




RESEARCH ARTICLE

# The Global Jukebox and the Celestial Monochord: Alan Lomax and Harry Smith Compute Folk Music in Cold War America

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## Abstract

*Typically understood only within the cultural history of the post–World War II folk music revival, documentarian Alan Lomax’s “Cantometrics” research and artist Harry Smith’s Folkways Anthology of American Music also deserve to be positioned within the broader Cold War–era rise of the digital computer and tactics of computation in American society. Linking what Ross Cole describes as the “folkloric imagination” to what we might call the Cold War “computational imagination,” Lomax and Smith each examined folk music not through conventional ethnographic or musicological modes, but rather through computational lenses of data analysis, systems theory, informatics, and cybernetics. Both sought to expand cultural democracy by doing so, carrying Popular Front ideals into the postwar milieu while also presaging dilemmas found in today’s fraught context of data analytics, artificial intelligence, and the application of digital technologies to almost all aspects of human culture.*

Among the pop stars at the 1991 Grammy Awards ceremony were two unexpected figures: folk music documentarian Alan Lomax and record collector, artist, and experimental filmmaker Harry Smith. The music business was riding high at the time. Brisk sales from a new technology, the digital compact disc, meant renewed profits, yet the head of the National Academy of Recording Arts and Sciences, Bill Ivey, seemed to be in a retrospective mood. He gave Lomax and Smith Chairman’s Merit Awards for their work with the pre-digital sounds of traditional folk music.<sup>1</sup> The implication was that Lomax and Smith stood in stark contrast to the contemporary pop scene and its shiny silver CDs.<sup>2</sup> What Ivey did not acknowledge, or perhaps even

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<sup>1</sup>Bill Ivey, Letter to Harry Smith and “Chairman’s Merit Award to Harry Smith” certificate, Jan. 17, 1991, Folder 14, Box 2, Harry Smith Papers, Getty Research Institute, Los Angeles, CA; Bill Ivey, Letter to Alan Lomax and “Chairman’s Merit Award to Harry Smith” certificate, Mar. 4, 1991, Alan Lomax Collection, AFC 2004/004, MS 29.02.15, American Folklife Center, Library of Congress, Washington, DC, <https://www.loc.gov/item/afc2004004.ms290215/> (accessed May 10, 2022).

<sup>2</sup>At the same time, part of what made CDs so profitable was the reissuing of back catalog recordings on a new format, so perhaps Ivey’s retrospective turn fit the moment. See Simon Frith, “The Industrialization of Popular Music,” in *Popular Music and Communication*, ed. James Lull (Newbury Park, CA, 1987), 67.

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know, was that Lomax and Smith had embraced computational approaches decades before 1991 and the rise of the digital compact disc.

In the 1950s and 1960s, as the digital computer itself emerged in Cold War America, Lomax and Smith grew interested in how computation might not disrupt, but rather advance, the study and value of folk music.<sup>3</sup> To be sure, they were very much a part of the folk revival, with its focus on reimagining older traditions as resources for modern times, yet Lomax and Smith were also keen to discover more robust connections between rooted cultural forms such as folk music and computational approaches. Their work was part of a larger intellectual shift during the decades after World War II from the pursuit of knowledge and wisdom to the organization of data as information. As Michael Mahoney contends, “Since World War II ‘information’ has emerged as a fundamental scientific and technological concept ... reshaping established disciplines” as well as the “formation of a panoply of new subjects and areas of inquiry concerned with its structure and its role in nature and society.”<sup>4</sup> Data became the raw resources produced by computational processing, to be organized by “systems men” and programmers into information. As Thomas Haigh points out, however, the two terms—data and information—were often used “interchangeably in discussions of management or computing.”<sup>5</sup> Natural scientists, medical researchers, engineers, economists, and policy makers also adopted the move to information and data.<sup>6</sup> So too did anthropologists, sociologists, linguists, historians, and even literary scholars. Often working with qualitative, aesthetic materials such as music, they treated it as quantitative data—as so many bits and bytes of modular, interchangeable, compatible components that they could fit into large-scale systems one could compile, assemble, process, analyze, and compare using computational tactics.<sup>7</sup> Many also turned to Norbert Wiener’s controversial idea of cybernetics, in which he extended his World War II engineering research quantifying the cyborgian interactions between anti-aircraft gunners and their guns to any type of cultural interaction.<sup>8</sup> Prominent figures such as anthropologist

<sup>3</sup>Paul E. Ceruzzi, *Computing: A Concise History* (Cambridge, MA, 2012).

<sup>4</sup>Michael S. Mahoney, “The History of Computing in the History of Technology,” *Annals of the History of Computing* 10, no. 2 (Apr. 1988): 113.

<sup>5</sup>Thomas Haigh, “Inventing Information Systems: The Systems Men and the Computer, 1950–1968,” *The Business History Review* 75, no. 1 (2001): 34. See also Ronald R. Kline, “Cybernetics, Management Science, and Technology Policy: The Emergence of ‘Information Technology’ as a Keyword, 1948–1985,” *Technology and Culture* 47, no. 3 (2006): 513–35; Thomas Haigh, “How Data Got Its Base: Information Storage Software in the 1950s and 1960s,” *IEEE Annals of the History of Computing* 31, no. 4 (2009): 6–25; Nathan L. Ensmenger, *The Computer Boys Take Over: Computers, Programmers, and the Politics of Technical Expertise* (Cambridge, MA, 2012).

<sup>6</sup>See James W. Cortada, *The Digital Hand* (New York, 2004), *The Digital Hand, Volume II* (New York, 2006), and *The Digital Hand, Volume III* (New York, 2008); Ronald R. Kline, “What Is Information Theory a Theory Of? Boundary Work among Information Theorists and Information Scientists in the United States and Great Britain during the Cold War,” in *The History and Heritage of Scientific and Technological Information Systems: Proceedings of the 2002 Conference* (Medford, NJ, 2003); Alistair Black, “Information History,” *A Review of Information Science and Technology* 40 (2006): 441–73; and the essays in Thomas Haigh, ed., *Exploring the Early Digital* (Cham, Switzerland, 2019).

<sup>7</sup>See Howard Rheingold, *Tools for Thought: The History and Future of Mind-Expanding Technology* (Cambridge, MA, 2000); N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago, 1999); Lisa Gitelman, *Always Already New: Media, History, and the Data of Culture* (Cambridge, MA, 2006); Alan Liu, *Local Transcendence: Essays on Postmodern Historicism and the Database* (Chicago, 2008); James Gleick, *The Information: A History, a Theory, a Flood* (New York, 2011); Daniel Rosenberg, “Data After the Fact,” in “*Raw Data*” Is an Oxymoron, ed. Lisa Gitelman (Cambridge, MA, 2013), 15–40; Alan Liu, *The Laws of Cool: Knowledge Work and the Culture of Information* (Chicago, 2016); James W. Cortada, “Shaping Information History as an Intellectual Discipline,” *Information & Culture* 47, no. 2 (2012): 119–44; and William Aspray, “The History of Information Science and Other Traditional Information Domains: Models for Future Research,” *Libraries & the Cultural Record* 46, no. 2 (2011): 230–48.

<sup>8</sup>Norbert Wiener, *Cybernetics, Or Control and Communication in the Animal and the Machine* (1948; Cambridge, MA, 2019); Norbert Wiener, *The Human Uses of Human Beings* (New York, 1950). See also, Steve

Margaret Mead debated how to apply Weiner's cybernetics to culture at the Macy Conferences of the 1940s and 1950s.<sup>9</sup> Overall, the notion of computing culture and exploring it as a system of data and information became far more prominent during the Cold War years and, as David Price has pointed out, it was often tied to militarized, state-sponsored geopolitical efforts by the United States in the nation's struggle with the Soviet Union and other communist governments.<sup>10</sup>

Alan Lomax and Harry Smith joined these larger efforts to handle culture as data and information, but only a few scholars have noticed their computational turn. Most scholars instead emphasize folk music's Luddite antimodernism or its associations with left-wing politics.<sup>11</sup> The story endures, after all, that Lomax himself, along with his friend Pete Seeger, tried to cut the cable when Bob Dylan plugged in an electric guitar to perform at the Newport Folk Festival in 1965.<sup>12</sup> This mythical confrontation conceals the fact that Lomax had long been striving to link folk music to larger systems of amplification, mass communication, and even computation. Both Lomax and Smith thought that traditional music could be broken down into data and then reassembled into comparative systems of analysis. These, they believed, could be processed and understood through the technologies and postwar computational ways of thinking that other folklorists believed threatened the very existence of cultural heritage. Like other Cold War-era social scientists and anthropologists, Lomax and

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J. Heims, *The Cybernetics Group* (Cambridge, MA, 1991); Steve J. Heims, *Constructing a Social Science for Postwar America: The Cybernetics Group, 1946–1953* (Cambridge, MA, 1993); Peter Galison, "The Ontology of the Enemy: Norbert Wiener and the Cybernetic Vision," *Critical Inquiry* 21, no. 1 (1994): 228–66; Ronald R. Kline, *The Cybernetics Moment: Or Why We Call Our Age the Information Age* (Baltimore, 2015); and Stefanos Geroulanos and Leif Weatherby, "Cybernetics and the Human Sciences," *History of the Human Sciences* 33, no. 1 (Feb. 2020): 3–11. The information and communication theories of Claude E. Shannon were also very influential. See Claude E. Shannon, "A Mathematical Theory of Communication," *Bell System Technical Journal* 27 (1948): 379–423, 623–656; and Claude E. Shannon and Warren Weaver, *The Mathematical Theory of Communication* (Urbana, IL, 1949).

<sup>9</sup>Claus Pias, ed., *Cybernetics: The Macy Conferences 1946–1953: The Complete Transactions* (1950–1955; rev. ed., Zürich, 2016).

<sup>10</sup>David H. Price, *Cold War Anthropology: The CIA, the Pentagon, and the Growth of Dual Use Anthropology* (Durham, NC, 2016).

<sup>11</sup>Henry Adam Svec, *American Folk Music as Tactical Media* (Amsterdam, 2018); R. Bruce Elder, "Harry Smith: Collecting Thought-Forms and Programming the Aerial Computer," in *Harry Smith's Anthology of American Folk Music: America Changed through Music*, eds. Ross Hair and Thomas Ruys Smith (New York, 2016), 100–22. On the history of the folk music revival, see Neil V. Rosenberg, ed., *Transforming Tradition: Folk Music Revivals Examined* (Urbana, IL, 1993); Robert Cantwell, *Ethnomimesis: Folklife and the Representation of Culture* (Chapel Hill, NC, 1993); Ron Eyerman and Scott Barretta, "From the 30s to the 60s: The Folk Music Revival in the United States," *Theory and Society* 25, no. 4 (1996): 501–43; Robert Cantwell, *When We Were Good: The Folk Revival* (Cambridge, MA, 1996); Benjamin Filene, *Romancing the Folk: Public Memory and American Roots Music* (Chapel Hill, NC, 2000); Richard A. Reuss with JoAnne C. Reuss, *American Folk Music and Left-Wing Politics, 1927–1957* (Lanham, MD, 2000); Ronald D. Cohen, *Rainbow Quest: The Folk Music Revival and American Society, 1940–1970* (Amherst, MA, 2002); J. M. Mancini, "'Messin' with the Furniture Man': Early Country Music, Regional Culture, and the Search for an Anthropological Modernism," *American Literary History* 16, no. 2 (July 2004): 208–37; Dick Weissman, *Which Side Are You On? An Inside History of the Folk Music Revival in America* (New York, 2006); Ray Allen, "In Pursuit of Authenticity: The New Lost City Ramblers and the Postwar Folk Music Revival," *Journal of the Society for American Music* 4, no. 3 (Aug. 2010): 277–305; Grace Elizabeth Hale, "Black as Folk: The Folk Music Revival, the Civil Rights Movement, and Bob Dylan," in *A Nation of Outsiders: How the White Middle Class Fell in Love with Rebellion in Postwar America* (New York, 2011), 84–131; Edward P. Comentale, *Sweet Air: Modernism, Regionalism, and American Popular Song* (Champaign-Urbana, IL, 2013); and Andrew Peart, "'The Abstract Pathos of Song': Carl Sandburg, John Lomax, and the Modernist Revival of Folksong," *New Literary History* 46, no. 4 (2015): 691–714.

