The Berliner Phonogramm-Archiv and the Emergence of Comparative Musicology

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ABSTRACT

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This dissertation examines the early history of the Berliner Phonogramm-Archiv (Berlin Phonogram Archive) and its role in the institutionalization of comparative musicology. The Berliner Phonogramm-Archiv was established in 1900 by psychologist Carl Stumpf in order to collect and preserve the phonographic recordings of non-European musics that would serve as the primary research materials for the then nascent discipline of comparative musicology.

I situate the formation of the Phonogramm-Archiv and the emergence of comparative musicology within the historical contexts of the German cultural sciences and colonialism, and argue that both archive and discipline were informed as much by this immediate intellectual and political background as they were by the arrival of sound recording technologies in Germany. I explore how the other cultural sciences, primarily anthropology and ethnology, served as a model for comparative musicology’s methodological and epistemological framework, as well as for the strategies employed for expanding the Phonogramm-Archiv’s collection. As a cultural science, comparative musicology was governed by the tenet of scientific objectivity, and in sound recording, Stumpf found a means with which it was possible to engage with non-European musics objectively. Yet the scientific method also required the comparison of many different examples in order to determine laws through induction, which necessitated the collection of
recordings of as many different musics as possible. In this dissertation, I demonstrate how the Phonogramm-Archiv’s mission to amass recordings and the comparative musicological project these recordings facilitated were both enabled by and dependent on the German colonial apparatus.
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to my parents

and

in loving memory of

Diana Ientile (1959–2012)
Upon learning of the advent of the phonograph in 1877, *Scientific American* issued an enthusiastic response, in which its author remarked:

That the voices of those who departed before the invention of the wonderful apparatus . . . are for ever stilled is too obvious a truth; but whoever has spoken or whoever may speak into the mouthpiece of the phonograph, and whose words are recorded by it, has the assurance that his speech may be reproduced audibly in his own tones long after he himself has turned to dust . . . Speech has become, as it were, immortal.¹

Key to this account is the acknowledgment of the phonograph’s capacity for preservation, a quality that was not lost on the device’s inventor, Thomas Edison. In an article published a few months later, Edison informed his readers that “for the purposes of preserving the sayings, the

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voices, and *the last words* of the dying member of the family—as of great men—the phonograph will unquestionably outrank the photograph,” declaring as well that “it will henceforth be possible to preserve for future generations the voices as well as the words of our Washingtons, our Lincolns, our Gladstones, etc., and to have them give us their ‘greatest effort’ in every town and hamlet in the country, upon our holidays.”

The “voices of the dead” became a trope of sorts in writings about sound recording and even in advertising as a commercial industry for sound—particularly music—recording emerged in the United States around the turn of the century and began to blossom. A Victor Talking Machine Company advertisement from 1918, for example, depicts a woman on stage singing confidently and expressively to a full house as a spectral form lurks behind, her mouth barely open and her posture hunched in concession of defeat (Figure 0.1). From the text below the image, we learn that the women depicted are Jenny Lind (1820–87)—the so-called Swedish Nightingale—and Dame Nellie Melba (1861–1931). The apparition is Lind, who, having died before she could be recorded, survives only in (silent) ghostly memory. Melba, on the other hand, who is commanding the center of the image, will live forever, the sound of her singing voice preserved in the grooves of a Victor record. Whereas before, the advertisement implies, the voice had been fleeting and “mortal,” in the age of sound recording, the voice may resound forever—it has become “immortal.”

Jonathan Sterne locates such thinking within the broader culture of preservation that arose in the United States with the development of effective methods for canning food and embalming human corpses. These practices became increasingly widespread during the American Civil War, as they facilitated the transport of both foodstuffs and the bodies of the fallen across vast...
distances without risk of immediate decay. Claims to the “immortality” of the voice thus posited sound recording as a kind of analogue to embalming, wherein the physical recording functioned as a “resonant tomb” from which the voice could speak or sing according to the will of a desiring auditor; however, such statements did not in fact reflect the actual experience of sound recording, for, as Sterne observes, the recordings were themselves ephemera. Phonographic cylinders would effectively disintegrate as the stylus traced their grooves and channeled the sounds they bore: the earliest recordings could be listened to only once, and even later cylinders made of a more durable wax would eventually wear out with repeated use. Although claims to the permanence of sound recordings were therefore inaccurate, their prevalence suggests a common expectation regarding the technology's future, one that, as Sterne argues, “promoted and gradually propelled technological and institutional innovation.” Preservation was a program for sound recording, and nowhere was this program of preservation more apparent than in the context of the sound archive, as preservation concerned not only the durability of the recorded cylinder, but also the scope of the archival mission.

