates (2012) argues, the ways that sound engineers conceive of their workspaces shapes the ways that they approach their work, from their discursive strategies to their recording and mixing philosophies. In particular it colors their relationships with the community members and artists whom they regularly engage in the space. Should the people who enter the studio to record be thought of as clients or perhaps something more radical? Partners? Collaborators? What kinds of social relations should be prioritized in a truly revolutionary recording space? What about in a commercial studio? As this chapter details, a significant yet unwritten part of the job for many community-studio sound engineers involves performing this kind of boundary-work—asking these questions regularly and weighing the effects of framing their spaces in different ways.

This section also examines the ways that the sound engineers' framing of their workspace becomes enmeshed in their relationship with the technology and equipment they use (as well as their aspirations for particular gear that the studio might one day contain). I often recall a conversation I had on my first day of field research at Sankofa Studio in which Dan, the studio's program coordinator

and sound engineer from 2012-2017, opened up about his disappointment in the equipment he had inherited. Midway through giving me a tour of the building he paused and remarked that he wished Sankofa Studio "felt more professional." When I asked him what he meant by that he smiled wryly and said, "I wish the equipment was a little better. That we had more acoustic paneling. That it just felt like a professional…a real studio." Over the next few months, as I visited the studio to interview him and observe him working with artists, he shared this sentiment again and again. At one point while looking over a printout of the grant application that had led to the space initially being funded, he became visibly agitated. Letting out a deep sigh and handing me the application documents, he told me about how disappointed he had been upon first entering Sankofa:

> I hate saying this because I'm not really supposed to but I don't really know what the fuck they were thinking when they purchased this stuff. This studio could have been awesome…I walked in here and I was like, "Wow man, I really feel like I want to do some research. This doesn't look like a studio. This looks like a home fucking studio.

For Dan, Sankofa Studio's recording equipment appeared to call into question its authenticity as a proper recording space. Initially when I asked him what equipment it would take to transform Sankofa into a space that would be legible as a professional recording studio, he responded to my query with a desire to one-day outfit the studio with a state-of-the-art microphone cabinet, replete with microphones from highly regarded companies like the German manufacturer

Neumann, and more acoustic paneling to eliminate unwanted echo, reverb, and general ambient noise. But after I had observed a few sessions he shared that a song that sounds "professionally mixed" more often than not comes down to the engineer's training and embodied experience, their tacit knowledge (Polanyi, 1958), as opposed to the capacity and parameters of the available equipment. "Of course gear matters," he remarked one afternoon after I pressed him on the importance of studio equipment, "but it's not everything. Depending on the sound you want, you can get a clean, professional sounding mix just about anywhere. Even here. Even with our real cheap mic."

I was not entirely surprised to hear Dan's latter remarks devaluing the relative importance of particular high-end recording gear in achieving "professional-sounding" production outcomes; the notion that the specific equipment in a studio can play an ancillary role to the perceived fidelity of the music produced therein was a point that had come up in conversation with other sound engineers about my own music, as well as something I had read about in well-respected trade publications like *Sound on Sound* (White, 1995). I was also familiar with this sentiment as an extension of academic observations and denunciations of the fetishization of gear among mostly male audio production and recording enthusiasts (Farmelo, 2014; Meintjes, 2003; Gay, 1998; Rodgers, 2010, p. 279). And it was one that came up time and time again among the community-studio sound engineers that I interviewed. Clyde, the Sankofa Studio

co-founder whom I discussed in the last chapter, underscored as much when I asked him whether one could actually produce high-fidelity music in a gear-strapped and largely untreated acoustic space like Sankofa. He argued:

> [G]ood engineers can work with very simple things…You can do really great things with minimal tools if you're good at it. And so I think that speaks highly for what's possible in lots of community facilities…There are tons of people who buy lots of gear and there are lots of studios that have brilliant gear but not a good engineer. Stuff comes out of those places. Doesn't really move people. So what moves people is not, it's not about having an expensive microphone.

What *was* surprising was Dan's insistence in the presence of other recording artists that the gear selection, specifically in regard to the microphones at Sankofa, actually did matter quite a bit in his ability to achieve a professional sounding mix (the details of which, I will expand upon later in the section). I began to wonder what was the line that distinguished the tools used in a community space that resembled a home studio and those used in one that *felt* like a "real" studio. Conversations like the ones I had with Dan pushed me to extend my analysis beyond solely examining the boundary-work performed by sound engineers in regard to discourse and recording philosophies. Thus in this section, and specifically in the next chapter, I also explore the ways that sound engineers imbue recording and production technologies with different symbolic meanings depending on their framing of the space.

Finally, part of the exploration I pursue in this section involves making sense of the ways that sound engineers at community-studios actively imbue their

own identities with meaning. Drawing on Christine Dunbar-Hester (2014), who in turn references Judith Butler (1990), I conceptualize identity not as a role that one steps into but rather as a "social tool" (Dunbar-Hester, 2014, p. 22) through which (in this case) sound engineers suffuse their technical work with particular and often contradictory meanings. In turn the act of laying claim to a given identity has material and technical consequences. For instance, in some cases the title of "sound engineer" offers individuals who work in audio production a means to pivot away from less favorable professional associations with their putative role; Louise Meintjes (2005) has noted that certain high-profile artist-engineers like Steve Albini (Nirvana, Spencer Blues) "identify what they do as engineering rather than producing, as engineering gains in reputation as a compositional act and producing suffers from its association with big business" (Meintjes, 2005, p. 27). In other cases sound engineers must come to terms with being cast as "merely" craftsmen or technicians in situ and on paper (or rather *off* paper in regards to being uncredited), a framing that takes on particular significance in studio spaces wherein the sound engineers have different cultural and racial backgrounds than the producer(s) and recording artist(s) in the room (Meintjes, 2005, pp. 32-34). In regard to being a "foreigner," producer and sound engineer Nigel Pegrum has reflected on the necessity of taking a back seat when he first started working with Aboriginal didjeridu artist David Hudson, noting:

"[A]s a Pommie [British migrant] in Australia…I really was very careful about putting forward any opinions" (Neuenfeldt, 2005, p. 89).

In the case of the sound engineers I observed at community-studios, their identities hovered in a strange space between the white-collar workflow of modern commercial studio management (Porcello, 2004, p. 736), and the anti-establishment politics of radical community organizing. Whether it is their initial desire or not, the individuals who operate these spaces are often positioned as community leaders or even activists in addition to being engineers. At times these identities seemed to reinforce each other, and at other times they created great tension for the engineers and instructors sitting at the center. In particular, I argue that the adoption of initiatives and policies around professionalization both reinforces and challenges the status of community-studio engineers as advocates for the most vulnerable members of their respective communities. Throughout our conversations at Inclusive Recording, Claire spoke about her difficulty in crafting an explicitly feminist space that seeks to disrupt traditional studio power dynamics while balancing the necessity of asserting her expertise with clients (who were often her friends or first-time recording artists). For her, trying to run a more "professional" space meant possibly compromising on the values she prioritized when designing and building out Inclusive Recording as a feminist intervention. This section is therefore not only about how sound

engineers in community-studios define and envision the space, but also how their boundary-work often begins with their understanding of themselves.

In order to examine each of the aforementioned forms of boundary-work, I have culled two "sites" through which the sound engineers and instructors most clearly reflected the challenge and promise of operating a multivalent studio space: in their discursive strategies with recording artists; and in their philosophies towards recording and mixing. What follows in this chapter is a breakdown of the first of these sites, the discursive strategies, using the words and experiences of the sound engineers at Sankofa Studio and Inclusive Recording, and where applicable an all women-run community-studio in the Bay area called the Women's Audio Mission.[*] The next chapter deals with the second site, the recording and mixing philosophies of the engineers, as well as a case study on microphone use at Sankofa Studio which explores moments of dissonance for the engineers when these sites come into conflict with the community in and outside the studio. I employ the term dissonance here both because it is a metaphor that derives from musical language and because it describes a state of unresolved tension. As Hutter and Stark (2015) argue, a dissonant state often precedes a moment of new knowledge coming into being:

> This state ends in one of three ways: the dissonant sound is resolved back into the old resonant order, the dissonance persists, unrecognized, as form of noise,

[*]The names of Sankofa Studio and Inclusive Recording have been changed and the engineers and artists associated with them have been anonymized using pseudonyms.

> or the aesthetic expectations adjust to a new resolution. The new resolution may be the result of initial intentions by the producers or the outcome of a misunderstanding that has found successful interpretation—either way it becomes part of social change (p. 6).

Ultimately their argument suggests that by examining the moments of dissonance that emerge for the actors within a community-studio, one might discover key insights about community-studios more generally.[17]

Finally, although I have split these sites into two chapters, it goes without saying to anyone who has worked in a studio setting that the analytical frames of each chapter do not reflect actors' categories; none of the sound engineers with whom I engaged conceived of their work as falling neatly into one kind of work or the other. The conversations and moments they shared with recording artists greatly informed their philosophies towards recording and mixing and vice versa. Still, there were many moments in which they discussed (and I observed) fractures between the principles that shaped their work in each of these two sites. For the purposes of analysis these sites are therefore usefully conceived of as separate but interrelated aspects of studio work in order to illuminate the moments of dissonance that pervade work in a multivalent space.

Discursive Strategies at Sankofa Studio

The first site through which the community-studio sound engineers I observed

[17] See Antal, Hutter, and Stark (2015) to read more about how the concept of dissonance is being used as a way to understand creative innovations and popular culture.

reflected the contested meanings of their studio spaces was in their professional discourse with recording artists. As Porcello (2004) argues in his work on professionalization within the field of sound engineering, a close examination of the different linguistic strategies employed by engineers in situ reveals how the process of sound recording largely unfolds through talk-about-sound. Drawing on Charles Goodwin's (1994) concept of "professional vision" Porcello suggests that prospective sound engineers develop "professional audition" by learning how to speak about sound in ways that are mutually intelligible to other practitioners in the field—in this case other sound engineers and musicians. Whereas Goodwin highlights the importance of discursive practices in forming knowledge-objects in relation to expert-seeing, Porcello focuses on the centrality of similar practices in forming "relevant object[s] of auditory knowledge" (p. 734) for sound engineers and their clients in recording studios. Specifically, he argues that an engineer's (perceived) competence hinges largely on her ability to successfully maneuver between different "registers," or sets of linguistic resources used to talk about musical sound toward a shared desired outcome (p. 746).

In the context of recording sessions, these resources can involve techniques ranging from the use of vocal mimicry (wailing like a particular guitar tone) and metaphors (evoking words like "warm" or "tight" to describe a sound) to invocations of other artists and specific pieces of equipment as shorthand for

particular styles and methods of recording and mixing (Porcello, 2004, p. 743). Skilled sound engineers must be able to coproduce a shared language with clients or other engineers in a manner similar to the creation of a pidgin described by Galison (1997) in his research on the cultural history of microphysics. According to Galison, scientific collaborations often require "native speakers" to develop a shared language, a pidgin, to communicate "across specializations on delimited issues" (Galison, 1997, p. 259); similarly sound engineers must be flexible enough with their discursive repertoires to accommodate a wide range of ways of talking and thinking about sound. Further sound engineers must be able to translate this language into discrete production decisions through the conversion of vague descriptors like "warm" or "hollow" into precise manipulations of outboard analog and digital sliders and filters that correlate with the frequencies, shapes, and amplitudes of the captured sound waves. Schmidt-Horning (2013) in fact likens the recording studio to a "trading zone" in the same way that Galison (1997) has described the cross-disciplinary work undertaken in the physics lab—as spaces that both require local coordination between separate spheres (professional specializations or studio positions) to produce a mutually desirable outcome despite differences in language, systems of belief, and culture (Schmidt-Horning, 2013, p. 137).

Additionally, Porcello notes that an engineer is only as successful as her ability to be flexible with her discursive instrumentations even when working

with others who speak in the same register: "Learning a register is, technically, a matter of language acquisition…But knowing a register is not the same as possessing the ability to deploy it correctly, particularly when it comes to the social conventions that inevitably surround its use" (Porcello, 2004, pp. 739-740). Ultimately Porcello argues that a sound engineer's ability to deploy and interpret different registers of talk-about-sound competently not only ensures that she can achieve the desired outcome for her client in ways that also read as meaningful and enjoyable to a broader audience but it also reflects her proper socialization as an insider within the "discourse community" of professional sound engineers (ibid, p. 735).

Many similar insights about the relationship between work and ways of talking about work are certainly not new to the field of science and technology studies. Since the 1980s several science studies scholars have used ethnomethodological examinations of various laboratory contexts to expound on the centrality of discursive techniques in fact-creation including but not limited to Knorr-Cetina (1983) and Lynch (1982). And these ideas have been fruitfully explored and echoed in other studies that focus on the politics of recording studios (Meintjes, 2003) and music scenes (Gay, 1998). Still, there are ways in which analyses like Porcello's do not account for the complexity of community-studio contexts. Whereas he argues that demonstrations of professional audition in part serve as a way to demarcate novices from

professionals, discourse in a community-studio often deliberately eschews this insider/outsider distinction. This is not to say that in traditional commercial settings the sound engineers and their clients don't work together to shape sonic outcomes. As Porcello (2004) notes, "There is clearly a process of co-creation between linguistic resources and situated activity of [the] work" through which they eventually arrive at "the right sound" (p. 740). Even so this does not change the fact that in commercial studios the engineer acts as a translator for the purposes of molding a desired product for a client rather than as an interpreter who must also educate said clients about how the work is done. Conversely, in community-studios one of the key roles of the sound engineer is to invite so-called unskilled members of the community into her world as an active participant. An emphasis on providing explicit educational experiences thus marks a distinct discursive priority for community-studio sound engineers, whether in the context of recording and mixing sessions or in more formal classes and "skillshares."[18]

Take for example the following exchange between Dan and a local rapper, anonymized here as FG. FG had booked a private session one summer afternoon in 2013 in order to record a new song. For the negotiated rate of $5 an hour, FG

[18] Skillshare is a term to which I was introduced at Inclusive Recording that describes a particular kind of educational setting for the provision of skills like producing, recording, and podcasting to people of all technical proficiencies; I will return to the distinction between a class and skillshare later in this section on discourse.

was able to book a closed-session during which time only he, Dan, and myself were allowed inside. The two had already recorded two of FG's songs earlier in the month so when he arrived at the studio the two fell quickly into their routine: FG provides Dan with a CD that contains the file of the beat FG will be rapping over, an instrumental track that had been produced by another local artist and studio mainstay; Dan then rips the track from the CD onto his computer desktop and drags the files into a new Pro Tools session; FG hovers by the isolation booth, quietly reciting the words for the new song from the lyrics he had scrawled in a small notebook; without being prompted by Dan, FG provides him with the beats per minute of the instrumental track; Dan then inputs the beats-per-minute (BPM) data into the Pro Tools session in order to set the timing for the click track that will accompany the song as it plays through FG's headphones and keep him steady on beat while rapping; Dan then plays the beat through the studio monitors for about 10-seconds as the metronome ticks on top of it in rhythm, before stopping the track and nodding to FG; FG walks into the booth holding open his spot in his notebook with his thumb. After FG dons the headphones over one ear, Dan reroutes the signal through FG's headphones, soon asking, "Is the volume good? The beat too loud?" "Perfect," FG replies. "Okay now check the mic," Dan directs him. FG repeats the words "check" over and over again into the microphone for about 20 seconds before telling Dan, "That's good man!" After a few seconds Dan yells to the booth, "Ready?" FG responds, "Let's

go!" With that Dan clicks the red "record" button on the screen and FG begins to rap as the waveform appears linearly in black on the screen of the Pro Tools session. The beat is barely audible to Dan and me through FG's headphones as he emphatically delivers each word. Just as Dan begins to nod his head to the rhythm of FG's flow, FG flubs his words. He abruptly stops rapping with a chuckle and a quick apology. "From the top?" Dan asks, stopping the recording. FG sheepishly peeks his head out of the booth, as he says, "No just from right before where I messed up."

For the next half hour, the two recorded his first verse in this way; FG rapped a few lines, mispronounced a word, rapped too fast or too slow, or didn't recite a phrase with the emphasis that he desired, they stopped recording the track, and then Dan began recording the verse from just a few seconds before FG had messed up, using a different track. After several takes and mistakes in many of the same places, Dan (abbreviated DB) gently intervened:

1. DB: Did you get a chance to practice this, this week at all bro?
2. FG: It's been crazy, just haven't had time. Haven't had
3. DB: Do you maybe want to take a quick break and you can practice it again?
4. FG: My bad, my bad…
5. DB: No, it's all good man, it's sounding really good! You just gotta…you just really gotta come prepared. I'm all booked up today after you, so if we don't finish you might
6. FG: Yeah, my bad
7. DB: have to come next week. You know in a real studio, time is money. And I mean sure, sure we can do punch ins. I can comp it all up real fast and make it sound good, pretty seamless. But sometimes it sounds
8. FG: better
9. DB: Well I'm happy to do both. It's what makes you happy. Just with some people it sounds more natural when you just do it all the way through a

couple of times. Because your voice is changing a little when you do each take, you know? But it's really up to you!

10. FG: I know. My fault, my fault. Let's just like…punch in for now. I just ain't have time this week. I just wrote this you know?

In this exchange, Dan uses FG's errors as an opportunity to educate him about the financial and aesthetic costs of coming to a studio session unprepared. First, he warns FG that being unrehearsed in regard to his verses will result in more time spent tracking. At Sankofa Studio that meant the possibility of FG losing his place in the packed queue and having to finish recording at a later date (5); and at a "real" studio, with a much higher hourly rate, this unpreparedness could also translate into significantly greater expenses than anticipated (7). Dan therefore frames these sessions at Sankofa as a form of practice for future recording sessions, demarcating Sankofa from "real" commercial studios along monetary lines (a point to which I will return in the next section). He then lightly chides FG about how arriving to the studio unrehearsed also risks the integrity of the vocal take itself. In particular, Dan stresses how an artist's need to redo various parts of a verse relegates the sound engineer to relying on "punching in" (7), a post-production technique that allows users to surgically splice and blend together the best parts of different takes into a single take (and one that has been made considerably easier and more commonplace by digital audio workstations like Pro Tools). Even as Dan insists that he is happy to move forward in whatever way that FG desires, he shares his concerns about the effect of punching in on

how "natural" FG will ultimately sound (7). As is the case with related concepts like "authentic" and "sincere" the term "natural" can certainly imply a variety of production values in regard to mediated music (Greene, 2005, pp. 9-11). Given Dan's emphasis on the audible differences in FG's delivery from take to take, it can be inferred that "natural" in this instance refers to the continuity in cadence one expects from a performance completed in one moment. As I will expound on in Chapter 4, this form of "liveness" has become a much-desired recording aesthetic, particularly for many of the hip hop artists at Sankofa Studio seeking to reject so-called "industry standard" production and recording styles that have come to characterize the most widely circulated and commercially successful rap songs in recent years.[19] Thus wrapped up in Dan's gentle admonishment of FG regarding his lack of practice, is a reflection on the risks this may also have on FG's sonic credibility as a hip hop artist.

The provision of this kind of situational education often extended beyond recording into the mixing sessions. Mixing is a process that takes place after all vocal and instrumental tracks have been recorded (or produced in the case of

[19] Ray Fouché (2012) speaks about similar issues in terms of authenticity and the turntable, arguing that in order to demarcate insiders from outsiders in the hip hop community, black turntable aficionados root authenticity in the tactile manipulation needed to control the mechanical properties of the analog turntable. As black turntablists have pointed out, this expression of live dexterity has largely disappeared in digital turntable systems, which are widely accessible to mostly white populations without direct ties to the culture.

beats without live instrumentation).[20] Generally speaking, mixing involves balancing and blending each of the tracks together in terms of their volume and dynamics among other parameters. The tools for achieving this blended sound vary widely but in my experience the most commonly discussed elements tend to be reverb, short for the reverberation of sound waves on different surfaces, which often produces an echo-like effect (Schmidt-Horning, 2013, p. 93); equalization or EQ, the adjustment of a track's frequency response to account for things like a "weak sounding bass or to add life to a dull-sounding horn section" (ibid, p. 113); and compression, the reduction of the difference in decibels between the quietest and loudest sections of a recording (Devine, 2013, p. 164). Because most of Dan's clients were hip hop and R&B artists who were not working with live instrumentation, artists would generally provide him with a single instrumental track over which the various vocal takes were then recorded. As a result, the bulk of his mixing work involved blending together all the vocal takes from one session through the use of the aforementioned effects in addition to filters, and digital plug-ins, "specialized digital signal processing effect[s]" (Marshall, 2017, p. 196) included in the Pro Tools suite. It also involved integrating the vocal arrangements with the dynamics of the beat, from

[20] Some engineers describe mixing while they are in the process of recording (Marshall, 2017, 77); for the purposes of this paper it is helpful to think of mixing as a practice that takes place when an audio engineer has most or all of the recorded information in front of them.

interventions as simple as cutting out the beat for a moment to highlight a particular moment of the vocal performance (what's known as a "drop") to adding instrumentation to "fatten" or fill out the instrumental track.

Typically before starting on a mix, Dan invited the recording artists to sit down next to him immediately after tracking the vocals. Side-by-side, the two listened to the contents of the Pro Tools session they had just recorded on Dan's computer to discuss the mix in real-time (and potentially re-record tracks if time permitted). For Dan this level of transparency about the mixing process was one of the most unique aspects of working in a community-studio:

> It was such an unorthodox situation. You know, you don't normally go to the studio and get what I gave to you. And it was free for three years! What we would always do is mix the song when you were done with it and you would sit right next to me and you tell me exactly what you were looking for and I would give you what you were looking for. Eventually I got kind of good at it. And that was the main thing that I think really did develop the artist that was with me. They really had the opportunity to sit with somebody that could speak to the computer. If they wanted to do something, I could do that for them.

Often as he played back the track, the artists asked him to stop so that they could provide suggestions or ask questions along the way. "Will you turn me up here?" "Definitely use the second take of that verse." "Drop the beat right there!" Depending on their level of fluency with sound engineering terminology the artists used a range of what Feld calls "interpretative moves" for expressing their desired sound (Feld, 1994, as cited in Porcello, 2004, p. 746). A few attendees were knowledgeable enough to comfortably use "pure metaphors" like "wet" and "dry" to describe their desire for more or less reverb in their vocals, for

example. Because pure metaphors do not have acoustic similarities to the sound object or effect they are describing, their use reflects a more formal understanding of sound engineering than was typically the case (Porcello, 2004, p. 747). More often, the artists used techniques like singing the kinds of sounds they hoped for or lexical onomatopoeias, the use of "words that bear an acoustic resemblance to the sounds they describe" such as the word "ringing" (ibid). Most frequently recording artists would make requests in terms of specific effects or general "vibes" that they had heard in other artists—what Feld (1994) refers to as an associational interpretive move for conveying information about sound (ibid, p. 746). I will return to this point in detail in Chapter 4 but suffice it to say, the artists were deeply involved in the process of mixing their tracks. And when artists weren't sure what they wanted or what their options even were, Dan leaned into his role as an educator:

> I realized that there's a total learning curve when it comes to terminology so I'm always an educational engineer. What I would do is I would say, "This is what reverb is," and I'll increase it. And then I'll decrease it. And, I'll say what do you think? What are you looking for? And they do their best to explain. Most of the time they wouldn't actually know what certain words actually meant. And even when I taught them certain words like muddy, and even where you might find mud in the frequency spectrum, it was hard because muddy might mean something different to one person, you know, versus the other person. So if they work with someone else, it might be a different standard. You know, one engineer might think muddy is one way, it's 130 to 250 hertz but then you've got another person that's like, oh no dude. Those are issues that even experienced engineers have in their sessions with other engineers and other artists. So sometimes I felt a little funny about that.

In many regards, these mixing sessions were not unlike those that take place in more traditional commercial studios. As Dan noted, even skilled sound engineers

may not be able to come to an agreement on the frequency range that constitutes "muddiness," the unintelligibility of distinct sounds on the low-end of the frequency spectrum because of competing sound waves or low fidelity recording equipment.[21] Across the board (or perhaps more aptly, *behind* it) much of the work of sound engineering can be characterized as an exercise in what guitarist and recording innovator Les Paul called "chasing sound" (Schmidt-Horning, 2013, p. 56). Traditional commercial studio work thus requires similar kinds of conversations between the engineer and the client in order to arrive at the desired outcome (although they don't always take the form of an immediate post-recording sit-down). Still Dan's identity as an "educational engineer" creates a different relationship with artists about the information they discuss. In these conversations the transmission of knowledge and skills is just as much about improving efficiency within the session, as it is about empowering studio-goers to be able to speak about these issues beyond their time at Sankofa Studio. Rather than solely focusing on the terminology needed to successfully complete the mix in the moment, Dan expressed ambivalence about offering hard and fast rules about the meaning of terms like "muddy," given his insider knowledge about the "situatedness" (Porcello, 2004, p. 740) of professional audition.

[21] The frequency spectrum that is audible to the human ear ranges from roughly 20 hertz (cycles per second of a sound wave) to 20,000 hertz. The fewer cycles per second, the lower the frequency of the sound.

Even when Dan was authorized by the artist to handle the initial mix without their input, education remained a primary focus in subsequent conversations about the track. This was the case in the following exchange, which took place between Dan and another rapper, abbreviated here as BR, who arrived at the studio one Friday afternoon in August of 2013 to listen to and discuss the most recent mix of a track he had recorded with Dan the week prior. On this afternoon it was an open studio day, so the room was buzzing with energy and movement, as community members of various ages came in and out of the space joining and starting conversations, sitting at the computer stations to check email, browse the internet, and work on music. Others quietly rehearsed verses that they hoped to record later that day. After greeting Dan, BR pulled up a seat next to Dan and they both sat in front of the computer as Dan opened the Pro Tools session and began to play the track on the monitors. After playing the song all the way through one time, they began to discuss the track:

1. DB: Okay so I've been working on this mix
2. BR: Cool, cool. It sounds real good. Real smooth but like
3. DB: Pretty clean, right?
4. BR: Yeah. Yeah, and you know how I wanted
5. DB: The vocals are sitting just above the track, just above the
6. BR: I don't know. Like, it sounds good…I don't know. Can you turn the volume way up? My vocals?
7. DB: For sure, but don't you mean the level? Remember the correct terminology is
8. BR: Oh yeah, my bad, I forgot, I forgot. Levels, levels…
9. DB: It's all good! Remember volume isn't a unit of measurement but a level is. You know I can say bring the level up by 12 dB (decibels). See how I can slide this knob and the dB changes. That's not volume.
10. BR: That makes sense.
11. DB: Maybe you don't care but who knows? You might get into this someday.

12. [Both laugh]

In this exchange, Dan uses BR's request to boost the vocals as an opportunity to teach the rapper about proper studio terminology (9). Had the two been in a commercial setting, this exchange would not have been necessary. Dan's professional audition would not have required him to explain the intricacies of technically accurate terminology since Dan understood what was being communicated when BR asked him to turn up the volume (7). Instead Dan likely would have made the translation between volume and level himself and moved forward with the appropriate changes. As Porcello notes, drawing on Suchman: "When action is proceeding smoothly, it is 'essentially transparent'" (Suchman, 1987, p. 53, as cited in Porcello, 2004, p. 740) in a commercial studio. However because of his responsibilities as an educator in the space, Dan made visible the theories at play in professional sound engineering practice in order to create a teachable moment, even suggesting that BR might one day draw on the knowledge gained from these sessions if he decides to pursue sound engineering.

