

Authentic Intelligence Mixtapes: DJs and producers' communal radical archiving and teaching in the age of AI

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Black and indigenous musics continue to evolve and dominate global markets and cultural spheres, notwithstanding a history of intellectual property theft and cultural appropriation. DJs and producers (by way of sampling or extrapolation) have played archival roles outside traditional music archiving. Colonial invasions and the transatlantic slave trade, as well as academic neocolonialism, displaced cultural histories imparted through oral traditions. The Black radical tradition resists global corporate capitalism, even within a music industry that emphasises stereotypical Black tropes for profit. Without regulation, the practices of museums, the education system and the music industry will be exacerbated by the development of recommendation systems and artificial intelligence (AI). Hence, in communities that have already suffered unjust intellectual and cultural property theft, I recognise and re-centre the archiving musico-cultural role that DJs and producers have historically played.

1. INTRODUCTION: DJ AND PRODUCER AS MUSICAL GUIDE

In the Black musics of the world, the roles of performer, producer, composer, promoter and curator become blurry. In all of these, musicians create the archive for the invisible library that is the dancefloor. In place of textbooks, music that fuels dance is the teaching material of these curators and creators. Hip-hop in particular is at the nexus of DJ culture. It is the beginning of the spread of electronic music techniques that had their roots in Jamaican dub and African-American disco music. Black and indigenous musics continue to develop and dominate the global market and cultural sphere, notwithstanding a history of intellectual property theft and cultural appropriation. Colonial invasions and the transatlantic slave trade, as well as academic neocolonialism, displaced cultural histories imparted through oral traditions. As New York just celebrated 50 years of hip hop and 150 years of jazz, it is time to redress the scholarship on music and the practices that these genres proliferated. Without regulation, the practices of museums, the education system and the music industry will be exacerbated by the development of recommendation

systems and artificial intelligence (AI). I recognise the preserving musico-cultural role that DJs and producers have historically played in communities that have suffered this unjust intellectual property theft.

The etymology for the word 'radical' derives from 'root'. Just as 'radical' has roots and growth embedded in it, Black music cannot be shoved restrictively under museum glass because they are alive in the roots of Black communities. For instance, lyrical themes in hip hop teach musico-cultural themes from the Black radical tradition including Black history such as Egyptology, Pan-Africanism, decolonisation and Afro-futurism. Music in and throughout the Black radical tradition resists global corporate capitalism, including in a music industry that emphasises stereotypical Black tropes for profit. So, 'radical', in this sense, regards DJs and producers in terms of continuations of the Black radical tradition.

DJs and producers (through sampling and extrapolation) have played archival roles outside the traditional music archives. Music is traditionally archived as scores, sound recordings and related materials such as transcriptions. These materials are housed in dedicated music archives, or within museums, or libraries. Although these archives are necessary for non-majoritarian musics, they are static, disembodied and do not tell the whole story. Before the advent of streaming services, human beings recommended music by simply playing it for us. Different communities formed around sites of listening that were either physical sites such as record stores and venues, or the ephemeral sites of radio. These communities developed an openness to different musics because they trusted their musical guide's authenticity. These guides contributed to a shared community and cultural narratives. Our musical guide's choice of what to play can teach us how the music connects, and how they, as our guide and teacher, want to frame the story and history musically. But how are songs chosen in the context of streaming?

Although DJ/producers may be included in music recommending music to others, the current automated

systems exclude participatory music practice. Participatory music practices stemming from global music roots engage dance, call and response and other forms of audience participation. The mere addition of algorithms and big data in these choices lessens human involvement. Human-computer interaction (HCI) signifies a human in the decision-making process, but there are realms of computer science without any human participation at all. More importantly, HCI still does the job of many humans at once, threatening jobs. Music creators believe their revenue is dwindling through streaming (Sisario 2021). For instance, each play on Spotify in the United States generates USD 0.003 per stream (Ingham 2023). Over a generation of listeners is used to this streaming model. However, this amount is in stark contrast to radio royalties per play that came before it, let alone purchasing physical copies. Furthermore, Spotify recently decided to remove its income for the lowest earners – only paying out to artists with more than one thousand streams per year. So the revenue does not trickle down to creating as labour, it simply trickles back up to the corporate streaming bosses, top-selling artists and their labels (Ingham 2023; Krukowski 2023).

Although we may not have explicitly asked for it, most of us already have an AI system with all of our preferences embedded in it. To improve the app user experience, recommender systems make ‘tags’, or markers of songs, including noting listening preferences of others who liked that song. These factors *could* signify that AI is a better musical guide than humans. However, the algorithm merely reflects your existing tastes back to you, unlike the DJ who takes pride in taking you on tangential journeys connecting new musical dots. With newer media technologies, receiving bespoke recommendations – tailored to existing tastes – is favoured over a communal experience. These automatic recommendation systems may, wittingly or unwittingly, displace traditional musical and cultural educators. Therefore, artificial *disembodied* algorithmic recommender and AI generative roles jeopardise the embodied human DJ and producer roles, as algorithms train ‘Me-ness’ with more ‘Me-ness’.

2. DJS AND PRODUCERS AS RADICAL COMMUNITY ARCHIVISTS AND TEACHERS

The music curator (DJ and producer) *is* the archivist and teacher in Black music. The DJ as ‘selecta’ teaches us lessons by choosing and making the connections from one track to another. Though DJs may not always be producers, they create meta-material through mixtapes or live DJ sets. The DJ can bring in the next track based on musical elements (e.g., tempo and harmony), subjective elements (e.g., genre)

or non-musical elements (e.g., historical connections and nuanced links). These mixtures of tracks, and transitions, can bring the listener to new forms of music that may have been unimaginable to listen to previously.