<sup>12</sup>The best account of this event can be found in Elijah Wald, *Dylan Goes Electric! Newport, Seeger, Dylan, and the Night That Split the Sixties* (New York, 2015).

Smith hoped to catalog global cultural forms quantitatively: not merely as distinctive modes of qualitative aesthetic expression, but also within universalizing, correlated datasets.<sup>13</sup>

Using IBM punch cards and a mainframe computer, Lomax undertook a massive project—Cantometrics, or “song measurement”—to study singing styles around the world statistically. His goal was to reposition new technologies such as computers in service of fighting cultural homogenization—what he worried was a “cultural gray-out”—caused by new technologies of mass mediation and mass communications themselves.<sup>14</sup> Unlike Lomax, Smith never used digital computers themselves, but with the influential *Folkways Anthology of American Folk Music*, released in 1952, he too adopted a computational approach. Rather than follow the conventional modes of anthropological and ethnographic representation he had studied as a young man, he combined esoteric varieties of “magick,” such as neo-Platonism, neo-Pythagoreanism, tarot, and theosophy (which, one should note, were already informed by mystic visions of computing the universe), with postwar cybernetics and information theory. As with his other investigations into patterns of culture, completed through avant-garde filmmaking, painting, and the collecting of everything from Ukrainian Easter eggs to Seminole quilts to paper airplanes and string games, Smith’s goal with the *Anthology* was to systematically rearrange older materials into new and revealing forms.<sup>15</sup> In the case of folk music, he assembled vernacular music found on commercially released 78 rpm records, released in the United States during the 1920s and 1930s, onto long-playing 33 1/3 rpm albums. He sought to unleash the hidden meanings not just of the songs themselves, but of the relationship among the songs. He even hoped that by organizing the older, mostly forgotten songs from the past in new, computationally determined orderings, they might have positive effects on the moral imagination of Cold War-era listeners. He accompanied his compilation with a booklet that reconfigured the American folksong tradition into a confounding new dataset. The results were far more eccentric than Lomax’s more overtly social scientific orientation, which was already weird by the conventions of the folk music movement, but as with Lomax, so too with Smith: in their work, folk music began to flow through the Cold War paradigm of computers, feedback loops, algorithmic analyses, and informatics.

By bringing folk music into the Cold War milieu, Lomax and Smith linked what Ross Cole calls the “folkloric imagination” of the first half of the twentieth century to the what we might think of as the computational imagination of the second half.<sup>16</sup> Their work cuts across the rupture many historians mark between the democratic cultural politics of the Popular Front in the 1930s and 1940s and the Cold War context of the Red Scare, mass consumer conformity, and liberal consensus. It does so, however, in a surprising way: not by porting Popular Front concepts of folk-music-as-radical-political-action into the New Left and Civil Rights Movement of the 1960s by way of 1950s subcultural activity, but rather through the dominant technological transformations of the Cold War world itself.<sup>17</sup> Lomax and Smith pushed for the realization of

<sup>13</sup>See studies such as Rebecca M. Lemov, *Database of Dreams: The Lost Quest to Catalog Humanity* (New Haven, CT, 2015); and Fred Turner, “The Family of Man and the Politics of Attention in Cold War America,” *Public Culture* 24, no. 1 (2012): 55–84.

<sup>14</sup>Alan Lomax, “Appeal for Cultural Equity,” *The World of Music* 14, no. 2 (1972): 3–17.

<sup>15</sup>See John Szwed, *Cosmic Scholar: The Life and Times of Harry Smith* (New York, 2023); John Klacsmann and Andrew Lampert, eds., *Paper Airplanes: The Collections of Harry Smith: Catalogue Raisonné, Volume I* (New York: 2015); and John Klacsmann and Andrew Lampert, eds., *String Figures: The Collections of Harry Smith: Catalogue Raisonné, Volume II* (New York, 2015).

<sup>16</sup>Ross Cole, *The Folk: Music, Modernity, and the Political Imagination* (Berkeley, CA, 2021), xii.

<sup>17</sup>On Popular Front culture, see books such as Richard H. Pells, *Radical Visions and American Dreams: Culture and Social Thought in the Depression Years* (New York, 1998); and Michael Denning, *The Cultural Front: The Laboring of American Culture in the Twentieth Century* (New York, 1996). On Cold War culture, the classic study is Stephen J. Whitfield, *The Culture of the Cold War* (Baltimore, 1996). On the persistence of Popular Front cultural politics into the Cold War decades, see Robert Cantwell, *When We Were Good*, 241–68; and Grace Elizabeth Hale, “The Union of Folk Music and Left Politics: Pete Seeger in Cold War America,” in

cultural democracy through computation. The ideal of cultural democracy traces back to the Progressive Era, prior to the Popular Front, when thinkers such as William James, John Dewey, Jane Addams, Randolph Bourne, W. E. B. Du Bois, and Horace Kallen began to conceptualize notions of cultural pluralism.<sup>18</sup> This fed Robert Dahl's popular postwar notion of political "polyarchy," or electoral contestation by many groups, but its more relevant trajectory for Lomax and Smith can be found in the cultural theories of Popular Front figures such as Rachel Davis DuBois (no relation to W. E. B. Du Bois).<sup>19</sup> In the 1930s and 1940s, DuBois advocated for "a sharing of values among numbers of our culture groups" through "a creative use of differences." She played up the importance of distinctive streams of culture intermingling with each other without ever simply dissolving into one homogenous whole.<sup>20</sup> Cultural democracy meant an openness to individual creativity and freedom not pitted against a rich basis of tradition, but rather arising from it. The concept emphasized variegated, rooted communal particularities that, when made legible, might better sustain humans while also allowing them to change, grow, shift, and adjust. In place of atomized isolation and how it threatened to lead to authoritarianism by way of potent technologies of mass mediation, cultural democracy instead undergirded the goal among certain social scientists in the Cold War to foster a multimedia "democratic surround" for citizens so that they might be able to cope with modernity rather than be overwhelmed by it.<sup>21</sup>

In their computational work on folk music, Lomax and Smith joined this effort. Computation, they claimed, could capture archaic musical forms and then fruitfully transmit older cultural values into the informational and cybernetic systems of Cold War society. Rather than feeding what Paul N. Edwards characterizes as the "closed world" quality that predominated in the era, in which the turn to digital computation helped to seal up Western society in a shield of data, radar, and military control, Lomax and Smith hoped to open up society by computing folk music in support of what Lomax called "cultural equity" and what Smith heard as "historic changes" found in folk sounds.<sup>22</sup> Computing folk music could even, they believed, help to address social ills such as racism, sexism, class inequality, and imperialism. To Lomax and Smith, computers were not merely "giant brains" threatening to destroy humanity. Rather, if properly wired up to the ear of discerning folkloric analysis and the pumping hearts of everyday people making music, computation might better complete a circuit of cultural power between the masses and their machines.<sup>23</sup> Streams of tradition could flow into streams of data and information. Although neither Lomax nor Smith entirely succeeded in their visions of computing folk music for democratic ends, they did leave a record, a kind of printout, of how computation might enliven cultural democracy. Against the fears that computers, artificial intelligence, and data processing might dehumanize people, Lomax and Smith

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*Liberty and Justice for All? Rethinking Politics in Cold War America*, ed. Kathleen G. Donohue (Amherst, MA, 2012), 243–80.

<sup>18</sup>See, among other studies, Jonathan M. Hansen, *The Lost Promise of Patriotism: Debating American Identity, 1890–1920* (Chicago, 2003).

<sup>19</sup>Robert A. Dahl, *Who Governs? Democracy and Power in an American City* (New Haven, CT, 1961); Robert A. Dahl, *Pluralist Democracy in the United States: Conflict and Consent* (Chicago, 1967); Rachel Davis DuBois, *Get Together Americans; Friendly Approaches to Racial and Cultural Conflicts through the Neighborhood-Home Festival* (New York, 1943).

<sup>20</sup>Quoted in James Bau Graves, *Cultural Democracy: The Arts, Community, and the Public Purpose* (Champaign, IL, 2010), 10–11.

<sup>21</sup>Fred Turner, *The Democratic Surround: Multimedia & American Liberalism from World War II to the Psychedelic Sixties* (Chicago, 2013).

<sup>22</sup>Paul N. Edwards, *The Closed World: Computers and the Politics of Discourse in Cold War America* (Cambridge, MA, 1996); Alan Lomax, "Appeal for Cultural Equity," 3; Harry Smith, "Foreword" to booklet accompanying the *Anthology of American Folk Music*, ed. Harry Smith, (1952; reissue, Smithsonian Folkways, 1997), SFW 40090, 2.

<sup>23</sup>Edmund Berkeley, *Giant Brains; or, Machines That Think* (New York, 1949).



**Figure 1.** Alan Lomax in front of a Cantometric coding chart and audio equipment in the archives of the Association for Cultural Equity, ca. 1978. Photographer unknown. From the Alan Lomax Collection at the American Folklife Center, Library of Congress. Courtesy of the Association for Cultural Equity.

proposed instead that these technologies had the potential to provide alternatives to the dangers of totalitarianism—and even to the threat of capitalistic monoculture and homogenization.

Just a few years before Lomax and Smith, the witty folksinger Woody Guthrie (an inspiration to both) had placed the phrase “This Machine Kills Fascists” on his acoustic guitar to signal that, as a folk musician and transmitter of premodern communal traditions, he was joining the fight against Nazism in World War II.<sup>24</sup> In the postwar decades, Lomax and Smith continued the struggle, only they scrawled the same phrase in algorithms across cybernetic systems, statistical analyses, and information theories. They claimed that when folk music met techniques of computation, not just acoustic guitars, but also the new machines and ways of thinking in the emerging digital age could serve democratic rather than fascist ends.

### “None of This Fascist Yes or No Thing”: Alan Lomax’s Global Jukebox

In 1961, Alan Lomax (Figure 1) embarked on his Cantometrics project. He would eventually code and compare thirty-seven aspects of musical performance style from field recordings that encompassed 5,776 traditional songs from 1,026 societies.<sup>25</sup> Along with a team of researchers, he turned to cybernetic ideas about communication and information as well as

<sup>24</sup>See Will Kaufman, *Woody Guthrie’s Modern World Blues* (Norman, OK, 2017), 79, 140.

<sup>25</sup>Anna L. C. Wood et al., “The Global Jukebox: A Public Database of Performing Arts and Culture,” *PLOS One* 17, no. 11 (Nov. 2022): 1.

computational approaches, such as customized software programs and complicated statistical analysis, to make sense of his data. The goal was to map out, in rough comparative form, not *what* people sang around the world, but *how* they sang. Lomax called this “performance style.” He theorized that it was not the content of song, but the way it was performed, that was the key information. In singing styles, Lomax believed he had come upon data that entailed the deepest values, norms, and modes of social organization and function from culture groups around the world. Out of his computational work, Lomax would eventually create the “Global Jukebox,” a CD-ROM that presented his Cantometric findings in interactive digital form.<sup>26</sup>

Cantometrics exemplifies what media studies scholar Henry Adam Svec describes as Lomax’s “deep digitality.” It marked a computational turn in his ongoing effort to bring elite, cutting-edge technologies to bear on cultivating the roots of human music and culture.<sup>27</sup> The complexity of the Cantometrics project as it developed over the course of the 1960s and into subsequent decades has made it among the least analyzed parts of Lomax’s celebrated (and sometimes fiercely criticized) career as a documentarian and folk music examiner and popularizer. What scholarship has been completed on Cantometrics tends to devolve into arguments about whether it was convincing or not as social science. If we step back to treat Lomax’s work more historically, however, we begin to glimpse how computers, information theory, cybernetics, and cross-correlated statistical analysis existed not only in business, the natural sciences, engineering, and military affairs, but also in the analysis of traditional culture.<sup>28</sup> Having long believed technologies from print to radio to film could feed rather than undermine the appreciation of musical heritage, Lomax positioned Cantometrics as a way to bring folk music into the fold of postwar Big Science.<sup>29</sup> The computer had something to process about folk sounds and their significance.

