Categorising Electronic Music

Danielle Sofer

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Categorising Electronic Music

Danielle Sofer

When seemingly automated technologies display biases usually defined as discriminatory human behaviours, these tendencies are referred to collectively as 'sociotechnical bias'. In this article, I explore facets of racial and gendered sociotechnical bias apparent in the musical categorisation strategies of the database Répertoire International de Littérature Musicale Abstracts of Musical Literature (1967-Present Only)—or RILM. The article shows how concerns about sociotechnical transparency raised in the digital humanities and computer science are also embedded in musical technologies to advocate for greater awareness and action regarding implicit biases currently operating in musical spheres. The article finds that shared technology among many kinds of electronic music facilitates a kind of musical 'code-switching' across genres that, if attuned to appropriately in database administration and keyword designations, would minimise racializing and gendering biases in electronic music categorisation.

Racialised and gendered biases in digital archives are well known. The absence of records documenting experiences by women, women of colour, and Black women is especially pronounced. Bettye Collier-Thomas (1981), a scholar of African American women's history and a museum curator and director, has explained the function and necessity of Black museums, which emerged because American historical institutions actively sanitised history of Black individuals to the effect that archives came to reflect the same racism and prejudices held in common currency by the dominating white social order. Such biases are inevitably retained when historical records become digitised, and musical digitisation and database curation is no exception. A basic understanding of database design is therefore important for music scholars even beyond practical administrative questions of what to include in a given database. Once we choose what to include, our methods of organising musical records have profound effects on how musical categories circulate which, in turn, influences whose work is represented.

The 'Black Women Big Data' project used computational analysis to examine 'approximately 800,000 books, newspapers, and articles in the HathiTrust and JSTOR Digital Libraries to identify Black American women's perceptions about U.S. social structures and their lived experiences' (Brown et al. 2016, 112). The authors encountered a number of problems already when attempting to identify a corpus from which to draw their data, since there is no check box to tick in searching these databases to indicate that an author is Black or that her writing specifically centres Black women. Metadata does not usually indicate racial signifiers, nor is an author's race apparent by their name, such that, unless an entry deals specifically with and is categorised under the Library of Congress subject heading 'African American' there may be no definitive way of identifying appropriate sources. Not only do existing records lack representation from Black women, but there are exceeding difficulties in trying to 'represent' 'the complex politics of race, class, gender, and sexuality' 'algorithmically' (Brown et al. 2016, 113). Centring the discursive experiences Black women embody makes way for presenting the many diverse and divergent experiences among Black women, giving space and voice to multiple perspectives that, once collected together, would legitimize an as yet underrepresented area of inquiry. Underrepresentation of Black women's experiences in archival documents and database entries sends a message that these accounts are less significant than those that do appear—primarily accounts by white men. The study points to amassing evidence about the ways in which 'data and its sources are legitimized by those with authority to determine what is "important", and what is deemed important is subjective based on the legitimizing institution's positionality and agenda' (Brown et al. 2016, 114). Projects like 'Black Women Big Data' aim to 'decolonise' the digital humanities in order to expose and confront such biases, so as to legitimise and simultaneously recuperate Black women's experiences and perspectives as scholarly forms of knowledge building.

In this vein, the present article examines similar problems of representation and curation within the context of musical databases looking specifically at the categorisation of electronic music. I expose gaps in current musical curation methods, yet, for reasons I address later on, including aesthetic, ideological, and generic (of genre) considerations, there is insufficient space here for me to propose solutions that could fully recuperate the representation of Black women within current musicological practices of digital curation. I do, however, interrogate musicological databases to expose similar biases to those uncovered by the 'Black Women Big Data' study. I show that race and gender are significant factors in the digitalisation of musicological research that require more substantial disciplinary interrogation at the computational level.

Performing a search for electronic music sources in different music databases, I expose an apparent racial homogeny within sources containing the term 'electroacoustic'. In multiple databases, results returning for the search term 'electroacoustic' comprise literature written primarily by white men on music composed primarily by white men. I contend that, beyond a lack of representation, the databases' absence of non-white men and non-men reflects a superficial boundary grounded in *who* creates music rather than *how*. That is, rather than aesthetic, stylistic, or technical differences,

the relative homogeny of search results reflects an as yet unflagged characteristic of electroacoustic music: its 'white racial frame', described by Joe R. Feagin as,

> [A]n overarching worldview that encompasses a *broad and persisting set of racial stereotypes, prejudices, ideologies, images, interpretations and narratives, emotions, and reactions to language accents, as well as racialized inclinations to discriminate.* For centuries now, it has been a dominant and foundational frame from which a substantial majority of white Americans – as well as many others accepting or seeking to conform to white norms and perspectives – view our still highly racialized society. (Feagin 2010, 3)[1]

Because electroacoustic composers and theorists are overwhelmingly white and male, but such identifying factors are not overtly flagged, either in the ways the music is discussed or in how electroacoustic records are categorised, 'the white racial frame' appears merely to coincide with the masculine and the music's aesthetic. This article exposes the coincidence of the white, the male, and the electroacoustic in database search results to argue that, more than mere coincidence, electroacoustic music's whiteness is a mainstay of decisive and strategic gatekeeping. In pointing to this overt whiteness, I challenge the supposed neutrality of computational and digital curatorial decisions in electronic music categorisation, inflecting clear-cut and simplified computational modularity with the nuance and complexity required to break the vicious cycle of musicological eliteness, white supremacy, and flagrant inequality.