I present these studio session vignettes to illustrate the ways in which the values that frame community-studios can appear untenable with the core tenets that undergird successful commercial studios, like the high valuation of time-based productivity and the protection of proprietary knowledge. At a glance, one could conceive of the discursive practices presented thus far as exercises in instituting professionalization measures—through establishing norms with

clients around being on time and being "prepared" to record as well as providing them with tools to understand studio terminology in order to streamline the discussion during the mixing session. However a deeper understanding of the culture at Sankofa Studio as well as the history of recording studios more generally highlights the ways in which these practices are unique to spaces like Sankofa. Over the course of my time observing Dan's sessions at Sankofa Studio, he made it clear that regardless of what he wanted to see happen in the space, he prioritized the needs of the artists above all. To that end he spent several hours a week sitting and working with clients to not only achieve their desired sound but to also teach them about the ways he was achieving these outcomes. When services were not being offered for free, as they were during open studio hours on Fridays, he expressed ambivalence about charging clients: "The whole time I was at Sankofa it was people first. Community first. It was so many times I felt uncomfortable asking for more than $5 so I didn't." Those hours spent painstakingly going through each portion of the song and explaining the process to the artists could almost certainly have been more efficiently spent mixing alone and presenting the mix to the clients at a later time. On occasions when he was authorized to mix tracks without a sit-down with the client, he worked quite quickly, using keyboard shortcuts to trim and blend tracks as well as to add effects from his stable of plug-ins. He even joked that he was getting so dexterous with his fingers that he could probably mix with his eyes closed.

Beyond potentially making things trickier for himself, Dan's prioritization of education in situ flies in the face of contemporary studio logics more broadly, which are increasingly built around time-based productivity. Marshall (2017), citing the "crisis in the music industry regarding the value of musical recordings, their legitimate means of circulation, and the resources available for professional music production" (pp. 76-77) in the mid to late 1990s, argues that successful commercial studio engineers have primarily been able to set themselves apart and keep their businesses afloat based on their speed. He further notes, "As record labels tightened their belts, there was an increasing focus on maximizing the efficiency of studio time...[Engineers] frequently cite time efficiency as the most valuable skill in the studio" (Marshall, 2017, p. 77). In this regard, spending several hours a week explaining the process to a client directly challenges Dan's ability to develop this key aspect of his professionalization.

Dan's transparent mixing approach (and the transparency exhibited by the other engineers I will discuss) also positioned him against other commercial studio engineers for whom secrecy around recording techniques and practices has marked an important part of their professional livelihood since the first days of phonographic recording. As Schmidt-Horning (2013) notes the contemporary demarcation of the sound engineer's control room from the artist's recording space has only become an issue of acoustic consideration since the development of electric recording in the early 20th century, owing to the increased sensitivity

of microphones over recording horns; the inclusion of a partition that distinguished these two spaces in the mechanical recording era was in fact rooted in late 19th- and early 20th-century inventors' anxieties about the theft of unpatented proprietary information about experimental recording equipment: "Secrecy permeated early recording culture because recordists and inventors sought to protect their inventions and innovations from being copied by rivals; in such a climate, even musicians apparently could not be trusted" (ibid, p. 14). In the postwar period, particularly following the development of professional audio engineering societies, this level of secrecy appears to have subsided between engineers in competing firms; against corporate wishes, informal trading became the way of the day as engineers wrestled and experimented with the deluge of new recording tools and techniques (ibid, pp. 125, 137). In a contemporary recording context there appears to be a renewed investment in professional secrecy, with proprietary information taking the form of well-guarded techniques and tools used by sound engineers to achieve a characteristic sound. As several ethnographers of recording studios have noted, these techniques remain guarded for good reason; the development of such a sound can mean above all, cultural and therefore financial success in the highly competitive world of sound engineering and production (Marshall, 2017, pp. 131-132; Schmidt-Horning, 2013). In reflecting on the "ur-instance" of overt-vocal tuning in Cher's 1998 hit "Believe," Marshall (2017) notes that songwriter

Mark Taylor initially misled listeners to believe that the characteristic robotic warble was the effect of a vocoder pedal. Marshall suggests that this deception could have been the result of Taylor's anxiety about revealing a "trick of the trade" or it might have come from a desire to avoid the potentially embarrassing narrative of having stumbled on the effect through accidental "misuse" of Auto-tune (pp. 131-132). For the purposes of my point about secrecy, it is sufficient to note that Marshall does not present the practice of obscuring production techniques as aberrant behavior. Ethnomusicologist Karl Neuenfeldt further argues:

> The notion of there being 'secret' aspects to recording processes points out that although recording technology may be standardized worldwide (given the relatively limited number of large manufactures and formats), individual producers or engineers may still have particular ways of recording or mixing. These arise from their particular aesthetic vision, sometimes identified as a particular "sound," such as that connected to a producer (for example, Phil Spector or George Martin) or a place (for example, Nashville or Berlin) (Neuenfeldt, 2005, p. 89).

Thus in sharing their techniques and approaches so freely, as is presumably part of the responsibility of the professionals who operate these spaces, community-studio engineers must compromise what seems to be an important part of their professional identity and livelihood. This is certainly not to suggest that a few sessions with an experienced audio engineer will enable a newly minted recording artist to challenge the engineer's authority as the expert in the room. Nor that commercial engineers uphold the ideals of time-based productivity and secrecy at all times. But it does call attention to the tension between the different

identities that emerge for studio engineers in multivalent recording spaces.

Discursive Strategies at Inclusive Recording

At Inclusive Recording, Claire designed the space as a way to lean in to her excitement about being an educator and to completely eschew norms around secrecy so pervasive in sound engineering culture. In a discussion about her desire to promote what she called "the accessibility of knowledge" in her studio, she joked that sharing her process probably made her "a bad business person." All jokes aside, she framed her decision to provide transparency at every step of the way as a moral one:

> Based on my experience at the first studio where I worked, I feel like a lot of bigger studios are really not as excited about the accessibility of knowledge and I see where they're coming from. They don't want people to be recording themselves because they want people to come and pay them to do it because that keeps their business running. But you know, I just can't get behind that.

As noted in the previous chapter, Claire often conceived of her work at Inclusive Recording as a response to her prior position as an engineer at a 9000-square-foot commercial studio in Pittsburgh, complete with a mastering suite, two mixing suites, large format consoles, an extensive mic locker, and "all of the outboard gear that you could think of"—what she called "a total playground for anybody wanting to record." In this instance, she presented her commitment to providing accessible education around technical knowledge as a rejection of her former employer's prioritization of secrecy in order to remain economically

viable. She was so committed to making technical knowledge accessible that shortly after opening Inclusive Recording in 2017 she partnered with the Carnegie Library to begin holding free, publicly open workshops in the studio called skillshares. Although the term skillshare in this context is not affiliated with the company of the same name, Claire's workshops share the same basic premise around the provision of introductory tools for understanding a variety of different skills through courses led by real practitioners (I myself was solicited by the company Skillshare in 2016 to teach an online class on hip hop songwriting). Naturally, Claire's skillshares are audio-based, centering on skills around the use of digital audio workstations and podcasting. To her delight, the 10-15 person workshops have often been completely filled with women and non-binary people of various racial backgrounds and technical proficiencies. For her, using the word "skillshare" rather than class serves as a way to highlight the collaborative nature of all learning opportunities:

> I try to let people know that I'm not seeing myself as a teacher but really just a facilitator for us to have a conversation and that I'm learning in every session too. So really trying to get that out in the open at the beginning of every project or every skillshare or meeting up with an artist for the first time. I ask, who wants to know more about recording? Sometimes people will come through where we'll get coffee just to talk about that. It's another thing that I'm really not crazy about from some of the bigger spaces. Just this weird expectation that the engineers and producers are all knowing and infallible people.

Framing herself as a facilitator and her space as one that engenders the deconstruction of boundaries around technical knowledge allows her to thumb her nose at the power dynamics that had characterized her initiation into sound

engineering cultures. Like many of the engineers I interviewed and those whose experiences have been carefully documented in other studio ethnographies (Marshall, 2017; Meintjes, 2005, pp. 24-25; Schmidt-Horning, 2013), Claire received her initial in-studio training through an internship in an environment where it was best to be seen and not heard. Even as she expressed gratitude about all the things she was able to learn in that space, she lamented the fact that she had received little to no guidance as she figured out how to complete tasks like soldering microphone cables and repairing mic preamps:

> It was pretty much, if there's a problem, fix it, learn how to deal with it. If you're not sure, figure it out. I know within the first week I learned how to solder, which is great because that's come in so handy for me so many times. There were tons of times when I just did Google searches, you know, because I wasn't sure. And the engineers were so busy, so on the one hand, I was forced to learn a lot, which was good. But overall I'm not a big fan of that learning style.

At Inclusive Recording, Claire could present the possibility of a more generous transmission of technical knowledge, as well as what it might look like for underserved communities to contribute their own forms of expertise and to even redefine the bounds of what constitutes technical knowledge. Whether in a skillshare or in a recording session, Claire embodies her role as a facilitator, approaching interactions with others as conversations rather than lectures or explanations. Viewed through this lens, asking questions or expressing confusion about a concept becomes a technical contribution because it prompts an opening of the black boxes that populate the workspace of more seasoned engineers.

Reflecting on her positive experiences leading skillshares, Claire remarked: "every time I've done [a skillshare] I've learned something. Or someone has asked a question that's made me restructure the way that I'm thinking about one of my processes. I'm also getting a lot out of it." In this way the educational obligations of spaces like Inclusive Recording enable a more expansive understanding of the technical work performed even by novice recording artists in their interactions with sound engineers.

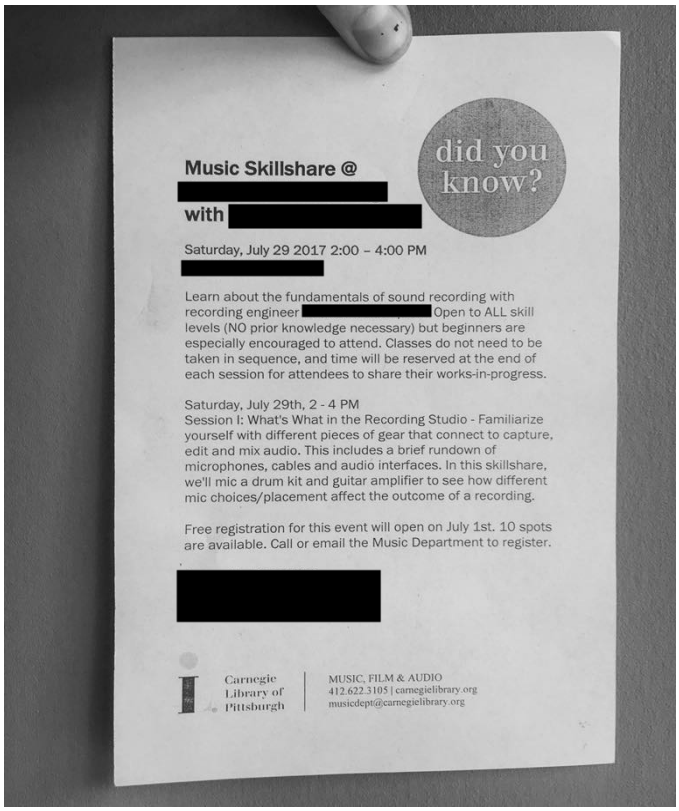


Figure 5: A copy of a flyer for a skillshare with identifying information blacked out. Courtesy of Inclusive Recording (2016).

At Sankofa, Dan was also excited about the mutual benefits of educating clients while recording and mixing them, although he was more interested in how

these experiences improved his technical viability: "I really honed my skills during that time. Every time somebody had a question, I really would have to explain what I was doing. It challenged me to get better." While this was an important consideration for Claire, her interest in creating an environment that was open to questions also appeared to be rooted in her experiences as a young woman trained in an intense, male-dominated, technical space. It is worth stating that her gendered experiences reflect only one part of her complex relationship with sound engineering (and only one angle of her position on accessibility). In conversation about gender disparities in sound work she quickly pivoted the conversation to discuss the women engineers she knew and wanted to celebrate:

> I think it was so overwhelming to me at first. I wasn't around any women in my studio. I mean even rarely any women artists. And I just didn't know any women in the field. But I feel like there's so much focus on there being "so few" women in audio…I mean clearly it's a historically male dominated field and I've definitely come across my fair share of absolute shithead, aggressive, macho men who clearly felt so threatened by having a young woman in the same space. But there's so many amazing women doing this that I've tried to redirect my focus to doing what I can to amplify their voice rather than mourning the fact that there aren't more.

Throughout our time together she expressed frustration that her status as an audio engineer was frequently qualified by her gender; she often recounted with great exasperation how many well-meaning artists couldn't help but share their excitement with her about working with "a female engineer." I had also been on the receiving end of uninspired and essentialist comments about my status as a woman producer so I could appreciate her reticence to tie any one aspect of her

approach to her experiences as a woman in sound. That said, gender matters. It is therefore difficult (and disingenuous) to disentangle Claire's gendered experience of the world from the discourse she used to discuss her work, particularly given how well her perspectives align with those of several other women who study and work with sound.[22] As Jennifer Stoever (2018) argues, the curatorial role of many black and Latinx women living in personal proximity to hip hop's male progenitors in the 1960s and 70s could fruitfully be reimagined as constituting production work, considering the centrality of their record collections in shaping the sounds of early hip hop production. And in her observations of Native American musicians in recording studios, Beverly Diamond (2005) notes the ways in which the Aboriginal women artists she observed tended to expand traditional definitions of production to include things like the selection of studio collaborators and determination of the album concept, while her male interviewees focused more narrowly on uses of technology (p. 132). Without relying on essentializing narratives about women's ways of working, it is clear that Claire's radical reimagination of expertise as a shared endeavor was shaped by her understanding of what it frequently means to be a woman in sound.

[22] In the footnotes for the introduction of *Pink Noises*, Tara Rodgers (2010) has compiled one of the most comprehensive lists of books and articles regarding women in sound as well as issues of gender, technology, and sound more generally; in particular see pp. 19-23.

Her insistence on being seen as a facilitator also has antecedents in the perspectives of other women who work with sound. In several interviews with live and studio-based engineers and their clients, ethnomusicologist and sound engineer Boden Sandstrom (2000) notes the ways in which women sound engineers are sometimes categorized (and categorize themselves) as "mediators" because they are seemingly better listeners than their male counterparts (p. 299). Such listening is not instantiated within the sort of "audile technique" (Sterne, 2003, pp. 23-24)[23] that is typically ascribed to sound engineers through shop-talk, online forums, and interviews in trade publications—namely one's powers of discernment or as Marshall (2017) puts it, their ability to "hear" or "tell" (pp. 101-117) what is or should be happening in a particular mix based on their training as "expert listeners."[24] Instead the listening practices referenced by Sandstrom and her interview subjects are inhered in the engineer's ability to be receptive to a wider array of creative potentials than what "fits." When musician Carlos Arrien speaks of women engineers often possessing a "good feel for mixing" (ibid, p. 296) because of their listening skills, he calls to mind the words

[23] Jonathan Sterne defines audile technique as "a set of practices of listening that were articulated to science, reason, and instrumentality and that encouraged the coding and rationalization of what was heard."

[24] Several sound studies works have examined the coproduction of the expert listener in relation to contemporaneous developments in scientific forms of life. To read more on the engineering of expert listening see (Cleophas & Bijsterveld, Krebs, and Rice, each from the Oxford Handbook of Sound Studies published in 2012); as well as (Perlman, 2004) and (Sterne, 2003).

of Nobel Prize winning cytogeneticist Barbara McClintock, who argued that rather than imposing an answer on her observations, a good scientist must have a "feeling for the organism" (Fox Keller, 1982, p. 599). This framing also evokes the philosophies of experimental and electronic music pioneer Pauline Oliveros regarding the practice of Deep Listening—to one's body, mind, and environment—in the process of art-making (Rodgers, 2010, pp. 18-19, 30). In each case the ability to be open to possibility, to be a facilitator of new outcomes, is heralded as a mark of true technical expertise.

As Sandstrom and her interviewees make clear (and as anyone with a rudimentary understanding of gender knows), these kinds of gendered associations cannot be applied with broad strokes. It may go without saying, but these observations do not suggest that women sound engineers possess innate listening skills by virtue of their identities as women.[25] In positing that women engineers are generally better listeners, one must be careful not to replicate culturally pervasive ways of speaking about women's experiences and proficiencies as being somehow more natural or embodied than their male counterparts through concepts like the oft-cited notion of women's "intuition" (Fox Keller, 1983, p. 133; Lerman, 2003, p. 143). Instead these gendered

[25] In Marshall (2017) one of his respondents, a woman sound engineer posit that women hear differently than men in the same way that men are said to have better focused-forward vision, while women have better peripheral vision (pp. 276-277). Still, hearing differently because of biological difference is not the same as being a better listener.

associations must be understood as socially constructed through the unique conditions that shape the perspectives of certain women in sound.[26] In reflecting on her own standpoint Sandstrom (2000) notes, "Our experiences as members of a marginalized group helped us not only to identify with the performers need to communicate their music and its meaning but also, as sound mediators, to contribute to the process to the best of our abilities" (Sandstrom, 2000, pp. 299-300). In turn these framings of the sound engineer as a "mediator" or "midwife" (ibid, p. 299) or in this case "facilitator," prioritize certain kinds of people and social relations. It is not coincidental that Claire's skillshares and sessions are populated in the ways that they are.

Beyond engendering an empowering space for novice artists, producers, and engineers to learn and participate, Claire's discursive strategy of framing her work as facilitation also served to relieve the pressure she felt in regard to her own expertise:

> One thing that I [also] realized after leaving a bigger studio is that there's this inherent hierarchy of artist to engineer. Maybe hierarchy is not the right word, but there's just this expectation. I'm the engineer, I have all the answers to your questions. I know everything. I am skilled in every aspect of every part of audio and that expectation is really stressful and scary and unrealistic because no one knows everything.

[26] I use the phrase "women in sound" to make reference to a zine of the same name started by feminist sound engineer Madeleine Campbell in fall 2015. *Women in Sound* is a quarterly zine that is "dedicated to women, queer and trans* people in live and recorded sound." Each issue features interviews with women and non-binary artists, producers, festival curators, and sound engineers among others. Issues and interview transcripts can be found at http//www.womeninsound.com.

One of the great stresses caused by her work, both as an intern and later at Inclusive Recording, was contending with supposed gaps in her knowledge given the dynamic that had structured her last studio gig and her understanding of studio culture more generally. Kelley Coyne, an engineer at the Women's Audio Mission, described dealing with a similar anxiety about certain mythologies around audio engineering work, stating:

> There's this idea that there's a magic in the recording engineer role. Where it's this mystery and magic and then as an engineer you have this anxiety that you don't have that so you have to work extra hard… every studio I've worked for, it's like the engineer's expected to do 10 hour days to account for that (K. Coyne, personal communication, October 31, 2017).

For Kelley the sense that a good engineer possesses an intangible ability to manipulate sound not only reinforced the gulf between sound engineer and artist but also contributed to a culture in which engineers felt compelled to work long hours or risk losing clients. As if to affirm that Claire's discursive instincts were correct, Kelley then cited Inclusive Recording as a perfect example of a space that rejected these notions:

> There's something really cool about [Inclusive Recording] because instead of making the process of recording this far off, esoteric thing, it's like [Claire] is saying, "Actually sound engineering is a service industry and you know, we're really just customer service" [laughs] (K. Coyne, personal communication, October 31, 2017).

In making these observations about the forces that structure relations between artists and engineers in the studio as well as the mythologies that surround sound engineering more generally, Claire and Kelley are calling attention to certain

aspects of the broader studio culture that date back to the electrification of the recording process in the 1920s. It was at that time that the skillset and profile of recordists shifted from associations with craftsmen and tinkerers to being linked with professional engineers (although the term "sound engineer" did not come into popular usage until the 1960s) (Schmidt-Horning, 2013). The increased control that was afforded to recordists through advances in the science of electroacoustics "served to raise the scientific standards of what had been a craft-based endeavor" (ibid, p. 55). Although early recordists had always possessed esoteric knowledge about the principles of capturing sound, they were now able to use tools like the condenser microphone to more fully and precisely manipulate the sound level of the track being recorded during the session, complete with the new addition of a physical separation of engineer from musician through walls and thick glass partitions (ibid, p. 36). Following the post-war period, as recording apparatuses became increasingly sophisticated, engineers who had once been primarily responsible for staging performers in situ, were now instructed by producers and driven by their own curiosity to make use of the considerable creative affordances of multitrack recording, stereophonic sound, and new signal processing effects (ibid, pp. 172-207). Like Claire and Kelley, there were certainly engineers along the way who felt ambivalent about the creative control and prestige they were now granted given the increased technological mediation involved in record production;

increasingly old school engineers began to call out the prevalence of "'because we can' syndrome" (ibid, p. 193), which referred to younger engineers' tendency to play with the endless parameters of new recording technology for the sake of experimentation or in some cases to rack up more billable hours through their clients (ibid, pp. 181-183). But there were many others for whom this status was justified given the technical and artistic innovations they contributed towards the improvement of recorded sound. There is a reason why sound engineers in the 1950s and 60s began using the metaphor of the control room as the central nervous system (Schmidt-Horning, 2013, p. 105) or as an airplane cockpit (ibid, p. 128;) to describe the increasingly complex and central controls of outboard studio equipment.[27]

According to Kealy (1979) a "customer service" model did begin to replace the craft-union mode of collaboration that had characterized post-war studio dynamics during the late 1950s into the 1960s. As innovations like tape recording became more financially accessible and emergent musical groups, primarily rock bands, found success in writing, arranging, and performing their own music, they began to exercise greater creative and financial control by opting

[27] As I detailed in the last chapter, I do not account for arrangers, A&R professionals, or producers in my analysis of shifting studio dynamics because they do not play a role in the community-studios I observed. The artists I observed either produced/wrote their own music, the engineer produced instrumental tracks for them, or they utilized instrumental tracks from other artists that they ripped or downloaded from the internet, or from producers who did not have involvement in the creative process beyond production of the beat.

to record in independent and home studios rather than the tightly controlled union-regulated studios of the major labels. The engineers who thrived in this period were those who became "more like a service worker who must please his clients" (Kealy, 1979, p. 14). But by the 1980s, just a few years after Kealy declared the emergence of the artist-mixer as the latest mode of engineering practice, commercial sound engineering had largely become aligned with the domain of white collar work through the introduction of formal educational training at two and four year institutions (in place of apprenticeships), while also emphasizing the use of digital and computer-based recording and mixing software (Porcello, 2004, pp. 735-736). This shift, in addition to recasting the priorities of the recording studio, further instantiated the white male geek, so to speak, as the prototypical audio engineer. Noting the lack of women and black audio engineers who are accounted for in the history of recorded sound, Schmidt-Horning laments, "For the first century of sound recording, the field of audio engineering and recording studios in particular comprised a profoundly white male-centered culture that reflected corporate culture at large and technical professions in particular" (Schmidt-Horning, 2013, p. 9). Thus for Claire and Kelley, reframing their work in terms of facilitation and customer service, is an active attempt to deconstruct popular expectations around how both artists and engineers should behave.

Conclusion

I'll close this chapter by reflecting on the limitations of these discursive strategies in actually engendering new ways of working in multivalent recording spaces. As I looked over the transcripts of my conversations with each of the community-studio engineers, I was reminded of Dunbar-Hester's (2014) research on techno-activists seeking to challenge the threat of mass media consolidation in the 2000s. Part of her analysis involves comparing the gap between the ways in which the low-power FM radio enthusiasts and community organizers that she profiled discussed their work and the ways that this work actually unfolded. In particular she focuses on a series of "barnraising" events through which organizers guided hundreds of local and national volunteers through workshops covering radio "programming, audio editing, interviewing, technical aspects of broadcasting and station governance" (p. 20). Among the other forms of work that took place at these events (like childcare, cooking, and cleaning), organizers highlighted the technical activities as a means through which they could engender community consciousness about the importance of public media like community radio stations (ibid, p. 23). For them the symbolic value of participating in hands-on activities like soldering, wiring, installing software, and staging broadcasting equipment was thought to have a "transformative effect on how members of a community feel ownership of the media in question" (ibid, p. 39). But despite their best efforts to create an inclusive space, the stickiness of certain aspects of

the "geek" identity associated with their work meant that their egalitarian ideals often broke down in practice. Drawing on Susan Douglas (1987) and Kristen Haring (2002), Dunbar-Hester partially locates the salience of this particular geek identity among male radio activists within the construction of a new style of masculinity in the early 20th century that prioritized technical mastery rather than brute strength and brawniness (pp. 54-55). Consequently the practices of tinkering with radio and electronics have since emerged as traditionally masculine pastimes in ways that proved challenging to untwine from the practical work of radio activism, although the activists certainly sought to repurpose the geek identity by encouraging everyone in the group to lay claim to it regardless of their skillset (pp. 67-68). As Dunbar-Hester further notes:

> The radio activists valued craft and production at the community scale. They also strongly believed in the emancipatory potential of tinkering and an implicit radical promise in teaching women to solder. But they continually grappled with iterations of masculinity and femininity that surrounded technical and nontechnical work, some of which they wished to retool or reject outright…As they focused mainly on the technical side of the work, they not only valorized the technical work, but they also devalued the work that was nontechnical and was rather more likely to be performed by women (Dunbar-Hester, 2014, pp. 66-67).

In turn, the makeup of barnraising events reflected these gendered relationships with radio and tinkering, with men overwhelmingly taking up space as the leaders and primary participants in the technical work of station building, while women were more likely to be cooking, cleaning, and doing organizational work (with some notable exceptions). And in cases where women with a high level of

technical proficiency did emerge as leaders within the group, they described feeling at odds with less virtuosic women who felt betrayed by their eschewal of traditional gender roles (ibid, p. 62) or they were described by other women with less technical know-how as embodying a combative "macho" energy that replicated the same gender norms the group was trying to escape (ibid, p. 65). Dunbar-Hester concludes this section by noting, "just because geek and gender selfhoods are 'constructed'—as opposed to innate, fixed, or immutable—this does not mean they are also not 'real' in the sense of being entrenched" (ibid p. 68).

As I will discuss in the next chapter, similar conflicts often emerged for the engineers I interviewed and observed around the expression of their selfhoods, particularly in terms of the dissonance between their anti-establishment ideals for the space and their use of the sound engineer identity as a social tool for maintaining authority and a certain level of professionalism. While they each expressed great joy in being able to educate underserved communities about how sound works (and could work for them), this excitement was often tempered by their keen recognition of the ways that their work could enable them to reproduce the power dynamics that typically govern commercial studios (and that often govern technical domains in regard to race and gender). Claire's use of the words "facilitator" and "skillshare" to frame her work are clearly attempts at reconciling some of these dynamics. But the fact remains that

the community-studio engineers sitting in front of the computer, endowed with greater knowledge than their clients about how it all works are mostly white with advanced degrees who carry their own technical and artistic preferences that are shaped by these backgrounds.