Born in Texas in 1915, Lomax had become, by the 1960s, one of the foremost folk song collectors and presenters in the world. He was a veteran field recorder as well as a pioneer in the use of radio for creating interactive conversations between everyday citizens and their leaders.<sup>30</sup> What archivist Nathan Salzborg calls Lomax’s lifelong “media activism” led logically to his growing interest in computers in the decades after World War II.<sup>31</sup> Key to Lomax’s developing interest in computation was his ten years of self-imposed exile in Europe during the height of the Red Scare in the 1950s. Settling in London, he began to conceptualize his Cantometrics project while producing a World Library of Folk Music for Columbia Records, conducting field recording trips around the United Kingdom, Spain, and Italy, and creating documentary radio shows for the British Broadcasting Company.<sup>32</sup> Noticing how the age of electronics

<sup>26</sup>The project now exists, posthumously, as a website: Association for Cultural Equity, The Global Jukebox, <https://theglobaljukebox.org/> (accessed Jan. 12, 2022).

<sup>27</sup>Henry Adam Svec, “Folk Media: Alan Lomax’s Deep Digitality,” *Canadian Journal of Communication* 38, no. 2 (May 2013): 227–44.

<sup>28</sup>On the reception of Cantometrics, see Patrick Savage, “Alan Lomax’s Cantometrics Project: A Comprehensive Review,” *Music & Science* 1 (July 2018): 1–19.

<sup>29</sup>Naomi Oreskes and John Krige, *Science and Technology in the Global Cold War* (Cambridge, MA, 2014); Olof Hallonsten, *Big Science Transformed: Science, Politics and Organization in Europe and the United States* (New York, 2016).

<sup>30</sup>John Szwed, *Alan Lomax: The Man Who Recorded the World* (New York, 2010); Svec, “Folk Media”; Tom Western, “The Age of the Golden Ear: The Columbia World Library and Sounding Out Post-War Field Recording,” *Twentieth-Century Music* 11, no. 2 (Sept. 2014): 275–300; Andrew J. Bottomley, “The Ballad of Alan and Auntie Beeb: Alan Lomax’s Radio Programmes for the BBC, 1943–1960,” *Historical Journal of Film, Radio and Television* 36, no. 4 (Nov. 2015): 604–26.

<sup>31</sup>Nathan Salzborg, “Listen to Our Story: Alan Lomax, Folk Producer/Folk Promoter,” Video, Benjamin Botkin Lecture Series, American Folklife Center, Library of Congress, June 10, 2015, <https://www.loc.gov/item/webcast-6823/> (accessed Feb. 4, 2022).

<sup>32</sup>Western, “The Age of the Golden Ear”; E. David Gregory, “Lomax in London: Alan Lomax, the BBC and the Folk-Song Revival in England, 1950–1958,” *Folk Music Journal* 8, no. 2 (2002): 136–69; Ronald D. Cohen, “Alan Lomax: An American Ballad Hunter in Great Britain,” in *Transatlantic Roots Music: Folk, Blues, and*

brought with it the capacity to assemble samples of music from around the world in high fidelity, Lomax started to picture a comparison of global singing styles. After he returned to the United States in 1959, Lomax studied with George Trager and Raymond Birdwhistell, embracing their linguistic theories of metacommunication. Informed by direct participation in the Macy Conferences that produced the “second order cybernetics” movement, Birdwhistell contended that repetitive nonsemantic acts beyond the content of speech were crucial to communication.<sup>33</sup> How people said things mattered as much as what they said. Gesture, eye contact, tones of voice, distance between bodies, and many other factors were part of how language functioned.<sup>34</sup> For Lomax, it was an easy step from thinking about speech and linguistics this way to considering singing and music in the same vein.

In 1961, Lomax received a Rockefeller Foundation grant for the Cantometrics project. Drawing on the theories of Birdwhistell and others, he focused on song performance styles, which he believed always involved metacommunications whose “function is to reflect and reinforce norms and to pass this information across time.”<sup>35</sup> His goal was to analyze performance modes, not musical repertoire. To do so, Lomax devised a system of musical notation that concentrated not only on conventional Western factors of pitch, melody, harmony, and rhythm, but also on bodily expression. Working with a team of collaborators, including ethnomusicology graduate student Victor Grauer and avant-garde trombonist Roswell Rudd, Lomax hand-coded musical singing styles from around the world using factors such as orchestral relationship, tonal blend, words to nonsense ratio, glottal range, embellishment, melisma, and other descriptors of timbre, tone, and delivery as well as relational qualities within musical performance (Figure 2). Once the coding was completed, Lomax found himself no longer working directly with musical sounds, but rather with the quantified measurements of what he and his research team had heard in the performance styles of the music.

What to do with this datafication of musical performance style? Lomax brought the research to his friend the anthropologist Margaret Mead.<sup>36</sup> She suggested that Lomax and his team turn their coding cards sideways from the verticality of the original forms they had coded to a horizontal orientation. The cards, she argued, might be more easily read as charts, as graphical visualizations of data. Lomax realized that his coded data could also be placed on computer punch cards for additional statistical analysis. To get the computer to read the hand-coded entries, Lomax had to shift Cantometrics from its original tabulations to a one-to-thirteen scale that allowed it to be placed on a standard IBM punch card. Lomax and team had to design their own computer language, REDODATA, to compare the coded entries using Q-factor analysis. They were ultimately able to run the codings through the mainframe at Columbia University’s Bureau of Applied Social Research in search of correlations and connections within their dataset.

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*National Identities*, eds. Jill Terry and Neil A. Wynn (Jackson, MS, 2012), 119–37; Dale Carter, “Contested Grounds: Alan Lomax, John Lorne Campbell, and the Scottish Folk Revival,” *Review of Scottish Culture* 26 (2014): 4–24; Bottomley, “The Ballad of Alan and Auntie Beeb.”

<sup>33</sup>Birdwhistell was part of the “Palo Alto Team” in 1956 at the Institute for Advanced Study in the Behavioral Sciences in Palo Alto, California, alongside Gregory Bateson among others. See Ellen Harold and Susan Tobin, “Ray Birdwhistell,” Association for Cultural Equity, <https://www.culturalequity.org/alan-lomax/friends/birdwhistell> (accessed Feb. 15, 2022).

<sup>34</sup>Brenda Farnell, “Birdwhistell, Hall, Lomax and the Origins of Visual Anthropology,” *Visual Anthropology* 16, no. 1 (2003): 43–55; Ray L. Birdwhistell, *Introduction to Kinesics: An Annotation System for Analysis of Body Motion and Gesture* (1952; Melbourne, Australia, 2021); Ray L. Birdwhistell, *Kinesics and Context: Essays on Body Motion Communication* (Philadelphia, 1970).

<sup>35</sup>Alan Lomax, quoted in Herbert Yahraes, “Music as a Measure of Psychological and Cultural Development,” *Mental Health Program Reports* No. 2, U.S. Department of Health, Education, and Welfare, Public Health Service Publication No. 1743, 1968, in Performance Style Project Interest #2, Interviews, Publicity, Writings About By Others, Alan Lomax Collection, AFC 2004/004, MS 55.03.10, American Folklife Collection, Library of Congress, 56.

<sup>36</sup>Alan Lomax, *Folk Song Style and Culture* (1968; New Brunswick, NJ, 1994), ix.



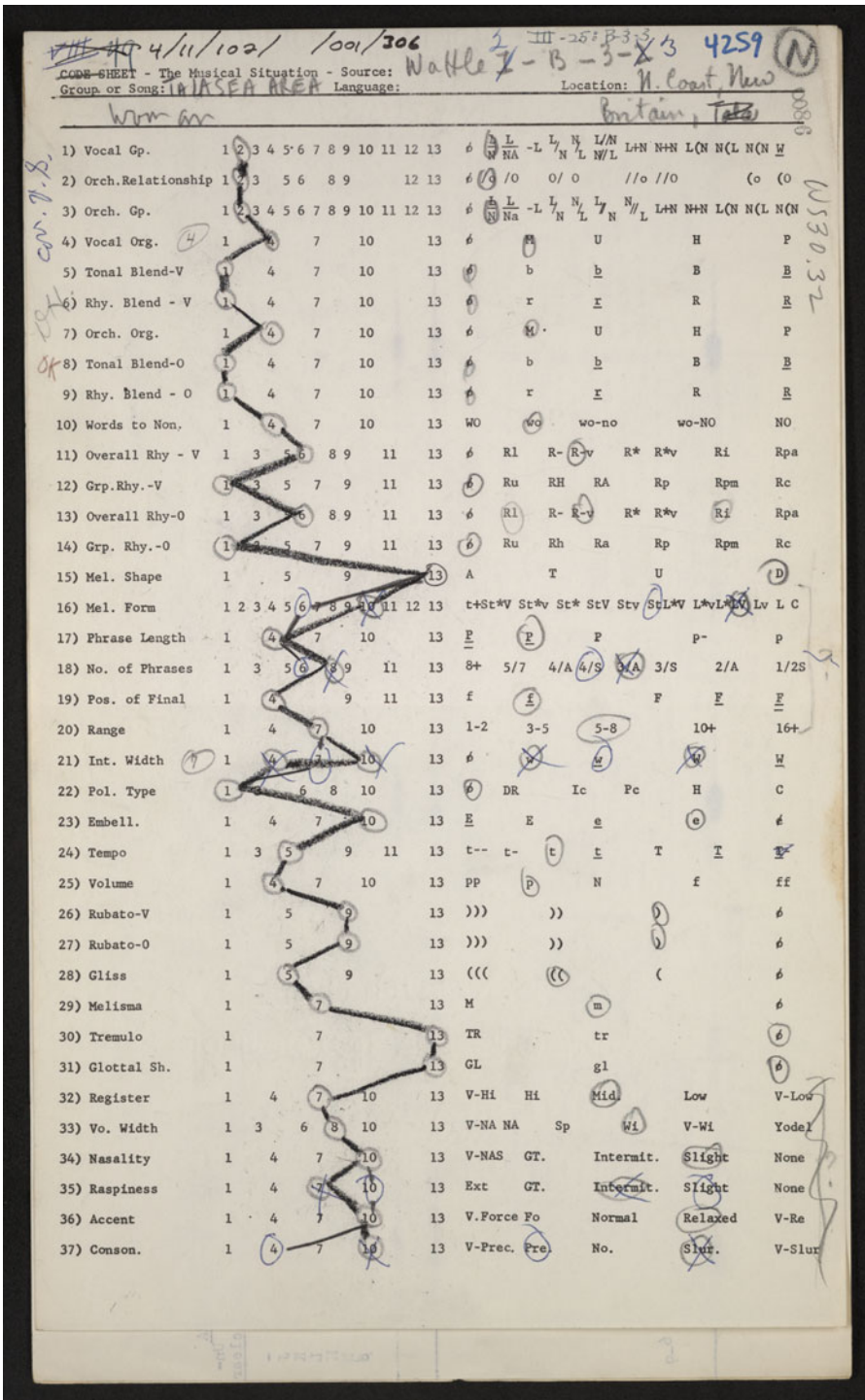


Figure 2. An example of a Cantometric coding sheet, ca. 1962. This one codes music from the Talasea Area of the north coast in West New Britain Province, Papua New Guinea. From the Alan Lomax Collection at the American Folklife Center, Library of Congress. Courtesy of the Association for Cultural Equity.