Categorisation of Electronic Music

When I began research for my PhD dissertation on sexuality in electroacoustic music in 2012, it occurred to me, perhaps much too late, that I had music from a lot of white men, some white women, and no people of colour. This realisation sent me on the search for 'electroacoustic' composers of colour and, in particular, women of colour. Aside from word of mouth, which proved to be the most effective method, I performed a lot of searches in online databases, including databases not particularly geared toward music scholars, such as Google, Google Scholar, Wikipedia, social media platforms like Twitter, Facebook, and Instagram, as well as databases specially curated for musicologists, composers, music theorists, and other kinds of music scholars. These included the RILM database—the *Répertoire International de Littérature Musicale* Abstracts of Musical Literature (1967-Present Only), whose headquarters, despite its French title, are located in New York City; the French Electroacoustic Music Store *electrocd* directed by Jean-François Denis; and perusing past programmes of the International Computer Music Conference. I had very little luck at that time. I went out in search of electroacoustic musicians of colour—musicians who might resemble me and share my world view, but I hit a wall when my search yielded few results. Scanning through names and images of individuals typically identified with electroacoustic music and never encountering

a woman of colour like myself gave me pause (observations supported by Rodgers 2015, 10–11). My musical interests appeared to clash with my own identity, and I asked myself, what am I doing here researching electroacoustic music? Am I in the wrong place?

Given that I was investigating scholarly sources for my dissertation, my first search was of the RILM database, which advertises itself as 'a comprehensive music bibliography, serving the global music research community' (https://www.rilm.org/). The site's 'resources attest to RILM's commitment to representing the world's knowledge about all musical traditions, and to making this knowledge accessible to research and performance communities worldwide via digital collections and advanced tools'("-RILM - About Us" n.d.). As a subscription service, mostly for university-affiliated scholars, the site is the most obvious choice for an academic music scholar but, as such, it also upholds barriers on account of who can access the site and ultimately in what sources the database actually contains.

As of 15 May, 2020, the search term 'electroacoustic' returns 2,814 results. A search of English-language entries with the search term 'electroacoustic' in RILM yields a handful of results about music by women, owing to representative authors (McCartney 1994, 1997; Bosma 2003; Ferreyra 2004; Metzelaar 2004; Sunabacka 2008; Bossis 2008; Lefebvre 2009; Simon Emmerson and Landy 2016), and scrolling through these results, **Q2** very few entries touch on non-heteronormative sexualities (Woloshyn 2017; Truax 2003). A number of recent entries propose to expand electroacoustic geographies beyond the typical French-German divide of the field's origin story (notable examples include Flašar 2008; Carrera and Daniela 2015; Dignam 2017; Piñera 2017; Mądro 2017; Herrera 2018). Most surprisingly, the search for 'electroacoustic' appears to exclude, by omission, music by Black composers—only *one* relevant result returns from over 2,000.

The search term 'electronic' returns 25,660 results, while the terms 'Black' AND 'electronic' concatenated by a Boolean operator returns 391 results and a significantly richer breadth of music extending the expansive gulf between classical and popular. The term 'afrofuturist' is a common descriptor of electronic music by Black composers, and returns 60 results (up from 55 in November 2018, but *down* from 63 in April 2019)—without any apparent distinctions between musical styles like pop, R&B or hip-hop. Searching for 'electroacoustic' AND 'hip hop' yields 3 results (down from 4 in November 2018). Table 1 tabulates a matrix of the results returned for search queries I performed. The first row includes identity designations (e.g. Black, whiteness,[2] African American[3]) and the first column lists musical descriptors (e.g. electronic, electroacoustic, afrofuturist). Figure 1, in turn, graphically represents these results to illuminate the concatenation of search terms. Each column, starting from the left, is headed with a musical designation (electronic, hip hop, gospel, electroacoustic, afrofuturist), and beneath each heading this designation's concatenated by a Boolean operator AND with the search terms Black, women, Africa, African American, whiteness, electroacoustic. Total search results for each category appear in the bottom left corner of the infographic.

Table 1 Tabulation of search queries performed in the RILM database on 15 May 2020. Elements at the juncture of two terms, a horizontal and vertical one respectively, displays results of concatenating the two expressions by a Boolean 'AND' operator.

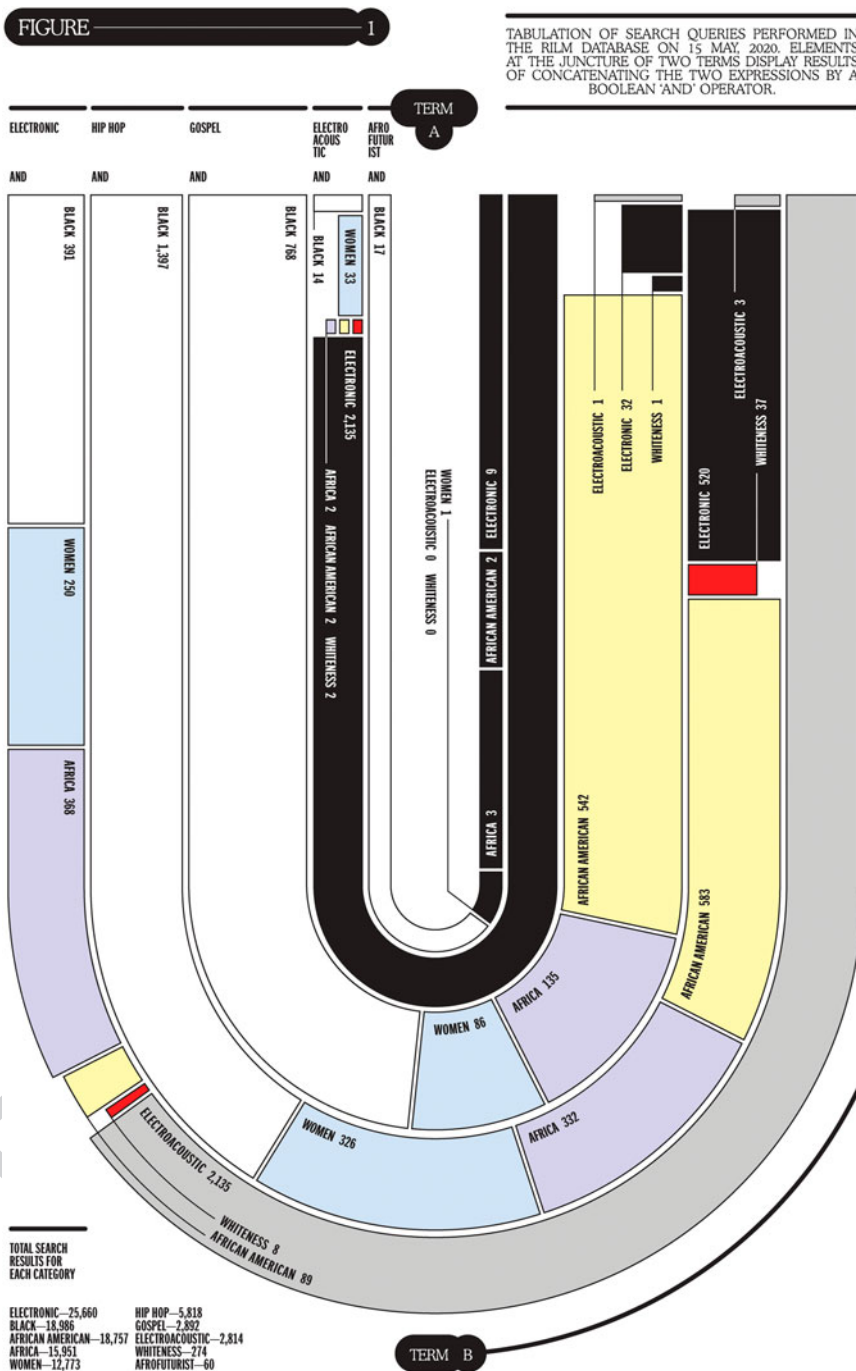|		Electroacoustic	Electronic	Afrofuturist	Gospel	Hip Hop[a]
		2,814	25,660	60	2,892	5,818
Electroacoustic	2,814	–	2,135	0	1	3
Electronic	25,660	2,135	–	9	32	520
Women	12,773	33	250	1	86	326
Africa	15,951	2	**368**	3	135	332
African American	18,757	2	89	2	542	583
Whiteness	274	2	8	0	1	37
Black	18,986	14	**391**	17	768	1,397