These issues were especially felt among the audio engineers who operated feminist recording spaces. As I have illustrated in this chapter, both Claire and Kelley, were particularly sensitive to power dynamics that emerge around technical expertise. They often expressed anxiety about their perceived responsibilities: should they tell an artist if they considered a take "bad?" What message did this kind of intervention send? What message did it send if they chose not to intervene? In the next chapter I will discuss how each engineer's values shape both their answers to these kinds of questions and their understanding of technical interventions more generally in community-studio spaces.

CHAPTER 3: Production Values as Boundary-Work

In the last chapter I explored the ways that community-studio sound engineers perform boundary-work through their discursive strategies. For them, operating a commercial studio that doubles as a community resource (or the reverse, depending on their priorities) more often than not means reinterpreting their traditional understandings of "professional audition" (Porcello, 2004, p. 734) to incorporate the needs of their target communities. In some instances this looks and sounds like an explicit rejection of contemporary studio ideals around efficiency and secrecy in favor of prioritizing education and inclusion. This was certainly the model used in the feminist studios I examined. At other times, the engineers' discursive boundary-work serves to reify notions of what constitutes a "real" studio, by framing the community-studio as a kind of practice space for the real thing, as was the case at Sankofa Studio. Each engineer must also strike a balance between their personal ideals about which framing will best benefit the communities they serve and their desire to produce music in ways that affirm their professional identities as skilled sound engineers. At times these imperatives conveniently overlap, but in other contexts the contrast between the two is too sharp to reconcile.

In this chapter I will focus on the engineers' production values in part to elucidate the conflicts that arise when their desires to honor their communities do not align with their production ideals. Whereas in the last chapter I explored

some of the ways that community-studio sound engineers talk about their work with their clients, here I explore the ways that these engineers talk about their work amongst themselves. In particular I focus on the kinds of questions and concerns that each sound engineer has to consider in their day-to-day personal practice: namely how should a sound engineer in a community-studio assess music that they find to be off-putting or performed "incorrectly"? And what are the ethics around intervention in a space that is targeted towards first-time recording artists as well as musicians who intentionally make music on the fringe?

These sorts of questions about proper technical interventions are not unique to sound engineers who work at a community-studio. The primary role of a recording and mixing engineer is, after all, to facilitate the inscription of sound through specialized techniques and tools and organize the presentation of these sounds for a desirable sonic outcome. As a part of this process it is necessary to ask questions about how and when it is best to intervene (if at all). Marshall (2017) has meticulously explored the ways that engineers who use vocal tuning negotiate their corrective and creative interventions in the "production" of voiced emotion. And Schmidt-Horning's (2013) history of recording studios is loaded with accounts of recordists and sound engineers expressing considerable anxiety about the pressures involved in managing their personal preferences and professional recommendations alongside the vision of the artists, producers, and music label executives who often finance their recording

ventures. In the words of one deeply frustrated sound engineer, "If it's a wonderful, successful great selling album, it's a wonderful producer. If the album dogs, and it's bad and nobody buys it, it's the engineer's fault" (Meintjes, 2005, p. 32).

Still, the stakes in intervening for community-studio engineers do differ from those of more traditional engineers in a few ways. First, community-studio engineers are almost always relating directly to an artist instead of the constellation of music industry figures that can literally and figuratively accompany a commercial recording artist into a studio space. More to the point, the stakes differ because the nature of concerns around intervention in commercial recording spaces is fundamentally about achieving successful production outcomes.[28] Or in the words of one particularly expeditious engineer regarding a good mix, "Who cares how it happened? Just do it" (Marshall, 2017, p. 78). In community-studios, the engineer must think about their interventions both in terms of what is produced as well as the environment that is coproduced by the recording and mixing process. In these cases the studio is itself an intervention for a host of social issues; when community-studio engineers fully take the reins with certain production decisions, they can risk both mucking up

[28] Obviously the term "successful" is a subjective one. For the purposes of my argument I conceive of a successful sonic outcome as the end-production of a song or project that the artist and their associated team (management, producer, etc.) feel confident about sharing publicly.

the mix and also violating the trust of their community. Even in so-called safe spaces like Sankofa Studio and Inclusive Recording, such violations can easily be tied to the music industry's history of exploiting artists from similar kinds of marginalized communities. As this chapter will illustrate, community-studio engineers must therefore spend considerable time examining the technical interventions that would likely be interpreted as a normal part of their work in a different recording context.

In that regard this chapter also explores how the interventions that each engineer makes to achieve a particular sonic outcome are loaded with politics and cultural legacies that extend beyond what their intentions may be. When Mara Mills (2012) rhetorically asks whether signals have politics in her work on the cochlear implant and the electroacoustic signals that have shaped its use, she invites readers to think about how a technological intervention, especially one that seems largely imperceptible to able-bodied observers, carries the ghosts of particular human wants, needs, and judgments.[29] Further, as Jonathan Sterne (2003) argues, it has historically been easy in studies of sound to naturalize and therefore depoliticize its largely unseen objects of study (pp. 14-15). Thus in this chapter I want to move beyond the ways that the engineers talk to me and their clients about their interventions in order to highlight the politics that guide their

[29] The title and subject of Mills' article, "Do Signals Have Politics?" is a nod to Langdon Winner's (1980) article, "Do Artifacts Have Politics?", which I discuss in the introduction.

fingers along faders and knobs to (re)produce values that we may not always be primed to hear.

What follows is an empirical examination of the production values of the community-studio engineers I observed, punctuated by a brief illustration of how one engineer's desire to frame his studio as a professional space has meant publicly forgoing his philosophies regarding the relative importance of high-end gear in achieving ideal outcomes.

Production Values at Sankofa Studio

When I speak of production values, I am referring to the philosophies that guide the engineers' artistic and technical choices with regard to the process of recording and mixing music for community members. Although sound engineers in both commercial and community-studios certainly utilize "industry standard" techniques and tools, like the nearly ubiquitous DAW (digital audio workstation) Pro Tools, every engineer I interviewed (and with whom I have worked) has been adamant that there are very few formal rules that guide their work. Instead of Pro Tools, the engineer who recorded my latest two albums uses Cakewalk Sonar exclusively as his choice of recording and mixing DAW. Whether working in a large or an independently owned studio, each engineer decides for themselves how they will intervene in different sonic issues as they emerge. In fact the most successful sound engineers have arguably made a name for

themselves and their "sound" precisely by ignoring and challenging the conventions of their contemporaries (Greene, 2005, p. 3).

Absent many standardized rules and techniques, skilled sound engineers must rely in part on their professional audition, as informed by their technical training and aesthetic preferences, in order to arrive at the desired sound of their client (artist, producer, or record label). Of course because studios do not exist in a bubble, these values are also informed by the global and local contexts in which the studios exist (Meintjes, 2003; Porcello & Greene, 2005). Every decision on the part of the engineer must therefore largely be understood in terms of the social dynamics and broader cultural histories that shape the lives and listening experiences of the engineers, producers, and artists who work in the space. Because community-studio programs are framed as interventions for a number of social ills that stem from wealth and educational inequalities, several key factors like race, class, and gender loom large in the approaches of the sound engineers in charge. In terms of their production and recording values, this has meant that the community-studio engineers I observed were frequently forced to make technical decisions that could place their aesthetic ideals and their social ideals at odds.

Take for example an early intervention that was made at Sankofa Studio to account for the noise level of people in the background during recording sessions. Particularly on "open studio" days it could be challenging for

prospective recording artists to find a quiet moment or space to record. Depending on the time of the week and day in which you entered the studio, it could be in use by just one or two people or it could be occupied by 10 to 15 community members, varying in ages and volume. In order to account for the consistent background noise, Annie, the program manager (and sole audio engineer) of the studio from 2008-2011, began experimenting with different effects until landing on the technique of gating:

> The studio would be pretty loud sometimes! It could get really hard to focus and hear what you were working on. But I didn't want to shut people up; we didn't want to shut people up. So one of the things we learned early on in Pro Tools, because they're all doing vocal stuff, was how to put a gate on so that you could sort of cut out the rest of the room noise.

A noise gate is an electronic device or a software effect found in a digital audio workstation like Pro Tools that reduces the volume of audio signals that fall below a certain threshold. The threshold level of the gate is typically set just above the volume of background noises or sounds like humming and hissing that can be caused by distortion. Thus the gate "opens" when the volume of the signal rises above the threshold level and "closes" for noises that fall below that point. What this also often means is that in the process of limiting excess noises, other intended vocal sounds can wind up on the chopping block, as is often the case with the pronunciation of sibilants (like s or sh) and certain plosive sounds (like p and t), particularly if . Much of the background noise took the form of people's conversations, which greatly complicated Annie's ability to neatly use the gate to

delineate the artist's performance particularly given her rudimentary knowledge of sound engineering. But even with the possible loss in intelligibility for the artists, it was much more important for her to preserve the safe space that Sankofa had come to be for so many community members. Rather than silence those community members, she therefore used the software to maneuver around the potential limitations of the work environment.

For Dan this kind of concession regarding the clarity of the vocal takes was unthinkable. Although he did not critique Annie's approach specifically, he stressed that the studio should be silent at all times when artists were recording, regardless of how many people were in the room. Whenever somebody entered the recording booth he either kindly shushed the others in the room, or let the recording artist do the honors. After being part of enough recording sessions, frequent attendees knew to be quiet whenever an artist entered the booth for recording. For Dan, it was important that he produce "professional sounding mixes" for his clients and it would be impossible to achieve that with people talking in the room and being disruptive. When I pressed him on what he meant by "professional," Dan responded:

> You know, clean mixes. Something that you might hear on the radio, you know? Just something that doesn't sound like it was recorded in somebody's bedroom. I just want people to feel good when they play it back! Proud of what we could do here.

In Dan's mind, crafting an auditory facsimile of the conditions that produce

songs "you might hear on the radio" was important for the morale and sense of pride experienced by the artists regarding what was possible at Sankofa. Furthermore for Dan the sound of "the radio" served as a stand-in for globally circulated, hi-fidelity music; he was not, for example, expressing any desire to sound like the eclectic and often lo-fi music played by the "hippie" and experimental DJs volunteering at the city's community radio station. For Dan, "the radio" referred to an aesthetic in which the songs carried no unique audible traces of the places in which they were recorded. Whereas Annie prioritized the experience of building community at Sankofa, which could be preserved through the intervention of techniques like noise gating, Dan believed that the prioritization of a clean mix allowed for the artist to gain entry into a broader global community of professional artists.

Taken to one extreme, the first example with Annie could be seen as extending a Western musical tradition that systematically undervalues the "modes of listening" (Douglas, 2004, p. 7) that coproduce black forms of sociotechnical knowledge. Whereas Douglas (2004) introduces the term "modes of listening" specifically to refer to the range of listening practices that radio cultivated across different communities and eras in the US (such as the exploratory listening practice of DXing, first taken up by early 20th-century ham radio hobbyists), here I use it to refer to particular listening practices that coproduce a given racial formation in relation to the cultural histories of its

members as well as their access to and engagement with sonic technologies. In this case, Annie's decision to risk the sonic integrity of the mix could be seen as reflecting a worldview in which black musicians and listeners, and by extension their modes of listening, are rendered too unsophisticated to warrant expending the time and energy to cut a clean or audible record (Kealy, 1979, p. 13). Throughout *Black Noise*, Tricia Rose's seminal work on the auditory context that has shaped and emerged from US hip hop cultures, she highlights the racism laden in the assumptions of scholars and practitioners of Western musical styles who position black forms of musicking as fundamentally unmusical and unsophisticated (Rose, 1994). Louise Meintjes reveals the international character of such racist notions through her revelation of the ways that white sound engineers working in post-Apartheid South African studios discussed the black African artists they were recording, noting:

> Their disparaging criticism of the quality of the music were sometimes underwritten by pejorative assumptions about the people who composed, performed, and enjoyed it: lo-tech production was adequate for low quality music making for listeners and performers who wouldn't know the difference (Meintjes, 2005, p. 40).

The idea that employing a technique with the potential to muddle the intelligibility of the artists would be appropriate for Sankofa could thus be seen as part of a similar ideology that holds poor black and brown artists to lower

standards in the art that they produce and consume.[30]

Conversely, Dan's perception that Sankofa needed to be transformed into a kind of sonic "non place" (Augé, 1995, in Théberge, 2004, p. 772) could also be seen as reflecting harmful implications about the purpose of the space. Paired with his constant positioning of Sankofa as a sort of "practice" studio for the real thing, one could certainly see how its inhabitants might begin to question his assessment of the music they were recording there. After all, if they weren't working in a real recording space, could they consider themselves real artists? Further, his conflation of "radio music" with the sound of a desirable mix reflected his potential to adopt unimaginative and mass produced mixing approaches to be applied to the (mostly) rap music he recorded. I recall a conversation with Dan in which he remarked that while he had initially despised rap music, he now enjoyed it because he knew how to "mix it properly." When I asked what he meant by this he responded that he knew how to utilize pitch-correction software like auto-tune in the "extreme" way that rappers like it to be used. As Auto-tune aficionados like T-pain have argued, these kinds of overt uses of vocal tuning software often require sophisticated understandings of technology and musicality (Marshall, 2017, pp. 118-126); further they offer

[30] For further discussions of black modes of listening in relation to the technologies of sound (re)production, see (Rose, 1994, Chapter 3); (Douglas, 2004, Chapter 3 & 4); (Stoever, 2016); as well as (Fouché, 2006a & 2012).

important insights and critiques of the broader musical landscape and society that they coproduce (ibid, 118-138). But to Dan, this kind of "extreme" pitch correction was simply a default setting to be engineered into on any rap song in order to make it fall in line with the majority of popular rap songs on the radio. Although I did not observe Dan liberally applying overt auto-tune to all or even most of the songs that he mixed, his comments do reflect his receptivity to the notion that rap music is most usefully conceived as a mass-produced commodity.

Along a similar vein, Dan lamented that while he personally couldn't stand the "over-compression" of contemporary music, he found himself ascribing to these aesthetic standards in order to produce "professional-sounding" mixes:

> I really didn't want to at first [laughs]. Over-the-top compression is killing music today. But now I'm kind of over on the dark-side, you know making stuff sound good for radio. I've got my compressors and I'm just going nuts with the in-the-box plug-ins. You know because everybody's rapping and they already have their beats, I'm basically just recording the voice. So I focus on mixing the voice and I have to figure out how to make a voice sound huge. It's made me dive into the plug-in world that I wasn't really into in college. And now I use all this stuff to make the voice sound like a metal song alone.

In revealing his reticence to go over to the "dark-side," Dan was tapping into the heart of the so-called "loudness war," a set of scholarly and popular debates waged over the past decade or so about the use of dynamic range compression in the mixing and mastering of contemporary pop[31] music (Devine, 2013). The

[31] I use the term "pop" to refer less to a particular genre and more to music from the most visible and commercially successful artists in the music industry. Rap, which has recently overtaken rock as the most widely consumed form of music according to Nielsen, certainly fits within this category (Ryan, 2018).

practice of dynamic range compression allows mixing and mastering engineers to lessen the difference in volume between the loudest and quietest parts of a song.[32] Because this technique involves raising the level of quieter sounds to meet the level of the loudest ones, it can have the effect of raising the average volume of the song (ibid, p. 163). Over time popular music has increasingly utilized dynamic range compression, which has resulted in overall louder music than popular songs from even 20 years ago. For some listeners, "over-compression" comes at the expense of a song's finer details because the process involves squishing down the peaks and valleys of the recording to make them sit at around the same place as the song's average level (ibid, pp. 164-165). For others this kind of compression offers a perfect solution for the distracted and noisy ways in which people listen to music today. To a certain contingent of producers and engineers, dynamic range compression is a necessary part of engineering music that is sonically competitive and therefore commercially viable. Because Dan's nascent understanding of successful rap music was limited to what he heard "on the radio" and saw on TV—its most commercialized representation—he was certain that mixing rap music required the kind of compression and sonic gloss found in most contemporary pop music. He had no exposure to the intentionally

[32] See Devine (2013) for a detailed breakdown of the relevant social groups in the conversation about compression and the social history of "loudness" more generally. Devine argues that the contemporary debate over dynamic range compression represents just one strand of a history full of other battles for and against "loudness".

"lo-fi" sonic stylings of experimental rappers and producers like the iconoclastic, underground super-group Madvillain, for example (Winkie, 2018). Instead Dan looked to artists like Drake, a globally dominant pop, R&B, and rap crossover artist (Burke, 2018), whose primary producer, Noah "40" Shebib, he cited as one of his biggest inspirations in learning how to mix rap music (Charity, 2018). So for all of Dan's genuine excitement about engaging with hip hop, ultimately his one-size-fits-all understanding of rap music mixes, made me worry about all that was being lost. In particular his comments reminded me of my own experiences working with sound engineers who had tried to steer my sound towards greater commercial viability; one engineer was emphatic that I let him use vocal tuning to "correct" my voice on a chorus that I didn't think required it. I regretted that decision immediately and now find the song he mixed to be unlistenable; another engineer suggested that I alter my natural rap cadence to emulate one of rap's most commercially successful women artists, Nicki Minaj. Thankfully I did not listen to him.

Dan's comments about applying standard pop mixing approaches also call to mind (and lend some truth to) the complaints catalogued by Théberge (1997) from artists and popular music publications in the 1970s and 80s about the growing homogeneity of sounds in popular music (p. 1). These anxieties have become so pronounced in recent years that a contingent of music scholars, data analysts, and scientists have even attempted to quantify and measure

homogeneity among songs on the pop music charts over the past 30 years. According to a 2018 report from *The Pudding*, a digital publication that breaks down complex ideas in popular culture through data visualization and independent research, as well as an article published in *Nature* (Serrá et al., 2012), Western pop music has in fact become increasingly homogenized since the 1980s as measured by variations in chord progressions and timbral properties among other factors. In particular the report from *The Pudding*, entitled "The Musical Diversity of Pop Songs," posits that although the most popular songs of a given era always share similarities and reflect trends, there has been a distinct convergence in contemporary pop music owing to a decrease in the number of record producers helming the production of a greater number of hits. Music writer John Seabrook (2015) has also pointed to the rise of the highly fungible and specialized production chain involved in modern pop music-making, which he refers to as the "track-and-hook" method of songwriting. As it relates to the processes that characterize this method, the report claims:

> What separates track-and-hook from its predecessors is how the music is made. The storied, solitary figure working out musical problems at a piano while filling up an ashtray has been replaced by teams of digital production specialists and subspecialists, each assigned to a snare track, a bass track, and so on, mixed and matched and stuck together like Legos (The Musical Diversity of Pop Songs, 2018).

Consequently, songwriting teams end up drawing on the same specialists to produce the component parts of each song. The report further argues:

> From 2010-2014, the top ten producers (by number of hits) wrote about 40% of songs that achieved #1 - #5 ranking on the Billboard Hot 100. In the late-80s, the top ten producers were credited with half as many hits, about 19% (The Musical Diversity of Pop Songs, 2018).

In the notes at the end of the report, the authors make clear that these kinds of claims have been disputed by other groups of researchers (Leroi et al., 2015) who argue that there is no evidence of homogenization of music in the popular music charts. Still, if the former studies are to be given any sway, they suggest that as rap music becomes modern pop music, rappers must become vigilant with music producers and industry professionals about being given the space to create idiosyncratic, strange, and sometimes dissonant art. In the context of Sankofa that means artists should at the very least be made aware of what may sonically be at stake for their music mixes when the engineer running the space considers commercial viability to be the music's primary value.

I do not present these examples as an evaluation or an indictment of Annie and Dan's different philosophies towards dealing with background noise or mixing a track. Nor do I present these interpretations of their actions as reflections of their own perspectives about the artists whom they recorded at Sankofa. In conversation with Annie and Dan as well as with their colleagues, it was immediately evident how much they cared about and respected the residents in the neighborhood and further that their intentions as sound engineers were guided directly by their desire to serve them well. Despite Dan's apparent reliance

on standardized approaches towards engineering rap music, I witnessed how hard he worked to perfect each and every mix he completed. Instead, I present these two cases as examples of the ways in which the status of a studio as both a community safe space and as a commercial recording space can generate vastly different interventions for similar sonic challenges depending on the engineer's understanding of their social responsibility. In turn each of these solutions carries with it broader social histories of the communities being served. Although Annie and Dan employed different interventions for the "problem" of studio noise, both scenarios emerge from modernist ideas about what constitutes noise as well as the construction of noise as a problem space that should be addressed through scientific modes of measurement and regulation (Cleophas & Bijsterveld, 2012; Thompson, 2002). These scenarios also evoke racist historical narratives that frame black performers as undeserving of high standards or unique approaches around their music production, recording, and mixing. Even with Annie and Dan's understanding of the historical racial disparities that justify the importance of a space like Sankofa, the implications of this history proved difficult to disentangle from either of their approaches.

Production Values at Inclusive Recording

At Inclusive Recording Claire framed her recording and mixing philosophy largely in terms of her social responsibility to the artists, many of whom were

entering into a recording space for the first time. As with her discursive strategies towards clients, she viewed mixing as an exchange through which she had just as much opportunity to learn as the artists with whom she worked. Part of that process also meant setting up ethical boundaries around how she approached a mix, given her position of power. This was very much the case in the following episodes, taken from one of Claire's mixing sessions for a four-person fuzz-pop band that she had been recording for the past year. She had already had one sit down with the band the day prior to discuss their latest 10-track album, which she was recording and mixing in its entirety. At the sit-down they listened to all of the recordings they had tracked together in the studio, during which time she took notes and they all made suggestions. This particular morning she was in the process of listening to the rough recordings of each song on Pro Tools and tidying up the notes they had written, in preparation for the band to come in and potentially record (and re-record) sections that afternoon. As she played each of the songs on the studio monitors she grew frustrated by the layers of distorted sound. Eventually she stopped the session, pointing at the various tracks on the screen, and then she turned to me and said:

> Their songs have so many synths! So many guitars! And the bass is almost like a guitar. So we were listening to this yesterday and B. was like what if we added this guitar here, and I could do a guitar lead on here and I could do a guitar lead on here. I was thinking, "To be honest, I think it would be more powerful to take things away and then maybe add things in places." I don't think they were hearing it. The bass guitar is so fuzzy that it almost sounds like a guitar. So to then have guitar tracks on top of that it's like, hm let's figure this out. I sometimes mute the extra tracks and it sound so much better! But I would

> absolutely never take it upon myself to be like, "Oh so I cut this part of the guitar." I know some engineers do stuff like that but I'm not gonna cross that line. So by sending them a copy of the notes we all took, like discussion notes, my hope is that they'll see that sometimes less is more.

Later on that morning as she played back another session from the same band she again expressed her frustration, this time regarding tracks in which the synth had been run through a fuzz pedal on the first and an echo pedal on the second. This produced a recording of the same riff on two separate tracks, with slightly different tones and levels of distortion between them. To illustrate the tonal redundancies between the two, she muted all of the other tracks in the session and played both synth tracks together. As the two synth tracks played she began muting and unmuting one of the synths to illustrate the minor differences between the two recordings. Turning to me a second time, she said:

> You hear? These are two different synths that both sound cool but when you have that and guitar it's like, this is a *lot!* [The band] want[s] all of it but you can't even tell that both synths are in here. Like I could take it away and they probably wouldn't even know. When there's that much stuff, I have to figure out what's actually playing what. Wait which synth is doing what right now? What's going on? What am I even mixing? Because I know I recorded all this but there is so much mid-range happening right now!

In both instances Claire's formal training and hands-on knowledge informed her instincts about the problems with each track, from the chaos caused by the multitude of distorted tracks to the redundancies of the synth tracks. For her the solution was relatively straight forward: eliminate some of the competing mid-range frequencies caused by the layers of guitars and synths, as well strategically cut and layer the tracks themselves in order to create more dynamism and clarity.

However she was greatly concerned about receiving pushback from the band ("I don't think they were hearing it"), particularly from the guitarist who was ever eager to add more guitar riffs and layers. Yet even as she alluded to the fact that it would be possible for her to delete and restructure a few tracks in the final mix to her liking, she contended that she could not "cross that line" because of the ethical implications of removing recorded material without the band's consent. Although making that kind of creative call certainly fell within the bounds of the liberties that commercial engineers are often allowed to take (Meintjes, 2003, pp. 88-89; Schmidt-Horning, 2013, pp. 187, 190), the norms that Claire had established at Inclusive Recording around transparency took center stage. She risked calling her studio's ideals into question by violating the implicit trust of her clients.[33]

In certain regards Claire's mixing philosophy did not visibly differ from the practices of more traditional sound engineers. For her, as with many of the other engineers I interviewed and with whom I've recorded, as well as those who appear in ethnographies of recording studios (Porcello, 2004; Marshall, 2017; Meintjes, 2003; Schmidt-Horning, 2004, 2013) mixing is primarily an exercise in

[33] Later in the recording session she did end up "crossing that line" and muting the echo pedal synth without speaking to the band. Ultimately she decided that they would not be able to notice the difference and that she could always bring it back if necessary (since she muted the recording and did not delete it). Even though she ended up changing her stance, it was still notable that she brought up this concern in the first place if only to highlight the kinds of ethical issues that emerge in a community-studio.

purposefully pulling back and spatializing the layers of tracks (through techniques like panning and adding reverb) in order to highlight certain elements that are already present, rather than stacking layers and layers of sound to build the presence and volume of certain instruments and vocal structures. Part of the engineering process thus requires convincing novice and seasoned recording artists that sometimes giving a section more prominence simply requires toning down the other surrounding elements. Later in our conversation Claire noted:

> I've noticed there's some bands that say, "I want my stuff loud!" And then [they] don't understand that instead of boosting the level of everything, pull back on something and then create more space for another level. And then you don't have this blown out signal. Something else can be louder by something else stepping back a bit.

Generally speaking the commercial engineers I interviewed straightforwardly framed these kinds of "subtractive" approaches in terms of aesthetic preferences and technical understandings of how spatialized sound best functions. In regard to using a subtractive approach for equalization, Alejandro "Sosa" Tello, Jr., the sound engineer with whom I've collaborated for my two most recent albums and one who boasts over 20 years of recording experience, argues, "Subtractive EQing makes for a cleaner track because it's just easier to take away than to add. If you understand how sound works, you get it. It's that simple." Yet for Claire, she presented her beliefs around subtractive EQing using the anti-establishment language so much a part of community-studio discourses. Take for example, her perspective on the use of vocal tuning software. Auto-

tune[34], as vocal tuning software is most commonly known, emerged in the 1990s and has since become ubiquitous throughout music production processes both in its "intended" use as a largely undetectable corrective tool and in its overt form as an instrument in itself (Marshall, 2017). In recent years, auto-tuning practices have become something of a lightning rod for a broad array of conversations around authorship, authenticity, race, and gender. Depending on one's standpoint, the use of vocal tuning represents either the death knell for "real" vocalists and performances, an opportunity to reimagine what musicality and talent sound like, or everything in between (ibid). Yet even as Claire expressed an appreciation for the heavily auto-tuned rap-crooner Future, when I asked for her thoughts on using auto-tune for her clients, she simply shared that the technology was expensive, it was not something that she utilized in her studio, and that people who wanted to record music that utilized pitch correction should go elsewhere.