‘Producers’ play many roles. These include the subsection of the composer-producers I categorised as ‘artists’, as they are composing and improvising, much like other music creators (Adu-Gilmore 2015). Producers can bring samples and composition techniques from past genres, remixing old material into new meanings. Finally, DJs and producers can engage with subtleties such as emotions and whims, discerning the crowd’s energy. DJs and producers are integral to communal identity – intersecting sites of culture, gender, race, class, sexuality, genre and geography and offering alternate spaces for archiving and teaching. Hence, as opposed to a call for traditional archiving, this article shows examples of underrepresented music archiving, while centring the inherent archiving praxis of the DJ/producer.

Thomas Craig elucidates on the DJ’s iterative song selection process as ‘sonic algorithm’, impacting the hip-hop community:

The DJ stands as Hip Hop’s cultural historian as well as meaning maker and memory maker: taking us on spiritual journeys by using music to help us evoke and call up our best and brightest archived memories yet simultaneously creating new memories while in the midst of the DJ’s mix. The DJ is also able to establish communities and cultivate joy, progress, and healing, connecting our pasts, our presents, and futures. (Craig 2024: 39)

Craig explains the connection between the process of DJing (such as selecting tracks and counting beats) as a key influence on the way producers use samples in his chapter, ‘The Breaks, the Archives and the OG Algorithm’ (Craig 2024). He continues ‘the DJ/Producer also serve as the connective linkage between the roots and foundation of the culture’s past and future’ (Craig 2024: 44). He demonstrates this temporal link throughout the chapter, relating practices of foundational hip-hop producers who were exposed to DJing or were DJs themselves, while noting the influence of DJ culture on the song sequence of Beyonce’s 2022 album *Renaissance* (Craig 2024).

The case for DJs as archivists and records as archives is well established. Mark Campbell’s ‘Mixtapes and Memory Making: A Hip Hop Remix of the Traditional Archive’ states:

Institutional hip hop archives have yet to purposefully archive the dynamic and intricate turntable skills and innovations of DJs, although the case can be made that archives would benefit from doing so. Like professionally trained archivists, DJs know and regularly handle

thousands of vinyl records, have intimate knowledge of metadata and have organisational systems similar to archivists' data management systems. While archivists manage and care for historical documents and records, both DJs and archivists demonstrate a level of care that distinguishes them as members of specific professions. (Campbell 2021: 132)

Campbell also leaves a call to action for the field: 'Rather than simply attempting to archive hip hop, solely relying on an objective professional archivist, might we try to understand how hip hop cultures preserve, organise and archive themselves on their own terms?' (Campbell 2021: 132). Campbell explains that archiving is timely, as many key practitioners are still alive, and those who have recently passed, such as DJ Screw, still have source materials, such as mixtapes in circulation. He argues that the DJs are also archivists in the practice of DJing itself. However, Campbell also suggests remixes are intellectual property, considering how they can be tracked for valuable cultural information (Campbell 2021). In 2017, Campbell launched and is currently director of the North Side Hip-Hop digital archive which digitises 'oral histories, event flyers, posters and analog recordings' of Canadian hip hop (Northside Hip-Hop Archive n.d). In 'Records as Records: Excavating the DJs Sonic Archive', Maloney and Schofield (2022) recognise the potential of easily storable audio and video to give better representations of DJ sets. They point out that the DJs archival practices (e.g., record bags for DJ sets) are categorisations to be preserved and studied as physical archives.¹

Mark Anthony Neal's book *Black Ephemera: The Crisis and Challenge of the Musical Archive* confronts the intangible nature of Blackness in an African-American context where hiding knowledge is part of the historical narrative (Neal 2022: 144–85). Neal examines Black archival practices more broadly but he refers to music as archive in all forms. Black archival practices create and re-contextualise through songs, albums, mixtapes, sampling and covers into different genres and meanings, from sacred to secular and political and everything in between. Noting that traditional archiving takes benefactors and outlining large projects, '*Black Ephemera* deliberately posits the archive in opposition to such grandiose endeavors, however valuable they might be, and focuses instead on those artifacts that, broadly defined, might be thought of as literal afterthoughts – as culture not in

need of curation' (Neal 2022: 6–7). Neal elucidates the depth of cultural and political meaning in a sample:

Black Ephemera has reminded me that for every movement forward, there are necessary returns to the archive. When Public Enemy's 'Fight the Power' emerged as an anthem of Black protests during the summer of 1989, which witnessed the premiere of Spike Lee's third film *Do the Right Thing* (the song the film's literal anthem) and the shooting death of Yusef Hawkins, who was for my generation what Trayvon Martin would become for another generation more than thirty years later, it did so with a powerful homage to the Isley Brothers. 'Fight the Power' was initially a funky call to resistance recorded by veterans of the rock & roll era, in 1975. 'And when I rolled with the punches I got knocked on the ground/By all this bullshit going down'. (Neal 2022: 187)

Markle shows the 'archiving, curating, and storytelling as a distinctive praxis of the hip-hop producer/DJ' through Madlib (Markle 2017: 207). He makes a fine-tuned analysis of the album *Medicine Show #3: Beat Konducta in Africa* in his chapter 'The Hip-Hop DJ as Black Archaeologist: Madlib's Beat Konducta in Africa and the Politics of Memory'. He reveals Madlib's deft editing and sampling of African music and speeches, at times cutting out words of historic speeches to bring a renewed message as anticolonial practice (Markle 2017). Teaching through time, memory and archive also appears in 'Records as Records', as Maloney and Schofield state that records are not fixed and that 'They echo and reverberate forward in time, influencing other records that come after; the genesis of a culture's musical canon could be said to stem from these echoes and resonances' (Maloney and Schofield 2022: 247). In a similar vein, D. A. Norton's 'A DJ in the Library' describes how DJ Screw's work creates community and technical communication. In 'DJs, Playlists, and Community: Imagining Communication Design through Hip Hop', Del Hierro (2018) explains the importance of hip hop as a means to speak to communities, likening the mixtape practice to African-American call and response. Del Hierro shows the necessity of personal relationships for DJ Screw's mixtapes (who famously created 'chopped and screwed', slowed down mixtapes), through supporting archive materials, such as track listings and notes to friends.

