

## Mapping the Music Genome: Imaginative Geography in Pandora Internet Radio and the Genographic Project

Amanda Modell

“The answer to the question ‘Who are you?’ is stored in code.” This is how Dr. Spencer Wells opens “Breaking the Code,” a promotional video for National Geographic’s Genographic Project.<sup>1</sup> The view pans to the right to show a simplified female form, a black outline on white background. It resembles the image on a restroom door, but with a feathered flip hairstyle reminiscent of Mary Tyler Moore. This all white, female, domesticated image implicitly interpellates a white middle class woman viewer. Later, a DNA ticker tape runs horizontally through the frame until it penetrates this image and populates it with a A’s, C’s, G’s and T’s—letters that represent the nucleotides of a DNA strand (see fig. 1). Wells later compares these nucleotides to letters in a book. Their order “determines whether the book is a mystery, a thriller, *War and Peace*, or the Bible. Just rearrange the letters and you’ve got a totally different story. . . So DNA is just a bunch of letters arranged in a certain order that tells the story of you.” An animated map of the world appears behind Wells. Reproductions of the original female figure and her male counterparts pop up all over this map, connected by a matrix of yellow lines (see fig. 2). In this promotional video, the DNA “code” not only signifies like the text of a book, but also physically materializes bodies and positions them in the world.

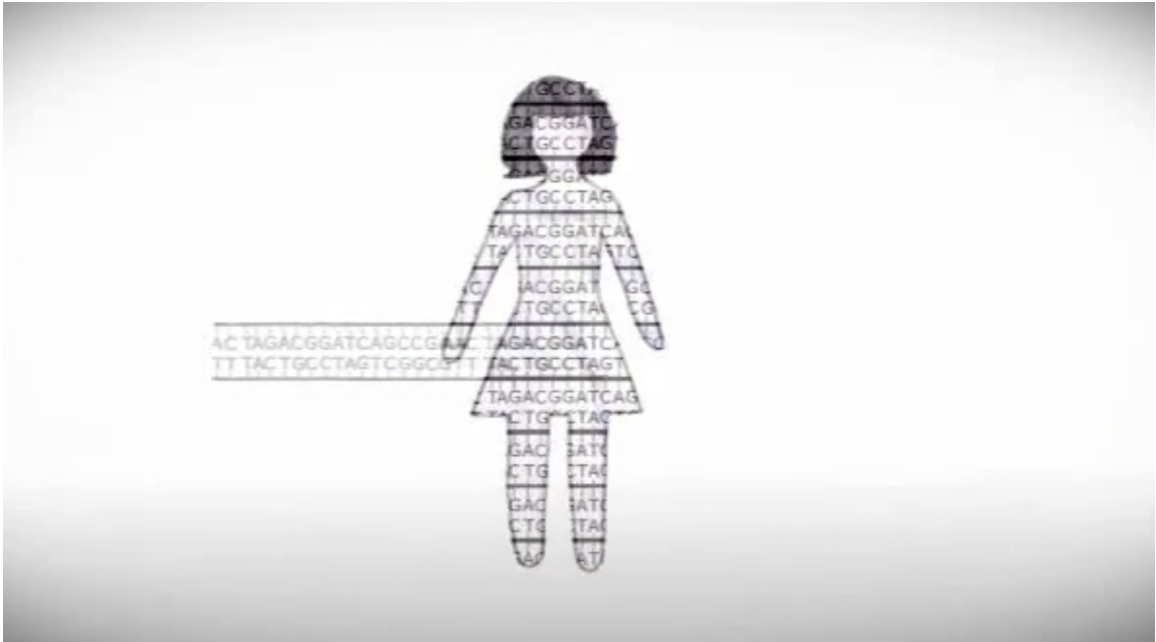


Figure 1: From "Breaking the Code," Genographic Project, "Behind the Science," [genographic.nationalgeographic.com/science-behind/](http://genographic.nationalgeographic.com/science-behind/).



Figure 2: From "Breaking the Code," Genographic Project, "Behind the Science," [genographic.nationalgeographic.com/science-behind/](http://genographic.nationalgeographic.com/science-behind/).