With his connections to Birdwhistell and Mead, Lomax built on his computational work to participate in the cybernetic intellectual movement underway in mid-twentieth century America. In Cantometrics, folk music fell under the influence of ideas about communication as a process of order and noise, as information communicated or distorted through feedback systems. Cybernetic concepts of information and noise informed the coding elements of Cantometrics, which included factors such as “information load (text to nonsense syllable),” among its “37 performance scale ratings, such as from soft to loud, length of phrases, ... structure of orchestration, degree of unison, heterophony, and so on.”<sup>37</sup> One hears this influence in conversations Lomax conducted with his colleague, anthropologist Conrad Arensberg, who was a key collaborator in the Cantometrics project. Arensberg remarked to Lomax at one point that with musical expression, “you can also see it as a field of interaction and communication, with certain potentialities of scoring to fill up the field,” further explaining: “You can see it as a message network out of information theory, and asking what is the flow of messages here: how much, how frequent, and so on, where are the failures of communication, and the breaks of circuits.”<sup>38</sup> Lomax got excited by Arensberg’s proposals. A few years later, building on these cybernetic ideas, he would write that song was “a multileveled communication at each level of which there lies stored information for the student of culture and communication.”<sup>39</sup> Reflecting on the project in the 1980s, he confirmed the orientation of Cantometrics toward postwar cybernetics and systems theory. “This is what is called systems analysis,” he explained about Cantometrics at a 1986 Rome lecture, “and it’s used in physics and biology and every other kind of science. It took us about three years to invent a system and then it took us about twenty years to get the computer to handle it right. But the results are worth waiting for.”<sup>40</sup>

Much as Norbert Weiner and other cyberneticists sought to identify the most machine-like qualities of human action, simplifying complexities in search of basic building blocks of behavior, so too Lomax abandoned the typical focus of musicologists and musicians themselves on the “endless nuances of melody and rhythm.”<sup>41</sup> In their place, he shifted to a “preoccupation with such humdrum matters as group organization, degree of integration, and information load.”<sup>42</sup> He wanted to develop a cybernetic approach to song as data so that one could hear “singing the way some anthropologists and linguists view social behavior.”<sup>43</sup> This, Lomax believed, might “lead to a better understanding of people everywhere” because “song,” he believed, “is an informational system, reminding a person of what culture he belongs to and what it expects of him.”<sup>44</sup> By paradoxically abstracting sound making and music making, removing them from specific individuals, Lomax felt he could document and dramatize their profound humanity more vividly at a global scale. “We feel we have offered no loss of contact

<sup>37</sup>Alan Lomax, *Alan Lomax Introduces Cantometrics Demonstration Tape*, 1980, Cassette Tape, T3638, Track 1, Discussions, Lectures, and Interviews, Alan Lomax Digital Archive, <https://archive.culturalequity.org/node/62987> (accessed Jan. 10, 2023).

<sup>38</sup>Conrad Arensberg, *Conrad Arensberg and Alan Lomax Discuss Correlation of Ethnomusicology with Murdock and White’s Cultural Classifications (part 1)*, July 1963, Reel to Reel T1263, Discussions, Lectures, and Interviews, Alan Lomax Digital Archive, <https://archive.culturalequity.org/field-work/southern-us-1959-and-1960/conrad-arensberg-and-alan-lomax-discuss-correlation> (accessed Jan. 15, 2023).

<sup>39</sup>Lomax, *Folk Song Style and Culture*, 28.

<sup>40</sup>Alan Lomax, “Lecture on Cantometrics at the Palazzo della Cancelleria, Rome,” 1986, Cassette Tape T3869, Track 1, Alan Lomax Digital Archive, <https://archive.culturalequity.org/node/62990> (accessed Jan. 18, 2023).

<sup>41</sup>Alan Lomax, “World Song Performance Styles, Introduction,” Performance Style, Writings, Unpublished, Series 1, 1967-68, Box 273, Folder 39.03.13, Alan Lomax Collection, American Folklife Center, Library of Congress, 1.

<sup>42</sup>Ibid.

<sup>43</sup>Ibid., 2.

<sup>44</sup>Yahraes, “Music as a Measure of Psychological and Cultural Development,” 53.

with the values and the feelings that songs convey,” he wrote in response to those who thought he had lost sight of aesthetic beauty or cultural particularity.<sup>45</sup>

Yet Lomax’s turn to cybernetics did ask listeners to reorient their ears and ideologies. Rather than imagine music as dynamic, changing, and individualistic—something in the moment—Lomax believed precisely the opposite: singing happened in the moment, but the *styles* that people turned to when they performed music, he contended, were quite stable, persistent, and long-lasting within particular culture groups. They were repetitious—“redundant,” as Lomax called them. The focus on singing style as stable and durable set Lomax apart from most other musicologists and from many musicians themselves. He even diverged from common cybernetic theory. Most cyberneticists assumed that style was noise, distorting attempts to communicate content.<sup>46</sup> Lomax reversed the relationship. Style was the key information, and content was the noise. “Singing is a specialized act of communication,” he explained, “akin to speech,” but even more “formally organized and redundant.”<sup>47</sup> Singing style constituted a cybernetic system of informational communication, feedback, and adjustment that could “project out across a big group” for the “coordination and synchronic aspects of communication that seem to operate through the whole of social reality.”<sup>48</sup> For a performer or listener, the style “symbolized the place where he was born, his earliest childhood satisfaction, his religious experience, his pleasure in community doings, his courtship and his work—any or all of these personality-shaping experiences.”<sup>49</sup> Musicologically, then, singing style was not a solo act, but a collective vestige at the ready for deployment in new situations. And contra typical cybernetic theory, Lomax proposed that style was not surface noise distorting content of message, but rather the core message itself.

Lomax offered an example of what Cantometrics revealed when he described the African diasporic tradition of the “free-rhythmed work call” as it moved across the Atlantic Ocean:

One little known Black style is the free-rhythmed work call—the song of the oppressed farm worker loaded down by taxes—You hear this wailing solo cry all through the whole orient—here is an African example from Senegal—here is a Mississippi levee holler which catches it almost phrase for phrase—solo, free-rhythmed, ornamented—this ancient Afro-Asian style became the source of the blues ... both in Africa and in Mississippi—here the bard made poignant and satirical verses, a free rhythm melodic style, using the stringed instrument to comment on his song in polyrhythmic but independent obstinate style—first a Mississippi singer, then an African bard—then a Mississippi singer—almost as if they were asking and answering questions, the one at the beginning, the other at the end of the African Diaspora into the New World—a song-trace that Cantometrics makes easy.<sup>50</sup>

Writing this, Lomax thought he could discern in his data a common performance style stretching across the Atlantic, from Senegal to Mississippi. What others thought was superficial ornamentation was, for Lomax, the most important aspect. Cantometric analysis revealed that “Afro-American style is virtually identical with that of the African heartland...its two closest cogeners are Equatorial Bantu, at 85% similarity, and Guinea Coast, at 84% similarity.” For Lomax, “Afro-American song has hewed to the main dynamic line of the principal

<sup>45</sup>Lomax, “World Song Performance Styles, Introduction,” 2.

<sup>46</sup>Weiner, *Cybernetics*; Shannon, “A Mathematical Theory of Communication”; Shannon and Weaver, *The Mathematical Theory of Communication*.

<sup>47</sup>Lomax, *Folk Song Style and Culture*, 2.

<sup>48</sup>Alan Lomax, *Alan Lomax and Conrad Arensberg Give AAAS Lecture on Cantometrics (part 2), with Remarks by Herbert Barry*, Feb. 21, 1976, Cassette Tape T3784B, Track 2, Discussions, Lectures, and Interviews, Alan Lomax Digital Archive, <https://archive.culturalequity.org/node/62914> (accessed Jan. 20, 2023).

<sup>49</sup>Lomax, “Folk Song Style,” 929.

<sup>50</sup>Lomax, “Notes for the Spots on Program,” 4.

African tradition.”<sup>51</sup> Cantometrics, emerging out of Cold War cybernetic notions of feedback, communication, information, load, order, and noise, confirmed what many African Americans themselves already knew but musicologists disputed: that cultural modes had survived the Middle Passage to provide sustenance and stabilization through the traumas of enslavement, exploitation, and racism.

Lomax’s cybernetic theories not only led him to ponder “diffusion” of culture across geographic space and time, but also whether music indexed the “functionalist” dimensions of its social settings.<sup>52</sup> When Conrad Arensberg showed Lomax the research of George Murdock and the Human Relations Area Files project at Yale University, an extensive set of data about 565 culture groups from around the world, each coded by thirty attributes, Lomax sought to correlate his Cantometrics data to Murdock’s materials.<sup>53</sup> Arensberg proposed to Lomax that such a comparison “might be a test of our notion that the music is a symbolization, a most rapid and compact statement, of the larger thing, of the style of society.”<sup>54</sup> Lomax vigorously responded: “Well, if it’s not that what the hell is it?” For Lomax, “This is what Cantometrics as a tool for looking at culture either falls or stands on.”<sup>55</sup> He “decided to match the Murdock ethnographic cultural codings with a rated musical sample of at least ten songs per culture for more than 200 cultures, evenly distributed across the world culture map.”<sup>56</sup> When this work was completed, Lomax wrote that “the correlations so far established between Cantometric and social variables indicate that a singing style conveys and reinforces the ways in which people work together to live, organize group activities, relate to leaders, control information flow, shape their erotic behavior and enact their roles.”<sup>57</sup>

Feeling encouraged by his work, Lomax thought it might even “soon be possible to listen to a few recorded songs from an unidentified geographical area” to be able to “identify the area and describe in general terms such characteristics as the culture’s predominant means of livelihood ... its political organization, its attitude toward sex, and its child-rearing philosophy.”<sup>58</sup> For Lomax, “The level of complexity of orchestral organization is a good index of the level of political complexity in a culture,” he contended of the data, while “other aspects of performance style ... are reliable indicators of other aspects of social structure: of the feminine role, of social solidarity, of sexual mores, of stratification, and much more.”<sup>59</sup> Lomax was confident that his cybernetic approach to song style, statistically analyzed and computed, produced compelling results, not just about the dissemination of song across the world, but also about the functional factors within particular societies. “We can,” he argued, “now roughly predict the basic structure of a culture by a Cantometric profile of its singing style.”<sup>60</sup>

Lomax grew particularly intrigued about gender. “There seems to be a very powerful relationship between the occurrences of polyphony and the role of women in subsistence,” he noted of his findings.<sup>61</sup> “Where natural polyphony was the rule,” he wrote, “that is where

<sup>51</sup>Alan Lomax, “The Homogeneity of African-New World Negro Musical Style, 1967,” Alan Lomax Collection, AFC 2004/004, MS 01.01.12, American Folklife Center, Library of Congress, 17.

<sup>52</sup>On functionalism and diffusion, see Filene, *Romancing the Folk*, 137–9.

<sup>53</sup>George Peter Murdock, *Outline of World Culture*, 2nd rev. ed. (New Haven, CT, 1958). For more on the history of the Human Relations Area Files project, see “History and Development of the HRAF Collections,” Human Relations Area Files, <https://hraf.yale.edu/about/history-and-development/> (accessed Jan. 24, 2024).

<sup>54</sup>Conrad Arensberg, *Conrad Arensberg and Alan Lomax Discuss Correlation of Ethnomusicology with Murdock and White’s Cultural Classifications (Part 4)*, July 1963, Reel to Reel T1266, Track 1, Discussions, Lectures, and Interviews, Alan Lomax Digital Archive, <https://archive.culturalequity.org/node/62900> (accessed Jan. 23, 2023).

<sup>55</sup>Ibid.

<sup>56</sup>Lomax, *Folk Song Style and Culture*, 21.

<sup>57</sup>Lomax, “World Song Performance Styles, Introduction,” 3.

<sup>58</sup>Yahraes, “Music as a Measure of Psychological and Cultural Development,” 55.

<sup>59</sup>Lomax, “Alan Lomax Introduces Cantometrics Demonstration Tape.”

<sup>60</sup>Ibid.