Recordings as archive items give insights into DJ practice and culture. For instance, in their article 'Record Collections as Musical Archives: Gender, Record Collecting, and Whose Music is Heard', Maalsen and McLean (2018) convincingly posit records as archives, using them to demonstrate gender biases in record collecting. They describe typically femme object collecting as historically less financially and culturally valuable than their male object

¹Two notable exceptions where the archives of important DJs have been preserved rather than lost to history are Afrika Bambaata and Frankie Knuckles's record collections. Although the categorisation in these collections is important, only Bambaata's written documentation was left intact (Maloney and Schofield 2022: 253). Notably, substantial abuse allegations against Bambaata, which he has denied, led to the Universal Hip-Hop Museum removing all ties to him, even though he was a founding member (Gee 2023).

collecting counterparts (stamps and military regalia). However, they also remark that as popular music is often depicted as feminine, this erasure of feminine collecting is particularly paradoxical (Maalsen and McLean 2018: 51). They also argue that older forms of archiving such as museums, as well as newer forms, such as reissue labels, curate our cultural heritage; thus record collecting becomes a gate-keeping act. Finally, Maloney and Schofield honour the ‘agility and reflexivity’ of DJ practice as necessary performance skills (Maloney and Schofield 2022: 251).

Informal mentoring from the Black Arts Movement of the 1960s cannot be separated from the Black Power Movement and Civil Rights movement. Cultural-theorist and composer George Lewis details the ways the Association for the Advancement of Creative Musicians (AACM) learnt music and taught the next generation of players. The AACM often learned informally through the community, the church and military and they continued a tradition of cultural stewardship and music classes (Lewis 2007). DJs and producers continue to inscribe memory, history and connections for communities with otherwise untaught histories. Scholars have highlighted the importance of hip hop as research and pedagogy in terms such as Spady’s ‘hiphopography’ (Spady 2013) and DJ Lenise’s ‘DJ Scholarship’ (Frank 2020). DJ Lenise (Frank 2020) asserts that the sample takes us through different times, similar to time travel (Frank 2020: 16). This assertion could be akin to a familiar jazz or classical chord progression that tells the experienced listener: ‘you’ve heard this before, but I’m going to do something different with it’. Finally, Spady explicitly calls for research to re-centre hiphopography in Afro-diasporic cultures: ‘What are the challenges in writing about African American, Afro-diasporic, and Latino people who gave birth to the Hip Hop cultural movement? How do we assure that these historical actors’ experiences and visions enter the historical record in their own voices?’ (Spady 2013: 126). Thus, re-centring hiphopography among Afro-diasporic cultures relinks Black musico-cultural praxis and continues to decolonise, with or without formalised education.

Two examples of music archives at the vanguard focusing on African popular musics styles are in housed in Ghana and South Africa. John Collins created NGO Bokoor African Popular Music Archives Foundation (BAPMAF), Ghana’s first popular music archive, in 1990 to document the popular music that he found to be exemplary of Ghanaian culture, but underrepresented in university archives with little resources to assist:

Nevertheless, popular music in Africa is now quite old itself, tracing its roots back to the nineteenth century . . . Moreover, wars, coups and socioeconomic crises have

negatively affected the growth of popular music and the livelihoods of its practitioners and audiences. Thus there is a need for archives that preserve African popular music. (Collins 2015: 185)

In 2005, Professor Muller created the Documentation Centre for Music (DOMUS) as an archive spanning all types of South African music, from contemporary classical, to Indigenous African and popular genres. DOMUS included these categories as part of an exercise in decolonising and ‘delinking’ epistemologies with the archive to encourage new ways of knowing. ‘Archival institutions and archivists had to confront the reality of their profession, namely that archives don’t simply come into being but are the results of the socio-political and economic contexts in which they are created’ (Lambrechts 2020: 311). The archive also morphed from archive to Africa Open Institute for Music, Research and Innovation (AOI) to allow for funding and research. (Lambrechts 2020: 312). ‘It is through active archivists, invested in the task of decolonisation through constant evaluation of their practices and collecting material in tandem with in-depth and critical research, that our institutional doors will be opened to diversity and change’ (Lambrechts 2020: 319). Mbembe recommends using the archive as ‘partly a park and partly a graveyard, where statues of people who spent most of their lives defacing everything the name “black” stood for would be put to rest’ (Mbembe 2015: 4) Applying Fanon’s decolonising philosophies to archive and teaching throughout, Mbembe states:

In order to set our institutions firmly on the path of future knowledges, we need to reinvent a *classroom without walls* in which we are all *co-learners*; a university that is capable of convening *various publics in new forms of assemblies that become points of convergence of and platforms for the redistribution of different kinds of knowledges*. (Mbembe 2015: 6)

Musics not afforded the dubious luxury of hundreds of books on one composer or period are held in the oral history memory. In an oral tradition, such as African-American blues or African griot singing, there is no music notation or score. Musical praxis was carried down throughout history, whereas classical music is ‘composed’ and valorised as such, through a notated score. Classical and notated music forms were followed by computer musics from the same notated instrumental composers, such as Varèse and Stockhausen. In the present day, musicians from any genre may be recorded; non-notated traditions, however, are *only* represented live or in recordings. So, musics linked to notated music continue to be studied and archived in different ways to musics from non-notated and oral traditions. In musics

underrepresented in the colonial education system, documentation and archives can run scarce: archiving takes time, money, effort and storage space, especially in the global South. A traditional library or museum archive is often unavailable to marginalised youth though the reasons behind this may be unclear (Crispin and Beck 2023). Perhaps this is due to historic lack of property to house physical archives and resources for hardware and software to house digital ones. Even where archiving is possible, the ability to *maintain and continuously upkeep* this property and technology may lessen over time, as interested parties with funding, such as foreign NGOs and non-profits, lose funding or leave to do something else. The fluid and mutable nature of the radical Black archive comes to light, born from local dance practices and participatory music practices through radio shows, venues, festivals and club nights.