I begin with this video because of how it appeals to self-discovery, constructs DNA as a deterministic code, and maps a self into the world via others. The video advertises the GENO 2.0 Test Kit, which contains everything the consumer needs to submit their genetic material to Genographic: mouth swabs, instructions, and a keepsake box for test results. Those results, or the answers to the question “Who are you?” include a genetic ancestry breakdown that’s categorized geographically. The example from Genographic’s website lists 43% “Mediterranean,” 35% “Northern European,” 19% “Southwest Asian,” and 2% “Northeast Asian.”<sup>2</sup> In this taxonomy, genetic ancestry and geographic ancestry are synonymous.

While the Genographic Project promises to sequence consumer genomes, the Music Genome Project (MGP) works to sequence song genomes. The MGP drives Pandora Internet Radio, a digital distribution platform that uses algorithmic technology to offer personalized music recommendations. Pandora promises the ability to “personalize, discover, and explore” new music on individualized stations that play “only music you love.”<sup>3</sup> The user starts a station with “seeds,” which can be songs, artists or genres. The station will play music similar to the seeds based on certain traits, or “genes” in the MGP lexicon. The Pandora Music Box application displays song traits such as “danceable grooves,” “R&B influence,” or “a subtle use of vocal harmony.” With these traits, the user can discover what the music they like has in common, and select for those traits by “thumbing up” or liking certain songs. Since Pandora offers explicitly personalized stations, discoveries about users’ musical tastes can approximate discoveries about their musical selves.<sup>4</sup>

Ideas about race and place inform these discoveries, along with those in the Genographic Project. In particular, the Music Genome Project’s ‘world music’ taxonomy echoes the Genographic Project’s collapse of genetic and geographic ancestry. When analysts set out to sequence a song into the Music Genome Project, they first choose the song’s “genome” (these include jazz, pop, and ‘world,’ among others). This decision determines what data fields analysts will fill out about a song—or what “genes” it can have. The “world” music genome then features a drop-down menu for different subgenres, some based on style and some on geography (i.e. “Puerto Rico” or “Reggaeton”). This classification choice further shapes a song’s potential “genes” and which stations it will appear on. So world music in the MGP

provides a musical analogue to the Genographic Project's genetic ancestry testing. Both projects rely on what Edward Said terms "imaginative geography," a way of knowing an other based on place and knowing a self based on an other.<sup>5</sup>

Both Pandora and the Genographic Project offer this sort of self-discovery to consumers. Through a discourse of personalization and exploration, both projects interpellate a highly individualized, adventurous consumer with a pre-established self that can be discovered through *code*. Consumers may entrust time, money, information, or their biological material in exchange for information about themselves. This construction presumes that the self is somewhat unknown to the consumer. Consumers want to know more about who they are, and have confidence that the technologies in Pandora and the Genographic Project can provide that information. In both instances, self-knowledge is accessible through code—the code that enacts a music selection algorithm or the code within the user's DNA. *Code* mediates technoscience and consumer self-knowledge.

In order to understand how, this essay examines the promotional materials and structuring logics of the Genographic Project and the Music Genome Project. How does code work literally and metaphorically to establish a consumer's sense of self? With appeals to self-discovery, direct-to-consumer genetic testing and music distribution technology rely on common sense ideas of race informed by place, or "imaginative geography," while simultaneously reinforcing those ideas. Analyzing this phenomenon is only possible in a study that moves between and beyond media industries.

### **Distribution, Between and Beyond Media**

Within music distribution Pandora is innovative, and its model is expanding to other media industries. It allows music analysts, algorithmic technologies, and users to collaborate on stations, a process that combines top-down media distribution and lateral media circulation. In analyzing these processes, I follow media studies scholars who suggest distribution is much more than the space between production and consumption.<sup>6</sup> Scholars disagree on "distribution" and "circulation" as analytical frames, considering the politics of top-down and lateral analyses.<sup>7</sup> Pandora is a platform on which circulation and distribution occur simultaneously and articulate.