[a]This result is the same for variants of 'hip hop', including hip-hop.

As those invested in the digital humanities and information science know, there are certainly limitations to these kinds of investigations as they rely on 'text' searches, such that even when a composer or author identifies in a particular way, if they have not identified themselves as a woman, or Black in the title or the abstract, the term is unlikely to appear in the metadata. We see this clearly in the results for 'Afrofuturist' AND 'Black', where the afrofuturism philosophy prioritises Black-centric cultural expressions and Afro-diasporic history (Dery 1994, 180; Eshun 1999, 00[-006]-00[-005]; Murchison 2018, 81) to the extent that including both terms could be considered redundant (the same for 'Afrofuturist' AND 'Africa'). Even still, we can draw a preliminary conclusion based on these findings, that our methods of categorisation in electronic and electroacoustic musics require further attention.

A RILM search of the terms 'electroacoustic' and 'afrofuturist' together yields *no results*, from which I am inclined to deduce that the two terms are incompatible within academic musical disciplines—at least in our cataloguing strategies—since the RILM database represents academic music scholarship exclusively. Perhaps one explanation for the omission is that a RILM search (powered by EBSCO) is not the appropriate venue for seeking out resources on 'electroacoustic' music, though the search yields over 2,000 results (compared to 15,424 for 'Beethoven'). This possibility exemplifies the marginal role that electronic music has typically played for musicologists, though some now canonised composers of electronic music—John Cage, Karlheinz Stockhausen, Pierre Schaeffer, Milton Babbitt, to name a few representatives—have long been celebrated as central contributors to 'contemporary' music. Recall that Theodor Adorno (1976, 183) derided electronic music practitioners by referring to them as 'tinkerers' ['*Bastler*'] levelling them similarly to advocates of other loathed traditions, for example, jazz and popular music.

A second and more likely reason for this poverty of results is because authors are requested to self-contribute to RILM; perhaps authors do not see the value in contributing to the database on electronic topics.

FIGURE 1

TABULATION OF SEARCH QUERIES PERFORMED IN THE RILM DATABASE ON 15 MAY, 2020. ELEMENTS AT THE JUNCTURE OF TWO TERMS DISPLAY RESULTS OF CONCATENATING THE TWO EXPRESSIONS BY A BOOLEAN 'AND' OPERATOR.

TOTAL SEARCH RESULTS FOR EACH CATEGORY

ELECTRONIC—25,660   HIP HOP—5,818
BLACK—18,986   GOSPEL—2,892
AFRICAN AMERICAN—18,757   ELECTROACOUSTIC—2,814
AFRICA—15,951   WHITENESS—274
WOMEN—12,773   AFROFUTURIST—60

Figure 1 Graphic representation of results from Table 1. Each column, starting from the left, is headed with a musical designation, and beneath each heading this designation's concatenated by a Boolean operator AND with another search term. Infographic by Christina Huang.

Colour online, B/W in print

Thirdly, perhaps authors are contributing their work, but do not apply search terms commonly associated with electronic musical traditions. Indeed, notable in the search for 'electroacoustic' on RILM, the now canonised texts on women's contributions to electronic music by Elizabeth Hinkle-Turner (2006) and Tara Rodgers (2010, 2015), respectively, do not appear, nor does important work by George E. Lewis (2000, 2008a), Michael Veal (2002, 2013), or Paul D. Miller (2008), who have respectively contributed tremendously to the history of electronic music in the context of Black musical practices in and outside of the United States, as I detail below. Significantly, though their work does not appear in the search for 'electroacoustic', Hinkle-Turner, Rodgers, Lewis, Veal, and Miller's respective writings on electroacoustic music are listed in the database using alternative keywords ('alternative' in the sense described in this issue's Introduction).

It may surprise some that only one result matching the 'electroacoustic' search term in RILM proclaims to explore 'collaborations between electroacoustic and jazz musicians'. The author of this singular entry, Robert J. Gluck (2009, 141), writes: 'Throughout its history, electroacoustic music has viewed itself as distinct from what are perceived as popular musical forms. This is problematic because a parallel experimental musical universe has existed within jazz and other African-American musical traditions'. RILM's omissions in this regard reflect an irreconcilability not only between the terms 'electroacoustic' AND 'Afrofuturist' but also between how white electronic music can be bracketed off as an exclusive 'electroacoustic' category, while Black electronic practices reflexively cling to what Gluck describes above as 'popular music forms'.