In this dissertation, I examine the early history of one such archive, the *Berliner Phonogramm-Archiv* (Berlin Phonogram Archive), specifically as it relates to the institutionalization of the then nascent discipline of comparative musicology. Established in 1900 by psychologist Carl

4. Ibid., 298.
5. Ibid., 26.
Stumpf, the Berliner Phonogramm-Archiv is one of the world’s oldest sound archives, predated only by Vienna’s Phonogrammarchiv der kaiserlichen Akademie der Wissenschaften (Phonogram Archive of the Imperial Academy of Sciences), which was founded on 27 April 1899. From its beginning, the Berliner Phonogramm-Archiv’s focus was on the documentation and preservation of non-European musics in support of the scholarly endeavor to study the world’s musical cultures. Writing shortly before his flight from Germany in 1933, Erich Moritz von Hornbostel, director of the Phonogramm-Archiv from 1905, recalled that “the program of the archive was a foregone conclusion: the aim was to collect the musical utterances—fading rapidly in the face of all-leveling civilization—from all peoples of the Earth and to make them available for comparative study in the fields of musicology, ethnomusicology, anthropology, Völkerspsychologie, and aesthetics”; yet it is for its association with the emergent discipline of comparative musicology that the Phonogramm-Archiv is best known today. I situate the establishment of comparative musicology in the context of the Teaching-Learning-Research Triangle in 19th-century Europe. In doing so, I also trace the rise of comparative musicology as a discipline.


musicology and the inception of the Phonogramm-Archiv within the historical contexts of German anthropology and colonialism, arguing that they were informed as much by the immediate intellectual and political background as by the arrival of sound recording technologies in Germany.

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The success of the Phonogramm-Archiv’s mission depended on its contributors being able to access the musical cultures that it was intended to document, access that was provided, in large part, by the colonial apparatus. The Phonogramm-Archiv was founded when the German colonial effort was in full swing and Germany had already become the third-largest colonial empire in the world (Map 1). Germany acquired its first colonies in the 1880s amid the aggressive European colonial expansion across the African continent known as the “Scramble for Africa.”

In 1884, Germany laid claim to three colonies—Deutsch-Südwestafrika ("German South West Africa"), Togoland, and Kamerun—and acquired Deutsch-Ostafrika ("German East Africa") the following year. At the same time, Germany’s colonial gaze was also directed toward the South

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9. According to Thomas Pakenham, this phrase was "apparently" coined in 1884, but I have not been able to locate the original source. Thomas Pakenham, *The Scramble for Africa: White Man's Conquest of the Dark Continent from 1876 to 1912* (New York: Avon Books, 1991), xxv.
MAP 1

Map of the German colonies in the mid-1890s.

Pacific: Kaiser Wilhelmsland (northeastern New Guinea), the first protectorate in the region, was established in 1884, followed by the Bismarck Archipelago, the northern Solomon Islands, and the Marshall Islands in 1885. (Germany’s colonial possessions in the South Seas would continue to increase over the next fifteen years, although Germany ceded much of her holdings in the Solomon Islands archipelago to Britain under the Tripartite Convention of 1899, in exchange for recognition of her claim to the western Samoan Islands.) German explorers, traders, and missionaries had long been active in both regions, but in many cases, the colonies were formally established in an effort to help protect these interests from Europe’s other colonial powers.10

With increased colonial presence in different parts of the world came new opportunities for enlarging the Phonogramm-Archiv’s collection of recordings, as ships were regularly transporting people between Europe and the colonies, making it far easier to have a non-European musician perform before a phonograph. Yet this expansion and increased circulation was also a source of anxiety, as the spread of Europeans—and of European cultures—to the rest of the world threatened ongoing cultural difference and thus the very traditions that the archive sought to document and study: “The hazard is great that rapid propagation of European culture will destroy even the last traces of foreign singing and saying,” Hornbostel wrote in 1905. “We must save whatever there is to save before the dirigible joins the automobile and electric high-speed train, and before we hear ‘Ta-ra-ra-boom-de-ay’ in all of Africa and the lovely song of the little Cohn

in the South Seas.” The Phonogramm-Archiv’s was thus a self-professed “salvage” mission, one driven by the desire to capture sonic traces of the “authentic” before its corruption by the unrelenting wave of Europeanization, and for Hornbostel, Stumpf, and others of similar mind, it was imperative that these disappearing musical artifacts be collected and preserved, “before,” as Eric Ames writes, “new technologies of transportation and communication delivered mass culture to the colonies.”