<sup>61</sup>Lomax, “Performance Style Work and Song 1966,” 35.

there was more than one voice or part in the choral section ... society, too, was bi-modal—women and men both had important parts in the main food-producing activities of the society.”<sup>62</sup> The integration of distinctive male and female voices in choral singing lined up with data from Murdock’s Human Relations Area Files. This suggested more integrated labor practices when it came to women’s involvement in productive processes. By contrast, where social organization was highly individualized, and often patriarchal, women were excluded from active participation in productive processes and singing styles alike. In these cases, the singing turned away from open choral polyphony by male and female voices joined together to far more strident, solo, isolated, vocal forms. For Lomax, a data-oriented, informational, systems analysis approach to music revealed direct correlations to the gendered dimensions of economic organization. Abstracting music into numerically measured components allowed him, so he claimed, to notice its concrete social meaning. When it came to gender and power, Lomax proposed, choral singing with open-throated voices and both men and women seemed to correlate to cultures with more loose, open relations between the sexes in economic relations; solo singing with more nasal, strident vocal styles generally occurred in more patriarchal cultures with strict exclusions or limitations on women’s participation in the public economic life of the community.<sup>63</sup>

Was Lomax merely reproducing existing, orientalist clichés in which Northern and Western European cultures were imagined as the wellspring of egalitarian democracy while Southern and Eastern Mediterranean and Asiatic cultures were understood as fantasies of hierarchical male control over hypersexualized but constrained women?<sup>64</sup> Perhaps. As for many scientists, his turn to data seemed to become a vehicle for confirming existing biases. Under pressure from himself—not to mention funders—to prove that Cantometrics was valid and useful as social science, Lomax spent years working on the project. Yet throughout the project, he also remained committed to an emancipatory ethos, a pluralistic humanism, and an emphasis on the value of noticing and preserving cultural diversity through computational means. While he retained problematic hierarchies from older schools of anthropology and the European literary imagining of the other, Lomax nonetheless began to envision a new way of valuing cultural heritage beyond merely salvaging or fetishizing seemingly ancient modes of living. “Most of the primitive people of the world,” he argued (to be sure still using the outmoded framework of salvage anthropology even as he argued for the value of cultural equity), “want our technology and our products, but to get them they think—and we seem to think—they must give up their whole way of life, including their personality structure.” Lomax dissented. “I don’t think so,” he explained. “I think that in the communicational arts they can keep what they have, and what this means to them, and still reach out and adapt themselves to desirable changes in their productive means and capabilities.”<sup>65</sup> Here was an attempt, flawed but not merely colonial and imperialistic, to use the computational approach of Cantometrics in order to retain older traditions within a globalizing modernity.

Lomax’s system threatened to reduce the diversity and sophistication of the world’s musical expression to fit it into one unified computational system. Lomax himself noticed these issues. Speaking in the late 1970s, he remarked of Cantometrics, “I’m not saying we have the answer.”

<sup>62</sup>Lomax, “Notes for the Spots on Program,” 5.

<sup>63</sup>Yahraes, “Music as a Measure of Psychological and Cultural Development,” 55. There is a fine irony to Lomax using computers for his research into gender and sexuality since women were often the human computers before being replaced by machines. See Jennifer S. Light, “When Computers Were Women,” *Technology and Culture* 40, no. 3 (1999): 455–83; Janet Abbate, *Recoding Gender: Women’s Changing Participation in Computing* (Cambridge, MA, 2012); and Mar Hicks, *Programmed Inequality: How Britain Discarded Women Technologists and Lost Its Edge in Computing* (Cambridge, MA, 2017).

<sup>64</sup>Edward W. Said, *Orientalism* (New York, 1978).

<sup>65</sup>Yahraes, “Music as a Measure of Psychological and Cultural Development,” 67.

Rather, he believed, “This is just the edge of a big, black universe that we’ve explored.”<sup>66</sup> Lomax emphasized that Cantometrics was just a tentative beginning. “What is more complicated than a whole culture?” he asked.<sup>67</sup> The aim was never to reduce cultural complexity; it was always to wield digital computation and social scientific thinking in service of humanistic multiplicity. In this respect, Lomax diverged from the dominant cybernetic arguments of Norbert Wiener and others emerging out of World War II. They contended that men and machines could be smoothly integrated into mechanical systems. After all, Wiener’s cybernetic research began with a focus on how to make the interplay between human airplane gunners and their weapons in the World War II fight against the Axis powers.<sup>68</sup> Ultimately, humans were just part of the larger machines. Lomax, by contrast, distinguished strongly between humans and devices such as digital computers. “Man is essentially an aesthetic animal,” he contended. “We’re not a computer that goes yes-no-yes-no-yes-no with a tree diagram making sense out of what we do.”<sup>69</sup> There was, for him, “None of this fascist yes or no thing.”<sup>70</sup> Computers might model larger social forces—“as a people live, so do they sing,” Lomax contended of his findings—but once the mainframe spat out the statistical results, they were only meant to provide a framework for catalyzing greater appreciation of human cultural expression’s range and richness.<sup>71</sup> Out of data, he hoped, would emerge democracy.

#### “A Punch Card of a Certain Sort”: Harry Smith’s *Anthology of American Folk Music*

Alan Lomax thought that computers could bring folk music into the empirical, “Big Science” movement of Cold War America even as he held on to Popular Front goals of expanding cultural democracy rather than constraining it; Harry Smith, by contrast, was far less concerned with official acceptance or social scientific status, yet he too held on to the ways in which the abstracted, ordered, data-fied patterning found in the postwar computational turn might enhance deeper dreams of democratic flourishing. Smith (Figure 3) was, in fact, sometimes confused with Lomax. “I assumed,” the owner of New York City’s Folklore Center, Izzy Young, wrote, “as others did, that Harry Smith was a pseudonym for Alan Lomax.”<sup>72</sup> Smith, however, was very much his own person. Born in the Pacific Northwest in 1923, he was an artist, amateur anthropologist, avant-garde filmmaker, and obsessive collector of objects. While he did not use digital computers themselves, and the archival record of his activities is scattershot and incomplete, one can discern on his influential folk music creation, the *Anthology of American Folk Music*, computational approaches. Smith combined ideas from early modern neo-Platonism and neo-Pythagorean theory, which he had been exposed to as the child of theosophist parents, to Cold War-era informatics, systems theory, and cybernetics. In doing so, he created a musical compilation that confounded conventional ways of presenting folk music.<sup>73</sup>

<sup>66</sup>Alan Lomax, “From Lead Belly to Computerized Analysis of Folk Song”: *Lomax Lecture on His Life’s Work Given at the Celeste Bartos Auditorium in New York City, 1979*, Cassette Tape T4100, Tracks 1 and 2, Discussions, Lectures, and Interviews, Alan Lomax Digital Archive, <https://archive.culturalequity.org/dli/lomax-1979> (accessed Nov. 9, 2022).

<sup>67</sup>Ibid.

<sup>68</sup>Weiner, *Cybernetics*. Wiener himself grew skeptical about the applicability of cybernetics to social dynamics; see Norbert Wiener, *The Human Use of Human Beings* (New York, 1954); and Norbert Wiener, *God and Golem, Inc.: A Comment on Certain Points Where Cybernetics Impinges on Religion* (Cambridge, MA, 1964).

<sup>69</sup>Lomax, “From Lead Belly to Computerized Analysis of Folk Song.”

<sup>70</sup>Ibid.

<sup>71</sup>Lomax, “Alan Lomax Introduces Cantometrics Demonstration Tape.”

<sup>72</sup>Izzy Young, “A Tribute to Harry Smith,” in *The Conscience of the Folk Revival: The Writings of Israel “Izzy” Young*, ed. Scott Baretta (Lanham, MD, 2013), 211.

<sup>73</sup>Bret Lunsford, *Sounding for Harry Smith: Early Pacific Northwest Influences* (Anacortes, WA, 2021); Szwed, *Cosmic Scholar*.

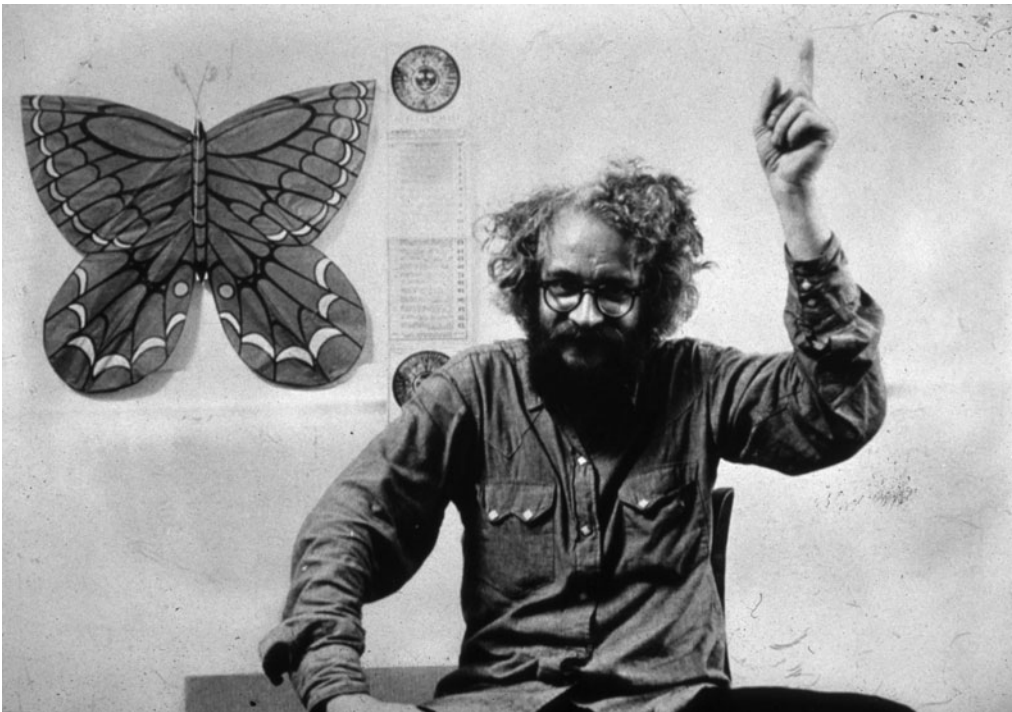


Figure 3. Harry Smith, ca. 1970. Photographer: John Palmer. Courtesy of the Harry Smith Archives.

Smith sought to transform the supposed dross of castoff 78 rpm commercial recordings of “hillbilly,” “race records,” and other ethnic music from the late 1920s and early 1930s into a dazzling array of possible correlations and connections for Cold War Americans.<sup>74</sup> The *Anthology* did not consist of field recordings, which most folklorists considered the gold standard of authentic folk music expression.<sup>75</sup> Instead, Smith drew upon the 78s he had collected from remaindered piles in warehouses, thrift stores, and used record stores on the West Coast during the late 1940s. In the liner notes to the *Anthology* (Figure 4), he explained that these recordings from a few decades earlier were important not because they preserved pure, uncontaminated sounds, but rather the opposite: they presented an America in flux, poised between isolated premodern separateness and a growing modern integration. Smith wrote that the 78s came from a moment “when American music still retained some of the regional qualities evident in the days before the phonograph, radio, and talking picture had to integrate local types,” but, at the same time, these very technologies were suddenly “making easily available to each other the rhythmically and verbally specialized musics of groups living in mutual social and cultural isolation.”<sup>76</sup> For Smith, rooted difference and integrative hybridity performed a kind of duet on the commercial recordings of the late 1920s and early 1930s. He speculated that they captured data that was vernacular, embedded, impure, and crassly material. They were taken from early music business efforts to make a profit, not from the noble realm of folklore. Purity was not the key. Relationality was. When assembled together in his re-ordering of tracks

<sup>74</sup>Robert Cantwell, “Smith’s Memory Theater: The Folkways Anthology of American Folk Music,” *New England Review* 13, nos. 3/4 (1991): 364–97; Robert Cantwell, *When We Were Good*, 189–240.

<sup>75</sup>Lomax was also interested in commercial folk recordings, and partly inspired Smith. See Nathan Salzbarg, “This Unknown Body of Americana’: Alan Lomax’s *List of American Folk Songs on Commercial Records* and the *Anthology of American Folk Music*,” in *Harry Smith’s Anthology of American Folk Music: America Changed through Music*, eds. Ross Hair and Thomas Ruys Smith (New York, 2016), 57–62.

<sup>76</sup>*Anthology of American Folk Music*, liner notes booklet, 1.