At first I was struck by this admission on her part. Surely the position that vocal tuning was not welcomed at Inclusive Recording was unsuitable for a site that billed itself as open to all kinds of performers, particularly given the close

[34] Marshall (2017) makes the distinction between "Big-A" Auto-Tune to refer to the brand name of the most well-known pitch correction software, and "little-a" auto-tune to refer to the wide range of pitch correction software and hardware that have been designed contemporaneously as well as earlier instantiations of digital tuning practices and technologies such as the vocoder. Here I use the term auto-tune as shorthand for pitch-correction.

relationship between audible vocal manipulation and contemporary hip hop and pop musicking. As many scholars of contemporary music have noted, black and women artists disproportionately make up the groups of users outside recording and software engineering proper who have "reinscribed" auto-tune as a new musical instrument (Marshall, 2017, p. 8). The recording artists at Sankofa Studio, most of whom were young black men, overwhelmingly thought of themselves as rappers; and although many of them did not desire to use auto-tune in this way, its relationship with contemporary rap music is undeniable. Dan once remarked that he did not arrive at Sankofa with an appreciation for popular rap production styles, but he immediately realized that he had to educate himself on tools like auto-tune in order to be ready to serve the majority of his clientele.

Claire soon clarified that she did not have the skillset to artfully engineer auto-tune overtly as a form of vocal instrumentation. But even in regard to the largely imperceptible use of auto-tune to pitch-correct, a skill she did actually learn while working at the last studio, she maintained that it was not something she was interested in bringing to Inclusive Recording:

> I mean, I'll comp together a bunch of different takes…That's totally cool. But not the digital tuning of vocals. And the software to do it is really expensive. And it's so time consuming to actually do it right…It's just not a priority. I really hope that we could just have performances that we're comfortable with.

Given her financial constraints (Auto-tune Pro is running at $399 at the time I am writing this chapter) and the limitations of her time as the only engineer in

the space, her stated reasons for not investing in vocal-tuning software certainly made sense. Although Auto-tune has been marketed as a time-saving tool (it's tagline is "It's About Time") because it ostensibly cuts the time that an artist would've been required to record multiple takes, Claire did not see it that way. In the vein of historians of other "labor-saving technologies" (Kline, 1997; Schwartz-Cowan, 1985), Claire's comments suggest that despite the putative time-saving benefits of pitch-correction software, the expectations around its use require just as much or more time on the part of the engineer to "get it right." In this case the ubiquity of auto-tuned performances can be understood as having engineered a new cultural expectation for listeners, artists, and engineers around the importance of being "on-key," one that ends up requiring diligence on the part of engineers to utilize vocal tuning and make it sound natural.

As Claire talked about her production philosophy more generally, it became clear that her rejection of auto-tune was also a statement about what she and others have called the "fetishization" of gear among both amateurs and experts. In regard to the recording studio, Meintjes discusses fetishization at length (Meintjes, 2003, pp. 71-108) to highlight how the "enchanting" and elusive worlds of science and sound when brought together by studio gear, enable the construction of the studio space as a magical one, as fetish itself: "This interior world—the extensive and ephemeral residing in the complex and mathematical, yet presented as the small, intact, and simple—imbues the technology with an

affecting presence" (ibid, p. 89). In an article for the online publication Pink Noise Mag, sound engineer Allen Farmelo (2014) discusses gear fetishization in terms of the male gaze and the sexualized ways that consumers of high-end recording gear talk about the tools that they own and use. And although Waksman (2000) does not use the term "fetishization" in his history of the electric guitar, his coinage of the term "technophallus" to describe its symbolic meanings certainly resonates with positions like Farmelo's. The same can be said about Perlman's work on audiophiles and their deification of listeners with so-called "golden ears" (Perlman, 2004).[35]

For Claire, gear fetishization is especially characterized by the desire to possess specialized high-end gear for the sake of posturing in online forums and social media spaces. In her eyes, the possession of these tools is often less about trying to improve the quality of a particular mix and more about being able to participate in what she called a "pissing contest" in online forums like those hosted on gearslutz.com and soundonsound.com. In regard to the ways her studio was a response to the dominant culture around studio gear, she commented:

> You know, it was such an adjustment stepping back and being so stripped down from the first studio where I worked…I mean I have invested a lot of money in the gear that I have and I really love it and it is high quality, good

[35] See also Jonathan Sterne's work on the MP3, which highlights debates about the limits of listening and human perception (Sterne, 2012); or Trevor Pinch and David Reinecke's work on technonostalgia and the value placed on older (and potentially expensive) gear that doesn't always make sense in terms of the environments of their use (Pinch & Reinecke, 2009).

> sounding gear, but one thing that I'm really so grateful for is that I think stepping back from having all the gear in the world at my fingertips is that I am now so much more focused on the human element and the humans recording and the humans performing this work than the gear that's recording it. I feel like this huge shift has happened for me where I'm just paying so much more attention to the people versus the gear. It's made me a better engineer. It's part of the culture, being so focused and competitive about gear. And it doesn't help that there's so much marketing from these audio dealers and from these audio companies that really make you feel like you do need to have that gear. So I'm happy to be outside that bubble to a certain extent.

The financial constraints of outfitting a studio by herself had allowed Claire to recognize how focusing on expensive studio technologies could be damaging to the recording and mixing experience she wants to create. In that regard, her remarks actually align quite well with the perspectives of prominent commercial recording and mixing engineers regarding audiotechnophilia, the love of audio gear and technologically driven sounds (Schmidt-Horning, 2013, p. 220). For such commercial engineers, audiophiles are simply amateurs with unrealistic expectations who make dishonest claims about what sonic technologies can and should do (Perlman, 2004). According to Eric Sarafin, a mix engineer and author of the widely read Mixerman Chronicles:

> You can't possibly be an audiophile AND a mixer. The whole thinking process of an audiophile rejects compromise…Mixing actually precludes that sort of thinking. There is way too much gear involved in a mix to avoid a compromise (Slipperman, 2010, in Marshall, 2017, p. 288).

But for Claire, these issues of gear fetishization so prominent among audiophiles were also a problem in professional studio cultures. And even though software like auto-tune might not carry the kind of "authenticity" and therefore premium placed on analog gear (Fouché, 2012), Claire saw the fetishization of

gear and cultural reliance on auto-tune as two sides of the same coin—one that centered on the tools of recording and production at the expense of the more "human" aspects of recording. After logging countless hours splicing together bits and pieces of different vocal and instrumental takes and utilizing pitch-correction software to account for flat or sharp vocal notes in her former role as an engineer at a larger commercial studio, she now shaped her approach at Inclusive Recording around being as unobtrusive as possible.

Claire's ideals concerning the proper role of the engineer also shaped her approaches to EQing. Equalizers are signal processing devices designed and first used in the 1940s and 1950s during the mastering process, the final editing stage through which a record is prepared for mass distribution and standardization across different playback systems. At that time engineers used equalizers primarily in the final mix to boost frequencies that had been compromised or lost in the mixing process. Equalizers were only used sparingly during the recording process as "corrective devices" when engineers encountered serious issues with miking or other problems with capturing a recording's full signal (Schmidt-Horning, 2013, pp. 113-114). Since then, EQing has become an integral part of the mixing process, allowing engineers to shape the specific details regarding the "height" and "width" of the frequencies they would like to manipulate. Describing her EQing approach as subtractive Claire remarked:

> When I EQ things, I mean this is just how I do it, but I way more often do

> subtractive EQ, pulling frequencies out rather than boosting something else. And I mean, I definitely will add things in certain places but…So, I'm not taking away from the bass necessarily but it's just interacting with the kick in a way that the space opens up so I don't have to boost something or take something away permanently.

Whether she was recording a soft-spoken experimental vocalist or a loud fuzz-pop band, Claire wanted to create as much sonic space as possible. To her, it was important to let the sounds "naturally" play with each other rather than engineering a relationship through the use of too many filters and other effects. While subtractive EQing is certainly not an approach that Claire developed, she framed its use in terms of her experiences operating a feminist recording space. Again, she invoked her former employer as a way to perform boundary-work around her the function of her studio:

> In the last studio I didn't really have to think as much about every aspect of recording and mixing. But now I have fewer resources, so I started to ask these questions…What can the tracks do? How can they be self-sufficient in a way? I'm always going to be mixing stuff and always going to be adding effects, and inserts and plug-ins. But, yeah, I want to do enough just with the audio itself. So I can do less and less digital processing. I spent a little while in a studio in France with Steve Albini. And every single album he's ever recorded has been to tape. He's *never* done a digital recording session. And he was just discussing that so many people, myself included, will just throw plug-ins on or pull this out and pull this out and pull this out. But it's like, these things affect each other. I just want to be intentional with everything I do here.

Drawing on the expertise of acclaimed engineer/producer Steve Albini, Claire now prioritized being as mindful as possible with respect to the tools she used and in regard to the (mostly digital) sonic space within which she worked. As it relates to EQing, this meant being more thoughtful about not only how she could strategically pull back certain tracks as a way to "boost" others but also the

kinds of equalization techniques she utilizes:

> If I'm EQing something, I'm trying more and more to use simulations of older EQs, rather than this [*she opens an EQ model on Pro Tools that displays the EQ spectrum visually*], which is so much more just like, looking and pulling stuff down, I feel like this [*she opens an EQ model that represents an analog equalizer, complete with skeuomorphic knobs to manipulate the bandwidth and Hz of each sound wave*] it takes me a minute to kind of figure out what is what more. And so I'm listening more rather than just looking at it. With this one [*she still has the analog EQ model open*] it's like okay, 1.5K, dip down 4 decibels and rather than seeing things just going through the different frequencies…I don't know for some reason the old, analog versions of it, it just makes me listen more rather than looking hard. Which is so hard to do!

To demonstrate what she was talking about, she selected the analog model, and "turned" a knob under the heading "Hz" to the left by clicking on it and slowly dragging it down and to the left. The low end of the guitar track began to growl as it played. She then returned to the EQ model on Pro Tools that visually mapped out the EQ spectrum of the selected track, and using the computer mouse she dragged a chunk of the mid-range area (between 900 and 1320 Hz) up 13.5 decibels (dB), and pulled the lower end of the spectrum (below 200 Hz) down 12.5 dB from the center line:

> See, I just so liberally dragged this. It's so easy to just drag if it's something like this. I can end up with a sculpture or something. Like maybe I should re-track if I'm having to do all that (see figure 6).

Claire's approach meant that if she recorded a vocal take that required building a "sculpture" out of the EQ model it must be re-recorded to achieve the intended effect more naturally or be removed from the mix entirely (a practice not

uncommon to engineers in other recording spaces).[36] Here the digital tools that opened up the world of recording and mixing to the masses and enabled Claire to afford opening Inclusive Recording, presented her with an engineering challenge in the form of their "scripts" (Akrich, 1992, in Marshall, 2017, p. 7)—sociotechnical modes of engaging with an artifact that are wired into their makeup and design. In regard to sociotechnical uses of pitch-correction software, Marshall (2017, p. 7) follows the lead of Jarzabkowski and Pinch (2013) who argue that an analytical focus on scripts and intended uses can obscure the variety of ways that users reinscribe technologies with new uses and meanings; still it is a fitting conceptual tool for thinking about Claire's engagement with different EQ models. As she illustrated through her demonstration, being able to pull, slide, and visually manipulate the EQ spectrum, as is commonplace on most digital audio workstations, meant that she often neglected to listen carefully to the track in question and fully account for the effects that such changes were having on the mix more generally. When she "listened" with her eyes, she relied more on the technology to tell her what was happening and thus risked overcorrecting much of the time. By contrast, she found that EQing by "moving knobs," even if only in a simulated way with a mouse, allowed her to focus more concretely on the sonic qualities of the sounds she was manipulating as she

[36] Spatial metaphors around architecture show up quite a bit in descriptions of contemporary mixing practices. In particular see (Meintjes, 2003, p. 92; Schmidt-Horning, p. 173).

experienced them aurally. Katherine Hayles (1999) refers to an interface like the digital knob as a skeuomorph, "a design feature that is no longer functional in itself but that refers back to a feature that was functional at an earlier time" (p. 17). In this case Claire is not touching and turning a physical knob, as would have been required in analog equalization, yet moving the mouse to simulate that motion allows her to retain elements of her identity as an engineer who is cautious and intentional with regard to any manipulation of the captured sound.

Figure 6: A screenshot example of a visual EQ model from the digital audio workstation Logic taken by the author.

Interestingly Claire's position about the superiority of analog gear for the purposes of equalization put her in the company of many of the same gear-heads that provoked her ire. For all of her well justified condemnation of the fetishist culture around the tools of the studio, particularly those that are analog, she maintained an appreciation for the kinds of haptic affordances to be found in analog technology. But unlike her bedfellows, this appreciation was not rooted

in the symbolic capital, expertise, and "authenticity" (Fouché, 2012) evoked by its use; instead it lay in the ways that analog tools enabled her to *feel* less beholden to the technology for assessing the success of a track. In turn, she felt that this allowed her to remain as intentional and inconspicuous as possible in the mix, which reflected her broader feminist ideals about the facilitator role of the engineer.

Relying as little on the technology as possible to create a desired sound also enabled interesting moments of creativity and ingenuity:

> One time I was recording a drum kit in here recently and it was really late and there was a bunch of people in here and it was really hot and it was late so we kept both doors open. And we listened back to a take of it and I was like, what is that magical reverb happening? I don't have any plug-ins on. But I had left a microphone in the hall accidentally and it ended up working really great. So I learned that I can have that natural reverb, if it works out, rather than adding it in later.

Examples like this are reminiscent of the chronicles of early sound engineers who had to rely on whatever spaces they could find in order to achieve optimal reverb, including high-traffic areas like stairwells and bathrooms (Schmidt-Horning, 2013, p. 93). But as exciting as this experience was for Claire, it did not represent the typical recording scenario at community-studios like Sankofa Studio and Inclusive Recording. Because of the acoustic limitations of spaces such as these (both in terms of their proximity to other high-traffic areas in the same building, and the interior treatment of the space), a heavy reliance on post-production effects can be a necessity in order to achieve a professional sounding mix. For

Dan, building heavily compressed, commercial-distribution-ready mixes was simply a part of finding success in the landscape of contemporary music; but for Claire, who saw Inclusive Recording as an extension of her feminist ideas, this created a tricky scenario in which she was constantly evaluating what a particular piece of software or hardware means for the immediate sound of the mix as well as for her ability to maintain her ideals.

This chapter has hopefully revealed some of the ways in which the politics that shape an engineer's recording and mixing philosophies emerge at the intersections of a range of personal, cultural, and historical values regarding taste, genre, commercialization, and authenticity, as well as race, gender, and class. They are also coproduced by the technologies of the studio, with their complex meanings, affordances, and constraints. Whether community-studio engineers are invested in creating a commercial studio with a twist, or engendering a feminist-overhaul of traditional studio dynamics, they must harness their "professional audition" to both listen to and appropriately shape a song's mix (in a way that reflects their professional identities and personal tastes as well as broader cultural sensibilities), while also listening to and honoring the needs of the target community. Ultimately this section illustrates how difficult it is for those who manage the daily operations of a community-studio to devise an all-inclusive recording and mixing strategy that supports every kind of artist and non-artist who enters these resource-strapped yet vibrant multivalent spaces.

On Money, Microphones, and Production Values

I will close this section by presenting two ongoing dialogues at Sankofa Studio about the monetary valuation of microphones and differential access to gear more generally, in order to highlight how the production values of community-studio engineers can shift in public versus private discourse. As anyone who has ever worked in a studio knows, money matters. The hourly rates for recording, mixing, and mastering dictate who is able to enter a given studio, while they should also reflect the cost of keeping the lights on. Yet despite the importance of money in the operation of any studio, surprisingly little has been written about the specific details of how it flows throughout a studio context. Much of the sound studies literature around music production that engages with the specific details of monetary valuation focuses on the market costs of musical instruments and digital tools of music production (Théberge, 1997; Pinch & Trocco, 2002; Pinch & Reinecke, 2009) and the costs associated with the sonic commodities that emerge from studio sessions (Cleophas & Bijsterveld, 2012; Rose, 1994; Suisman, 2009). In regards to the specific costs associated with operating a high-end studio, Meintjes highlights figures like the US $17.8 million cost of the recording studio that posed the greatest competition for the studio she was researching (p. 79); in regards to the socioeconomic status of her research subjects she mentions the meager lifestyles of many of the musicians she followed, highlighting the necessity of working more than one job to survive (p.

6), and she alludes to the financial wellbeing of certain artists, producers, and engineers by making reference to the cars that they drive to the studio (pp. 74-76). Marshall (2017) does not provide monetary details beyond stating that his studio research sites are in the "middle range in terms of size and cost-of-service" (p. 22); he also notes that Auto-tune costs "several hundreds of dollars" (p. 2); Schmidt-Horning (2013) details several cases in which rent and the cost of upgrading gear became too prohibitive for studio owners to maintain their spaces, although she does not mention specific numbers.

After visiting cash-strapped studio environments for the past few years and sitting with artists and engineers who often expressed considerable anxiety about money, it has become clear that the vague monetary descriptors that often accompany studio accounts are insufficient for painting a full picture of studio life. Just as scholars detail the complex ways in which engineers select and repurpose recording and mixing gear, scholars could benefit from discussing in concrete terms topics as important as the rate of a recording session, the salaries and incomes of recordists, mixers, and engineers, or the expense of a piece of recording/mixing gear relative to the income of its buyers. The monetary valuation of the tools used in the studio is central to stories of recording and mixing as they help us to make sense of who can access them, and what the professional identity of the sound engineers operating in these spaces means more generally.

Perhaps because of the absence of concrete money talk in prominent studio ethnographies, I hadn't initially considered questions of how monetary valuation works within a community-studio space beyond the obvious considerations—making sure the space has the funds to keep the lights on and pay engineers while remaining financially accessible for its target population. I made sure to note that Annie and Dan were paid $11 an hour and were not allowed to work full-time (more than 35 hours a week) because CCA could not bear the expense; I jotted down that Claire's monthly rent was set at $267.50 and eventually increased to $330 over the next few years; I also noted that Claire sets her recording rate along a sliding scale between $25 and $50 an hour, and she offers payment plans to clients so they can pay in installments that reflect the schedule of their income. But as I learned at Sankofa, the monetary valuation of studio tools also plays a symbolic role in helping to delineate a community-studio's status as a "professional studio."

When Sankofa had first opened its doors in the summer of 2007 it was primarily to serve as a site to hold classes for children in a music education summer program run by volunteers at the center that housed the studio, but it quickly found favor with a few aspiring local artists and eventually more seasoned vets. At that time, prospective artists looking to record simply showed up on a first-come first-serve basis between 2pm and 6pm Monday through Thursday and after signing in at the front desk of CCA, they would head upstairs to the

studio to begin.

Things began to change after Annie was hired in 2008. After receiving the blessing of the community center's advisory board, she soon began requiring artists to book time in advance during certain days of the week, a plan that she developed for a few reasons:

> I consistently felt like [Sankofa] was being underutilized. And so on my end I thought we might make it seem a little more exclusive if we made people book and commit to time. And that was successful-ish. It could've been better. I would've liked to have seen it drive more traffic. But it did some. And then the other reason we started having people book time is because we were kind of playing with the idea of starting to charge a little bit. One, to create some revenue for future projects, but also to make people commit to it in a different way.

By the time I began visiting the studio for research in the summer of 2013, Annie and the board had moved beyond simply playing with the idea of charging attendees. Prior to her departure in 2011, Annie had restructured the policy to stipulate that every community member was now allotted eight free-booked hours, after which time they were required to pay a fee of $25 an hour to record. Dan, whose tenure as program manager and sound engineer began in 2012, shaved the allotted free hours down to six. He also added the option of allowing community members to begin recording at the rate of $25 an hour for access to private sessions on three days of the week during which time local artists could block out four-hour recording slots, receive mixing and recording consultations, and substitute use of the standard $180 MXL V87 microphone for Dan's pièce de résistance, a $900 Mojave MA301 mic (the technical specifications of which I

will describe in a moment).

Like his predecessor, Dan felt that these changes would be important to foster a sense of pride in the artists and in the space. Asking participants to put their own money down seemed like a straightforward way to increase their level of investment, particularly as the target population was largely the cash-strapped youth in the surrounding area. And the money could ostensibly make a big difference at CCA as well. As Dan elaborated, "I'd love to get to the point where I constantly have people coming in to record on the weekend, and we're getting tons of money filtered into the center so that we can increase the wages that we pay our workers here or maybe give us bonuses at the end of the year. I want to be the reason that happens." But in reality, the actual dollar amount being raised was not the most important outcome of instituting paid recording time in his eyes. For one, the studio engineer's salary came from the community center's city-funded annual budget and was therefore not reliant on outside funds. Perhaps for this reason, Dan often relented on the $25 an hour rate and conceded to charge his clients $5 if anything. What was more important for him was the symbolic role played by a monetary exchange in establishing the sense that attendees were working in a professional studio space—one that didn't allow people to come in and out as they pleased during sessions; one in which being unrehearsed and therefore wasting the engineers' time was an expensive gamble; and one that provided its clientele with high-end recording gear like the Mojave

MA301.

Even with an understanding that the price or cost of a commodity reflects a variety of factors, I couldn't help but believe that the Mojave microphone would sound unequivocally better than the MXL in terms of the fullness of the recordings it produced. The fact that Dan saw fit to consistently bring up the price of the two microphones was clearly meant to convey their respective value. And his strategy worked (at least initially) because although I'd spent limited time in a commercial studio as far as my personal music career, I felt safe in assuming that any microphone that costs nearly $900 should perform noticeably "better" than one that costs a quarter as much. I wasn't sure what "better" necessarily meant but I assumed I would be able to eventually tell.

An examination of each microphone's specs reveals some basic commonalities. First, they are both condenser microphones (also known as capacitor mics), meaning that sound waves are transduced into electrical signal by vibrating a metal diaphragm that is parallel to a steady metal backplate, which fluctuates the capacitance (ability to store a charge) generated by the two plates to the rhythm of the vibrating diaphragm and produces a concomitant electrical signal (Wente, 1935, p. 6). Additionally both microphones feature "solid state" design meaning they use field effect transistors (FET) to boost the mic signal, instead of tube preamps. This results in a "clean" and low-noise performance, as opposed to the "warmth" and coloration of the sound amplified by vacuum

tubes. Both mics also share a cardioid or heart-shaped sensitivity pattern, meaning that they are most sensitive to signal received from the front of the mic (although the Mojave also has the ability to receive signal omni-directionally and bi-directionally).

Beyond that the two microphones appeared to be night and day. Although both mics can pick up frequencies between 20 Hz and 20 kHz, what is generally considered to be the range of human hearing, the frequency chart provided by each manufacturer reveals that the Mojave boasts an overall higher decibel response to signal, particularly at the low-end (see figure 7 and figure 8). In write-ups from trade publications like *Tape Op Magazine* and *Sound on Sound* reviewers describe the Mojave as a triumph of modern engineering, boasting features like its "military grade" FET (Gatski, 2013). One reviewer even goes so far as to compare the Mojave to the classic U87, a condenser microphone from the German company Neumann, often considered the industry-standard in microphone engineering and manufacturing (Schumacher, 2012). In particular, reviewers seem to celebrate the Mojave's capacity to "[nail] that vintage sound" (Gatski, 2013) while still producing a clean signal. The MXL, by contrast, has not been reviewed by any of the popular trade publications[37] and the users who

[37] I consider the major trade publications on mixing and engineering to be the following (in no particular order): *Tape Op, Pro Sound News, MusicTech Magazine, Audio Media, EM, Sound on Sound, Resolution, Mix, Recording, Future Magazine,* and *Computer Music*. These selections are based

appear on forums seem ambivalent about its capacities. One user named "audiokid," a staffer for the popular online forum recording.org, claims: "MXL microphones are all about, 'looks,' not sound quality" (audiokid, 2011). "Guitarboy94," a user on the gearslutz.com forum advises a recording artist with a question about upgrading his current set-up against purchasing an MXL V87 by arguing, "I suggest saving up a little more and moving out of the low, low, low end. A cheapie MXL condenser with a built in preamp sounds like a recipe for poop" (Guitarboy94, 2012).

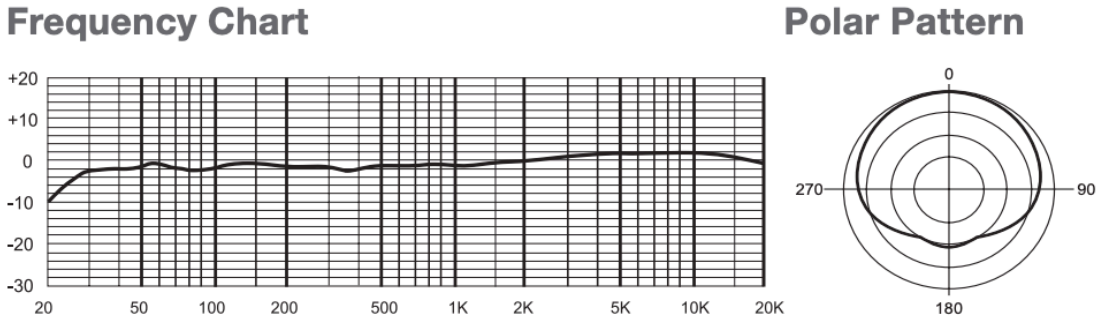


Figure 7: Frequency response chart for the MXL V87 microphone (Marshall Audio, n.d.)

At Sankofa, Dan shared many of these same sentiments with his clients, albeit with less distaste for the MXL mic. He often spoke glowingly to anyone who would listen about how the Mojave mic produced a "nice full-bodied sound" that could not be produced by the MXL. But as I spent more time at the studio, and we listened back to the mixes he produced with both microphones,

on the options on a *Tape Op* survey that asked new subscribers to select other recording magazines that they read from a list of *Tape Op*'s competitors.

I began to wonder how much of a difference studio goers were actually paying for when they opted to record with the Mojave. I was not certain I could hear a significant difference between the vocal recordings, although I dared not say anything at the time. And when I did manage to work up the nerve to ask a few studio-goers whether or not they'd heard a difference, two admitted that they weren't really sure either. Eventually I began to wonder how much the so-called "quality" of the gear really mattered in the mixing equation at all.

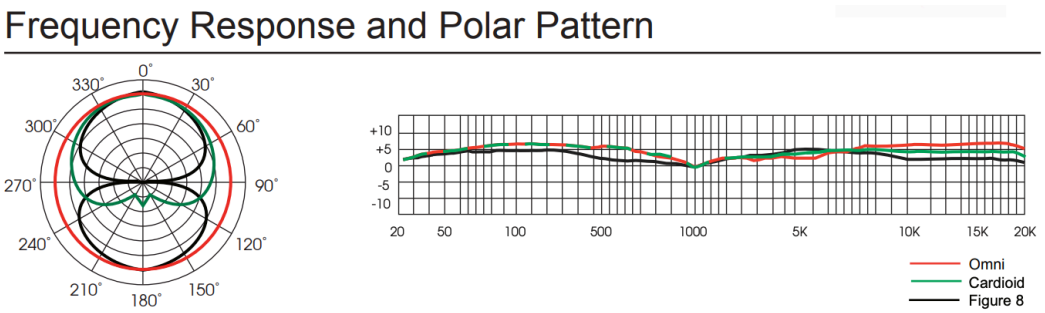


Figure 8: Frequency response chart for the Mojave MA301 (Mojave Audio, n.d.)