3. ARCHIVING

3.1. DJ/Selecta vs Recommender

Researchers have sought to demystify how music is chosen inside recommendation systems: systems far from arbitrary, though not solely algorithmic. ‘Intelligent User Interfaces for Music Discovery’ differentiates between three phases: first, content-based music retrieval interfaces that analyse and automate collections based on sound qualities; second, ‘collaborative and automatic semantic description of music’ from user-generated metadata; and third, recommender systems from online music interaction’ (Knees, Schedl and Goto 2020: 165). The humans choosing playlists, ‘are predominantly white, music geek males, young, and English-speaking men/women with a socially constructed imagination of the music listener wired in their heads’ (Bonini and Magaudda 2023: 68). The description of majoritarian start-ups strongly contrasts with the cultural and storytelling elements of mixtape and DJ set lists grounded in a sense of community and history:

Spotify’s headquarters strikingly resemble the stereotypical image of a start-up ... kids whizzing around on skateboards, playful spaces, open bars with free food and drinks on demand, graffiti on the walls, immaculate white Apple screens, colorful sofas, huge lettering on the walls in Helvetica font, and terraces where you can lie out in the sun and drink orange soda. (Bonini and Magaudda 2023: 60)

Traditional gatekeepers, from record companies, promoters, journalists, critics, radio DJs, club owners, festivals and music stores, were disrupted in the period between Napster (1999) and Spotify (2008) (Bonini and Magaudda 2023). However, Spotify sorts hyper-specific behaviour data categorising users as a ‘runner’

one day and a ‘parent’ the next: ‘Everyone’s music consumption behavior is fragmented, analyzed, and broken down into numerous parameters (“location”, “duration”, “device used”, “dwell time”, and “type of listening”, etc.) and compared with other behaviors grouped under the same label, producing clusters such as “music for runners”, ‘music to sing in the shower”, “music to start the week”, or “music for the gym”’ (Bonini and Magaudda 2023: 66). In a mixed methods study, Lüders hypothesises that the expectancy of the effort in technology use, as in ease of ‘effort expectancy’, convenience and price, makes users engage, showing that listeners and services both experienced positive impacts from their tastes being stored. Lüders concludes: ‘It does not matter for the service provider if most people do not grasp that they are being categorized’ (Lüders 2021: 2356). ‘Recommendation systems therefore have the potential to act as a neocolonialist force in music, trained on data in which dominant user demographics are over-represented, and using the tastes and preferences embedded in this data to guide the music consumption of other musical cultures’ (Born, Morris, Diaz and Anderson 2021: 13). Musicians and record labels are promised potential access to large revenue, and software engineers also believe ‘that their work benefits the greater good’. However, for corporations the link from ‘scalability to creativity and democratisation serves to legitimise their position within a globalised network of power and control’ (Hodgson 2021: 2). Although recommendation systems seem to dominate the market, users and other stakeholders are mostly in the dark about the intricacy of their inner workings and ensuing societal impact. Involving DJ/producers within the selection processes may seem like a solution. But the entire selection process itself is disappearing from the music industry.

3.2. Artificial Imitation: DJs and Producer vs AI

Ghana’s gold is still being extracted by its former colonial powers. But this is not the only type of extraction. Now that information is the new gold, the global South is, yet again, a source of wealth with potential for plunder. Kwame Nkrumah, Ghana’s first president, coined the phrase ‘neocolonialism’ for these continued extractions. As the race for uploaded data continues in the global North, how do countries with less access to technology protect their cultural and intellectual property? ‘The Blueprint for an A.I. Bill of Rights’ in the White House Office of Science and Technology Policy states: ‘You should not face discrimination by algorithms and systems should be used and designed in an equitable way’ (White House Office of Science and Technology Policy 2022: 5). How do we ethically archive, protect, preserve and

teach historically vulnerable Black and indigenous musics in the algorithmic age of AI?

In 2023, machine learning has exponentially advanced in its capacity to pretend to *be* Drake ft. The Weeknd (Engle 2023) or Travis Scott. With the fake Drake ft. The Weeknd song being eligible for the Grammys (Coscarelli 2023), this brazen level of theft – stealing a person’s identity and pretending to be them to generate revenue – makes previous cultural appropriations, from rock ‘n’ roll to hip hop, pale in comparison. Also in 2023, the Writers Guild of America along with the Screen Actors Guild and the American Federation of Television and Radio Artists (SAG-AFTRA) went on strike, partly to protect themselves from AI. This AI can be used to appropriate an actor’s voice and likeness for endless appearances in the future, while being paid only once for an initial scan. The *Los Angeles Times* explained: ‘The technology’s relationship with Tinseltown is proving particularly fraught, given its ability to generate content ... the roll-out of this generative AI could make workers’ jobs easier – or put them out of work entirely’ (Contreras 2023).