To engage the history of the Berliner Phonogramm-Archiv is also to engage the history of comparative musicology, as their beginnings were intertwined. In a sense, the founding of the Phonogramm-Archiv was accidental, a byproduct of Stumpf’s effort to refine the method for


Originally from the United States, “Ta-ra-ra-boom-de-ay” is a popular song that was made famous in the 1890s by the English music hall entertainer Lottie Collins. The “song of the little Cohn” to which Hornbostel was referring is likely “Hab’n Sie nicht den kleinen Cohn gesehn?” (Haven’t You Seen the Little Cohn?), a music hall song by Julius Einödshofer, first performed in 1902, whose title character quickly turned into an anti-Semitic icon. On the early performance history of “Ta-ra-ra-boom-de-ay” and its beginnings in blackface minstrelsy, see Melissa Bellanta, “‘Ta-ra-ra-boom-de-ay’: Lottie Collins’ Act and the Not-So-Modern Girl,” Nineteenth Century Theatre and Film 37, no. 1 (June 2010): 3–5. On “Hab’n Sie nicht den kleinen Cohn gesehn?” see Fritz Backhaus, “‘Hab’n sie nicht den kleinen Cohn gesehn?’ Ein Schlager der Jahrhundertwende,” in Abgestempelt: Judenfeindliche Postkarten, ed. Helmut Gold and Georg Heuberger (Heidelberg: Umschau/Braus, 1999), 235–40; and Marline Otte, Jewish Identities in German Popular Entertainment, 1890–1933 (Cambridge: Cambridge University Press, 2006), 240–41.


engaging with non-European musics within the context of scientific investigation. For Stumpf, comparative musicology was an example of what Woodruff D. Smith has termed the “cultural sciences,” those disciplines whose practitioners, following the example of natural scientists, studied culture with the aim of locating the laws that governed the human realm as revealed therein. In conceiving of comparative musicology as a science, Stumpf operated according to an already established epistemological framework, deliberately modeled after the natural sciences, that was governed above all by the tenet of objectivity. As Lorraine Daston and Peter Galison have demonstrated, scientific objectivity emerged in the mid-nineteenth century and quickly became the guiding principle for science. “Objectivity,” they write, “preserves the artifact or variation that would have been erased in the name of truth; it scruples to filter out the noise that undermines certainty. To be objective is to aspire to knowledge that bears no trace of the knower—knowledge unmarked by prejudice or skill, fantasy or judgment, wishing or striving. Objectivity is blind sight, seeing without inference, interpretation, or intelligence.” To practice an objective science was thus to practice a science that aspired toward a total absence of subjectivity, all the while remaining vigilant to the intrusion of the subjective self and curtailing that intrusion as much as possible. In a sense, then, to pursue objectivity was to engage in a technique of self-annihilation.


Broadly speaking, the subjective self that nineteenth-century scientists sought to subdue in the name of objectivity consisted of certain aspects of the self that they perceived as threats to scientific knowledge. Scientists feared “that the subjective self was prone to prettify, idealize, and, in the worst case, regularize observations to fit theoretical expectations: to see what it hoped to see.” As Daston and Galison observe, the “practices [of scientific objectivity], like all techniques of the self, cultivated certain aspects of the self at the expense of others. The will was at once the citadel of the subjective self and the sword and buckler of objectivity. It was the will straining against the will that gave objectivity its peculiar pathos, its tension between personal sacrifice and liberation from the personal, between active intervention in and passive registration of nature.” The distinction between objectivity and subjectivity was thus one of diametric opposition, the intervening chasm navigable only by willpower, and it was the scientist’s duty to realize the scientific self of objectivity through disciplined acts intended to curtail the impact of her will.