These sorts of concerns about the (im)perceptibility of difference in recorded music are certainly not new to sound studies (Perlman, 2004; Sterne, 2012). Nor are they new among consumers of popular music. When rapper and music mogul Jay-Z purchased the music streaming service TIDAL in 2015 to serve as a rival for industry behemoths Spotify and Apple Music, one of its major selling points was the promise of higher definition streamable music. Regular subscribers pay $9.99 a month to listen to "lossy" compressed versions of their favorite songs streamed at the same rate of 320 kilobits per second (kpbs) as

songs on Spotify and iTunes premium, while those who stream TIDAL HiFi for $19.99 a month are able to listen to "lossless" CD-quality tracks at 1411 kpbs. According to TIDAL's website, these uncompressed versions of each song allow listeners to "hear every instrument and every note—as the artist intended." In the years following Jay-Z's acquisition, online listening tests have popped up in publications like NPR (Fisher, 2015) and on forums like Quora (Bowyer, 2018) seeking to assess whether the public can in fact perceive a difference between lossy and lossless music. As Tyler Fisher concludes at the end of an article explaining the results of NPR's listening test, "It seems clear enough that most listeners have trouble discerning between lossless audio and a high-quality mp3" (Fisher, 2015).

In the recording studio these questions revolve around not only whether material differences in recording and mixing gear result in noticeable production outcomes but also how to determine what gear and which acoustic properties of the space are responsible when sonic differences are produced. As it relates to the process of selecting the "best" microphone for a particular recording, one must consider a wide range of factors that affect not only the fidelity of a given vocal recording but also its tone. To start, there is the issue of the materiality of the device that converts sound into grooves on a track, electrical signals, magnetized tape, or bytes in a digital file. In early studios, the size and material composition of the recording horn were crucial to the sound that was produced

and the way that the grooves were cut into the lacquer disks (Schmidt-Horning, 2013, p. 23). When studios began using electrical recording systems in the 1920s, these kinds of concerns were subsumed within the domain of microphoning. In a contemporary context, recording engineers generally record vocals with condenser and ribbon microphones and occasionally dynamic microphones (the quality of recordings produced by carbon, ceramic, and crystal microphones is generally too low for any kind of musical recording). In turn each mic's "sound" and frequency response differs from company to company depending on the materials of its composition as well as its shape and size (Dyar, p. 1960, p. 137). Because of their sensitivity, condenser and ribbon mics are often considered the most desirable for recording the voice, although the "punchiness" of dynamic mics is sometimes a preference (White, 1995); but they also require the use of amplification devices to boost the relatively weak signal that they produce (discussed earlier in terms of FET and tube preamps), which also affects the tonal qualities of the sound produced. Between the mic's transduction mechanism and its material composition, any number of qualities can thus affect the "warmth" "fullness" or "brightness" of a recording.

Further complicating the idea that one can reliably discern whether one microphone is "better" than the other, is the fact that the materiality of each human voice responds in particular ways to the unique technical capacities of every microphone. Sound studies scholars have long called attention to the

importance of examining sonic materiality within studies of sound (re)production technology, namely to point out the ways in which the "success" of particular forms of vocalizing and instrumentation can be better understood alongside the material and cultural affordances of the technology that enables their reproduction and manipulation (Pinch & Trocco, 2002; Douglas, 2003, p. 87; Schmidt-Horning, 2013, p. 45). Susan Douglas (2003) has even partially attributed the success of jazz music in the beginning of the 20th century to the technical constraints of early radio, which mangled the high and low frequency sounds of violins, oboes, and cellos, the sounds that overwhelmingly comprise the instrumentation of symphonic music. The crystal receivers, headphones, and "tinny gooseneck loudspeakers" of early radio listeners were instead uniquely suited to reproduce the instrumentation of jazz with its pianos, clarinets, and saxophones (Douglas, 2003, p. 87). Similarly, she illustrates how the sensitivity of early microphones pushed the forceful (and therefore potentially damaging) singing of sopranos out of favor and ushered in the success of softer cooing styles like the crooning of singers like the "First Lady of Radio" Vaughn De Leath and Bing Crosby (ibid). In a contemporary recording context, this recognition of differences in voiced materiality is reflected commercially through the wide variety of microphones on the market. The online store Gear4Music lists 38 microphone brands among its inventory. In addition to the range of mic manufacturers, each make and model within a brand offers unique benefits for

particular kinds of voices, sexed bodies, and musical styles (Jasper, 2009; Houghton, 2010). In one particularly thorough *Sound on Sound* write-up offering advice about selecting the best microphones for an engineer with limited funds and space, the author begins with the disclaimer, "No two human voices are the same, and no mic will be a perfect fit for every voice" (Houghton, 2010).

In addition to the materiality of the microphone and the voice, the acoustic treatment within the studio as well as the room's capacity to insulate the space from outside noise also affect the quality of a recording. The first studios were acoustically dead rooms complete with a recording horn jutting out of a hole in the wall and damped wall surfaces to minimize unruly reverberations. But as radio stations found that they could successfully enhance music and speech broadcasts through the controlled use of echo chambers and more reverberant studio sites, music executives and recording engineers followed suit (Schmidt-Horning, 2013, pp. 79-82). By the 1940s and 1950s the most desirable recording spaces included large music halls and churches with built-in natural reverberation and microphones placed strategically throughout to pick up the nuances of each performance. Where natural reverb was unattainable, engineers designed architectural and technical interventions like moving baffles that allowed them to recreate the reverberation and echo of these spaces in smaller acoustic environments (ibid). Since that time commercial studios have evolved to reflect a wide variety of configurations that each prioritize sound in different ways.

Generally speaking, most studios today possess an isolated recording space separate from the control room (like the small wooden iso booth at Sankofa Studio) outfitted with some kind of sound reflection and absorption devices on the walls, floor, or ceiling (foam and wood covered panels, rugs, bass traps to mitigate the swell of low frequencies, etc.). In turn the placement, frequency, and material makeup of these architectural interventions can greatly boost or muddle the clarity of a recording no matter how sophisticated the microphone, artist, or engineer may be.

All of the gear and studio acoustics aside, the recording and mixing engineer represents the final (and some would say most important) component in shaping how a recording will unfold. Even in a state of the art, sonically treated recording space an unskilled engineer can ruin an ostensibly great work of art. Among other industry tales, the rap group Beastie Boys have recently revealed that their popular 1994 anthem "Sabotage," celebrated for its anti-establishment message, was actually about a particularly contentious relationship with their sound engineer Mario Caldato, Jr. (Diamond & Horowitz, 2018, p. 364). Although in this case sabotage was more about Caldato's impatient attitude and less about his technical qualifications as a mixer, this illustration still calls attention to the substantial power of the engineer to make or break a recording. Each of the engineers that I interviewed maintained vastly different philosophical approaches and technical interventions to meet the needs of their communities,

but they all agreed that the proficiency of the engineer was one of the most important pieces in the quest for a professionally engineered track. In regard to Sankofa Studio, Dan privately shared that regardless of which microphone he selected, he was able to achieve a professional sounding mix because of his learned and practiced skills:

> If you're a good engineer and you have any good ears on you for engineering work, you should be able to sit there with an EQ spectrum, a compressor, and all that reverb and you should be able to use [them] to the best of your ability and actually create a professional mix. I can do that, with Pro Tools and the right plug-ins, even with this crappy microphone. It's not impossible, it just requires time, patience, and knowledge of the thing.

Citing the engineers' ears and hands as the most essential tools in the achievement of a professional mix, Dan's private commentary began to reflect a much more nuanced position than the one he put forth in the revised recording policy and in face-to-face conversation with clients. He continued:

> I've actually recorded somebody on this (the Mojave) microphone and that microphone (V87) sounded better on them. Yep, that $180…? That $200 microphone. Even though this one is wicked expensive, I have seen the other one work better. It just depends on the voice really. Sometimes you need the punch of the MXL.

Not only was he certain that he could engineer mixes of a similar quality regardless of which microphone was in use, but he was also suggesting that at times the cheaper, more publicly accessible mic sometimes provided a more ideal sound ("the punch") for the artist in question. Given the variety of aforementioned factors in shaping the way that each individual microphone reproduces a vocal take, this was not a particularly shocking revelation. Still, I

was struck by Dan's openness about the subjective nature of the entire process, given the stakes for the recording artist of (literally) buying into his differential access program. For the price of $25 an hour, a rate over three times the minimum wage at the time of my research in 2013, one should expect to receive a noticeably different outcome. Even if most studio attendees only ended up paying around $5, I began to feel that the policy itself was putting too much emphasis on the importance of studio gear, particularly as people continued to pay for a service without significant demonstrable results.

Many of the studio attendees that I interviewed were excited about the differential payment system. As one local hip hop producer noted: "It's awesome because it's like Soundcloud. You can get the basic plan for free. But if you have some extra money and want to get a better quality sound or anything like that, there's that option too." According to him, the introduction of the differential cost system was simply a reflection of trends across music sharing sites like Soundcloud that allow artists to make decisions about their level of investment via incrementally priced packages (in the form of greater storage capacity, and access to statistics regarding those listening and sharing the music). And whether the free or rented microphone was being utilized, he contended that the audio quality was still better than anything he could record and mix on his own. He continued:

> The production quality is really great. I don't hear stuff in the background

> when I hear songs recorded at Sankofa. It's nice…My own music that I make in my house sounds a lot worse. It's definitely a step up. I don't have enough of an ear to say it's top quality, but it's better than anything you can record at your house and it feels cool to do it in an official way.

A few community members were deeply disturbed by the changes that had taken place at Sankofa. One local rapper claimed that turning Sankofa into a "real studio" had never been a part of its original mission. He expressed anxiety that the space's shift towards a "professional studio" in structure meant the dangerous imposition of capitalist power dynamics in which those with more money would have access to better resources, passionately stating, "That's not what the space was designed for! He's trying to turn it into a 'real studio' but that defeats the purpose. Why are you charging us extra to use our own space?" Even when I clarified to the individual that Dan had indicated that the funds were funneling back into the community center, he remained suspicious and dissatisfied. "It's just not the point. Why not use the better quality stuff for everyone, if you have it? Who wants to use the worse stuff? They'll do it because they don't have the money." For this individual the distinction between a community-studio and "real studio" was not necessarily to be found in the adoption of particular equipment but rather in the control exercised by the engineer regarding said equipment's accessibility. I wasn't sure what to make of the different arguments about the differential cost system but what became clear was that regardless of which side community members gravitated towards, they

were almost uniformly united in their belief that there was in fact a discernible difference between the two microphones. Whereas the motivations that drive monetary valuation can be difficult to discern in purely commercial contexts, Dan's status as a community leader and as an expert crystallized the idea that in this case, monetary valuation has some direct relationship to the quality of the commodity being sold.

When I stopped pursuing research at Sankofa Studio to move on to my next research site in 2014, the policy around differential access was still in place and some community members continued to make use of the Mojave mic for the higher price. While I do not wish to make a normative argument about Sankofa's management of access to different mics, I hope this section points out the ways that such a system might be thought of as part of a greater conversation about the ethics of recording. Is it fair to charge members of a socioeconomically disadvantaged community money to use a piece of gear that doesn't make a perceptible difference in recording outcomes for all of its users? Or is it justified when it is in service of creating a system that enables people from marginalized communities to invest in their careers and construct their identities as professional artists in new ways? Annie, Dan, and the executive board hoped that by building in the practice of exchanging money to record and utilize a state-of-the-art microphone, artists would begin to see themselves as professionals and show up to the studio on time, well-rehearsed, and ready to make a hit song. For

them, it didn't matter whether a vocal take sounds better because of the mic being used or because the artist improves his or her performance to meet the expectations of the session. I left Sankofa still wondering about the same set of issues. I close this section by leaving this question open but in the next chapter I will re-engage with it (at least partially) by examining how artists construct their identities in relation to the tools and techniques of community-studios more generally.

Conclusion

This two-chapter section has examined the ways in which the discursive strategies and production values of community-studio engineers reflect the tension they experience between fulfilling their professional desires and meeting their interpretation of their clients' needs in a community recording space. In particular, Chapter 3 has illustrated how these imperatives cannot be separated from broader cultural values and problems. Even spaces that position themselves (or find themselves positioned) outside of the traditional studio system must contend with the broader history of recording studios. This history includes changes in the science of acoustics, the consolidation and growth of the recording industry, the rise of independent labels, and the emergence of new attitudes and musical tastes (Schmidt-Horning, 2013). It also includes the professionalization of sound engineering, the systematic denial of access to

technical spaces for people of color and women, and the black-boxing of tools and techniques used by professional engineers within computers and pieces of software (Porcello, 2004; Schmidt-Horning, 2013). Thus even in radically reimagined community recording spaces, the engineer's position of power relative to artists and musicians in the execution of music production decisions must still be critically examined. In discussing broader music industry forces, Porcello notes that artists and their music are thus caught "in the interstices of a professional proscription and the eventual public ascription of musical style" (Porcello, 2004, p. 21). As I have revealed in this chapter, engineers are also caught in such "interstices" even as they play an increasingly important role in the construction of particular listening formations over time. In the next chapter I shift gears to look at the artists who choose to record at community-studios. For some these spaces offer the only possibility of recording in the ways that they want to record. And to others, for whom other options do exist, I reveal how the act of going to a studio and working with a "real engineer" or working in an explicitly anti-establishment space performs a role in helping them to establish their identities as particular kinds of artists.

CHAPTER 4: Artist Reflections on Community-Studio Musicking

In the last two chapters I focused on the boundary-work performed by the engineers at Sankofa Studio and Inclusive Recording as it was reflected in their discursive practices and their production values. Initially the norms around managing these kinds of multivalent spaces appeared relatively uncomplicated for the engineers to follow and maintain; behind the boards, the engineers I observed routinely and enthusiastically eschewed the commercial studio values of time-based productivity and proprietary protection in order to educate their clients on how tracking and mixing work, and to create a less hierarchical studio environment more generally. But a closer examination of the engineers' daily studio practices revealed the ways in which they found it difficult to reconcile their community-studio norms with their aesthetic and technical beliefs. Specifically the construction of their multivalent studios as accessible, judgment-free recording spaces sometimes clashed with the values that were embedded in their modes of thinking and talking about sound in the studio—their "professional audition" (Porcello, 2004). In that regard I have conceived of community-studios as imaginary boundary objects because while they function rhetorically like sites that are mutually legible to a wide variety of actors, they cannot be fully managed in such a way. No matter how radical of a space Claire was trying to create at Inclusive Recording, she had to articulate particular sonic standards about what counts as a "good" or a "bad" take as well as determine

the proper interventions for rectifying the latter valuation. And for Dan, his belief that Sankofa Studio should function as a practice-space for a "real" commercial studio meant that he framed Sankofa's authenticity in terms of the select pieces of high-end gear that it possessed, despite his professional understanding that recording gear represents just one set of tools that determines how effectively one can achieve a desired production outcome. Thus while the engineers often presented clear ideas to me and to the artists with whom they worked about their values as recording professionals, ultimately the boundary-work they performed around "real" studios and "good" takes in the acts of recording and mixing revealed areas of dissonance and at times even reinforced the very power dynamics that their space was conceived to counteract.

In this chapter I will examine the ways in which the artists recording in community-studios perform their own forms of boundary-work around their musicking practices and their identities. Like the community members who come together to build out such spaces and the sound engineers who manage them, the artists must also make determinations about the kind of space a community-studio should be through the music they create (and desire to create). I think of the way in which many of the rappers at Sankofa Studio largely framed their music as a rejection of popular narratives about what hip hop music has supposedly become over the last 40 years: a vapid, fully-commercialized mode of art that has reached its saturation point with unintelligible songs from artists

who glorify the commodification and hyper-sexualization of women's bodies, as well as hyper-violence and the abuse of illicit drugs. As a rapper who has been active for the better part of a decade as well as a longtime fan of various hip hop cultures, I know that these are generalizations about an art form that has been wildly complex since its inception.[38] Yet scholars and lovers of hip hop culture(s) like Bakari Kitwana (2002) and Tricia Rose (2008) have also made the point that it has become virtually impossible to write these representations off purely as hyperbole when noting their salience throughout mainstream hip hop, even for those who vehemently defend hip hop against its most conservative, often ill-informed, and racist detractors. Rose (2008) in fact uses the term "commercial hip hop" to refer specifically to "the heavy promotion of gangstas, pimps, and hoes churned out for mainstream consumption of hip hop" (p. 24). Consequently, within the context of community-studios these kinds of ideas about the toxic nature of mainstream rap music have significantly shaped the sonic desires of many of the rappers who entered the spaces I observed, including the beats they choose to use, as well as the ways that they wished have their music mixed. This chapter will thus engage with how community-studio artists often use their music to respond to and reject broader narratives that they

[38]Countless artists, scholars, cultural critics, and fans of hip hop cultures have meaningfully written about the complex lifeworlds within different hip hop cultures and histories. For a list of writers, journalists, poets, scholars, and activists who have engaged these ideas see Fouché (2012, pp. 507-508), Rose (2008, p. 12) and Alridge & Stewart (2005).

have been told about themselves, their peers, and their communities, sometimes even in the wording of the grants and marketing tools that seek to justify the existence of the community-studios in which they record.

Along a similar vein, this chapter explores different notions of sonic authenticity as it is mediated by the production and recording software and hardware that the artists utilize. Following in the footsteps of sound studies works from Fouché (2012) and Porcello (2005), this chapter will highlight the ways in which the identities of community-studio artists are reflected in the sonic qualities of the music they produce (as well as the tools that enable their production styles). Many of the artists that I interviewed and observed spoke with pride about the progressive messages in their music whether they were fuzz-pop rockers, folk singer songwriters, R&B crooners, or hip hop artists. They also often aligned themselves with social justice causes and organizers, whether that meant helping to organize Pittsburgh's annual feminist music festival, Ladyfest, or performing in the Southside community's annual festival to celebrate Juneteenth, a holiday that commemorates the emancipation of enslaved African-Americans on June 19th, 1865. In many ways the framing of their work as a vehicle for certain progressive ideals is explicitly encouraged by the community-studio administrators and engineers who envision these studios as revolutionary spaces. At the recording studio located within the Yolé!Africa community center that I visited in Goma, artists were regularly engaged by the organizers running

the community center, Petna and Chérie Ndaliko, to think through and discuss the political imperatives of their art (Ndaliko, 2013); at Inclusive Recording, Claire hung a large sign designed to look like a quilt above her computer, which read: "For a Feminist Reconstruction of the Commons." In turn these framings of community-studio artists as agents of social change are often tied to particular sonic sensibilities and valuations about tonal qualities of the music and mix, from the use of distortion on a guitar riff to the inclusion of background "noise" and other sonic elements that would ostensibly be cut from a polished pop production. I often recall the contempt that many recording artists at Sankofa Studio held for overt vocal tuning because for them it reflected an adherence to pop music sensibilities and the conformity of rap music at the expense of "real" hip hop values like lyricism and individuality. One artist even brought up "D.O.A. (Death of Auto-Tune)," the 2009 hit from the emcee Jay-Z (Marshall, 2017, p. 2), in order to express his distaste for auto-tune's prevalence in contemporary hip hop music: "D.O.A. is definitely my jam. I'd love to see the death of auto-tune…[These] rappers sound like clowns. No real lyrics." Interestingly even some of the artists who gravitated towards more commercial-sounding music production and topics framed their art in terms of the progressive language so much a part of each community-studio space. Thus in exploring these framings, this chapter will highlight the ways in which the perception of a community recording space as one of resistance engenders

particular kinds of artists and ways of producing art, although it does not necessarily dictate what kinds of music are produced.

Finally this chapter considers what community-studios mean to artists whose expertise and access would seemingly place them outside each studio's target demographic. Although community-studios are often framed as resources for first-time and new recording artists, a significant number of the attendees I interviewed not only possessed the skills to record themselves independently but they also had access to home studios with the same software, quality of microphones, and level of soundproofing that was offered at the community-studios they frequented. I was not entirely surprised to learn that many of the studio-goers were sufficiently well-versed in recording and production terms and techniques. As I discussed in the last section, the shift in audio engineering education from apprenticeships to classroom-based models in the 1980s alongside the contemporaneous proliferation of sophisticated low-cost recording technology has completely changed the nature of expertise among recording professionals over the last 30 years (Bates, 2012; Marshall, 2017; Théberge, 1997, 2004; Schmidt Horning, 2013). The tools and techniques that once bounded the specialized domain of audio engineering work have become features of even the most basic digital audio workstations; many of the artists that I observed, shared that they had produced or recorded their first tracks using the digital audio workstation GarageBand, a recording and production software that has been

included as a free application on every Apple computer since 2004 (Deitrich, 2004). Additionally audio-engineering education is increasingly taking the form of free Youtube tutorials, paid online classes on sites like Skillshare[39], and free workshops offered by community-studios (among other institutions). In turn these changes have accompanied the rise of what Théberge calls the "network studio" (2004), a modern studio assemblage that harnesses the networked connectivity of the Internet to enable real-time remote recording sessions between engineers and artists with the goal of rendering place obsolete in the recording process. Separately, each of these shifts has certainly called into question many longstanding assumptions and realities about the kinds of spaces that are required to achieve a high-quality recording but taken together they eliminate any ostensible need for brick and mortar commercial recording spaces, a reality that has been reflected by the widespread closure of most large and mid-size studios starting in the early 2000s (Marshall, 2017; Bates, 2012). Yet the proliferation of community-studios over the past 20 years, clearly reflects a different reality for the artists who make these spaces their homes as they record new projects. As BL, a seasoned singer-songwriter shared in regard to Inclusive Recording:

[39] Skillshare, a website that offers online-courses and video tutorials on a variety of topics, boasts over 50 audio engineering and production classes under the search heading "mixing" including a course led by Young Guru, the famed audio engineer behind multi-platinum artist Jay-Z, and can be accessed for $15 a month (Learn how to mix music with Young Guru, n.d.).

> I see myself as a feminist in my personal life and through the music I make…it's really perfect that I also get to record in a feminist studio. I've recorded many different places over the years, some were really good studios with nice engineers and I love the music that we made together, but what I love most about [Inclusive Recording] is that my values are now reflected in every aspect of my music.

For this artist, Inclusive Recording offers something special in that it allows her to extend her feminist ideals into every layer of her musicking practices. Regardless of the generally positive and successful recording experiences she'd had at other studios, the very fact of recording in an explicitly feminist space is performing important symbolic work given how she sees herself as an artist and as a person. Thus in addition to exploring how the framing of a community-studio directly manifests in the kinds of music each artist produces, this chapter also illustrates how the "symbolic capital" (Bourdieu, 1979) offered by each studio plays an important role in how artists see their work, even for those who do not necessarily benefit in technical terms from the social intervention that the studio is trying to make.

To examine each of these aspects of artistic life in and around a community-studio, this chapter will follow the roadmap of the previous two chapters by placing Sankofa Studio and Inclusive Recording under a microscope. However rather than focusing on the community-studio engineers, this chapter tells the stories of Sankofa Studio and Inclusive Recording as they are articulated by the artists at these sites to bring attention to the dynamics that shape community-studios more broadly.

Artistic Life at Sankofa Studio

Almost immediately after Sankofa opened its doors in 2007, the studio emerged as a home for many different kinds of artists. As was mentioned in the last section, the space was originally conceived as a resource for school-age children from the surrounding neighborhood to learn multimedia production and recording skills but it quickly became a space for more seasoned community members to convene and act on their musical aspirations. In speaking with Annie, the program coordinator and audio engineer at Sankofa from 2008-2011, it became clear that although she felt the space was generally being underutilized, it boasted an impressive range of artists across different ages, genres, racial backgrounds, genders, and skill levels in the short time it had been open. During the many hours I spent sitting in a chair next to Dan's desk, I had the opportunity to observe several of these community members, many of whom I recognized from my own experiences performing locally. I often recall one particular session in which the front-woman for a local blues and R&B group with whom I'd performed a few times at community events, brought me to tears through an effortless yet powerful recorded performance of an original song about faith.

As I spent more time at the studio, I quickly realized that sessions like hers were not the norm at Sankofa. Overwhelmingly, the formal studio sessions I observed were booked by rappers, most of whom were black, young men between the ages of 18 and 25 who lived in or had spent significant time in the

surrounding neighborhood. A quick perusal of the studio's daily sign-in sheets throughout the summer revealed that this was the case even on the days when I was not conducting research in the space. Many of these artists had spent their preteen years in the after-school program hosted by CCA that was described in Chapter 1. One of the artists I encountered the most in the space, KM, was a 20-year old rapper and student at the local community college who had been coming to the community center in which Sankofa was housed for over a decade. He was known affectionately around the building by other artists, the center's administrators, and other community members, each of whom had only positive things to say about him and his impact on the other young black men in the neighborhood. And his affection for the community was just as strong. In our first interview he shared, "Sankofa's like home for me. I know everybody, they know me, it's all love all the time…I got Southside on my back forever."

In speaking with KM and many other young rappers at Sankofa I soon recognized the ways in which their performances of boundary-work regarding the space reflected Dan's insistence that it should function as a "professional" recording studio (as opposed to something more like a communal home studio). As Chapter 3 details, Dan had taken several measures to "professionalize" the recording process at Sankofa including the maintenance of a formal system for booking sessions, and the creation of a policy that enabled differential access to recording equipment depending on one's level of financial investment. For Dan

these measures were important both for boosting the morale of local artists and for raising the profile of the studio as a serious site for music production more generally. Evidently his instincts were correct as several of the artists that I interviewed spoke with great pride and excitement about the fact that recording at Sankofa felt like recording at a "real" studio in some way or another. As one rapper, JJ, shared:

> Dan really cares about the process. It's not just him feeling bad for us or whatever. He spend a lot of time on it and it just feels really legit. We can use a real mic, not just some old BS you might have at home. We make stuff here that our friends can listen to but also people who don't look like us will like. Really, I want to take this international!

Another artist, RG, shared, "It feels professional because we do everything like how they do in any other studio. We record in the booth, we do a bunch of takes…Dan run[s] the sessions really professional. I never been to another studio and probably wouldn't want to go." Both artists tied their perception of Sankofa's status as a professional space to its containment of tools that demarcate real studios from unsophisticated home recording environments—from proper isolation booths to high-end microphones. Additionally, for RG the process of recording at Sankofa was comparable to a high-end studio experience given the professional practices that shaped Dan's sessions with artists ("we do a bunch of takes") despite never having recorded in the kind of space against which he was measuring Sankofa.

