The Origins of Ethnographic Sound Recording, 1878-1892
Patrick Feaster

The history of ethnographic sound recording in general has been explored by various researchers, most notably Erika Brady. However, the earliest period is so remote in time and so tightly interconnected with the complexities of the early phonograph industry that it has inevitably remained somewhat obscure and mysterious. This essay will survey some of the “firsts,” emphasizing how early recordists sought to challenge both the technological and contractual limits of sound recording in order to further their goals.

The documentation of languages was one of the many uses envisioned for the phonograph during the first few months of speculation into how the new machine was going to change life, the universe, and everything. In an interview of April 19, 1878, Thomas Edison stated:

I saw the president of the American Philological Society the other day... He wants one of my improved phonographs to preserve the accents of the Onondagas and Tuscaroras, who are dying out. One old man speaks the language fluently and correctly, and he is afraid that he will die. You see, one man goes among the Indians and represents the pronunciation of their words by English syllables. Another represents the same words differently. There is nothing definite. The phonograph will preserve the exact pronunciation. The president of the Philological Society means to travel with it among all of the North American tribes.

Lisa Gitelman draws attention to this interview while exploring how recordings in the earliest period were perceived as “souvenirs” in various senses, but it may also mark the first proposal for an ethnographic sound-recording project. The anonymous “president” was possibly J. Hammond Trumbull, a student of Native American linguistics and member of the American Philological Association’s executive board who, as president in 1874-75, had addressed the society’s annual meeting with concerns similar to those cited by Edison. Whoever it was, the idea of ethnographic sound recording was present, if not the actual practice. “Suppose Stanley had had one,” one editor enthused shortly after this, “and thus obtained for the world all the dialects of Central Africa.”

Easier said than done—the phonograph of 1878 was designed merely to demonstrate the principles of sound recording and playback, even if some scientists did use it in earnest to study the acoustics of speech. The user wrapped a sheet of tinfoil around a pre-grooved cylinder, and sound (Continued on page three)

From the Director
Daniel B. Reed

In February 2002, Mike Casey moved to Bloomington from Carrboro, NC to become the ATM’s first-ever, full-time Coordinator of Recording Services. Mike comes to us with a breadth and depth of interests and experience that combine to make him ideal for this position. From 1987 until 1998, Mike worked in several capacities at one of the leading sound archives in the United States—the Southern Folklife Collection (SFC) at the University of North Carolina at Chapel Hill. Mike also holds an M.A. in Folklore from UNC-Chapel Hill, and is a performing musician, specializing in traditional Irish flute. Mike
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waves were recorded by indenting the foil into the groove. Once the tinfoil was removed, it could not easily be played again even on the same machine, much less another one. Adapting this instrument to serious fieldwork would have been a daunting task, but at least one explorer wanted to try, as reported in 1884:

An interesting experiment is to be made by Dr. [Eugen] Zintgraff, who, in company with Dr. [Josef] Chavanne, is about to visit the Congo and the interior of Africa. He takes with him a phonograph, wherewith to fix the speech and melodies of hitherto unknown tribes, which, thus received by the instrument, will be forwarded to scientific men in Germany. The apparatus (which will be used for such a purpose for the first time) has been made by Mr. Fuhrmann, of Berlin, and exactly corresponds with one he has in that city, so that the plates used in Africa can be sent to Berlin to be unrolled by that machine, and caused to re-emit the sounds received.7

Zintgraff had considered the logistics of field recording enough to have two identical phonographs built at a time when machines were not standardized and recordings were not generally interchangeable. The plan probably fell through, despite later statements to the contrary,8 since the reports that resulted from the expedition never mention a phonograph. Nevertheless, the popular press reported and commented on the idea, even alleging that the travelers' true intention was to establish themselves as supreme rulers in Central Africa through the introduction of a “phonograph god” uttering orders on their behalf.9 Felix von Luschan later claimed he had envisioned using the phonograph in anthropology in 1878-9 and had seriously considered doing so around 1885-6, but had found the technology insufficiently developed and was told that “such things belonged at a fair and not in the museum.”10