These complex media movements exist within colonialism's and transatlantic slavery's legacies. To grapple with this context, this study builds on media scholars' calls for distribution studies that span media industries.<sup>8</sup> An analysis of Pandora can approach an entire genre of media distribution and its racialized modes of consumption and self-making. Further, I suggest these modes of consumption and self-making extend beyond media industries. Recently, media distribution applications that emulate Pandora's recommendation technology have proliferated. For instance, N3twork seeks to become the "Pandora of internet videos," Swell the "Pandora of talk radio," and Booklamp the "Pandora of books."<sup>9</sup> There are signal differences between these platforms—some have used machine learning rather than human curation, for example. But their similarities display how Pandora has initiated a particular approach to digital distribution and how this approach has become generic. Direct-to-consumer genetic testing shares this genre's modes of racialized self-making and consumption; a comparative study that reaches beyond media industries can reveal these commonalities. The MGP and the Genographic project rely, in part, on place-based racial common sense. Affiliating geographic areas with racial formations can influence ideas of selfness, other-ness, and relationality, and these processes are often racialized and sedimented into common sense. The MGP and Genographic Project's products can then shore up that common sense with scientific legitimacy. Comparative studies between and beyond media industries reveal the technologies with which this common sense gains traction.

### **Imagining "World" Music, Imaging "Genographic" Ancestry**

Taxonomy is one of the world's oldest technologies. The MGP is a taxonomic database that relies on genomic metaphors to classify and relate music.<sup>10</sup> When Pandora music analysts have decided a song will be included, they first choose its "genome." The genomes are database interfaces, and each asks for different criteria about a song. For instance, the pop genome asks for about 150 pieces of data, or "genes," while the jazz genome asks for about 400. Each "gene" corresponds with a data field, and often this field calls for a numerical entry between one and five. Genes include things like instrumentation, tempo, the grittiness of a singer's voice, or how "exotic" a melody sounds.<sup>11</sup>

The Pandora algorithm uses these “genes” to affiliate songs on users’ stations, drawing on the user’s history and the collective history of all Pandora users. Although the relations that filiate certain songs and genres are fairly clear to Pandora users, the MGP’s genomic language and taxonomy may or may not be apparent. In keeping with the highly individualized discourse, most Pandora advertising emphasizes how the user’s individual history determines the songs on their stations.<sup>12</sup> But some Pandora promotional material does highlight the MGP, and the name is fairly widely known amongst Pandora users. There is also a fair amount of genomic language on the user interface: Pandora website materials discuss “seed” songs and refer to music analysts coding a song’s “musicological DNA,” but the casual user may or may not be aware of this. In addition, the Pandora Music Box application lists song “traits” as well as “attributes.” The term “trait” of course could refer to phenotypic traits but could also be read in a more general way. No matter how aware a user is of the genomic language that informs the MGP, they will know Pandora intends to group music based on formal similarities: it affiliates music that is related.

In “world” music, these relations are often geographical and informed by colonialism’s legacy. World music subgenres conflate place and style, assume a listener outside of the “world,” and can naturalize place-based difference. The slippage between place and style is not unique to Pandora, but appears throughout the “world music” industry. As stated earlier, when a music analyst chooses a song’s subgenre in the World genome, this choice determines which criteria the analyst can input, or what “genes” the song can have. For example, an analyst would be able to enter different criteria for a song in the “Brazilian” subgenre than one in the “Celtic” subgenre. Anthropologist Steven Feld points out how “world music” signifies music from the Global South, assuming a listener in the Global North.<sup>13</sup> Due to licensing restrictions, Pandora is only accessible to users in the United States, Australia, and New Zealand, guaranteeing the listener is at least physically in the overdeveloped world.<sup>14</sup> Overall the MGP risks unintentionally reinscribing a highly problematic relation between place, sound, race and bodies, one shaped by colonialism’s durative global project.