Although the public may be in the dark, the lack of creative agency of the most popular streaming platforms is clear to musicians:

Most artists recognise that claims of ‘democratisation’ made by these streaming platforms are deeply flawed and that the unequal power dynamics of the old music industry persist. Instead, gaming of Spotify’s song recommender system is widespread as artists and record labels vie to make their music ‘algorithmically attractive’ and ‘Spotify friendly’. (Hodgson 2021: 2)

AI music generation signifies a stark change in the roles of DJ/producer and musicians: ‘In the long run, we expect the borders of these domains to blur, i.e., there will be no difference in accessing existing, recorded music and music automatically created by the system tailored to the listener’s needs’ (Knees et al 2020: 172). The authors conclude with benefits for the audience, stating this as an ‘exciting field to work on’ (Knees et al. 2020: 174). These consumer benefits, however, overlook impacts on musicians, DJs, producers and other cultural actors’ livelihoods, automated developments remove more and more humans from the loop.

4. TEACHING

4.1. Informal mentoring: the DJ/producer, identity and communal history

In 2019, I travelled to Mexico City, Lisbon and Accra to examine global electronic musics and experience them in various kinds of venue spaces. This method employs both community-based and qualitative

research techniques. As a composer-performer and singer collaborating with global music producers, my experiences of the music producers in Accra was often similar to Wellington, London, Tokyo or New York. However, music production also offers its own challenges and opportunities in different geographies. For instance, in prior research I found that external factors (e.g., power outages and flooding in Accra) slowed down music production (Adu-Gilmore 2015). In 2019, I interviewed DJs, producers and bookers in Mexico City, including Argentinian DJ-producer TAYHANA and South African DJ-producer Esa Williams. These one-off interviews were recorded with a Zoom H3-VR virtual reality audio recorder. My questions focused on venues and capturing sites of listening and how they created music in relation to these spaces (Adu-Gilmore 2021b). However, the themes of the identities curating these spaces came to the forefront of our conversations. Moreover, as I am part of the communities that I am interviewing, I picked up on previous informal conversations and delved deeper when in the interview. For instance, I had heard TAYHANA speak about coastal musics that we heard at a local venue, so I asked her questions about those musics and how they influenced her practice during our interview.

For some DJs and producers, entertainment may be a complete and valid practice in itself, creating a shared vibe and a musical adventure. However, some DJs take this a step further, educating us through making invisible links and references to artists that only the keen fan or fellow expert may observe. Whether in the club, or on the radio, mixtape, or stream, DJs function as curators, archivists and teachers. The practitioners I spoke to often curated in other ways, such as booking other artists, or being part of DJ collectives. In this section, I look at DJs and examine a couple of tracks to show teaching through community.

4.1.1. Track 1: Esa ‘Blast (feat. Pendo Awose)’

Esa Williams is a South African music producer, DJ/producer and radio host based in London. In his radio shows, DJ sets and talks, Esa inspires diaspora and non-Black audiences to know more about South Africa, Africa and the global history of Black electronic musics. His regular show on Giles Peterson’s worldwide FM has its roots in his long-standing night in London’s Notting Hill Club. Like many top DJs, Esa is a storehouse of music knowledge, stories, and connections.

In Mexico City, where I interviewed Esa, he gave a lecture on how to start your own radio station. As well as being a highly informative speaker, Esa did something else with the listeners: he motivated, inspired and encouraged the local community he

was visiting. This inspiration of inner empowerment is natural to organic forms of music curation and history-telling, giving a sense of a deeper mission involved. Born into apartheid, Esa describes specificities of the system on South African music producers on local 'Bubblegum' genre:

'Til the late 80s, that was the music that was popular in South Africa; that was the artist they were pushing even through the apartheid government. It was like the way that the government set up that artists from the townships could make music that then in turn would be sold to the market, but these people didn't even have money to buy food – so how are they gonna buy records and record players? And music never left South Africa because it was apartheid so people – there was the export, ya know? There were a lot of sanctions on South Africa at that time.²

Esa draws different African and techno musical influences together for listeners in 'Blast (feat. Pendo Zawose)'. He said that he wanted to go to East Africa and work with local musicians 'to create new music, new ideas that we could then bring over to Europe that would give Africa – take it away from its stigma of its being primitive ... Even though I'm really cool with all the traditional stuff, I still want to take something that was- in Africa we can also make techno, you know?' He worked with the children of a legendary Tanzanian artist Hukwe Zawose. Esa recorded local instruments such as the metallophones, *illimba* and *kalimba* and stringed *zeze*. He used the backing track of his friend Narch Beats in the *kwaito*, a South African house subgenre that Esa describes as down-tempo Chicago house, using synths that it became more techno-driven: 'So when I got that track, it was so dark and so raw that I was like, What vocal? I don't think that there's anything that would work with this vocally. And then I heard her sing while she was playing the marimbas and all these instruments'. He describes in the online liner notes, 'We only did one take, but her vocals completely blew me away.'

'Blast' is a brutalist deconstruction of filter and house beat. The song begins with an intensely harsh FM synth with vocals, the filter opening up with a beat and the same chromatic synth line mimicked an octave below in the bass. The rhythm slips between four-on-the-floor, with the bass filtered out with the return of the higher synth for almost too long, before the release of the bass line and kick drum. There is a juxtaposing high hand-drum sound in 3 + 3 + 2 rhythm (featuring in many diasporic musics including dancehall and trap, and is also the first part of a Latin *clave* rhythm). The strident tone of Pendo's chant – a long phrase followed by a faster one – sounds traditional and is also reminiscent of Siouxsie Sioux's post-punk

banshee scream. The intensity of vocal technique within a forcefully skilled production embodies Afro-diasporan musical history and Afro-futurism.