The pursuit of objectivity is a recurring theme in this dissertation, as it was a guiding force in the effort to institutionalize comparative musicology both as a discipline in its own right and as a recognized field within the larger cultural scientific project. The founding of the Phonogramm-Archiv was a crucial part of this effort, on the one hand because the repeatability of the sound recordings it was intended to house would reduce researchers’ reliance on memory as they

17. Ibid., 381.
18. Ibid., 38.
described, transcribed, and analyzed audible musical examples, and on the other hand because it
would allow scholars to consult examples of musics from any number of cultures in a single place
and consequently make it easier to evaluate them within the inductive, comparative framework
inherited from the natural sciences.

Stumpf was not alone in looking to the natural sciences as a model for the study of music. In
his 1885 essay “Umfang, Methode und Ziel der Musikwissenschaft” (Scope, Content, and Aim of
Musicology), for example, Guido Adler clearly aligned the methodology of musicology—and the
study of art in general—with that found in the natural sciences:

For the attainment of his main task, namely, the study of the laws of art in
different eras and their organic connection and development, the art historian will
employ the same method as the naturalist: preferably the inductive method. From
several examples, he will draw out those aspects that are common and separate
those that are different and will also make use of abstraction by disregarding
particular components of concrete conceptions and favoring others. Also, the
formulation of hypotheses is not precluded. A more detailed explanation of the
abovementioned is reserved for a special essay; the emphasis here lies in the
analogy between the method of the science of art and the method of natural
science.\footnote{Guido Adler, “Umfang, Methode und Ziel der Musikwissenschaft,” Vierteljahresschrift für
Kunstgesetze verschiedener Zeiten und ihrer organischen Verbindung und Entwicklung wird sich der
Kunsthistoriker der gleichen Methode bedienen wie der Naturforscher: vorzugsweise der inductiven
Methode. Er wird aus mehreren Beispielen das Gemeinsame abheben, das Verschiedene absondern
und sich auch der Abstraction bedienen, indem von concret gegebenen Vorstellungen einzelne
Theile vernachlässigt und andere bevorzugt werden. Auch die Aufstellung von Hypothesen ist nicht}
Yet to engage in the inductive method—by which broad generalizations are made from observations of particulars—it was necessary first to have examples to examine, and those examples would need to be somehow of a kind, with respect not only to the general class of thing but also to the manner in which they would be rendered comparable—how, for example, one would compare a sculpture and a painting in an attempt to determine the laws concerning the development of visual artistic style. In Stumpf’s case, he knew that he wanted to study non-European musics (and non-European musicians), but it was the question of how he would do so within the scientific context that he needed to answer before he could proceed.

As I demonstrate in Chapter 1, this is the project that ultimately led Stumpf to found the Berliner Phonogramm-Archiv, a founding that coincided with his first experiments in incorporating sound recording into his investigational method. In sound recording, Stumpf found a means of better obtaining the “reliable material” (zuverlässiges Material) that permitted researchers to study non-European musics according to the standard of objective science.20 An adherence to—even an observance of—this requirement was what Stumpf found lacking in earlier writings on non-European musics, and, as I discuss below, he had been working to rectify that deficiency at least since his interactions with members of a Canadian First Nation in 1885. Between 1886 and 1892, Stumpf published three papers on non-European musics, across which

ausgeschlossen. Die nähere Begründung des Gesagten sei einer speciellen Abhandlung vorbehalten, das Schwer gewicht der Betrachtung liegt in der Analogie der kunstwissenschaftlichen Methode mit der naturwissenschaftlichen Methode.”

he devised and revised his methodological approach with the ultimate aim of making that approach as objective as possible. In tracing this thread through these three papers, I demonstrate that Stumpf’s ensuing “Tonsystem und Musik der Siamesen” (Tone-System and Music of the Siamese)—the paper that resulted from his first phonographic recordings—was a culmination of the years that he had spent refining his notion of what constituted the “reliable material” he so desired and determining a method by which they could be attained. He was encouraged enough by the results he had achieved in his phonographic experiments that he continued to seek more opportunities to make recordings, and thus the recordings he made of the Siamese musicians became the founding stock of the Berliner Phonogramm-Archiv.

For Stumpf, the phonograph’s promise was that it would always function as the “keen and objectively hearing ears” that he had found lacking among travelers who jotted down the melodies they heard, and the objective listening that he alluded to here was necessary for the resulting “materials”—in this case transcriptions—to be “reliable.” In being able to repeat the recordings, the objectively minded transcriber would have every opportunity to check that the transcriptions reflected the sounds as emitted from the phonograph and thus ensure that any trace of the subjective self had been eliminated. In this way, listening was fashioned into a technique of science as well as a technique of the self.