Indeed, as George E. Lewis (2008b, 141) explains in his Forward to a special issue of the *Journal of the Society for American Music* on Afrofuturism, contrary to common representation, Black musicians and scholars have significantly informed 'the confluence of music with technology', and still this discourse has not entered electroacoustic consciousness. Gesturing toward a reconciliation of music's fragmented electrified strands, Lewis proposes to electroacoustic historians and theorists that 'removing the putative proscription on *nonpopular music* allows us to take a more nuanced, complex view of the choices on offer for Black technological engagement … ' (142, emphasis added). Elsewhere Lewis (2004, 165) expressly articulates how Black musicians employ 'a degree of code-switching across traditions and genres' in addition to the 'genre mobility and musical hybridity' typically practiced by experimental musicians, suggesting that, while Black musicians are well-aware of racist practices of exclusion, part of the difficulty in reconciling the Afrofuturist tradition with the electroacoustic one lies in the unwillingness of electroacoustic musicians and researchers to create resources that detail shared musical qualities across this apparent 'sonic color line' (Stoever 2015). Whereas, 'Afrofuturism' is clear about its Afro-centric emphasis, the keyword 'electroacoustic', as applied in the RILM search above, also entails a racially coded meaning, but its white racial frame—solidified by the omission of Black musicians and writers—is not flagged overtly.

One of the earliest records returned for the search 'Black' AND 'electronic' deals, unsurprisingly, with hip hop, David Toop's *The Rap Attack: African Jive to New York Hip Hop* (1984). This is not the earliest contribution on 'rap' in the database, a place held by Bruce Jackson (1974) seconded by Cheryl L. Keyes (1984).

Conversely, the earliest entry to return using the search term 'hip hop' comes from electroacoustic forefather Pierre Schaeffer, and, considering *À la recherche d'une musique concrète* was published in 1952, the record actually has seemingly little to do with the search term. In answering the question of why Schaeffer's name appears in a search for 'hip hop' when his work predates the practice and has no immediate connection to the genre requires further historicization of electronic musical practice. The answer lies not only in *how* the record (RILM Accession Number 1952-00530) has been categorised—but *by* and *for* whom. Though this entry's abstract is unattributed, where notably some entries are attributed to a named author, an English-language abstract of the book has been provided mentioning not only Schaeffer's 'pioneering work in electroacoustic music and sound recording' but also flagging this work's potential '[relevance] to DJs and hip-hop producers', such that Schaeffer's book has been retroactively categorised and subsumed under 'hip hop' both as a keyword and, in turn, as a musical phenomenon.

Given the relative uniformity of results yielded from the search for 'electroacoustic' in the RILM database, one quickly sees how a fragmented system of categorisation, such as that replicated by academic databases, leads to decreased recognition for individuals whose music does not fit the mould. To be clear, while a search using the term 'electroacoustic' includes ample theories and analyses, and even copious definitions of how electroacoustic music came about and what it could be, omitted in these presumably broad brushstrokes are examples of a true diversity of repertoire, theorists or creators. What semblance of 'reality' do our collective academic research databases bestow on musical and musicological practice? By RILM's omission, electroacoustic music has become a genre defined by a predominantly white, male canon, with sedimented European origins. And these findings are replicated in other databases too.

Looking to another example of database curation on the *electrocd* website, 'The Electroacoustic Music Store' is a significant resource for anyone interested in electroacoustic music. The website features work by many of the field's most recognisable names, with biographical details, some contact information, audio samples, liner notes to recordings, a blog, event announcements, and much more, such that this site would be the first stop for electroacoustic neophytes.

The site lists a total of 4,364 electroacoustic artists. A featured category, indicated on the website by a star icon, boasts headshots and additional details for 61 composers (https://electrocd.com/en/artistes/tous), none of whom appear to be Black or even people of colour.[4] This is remarkable because many well-known composers, including Pamela Z, the aforementioned George E. Lewis, Toru Takemitsu, and Nam June Paik appear in their long-form database. The database is not conservative in its definition of 'electroacoustic' as it includes a range from mainstream artists (e.g. Matmos and Cabaret Voltaire) to obscure artists like one represented by the ASCII phallus[5]

'8=====D'. This goes to show that even in the most expert domain—where electronic is taken in its broadest sense—electroacoustic expertise appears somehow to conflict with non-white practitioners. To counter this claim, some might argue that electroacoustic music is not considered a particularly Black domain—a kind of rhetoric that presumes Black musicians only make music that is in some way coded with a particularly 'Black' aesthetic that is incompatible with the 'electroacoustic' sound. Yet, already in 1973, Eileen Southern, preeminent musicologist, scholar, and researcher of Black American musical styles, declared: 'Many of the young contemporary black composers are experimenting with electronic techniques, sometimes combining the electronic sounds with a chorus singing spirituals or gospel songs or an ensemble playing jazz blues, etc. Some composers have written jazz cantatas, rock operas, and gospel ballets or gospel cantatas. In fact, with the typical black composer, almost anything goes!' (Southern 1973, 32). Indeed, there is evidence for Southern's proclamation already in the limited results returned in both RILM and *electrocd*.

Digital repositories are significant resources for those in a position to access them. Whereas scouring a physical archive for my queries above would have taken a lifetime, and risked rife miscalculations, the digital repository and metadata allow scholars to comb through RILM's over 1,000,000 abstracts and 300,000 full-text records in a matter of seconds. The opportunities afforded should not be dismissed, nor should we discount the collection based on the limitations identified above. Rather, I propose, in the vein of digital humanities scholars more generally, that we identify the limitations and gaps of our digital musicological resources such that we acknowledge their value also as sites of socio-political action, to consider 'data as interactive and dynamic rather than static' (Brown et al. 2016, 117). Digital humanities scholars also identify social media sites for their 'disproportionate usage among people of color, particularly Black women', and as richer 'sources of corpora creation' than large scholarly databases (Brown et al. 2016, 120). We might extend these findings also to forms of music-making, publication, marketing, and distributing, where—especially now, in the wake of a global pandemic—the boundaries between professional and amateur become increasingly blurred as musicians across musical geographies and styles take to promoting themselves and their work online.