Also contained within JJ and RG's glowing assessments of Sankofa, is an expression of their keen awareness regarding the one-dimensional characterizations of their identities as poor, black, urban youth in the eyes of those who live in proximity to their community as well as to the faceless granting organizations that brought Sankofa into being. In particular their words highlight the ways in which their perceived status as "underserved" or "at-risk" might render them vulnerable to negligence or paternalism in other similar spaces. When JJ remarked that Dan approaches his work with a seriousness that is not couched in pity ("feeling bad for us"), he is articulating an understanding that the studio is a social intervention and as such the motivations and approaches of its various stakeholders may not be solely (or even peripherally) rooted in the quality of its creative output. And JJ is also speaking to a broader conversation that has marked a dangerous yet central element of Western humanitarian work in which white-led organizations as well as individual donors, educators, and volunteers take part in what writer and art historian Teju Cole has called the "White-Savior Industrial Complex" (2012). Cole coined the term to characterize the prevalence of "well-meaning" white-led organizations and social causes that attempt to "save" black Africans in various localities from a range of sociopolitical issues across the continent. And although Cole was primarily interested in having this conversation in regard to humanitarianism in Africa, it is easy to use this framework for understanding similar efforts in other parts of the global south

and in the US. At its worst, the white savior complex has taken the form of the deadly "civilizing" efforts of missionaries and militants throughout the pre and postcolonial periods of the past 500 years; and in its least innocuous form it takes the shape of well-meaning volunteers or partner organizations introducing initiatives and programs that reflect their belief that they are best equipped to eradicate the economic, social, and political challenges faced by communities of color regardless of what these communities have to say and do for themselves, and without meaningfully engaging the complicity of their own histories and policies in plunging such communities into chaos in the first place (Ndaliko, 2016). Speaking in regard to the spectacular failures of international NGOs in Africa and Western humanitarian efforts more broadly, Ndaliko (2016) argues, "Historically speaking, the Western version of making the world a better place has had catastrophic consequences for the browner people of that world" (p. 11).

In the context of STS scholarship, Dunbar-Hester (2013) effectively illustrates a similar point when highlighting the missteps made by the group of educated, mostly white community organizers she surveyed in the early 2000s as they attempted to galvanize poor black residents in Chicago's Larch Park around the development of publicly accessible wireless community networks; even though the organizers explicitly framed their work as anti-racist and they thought deeply about how to avoid appearing paternalistic to the members of the Larch Park community, they initially failed to gain traction partially because of their

inability to anticipate how developing a sophisticated communications infrastructure might render a poor black community susceptible to the ever-present threat of gentrification in ways that might not affect other communities (pp. 174 - 175). Illustrations like these reveal the importance of adopting "intersectional" (Crenshaw, 1991) frameworks for conducting earnest humanitarian work as well as the ways in which marginalized communities are routinely forced to assess monetary and social interventions that supposedly provide them with a clear public good.[40] And they give greater context for why an artist like JJ might express so much excitement about the seriousness with which Dan takes his position as Sankofa's engineer.

Within the context of US rap music, JJ's sentiments also reflect the complicated relationship between hip hop's purveyors, its audiences, and the structures that control its circulation. When he remarks that he makes music at Sankofa that appeals both to his peers and "people who don't look like us" he is articulating a reality that black artists face whether they make music at a local community-studio or they operate within the upper echelons of the recording

[40] The term "intersectionality" was first developed and articulated by Kimberlé Crenshaw as a tool to address and understand the causes and effects of interlocking oppressions, although it should be noted that black and indigenous feminist and womanist organizers have long posited similar frameworks for understanding forms of oppression that intersect across various axes. "Womanism" is a social theory coined and fleshed out by Alice Walker (1983) among other black women writers and thinkers, that prioritizes the everyday and historical experiences of black women partially as a response to the minimization of these experiences within "mainstream" feminism and male-centered black liberation movements. To read more about how intersectionality has been theorized see Patricia Hill Collins (2015).

industry. Speaking about the cultural and racial dynamics that have historically bounded black musicking in America, Rose (1994) argues, "Black culture has…always had elements that have been at least bifocal—speaking to both a black audience and a larger predominantly white context" (p. 5). The contours of the relationships between emergent black forms of expression and the broader context of audition are, of course, always uniquely shaped by the cultural milieu and sociotechnical artifacts of their particular moment; but the fact remains that all black art that is produced and circulated in a Western context must contend with both the praise and the policing that comes with broadcasting voices and stories from the margins (Douglas, 2004; Rose, 1994).

Throughout the history of hip hop music, its black and Latinx artists have thus always had to skillfully navigate these elements of white praise and policing, while producing art that is at once understood by multiple audiences as "authentic" (a point I will return to later in the chapter). Just as multinational corporations like Coca-Cola began to realize that peppering their advertisements with hip hop iconography was useful for selling products (Kitwana, 2002, p. 9), the rappers who largely inspired these corporate moves were targeted by the FCC through its draconian censorship policies as well as racist insurance companies that refused to insure venues that booked rappers out of fear of "violence" (Rose, 1994, pp. xiv, xvi). As an emcee whose fanbase consists primarily of self-proclaimed geeks and nerds, even I am not immune from such forms of

institutional policing, having been barred from a performance opportunity as recently as March 2019 because of a venue's anti-rap insurance policies. In a community-studio context, artists must contend with an additional layer of self-consciousness because the studio is explicitly cast as a social intervention. It was certainly not lost on the studio-goers that the sign on the door imploring them to use "clean language" was premised on the kinds of violent or misogynist music they were expected to make. It was not surprising, for example, that in an interview with a local paper about an upcoming freestyle competition sponsored by the Unity community-studio in my hometown of Ithaca, NY, the studio coordinator (a generally thoughtful, young, white woman I would later befriend) shared, "It can be a bit of a struggle sometimes with hip hop and urban music, because some of it promotes violence and derogatory attitudes towards women" (Murtagh, 2010). In community-studio contexts these kinds of public attitudes about hip hop music can and do color the language and policies within the space. Additionally, while the community center's zero-tolerance policy on alcohol and drugs makes complete sense for a space that includes after-school programming and elements of daycare, it is also a reminder that the studio can never exist independent of the social control element.

In turn, the artists' awareness that Sankofa exists in part as a social intervention greatly colored the kinds of music they sought to create and the values they placed on particular forms of musicking. Take for example the

following vignette of a session RG booked to record a forthcoming single he hoped to release later that year in anticipation of a new EP. Dan, RG, and I sat in the studio one Tuesday afternoon in early August of 2015. I had just briefly interviewed RG about his relationship to Sankofa and now he was preparing to record. Before stepping into the booth, Dan played back the instrumental beat over the studio monitors that RG had sent him earlier in the day. While RG nodded his head to the beat's rhythm and mouthed some of his lyrics, I was immediately struck by how similar the instrumental track sounded to the production of A Tribe Called Quest, a hip hop group within the Native Tongues collective of the late 1980s and early 1990s. Artists linked to the Native Tongue wing of hip hop like Tribe, De La Soul, and Brand Nubian among others, prioritized Afrocentricity and playfulness in their lyricism (largely as a response to the rise of west coast gangster rap), and rhymed over beats that have been characterized as jazzy, sample-heavy production (Abdurraqib, 2019; Caramanica, 2008; Rose, 1994, p. 4). In the early 1990s when groups like De La and Tribe were achieving national prominence, this style of hip hop music had certainly marked a distinct sonic moment; so I was quite surprised to hear an 18 year old rapping over a beat that could pass for one of theirs in 2013. I jotted down a quick note to later ask him about his use of such an "old school" sounding track as Dan loaded the instrumental into a new Pro Tools session and RG hopped into the booth. As he began delivering the first verse of his track, a song about

the common rap theme of "hustlin'," he rhymed with great passion about his prowess as a hustler and he concluded the verse by imploring others to do the same. He was an adept lyricist and performer, effortlessly delivering intricate phrases full of internal rhymes, and performing lengths of the verse with a steady cadence punctuated by passionately executed punchlines. He asked to "punch in" at two points during the recording process but even then it was only because he felt his delivery could have been stronger. The process was much the same as he recorded the second verse, the chorus, doubles (a second layered recording in which the artist emphasizes the key points of the verse and chorus), and a few playful ad-libs (complementary sounds and phrases that also emphasize particular parts of the recordings).

When they finished recording the song, Dan asked RG to sit down next to him so that he could provide a sketch for how he wanted the song to be mixed, as was customary for all recording artists at Sankofa. RG's eyes lit up and he grinned, taking a seat next to Dan (abbreviated DB):

1. RG: Well I want it to sound kind of raw…Like…like not too many vocal effects on what I'm saying.
2. DB: Okay, got it. So just some basic reverb, basic compression but really not changing too much.
3. RG: Well yeah reverb, but just not too much. Pretty dry. Just raw. I don't want it too busy you know. And I want the doubles to be like, pretty low.
4. DB: Okay. Do you want to listen back?
5. RG: Matter fact, can I hear it without the ad-libs?
   [Dan plays the unmixed track, decreasing the volume of the doubled track as we listen back and muting the ad libs]
6. RG: I almost don't want the ad-libs in the track at all. Maybe we can try it real low and then see how it sounds without.
7. DB: Whatever you like, you're the boss!

They spoke for another 10 minutes about the details of the song (the places in the song that RG wanted the beat to drop out, whether he wanted the chorus to repeat twice at the end of the song or not at all, etc.) before Dan's next client came in, another local rapper, excited to record. RG and the young man greeted each other briefly, Dan and RG made plans to meet again the following week, and then RG and I left to finish the interview we'd started before his session. While it was still fresh in both of our minds I asked him to take me through his thought process when he was rapping the song and later discussing his ideas about the mix at the end of the session. Specifically I wanted to understand what he meant by "raw" (1) and why he was so insistent that the vocals remain relatively "dry," a term used to refer to a vocal take without the addition of effects like compression, reverb, or EQing (3). He thought for a moment and then responded, "Raw to me is like…not, like not pop stuff. I don't know I just like that raw sound, you know?" As we talked more about his artistic influences and desires regarding his music career, he eventually revealed that he was very dismayed about the state of contemporary commercial rap music. "Everything is just auto-tune, it's like all the same thing. The same trap beats. Or it's that Macklemore pop shit. You can't even tell what some of these rappers saying half the time," he lamented. "I just wanna do something different. I want us to do that here. I want it to be like, wow, at [Sankofa] we bringing back real hip hop."

I now understood the full significance of his choice to rap over a piece of production that mimics the jazzy laid back beats of artists like A Tribe Called Quest beyond its pleasant stylistic properties; this was an intentional way to align his work with central figures from the "golden age" of hip hop, the period that some experts say lasted from the mid to late 1980s (Rose, 2008, p. 34) and others say extended into the early 1990s (Alridge & Stewart, 2005, p. 194; Caramanica, 2004; Powell, 2000), which was characterized by rugged individualism and experimentation at every level of craft (McGee, 2008). In contrast, the "trap" style music he recognized as now being ubiquitous throughout commercial rap, emerged out of Southern drug dealer culture in the early aughts and found commercial success precisely because its most notable artists remained committed to telling the same kinds of stories and using the same kinds of sounds (Raymer, 2012). "The trap," a ghetto neologism for the site where drug deals are made, became the singular topical focus for a large swath of popular Southern rappers in the 2000s, who used their music to discuss the highs and lows of navigating street life through the lens of the drug trade (Vaught & Bradley, 2017, pp. 18-19). In turn its production style is typified by what music writer Miles Raymer (2012) describes as "booming 808-style sub-bass kick drums, twitchy sixty-fourth-note hi-hats, dive-bombing tom fills, and chilly cinematic strings." Since its emergence, trap rap has come to dominate much of the commercial music airwaves and elements of trap production like the booming 808s and

snappy trap snares have migrated to a variety of other popular music genres including reggaeton (Lopez, 2017), electronic dance music (known more widely as EDM) (Raymer, 2012), and most recently even country music with the controversial success of rapper Lil Nas X's song "Old Town Road" in 2019 (Leight, 2019).[41]

Beyond the influence of trap rappers on contemporary rap music, RG also expressed concern with the ways in which more traditional pop music is changing the character of hip hop. Couched within RG's frustration about the success of Macklemore, a white rapper whose saccharine pop-rap anthems dominated the Billboard charts throughout the summer of 2013 (Hot R&B/Hip Hop, 2013), is a critique of both the changing sound and color of contemporary commercial rap. Thus for RG, one of the clearest ways to distinguish his ideals and persona from those of the mainstream was by drawing on the sonic stylings of another group of hip hop artists who had defined themselves in opposition to the dominant commercial rap and production sensibilities of their moment.

Through my conversation with RG, I also understood his insistence about the crystal clarity of his vocals as being partially a response to broader trends

[41] The success of "Old Town Road" has led to a heated debate about the politics of genre precisely because the trap-inspired elements of the song like the 808 drums and trap snares led Billboard to remove the viral hit from the Hot Country songs chart, despite the use of banjo and its catchy hook delivered with a noticeable twang. To read more about the debate see Leight (2019).

regarding lyricism and delivery in hip hop music. Specifically, when he laments how unintelligible some rappers have become, he appears to be calling attention to the rise of "mumble rap," a sub-genre of hip hop that emerged in the 2010s as a branch of trap rap and one that has been typified by the largely indecipherable, auto-tune laden delivery ("mumbling") of its purveyors (Iandoli, 2016; Vaught & Bradley, 2017, pp. 18-19).[42] Marshall (2017) has called attention to the brilliance of pop hitmaker Ester Dean for whom the performance of auto-tuned sub-verbal utterances, which he likens to Christian "glossolalia" (p. 130), figures centrally in her songwriting approach. He notes, "Her voice has the character of both expression and sensation, as she uses a set of stock phrases to feel around the beat for an effective melody and cadence" (p. 131). Within the context of mumble rap, Vaught and Bradley (2017) argue that its emphasis on sounds and harmonizations instead of distinct words and phrases illustrates the ways in which "[hip hop] has always been more than the lyrical content but also the emotional meaning conveyed in sonic overtones" (p. 19). Still for artists like RG who defined true hip hop artistry in terms of lyricism as displayed through a meticulous and articulate vocal performance, conveying "expression" and "sensation" through unintelligible phrases represents a threat to the art form.

[42] At the time of our interview, the term "mumble rap" did not yet exist; it was coined by the rapper Wiz Khalifa in 2016 (Iandoli, 2016), and has since been viewed largely as a pejorative term used by hip hop purists of an older generation.

Along a similar vein, RG's reticence about including ad-libs in the mix also appeared to be a response to his issues with contemporary hip hop more generally. Although ad-libs have long been central elements of many different kinds of rap songs, they also subtly call attention to the piecemeal and therefore "artificial" nature of recorded music. As *Billboard* writer Natalie Maher (2018) argues, "Ad-libs are a sometimes complimentary, sometimes abrasive sonic measure of emphasis that can create status, be distracting, or in some cases, become bigger than the artist itself." By keeping the mix of the vocal takes "pretty dry"(3) and deemphasizing subtle sonic signifiers of the recording and mixing process like ad-libs, RG hoped to highlight the "rawness" of his performance—a performance in this case that he wanted to appear largely unedited and unembellished. In this way I understood that what RG conceived as "raw" was similar to Porcello's conception of "sincerity," (2005) a term he uses to describe the "seemingly honest, emotional immediacy" (p. 105) that has come to define the "Austin sound." In regard to the recording process, Porcello argues that as the possession of a vibrant, live music scene rooted in "sincere" performances from singer-songwriters, punk rockers, and country musicians became central to the identity and economy of Austin, Austin artists and engineers have begun to spend considerable energy in the studio trying to construct that sincerity through elaborate miking configurations and an emphasis on ensemble performances in the studio among other interventions. These artists

and engineers recognize that engineering out the "studioness" (Greene, 2005, p. 10) of a recording contributes important information to the listener about the artist's identity and values, even though the recording process is largely understood to be "surgical" (Marshall, 2017, pp. 88-89) and highly mediated. For RG, his association of studioness with popular contemporary rap songs (as well as his association of generic pop music with that studioness) shaped his conception of authenticity in proximity to liveness. As Fouché (2012) illustrates, displays of liveness have also marked important sites of "authenticity" among older generations of hip hop artists, particularly DJs, for whom practices like the use of an analog turntable has increasingly been edged out in favor of more publicly accessible digital turntable programs. For these "older heads" being able to work on the fly with repurposed tools and without formal instructions, marks ones entry into the universe of hip hop.

RG was not the only artist at Sankofa who was deeply invested in using his music to change popular narratives about rap music. Several of the other emcees that I interviewed spoke in some way or another about crafting their identities as artists in opposition to the ideals that governed the rap music they heard and saw on the radio and on TV, namely the glorification of sex, drugs, and wealth. Like RG, KM was excited to discuss why he rapped over non-trap beats, choosing instead to rap over soulful, sample-based beats reminiscent of the earlier work of artists like Kanye West and Jay-Z:

> I'm not like everybody else so I don't want to sound like everybody else. People at [the local college]…should come down here and see what we're about. It's not all negative…We're not just making auto-tuned pop garbage over trap beats. We're really talking about things. We real lyricists.

In this brief statement (first quoted on page 11), KM defines himself and his music in sharp relief to the kinds of anti-intellectual rappers he associates with vocal tuning, trap music, and pop music (being a "real lyricist"). In particular he is angered by the harmful stereotypes about black young men that persist in contemporary mainstream rap music, and he assumes that the strength of these negative associations accounts for the local college community's lack of engagement with Sankofa Studio and its clients. Whether KM's theory was correct or not, his comments paired with those of the other rappers, further highlight the ways in which the artistic and technical decisions made by artists working in a space like Sankofa are shaped by the anticipation of an audience comprised of listeners who are either peripherally connected to hip hop culture or those who are critical of commercial hip hop and nostalgic for a lost time. In turn these values emerge not only in terms of what the artists rap about but also how they choose to present their music through the production and the mix.

For some of the other rappers at Sankofa, they expressed just as much concern with hip hop music's most problematic messages but they were not necessarily as critical of its most popular sound. During an interview with JJ, he shared that his artistic approach involved crafting songs with thoughtful lyrics

about issues like gang violence and racism, but he chose to do so over the "same trap beats" that RG had denounced as ruining the art-form. According to JJ:

> Not all trap type beats are bad. They're catchy! And we can use the beats to connect old school with new school. That's how people listen. And that's what it's about here at [Sankofa]. A lot of older heads say I sound like Big Daddy Kane [laughs]. Well, that's cool because now you get to hear what Big Daddy Kane would sound like, rhyming over a more newer sounding beat. I think it's okay to use a little auto-tune, stuff like that, if you're actually talking about real life. I'm actually talking about stuff.

For JJ it was acceptable and in fact strategic to use creative tools like trap style beats and auto-tune in his music as it was in service of delivering a positive message to the community. Doing so enabled him to dress up the progressive messages he felt were absent from most commercial rap songs with an infectious new school presentation. As Rose (2008) notes, progressive rappers have typically struggled to find footing beyond the periphery of the commercial realm, often because of the active efforts by industry professionals to promote "gangstas, pimps, and hoes" as representative of black "authenticity." She argues:

> One of the ways that hip hop's progressive spirit has been driven to the margins is through the fashioning of an overtly "political identity" (i.e., conscious rap) as the only alternative to gangstas, pimps, and hoes. It's as if the only answer to a stylishly conceived "thug life" is to grimly fight the power (Rose, 2008, p. 243).

Thus for JJ, the only way to push the kinds of messages he hoped to deliver through his lyrics was to dress them up in the costume of popular music: overt vocal-tuning, trap-infused beats that he called "bangers," and catchy hooks.

It is important to note that at the time of my observations and interviews during the summer of 2013, hip hop was experiencing a sea change of sorts regarding the presumed commercial viability of "progressive rappers," or at the very least, rappers with a primary focus on dense lyricism. At the time that Tricia Rose published *The Hip Hop Wars* in 2008, she convincingly argued that hip hop was in crisis. Specifically she highlighted five factors that had coalesced in the mid-1990s to enable the wide-scale corporatization and distribution of hip hop's most one-dimensional and harmful images and ideologies of poor and working class black people throughout the early 2000s: (1) new technologies and new music markets; (2) massive corporate consolidation; (3) expansion of illicit street economies (4) America's post-civil rights appetite for racially stereotyped entertainment; and (5) violence and sexually explicit misogyny as a "valued" cultural product (p. 13). Fast forward to October 2012, when the rapper Kendrick Lamar dropped his second studio album "Good Kid, M.A.A.D City" to commercial, critical, and scholarly acclaim. The 12-track album finds Lamar waxing philosophical about the highs and lows of navigating black male adolescence in his Compton hood through extraordinarily vivid lyrics and a distinctive style of multi-subjective storytelling (Haile, 2018). In his glowing review of the album, *XXL* writer Jaeki Cho writes:

> The quality of precision shows in the music, the lyrics, the concepts, and the structure, making the Compton native's debut [major label] debut one of the most cohesive bodies of work in recent rap memory…While only time can

> determine the album's fate, this life chronicle of Kendrick has all—if not more—of the qualities rap's now living and deceased legends have carved in stone. It's an undeniably stellar major label debut from Kendrick Lamar, which will certainly hurt the self-esteem of many rappers out now while also inspiring them to reach these heights (Cho, 2012).

Lamar, alongside his frequent collaborator J. Cole who also took up space on the Billboard hip hop and R&B charts during the summer of 2013, has since become synonymous with thoughtful lyricism and generally progressive ideals; in 2018 he was awarded the Pulitzer Prize for music, the first for a rapper since the Pulitzer committee added a music category in 1943 (Coscarelli, 2018). Above all, Lamar's success has widely signaled that heady lyricism paired with experimental beats can also spell commercial success and industry-wide respect. Although none of the artists directly cited Lamar's career as a blueprint for their own "branding" decisions, many of them named him as a musical influence. So, in some regards the fervor with which the rappers at Sankofa spoke about rejecting mainstream rap could also be understood as partially fueled by the momentum of Lamar's meteoric rise.[43]

[43] This is not to suggest that Lamar's success has in any way resolved many of the central issues plaguing mainstream hip hop, nor that his music is absent of elements of its most problematic themes. As Rose (2008) painstakingly illustrates "mainstream" white America, various music moguls (both black and white), and mass-media corporations possess a deep financial and/or cultural investment in promoting a singular image of black "gangstas, pimps, and hoes" as "authentic" (p. 25); and further the strength of these financial and cultural investments indicates that they will not soon be challenged without a thoughtful and well-coordinated counter-offensive from actors at all levels of industry. Even so, given Lamar's cultural relevance it is important to at least consider how his career might serve as a catalyst for new narratives about what commercial success sounds like.

Still, I was quite fascinated by the fact that so many young people expressed this rejection through such a deep commitment to eras of hip hop that predated them by decades, particularly given the centrality of black youth culture in driving global interest in hip hop (Kitwana, 2002). When iconoclastic emcee André 3000, then 42, was asked whether he would be releasing new music in the future he responded:

> No matter how great you are or were at a certain time, the older you get, the slower you get—I don't care who you are. And I can feel that coming on. There's always a new wave of artists, and sometimes I'm just like, "I'm good. I'll let the young guys do it" (Gale, 2017).

Most of the "young guys" at Sankofa had been born in the early aughts just as the "consolidation and 'dumbing down' of hip hop's imagery and storytelling" in mainstream media had reached a peak, according to Rose (2008, p. 3). I will thus conclude this section by illustrating the importance of recording in a space like Sankofa for instilling these young artists with such a high valuation of older musical styles. During that summer I learned that many of the young artists who'd spent their formative years in and around CCA had been privy to workshops and lectures hosted by local community members as well as visiting musicians and scholars. Although I did not observe any of these events during my time at Sankofa, my respondents as well as other community members who met and worked in the same building as the studio often spoke about different music-focused events they'd attended in prior years, the most notable of which

being a workshop in 2011 held by hip hop progenitors like Afrika Bambaataa, Popmaster Fabel, and Joe Conzo, who visited the studio to talk with the community about the evolution of hip hop culture.

Figure 9: An image of children recording at Sankofa Studio taken by acclaimed photographer Joe Conzo during his visit to the studio in 2011 (Conzo, 2011)

Additionally, because of Sankofa's central location within a community center, studio attendees often crossed paths with local organizers and were sometimes in attendance at rallies, meetings, and other programming geared towards progressive change in the city. As I mentioned in the introduction, given Sankofa's location within a community organizing space as well as the administration's investment in connecting the youth with hip hop educators (and the ability of the community center to do so given its regional proximity to several major universities like Syracuse University, Colgate, Cornell, and Ithaca

College), it is easy to see why many of the youth gravitated towards the sounds of hip hop's golden and silver ages.

Understanding the broader history of Sankofa also provides insights into what a community-studio might offer beyond access to recording equipment and a trained engineer on site. Through interviews I soon learned that several of my respondents, including the more active rappers at Sankofa like KM, had access to home studios at which they'd recorded demos or earlier projects. KM, who worked with a few different local beat-makers, owned a laptop with GarageBand as well as a USB microphone with which he sometimes recorded song ideas. His cousin, whose home studio I visited twice, was equipped with a Bluebird large diaphragm condenser microphone, as well as a MacBook with the digital audio workstations GarageBand and Logic. I even sat in on one of KM's session led by his cousin, in which KM recorded the first verse of a new song; I did not hear a discernible difference in the rough recordings at his cousin's studio versus those at Sankofa. Yet KM was a regular at the studio as well as several others who could ostensibly record with EM or others free of charge, with greater latitude regarding the use of colorful language, and total freedom to use alcohol and psychedelic drugs. As I spent time at Sankofa, I began to recognize how the studio-goers were uniquely enriched by the experience of coming into a community-studio. The most active and well known among the artists I met framed their musical work as resistance music in some regard and thus recording

at a studio housed in a space often used for community organizing allowed them to fully embody their identity as activists. As KM shared, "I don't talk about the guns and drugs shit. I talk about us doing better because I really want us to do better and I feel like the community is watching me and really supporting the movement." Consequently, when the community center hosted programs or events, artists like KM and his crew were often asked to provide the musical entertainment. Additionally when the city held its annual music festival, the artists that often graced the stage were those who had played an active role at the community center and at Sankofa. When I was asked by CCA to perform at their annual Juneteenth festival in 2017, two of the artists who opened for me were rappers I had interviewed at Sankofa.

It is not my intention to make a cynical argument about the artists using their connection to Sankofa purely for some kind of social mobility; instead I am simply highlighting the ways in which the needs of the studio administrators, the engineers, artists, and community intersect in a community-studio like Sankofa. The funders and those who run the community center are invested in cultivating certain kinds of artists who generally reflect progressive ideals that fall in line with the politics of the center (and broader community); the artists, in conjunction with the engineers, seek to embody these ideals through their songwriting, production, and mixing approaches; and the community center rewards them with whatever visibility and access it can provide. Thus what this

section has hopefully revealed is both the way in which the framing and design of a studio as a community space can find its way into the values and technical desires of the artists working therein as well as how the artists use that framing to define and advance their work.

Artistic Life at Inclusive Recording

At Inclusive Recording, the framing of the space as an accessible, explicitly feminist recording studio drew in a number of different artists, for better or for worse. As I detailed in Chapter 2, Claire expressed great frustration at being the recipient of shallow requests from artists and managers alike who were eager to work with a "female audio engineer" or who desired some "feminine energy" for their album yet were unable to speak about their interest in Claire's qualifications or her studio set-up (or for that matter clarify what they meant by "feminine energy"). But for those who were earnestly invested in recording music in a space like Claire's studio, Inclusive Recording quickly became a safe haven and a site for creative freedom. Each of the artists I interviewed at Inclusive Recording shared the common narrative that it had in many ways become a kind of refuge for artists, often women, who had experienced everything from minor differences of opinion with an engineer in a prior recording space to sexual harassment during recording and mixing sessions. As one interviewee shared, "Working with [Claire] is like going to therapy."