The insistence on methodological objectivity situates Stumpf’s work within the intellectual milieu of the cultural sciences, a kinship that I explore as well in the context of Stumpf’s reliance

Völkerschauen—displays and performances of foreign peoples—as opportunities for recording. Völkerschauen had attracted anthropologists, ethnologists, and other cultural scientists from the time they began in the 1870s, as they were convenient opportunities for research. Waiting for recording opportunities to come to Berlin, however, was not itself a reliable strategy for building up the archive’s holdings, as such opportunities arose only when impresarios arranged for tours of ethnic groups, and these tours did not always include musical performances. As colonial empires continued to expand, however, more and more Europeans were traveling abroad, and travelers became an increasingly important source of ethnological research materials, as they would collect artifacts and data on the scholars’ behalf. It took time and resources to establish such arrangements, and without any institutional support or even a designated facility, the young Phonogramm-Archiv was not in the position to pursue them on its own.

Chapter 2 examines the association between comparative musicology and the ethnological sciences more closely, as Hornbostel, along with his colleagues Otto Abraham and Felix von Luschan, actively worked to institutionalize that relationship. My focus is on a trio of papers that the three presented at a meeting of the Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte (Berlin Society for Anthropology, Ethnology and Prehistory) in 1903 whose collective aim, I suggest, was to secure support from the society’s members for both the comparative musicological project and, more crucially, the incorporation of the Phonogramm-Archiv into Berlin’s Museum für Völkerkunde (Museum of Ethnology; today the Ethnologisches Museum). Luschan, an anthropologist and long-time assistant to the museum’s director, was already an avid supporter of the Phonogramm-Archiv’s mission and had recently returned from
an archaeological expedition to northern Syria during which he and Emma, his spouse, had themselves experimented with making phonographic recordings. Twenty of the songs that they collected were the focus of the first two papers presented, with Luschan discussing the benefits of phonographic recordings for ethnological study and the texts of the songs followed by Abraham and Hornbostel speaking to the songs’ musical elements. Luschan's paper demonstrated to the audience how sound recordings could be employed in non-musical studies, while Abraham and Hornbostel’s illustrated that the same recordings could serve as research material for more than one discipline. Additionally, it was an opportunity for them to establish how comparative musicological study could both further the greater project of the cultural sciences and enhance certain disciplines more directly. With respect to the disciplinary history of comparative musicology, Abraham and Hornbostel’s second paper is significant, for it represents the first time in which the program for comparative musicology was formulated publicly.

As with Stumpf, Abraham and Hornbostel were thoroughly committed to the ideal of objectivity, and in this chapter, I continue my discussion of the objective approach to the study of music, specifically with respect to the quantifying of sound in frequency. I introduce other devices that, like the phonograph, were employed in an effort to remove the need for human judgment, but at the same time, they functioned to discipline the listening act. A tone variator, for example, is capable of producing a pitch over a continuous range, and it has a gauge that, if properly calibrated, will register the frequency of the pitch it is sounding at a given moment. Abraham and Hornbostel used the tone variator to help them determine the frequencies of particular pitches, for when they matched the pitch emitted by the tone variator to the one they sought to measure,
the instrument would provide an accurate reading of the frequency. To use the tone variator in this way required a specific listening practice, one that was effected by the device itself: the tone variator would direct the user’s ear to the sound it was emitting, requiring that the ear remained focused on the pitch as it gradually modulated until a unison with the pitch being measured was perceived. In attending to the sound of the tone variator, the user would be prevented from listening to anything else—including other characteristics of the tone—and would be released only once the unison has been achieved.

Listening enters differently in Luschan’s paper, as his focus was on text. At the same time, his is a complicated example, for his was a task of transcribing a text in a language—Turkish—that he could barely speak and could not write. His solution was thus to transcribe what he heard using the German alphabet, which introduces an interesting tension between listening and hearing. He listened to the sounds of the text, but, already committed to hearing it through German ears, he was forced to make sense of the sounds of one language according to the phonetic vocabulary of another and then render it in written form. It is not an example of objective listening, but it is certainly a technique. I also use my discussion of Luschan as an opportunity to introduce the figure of the traveler, as his example illustrates the kind of logistical complexity behind the collection of objects, particularly when special equipment was required.