Launched in 2016, a relatively new site compared to RILM and *electrocd*, the Composer Diversity Database (CDD) (https://www.composerdiversity.com/), takes into account accessibility, stipulating, according to founder and Project Director Rob Deemer of SUNY Fredonia whom I interviewed May 4, 2020, that composers can be included in the database provided they have an online presence: 'a personal website or a component of a publisher's website for living composers and/or a page in compendiums such as Grove or Wikipedia for historical composers that interested researchers could locate lists of works (and hopefully ways to procure those lists)'. Deemer's team created the database for 'conductors, performers, educators, and scholars to have a useful resource in which to find underrepresented composers', acknowledging that users may very well be seeking composers who share their own identities. Since the CDD allows anyone to submit details of a composer, 'no genre or marketing

limitations', the possibilities of what constitutes an online presence, and even who could be listed as a 'composer' are considerably broader than we might expect from academic databases such as JSTOR or HathiTrust (or even RILM), which are only 'considered formal sources of corpora creation because they are legitimized through 365   formal academic agencies, which adhere to specific standards related to what data is included within collections as well as specific standardized processes through which one gains access to such data' (Brown et al. 2016, 115).

CDD is open access, and anyone who knows about the site can both search and submit to the database. In addition to typical musical parameters, including Genre 370   (orchestra, band, chorus, opera, voice, chamber, jazz/improv, film, game, musical theatre, songwriting, electroacoustic) and Medium/ Subgenre (string quartet, piano trio, woodwind quintet, reed quintet, sax quartet, brass quintet, Pierrot ensemble, percussion ensemble, young band, young orchestra, young chorus, young piano), CDD also provides information about a composer's living/ deceased status, sexual orien-375   tation (a tick box to indicate 'LGBTQIA2s+'), gender identity (woman or nonbinary), demographic criteria (African, American Indian / Alaska Native, Black, Latin(x)/ Latin American, East Asian, South Asian, Southeast Asian, West Asian / North African), and location (city and/or country of residence). Defining these parameters one can stipulate, for example, composers of electroacoustic music who ident-380   ify as Black women and find in the results 35 composers—many more than RILM returns using the search terms 'Black' AND 'electroacoustic'. Of RILM's 13 results, only one actually invokes the word 'Black' in its relation to identity, and that source is an edited collection about identity in Canadian music, with one chapter about 'electroacoustic music' and another on Black country musicians in the eighteenth century 385   (Diamond and Witmer 1994), such that even then, the two terms do not occur together. This is to say that, without specifically listing a composer's or author's identity in the metadata, it is extremely difficult to determine relevant sources about 'electroacoustic' music from underrepresented composers in the largest academic database of musical sources. The disparity between RILM and the CDD is significant, because, 390   once we locate composers on CDD, we may wish to find relevant academic scholarship about a given composer, which the CDD does not provide but RILM very well could.

Defining Electroacoustic Music

395   When I have wondered aloud why Black producers and artists appear less in electroacoustic music-making spaces, there have been a few responses laden with assumptions: (1) Black musicians do not make 'electroacoustic' music or engage with 'electroacoustic' practice; (2) Black artists do not want to make 'electroacoustic' music or participate in 'electroacoustic spaces', (3) 'Electroacoustic' music is often 400   funded by and produced within universities and government institutions that historically have less representation from Black individuals, meaning that there is a belief that such exclusion is not specific to electroacoustic practice but rather points to a broader sectoral problem, thereby excusing individual responsibility for the electroacoustic

exclusivity I have mapped above. As we can see from the CDD example, in fact there *are* Black composers of electroacoustic music—68 composers are listed in the burgeoning resource, and in *electrocd* we find a compelling example of how these composers exist despite not being 'featured' as centrally as the genre's canonised representatives.

The evident bias against people of colour in electroacoustic music has nothing to do with the music's compositional quality or aesthetic. Where hip hop is often framed as a descendent of electroacoustic practices—as Pierre Schaffer's inclusion in the RILM search on 'hip hop' shows (and more on this in the next section), electroacoustic music seemingly materialised from nowhere. Electroacoustic practitioners and historiographers continuously valorise a mythology of pioneering discovery (Morgan 2017). But, despite appearances, sound permeates racialised electronic boundaries that superficially isolate electroacoustic practices from other forms of electronic musical expression.

Our methods of computerised categorisation raise a philosophical question that is at once both ethical and aesthetic: How do we determine what kinds of music or which artists belong together and which ones do not? Certainly, answers to this question hinge on notions of genre and authenticity, and on market forces assigned by record executives, by artists and even by their listeners—these perspectives are examined extensively elsewhere, for example, by bell hooks (1994, 125–143), Adam Krims (2000, 46–92), and Karl Hagstrom Miller (2010). Building on these discourses, this article shifts conversations of genre from examining the historical and commercial impetus of categorisation to reflect on the consequences of digitising such institutionally assigned categories, for example in academic databases, and in doing so seemingly automating what are in actuality socialised and economic constraints of musical promotion. In the interest of reanimating electronic music's staid categories, as shown in the search performed above, I now present some common justifications given for bracketing electroacoustic music as a discrete subcategory of the electronic.

Electroacoustic composition and theory is often premised on the veil between recorded sound and a sound's inferred source-cause associations—whether composers work to reinforce or diffuse such mediated boundaries. *Musique concrète* founder Pierre Schaeffer is remembered for his notion of 'reduced listening' and its complementary conception of the 'sound object'. Music theorist Brian Kane (2007, 15) reads Schaeffer's 'sound object' as an intentional object, in the phenomenological sense. On the one hand, we 'hold' the immutable object in our minds such that it stands apart as an idea, that we may study it distinctly from our own prejudices. In this sense, the object is abstractable, connected to other like objects in their idealisation. Within this philosophy, a sound sample is both distinctly recognisable as a thing while also comparable to other samples—not in their *content* or what they sound like, but merely *as samples*. It is this indifference that allows me to compare electroacoustic and hip hop music, whose differentiation rests mostly on presumptions of distinctive content in each practice—though, even distinctions based on content are difficult to uphold.