As was the case with many of the rappers at Sankofa, the artists at Inclusive Recording who'd felt marginalized in other spaces often invoked the professionalism they experienced therein as a way to distinguish the studio from the other spaces they'd visited (or imagined visiting). Just as RG and JJ expressed excitement that they were taken seriously as clients by Dan, the artists at Inclusive Recording who felt overlooked in the past expressed a deep appreciation of Claire's commitment to their creative work as exemplified by her adoption of the facilitator role discussed in Chapter 2. Yet for these artists they stopped short of calling Inclusive Recording a "professional" studio because of their negative associations with studios that are coded as professional. This was certainly the case for SM, a 31-year old experimental rock songwriter and guitarist whom I observed in two recording sessions with Claire and interviewed afterwards. When I visited Inclusive Recording to observe SM for the first time, one cold January afternoon in Pittsburgh, she had come to the studio to complete recordings for a solo project she'd started a year earlier with Claire. SM had met Claire through their mutual position as volunteers in the Pittsburgh chapter of the national arts organization Girls Rock Camp, and they soon began working together. SM's hope was to complete an EP with the songs she recorded at Inclusive Recording and independently release them on a digital platform "at some point in the near future."

Within my first hour of sitting down, SM revealed that the tracks she was working on were actually re-worked versions of songs she'd written with a former friend and collaborator a year and a half earlier. She had ended their friendship when he expressed romantic feelings for her, which she did not reciprocate, and soon after they recorded their songs with a friend of his, she stopped communicating with him altogether. When she received the "stems" (individual digital files of each recorded track) from their recording session, they were emailed to her in such an incomprehensible way that she was unable to piece the tracks together (at this point in the story Claire interjected that it is unfortunately a common practice for sound engineers to hold on to tracks or only send bits and pieces in order to exert control over a project or artist, or because they don't trust the client to keep the rough recordings private or pay for the sessions in full). After much consideration, and with her ex-collaborator's blessing, SM decided to re-record the songs without his experimental embellishments and release them under a new stage name. She had even recruited some studio artists and friends from other band projects to record additional bass, vibraphone, and drum accompaniments.

Because it had been a year since SM and Claire last recorded anything, they initially spent the session trying to assess how the earlier recordings sounded and what they had left to complete. Claire sat at her desk in front of her computer, with a notepad and pen in hand, as SM kneeled next to her with her

MacBook open, her screen filled with Logic sessions from demos she'd recorded at home or with Claire at other times. Once plugged into the studio monitors, SM played Claire a song they had recorded together that she had been tweaking on her laptop; after recording the tracks the year prior, Claire had sent roughly mixed stems to SM so that she could listen back on her own time and figure out what she wanted to add and remove. As the song played, SM began deliberating about the merits of each track—for example wondering out loud whether or not to keep the drums and if so whether to use the take with the fast drums or the drum take completed at half-time, or if she wanted to keep the harmonic embellishments she'd played on guitar. Only when Claire was asked directly by SM what she thought, did she share her opinions regarding SM's concerns. She reminded SM that it's possible to bring the drums in for specific parts of the song rather than leaving them in for the track's entirety if that's what she wished; in terms of the harmonic elements, Claire shared that she enjoyed the warmth that they added to the song.

For the next hour or so we listened to three different songs that SM had started to independently rearrange, while Claire took notes and SM expressed her concerns. Eventually they decided to re-record the lead guitar parts from the first song SM had played. Claire cued up the Pro Tools session they had used to record the song a year earlier and then she began setting up three microphones in proximity to SM's amplifier as SM sat and tuned her guitar. When I asked

Claire why she set up three mics, she explained, "So we can have options. Every microphone sounds slightly different." Once Claire finished, she set up SM with a personal mixer through which she could adjust the playback mix in her headphones to her liking. SM then requested that her "scratch vocals" (a vocal track recorded purely for reference) play in the mix during the recording so that she could keep time. Once Claire had set up the mix that SM was going to hear through her headphones, she spent several minutes finding a metronome tick sound effect that didn't irritate SM. Then it was time to record. Claire gave SM a two-measure count-in and then she began to perform. After SM completed one take, we listened back, specifically to observe how each mic had picked up the performance. As Claire isolated the mix captured by each microphone and played it back, she asked, "How do you feel about each of the sounds? Do you feel like it's translating well?" SM responded that she felt good about each of the mixes and that she was ready to record a second take.

For the rest of the afternoon SM and Claire continued to work on tracking this song and one other. SM performed several takes of both songs all the way through; while we listened back, she pointed out areas that she wanted to punch in and re-record and Claire obliged; periodically we took breaks, once to order take-out and discuss our personal lives, and at another point to commiserate over the trials and tribulations of pursuing life as an independent musician or in Claire's case, a small studio owner and sometimes-touring live sound engineer.

For 20 minutes we unsuccessfully attempted to troubleshoot a strange buzzing sound that was coming from the amp. Finally after about five hours in the studio, and with the lead guitar sections of two songs fully tracked, we decided to call it a day.

The next morning when I returned to the studio to observe the tracking process once again, the day unfolded in much the same way. We caught up and ate our leftovers from the day before; Claire placed the microphones near the amp while SM tuned her guitar; Claire cued up the Pro Tools sessions they'd used the year prior and then she arranged SM's mix with her scratch vocals and a more palatable metronome sound; when SM was ready to record, she played a few takes of a new song, indicating where to punch in. Once SM felt satisfied with the takes she had recorded, we wrapped up the second session. As SM loaded up her equipment and Claire cleaned up the studio we continued our conversations from earlier and agreed to try and meet up again soon. I left the experience feeling energized, and I imagined this is the way many of Claire's clients must also feel.

When I followed up with SM to discuss how the sessions with Claire squared up with her experiences at other studios, it became clear just how distressing commercial studio life could be for young women navigating the process alone. Although SM shared the details of some productive sessions in which the engineers had listened to her ideas and collaborated with her to bring

those ideas into being, overwhelmingly her experiences at other recording studios were negative ones. One of her earliest projects, which she had recorded in college in a relatively sophisticated bedroom studio, ended in chaos after the three engineers helming the tracking and mixing process failed to properly organize their digital sessions and they each eventually lost interest in the project altogether. "There were too many cooks in the kitchen…[The files] all got lost and nobody wanted to put them together," she lamented.

Her next experience at Studio-B proved to be much worse although the studio was far nicer.[44] SM, who was a trained piano technician by trade, had connected with a sound engineer who worked in a studio with a piano in dire need of tuning. They soon agreed to set up a time-trade in which she bartered piano tech work for studio time, but she grew frustrated upon realizing the terms of the trade:

> [It] turned out to be less than ideal because he valued his time more than he valued my time. I went in for the first time and then we came up with this idea. In terms of how much work I did, I would say—because it was a Steinway that was very old, they're notoriously hard to tune and they're actually a harder tuning than usual—I probably spent two and a half or three hours there every single time just to make it sound decent…I mean he would have owed me a thousand dollars, but instead of paying that thousand dollars, he decided to record me for two days. He set aside just two days for us to record five tracks.

Although SM felt deeply undervalued by his proposal, she was eager to work with a professional engineer at a studio that had recorded high profile artists like

[44] This is a pseudonym.

the singer-songwriter James Taylor, so she wrangled her four bandmates at the time for two long days of recording. However, soon after they began tracking it became clear that SM and the engineer had envisioned the process unfolding in very different ways:

> He was very vocal about the fact that we were less "professional" than the bands he's used to recording. Less rehearsed…I feel like as a professional in my field, I don't try to pass judgment on people because I don't think *that's* professional. That kind of put me on edge. And so we would do a lot of guitar tracks, for example, that we didn't need to do because it was going to be buried in the mix anyway. Or, you know, I was happy with the imperfections and he was like, "You're not playing to the beat"… Overwhelmingly, I felt that there was some macho energy or like a lot of male energy that caused me anxiety because he was asking me to do something I couldn't do. I wasn't a trained singer, I wasn't a trained guitarist. And so knowing that and letting me step into the studio and then saying things like, "A professional guitarist would do this or that"…You know, it was like what do you want me to do? I'm already right here.

By framing the engineer's condescending and controlling attitude towards her band in terms of his masculinity, SM is calling attention to the gendered ways in which expertise is often weaponized in technical domains. When SM notes that she too is a professional in her field, she is both critiquing his approach and asserting that she also has useful knowledge to contribute to the interaction. As I detailed in earlier chapters, one of the primary reasons Claire had established Inclusive Recording was to reject long entrenched narratives about the sound engineer as the exclusive keeper of technical knowledge in the studio, which had emerged as part of the white male-dominated craft culture of early sound engineering and later overlapped with the corporate computing culture of

contemporary recording spaces (Porcello, 2004, pp. 735-736; Schmidt-Horning, 2013).

Beyond highlighting the salience of certain sexist attitudes in commercial studio settings, this power struggle also calls attention to the importance of having an honest conversation about expectations between artist and engineer at the start of a new recording relationship, what Claire referred to as a "consultation." In contrast to her experience at Studio-B, SM's sessions with Claire proceeded from the understanding that SM should be fully in control of the creative process and Claire's role was to facilitate that process in unfolding smoothly. To that end Claire actively cataloged SM's preferences and made sure SM felt heard (changing the metronome ticking sound to one that SM preferred, keeping her opinion on SM's music private unless asked, taking detailed notes, etc.) in addition to allowing space for SM to experiment and articulate future preferences (setting up multiple microphones to capture the same take instead of preemptively selecting an option through the staging of only one mic), and extending hospitality to SM at every session (ordering takeout and engaging in friendly conversation about their lives outside the studio).

In many ways Claire's behavior could be seen as a reflection of the importance on the part of the engineer of developing a kind of bedside manner and creating a welcoming environment in streamlining the recording process. As Schmidt-Horning (2013) argues, beginning in the 1960s artist comfort began to

take precedence over practical sonic considerations in guiding the recording process:

> [T]he ambience of a studio no longer meant its acoustical perfection, rather it became the 'vibe' given off by those who worked there, the 'feel' of the surroundings, an exotic or secluded location, hip interior design, amenities such as hot tubs and sleeping accommodations, and access to all kinds of indulgences (Schmidt-Horning, 2013, p. 209).

Modern commercial studios certainly do not have the kinds of budgets that once supported such extravagant amenities, but the "vibe" remains an important part of the recording process in certain high-end studios (Bates, 2012; Marshall, 2017, p. 221). In his experience as an intern at a mid-size commercial studio in Los Angeles, Marshall (2017) has discussed the importance of knowing "how to hang" for creating an ideal recording environment, stating:

> A good intern or assistant "should know how to sit in a studio and observe without making their presence uncomfortable-basically this means knowing how to take your cues from those around you. Sometimes that means shutting up and being still, but other times it means talking with band members, making the beer run, and being part of the gang. …The biggest thing you learn is how to hang - have a good hang so people aren't having nervous breakdowns and get good takes" (Marshall, 2017, p. 201).

Although this advice is designed to properly socialize studio interns, in Claire's position as the engineer running the session, the performance of hospitality through friendly conversation with SM and treating parts of the session like "a hang" still constitutes important production work by enabling SM to feel comfortable and produce "good takes."

Yet for the engineer at Studio-B the cultivation of a positive vibe was not as much of a priority. Perhaps because of the pressure to complete the record in two days, these kinds of small but important gestures like making time to catch up had to be cut. As Marshall (2017) has argued and I have illustrated in chapters 2 and 3, sound engineers working in commercial spaces are also often guided by the norm of time-based productivity. Thus, while SM found it wholly unreasonable for the engineer with whom she bartered to allot just two days to record five songs, this schedule may not have been far off from standard pacing in a high-end recording space, particularly one that hosts national acts. Furthermore, because the session was the result of a barter and not a "paying" client, the engineer, who only worked at and did not own the studio, was not being directly compensated for the exchange, which could have also impacted his desire to spend time on the project. In the end, whatever his motivations may have been for treating SM so dismissively, he never completed a final mix of the project and SM's requests to move forward after the initial recording and mixing sessions went unanswered.

SM's next set of recording experiences started off more promising than the last but soon placed her and her bandmates, all of whom were young women, in the company of male engineers who made inappropriate comments about the band's appearance. Speaking about the first of these experiences in the studio, SM recounted the following problematic interactions:

> [The engineer] was very kind in that he helped put all these files together. He accepted a lower rate of pay because I couldn't afford [his rate] at the time, which I thought was very generous. But he also made a comment about our appearance. And then that happened again two more times with two other engineers always about our violinist…and one engineer saying, "She's the hottest one of all ya'll." He just said it, while she was behind the booth, like in the booth recording. So I don't know what they said about me. I don't know what they said about the other females in the group and there were four of us.

Beyond the obvious discomfort caused by these troubling remarks, this interaction also highlights the ways in which the power dynamics of the recording process can be amplified by the very architecture of the studio. In this case, the separation between the men in the control room (the "central nervous system" described in Chapter 2) and the women in the tracking room, signified not only the relative control of the engineers to the artists in this scenario but it also enabled the engineers' objectification of the women to persist unchecked and unbeknownst to the artists behind the glass. "It kind of got me thinking about the motivations for them to do this in the first place and also the quality of the work…maybe their motivation was to work with us, but not necessarily to give us their best product or even close to their best product," SM shared as she reflected on the experience. Seen in this light, the "open studio plan" utilized in spaces like Sankofa Studio or Inclusive Recording is a radical intervention in part because it may offer relief from certain predatory behaviors that are likely allowed to thrive in spaces with physical separations between artists and engineers.

Although I do not present SM's experiences as representative of commercial studio life for up-and-coming women artists, the recent revelations

of some of the most visible women in the music industry indicate that it may not be so farfetched to view SM's accounts in this way. In a remarkably tone-deaf response to the glaring absence of women performers, producers, and engineers who were recognized at the 2018 Grammy awards, Academy president Neil Portnow stated that the onus is largely on women to address gender imbalances in the industry, noting, "[W]omen who have the creativity in their hearts and souls, who want to be musicians, who want to be engineers, producers, and want to be part of the industry on the executive level…[they need] to step up because I think they would be welcome" (Kornhaber, 2018). Naturally his comments were met with anger and disbelief from high profile women artists and executives who shared stories of mistreatment and sexual harassment that mirrored many aspects of SM's experiences (ibid). At a 2018 roundtable discussion for prominent women in film hosted by *The Hollywood Reporter*, the actress, singer and multi-instrumentalist Lady Gaga, shared that as a young and unknown woman artist it was "the rule and not the exception, that you would walk into a recording studio and be harassed" (Belloni, 2018).

Still, I present SM's journey less to make a general statement about the landscape of modern commercial recording and more so to indicate how radical and refreshing a space like Inclusive Recording might be for artists who have struggled to be heard in other studio contexts. When viewed against the backdrop of SM's experiences, Claire's conception of her role as a facilitator is

not simply a neat discursive tactic for bringing in clientele and "branding" the space as a feminist one[45]; it is an approach that is grounded in the reality that recording professionals must develop interventions for artists from vulnerable groups to prevent their mistreatment or endangerment, particularly in recording spaces that are coded as "professional."

For other artists at Inclusive Recording, the value of the space lay less in the overall environment Claire was creating around accessibility and more in her professional audition. This was the story for TL, a 39-year old singer and synth keyboardist who'd been in an electro-fuzz pop duo for eight years with her husband, a skilled guitarist and bassist, until his untimely passing in 2018. Their band had opened for me two years prior at a show in Pittsburgh and after I learned that they were recording with Claire, I returned to observe them in the studio as they tracked a few sections of what would become their last project as a band. In contrast to SM's experiences, TL's prior recording sessions with her husband were generally positive, whether they were tracking in home studios with friends or at formal recording facilities with trained engineers. She expressed a particular fondness for the casual nature of their home studio sessions, describing one afternoon in which she sandwiched tracking sessions in between

[45] By using the word "branding" I am calling attention to the capitalist co-optation of the language of feminism and women's empowerment toward purely commercial ends, which has accelerated in recent years according to Ziesler (2016).

spending quality time with the engineer's family: "I'd be upstairs playing with his wife and kids and then I'd come down and cut a vocal track, and then go help make dinner. It was just hanging out."

Where TL and her husband encountered most of their challenges in the studio was in the post-production process, whenever the person charged with mixing their tracks tried to tame the unruliness of their fuzzy, distorted sound in some way. TL recounted one early experience in which the mixing engineer, who was also a close friend, began to get too surgical with their recordings:

> He recorded us super duper...too professionally. The production level was almost too much for us. I mean it was super fun. We were just fucking hanging out…we'd go to his house. But he had a more professional setup. He was doing stuff like tweaking how the "s" sounded on my words. And he was doing all of these little tiny things…He knew that we wanted to be noisy. But it was almost a more produced version of that noisy sound, if that makes sense. Less lo-fi, less fuzz kind of. I mean it still sounds like us. But I remember at the time we were kind of like, "Damn dude, you know, we can sound a little off. We're cool with that."

For TL and her husband any attempts to remove the lo-fi or otherwise "off" qualities of their tone or performances put their aesthetic at-risk, which in turn was tied to their politics around "fighting the system" and community building with other progressive, sonically transgressive acts. In regard to their earliest recordings, which TL's husband had tracked and mixed at their home studio, she noted, "Those early demos are so fucking warm. They have this quality, you just feel almost like you're there. You got more of a sense of the people." Like the artists and engineers who argue that the use of even discrete vocal tuning risks

the emotional impact of a take delivered "imperfectly" (Marshall, 2017, pp. 41-42) or those who feel that the increased signal-to-noise ratio of music played on CDs versus LPS lessens its musicality (Perlman, 2004, p. 794), TL and her husband associated sonic imperfections and noise with distinct expressions of placeness and humanness so central to their artistic ethos. Removing those imperfections meant engineering the heart out of their intentionally flawed sound.

When TL and her husband arrived at Inclusive Recording, through the recommendation of a family friend, they were excited about Claire's client-centered approach and her ear towards experimental music (outside of the studio she was an experimental cellist and lover of artists like John Cage). Rather than starting from a place of containment or refinement regarding the fuzz and distortion, Claire and the band often exhausted all of their sonic options, looping the guitar, vocals, and synth tracks through a variety of different filters before determining which direction to take a particular song:

> [Claire] started to have fun with it too! [With the most recent project] she was like, "If we're going to go in that direction, we're just going to go all fucking way in that fucking direction. We're going to play with the way the vocals sound. [They'll] have this weird effect on it"… Claire and I, a couple of times, had a lot of fun just playing with vocal shit. Like what if I do a take like this? And then I do a take like that? And then we layer them and let's see how that sounds. We did a lot of just playing with the vocal layering in a lot of the songs just on the spot.

For TL having the freedom to experiment with the sonic potentials of her synth and vocal takes was an important part of recording at Inclusive Recording. And

although SM and TL arrived at the studio for different reasons, they both reflected on the fact that sparking a genuine friendship with Claire had also played an important role in developing their artistic sensibilities. As TL remarked at the end of our interview:

> She's a friend…And I think that changes the whole experience because you don't have to be afraid of offending anyone or saying the wrong thing or being too picky or not being picky enough. You know? No holding back. You don't have to be afraid.

At a traditional studio, the emotional work of catching up with clients, setting the vibe, and catering to their sensory preferences is all in the interest of getting a good take. Interns are expected to handle tasks like lighting incense, setting mood lighting, and procuring food for clients in the hopes of getting the artist into exactly the kind of mindset TL described having with Claire ("no holding back") (Marshall, 2017, p. 221, 268). But at Inclusive Recording the transactional nature of such interactions was not felt by the clients. Although working with friends had initially presented challenges for Claire as far as managing her business operations (see Chapter 1), it also resulted in good takes made possible by genuine friendships. As Tillman-Healy (2003) argues in her work about the use of friendship as a qualitative research method:

> Perhaps the most important aspect of this methodology is that we research with an ethic of friendship, a stance of hope, caring, justice, even love. Friendship as method is neither a program nor a guise strategically aimed at gaining further access. It is a level of investment in participants' lives that puts fieldwork relationships on par with the project.

Similarly, at Inclusive Recording the act of getting a good take, was never premised as being more important than the friendship itself. In turn this attitude facilitated the performance of "good takes" in a way that also managed to escape the pressurized environment often felt in traditional recording spaces.

Conclusion

In this chapter I have explored some of the ways that artists who utilize community-studios frame their identities and their art in relation to the space in which their music is recorded. Just as the engineers' understanding of the space and their role in it colors everything from their language to their recording and mixing philosophies, the multivalent status of the space invites certain kinds of artists and creative approaches. At Sankofa, many young emcees used their music to respond to local and national narratives about their identities as poor and working class black youth and rappers. Their investment in recording a certain brand of progressive rap music with classic hip hop production styles was propped up by the community center in which Sankofa was housed, through punitive signage dictating the use of "clean" language, and verbal and written warnings against the possession of illicit substances; as well as through events and educational opportunities that tied the space to broader community organizing efforts. In turn these emcees were given access to various platforms through the community center and other organizations with similar political

leanings. And at Inclusive Recording, the framing of the space as an accessible, feminist site invited a range of artists, often women, who were seeking more collaborative and safer recording experiences than the ones they had found in more traditional commercial studios (although this was certainly not the only kind of artist who recorded at the space). In contrast to the emcees at Sankofa, who often expressed a desire to achieve local (and sometimes global) success with their music, the artists at Inclusive Recording described musicking as a recreational activity or an exercise in personal fulfillment as was the case for SM. Both sets of artists could certainly be seen as creating music that is transgressive in some way or another. At Sankofa this meant largely rejecting the use of auto-tune, so pervasive in mainstream hip hop, and employing hip hop production that departed from the intentionally synthetic sound of trap style beats while at Inclusive Recording this took the form of sonic experimentation and the preservation of human error that might be edited out or "corrected" in a more professional studio. Ultimately these case studies reveal how the framing of a community-studio, in this case as a pre-professional space or an alternative to professional studios, coproduces particular kinds of artists and forms of musical expression.

Along a similar vein, this chapter has also explored how the status of a community-studio as a "professional" studio or radical community resource is in part negotiated by the artists who frequent them. Like the engineers who manage

the daily operations of the studio, the artists also engage in forms of boundary-work. At Sankofa many of the artists supported Dan's efforts to fashion the space in the image of a "professional" studio as this designation communicated a seriousness about their work that they were not afforded in other spaces. At Inclusive Recording, the artists often distinguished the studio from other "professional" studios they'd visited, highlighting the ways in which the culture around commercial recording often engenders mistreatment of artists from underrepresented communities or an adherence to more conventional sonic sensibilities.

I close this chapter by returning to the original question that largely prompted this dissertation project: namely what do community-studios provide for those who already have the skillset to record themselves? As this chapter has illustrated, part of what might insulate community-studios from broader shifts in the recording industry is the way in which their symbolic capital performs important work for artists in regard to their identities as musicians and global citizens. Although Claire joked that she was a "bad business person" because she valued accessibility of knowledge so much, the community-studio model is in many ways well equipped to weather the economic storms presented by the proliferation of low-cost home studios. As a vocal feminist it was important to BL to record in a space like Inclusive Recording; it was important for the rapper

KM, a pillar of his community, to record in a space that had been graced by the creators of hip hop.

Even for artists who do not (or no longer) frequent community-studios to record their music, these spaces possess symbolic value. When popular, progressive, Ithaca-based hip hop group The Gunpoets announced that they would be releasing a new album of remixes in collaboration with other local artists in 2011, they pledged that 100% of the profits from the record would go to support Unity Studio, their local community-studio (Catalano, 2011, p. 31). In 2015 Chicago-based emcee Chance the Rapper made headlines when he returned to YOUMedia, the community-studio at which he had recorded his first mixtape before achieving international success (Tardio, 2015). For the artists, engineers, and every day citizens who live and work near community-studios, their financial contributions and solicitation of the space become a way to signal their values and in some cases it even becomes a civic responsibility, a way to support a progressive and vibrant space that engenders creative expression from voices on the margins, particularly as many of these communities are literally being pushed to the margins of society through gentrification and a widening wealth gap.

CONCLUSION

Throughout the process of working on this dissertation and sharing its subject matter with anyone who would listen, one question kept coming up, again and again: would I ever consider opening up my own community-studio? Ostensibly working on a lengthy project like this has enabled me to figure out what works and what doesn't work in a community-studio space. After all, as an STS scholar I have been trained to examine sociotechnical configurations like the recording studio with a critical eye; working on this dissertation has been an extended exercise in parsing out the complicated politics that live in modern studio assemblages. But on the ground and behind the boards the details are always messier than what I can present on paper. I have tried to be as generous as possible in my analysis of the challenges faced by the administrators and audio engineers who run these spaces, knowing that were I to occupy any of their roles, I would not be sure of the best ways to serve my community either. And I have tried my best to richly document the stories of the artists who work in these sites without focusing so much attention on making such a clever argument that the details of their lives become background noise.

It can certainly be easy to examine these kinds of sites with a cynical eye; as several scholars that I have cited throughout this dissertation like Chéri Ndaliko, Tricia Rose, Travis Gosa, Kitwana Bakari and many others have articulated, it is often useful to adopt a healthy skepticism about programs that

trade in "helping" poor and working class black and Latinx youth to find success (whatever that means for them). Still, there is something to be said about taking the time to learn which spaces are genuinely invested in empowering underserved communities and allowing them the space to grow and improve. Thus rather than proposing a set of best practices, I will conclude the dissertation by revisiting some of the arguments and observations I have advanced as well as highlighting the broader implications of this work as a springboard for further research.

Dissertation Overview

Drawing on ethnographic research and interviews, as well as a range of sources in sociology/history of technology and science, and studies of gender, race, and urban culture, this project has revealed the community-studio to be a unique sociotechnical phenomenon worthy of critical engagement by STS and sound studies scholars as well as those invested in hip hop studies and feminist and gender studies. In addition to highlighting several notable community-studios, this dissertation has also laid out the confluence of sociotechnical and cultural forces that enabled the studio to emerge as an intervention for various forms of social inequality in the first place, namely: the proliferation of low-cost tools of digital music production and recording starting in the 1980s, the meteoric rise of hip hop as a global phenomenon in the 1990s, and the Western

practice of ascribing "emancipatory politics" to certain technological innovations (in this case the digital tools of modern musicking). Hopefully this project represents the first of many detailed accounts of community-studio histories and modern musicking practices.