Permanent, interchangeable field recordings became possible with the introduction of two competing machines in the latter half of the 1880s: the Bell-Tainter graphophone and Edison's wax-cylinder phonograph. Material of a superficially “ethnographic” character was soon being recorded. Several British newspaper articles described a set of Native American cylinder recordings on November 2, 1888, within a few months of Edison's new machine crossing the Atlantic, but these were not exactly ethnological in intent, presuming they even existed and were not a journalistic hoax. In connection with a legal dispute over the trademark “Ko-ko” in Great Britain, some American industrialists had supposedly induced “a Chippewa Indian from the ‘Wild West’...to travel to New York to speak to the phonograph his pronunciation of ‘Ko-ko,’ which is the war cry of his tribe, and an imitation of the owl's nightly screech.” Edison had sent these cylinders to his agent in England, and they were to be provided to the plaintiff to establish in court “the meaning and pronunciation of the words ‘Ko-ko-k”11 Buffalo Bill’s Wild West Show visited Paris the following year, and on May 23, 1889, its general agent took “a large number of his Indians” to visit the Exposition Universelle, which featured one of Edison's phonographs. While there, Red Shirt recorded a message in Sioux—complete with war whoop—for Rocky Bear, who was reportedly so unnerved on hearing it that he asked to return to camp.12 The explorer De Brazza also brought representatives of several African groups, who similarly made recordings of their speech.13

But the person responsible for initiating the first unambiguously ethnographic sound recording was probably Mary Hemenway, sponsor of the Hemenway Southwestern Archaeological Expedition. George Parsons Lathrop, a phonograph promoter who also tried to collaborate with Edison on a science fiction novel,14 had eagerly solicited Hemenway as a potential investor, even arranging a special exhibition of the still-experimental machine at her home.15 She ended up buying 150 shares in the Edison Phonograph

A Bell-Tainter graphophone, as depicted in the Kansas City Times (January 8, 1889)
Company on June 7, 1888. Lathrop had apparently played up Edison’s interest in the Southwestern Expedition during negotiations, and on August 16th Hemenway’s secretary, Sylvester Baxter, reminded the inventor of a promise to give the expedition two phonographs as soon as regular production began. One was to be used by the expedition director, Frank Cushing, “in his work of securing the rituals of the Zuñis in their own language.” On November 30, Cushing himself wrote to Edison: “Even in the wild countries we have been exploring, I have heard much of your great discovery in its improved form, from Mrs. Hemenway and other friends! Naturally, I was enthusiastic when I learned that one of the Phonographs was, when perfected, to come to us, for I recognised in it the only possible instrumentality for the preservation in their entirety, of the Ancient rituals of the Zuñi which I had been studying for so long.”

At the end of December, Baxter told Edison to postpone shipping a phonograph to New Mexico, because Cushing was elsewhere and ill. But on May 26, 1889, John Bourke observed that Cushing “had a graphophone from which he extracted the words of Zuñi, Apache, and Navajo dances, to Sara’s [i.e., Bourke’s daughter’s] undisguised horror and astonishment.” Considering the earlier correspondence of Baxter and Cushing with Edison, there is little reason for doubting Cushing had obtained an instrument for ethnographic purposes. Jesse Walter Fewkes, Cushing’s successor as director of the expedition, made a preliminary trip to the southwest that same year. He later wrote:

On my first visit to the pueblo, in 1889, it occurred to me that I might employ the phonograph or graphophone as a means of permanently recording the Zuñi music. I had heard the same plan suggested by others, and have lately been informed that the idea of preserving Indian languages by the use of the phonograph had been in the minds of many ethnologists, but that they looked upon this instrument, in its present condition, as too imperfect to be of value. Up to the time of my experimental work in this direction, I am unaware that any systematic attempts to preserve aboriginal languages by this instrument, or to test it for this purpose, had been made.

In a private letter to Edison, Fewkes was more explicit about the source of his inspiration: “Through Mrs. Hemenway of Boston, I became interested in using the phonograph in the preservation of the music and languages of the American Indians.” In his use of the phonograph, he was carrying out a plan that Hemenway, Cushing and Baxter had formulated months before.

Fewkes’ first efforts, believed to be the oldest surviving ethnographic sound recordings anywhere, were the cylinders of Passamaquoddy stories and songs he recorded from individuals in Maine on March 15–18, 1890, mainly to try out the technology. Satisfied with this experiment, he made his next recordings that summer at Zuñi, using equipment rented from the local Kansas Phonograph Company—at that time, different companies owned the leasing and exhibition rights to the phonograph and graphophone in different parts of the country, and this applied to machines used in ethnographic research just as much as to those used for business dictation. Worried that the Zuñians would object to the presence of a conspicuous recording “megaphone” during their ceremonies, Fewkes invited select individuals to perform the songs separately for recording and checked the results for authenticity by playing them back and having other individuals identify the songs by ear. His most pressing equipment-related concern was portability. He had found it “expedient” to choose a treadle-operated phonograph, rather than a battery-powered one, but feared this would mean sacrificing consistency of recording speed. After returning from the field in 1890, Fewkes learned that there were “portable, compact batteries, which could be readily carried over the rough mountain trails leading to the pueblo.” The next summer, when starting his Hopi work, he wrote to Edison looking to get a lightweight phonograph designed specifically for field recording:

If I could get a compact phonograph, after the nature of a Kodak camera, which I could carry with me it would be a very great advantage to me. An electro-motor is out of the question in Ethnological work especially when one is a hundred miles from the railroad as I now am. A treadle machine is very cumbersome. If you could have a small compact box machine, with hand motor it would be a great help to me and I should be glad to purchase it if such a thing is possible.
He was also unhappy about having to rent equipment from different companies depending on where he did his work—now he was in the Pacific Phonograph Company’s territory. According to Benjamin Ives Gilman, who transcribed Fewkes’ various southwestern recordings for publication, the machine used to make the Hopi recordings of 1891 was run by a storage battery, so apparently Fewkes did use an electro-motor after all. However, he is not known to have made any field recordings after these, and the Kodak-like recording apparatus he envisioned was not to emerge for some years.

What were Fewkes’ hopes for his sound recordings? In his article on the Passamaquoddy material, he suggests that the phonograph would obviate the difficulty of transcribing the “inflections, accents, and gutturals” of Native American languages on paper, since through it languages could be “permanently perpetuated” with all their elusive nuances—basically the same ideal that had been expressed in 1878. Although Fewkes transcribed and translated material for publication and stressed the phonograph’s utility as an aid in transcription, he also envisioned readers having access to the recordings themselves. He played them himself in conjunction with popular and scientific lectures in or before 1891.

It was Benjamin Ives Gilman who focused on devising and describing a scientifically rigorous method for transcribing and analyzing phonograms. He made experimental recordings of notes played on a harmonium to determine whether “phonographic aberration” would noticeably distort musical pitch. He found that treadle phonographs were accurate within a quarter tone, unless the operator got tired and stopped treadling; the electro-motor phonograph proved accurate within an eighth of a tone. A slight wavering in pitch was still troublesome, but he argued that phonographic specimens were as faithful to their originals as “casts or photographs of sculpture or painting.” Consequently, he felt justified in transcribing minute pitch “discrepancies” as evidence of intervallic relationships independent of the Western scale. He soon had an opportunity to make recordings of his own. On March 17, 1891, Frederick Starr took Gilman to a Chinese home in New York to record two musicians, and a few days later he recorded two other Chinese performers in Starr’s apartment. At the end of April, he wrote to Edison that he was busy studying these records at Columbia College and requested a meeting to discuss how he might improve his results, “whether by special construction or special methods of use.”

Gilman became a major proponent of sound recording as a tool in comparative musicology, as well as a prime target for opponents of the idea. The recordings he made in 1893 at the Columbian World’s Exposition—sponsored by our acquaintance Mary Hemenway—are well known today.

Several other experiments are known to have been made with ethnographic recording in or before 1892, and I have no doubt that even more will be rediscovered as time goes by. Although better known for her later recordings, Alice Fletcher had begun using the Bell-Tainter graphophone “for the registry of Indian music” sometime before March, 1891. At that time, she wrote to Alexander Graham Bell upset about the sudden obsolescence of her medium of choice: “It has already occurred that persons to whom I have sent rolls cannot get them reproduced because Agents of the Consolidated Graphophone and Phonograph Co. say that the Graphophone is now supplanted by the phonograph. This is unfortunate for field-workers as the former instrument in its simplicity and efficiency promised to do much.” Other early cases that would benefit from further study include some cylinders of Zulu music recorded by the Columbia Phonograph Company for G. Brown Goode of the National Museum in October, 1892, and the plan by L. A. Lee to take a phonograph to the Arctic in 1891 and to record “Esquimaux songs and language” in company with Franz Boas.
The most widely discussed “field recording” project of the early 1890s was not primarily ethnographic in intent, although it did face challenges and obstacles similar to those described by Fewkes and the rest. Richard Lynch Garner began his study of the sounds made by monkeys at the Cincinnati Zoological Garden in 1884, hoping to learn their “language,” but had serious difficulty transcribing and repeating the sounds. “At last came the Edison phonograph,” he later told an interviewer for Harper’s Weekly. “I was being shipwrecked, when this wonderful machine saved me. I spent a sleepless night when the possibilities of such a recording instrument were first mooted. I made use of it at once.”

He went to Washington and explained his ideas about primate speech to Frank Baker, acting manager of the Smithsonian Institution’s National Zoological Park. His first experiments were made there with a Bell-Tainter graphophone in or before September, 1890, to see whether one monkey would respond to a recording of sounds made by the other. Baker dismissed the results as wholly inconclusive, but Garner persevered. Further recordings followed at zoos in New York, Chicago and Cincinnati, for which he experimented with both graphophone and phonograph. His dream was to take a phonograph to Africa, where he could record both gorilla sounds and native human languages and attempt to place these into an evolutionary continuum.