Many theorists examine this acousmatic 'spacing', as Kane (2014) terms it, of a sound's source and cause—R. Murray Schafer's (1969) 'schizophonia' described sound's displacement through loudspeakers, Steven Connor's (2012) 'panophonia' explained the endemic 'separation of voices from their sources', and Mladen Dolar (2006) challenged the prospect of 'disacousmatization' declaring that, once recorded or masked, a sound's original source and cause is underdetermined, never to be revealed from sound alone. Nevertheless, Simon Emmerson (2007, 6) posits that listeners cannot help but attempt to identify the sounds they hear, attributing the behaviour to no less than a reflexive evolutionary imperative. Nina Eidsheim (2019) describes the voice in this context as a 'complex event' precisely because it begs the question, '*Who is this*?', thereby invoking a unique form of 'timbral discrimination' when voices are perceived as non-white (4). Eidsheim, like Schafer, Emmerson, Kane, and Dolar, traces the drive to divorce a sound's source from its effect electronically to Pierre Schaffer, but reframes this historical debt in racializing terms.

A sound's perceived source and cause in relation to the newly interpolated context is of central significance in many electroacoustic compositional philosophies, whether composers chose to deny or amplify any such connections. While many electroacousticians may attempt to deny the multifacetedness of composing with unconcealed intertextuality, others have turned their gaze to the merits of identification of and *with* discretely sampled material, especially in light of history, preservation, and allusion (D. Miller 2008; Katz 2010; Sewell 2013). Composer Beth Coleman alleges that composers who endorse concealing their sources deliberately seek to minimise Black musical influences: 'All these places understand that sampling something about hip-hop culture, and hip-hop style, is a mandate. It doesn't even have to be a Black face anymore' (Rodgers 2010, 93). That is to say that the acousmatic resonances of sampling retain more than sounds; also culture and context.

Hip hop ethnographer Joseph Schloss further contextualises the importance of sampling:

> In the community of sample-based hip-hop producers, the discourse of aesthetic quality is primarily based on the relationship between the original context of a given sample and its use in a hip-hop song; that discourse consists of assessments of how creatively a producer has altered the original sample. (Schloss 2014, 13)

Overt sampling is one of the most common techniques artists use to carve out musical heritage, whether the content of those samples is flagged as overtly borrowed or not is a facet of musical practice. In many academic spaces, hip hop is distanced from implicitly white discourses on electronic music based on its supposed musical content, though its creative techniques permeate these spaces.

Indeed, Kane (2014, 131) brings the conception of sound-as-object to its logical extreme in his discussion of Schaeffer's apprentice Luc Ferrari to argue that the content of the recorded sample is of no consequence within the electroacoustic philosophy because, regardless of content, Ferrari is primarily motivated to sound the

electronic medium—'the recorded character of the recording'. Ferrari's passive 'anecdotal' recording methods mean his attention is directed to the method of recording *as medium*. He therefore limits his role in meddling with the recorded content. Kane targets Ferrari's indifference to after-production as clumsy sound sculpting in
485 *Prèsque rien* (a work featuring recordings captured from a microphone directed out the composer's window)—this compositional insistence on indifference being one reason we hear the mechanisms of how the work was created rather than focus on its content or its aesthetic merits. In Kane's words, 'the flatness of the mixing suggests other kinds of flatness tied to audition', an inherent debilitation Kane identifies with
490 Ferrari's practice. Herein belies an aesthetic paradox: 'While trying to meet the transcendental condition of *recording whatever*, the recording is also stuck in the immanent
Q3 condition of always being a recording of something in particular' (Kane 2014). This 'something', I suggest, resists abstraction, paradoxically because of its ties to listeners' reflexive evaluation of the music's content.
495   For example, Ferrari frequently boasts of his music's 'intimate' qualities. A piece like
Q4 *Presque rien avec fille* (1989) is therefore described on the composer's website thus: 'a photographer or a composer is hidden, young girls are there in a kind of lunching on grass, and give him, without the [*sic*] knowing it, the spectacle of their intimacy'.[6] For
Q5 another piece, *Les danses organiques* (1973), Ferrari commissioned two women to
500 engage in pseudo-lesbian sex. In this vein, regarding once having clandestinely recorded a woman shopping, Ferrari intones: 'Indeed, I preserve bits of intimacy, like stolen photographs. Naturally, she does not know, and it is just this aspect that makes it even more remarkable. I have captured something on tape, I bring it into my intimate world—my home studio—and I listen to her again' (Robindoré 1998,
505 15). Here, beyond the medium of recording, surely the *content* and utility of the sample must be evaluated in terms of ethical practice. Is it appropriate to record a woman without her knowing for a composer's 'intimate' personal use? What about 'intimate' use by others?[7] It is my contention that we must acknowledge when it is appropriate to bracket and unbracket content from consideration, and it is important
510 to recognise *who has the privilege to do so*. Addressing the privilege of bracketing and unbracketing is, I believe, the first step to revealing some invisible barriers operating in the history and theory of electronic music that require our ethical attention.
       Kane examined the prevalence of the Pythagorean myth in the electroacoustic practice of veiling a sound's cause and source associations, notably opening up the defi
515 nition of 'acousmatic' sound by tracing the linguistic and historical slippage that upholds and advances electroacoustic music's mythic origins. Skimming through the book's examples, from Pythagoras to Schaeffer and Ferrari, even to Les Paul and eventually Kafka, the realm of the acousmatic appears to extend and touch on many more areas beyond the limited scope of 'music' and its practitioners, situating side-
520 by-side sounds emerging from religious convents, radio, academia, literature, and popular music studios all under the acousmatic banner. However, pausing on music for a moment, we cannot help but wonder how gender and race remain bracketed out of this discussion. According to Kane, 'writings on acousmatic sound are

usually intended for specialized and distinct audiences (composers, film theorists, opera scholars, theorists of vocality, etc.)' (Kane 2014, 46), all likely readers of his book *Sound Unseen*. Likely, because of who documents electroacoustic historiography and how, the music represented in *Sound Unseen* appears to replicate an unspoken norm in this category of music: that this category deals primarily with works by white men hailing from Europe and North America.