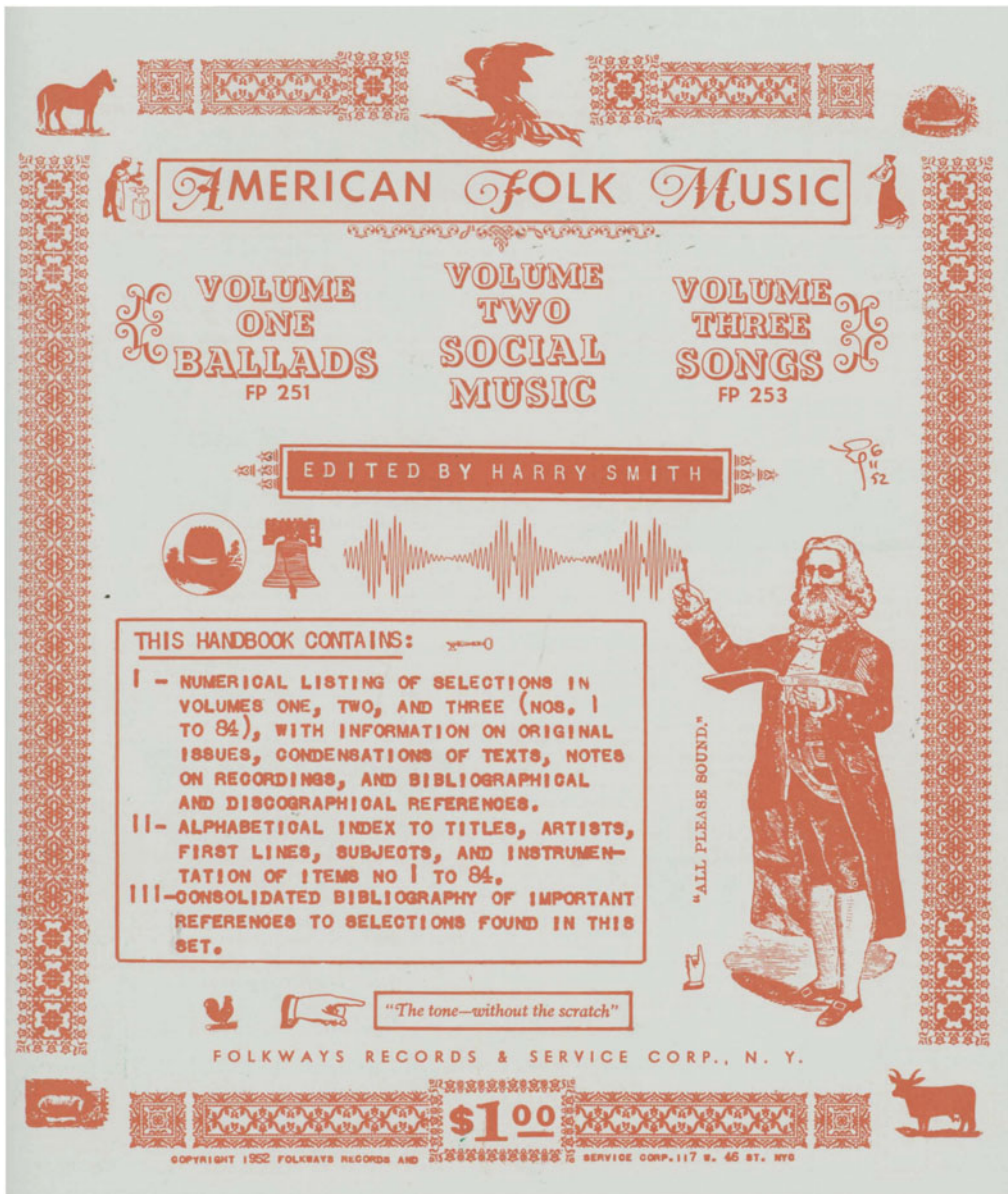


Figure 4. The cover of the booklet that accompanied the *Folkways Anthology of American Folk Music*, 1952. Copyright Harry Smith. Courtesy of Smithsonian Folkways and the Harry Smith Archives.

on the *Anthology*, the songs seemed to summon forth a mystical, spiritual richness. For Smith, the 78s mixed the material and the allegorical, the earthly and the spiritual, in ways he thought could be computed into a glorious device for activating democracy.<sup>77</sup>

This was where Smith’s neo-Platonic, neo-Pythagorean background began to manifest itself. For starters, there was no clear order to the eighty-four tracks Smith included on the *Anthology*, and he offered few explanations of the sequencing, only claiming that it was put together for

<sup>77</sup>My argument diverges from scholars who imagine Smith as a salvage anthropologist or primitive modernist attempting to save vanishing cultures, instead contending that he was far more curious about tabulating hybridity in American folk music.



“an epistemological and musicological selection of reasons.”<sup>78</sup> The mystery seemed to be part of the methodology. The montage of music seemed most of all intent on breaking down typical folk taxonomies into a kind of perpetual motion machine of song. The goal of Smith’s *Anthology* was to sustain an ongoing feedback loop of rehabilitation, a kind of cybernetic water-wheel that continuously bubbled along with a stream of consciousness from the past to the present. Maybe it could even reach up from the folksy, vernacular life of past Americans caught on commercial recordings to the celestial heavens. Making the connection between folk music on the *Anthology* and neo-Platonic and neo-Pythagorean mathematical theories clear, Smith placed a print of a celestial monochord on the cover. The print came from early seventeenth-century astrologer, mathematician, cosmologist, and alchemist Robert Fludd’s “De Musica Mundana” (“Mundane Music”), found in the tract *Utriusque cosmi maioris scilicet et minoris Metaphysica, physica atque technica Historia (History of the Two Worlds)*.<sup>79</sup> The engraving, produced in the famous print shop of publisher Theodor de Bry, portrayed an instrument that the ancient Greeks imagined as aligning sound pitches with the divine proportions of the universe.<sup>80</sup> The point Smith wanted to convey was that the tracks on the *Anthology* themselves were not meant to provide authentic samples of folk music, as with the statistical approach of Lomax’s Cantometrics. Rather, Smith wanted to assemble music together precisely to confound fixedness. As Smith interlocutor John Cohen, himself a folk revivalist musician and documentarian, pointed out, “To me, the *Anthology* was more of a statement of interrelationships than a sampling.”<sup>81</sup>

Different as the *Anthology* was from Cantometrics, Smith’s collection resembled Lomax’s interest in wielding technology in service of pluralistic humanity and democratic multiplicity. Smith heard his rescued commercial recordings from the late 1920s and early 1930s as resources for nothing short of changing Cold War society. When he was putting together the *Anthology* in the early 1950s, he “had the feeling that the essence that was heard in those types of music would become something that was really large and fantastic.”<sup>82</sup> Smith felt that he might even provoke “some kind of social force for the good.”<sup>83</sup> The purpose of the *Anthology*, he explained, was partly to see if Plato’s contention in *The Republic* was true since “you have to be careful changing the music because it might upset or destroy the government.”<sup>84</sup> Old music, reconfigured into new patterns, might remake American democracy, Smith believed. To be sure, the *Anthology* was an artistic undertaking, as many scholars have noted.<sup>85</sup> Smith himself admitted as much. “The whole *Anthology* was a collage,” he noted in 1968. “I thought of it as an art object.”<sup>86</sup> Yet Smith also believed that his work involved artistic evocation *through* precise correlation. “My essential interest in music,” Smith explained, “was the patterning that occurred in it, intuition or taste or whatever you want to call it only being a

<sup>78</sup>Cohen, “A Rare Interview with Harry Smith, Part One,” 2.

<sup>79</sup>*Anthology of American Folk Music*; Robert Fludd, “De Musica Mundana,” in *Utriusque cosmi maioris scilicet et minoris Metaphysica, physica atque technica* (Oppenheim, Germany, 1617–1621).

<sup>80</sup>Joscelyn Godwin, *Robert Fludd: Hermetic Philosopher and Surveyor of Two Worlds* (Grand Rapids, MI, 1991); David E. Creese, *The Monochord in Ancient Greek Harmonic Science* (New York, 2010); Roseen H. Giles, “The Inaudible Music of the Renaissance: From Marsilio Ficino to Robert Fludd,” *Renaissance and Reformation / Renaissance et Réforme* 39, no. 2 (2016): 129–66; David J. Kendall, *The Music of the Spheres in the Western Imagination* (Lanham, MD, 2022).

<sup>81</sup>Cohen, “A Rare Interview with Harry Smith, Part One,” 10.

<sup>82</sup>“John Cohen—Chelsea Hotel, NYC,” in *Thinking of the Self Speaking: Harry Smith, Selected Interviews*, ed. Rani Singh (Seattle, WA, 1998), 83.

<sup>83</sup>*Ibid.*

<sup>84</sup>Cohen, “A Rare Interview with Harry Smith, Part One,” 10.

<sup>85</sup>Kevin M. Moist, “Collecting, Collage, and Alchemy: The Harry Smith *Anthology of American Folk Music* as Art and Cultural Intervention,” *American Studies* 48, no. 4 (Winter 2007): 111–27; the essays in *Harry Smith’s Anthology of American Folk Music*, eds. Hair and Ruys Smith.

<sup>86</sup>Cohen, “A Rare Interview with Harry Smith, Part One,” 2.

guide to directions where this patterning might occur.”<sup>87</sup> Aesthetics, Smith contended, always involved technical dimensions. Therefore, “Anything that falls into the canon of that particular technological procedure can be found there,” he believed.<sup>88</sup> As with much of his work across music, film, collecting, and other endeavors, Smith explained that “the whole purpose is to have some kind of a series of things,” to gather “information.”<sup>89</sup> If you arranged the “information” exactly, Smith argued, it became “a way of programming the mind. It’s a punchcard of a certain sort.”<sup>90</sup>

Smith’s understanding of neo-Platonic ideas resonated with the Cold War computational moment. As scholar R. Bruce Elder argues, the *Anthology* was certainly grounded in early modern neo-Platonic and neo-Pythagorean theories of how one might calculate the material world’s correlations to the perfection of the universe. It demonstrated what Elder described as Smith’s interest in “collecting thought-forms and programming the aerial computer.”<sup>91</sup> What it also did was link these esoteric traditions to the postwar context of informatics, systems theory, and cybernetics. This was not as outlandish a connection as one might think. The term cybernetics had come from the ancient Greek word *kubernētēs*, which referred to the steerer or helmsman of a ship. Plato used it often in *The Republic* to refer to the art of governance. From there, the word showed up in Norbert Wiener’s best-selling 1948 book, which was released and much discussed in the years Smith was assembling the *Anthology*. Wiener coined the term to describe his mathematical and engineering investigations of feedback mechanisms and homeostatic machines, but scientific curiosity about these types of devices had a long history.<sup>92</sup> No less a figure than Robert Fludd, the early modern mathematician whose celestial monochord appeared on the cover of the *Anthology*, developed a model of an Archimedean water screw in 1617, with a famous 1660 woodcut of the perpetual motion machine circulating widely right up through the mid-twentieth century. Perhaps Smith might have seen it in his childhood studies of early modern science. Through his autodidactic explorations of anthropology, folklore, and linguistics, Smith also knew about cybernetic theorists of the postwar era, such as Roman Jakobson, who participated in the Macy Conferences and was certainly familiar with the broad contours of anthropological and linguistics theory as a whole.<sup>93</sup>

The *Anthology* was not directly part of cybernetics, not even in the tangential ways Alan Lomax’s *Cantometrics* was, but it too was touched by the computational turn of the Cold War years. Smith was likely aware of computers and their potential use for studying folksong. When he was avidly collecting 78 records in Northern California, for instance, Smith rented an apartment from the ballad scholar Bertrand Bronson (at one point, trading records with Bronson and possibly stealing a few). At the time, the University of California professor was researching ballads using IBM computers to track lyrics and musical scales.<sup>94</sup> Connecting

<sup>87</sup>Ibid., 10.

<sup>88</sup>Ibid., 9.

<sup>89</sup>Ibid.

<sup>90</sup>Ibid.

<sup>91</sup>Elder, “Harry Smith,” 100–22.

<sup>92</sup>Michele Kennerly, “Cybernetics in the *Republic*,” *History of the Human Sciences* 36, no. 1 (Feb. 2023): 80–102; Sheryl N. Hamilton, “The Charismatic Cultural Life of Cybernetics: Reading Norbert Wiener as Visible Scientist,” *Canadian Journal of Communication* 42, no. 3 (July 2017): 407–30.