The story of the house music archive comes to life in Esa William's 2017 EP *Aweh's* liner notes. The track 'Rent-A-Disc' represents the name of a Cape Town-based music library that opened its doors in the early to late 1990s. The library was the place-to-be to get all the early house records for many local DJs on the Cape Flats – including Williams's late father – and served as the inspiration for the B-side track. Hearing 'Rent-A-Disc', the soundworld, harmony and rhythm are so close to the rhythm that inspired it, we see the feedback loop of Afro-diasporan musics, from Chicago house to SA (South African) house. For non-South Africans and music scholars, Esa's story-telling contextualises through community history, teaching us in ways that musical analysis can only hint at.

4.1.2. Track 2: TAYHANA 'Petrolera'

DJ/producer TAYHANA is from 'Patagonia, so far, far away' in the south of Argentina, and moved to Buenos Aires at 20.³ The message of TAYHANA's music is personal she says, as opposed to something cultural, it is romantic and introspective. However, she explains that making mixtapes becomes more political. TAYHANA's first mixtape, 'No (Going) Back to the 90s', included political stories combined with protest sounds as a way to talk about her fellow Argentinian people. She focused on the 1990s because it marked the growth of a neoliberal period which she describes as a 'regression'.

TAYHANA's geography and history show the importance of the meaning behind 'Petrolera'. She describes her area as difficult due to harsh weather 'it's not the tourist area, it's more industrial, but it's beautiful too'. She adds that living there is very expensive due to vast socioeconomic disparity from the oil industry. Her track 'Petrolera' begins with hardcore drums, reminiscent of Brazilian traditional *Maracatu* drums, or the recent (Favela/Brazilian) 'funk'. The high synth sound and far away vocals sound like the trance dance music genre, but the low synth and guttural vocal shouts are quite the opposite. The sawtooth filtered bass synth chromatically ascending draws our attention to a dark truth. However, the high melodic keyboard line in the central section draws out TAYHANA's love of humanity and the romantic. In this case, we feel the tug of her visceral knowledge of petroleum in the depths of the local earth and the human lives that it encounters above it.

²E. Williams, personal communication, 23 August 2019.

³M. Tayhana, personal communication, 12 August 2019.

TAYHANA's musical influences take the listener on a journey of connections from Latin America and the African Diaspora. She explains that Cumbia was the first music she heard in childhood, and that her grandmother and mother made Argentinian folk music, such as *samba*, *chacarera* and *chamamé*. She says that it was only in Mexico that she came to nostalgically understand and reinforce her Argentinian influences. She describes her music as club music, which she says refers to Latino, Latino American or African-American. She says that the genres house and techno are more associated with commercial electronic music. Brazilian music influences her and she explains that African music predominantly influences the Americas in the coastal areas. She recounts enslaved Africans moved to Bahia, the original capital in the north of Brazil, and African culture, music and percussion influencing South America, such as Buenos Aires in Argentina, with the Afro-Brazilian religion of *candomblé* reaching Uruguay as well. South African house music Gqom also influences her, as she enjoys artists such as Gqom Allstars, finding they mix well with Latin American genres because of the distinctive percussion and drums. As much as TAYHANA likes touring and visiting Europe, she says she is not musically influenced by European dance music. As a musician and listener, TAYHANA clearly positions herself in local influences alongside Latin American genres and those of Africa and the diaspora.

Like many music producers, TAYHANA learned music production software online with no formalised training. She learned *Ableton Live* on YouTube and furthers her learning from blogs and listening to music on SoundCloud. She says that she found it easy to progress to DJing live, because she does not mind how many people are in the club. As a mentor, she listens to music a lot on SoundCloud or Spotify, and messages people to find out more about the music and who makes it. Melody Tayhana's formal mentoring came from studying the piano at the age of six, and at school from the age of thirteen, adding theory and composition. She says this foundation to understanding music makes it easy for her to understand music production.

TAYHANA is active in her communities as both artist and connector. She releases her music through Mexican label NAAFI, as well as mixtapes for radio shows and magazines. She runs a queer party as part of a queer collective, HiedraH, and has music on the HiedraH label. She says she likes to work with underrepresented people, describing HiedraH as a minority party in Buenos Aires (no one in the collective is from the capital of Buenos Aires, but from the periphery or places in Argentina). Almost, as an outsider-outsider, TAYHANA and HiedraH create an inclusive creative space. Since the interview,

TAYHANA became commercially successful producing 'CUUUUUuuuuute' for Spanish popstar Rosalía for which she won a Latin Grammy in 2022.

TAYHANA is a minority as an out lesbian, female producer and member of an indigenous community that seeks people who are not from the city, where her party is based. Remarkably, in my informal discussions with DJs and dance party curators, I found that the rare curators who are under-represented (in music this is often Black, Latinx, indigenous and female) may look at people who look like them and decide to represent them; moreover, they may go further and choose to foster other marginalised groups who are *not* like them.

DJs and producers' fierce opportunity-making and organising in global music communities invites audiences of peoples who may be otherwise marginalised. Without intervention, implicit bias can cause curators and learning institutions to replicate majoritarian archives – propagating mini-versions of themselves. Each of the interviewees were keenly aware of intersectional differences of the people in their communities and insightfully made decisions to include them. Through clubs, online music platforms, or friendship, these DJ/producers sprout networks of seeds of cultural connection using music. Musics erased from education and taught histories inhabit the radical archiving and teaching through DJ/producers. Recordings are archive items, and in Black musics the DJ and producer replaces the archivist while the venue, radio, or streaming platforms are informal physical and virtual archival spaces.