This project has worked in tandem with transatlantic slavery to constellate place, race, and power, and threaten indigenous relations to place and land. Said explains that colonial relations can manifest as “imaginative geography,”

in which making land “ours” and “theirs” results in negative identity construction, identification in relation to what one is not. This is both spatial and imaginative. It requires a “domestication of the exotic” in which strange things come to be known via the familiar. Imaginative geography results in a strikingly limited vocabulary to discuss the “exotic” in which a handful of stock tropes predominate.<sup>15</sup> “Discovering” tropes to coordinate their own position, imaginative geographers rehearse the historical construction of “New World” geography. As critical theorist Hortense Spillers explains:

“Geography” is not a divine gift. Quite to the contrary, its boundaries were shifted during the European “Age of Conquest” in giddy desperation, according to the dictates of conquering armies, the edicts of prelates, the peculiar myopia of the medieval Christian mind. . . . For all that the pre-Columbian “explorers” knew about the sciences of navigation and geography, we are surprised that more parties of them did not end up “discovering” Europe. Perhaps from a certain angle, that is precisely all that they found—an alternative reading of ego.<sup>16</sup>

As Spillers points out, there is a long history of self-centered imperial mapping, imbricated with structural violence. Imaginative geographers imagine they are turning space into place, or populating a space with meaning. This ignores all the indigenous mappings that have taken place before the colonial encounter and continue to take place after it—it relies on the idea of space that does not signify anything. In a highly problematic process, imaginative geography reinforces what the cartographer already knows, that spaces do not mean or matter until the “civilized” see and map them.

“World” music destabilizes the mapping practice’s ocularcentrism, but not its colonial imagination. In this generic configuration “the world” becomes a quite bounded space in which players must produce sounds that represent their origins. If the music does not confirm the tropes through which their players’ origins are understood—through which the exotic is domesticated—it risks not being legible to the world music consumer (who in this configuration is implicitly white, Western, and of means). World music is constituted of US-centric ideas about difference informed by geography, and the way the genre takes shape through technologies like Pandora’s MGP affirms these ideas and propagates them.

Direct-to-consumer genetic testing can also justify popular notions of place-based racial difference with scientific authority. As anthropologist Kimberly Tallbear has argued, hybridity depends on the idea of purity.<sup>17</sup> Tallbear makes this argument regarding genetic science, in which biological samples that are too highly “admixed” are sometimes excluded from sample sets. This means if folks have heritage from too many parts of the world, their biological material is not proper data for studies about human origins. These sampling practices are only possible due to pre-established ideas of “founder” populations marked by consistent genetic difference. Genetic scientists often divide these populations by continent, for instance dividing Asia and Europe. But continental boundaries are political, not physical, and often products of colonialism, slavery and imperialism. As such, when Genographic calculates a person’s percentage of “African” heritage, it invokes a continental nominative property that can’t escape its colonial grammar; Africa is a political formation, not a genetic one.<sup>18</sup> Shoring up political boundaries with physical evidence in this way reinforces a colonial logic with scientific authority. If the Genographic Project naturalizes political geography, genetic ancestry and geographic ancestry can become synonymous. Even the name Genographic exhibits this slippage. The gene and the geo are one—one is not bound to place, one is place. Scholars of indigeneity like Tallbear acknowledge that indigenous relationships to place and land are often rooted in practice.<sup>19</sup> The Genographic Project reduces that relationship to a deterministic, essentialized placement that forecloses any responsibility to the land.<sup>20</sup> One is absolved of responsibility if one’s tie to place has been written in code.<sup>21</sup>

### **CODA: Between and Beyond a Self and a Standpoint**

Digital code is sometimes compared to language, but it is closer to decree. Code has originated and advanced as a technology of empire, capitalism, and war. Friedrich Kittler reminds us the word originated from *codex*, or the Roman emperor’s written law. Kittler charts the Roman Emperor Augustus’s innovations in code, which were strictly in service to the imperial army.<sup>22</sup> *Codex* assumed the meaning of “book” as these imperial dispatches were bound together; the Napoleonic Codes were such a collection of laws. In 1838, Samuel Morse analyzed telegraph communications to see which letters were used the least frequently; these were assigned the shortest signals.



According to Kittler, this shows that capitalist concerns of efficiency informed Morse's famous code. Later, Alan Turing developed his original "difference engine" with the aim of cracking code, and it contributed handily to winning a war.<sup>23</sup> Kittler illustrates how code has emerged as a technology of empire, capitalism, and war.