In Chapter 3, I examine the series of German anthropological manuals issued between 1872 and 1908 in order to trace the emergence of music as an object of scientific research, suggesting that its path reflects both the changing sentiments regarding non-European music as an area for research and the emergence of sound recording technologies. Cultural scientists associated
with the Museum für Völkerkunde produced these manuals in order to provide guidance to travelers about the kinds of objects and data they were to collect. In identifying particular items and information for collection, however, the manuals’ authors also served to limit the scope of future study, as researchers could only examine those items that had been returned to them. Thus, each new manual represents, in a way, an updated program for the discipline it concerned, a new strategy for knowledge.

Together, these three chapters demonstrate how comparative musicology came to constitute a distinct and independent discipline within the intellectual tradition of the German cultural sciences that was centered around the institution of the Berliner Phonogramm-Archiv. Crucially, they illustrate the role of the German colonial context in shaping the epistemological and methodological framework of early comparative musicology, and, by extension, of the Phonogramm-Archiv, whose very mission depended on the continual circulation of people between the imperial capital and the colonies as well as the opportunities for intercultural exchanges that it facilitated.
Chapter 1

Measuring Music, Storing Sounds:

Carl Stumpf and the Development of a Method

Berlin, 1900

It was a balmy August Sunday in 1900, the overcast sky threatening rain, as Carl Stumpf, director of the Psychological Institute at the University of Berlin,1 and Otto Abraham, a physician and Stumpf’s assistant, approached Berlin’s Zoological Garden. They made their way to the venue that would host the spectacle, bypassing the elephant house for the building its opposite, the so-called Völker-Arena, where they would soon see a performance of the Court Theater Troupe all of the way from Siam, a performance that would occur four times that day. “23 Girls, 12 Men, on their first time in Europe!” an advertisement in the Berliner Tageblatt exclaimed, “in the

1. Officially Friedrich-Wilhelms-Universität at the time, the institution was renamed Humboldt-Universität in 1949 in honor of the university’s founder and his brother, the esteemed academics Wilhelm and Alexander von Humboldt, respectively. Because sources predominately referred to it as the Universität zu Berlin (its original name), I have followed suit in order to avoid confusion.
evening with electric lighting.” The troupe performed upon an outdoor stage built especially for the occasion, one that featured, according to one account, “the characteristic architecture of a Buddhist temple pavilion and images of the sacred white elephants in the ornamental finery.” Indeed, much of the reportage covering the troupe’s performances focused on the visual components of the presentations, from the custom-built stage, the lavish garments, and the bejeweled headpieces, to the “strange” choreography of the women’s movement and dancing, especially to the delicate motions of their hands and the intricate handling of their fans. Stumpf, too, was taken by the newness of what he saw, later recalling: “At the public performances, the women sang and danced, while the men composed the orchestra. The dancers’ garments were of extraordinary splendor, of admirable shade and harmony of colors; the movements [were] initially foreign to us, but very finely skilled; the variety, boldness, and expressiveness of the hand gestures were particularly astonishing” (Figures 1.1–1.3).


As relayed in the press, the performances were characterized mostly—or solely—by what was seen: (female) hands, (female) bodies, (foreign) movement, (foreign) costumes glistening in the electric light; in such accounts, they become property of the eye, occupy the realm of the gaze, are subjugated. Certainly the raised stage invited one to look, with the visual experience being further enhanced by the elaborate, sparkling costumes; but it is still curious that so little space was dedicated to the sounds of the performances, to those of the women’s voices and of the orchestra.

das Orchester bildeten. Die Gewänder der Tänzerinnen waren von ausserordentlicher Pracht, von bewundernswerten Abtönung und Harmonie der Farben; die Bewegungen für uns zunächst fremdartig, aber sehr fein ausgebildet; namentlich setzte die Mannigfaltigkeit, Kühnheit und Ausdrucksfähigkeit der Handbewegungen in Staunen.”
that accompanied them as they sang and danced, to the music that was heard almost throughout.⁶

This music was what drew Stumpf and Abraham to see the Siamese troupe, not solely due to its “exotic” nature, but also because the performances constituted the first occasion during which they would experiment with a device that they hoped would revolutionize the study of non-European musics: the phonograph. Noted then for being demonstrations of “the most