4.2. Formal mentoring: radical archiving in the classroom

Most commercially successful musics *are* Black: hip hop, reggaeton and afrobeats rule the airwaves. So, if Black, Indigenous and people of color (BIPOC) musics are doing so well, where are the textbooks and traditional archives, such as those housed in libraries and museums? Often, they simply do not exist. And if there are no textbooks and archives, then how do we learn these newer Black musics? Decolonising requires actively questioning and re-questioning with no concrete or comfortable answers. When DJs and producers act as communities in the place of gatekeepers, we begin to see interesting trends emerge. Musicians, music creators and audiences examine non-notated contemporary musics by listening to recordings engaged in community participatory practice. These music lovers can describe techniques and practices in depth, at times with standard music theory lingo and at times with a jargon understood by musicians across the world, with local variances. This too becomes radical Black teaching – the

apprenticeship from one family member or musician to another, engaging people, stories, dance, sound system and collective participatory music.

The Global Music Research Trip helped to inform the syllabus and teaching methods for Global Electronic Music I, where together in class as community, we continue the work to reveal histories seemingly hidden from scholars, stepping through the double-consciousness veil of music research. I found that these musics are seldom covered in academic publications and when they are, the focus is often on fashion, words and rap flow, as opposed to a critical musical reading of the underlying music track. But, Black people in the United States have been hip to the history of Black music, because it is their culture. Most Black and non-Black DJs I have collaborated with over the past two decades are truly aware of the history as well. As such, in my research, teaching and course creation, as in Global Electronic Music I (GEM I) at NYU, I noticed that the resources for teaching Global Musics are mostly in DJ magazines, forums and my own interview materials or contacts.

Listening to recordings *is* accessing the archive; it is the main source for the Black radical teaching. In GEM I, we teach elements of music and analysis, encouraging students to hear what is going on in the music at a deeper level to teach composition and theory, creating new research techniques as needed. We use the same analytical tools as those offered up in any composition class. As we listen to Black electronic musics and non-Black electronic musics, we begin to hear the wide scope of timbres possible. In classical music, we need many instructions and an intricate understanding of classical instruments to create vast arrays of timbre. Through electronic instruments and the computer, timbres can not only be endless, but also be manipulated by one person. Music and technological creativity can be shaped by preference, influence and experience. Students are mostly free to create what they like, at times within limits designed to grow and nurture certain creative skills. In Global Electronic Music I, we learn musical lessons from global music, through analysing and creating, while looking at non-traditional sources of information. New generations of students can learn from the past, with open views to Black radical innovation.

Founded in 2020 at New York University's music technology programme, Critical Sonic Practice Lab ran two symposiums: the first, 'Elegy', addressed the theme of the Covid-19 pandemic; and the second was on the theme of radical teaching and radical archiving. Our symposium guests are artist-scholars and our latest symposium focused on artists and activists. I asked the panellists how we can create archives for marginalised people while protecting intellectual property, and DJ and producer Alex Morris

responded that there should be a way to pay to access music archives embedded in the music retrieval and archival systems.⁴ Critical Sonic Practice Lab also designed the pedagogical project Music Tech Toolkit. This centred on the value of open-source, free or cheap software and hardware to use technology to teach music creation to communities of underserved and diverse learners. We began with Music Tech Modules for K–12 students in an underserved school in Accra, Ghana. We are also working with Notre Dame on a project at the Casa de Cultura Tainã, in Campinas near São Paulo, Brazil with our Brazilian collaborator Luis-Felipe Murillo's community commons project teaching and co-creating with music and technology. Rather than fixed curricula, Critical Sonic Practice Lab encourages culturally sustaining teaching materials, research and collaboration in community with local teaching-artists to tailor the teaching and goals of the learning environment.

5. DECOLONISING DATASETS

Lack of communication and community is a potential pitfall of teaching and researching music creation through technological tools. This risk is heightened in societies where community is undervalued. If we follow the argument in *The Undercommons: Fugitive Planning and Black Study*, global African diaspora culture is greater than any institution that tried to contain it (Harney and Moten 2013). The European colonisation and enslavement of African peoples and the invasion of Indigenous peoples created Gilroy's 'Black Atlantic' (Gilroy 1993) diasporan networks of information and culture. We access learning through *listening* to music as the shared cultural archive. In a decade of research on music in Accra, I have seen that the visceral embodied listening spaces of dancefloors, car radios and sound systems (Adu-Gilmore 2021a) are part of this archive. With streaming services widely available, no stone of Black creativity need be left unturned. After the lessons of the impact of streaming on music revenue for artists, we must ask ourselves how to progress ethically. Although bits and bytes, printed and digitised words, and streams cannot contain the synaptic connections of this unique global subculture and superculture, it is time to protect the music and its originators. For peoples who have been stolen and enslaved or overrun, the idea of culture – the most important knowledge-base of the diaspora and Indigenous peoples – is joined with the understanding that it must be kept at the source, original, real and owned. How do we humanise machine learning to create and sort and examine our archives while ensuring intellectual property of creativity and

⁴E. A. Morris, personal communication, 16 November 2021.

culture for marginalised DJ/producers and other music creators?