Within this context, code enacts. Digital code powers the personalized music selection algorithm on Pandora, and genetic code determines one's identity in Genographic discourse. In both situations code is not a static, readable text; code and user actively generate each "software performance."<sup>24</sup> These enactments of code are more like performative speech than language. Code enacts the algorithm that makes each Pandora "performance" (or station) unique, and Pandora trades on this individualization to promise only music you'll love. Meanwhile, the Genographic Project discourse directly compares code to language: it offers a glimpse at a book that tells the story of your life. So in the MGP, code materially constitutes the individualized station, whereas in the Genographic Project, code semiotically constitutes the individual.

Between the two projects code slips between the literal and the metaphorical, becoming what Donna Haraway calls a material-semiotic actor.<sup>25</sup> As such, code generates matter and meaning, creating positional relations between bodies and sets of music from a seemingly objective standpoint. The material-semiotic actor is an object of knowledge, but not a static thing to be studied; it is not text but performance, not language but speech. Further, that object isn't bounded prior to its social engagements; as Haraway explains, "Boundaries materialize in social interaction. Boundaries are drawn by mapping practices; objects do not pre-exist as such."<sup>26</sup> Code may appear self-evident, but it is not. It emerges as a result of boundaries between bodies, genomes, and musics. Imaginative geography generates place and difference, while code generates bodies that populate places and meanings that populate bodies. It justifies a veiled biological determinism in the Genographic Project and a certain musical determinism in the Music Genome Project, and both are mapped to place. Code helps generate the self-knowledge both projects promise. By endowing these projects with scientific legitimacy, code provides an imaginative objective standpoint from which to position a self in the world via others. The respective genetic mapping projects, musical and human, rely on a God Trick, a disembodied way to see

everywhere from nowhere.<sup>27</sup> Thus, in “Breaking the Code,” when Spencer Wells stands before the world and positions the white female subject vis-à-vis a world of others, he’s rehearsing a God Trick that’s at least hundreds of years old. “There I am,” I can think as the figure is placed on the map, “if I were a cartoon with longer hair.” From a standpoint outside “the world” the viewer locates her self. But this knowing self is not given; it is materialized and given meaning through code. This code is written and read by folks and algorithms with partial perspectives—with views from somewhere.

But “what is it to think from no standpoint; to think outside the desire for a standpoint?”<sup>28</sup> With this question, Black Studies scholar Fred Moten invites us to unsettle the very idea of worldview. Moten cites jazz musicians Don Cherry and Ed Blackwell’s extended medley “Mutron,” calling it “the noise of the end of the world in the invention of the earth.”<sup>29</sup> In what might be mistaken for silence, Moten listens for the black subject’s refusal of that which has been refused them. Beyond refusal, a transgressive desire for the absence of a standpoint inhabits “Mutron.”<sup>30</sup> “What if blackness is the name that has been given to the social field and social life of an illicit alternative capacity to desire?” Moten asks. For Moten, blackness is “unmappable within the cosmological grid of the transcendental subject.”<sup>31</sup> What is it to abide in Having No Place, Moten asks, to remain in cartographic incoherence? To refuse standpoints, to refuse the imperative to stand and point, to refuse the (ad)vantage from which one can map is to refuse sitting and being pointed at, to refuse being mapped or coded. This requires one to stand oppositional to stance, to sit with what is uncoded and unmapped, to surrender one’s *self* to “the noise of the end of the world,”<sup>32</sup> the music of refusal.

## Notes

- 1 “Breaking the Code,” *National Geographic*, accessed August 2014, [genographic.nationalgeographic.com/science-behind/](http://genographic.nationalgeographic.com/science-behind/).
- 2 “Buy the Kit,” *National Geographic*, accessed October 2014, [shop.nationalgeographic.com/ngs/browse/productDetail.jsp?productId=2001246&gsk&code=MR20945](http://shop.nationalgeographic.com/ngs/browse/productDetail.jsp?productId=2001246&gsk&code=MR20945). Test results also include “Hominin Ancestry,” represented in percentage Neanderthal and Denisovan DNA, and “Deep Ancestry,” represented as a map of ancestral migration.