<sup>93</sup>Raymond Foye recalls Smith being interested in Roman Jakobson’s cybernetic linguistics theories; Rani Singh, email to author, Apr. 29, 2022. For more on Jakobson, see Jurgen Van de Walle, “Roman Jakobson, Cybernetics and Information Theory: A Critical Assessment,” *Folia Linguistica Historica* 29 (2008): 87–124. On Smith’s awareness of academic anthropology and linguistics, see his mention of the structuralism of Claude Lévi-Strauss as well as the linguistics of Noam Chomsky in an interview with P. Adams Sitney: “P. Adams Sitney—NYC,” in *Thinking of the Self Speaking: Harry Smith, Selected Interviews*, ed. Rani Singh (Seattle, WA, 1998), 102.

<sup>94</sup>Bertrand Bronson, Letter to Charles Seeger, Mar. 30, 1949, Box 47, Folder 4, Seeger Family Papers, Music Division, Library of Congress, Washington, DC, ML31.S38. For more on Smith’s time in Berkeley, see Greil Marcus, “American Folk,” *Granta* 76 (Jan. 2002): 299–315. On Bronson’s work on ballads using IBM machines,

this computational research to his own theosophist background and interest in early modern science and math, Smith hoped to provoke new possibilities for American life, not only through artful collage, but also by quantifying culture. The booklet liner notes that accompanied the *Anthology* speak to Smith's computational dimensions. They have often been celebrated for their funny headlines ("ZOOLOGIC MISCEGENY ACHIEVED IN FROG NUPTIALS, RELATIVES APPROVE," Smith wrote for "King Kong Kitchie Kitchie Ki-me-o," a variant on "Froggy Went a-Courtin'," the English classic that spread throughout the United States and is represented on the *Anthology* by a 1928 Columbia Records recording by "Chubby" Parker), but they also included extensive discographic and bibliographical information. For example, "King Kong Kitchie Kitchie Ki-me-o," which was the eighth track on the *Anthology*, referred a listener to "AAFM 58"—track 58 of the collection. The bibliography then sent a reader reeling into a long list of citations: "ARNOLD-12; BARRY-11-3; BELDEN-494; BREWSTER-226; COX-470; EDDY-137; GARDNER-455; GORDON-86; HUDSON-282; LINSOTT-199; LOMAX-11-310; MORRIS-407; PERROW-VOL.26-134; RANDOLPH 1-402; SANDBURG-143; SCARBOROUGH 1-46; SCARBOROUGH 11-224; SHARP-11-312; STOUT-30; TALLEY 190; THOMAS-1-1-154; WHITE-218; OWENS-254."<sup>95</sup> It was as if Smith wanted to create many linkages, a folksy plenitude, filled with so much informational interconnection that it almost—but never quite—locked into an ordered whole.

Because it was filled with cross-references, the *Anthology* kept the listener's imagination circulating through wave upon wave of potential correlation. Yet Smith did not simply want to create a roiling ocean of data. The *Anthology* might better be understood as a cybernetic effort to make the long-playing phonograph record a machine capable of endlessly adjusting to conditions by continuously sorting and re-sorting information. Scratchy old records offered content and messages from the past within noise and distortion. As historian Ronald Kline explains, Cold War cybernetics itself imagined "communication as the retrieval of a message in the presence of noise."<sup>96</sup> Smith saw his task as similar. Later in his career, for instance, he argued that he was "making a study of noise; and its effect on or effects by other sounds" since "the greater part of my life," as he wrote, "has been devoted to looking at things and listening to sounds larger and smaller than the laws of physics required to bring them into congruence with certain laws."<sup>97</sup> This reflected how, for Smith, the *Anthology* was part of his larger project to bring antiquated ideas of computation from gnostic traditions into the Cold War moment of cybernetics and information theory. He pictured his work as an act of "sortilege," or divination through the arrangement and selection of cards, something Smith mentioned he used to create his experimental films.<sup>98</sup> The *Anthology*, like Smith's films, sought to uncover a liberating order of what he described as an "organized anarchy" undetected within the seeming chaos, randomness, and lostness of abandoned, technologically obsolete materials such as 78 rpm records.<sup>99</sup> So too, as with the more well-known cybernetic effort to develop infinitely adjustable machines and systems that could rebalance and recalibrate instead of turning entropic, the *Anthology* resembled Smith's film tactics in its attempt to "employ feed-back phenomena."<sup>100</sup> Here was a cybernetic endeavor that brought together aspects of Plato, Fludd, folk music, Norbert Wiener, and Claude Shannon.

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see Bertrand Harris Bronson, "Mechanical Help in the Study of Folk Song," *Journal of American Folklore* 62, no. 244 (June 1949): 81–6.

<sup>95</sup>Smith, *Anthology*, liner notes booklet, 3.

<sup>96</sup>Kline, *The Cybernetics Moment*, 13.

<sup>97</sup>Smith, Notebook, Aug. 8, 1991, Box 11 Folder 16, Harry Smith Papers, Getty Research Institute.

<sup>98</sup>P. Adams Sitney, "Harry Smith Interview," *Film Culture* 37 (Summer 1965): 101. Smith also mentions using sortilege in a speech at the Queens Museum; Harry Smith at the Queens Museum, Oct. 11, 1978, audio disc, 2013.M.4 (D12), Harry Smith Papers, Getty Research Institute.

<sup>99</sup>Smith quoted in Arthur Cantrill, "Interview with Harry Smith," *Cantrills Filmnotes* 19 (Oct. 1974): 7.

<sup>100</sup>Sitney, "Harry Smith Interview," 101.

One key issue Smith wanted the *Anthology* to redress through its combination of premodern computation and Cold War cybernetics was racial prejudice. Music company executives of the late 1920s and early 1930s, such as Ralph Peer, had separated the discs that served as Smith's data by the color line. They placed music by white artists into the "hillbilly" genre (often regardless of ethnic group). Black music became "race" records. Smith himself, writing in 1952, did not approve. "Unfortunately," he wrote, "these unpleasant terms are still in use by some manufacturers."<sup>101</sup> His concept with the *Anthology* was to loosen musical sounds from the grip of these racialized labels. Each volume mingled recordings by race, region, and style as if to suggest buried connections and commonalities beyond conventional ethnographic orderings of folk sounds. "I think that in most preceding series," Smith explained of the original 78 rpm releases, "the racial background of the recorders had been rather carefully stipulated." On the *Anthology*, "that was not done." For Smith, this "proved an interesting psychological test" for anyone who claimed they could easily sort out what a performer's racial identity was.<sup>102</sup> Instead, flux, movement, and motion became the predominant themes of Smith's set.

The first volume, for instance, drew from songs with some kind of connection to folklorist Francis James Child's famous organization of British balladry—the so-called Child Ballads that Bertrand Bronson studied; however, even the first two songs Smith selected register the sonic influences of African diaspora and the Asian Pacific on folk music in the United States.<sup>103</sup> It was as if Smith wanted to capture the deep river of balladry in the Americas as these songs crossed the Atlantic from the British Isles and, at the same time, catch the growing presence of the African diaspora. Opening the *Anthology*, West Virginia coal miner Dick Justice's "Henry Lee," recorded for the Brunswick label in 1929 (but mistakenly listed in the *Anthology* liner notes as recorded in 1932), reflects the musical influence of African American blues on this Southern white performer. In the *Anthology* booklet, Smith noted the song's roots in Child Ballad 68, generally known as "Young Hunting," but Justice's version is indebted to Black musicians who he imitated, such as Luke Jordan: one can hear this in his sliding blues notes and an undercurrent of syncopation in the waltzing guitar of the track.<sup>104</sup> The second song on *Volume 1* of the *Anthology* was "Fatal Flower Garden," a descendent from Child Ballad 155. It was recorded for the Victor label in 1929 (released in 1930) by Nelstone's Hawaiians, a Southern Alabama group influenced by the slack guitar fad coming from Hawaii.<sup>105</sup> Once again, Smith confounded notions of deep folkloric purity that had emerged with the folklore movement's racialized notions of the musical *volk*. In the United States, the *Anthology* seemed to suggest that the key dynamic was hybridity. Culture was already mixed up on these recordings. Through careful selection and sequencing of folk music data, Smith's point was to show how he was merely remixing what already was a program of continually adjusting elements in a powerfully miscegenated nation.<sup>106</sup>

*Volume II*, which is called *Social Music*, paid closer attention to the shifting instrumentation of folk music in America. Again, the emphasis was on how data from folk songs proposed clues

<sup>101</sup>*Anthology*, liner notes booklet, 1.

<sup>102</sup>*Sing-Out Program* with Barbara Dane, Irwin Silber, and Harry Smith, WBAI Radio, Apr. 27, 1965, Barbara Dane Collection, AFC 1980/001, SR034, American Folklife Center, Library of Congress.

<sup>103</sup>Francis James Child, *The English and Scottish Ballads* (Boston, 1866); Bertrand Harris Bronson, *The Traditional Tunes of the Child Ballads: With Their Texts, According to the Extant Records of Great Britain and America* (Princeton, NJ, 1959); Bertrand Harris Bronson, *The Singing Tradition of Child's Popular Ballads* (Princeton, NJ, 1976).

<sup>104</sup>Dick Justice, "Henry Lee" (Chicago: Brunswick Records, 1930). Justice is profiled in the second episode, "Blood and Soil," of the recent documentary film *American Epic*, dir. Bernard MacMahon (PBS, 2017).

<sup>105</sup>Nelstone's Hawaiians, "Fatal Flower Garden" (Camden, NJ: Victor Records, 1930). For more on the history of the influence of Hawaiian slack guitar on American music, see John W. Troutman, *Kika Kila: How the Hawaiian Steel Guitar Changed the Sound of Modern Music* (Chapel Hill, NC, 2016).

<sup>106</sup>For a critique of idealizations of the "mongrel past" in the culture of the United States, see Tavia Nyong'o, *The Amalgamation Waltz: Race, Performance, and the Ruses of Memory* (Minneapolis, 2009).

to deeper, separate traditions and, at the same time, documented the growing integration of styles across lines of racial difference. Of the first song, “Sail Away Lady,” performed by Uncles Bunt Stephens for the Columbia label in 1926, Smith wrote, “This performance is probably similar to much American dance music in the period between the Revolutionary and Civil War.”<sup>107</sup> He continued, “Although, by the 17th century, the banjo had been introduced to this continent from West Africa, the European settlers generally used the violin unaccompanied for dancing, and sang unaccompanied or with a violin only (see no. 13 in this set).” It was only the “increased social contacts of various kinds during the middle 19th century,” he contended, that then “popularized the violin-banjo combination.”<sup>108</sup> For Smith, the details he chronicles of commercial recordings from the 1920s and 1930s contained the vestiges of older separate practices and the irreducible mixing of transatlantic forces thereafter. The sounds, broken down and analyzed, revealed the separate origins of American folk music in the British Isles and Africa, yet also showed their fundamental combination into something new. Presented as “social music,” it allowed listeners to ponder the hybridized qualities of American folk music.

On the next *Social Music* track, the focus on instrumentation and its contextual factors—social music and its social causes—continued. This time, Smith added an awareness of the Caribbean and traced back to Europe the Iberian influences on U.S. music. He signaled again that these deep forces also included more modern factors such as imperial conflicts at the turn of the twentieth century. He wrote of “The Wild Wagoner,” recorded by the Jilson Setters (JW Day) in 1928 for Victor, “The use of guitar became widespread in this country about 1900; probably the result of cultural exchange during the Spanish American War.”<sup>109</sup> Folk music in America, treated as data and then arranged into a new, artistic order on the *Anthology*, almost continually restated the point Smith made in his foreword: these commercial recordings tracked backward into a deep, premodern past yet also caught in their scratchy grooves the growing integration of cultural forces. New hybrids of sound at once preserved and blurred lines of race and region. If these sounds from the 1920s and 1930s, processed as data, revealed the dynamic intermixing of African, European, and other ethnic sounds in a mongrel America, then, to Smith, they suggested as well that the modern United States could continue to change and adjust.<sup>110</sup> “Before the *Anthology*,” Smith explained,

there had been a tendency in which records were lumped into blues catalogs or hillbilly catalogs, and everybody was having blindfold tests to prove they could tell which was which. That’s why there’s no such indication of that sort (color/racial) in the albums [of the *Anthology*]. I wanted to see how well certain jazz critics did on the blindfold test. They all did horribly.<sup>111</sup>

If Alan Lomax perceived folk music as a form of “redundancy,” Smith understood it as almost the opposite thing: continual renewal. If arranged through computational strategies of programming the mind, folk music dynamism created endless feedback loops of reorientation. He wanted to unfix the history of race and region as codified in American folksong by using the very data of sound recordings that, as Karl Hagstrom Miller contends, helped to put a

<sup>107</sup>“Uncle Bunt” Stephens, “Sail Away Lady,” Columbia 15071-D, 1926; Smith, *Anthology*, liner notes booklet, 7.