Garner first wrote to Edison on July 27, 1891, with a few technical questions. When using the graphophone, he found it useful to be able to put cylinders on the mandrel backwards, reversing recordings for analysis, but Edison’s phonograph used a tapered mandrel on which cylinders would only fit in one direction. Garner wanted a special machine with a detachable or non-tapered mandrel. He also sought assurances about the terms on which he would be permitted to use the machine: “on my return I should want to use the phonograph in lectures, to deliver to an audience the original sounds secured in the wilds of Africa, and I should not want to be barred this use of it, either by any territorial limits or by reason of prices demanded for it.”

After nearly a month with no reply, Garner wrote again, urging that his project was “a matter of great importance to me, and possibly to the future of the phonograph.”

Finally Edison’s secretary replied, explaining that the inventor had been out of town but was interested in Garner’s work and astonished that he had obtained any results at all from the machines then on the market. He directed Garner to clear his project with the Edison United Phonograph Company, which had Africa as part of its exclusive territory. If that could be arranged, Edison thought he would be able to supply Garner with a phonograph “twenty times more sensitive and accurate than any yet made,” one that could record continuously for fifteen minutes.

In December, Garner reported that he had obtained the necessary permission (in fact he hadn’t), and he now requested further adaptations for his field recording equipment. In order for him to reproduce recordings and record responses simultaneously, he wanted Edison to devise a special phonograph with two mandrels—one with a recording diaphragm, the other with a reproducing diaphragm—both connected to a single horn, for which Garner enclosed schematic drawings. He had also been advised that it would be difficult to haul a battery around Africa, so he requested a clockwork phonograph that would run four or five hours per winding. Finally, he asked whether Edison could supply lighter, more rugged cylinders like the ozoerite-coated paper tubes used on the graphophone. Edison jotted down a note for his secretary to invite Garner to spend a day with an expert at the laboratory “to experiment & learn just what he wants.”

Whatever the result of these experiments may have been, Garner obtained testimonials from Edison and other prominent figures—including President Grover Cleveland—and proceeded to solicit funds for his “phonograph of special make” and other gadgetry through loans to be backed by future income from lectures or a $10,000 life insurance policy, depending on how things went. He was also busy collecting “phonograms which contain letters of introduction to savage tribes” to ease his travel: by June, 1892, he had a cylinder spoken in Ki-Congo from E. J. Glave of the Stanley expedition, and he hoped to obtain others.

But the owners of the European phonograph patent rights, which extended to Africa, would neither sell nor lease Garner a machine. He accordingly had to abandon his plans for the phonograph in Africa at the last minute: “the avarice of a few men makes science hide her head in shame, while they strangle her babes and cut off her posterity,” he thundered. Writing to Edison from the French Congo, he sorely regretted the lost opportunity: “Every cylinder recorded here would be
studied all over the civilized world by philologists, linguists and students of acoustics... If I had the machine and 600 or 800 hours of battery I could record the whole coast of Africa from Cape Palmas to the Congo, and many of these native tongues are as interesting and valuable as the speech of apes.” The main problem would have been averted, he claimed, “if I could have had a diaphragm,” but no English workmen “were willing to undertake it only as experimental work at heavy cost.” Elsewhere he complained that “the letters patent under which [the phonograph] is protected preclude all competition and prevent improvements.” These statements suggest that Garner’s obstacle may not have been obtaining a phonograph so much as having one built to his own quirky specifications.

The organization of the early phonograph industry into companies owning exclusive territorial rights seems to have complicated many of the early efforts at ethnographic recording. Researchers could not simply buy phonographs and take them along on their expeditions. At the same time, these pioneering recordists were more creative in their ideas about adapting and improving equipment for their purposes than is generally recognized. Whether the industry took their suggestions seriously or not, they were far from being uncritical consumers of technology.

Notes

15. Lathrop to Edison, May 27, 1888 (TAE 124:135).16. Tate to Gray, June 7, 1888 (TAE 139:2). The “Hemenway stock” caused some inconvenient wrinkles when Edison sold his interest in the company to Jesse Lippincott a few weeks later. Lippincott ended up buying her stock for $1200 more than she had paid; see Lippincott to Edison, Dec. 26, 1889 (TAE 128:40).
22. Fewkes to Edison, June 17, 1891 (TAE 130:827-30).
23. FCP 2:221-32.