- 3 “About Pandora,” *Pandora*, accessed May 2014, [www.pandora.com/about](http://www.pandora.com/about); and “Get a Little More Personal with Our New Design,” Pandora Innovators Blog, 30 January 2015 [blog.pandora.com/pandora-innovators/](http://blog.pandora.com/pandora-innovators/).
- 4 This equation of musical taste with a musical self relies on the tendency to identify through popular music choices, particularly in adolescence, and Pandora’s explicit marketing of highly personalized stations.
- 5 Edward Said, *Orientalism* (New York: Pantheon Books, 1978), 49–73.
- 6 Alisa Perren, “Rethinking Distribution for the Future of Media Industry Studies,” *Cinema Journal* 52, no. 3 (2013): 165–71; Steve Jones, “Music That Moves: Popular Music, Distribution and Network Technologies,” *Cultural Studies* 16, no. 2 (2002): 213–32; Benjamin Lee and Edward LiPuma, “Cultures of Circulation: The Imaginations of Modernity,” *Public Culture* 14, no. 1 (2002): 191–213; Ramon Lobato, *Shadow Economies of Cinema: Mapping Informal Film Distribution* (London: British Film Institute, 2012). Lobato’s study starts from the position that media distribution is a site of cultural politics as well as political economy. For more on this, see Lobato, *Shadow Economies*, especially Introduction and Chapter 1.
- 7 Ramon Lobato uses an expansive definition of distribution as any movement of media through time and space, to include informal distribution networks in distribution studies. This is an alternative to Dina Iordanova’s model, for instance, in which media distribution becomes circulation when consumers gain direct access to media. See Dina Iordanova, “Digital Disruption: Technological Innovation and Global Film Circulation,” *Digital Disruption: Cinema Moves On-Line*, ed. Dina Iordanova and Stuart Cunningham (St. Andrews, Scotland: St Andrews Film Studies, 2012).
- 8 Perren, “Rethinking Distribution,” 168–9.
- 9 Edgar Alvarez, “N3twork Wants to be the Pandora of Internet Videos,” *Engadget*. 21 August 2014, [www.engadget.com/2014/08/21/n3twork/](http://www.engadget.com/2014/08/21/n3twork/); Dave Smith, “Apple Will Buy Swell, a Personalized Radio and Podcast App, to Give iTunes a Shot in the Arm,” *Business Insider*, 28 July 2014, [www.businessinsider.com/apple-buys-swell-to-boost-itunes-2014-7](http://www.businessinsider.com/apple-buys-swell-to-boost-itunes-2014-7); Daniel Nations, “Booklamp—The Pandora of Books,” *About Tech*, accessed September 2014, [webtrends.about.com/od/web20/a/booklamp-books.htm](http://webtrends.about.com/od/web20/a/booklamp-books.htm). Apple has acquired Booklamp and Swell, shuttering the latter.
- 10 Pandora’s website describes the Music Genome Project as “a deeply detailed, hand-built musical taxonomy” that “powers the personalization of Pandora internet radio by using musicological ‘DNA’ and constant listener feedback.” “Overview: Company Profile,” Pandora Pressroom, accessed October 2014, [press.pandora.com/phoenix.zhtml?c=251764&p=irol-overview](http://press.pandora.com/phoenix.zhtml?c=251764&p=irol-overview).
- 11 Rob Walker, “The Song Decoders,” *New York Times Magazine*, 14 October 2009, [www.nytimes.com/2009/10/18/magazine/18Pandora-t.html?pagewanted=all&r=0](http://www.nytimes.com/2009/10/18/magazine/18Pandora-t.html?pagewanted=all&r=0).
- 12 For instance, Pandora recently released its “Thumb Moments” campaign, in which users who “thumbed up” a song received an impromptu streamed concert from the artist. The slogan for the campaign was “Each thumb makes a moment. What will yours be?” This emphasis on the individual thumb emphasizes the role of user feedback in crafting personalized stations. Simon Fleming-Wood, “What if a Thumb Could Instantly Bring You Face to Face with Your Favorite Artist?” *Pandora Listener Experience Blog*, 21 September