<sup>108</sup>*Anthology*, liner notes booklet, 7.

<sup>109</sup>Jilson Setters (JW Day), “The Wild Wagoner,” Victor BVE-42485, 1928; Smith, *Anthology*, liner notes booklet, 7.

<sup>110</sup>Smith’s computational arrangements on the *Anthology* anticipate the arguments about modern working-class hybridity on ethnic commercial recordings of the 1920s and 1930s found in Michael Denning, *Noise Uprising: The Audiopolitics of a World Musical Revolution* (New York, 2015).

<sup>111</sup>Cohen, “A Rare Interview with Harry Smith, Part One,” 10.

sonic color line in place in the first place.<sup>112</sup> Smith thought that if one unloosed the music from existing racial categories, deeper social connections might emerge. Most of all, a kind of seething and mutating aliveness of possibility arose from the repatterning of musical data. Smith's *Anthology* was a machine that continuously spat out new potential correlations. Rather than fix ethnicity in anthropological place, as Lomax's Cantometrics threatened to do, Smith hoped his compilation would whirl with mysterious ripples, undercurrents, and riptides. There was a tension, however, on the *Anthology* between the singularity, the irreducibility, of songs and their makers, on the one hand, and their potential to be pieces of a larger puzzle that only Smith could discern, on the other. The actual folk musicians became mere characters in his project, datapoints in his data analysis. Smith wanted to correlate the earthly vernacular to the heavenly perfected, but turning culture into data in fact required leaving ethnographic specificity behind for symbolic representation. It was his own organizational whole that mattered more to Smith than any specific song or its performer, audience, or context. While Smith clearly loved the *sounds* of these old records, he was not focused on the people who made them. Re-presented along the celestial monochord, songs threatened to lift away from the lives of their singers and became mere fodder for Smith's cybernetic recalculations. The distinctive embeddedness of musical sounds and forms was subordinated to the power of the interpreter, who was the only one capable of wielding them magically once they were transmuted into pliable data. As Smith put it, his goal was "correlating music into some kind of a visual thing, into some kind of a diagram," but "being as my essential interest in music was the patterning that occurred in it.... It was just as well to collect some other object."<sup>113</sup> To him, "I'm sure that if you could collect sufficient patchwork quilts from the same people who made the records you could figure out just about anything you can from the music."<sup>114</sup> The people who had originally generated these folk sounds were less crucial than the wizardry of the remixer casting sonic spells into new incantations.

In this way the *Anthology* struggled to realize fully its cybernetic hopes of producing a democratic sense of American culture. As critic Greil Marcus has contended, drawing on the scholarship of Robert Cantwell and a phrase coined by the poet and critic Kenneth Rexroth, Smith seemed to access an "old, weird America" from vestiges of an "old, free" one.<sup>115</sup> Yet to do so, the *Anthology* privileged Smith as mediator rather than giving primacy to the voices and sounds he sought to mediate. Instead of honoring the makers of American folk music as people aspiring to become free citizens in an egalitarian republic of harsh dissonances (such as slavery) and occasional social harmonies, he reprocessed them into an informatics of weirdness. Reaching back not only to commercial 78 recordings of the late 1920s and early 1930s, but also to deeper histories of neo-Platonic and neo-Pythagorean protoscience, Smith pushed computation in democratic and radical directions, but he could not throttle entirely beyond the gravitational pull of his own times, with their continued problems of racism. The dream of the endless regeneration of distinctive sounds slipped into the forced compatibilities of systems theory. People and the music they made became data, abstracted sounds whose main purpose was to be fed into the *Anthology's* alchemical computer. The mosaic of a computational democracy—a multicultural nation brought together to revel in its infinitely relational possibilities—spun into view on the *Anthology*, but then it disappeared again into the mystically elliptical computations of its own cybernetic design.

<sup>112</sup>Karl Hagstrom Miller, *Segregating Sound: Inventing Folk and Pop Music in the Age of Jim Crow* (Durham, NC, 2010).

<sup>113</sup>Cohen, "A Rare Interview with Harry Smith, Part One," 10.

<sup>114</sup>*Ibid.*

<sup>115</sup>Greil Marcus, *The Old, Weird America: The World of Bob Dylan's Basement Tapes* (originally published as *Invisible Republic: Bob Dylan's Basement Tapes*) (1997; New York, 2011); Cantwell, *When We Were Good*; Kenneth Rexroth, "'From a Very Good Man': Review of *Letters of Carl Sandburg*," *New York Times Book Review*, Sept. 28, 1969, 8.

### The Global Jukebox, the Celestial Monochord, and the Digital Sublime

Speaking about Cantometrics in 1976, Alan Lomax thought of nothing less than the celestial monochord, the very same instrument that graced the cover of Harry Smith's *Anthology of American Folk Music* in 1952. "Because of his experiments with the stretched string," Lomax remarked, Plato "had judged music to be the expression of the absolute."<sup>116</sup> Lomax, however, had no interest in plucking this philosophical zither. Cantometrics sought "to reverse the Platonic position." His system of analysis would "show that music and the arts represent the absolute center of human culture, the center of humanness."<sup>117</sup> The point was not, as Smith did, to reach for the heavens with folksong, but rather to emphasize the human use of music. For Lomax, Cantometrics did not strike the celestial tones of the heavens, but rather the material realities of a more quotidian, Aristotelian empiricism. He argued that if treated as anthropological data and handled computationally, musical styles revealed not some abstract ideal, but rather the more prosaic, yet equally beautiful, "human technique of adaptation ... tested out across some human terrain."<sup>118</sup> Smith, by contrast, saw his computational curation of data as an act of transcendent recomposition, a reshuffling of folksong data into a feedback system producing ever-changing glimpses of a higher order at work in the world. "I'm trying to found new sciences to entirely overhaul anthropology and turn it into something else," he told interviewer John Cohen.<sup>119</sup>

Despite their differences, the projects of Lomax and Smith shared a problem: both ultimately treated musical data as interchangeable. The actual songs, performers, and audiences mattered less in the end than the arrangements each interpreter's system produced. Datasets trumped distinctiveness. Songs were transpositional and modular—parts in a larger machine. Compatibility was more crucial than particularity, and comparability more important than any unique singularities found in specific performances. The amassing of music mattered more than any one example. Here were many songs, many performers, many song styles, lots of characteristics, an overwhelming amount of examples, potential connections, and possible relationalities. The result of these immense amalgamations was a sense of the *sublime*. Lomax and Smith took us into an immense vista of information, what Immanuel Kant referred to as the "mathematical sublime."<sup>120</sup> They used computers to seek out meaning in large amounts of information. This not only harkened back to Kant, but also fit into what postwar scholars such as Perry Miller and Leo Marx (writing at the same time as Lomax and Smith were developing their projects) called the American "technological sublime."<sup>121</sup> Like the American writer Henry Adams a few decades before them, so too for Lomax and Smith: the dynamo had replaced the Virgin, the machines the Church.<sup>122</sup> Yet as befits the sublime, a spirituality persisted in their numerical efforts, an urge to establish a pastoral balance between the folkloric and the computational, between folk music's ancient banjo strums and the hum of the mainframe.

Lomax and Smith pictured the application of computation to folk music at the very moment when computers were becoming a core technological component of America's global imperial

<sup>116</sup> Alan Lomax, *Alan Lomax and Conrad Arensberg Give AAAS Lecture on Cantometrics (part 1)*, Feb. 21, 1976, Cassette Tape T3784A, Track 1, Discussions, Lectures, and Interviews, Alan Lomax Digital Archive, <https://archive.culturalequity.org/node/62913> (accessed Jan. 20, 2023).

<sup>117</sup> *Ibid.*

<sup>118</sup> Lomax, *Alan Lomax and Conrad Arensberg Give AAAS Lecture on Cantometrics (part 1)*.

<sup>119</sup> John Cohen, "A Rare Interview with Harry Smith, Part Two," *Sing Out!* 19, no. 2 (July/Aug. 1969): 24.

<sup>120</sup> Immanuel Kant, *Critique of Judgment*, trans. J. H. Bernard (1790; trans., 1892; Mineola, NY, 2005), 81.

<sup>121</sup> Leo Marx, *The Machine in the Garden: Technology and the Pastoral Ideal in America* (New York, 1964); Perry Miller, *The Life of the Mind in America: From the Revolution to the Civil War* (New York, 1965). See also, David Nye, *American Technological Sublime* (Cambridge, MA, 1994).

<sup>122</sup> Henry Adams, "The Dynamo and the Virgin," in *The Education of Henry Adams* (1918; New York, 1983), 379–90.

power. Their projects participated in an atmosphere of growing American technological domination after World War II.<sup>123</sup> Yet both Lomax and Smith also sought out alternative, subversive, and even at times transformative uses of computing. Sharing an antifascist, radically democratic ethos, they each hoped to apply the all-purpose analytic capacities of computational processing not to consolidate but rather to amplify the interdependence of vernacular cultures expressed by everyday people around the world. With *Cantometrics* and the *Anthology*, we sometimes feel bewildered sensorially in the face of the scales of data that humans cannot process. This can be beautiful, for it reminds us that we can never truly master them except through what Kant calls “supersensible” reason. We can seek unities across vast diversities, and honor diversities within a larger potential unity. Which is to say that while the sublime can be paralyzing to the senses, it can also activate the potential of human reason to make sense of the world.

This was certainly the case with Lomax and Smith, who strived to access and process the dizzying registers of vernacular musical culture-as-data in Cold War America. Their efforts serve as precursors—and perhaps as warnings—for contemporary fields such as artificial intelligence, machine learning, data analytics, informatics, and digital humanities in the twenty-first century.<sup>124</sup> One might also think of their work anticipating what Victor Mosco calls the contemporary “digital sublime.”<sup>125</sup> As digital data become the main forms and content of humanistic inquiry, might we be able to bring together the computational approach of Lomax’s expansive statistical analysis with the recompositional tactics of Smith’s remix artistry? Can the scales of “big data” handled statistically be matched by a quirky attention to data’s particularities and recombinant potentialities? How do we pay attention to the humans making the noise, each in their own way, yet also singing out across the wires of global modernity? Perhaps, oddly, these new computational technologies are not so different from cultural heritage itself. Both imagine human culture as deep oceans of anonymized data operating at the level of the species, the group, the collective, the epic. Both then seek, almost obsessively, to identify authenticity, truth, and essence at scale. The danger is that the computation and cultural heritage might totalize in service of a domineering mastery. The dream is that, if coded properly, they might democratize in service of equitable diversity. To drop another coin into the slot of Lomax’s *Cantometric* global jukebox and strum again Smith’s cyberneticized celestial monochord is to notice that futuristic, new ideas about computation might be linked to very old, ancient notions of tradition. We listen back to Lomax and Smith and the voices they themselves listened back to and then computed to try to keep a human hand in the digital sublime.

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<sup>123</sup>Bhakti Shringarpure, *Cold War Assemblages: Decolonization to Digital* (New York, 2019).

<sup>124</sup>See warnings such as Wendy Hui Kyong Chun et al., “The Dark Side of the Digital Humanities,” in *Debates in the Digital Humanities 2016*, eds. Matthew K. Gold and Lauren F. Klein (Minneapolis, 2016), <https://dhdebates.gc.cuny.edu/read/65be1a40-6473-4d9e-ba75-6380e5a72138/section/ca35736b-0020-4ac6-9ce7-88c6e9ff1bba#ch38> (accessed Jan. 24, 2024).

<sup>125</sup>Vincent Mosco, *The Digital Sublime: Myth, Power, and Cyberspace* (Cambridge, MA, 2005).