This dissertation has also offered a ground up analysis of how two very different community-studio sites function. For both sites I have documented the organizational dissonance that takes place at every level of managing a space that sits at the intersection of the white-collar workflow of the modern commercial studio, and the anti-establishment imperatives of radical community organizing; and I argue that regardless of the kind of community-studio one works in, this dissonance is a central tension that informs community-studio politics. Whether community-studios provide accessible recording services and technical training to poor black and Latinx artists or women and girls (or both), and regardless of how effective these programs may actually be in achieving their stated missions, they share a commitment to reimagine the recording studio as a site for radical social reform; in turn the demands of honoring this commitment in a way that also achieves some measure of financial sustainability and organizational efficiency *require* community-studio stakeholders to shift between constructing such spaces as either "professional" studios on the one hand or radical community resources on the other. The expectation that community-studios should empower their clients to learn the same technical skills employed by the

studio engineers is in many ways antithetical to the logics that govern modern commercial studio management like time-based productivity and the protection of trade secrets; conversely the expectation that community-studio engineers should always serve as stewards for their clients' creative ideas, is complicated by the fact that at times the engineers' "professional audition" (Porcello, 2004) puts their technical and aesthetic beliefs about what sounds acceptable in contention with the desires of the client. As this dissertation has argued, community-studio life thus requires the people who engage these sites to uphold multiple visions of what the space should be, who it should serve, and how it should serve them, with the recognition that some obligations will always remain unmet.

In order to describe the process through which stakeholders, particularly community-studio engineers, arrive at a given framing of their studio site (as a pre-professional space or a community resource), I have adopted the concept of boundary-work, defined by Gieryn (1983) as an "ideological style" that is used by actors to establish one knowledge system as distinct from another. However in this case, the actors are primarily concerned with articulating the boundary around what should "count" as a community-studio as a matter of everyday practical consideration at every level of the studio's operations, from the kinds of sonic interventions prioritized by the engineers to the lyrical stylings of their clients. Should the studio have an open floorplan? How much should clients be charged? Should the engineer always defer to the preferences of the client or is

she doing the community a disservice if she does not assert her professional opinion when it conflicts with the desires of her client/collaborator? Should community members be given free access to the studio at all times, even if it means dealing with the threat of background noise during recordings? Or should the studio function more like a traditional commercial studio with structured time and restricted access? As this dissertation has illustrated, each of these considerations enables specific ways of working both in terms of the music and the social order that is produced in the studio. At a traditional commercial studio the engineer is of course at risk of messing up the mix whenever they take on a job; however in community-studios, the engineer must be mindful of the ways that their production decisions and organizational practices can either strengthen or violate the trust of their community.

In turn the stakes of the administrative and technical decisions that are made by the engineers and other invested community members, must be tied to the cultural and historical legacies of the communities being served particularly in regard to issues of race and gender. When the CCA executive board was presented with the choice between hiring a technically-proficient, white engineer who had no experience working with communities of color, and a recreational musician who was also a white male but was a respected ally to the mostly black Southside community, the executive board chose the latter candidate. Although doing so meant that Sankofa was not going to function as a truly professional

recording studio while the second candidate served as the studio coordinator, the board decided it was best to work with a known ally, particularly given the well-documented failures of well meaning "white saviors" (Cole, 2012) in similar spaces. Several years later when Dan began fashioning Sankofa into a pre-professional studio of sorts, with private studio hours, an hourly rate, and a fee for utilizing the $900 Mojave microphone, he shared that doing so would empower community members to feel like "real" artists and it would therefore boost their morale and improve the quality of their recorded performances; yet the imposition of this traditional studio system also meant eliminating certain forms of sociality that had relied on community members being able to freely enter into the space. Given America's racist history of social control in regard to poor black and Latinx youth, the restriction of movement from a communal, high-traffic area could be seen as inappropriate. Conversely, treating the space like a "real" studio could also be seen as an attempt to reconcile racist attitudes that render black forms of musicking as unsophisticated and undeserving of meticulous attention in the studio (Rose, 1994; Meintjes, 2005, p. 40). And when Claire was faced with an ethical dilemma regarding whether or not to remove what she considered to be an extraneous (and mostly inaudible) synth track from an artist's unmixed tracking session her decision not to "cross that line" was driven in part by her personal experiences as a woman working in sound and her understanding of the ways that sound engineers often abuse their power when

working with amateur musicians. Ultimately these examples reveal that issues of race and gender are inseparable from the politics that govern community-studio work, and in fact these identity formations are often rendered more visible because of the stated mission of community-studios to center members of marginalized communities.

This project has also illustrated how the social constructivist approach to the study of technology might be useful for rethinking the cultural myths that emerge around the history of recording studios more broadly. According to these kinds of "democratization" (Théberge, 1997) narratives, the specialized tools of the recording studio once exclusively the domain of professional audio engineers, have since trickled down to amateur and semi-professional musicians through the mass production of low-cost, high-quality recording hardware and software; consequently the commercial studio has become virtually obsolete, as artists increasingly eschew paying for studio time in favor of recording music of comparable quality for free on their personal computers and in their acoustically-treated bedrooms, basements, and other DIY recording spaces. Viewed singularly through this lens, the studio is nothing more than the sum of its parts—microphones, mixing consoles, and signal processing devices—and now that these parts have been made accessible to the masses, the studio ceases to be important. However as the social constructivist approach suggests, these kinds of linear narratives tend to overlook the central role of "relevant social groups"

(Pinch & Bijker, 1984) in articulating the meaning of a technology. In this case, the success of many community studios in the face of widespread commercial studio closures suggests that the economic cost of recording represents just one metric for assessing the value of a recording studio.

At Sankofa Studio and Inclusive Recording several of the artists I encountered, many of whom possessed the skills and home studio set-ups to record themselves competently, expressed pride that they were recording their music at studios that prioritized their communities. In turn, recording in these kinds of studio spaces, enabled these artists to strengthen the narratives they publicly presented about their identities as Afrocentric thinkers, feminists, or experimental musicians. And in some cases their relationships to these studios even led to professional opportunities, as was the case for several rappers at Sankofa who wound up performing at a progressive music event organized by the community center in which the studio was housed. Furthermore for many of these artists, the very act of recording in a studio was playing an important symbolic role in helping them to construct their identities as proper artists. Particularly for the rappers at Sankofa, being able to record their music in a space that resembled a "real" professional studio, complete with an isolation booth and attentive sound engineer helming each session, also enabled them to see their artistry as real. Conversely for the artists who frequented Inclusive Recording, the framing of the space as a feminist response to "professional" studios gave

them the peace of mind to play their music and experiment without fear of being judged, overlooked, and even harassed, which many of Claire's young women clients faced in other recording spaces. As I have illustrated through these narratives and the dissertation at large, the recording studio can serve many purposes beyond simply tracking, mixing, and mastering vocal and instrumental performances; for the artists who record at community-studios the symbolic capital of the space is a resource too invaluable to exchange for the ostensible financial and creative freedom offered by a home studio.

Finally this project has proposed the idea of the imagined/imaginary boundary object as another potential conceptual tool for framing the management of boundaries that takes place in intentionally multivalent settings. On the surface, the community-studio appears to be an ideal boundary object as it has been conceived by Star and Griesemer (1989)—as an object that can be interpreted in different ways by various stakeholders while being flexible enough to remain legible and useful to each group. Yet in practice, one group of community-studio actors, often the engineers, tends to make a decision about how the space is going to operate through the imposition of a policy (like the payment policy about the Mojave microphone), or a choice about a particular technical intervention (like Claire's removal of the extraneous synth track) and the other actors fall in line or are none the wiser. Like a shibboleth (Marshall, 2017), which is a kind of boundary object that strengthens the boundaries

between its associated stakeholders, the community-studio only functions rhetorically as a boundary object, because its imagined status as a boundary object is useful in "interessing" (Callon, 1986) funders, artists, and other community members. In reality, though, the asymmetrical organizational structure of the space means that parties with more power (access to funds, technical expertise, etc.) are able to dictate to a greater degree what the space should be, whether that is a traditional studio or a radical feminist intervention.

Broader Implications and Future Research

I will conclude by sharing the broader implications of this work, of which I believe there are many. For one this project will hopefully be useful to scholars who are invested in the politics of community-studios in international contexts. In part because her book *Necessary Noise* (2016) does such a brilliant job of laying out the politics of artistic life at the Yolé!Africa cultural center in Goma, I was unsure of what I could add to the story based on my two-week visit in 2015. As the dissertation began to unfold in front of me, I ultimately decided to leave the international angle out of the project, although I believe there is still much to be said. Particularly as programs that foster "hip hop diplomacy" (Katz, 2017) like the State Department-funded program Next Level continue to find international footing, this sort of cross-cultural analysis will become a site for new and exciting scholarship about community-studio dynamics. It is my hope that by positioning

my work alongside projects like Ndaliko's, my research will offer STS inroads into a discourse regarding the politics of humanitarianism that is usually in conversation with scholasticism from development sociology and medical anthropology (Brotherton, 2012; Ticktin, 2011).

Additionally this exploration of community-studios, particularly as informed by my visits to Inclusive Recording and interviews with Catherine Vericolli of FiveThirteen Studio, Kelley Coyne of the Women's Audio Mission, and Alissa DeRubeis of the S1 Synth Library, contributes to the growing body of works that disrupt narratives of women as passive users and unskilled laborers throughout the history of recorded sound. These narratives are a clear reflection of broader cultural scripts that naturalize norms around gender and technology, scripts that historians of technology have been challenging for decades. Largely inspired by the work of historians like Ruth Schwartz Cowan (1976), their tactics have included detailing the socially constructed nature of binary assignations like "skilled" and "unskilled" to a variety of labor practices; shifting historical analyses from prototypical technological artifacts like computers to "mundane" objects such as laundry machines, while noting that their categorization as mundane is tied to their association with women and the private sphere; and articulating the ways in which the word "technology" itself is entwined with raced, classed, and gendered ideas about mechanization and civilization, as well

as epistemological concerns around forms of manual and abstract labor (Hacker, 1983; Lerman, 2003).

In the context of sound studies, harmful cultural scripts about gender enable the systematic devaluation of woman-coded technologies and practices involved in sound production and reproduction, particularly in the cases of contributions from non-white women (Rodgers, 2010, p. 12). And in the recording studio, women, particularly those of color, who sit at the boards must contend with the gendered associations of engineering and electronic work with certain forms of white masculinity, alongside the pressures of working in a male dominated music industry (Oldenziel, 1999). As a black woman, a hip hop producer, and an STS scholar of sound, I therefore consider it my responsibility to help recover the stories of those rendered invisible and silent in histories of recorded sound. I am driven largely by my own experiences of being dismissed and patronized about my technical expertise, but I am also deeply indebted to STS and sound studies scholars whose work has helped me to challenge my own gendered assumptions, particularly about what counts as labor. Perhaps because of my musical background as a producer, I have often singularly focused on the importance of repopulating sonic histories with the contributions of women who are composers, performers, and engineers—in short, their "producers." But as Tara Rodgers argues, the lines that differentiate producers from consumers and users in sound reproduction, are heavily gendered and the word "reproduction"

must itself be understood as one tied to feminine passivity (Rodgers, 2010, p. 13).

As such, several scholars from a variety of different fields have worked diligently to not only push the needle in terms of who gets named as an actor, but also in terms of what counts as labor. Building on her earlier work about the cultural politics of listening, Jennifer Stoever (2018) has argued that the women closest to hip hop's male progenitors deserve production credits through their careful curation of the record collections that would become the sonic building blocks of the new genre. Jonathan Sterne (2003) has noted that early 20th-century women used sound recording technology to circumvent expectations about their ingenuity as entertainers. Specifically, he calls attention to the way in which many women used the availability of recorded concert music to "slip an appropriately calming and/or uplifting record on the parlor phonograph" if they couldn't "soothe their mates with their piano virtuosity" (Sterne, 2003, pp. 11-12).

Other STS scholars have also contributed unique insights that illustrate how gendered practices and expectations emerge in the very hardware and software of sound reproduction technologies. Lisa Gitelman (2006) has demonstrated that in early sound recordings, the technical and material conventions of the new medium, like the hardness of recording surfaces, were calibrated to accommodate the frequencies of women's voices. Rodgers (2011)

has revealed the ways in which the 19th- and 20th-century anthropomorphic categorization of certain "qualities" of sound in electronic sound synthesis like "decay" and "growth" emerged out of contemporaneous developments in scientific ideals regarding racialized and gendered categorizations. Specifically, she argues that the framing of the newly isolated sine wave as both disembodied and pure, in contrast to the connotations of indistinguishable sounds in terms of fluidity and excess, were reflections of anxieties about female sexuality and corporeality more generally, a point that certainly resonates with certain historians of gender and technology more generally.[46]

But there is always more work to do. Particularly within scholarship on recording studios and audio engineering cultures, we could all benefit greatly from more accounts of women working and creating. Pirkko Moisala and Beverly Diamond's anthology *Music and Gender* (2000) represents a notable exception, particularly the contribution of Boden Sandstrom who documents the work of women sound engineers from the 1970s and 1980s. Marshall (2017) has also engaged notions of gendered performance and listening in regard to vocal tuning, and sound engineering more generally. More often though,

[46] As Rebecca Herzig argues in her work on X-ray hair removal, for example, white women's bodies in particular emerged during the 19th century as the subject of great concern given their status as gatekeepers in the fight to preserve particular forms of whiteness. "Changing patterns of immigration stimulated further attention to comparative physiognomy, while shifting economic and political roles for White, middle- and upper-class women provoked particular interest in 'woman's' proper physical appearance" (Herzig, 2003, p. 74).

ethnographers of the studio have simply called attention to the male-centered corporate and technical culture of commercial studios, with brief mention of women in sound, if at all (Green & Porcello, 2005; Meintjes, 2003; Porcello, 2004; Schmidt-Horning, 2013). And a gloss of other well-read texts on sound reproduction technologies illustrates their reliance on reductive analyses that range from tokenizing women with technical expertise to completely erasing their contributions (Rodgers, 2010, p. 11). Citing Andra McCartney's (2006) work on composer and scholar Pauline Oliveros, Rodgers notes how such accounts reinforce notions of an essentialized "feminine" aesthetic (ibid). I often recall an experience in which I showed one of my earliest hip hop beats to a friend and fellow producer; he nodded his head as we listened in my car and smiling, he told me that he could tell I had made it because the beat had a "unique female sound." When I became annoyed and pressed him to explain what he meant by that, he grew defensive and shrugged off his earlier comment.

While it is not necessarily "incorrect" to presume that "sexed bodies and gendered identities" (Rodgers, 2010, p. 11) can result in unique ways of producing and understanding music, the aforementioned accounts often lack the empirical data needed to make such claims. The majority of woman-identifying audio engineers I interviewed were quite bothered by the idea that there could be a distinctly "feminine" ways of recording and mixing sound and lamented

feeling tokenized, even by other women. In an interview with Claire, the audio engineer running Inclusive Recording, she remarked:

> I do fairly often…[hear] even from women in a celebratory way, saying, 'It's so awesome to have a female engineer running sound for us at the show tonight!' And, 'It's so exciting to have a female recording my album.' But, I would hope that you would just be excited that you like my work. I don't know, I definitely want to create more space for people who are underrepresented but I definitely don't want it to define my work.

It is therefore essential to highlight women in sound and their different approaches to their work in order to resist essentialist narratives that end up defining the work they do. Following in the footsteps of *Pink Noises* (2010), this project has attempted to do just that.

Along a similar thread, I also hope that my study on the politics of community-studios has illuminated different feminist responses to the structures and constraints of traditional commercial studio spaces. In many ways the community-studio as it is often presented in grant applications and promotional materials represents a distinctly feminist intervention in itself: a space that has explicitly been conceived to provide marginalized communities with access to sound production technology—the material artifacts as well as the tacit knowledge that engenders producers' and engineers' specialized "ways of making and doing things" (Lerman et al., 2003, p. 2). For all the limitations of the community-studios I observed, my research has revealed that it is possible to push for audio engineering practices that reimagine the exclusionary power dynamics that have long defined many studio cultures: practices that subvert

power dynamics in terms of the configuration of the room itself; that recognize and account for the limitations of bodies; that follow the lines of inquiry proposed by Allen Farmelo (2014) regarding an end to the fetishization of recording gear. If we are to take seriously the idea that the studio, and by extension sound engineers, represent a critical site for the coproduction of broader industrial, technological, and cultural ideals, the adoption of feminist audio engineering practices more widely could provoke a sea change regarding harmful assumptions about women and people of color.

In that regard, this work also serves as bridge between STS and a wide range of threads within black studies. In many ways it speaks to conversations initiated by scholars like Tricia Rose (1994), Alexander Weheliye (2005), Ray Fouché (2006a, 2012), and Jennifer Stoever (2016) as well as a diverse range of activists, thinkers, and artists from Afrofuturist schools of thought who have explored the role that music production and reproduction technologies play in black expression, survival, and liberation.[47] STS scholars must move beyond only

[47] The term "Afrofuturism" was coined by cultural critic Mark Dery in his 1994 essay *Black to the Future*, as a way to link literary works that engage the histories, hopes, and legacies of African Americans through a scientific and technocultural lens. While Dery was primarily interested in the works of black speculative fiction writers like Octavia Butler and Samuel Delany (who also produced important essays on depictions of black characters in science fiction), cultural critics like Gregory Tate (1992), Tricia Rose (1994), and Kodwo Eshun (2003) began to explore connections between Afrofuturist signifiers, musical performances, and sonic reproductions. The term has since been linked to a diverse range of black aesthetics and ideas, and its definition (by design) remains persistently difficult to pin down amongst Afrofuturist thinkers. For further reading on the various threads of black futurist thought that intersect within Afrofuturism read Ytasha Womack's *Afrofuturism: The World of Black Sci-Fi and Fantasy*

calling attention to the many harmful scripts we have been fed about black people, women, other so-called marginalized peoples, in regard to technology and power, and begin to reimagine and propose new ones. For scholars and activists invested in the possibility of community-studios as real social interventions, that means continuing to closely examine and document the ways in which these sites fail and benefit the black and brown populations they serve through the practices they enable and the discursive strategies they employ.

As I have illustrated in this dissertation, these practices and discursive strategies take on particular significance in community-studio contexts, when cast against the music industry's generally exploitative relationship with African-American artists. The ways that community-studio engineers frame their studios, communicate with the artists in-situ, and seek to honor each artist's vision in the post-production process matters. In regard to the power of language in the studio I am reminded of Porcello's (2004) ideas about the discursive techniques of audio engineers:

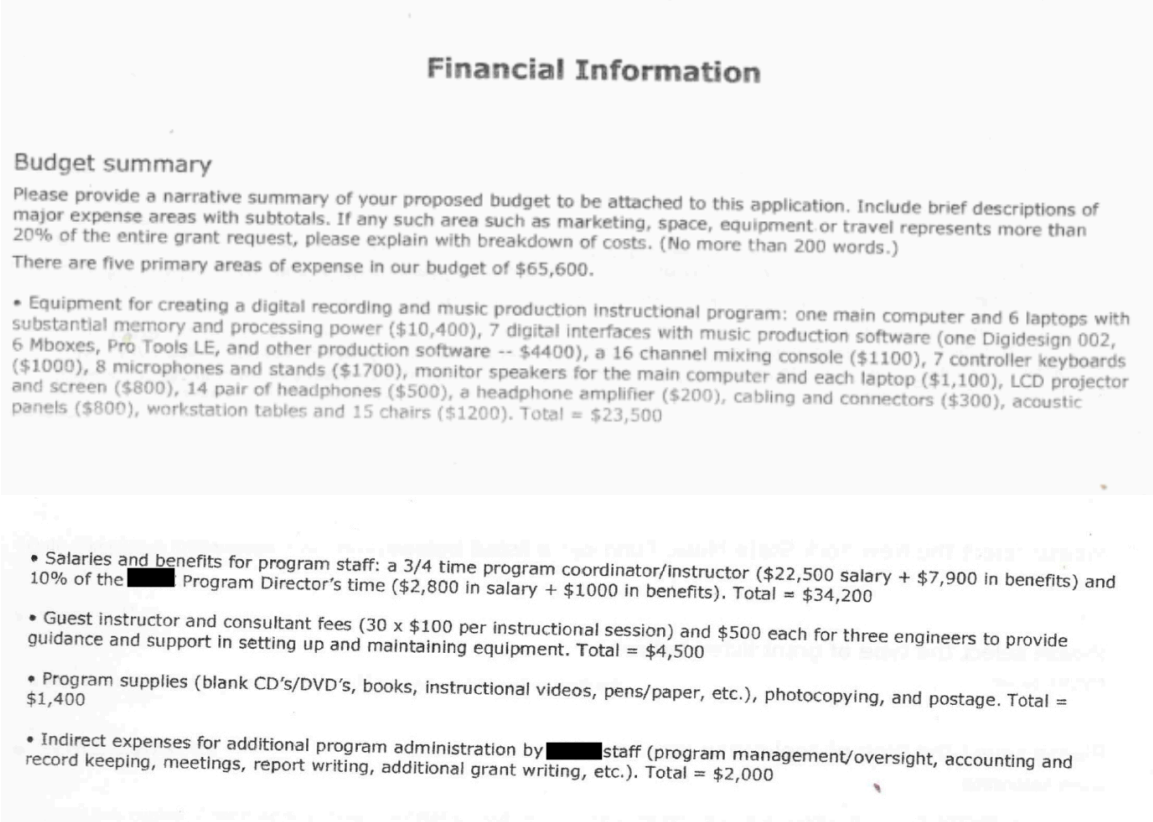
> Like all of language, there are politics behind access, and further politics behind language use… It is equally important to stress that [discursive strategies] can be used or withheld, understood, or subjected to feigned ignorance of by speakers. They can be offered up in order to clarify or obfuscate, to parade one's own knowledge while pointing to another's ignorance. They can be used to include or exclude, to insult or compliment. They can index social positioning in the production of music, and thus can be either inflammatory

Culture (Womack, 2013), a thorough and accessibly written cultural history of the critical, aesthetic, and technical threads that drive Afrofuturist thought and praxis. In it the author defines Afrofuturism as the "intersection of imagination, technology, the future, and liberation" (p. 9).

or tempering to the progress of a recording session (Porcello, 2004, p. 753).

Those who are invested in the future of community-studios for underserved communities of color must be aware at all times of the variety of ways in which power can be structured in a recording space. The studio's technologies (and by extension discursive techniques that emerge around its use) can be a force for positive change or a tool for exploitation (and sometimes one in the same). As Fouché (2006b) argues, "Technology, from slave ships to voting machines, has always played a role in the subjugation and control of black people" (p. 8); yet he has also illustrated how sonic technologies like the turntable have engendered certain forms of empowerment for black people, and particularly black youth (Fouché, 2012). Above all I hope that this dissertation has challenged us to consider the promise that community-studios might hold for underserved black youth, but also their potential, if unexamined, to replicate the same old power dynamics.

APPENDIX A: Itemized List of Studio Gear Requested in Sankofa Studio 2006 Grant Application



Financial Information

Budget summary

Please provide a narrative summary of your proposed budget to be attached to this application. Include brief descriptions of major expense areas with subtotals. If any such area such as marketing, space, equipment or travel represents more than 20% of the entire grant request, please explain with breakdown of costs. (No more than 200 words.)

There are five primary areas of expense in our budget of $65,600.

• Equipment for creating a digital recording and music production instructional program: one main computer and 6 laptops with substantial memory and processing power ($10,400), 7 digital interfaces with music production software (one Digidesign 002, 6 Mboxes, Pro Tools LE, and other production software -- $4400), a 16 channel mixing console ($1100), 7 controller keyboards ($1000), 8 microphones and stands ($1700), monitor speakers for the main computer and each laptop ($1,100), LCD projector and screen ($800), 14 pair of headphones ($500), a headphone amplifier ($200), cabling and connectors ($300), acoustic panels ($800), workstation tables and 15 chairs ($1200). Total = $23,500

• Salaries and benefits for program staff: a 3/4 time program coordinator/instructor ($22,500 salary + $7,900 in benefits) and 10% of the [redacted] Program Director's time ($2,800 in salary + $1000 in benefits). Total = $34,200

• Guest instructor and consultant fees (30 x $100 per instructional session) and $500 each for three engineers to provide guidance and support in setting up and maintaining equipment. Total = $4,500

• Program supplies (blank CD's/DVD's, books, instructional videos, pens/paper, etc.), photocopying, and postage. Total = $1,400

• Indirect expenses for additional program administration by [redacted] staff (program management/oversight, accounting and record keeping, meetings, report writing, additional grant writing, etc.). Total = $2,000

APPENDIX B: Itemized List of Studio Gear at Inclusive Recording with Date and Cost of Purchase

GEAR:
9/7/2016
Equator D5 Studio Monitors (pair) + carrying case **$534.94**

9/27/2016
Apogee Ensemble Thunderbolt 2 (8 channel audio interface) **$2,245.50 - demo deal discount**
API 512C (500 series preamp) **$803.25**
BAE 1073MPL (500 series preamp) **$850.00 - demo deal discount**

10/14/2016
(2) dbx 560A compressors **$299.91 - buy one, get one half off sale**

10/19/2016
Lauten Audio LA120 small diaphragm condenser microphone pair **$349.00**
3-pack Gator Frameworks microphone stand **$74.97**
sE Electronics Reflexion Filter Pro **$249.00**

10/22/2016
0.5M Apple Thunderbolt cable **$29.00**

10/25/2016
Sennheiser MD421 dynamic microphone **$379.95**

10/29/2016
Shure SM7B dynamic vocal microphone **$399.00**
Crown PZM 30D microphone **$399.00**

11/8/2016
Rupert Neve Designs active transformer DI **$269.00**

11/8/2016
Gator Frameworks kick drum/amp microphone stand x3 **$104.97**
Argosy 42" classic monitor stands (pair) **$179.99**
Auralex Large Iso Pads for monitors **$49.99**

11/19/2016
FabFIlter Pro-R reverb plug-in **$159.20**

FabFilter Timeless 2 tape delay plug-in **$77.40**

11/21/2016
API 2500 compressor plug-in **$34.30**
PAZ Analyzer plug-in **$129.00**

11/25/2016
Beyerdynamic M160 ribbon microphone x2 **$1,189.98**
Sennheiser MD421 dynamic microphone **$379.95**
Electrovoice RE20 dynamic microphone **$449.00**

12/26/2016
J37 tape saturation plugin **$179.00**
OneKnob drive pedal plugin **$20.30**

1/22/2017
2.0M Apple Thunderbolt cable **$39.00**

2/6/2017
Universal Audio 4-710D 4-channel preamp strip **$1,595.00 (used)**
1.5' ADAT/optical cable x2 **$49.90**
1.5' BNC word clock cable **$39.00**

4/16/2017
Mac Mini desktop computer **$699.00**

6/8/2017
Aphex Aural Exciter plug-in **$29.00**

BUILDOUT MATERIALS:
lumber for (24) 2'x4'x2" wall panel frames

12/6/2016
ATS Acoustics 2'x'4'x2" Owens Corning 703 insulation panels x 24 **$383.88**

12/7/2016
Acoustimac fireproof acoustic fabric for wall panels **$338.96**

1/13/2017
Green Glue damping compound and noise proofing sealant **$272.53**

1/14/2017
Home Depot commercial door with knockdown frame **$479.48**

wall materials:
dry wall
dry wall screws
lumber
Roxul mineral wool insulation

labor for building a wall/installing a door **$600 (Adelaide) + $400/recording time trade (Doug)**

3/19/2017
auto door sweep **$59.84**

3/19/2017
Primacoustic London Corner bass traps x2 **$519.98**

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