Certainly, this omission is not intentional, at least in Kane's case. Rather, what gets bracketed in is wholly contingent upon the invisible privilege that comes with what Foucault (1970, xi) termed the 'epistemological space' of our sedimented histories, and is therefore not necessarily traceable in the work of individual practitioners but nevertheless coincides with a shared attitude among a discipline's most influential members. To my mind, the delineation of electronic music into academic or institutional (i.e. electroacoustic) composition, and what is considered electronic music in the context of popular culture demonstrates the musical 'coincidence' of race and gender, (though I do not have much room in this article to examine the latter).

Crucially, the disembodied and disinterested compositional practice ascribed to electroacoustic music until now is not characteristic of all electroacoustic composers. Electroacoustic composer and theorist George E. Lewis (2000, 33) contends that, despite the seemingly automated mechanisms of computer music composition, software-based music systems can 'reveal characteristics of the community of thought and culture that produced them'. It is within this framing that Lewis positions his electroacoustic work *Voyager* 'as a kind of computer music-making embodying African-American aesthetics and musical practices'. Lewis's description of his compositional outlook acknowledges communal prospects of listening to electronic music to flag and recognise how social realities seep into musical contexts, a prospect he attributes in particular to 'African-American aesthetics and musical practices'. Philosopher Charles W. Mills (2005, 172) argues that the ability to overlook such realities has been a cornerstone of Western philosophy, which upholds the 'interests of the privileged' long questioned by people of colour and white feminists, while glossing over issues of embodied knowledge and social power. Mills astutely observes that even the 'reality' deemed in canonical philosophical literature is experienced by the dominating group of white male philosophers in a fundamentally different way from their minoritized counterparts. As we have seen, questions pertaining in certain measure to a constructedness of reality lie at the heart of listening to and theorising electronic media, wherein electroacoustic notions unapologetically favour the reality experienced by white European men.

In choosing to focus on a comparison of the means of production in hip hop and electroacoustic music, I sought to provide a common ground or starting point bridging two categories of music often delineated distinctively by practitioners, performers, and listeners. I hope it is now clear that the practices share many commonalities—as many, possibly, as distinctions. We might use these commonalities as cross-genre comparisons, as tangible instantiations of sociotechnical concerns that could fuel debates about an ethics of sampling in electroacoustic music to the extent that these have

been already belaboured in hip hop discourses. My intention in drawing out common characteristics between hip hop and electroacoustic music is not to justify or sanction the former for academic approval, but to illuminate some of the myth-making practices that might set up a rigid distinction between both practices and, in so doing, deter our understanding of the broad reach of each practice from a historian's perspective.

Hip hop, like many contemporary forms of musical expression, is often created through electronic means, but Murray Forman argues for a more nuanced understanding of hip-hop that is not necessarily beholden to 'technology':

> [T]echnology has never been the sole drive of hip-hop's development. Rather, the technologies of hip-hop are culturally inflected at diverse scales of effect, woven into prevailing social contexts, and enfolded within the systems of production and exchange that are prone to transition in the face of historically specific stimuli. (Forman 2004, 389)

Forman acknowledges that technological means of production become 'culturally inflected' by how, when, and why people engage with hip hop. Said another way, some kinds of hip hop—for example, experimental, jazz rap, or 'li-fi'—may share more commonalities with kinds of music currently labelled 'electroacoustic' than with music subsumed under the 'hip hop' heading. Indeed, like electroacoustic music, hip hop takes many forms.

That 'hip-hop is black American music', does not negate its 'hybridity' of genres, geographies, and musical canons, writes Imani Perry:

> To deem something as French or English rarely implies that there were no Germanic cultural influences, or Irish, or even Algerian. Why, then, is it so troubling to define something as black? Color consciousness that allows for an understanding of both the political implications of the category of race and the cultural forms that have emerged under that category is useful and progressive, and certainly not essentialist. (Perry 2004, 11)

And finally, to quote a twenty-year old passage from Kodwo Eshun,

> In fact the era when the History of HipHop could exhaust Machine Music is long over. All those petitions for HipHop to be taken seriously, for the BBC to give Techno a chance, for House to receive a fair hearing: this miserable supplication should have ended years ago. For there's nothing to prove anymore: *all* these Rhythmmachines are *globally* popular now. (Eshun 1999, 00[-005])

Adjoining the electronic aspects of 'electroacoustic' and 'hip-hop' practices of musical expression provides a more complete picture of electronic music history, which can really only benefit the relatively obscure, comparatively irrelevant, practice of electroacoustic music.

The Future of Categories

In his institutional history of the university, Gerald Graff identified a suspicion of 'generalisation' which has led increasingly to the narrowing and specialised 'patterned isolation' between academic disciplines we find today (Graff 1989, 60). Graff concludes that patterned isolation 'has welcomed innovations, but so isolated them that their effect on the institution as a totality is largely nullified' (Graff 1989, 225), such that individual faculty instructors have practically no influence on institutional systems of exclusion and exploitation. The pattern's effect accounts for the token hiring of scholars of colour in niche areas of specialisation (Graff 1989, 250), for example, as experts on 'Race Music', jazz, hip-hop or other recognised forms of Black Music. This is also one possible explanation for the limited communication between 'music', in which one might deliver lectures on the analysis, performance, and history of hip hop, and 'music-technology'—two disciplines that may very well be housed under the same physical roof. Tara McPherson draws an analogy between 'pattern isolation', which prevents communication across sub-fields and further cross-disciplinary generalisation, and the modularity championed in computation, arguing that, because of the 'pattern', those familiar with modularity in computation and coding might not be acquainted with how modular strategies have historically enforced racial segregation. Software engineers may therefore introduce modularity to categorise compact containment systems while unwittingly muting socio-cultural context or, as I have used the term here, content. When introduced as a process of clarity and simplification—such as limiting the number of keywords that describe a particular kind of document or style of music—modularity is dangerous precisely because of how it introduces biases covertly. Hardly simple or self-contained, the relatively simplistic textual analysis I performed raises many more complicated questions of musical genre, provenance, aesthetics, and, on the computational side of things, issues of textual categorisation, parsing and encoding that point to problems more far-reaching than even music itself.