- 2014, [blog.pandora.com/2014/09/21/what-if-a-thumb-could-instantly-bring-you-face-to-face-with-your-favorite-artist/](http://blog.pandora.com/2014/09/21/what-if-a-thumb-could-instantly-bring-you-face-to-face-with-your-favorite-artist/).
- 13 Steven Feld, "A Sweet Lullaby for World Music," *Public Culture* 12, no. 1 (2000): 145–71.
  - 14 Australia and New Zealand reveal how curious the terms "Global North" and "Global South" are, as the southernmost countries in the world belong to the Global North.
  - 15 Said, *Orientalism*, 60.
  - 16 Hortense Spillers, "Mama's Baby, Papa's Maybe: An American Grammar Book," *Diacritics: A Review of Contemporary Criticism* 17, no. 2 (1987): 70.
  - 17 Kimberly Tallbear, *Native American DNA: Tribal Belonging and the False Promise of Genetic Science* (Minneapolis: University of Minnesota Press, 2013).
  - 18 Frank Wilderson III, "Grammar & Ghosts: The Performative Limits of African Freedom," *Theatre Survey* 50, no. 1 (2009): 119–25.
  - 19 For more on Indigenous musicians' relationships to place, see Jessica Bissett Perea, "Pamyua's Akutaq: Traditions of Modern Inuit Modalities in Alaska," *MUSICultures* 39, no. 1 (2012), 33.
  - 20 The types of political boundaries I'm considering here begin from the idea that land is property. Changing this idea is fundamental to structural change. See Andrea Smith, "Indigeneity, Settler Colonialism, White Supremacy," in *Racial Formation in the Twenty-First Century*, ed. Daniel HoSang, Oneka LaBennett, and Laura Pulido (Berkeley: University of California Press, 2012), 66–90.
  - 21 The Genographic Project and the MGP rely on gene-centric assumptions that elide important gene-environment-interactions that shape how traits are expressed. The full extent of this important point is beyond the scope of this paper, but for more on the problems of gene-centric ideas, see Christina Cogdell, "The Gene in Context: Organic Complex Systems as a Model for Generative Architecture," *Postgenomics: Perspectives on Biology After the Genome*, eds. Sarah Richardson and Hallam Stevens (Durham, NC: Duke University Press, 2015).
  - 22 "the basis on which command, code, and communications technology coincided was the Empire," according to Kittler. Friedrich Kittler, "Code," *Software Studies: A Lexicon*, ed. Matthew Fuller (Cambridge, MA: The MIT Press, 2008), 41.
  - 23 Kittler, "Code," 40–46.
  - 24 Lev Manovich, "The Algorithms of Our Lives," *Chronicle of Higher Education* 60, no. 16, 16 December 2013, [chronicle.com/article/The-Algorithms-of-Our-Lives-/143557/](http://chronicle.com/article/The-Algorithms-of-Our-Lives-/143557/).
  - 25 Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," *Just Methods: An Interdisciplinary Feminist Reader*, ed. Alison Jaggar (Boulder, CO: Paradigm, 2008), 346–51.
  - 26 *Ibid.*, 348.
  - 27 *Ibid.*, 351.
  - 28 Fred Moten, "Blackness and Nothingness (Mysticism in the Flesh)," *South Atlantic Quarterly* 112, no. 4 (2013): 737–80.
  - 29 *Ibid.*, 753.
  - 30 Don Cherry and Ed Blackwell, "Mutron (Medley)," *El Corazón*, ECM, 1982. MP3.
  - 31 *Ibid.*, 740.
  - 32 *Ibid.*

I gratefully acknowledge the Mellon Social Justice Initiative at UC Davis, Sam Aranke and the Unsettling Approaches to Performance Studies study group, Kris Fallon, Caren Kaplan, duskin drum, Hilary Berwick, and Christina Cogdell for their invaluable support with this work.

**Amanda Modell** is a graduate student in Cultural Studies at the University of California, Davis. Her research interests include digital music distribution, genetic science, critical race theory, science and technology studies, feminist theory, yoga studies, american studies, and United Statesian music. She currently serves as a teaching assistant consultant and a co-facilitator for the Unsettling Approaches to Performance Studies study group at Davis. She is an amateur noise maker, semi-professional yoga teacher and keeps meaning to learn how to mountain bike.