The European idea of the library and archive insists on documentation stored in brick and mortar. However, now the library is uploaded, in the ‘cloud’ and searched in a vibrating expanse of electricity and faraway servers. One helpful element in the research on algorithm and automation in music recommendation systems is the actual data. Data collection systems, including music recommendation systems, can expose biases. For instance, the data-driven research paper ‘Investigating Gender Fairness of Recommendation Algorithms in the Music Domain’ (Melchiorre, Rekabsaz, Parada-Cabaleiro, Brandl, Lesota and Schedl 2021) discovers examples that exposes significant biases, stating that ‘Our research outcomes show that most of the collaborative filtering algorithms considered in our study tend to be unfair toward the female group (minority), in terms of NDCG, recall, and coverage metrics, particularly on shorter recommended lists, i.e., with ranking list up to positions 5 and 10.’ Furthermore, resampling methods typically employed to debias did not greatly assist the issue. In Critical Sonic Practice Lab’s *Sound and Music Computing Journal* article ‘f0 Analysis of Ghanaian Pop Singing Reveals Progressive Alignment with Equal Temperament over the Past Three Decades: A Case Study’, Roman, Faronbi, Burger-Weiser and Adu-Gilmore (2023) used MIR (music information retrieval) to study a Ghanaian superstar Daddy Lumba, purchasing tracks and culturally sensitive research mapping changes to local traditional vocal scales, impacted by autotune. They argued that their findings aligned with:

the mission of Critical Sonic Practice Lab, which includes decolonizing datasets, and departing from norms of tuning that are often overlooked, taken for granted, or even unknown. In doing so, we recognize that current algorithms are often trained with datasets that reflect majoritarian musics. (Roman et al. 2023: 6)

A reflective study from the MIR community investigates the intersection with ethnomusicology outlining developments in ethical research in a study deploying morality through the lens of Asian philosophy and religion coupled with a beneficial human-centred use of AI. For instance, a case study of Irish Traditional Music, unravels opportunities for misuse, such as not honouring copyright, or questioning the exploitation of music (within copyright), as well as showing musician practitioner responses questioning why music should be generated artificially at all (Huang, Holzapfel, Sturm and Kaila 2023: 8–11). The authors also encourage their field to: ‘go beyond building a technical problem around a dataset and

criticising ... “data-poor fields” for not showing interest in “upgrading” and “catching up”’ (Huang et al. 2023: 12). They also argue that the MIR community needs to ‘diversify itself in ways that transcend mere tokenistic gestures – it needs to go beyond diversifying datasets ... In other words, besides including more musical traditions as its subject of study, MIR needs to simultaneously expand its modes of conceptualising (thinking about) and engaging (working with) music. This would require an auto-critique of the field’s *raison d’être*’ (Huang et al. 2023: 1–2). In their white paper calling to inform policy, the authors warn ‘much research remains to be done on the cultural and societal impacts of these AI and algorithmically-driven developments as they influence the production, circulation, and consumption of culture’ (Born et al. 2021). Rather than solely diversifying data as an inclusive act, the authors ask governments to protect vulnerable communities, highlighting their freedom and rights, and artist and creator remuneration. They call for AI transparency and legibility, regulating corporate use of data collection and ask for further research in the fields of alternative economic models (diverse and potentially non-profit models), as well as longitudinal studies on the major streaming platforms and the lesser-known effects on the artist creators that have fuelled them (Born et al. 2021: 16–21). Disembodied from the cultural storytelling and community-building of the DJ/ selecta; the speed at which recommendation systems and AI gain ground requires regulation to avoid reinforcing neocolonialism in the future.

5.1. Limitations

Music scholarship is linked to archivists, stuck to a page, hoping that our audience will listen to the music that we are writing about while we write it. In the European colonial system, forms of documentation, such as writing and museums, legitimise history. However, in the written form, I acknowledge that music scholars *also* curate what the listener will read about or focus on in the music, like a static DJ. Decolonising requires reflexivity and new forms of teaching and researching. As I write this, I am aware that my own musical tastes dictate what I will analyse and this may not represent the community and practitioners within it. Inhabiting the subject-position of music scholar, and as a musician myself, I curate a written mixtape that I sit with for days, weeks, or years, before it gets to the page. Acknowledging writing about music as a form of curating requires recognising the role and limitations of articles such as this one.

6. CONCLUSION

The libraries with music archives burgeoning with scores and sketch studies dwindle when we examine Black and Indigenous musics. In teaching and researching global musics, we are beholden to look at the source material of recordings, popular media (e.g., radio shows and mixtapes, magazines) and the creators themselves. We are lucky if these artists are still around to answer questions for us. DJs and producers continue to teach communal history and culture through their role as authentic musical guide, teacher and archivist.

For marginalised peoples of the African diaspora, music has injected a sense of our own lived experience into a grey, unrelatable and often incorrect colonial history and education system. The technicolour version, replete with the joy and suffering of Black, Indigenous and marginalised experiences gives us valuable information that lies outside of traditional libraries and archives. But, as music scholars, traditional or non-traditional, we serve as the canaries in the coalmine. We have seen the impact of unkempt internet domination and the fallout on the take-home income of working musicians. We have also seen historic injustice on people of colour, especially Black music innovators, from rock 'n' roll to the blues. There is no need to revise work that human beings enjoy doing, including that of music artists, creators and curators, yet the technological race to create, imitate and appropriate is already here.

New authentic intelligence can be built into curating and listening, incorporating human joy and livelihood, which for most cultures has always been intrinsically linked to music. Future work lies in centring the *human* in human–computer interaction; DJ/producers have pioneered new musical technologies and creativities and their work is now being digitally appropriated. Research and commerce must recognise the past grievances to marginalised communities, and avoid replicating them. Software that scrapes a biased world, bakes that bias back into itself. As music scholars, we have new tools and opportunities to examine music and culture with a new and open lens, giving credit and revenue where it is due.

Authentic computer intelligence can help us to organise and sort through music data for analysis and learning. As Black music scholars, we have unique and expanding perspectives, embracing inclusive histories and practices, the unwitting histories of the oppressor and the primordial and budding histories of the historically and newly oppressed. Global participatory music practices help us get away from isolation and screens and into movement and connection with others: an antidote to growing mental health and health problems, exacerbated by the Covid-19 shut-downs. In the dancing archives of our bodies, our

inclusive histories enable us to capture and teach human cultural connections, artistic beauty and creative joys from the past, and thus inspire new potentials of powerful equity into realities for the future.

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