Though it does not appear in the RILM search for 'electroacoustic', a notable example of an analysis that bridges the electronic divide I have previously outlined is Michael Veal's (2002) account of 'Miles Davis's Unfinished Electronic Revolution'. Veal explores Davis's initiation of an 'electric jazz', referencing Filles de Kilimanjaro (1968) as an album that brought Davis's aesthetic closer to popular music, to the apparent detriment of 'neoconservative jazz musicians (such as the Marsalis brothers)' (Veal 2002, 155), while also retaining 'the traditional small-band emphasis on improvised interaction among members of an ensemble', a practice that 'can be traced all the way back to the roots of jazz in turn-of-the-century New Orleans' (Veal 2002, 159). According to Veal, Davis's later albums Bitches Brew and In a Silent Way continue this legacy, though they are 'essentially sonic collages … that foreground the role of the studio through audible splices and tape loops' (Veal 2002, 161)—'sonic collage' being a similar description to how I've defined sampling. Instead of mutual recognition, Veal reveals that Davis's inclusion of electronic instruments and pop-song

structures elicited more 'heavy-handed efforts' to sediment jazz practices (and I would suggest also electronic music practices), thereby omitting possibilities beyond these limited 'commercial, social, generic, and ideological borders. The precarious equation of modern jazz, free-jazz, experimental music, world music, and popular music that prevailed in the 1970s was effectively lost … '(Veal 2002, 163) Veal's point is that ethno/musicological systems of categorisation can remedy this problem by celebrating occasions when musical borders are blurred by electronic means.

Veal's analysis shows how electronic music historiography could benefit from expanding chronologically organised histories laterally via a shared period of musical creation. Investigations highlighting common experimental practices across the 'sonic color line' include Brigid Cohen's (2014, 2018) recent essays on the respective collaborations of Charles Mingus and Edgar Varèse in 1957, and between Yoko Ono and Stefan Wolpe in the 1950s. Jennifer Iverson (2017, 2019) illuminates the influence engineers had in the work of so-called pioneering composers like Karlheinz Stockhausen and Herbert Eimert in Germany to demonstrate a wider range of duties beyond the myth of the sole 'great' composer. And Elizabeth Hinkle-Turner (1991, 2006) has demonstrated repeatedly how women occupied similar technical roles to men in electronic music studios without achieving comparable recognition in their professional status or titles to their male colleagues. Hinkle-Turner's reprimand is echoed by Lewis (2008b, 142) who urges us to disrupt 'the maleness of the Afrofuturist music canon' with more scholarly attention to 'artists such as Pamela Z, DJ Mutamassik, Mendi Obadike, Shirley Scott, Dorothy Donegan, the Minnie Riperton/Charles Stepney/Rotary Connection collaborations, and more', a welcome invitation taken up by Tara Rodgers (2010) and Paul D. Miller (2010). Some recent electroacoustic historians and practitioners (Hinkle-Turner 2006; Rodgers 2015; Born 1995; Emmerson 2016; Truax 2003) have placed greater emphasis on identity in efforts to revise electroacoustic history's common narratives. These authors have expanded the purview of neatly packaged textbook histories, but our cataloguing methods are still catching up.

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Dr Danielle Sofer (she/her/they/them) researches themes related to electroacoustic music and gender, sexuality, social justice, philosophy, aesthetics, twentieth and twenty-first-century sound studies, sociotechnical ethics and bias in music, and a range of subjects under the umbrella of music theory and analysis. Such topics feature extensively in a forthcoming monograph, *Making Sex Sound: Vectors of Difference in Electronic Music* (Cambridge, MA: MIT Press, 2021), the first book to explore sexuality in electronic music. Danielle is co-founder and Deputy Chair of the LGBTQ+ Music Study Groups.

Notes

[1]   For investigation via a music-theoretical lens, see also Ewell (2020).

[2]   Because 'Black' has historical significance as a descriptor for 'Black music' I retained that designation, I change 'White' to 'Whiteness', which in the humanities tends to be more commonly used in critical sources having to do with race and ethnicity. A search for the terms 'White' AND 'electroacoustic' returns 10 sources either by or about people whose name is White.

[3]   Includes cognate terms like 'Black' and returns entries also about 'black sabbath' and 'black metal' which do not contain the term 'African American'.

[4]   It is admittedly difficult to determine racial or ethnic origins by appearance alone. None of the featured composers indicate identifying characteristics in their biographies.

[5]   My thanks to Emily Gale for suggesting this elegant phrasing.

[6]   '*Dans des paysages paradoxaux, un photographe ou un compositeur est cache, des jeunes filles sont là en une sorte de déjeûner sur l'herbe et lui donnent, sans la savoir, le spectacle de leur intimité*'. French from Ferrari's website, https://www.lucferrari.org, first accessed 29 April 2015. The entry has since been updated to the English translation provided, with the coy undated addendum: 'New text: "Suddenly the composer realizes that the title comprises the word 'girls' and he decides to justify that by the presence of a truly present girl."' https://lucferrari.com/en/analyses-reflexion/presque-rien-avec-filles/, accessed 4 December 2018. Since Ferrari passed away in 2005, it is unclear where this addendum originates, though it is attributed to the composer.

[7]   I interrogate this question more deeply in my forthcoming monograph, *Making Sex Sound: Vectors of Difference in Electronic Music* (MIT Press, 2021).

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