⁶ That these events were recounted in silence is especially surprising given how novel the experience of hearing foreign music was. As Eric Ames writes, “Europeans were already familiar with images of cultural difference, brought to them through paintings and illustrations, but ethnographic entertainments [i.e., Völkerschauen] made the sounds of non-European life available to mass audiences for the very first time.” Ames, “Sound of Evolution,” 301.
peculiar of exotic peoples that Berlin has so far seen,”? the performances are today mostly remembered for having contributed, via the phonograph, to the founding “stock” of one of the oldest sound archives in the world. It is fortuitous that the trials Stumpf and Abraham carried out were deemed successful, for Stumpf was then able to consult the recordings in order to complete his study, which, along with the recordings that have survived, provides us with

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7. Beeker, “Siamesische Hoftheatertruppe.” “. . . das Eigenartigste, was Berlin bisher von exotischen Völkern gesehen hat.”
a markedly better impression of the music heard during these performances than any other first-hand account I have located.

From the articles that do speak of the music, the “image” that emerges is one of an ensemble of women who danced, sang, and acted, supported by an orchestra of men playing predominantly “ancient” metal and wooden percussion instruments with great artistry, the sounds bright and pure (but not shrill of tone), and the various parts coming together to form a music that is tremendously melodic—even if somewhat monotone—and in no way inharmonic. (One author, so “astounded” by the “originality” of the composite melodies, went so far as to assert that “many a sophisticated composer will borrow from the Siamese,” perhaps prophesying something similar to the ways in which Claude Debussy famously “borrowed” from the Javanese after seeing a gamelan performance at the 1889 Exposition Universelle in Paris.) In two articles, the authors described the composition of the ensemble in more detail, one even speaking to the “status” of Siamese music and dance as compared to neighboring societies:

The orchestra consisted almost entirely of percussion instruments, which resembled Chinese metal cymbals [chinesischen Metallbecken] or wooden instruments that are also known to us as “xylophones”: the ranat, a kind of


Siamese gamelan; the khong,\(^{10}\) made up of metal cymbals [gongs] on a horseshoe-shaped wooden frame; guitars [sic]; cymbals [gongs]; hand drums; and reed flutes. This music is tremendously melodic, as the music and dance of the Siamese in general have reached a much higher stage of development than those of their Asian neighbors, excepting, perhaps, the Malays of Java and Malacca.\(^{11}\)

That this author’s assessment is *quantitative* as opposed to *qualitative*—“more advanced” and not (just) “better” (although it would be safe to assume that the latter is implied in the former)—speaks to a collection of issues intimately related to colonialism, issues that will be discussed and revisited throughout this dissertation. I have introduced this statement here because it is exceptional among the reports on the Siamese performances, as it invokes cultures *other* than the Siamese, and therefore indicates familiarity of some kind. Not only did this author—in spite of his errors in instrumental nomenclature—feel compelled, and therefore able, to make such an evaluation of cultures other than his own, he was also able to offer a specific exception, which suggests more than a passing acquaintance.

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10. “Kambong” in the original, which is likely a corruption of the transliteration for the generic *khong* (ฆ้อง)—“gong”—or the more specific *khong wong* (ฆ้องวง)—“gong group”—which is consistent with the ensuing description.

In this chapter, I explore the intellectual history that led to Stumpf’s “Tonsystem und Musik der Siamesen” (Tone-System and Music of the Siamese)—the study that ultimately resulted from his experience with the Court Theater Troupe and the phonographic recordings he made—and consequently to his founding of the Berliner Phonogramm-Archiv. I do so by examining the three papers that Stumpf wrote about non-European musics in the years before he first gained access to a phonograph. On one level, his papers evidence the development of a methodology that is learning how to engage with musical sounds according to the terms of a science, as each paper presented Stumpf with an opportunity to think through and refine aspects of his approach to the study of non-European musics and, in certain respects, of non-European musicians. At the same time, each offers entry into the larger “prehistory” of the Berliner Phonogramm-Archiv, allowing us to engage with the relationship between the German cultural sciences—of which anthropology and ethnology were a part—and the innovations in and uses of technologies that both encouraged, and ultimately enabled, Stumpf’s study and his ensuing founding of the Phonogramm-Archiv. As will become evident, the specifically musical is wholly entangled in what might be termed the “anthropological,” in the most general sense of the word. As such, the most accurate account is one that treats them—the musical and the anthropological—alongside one another, hence my decision to withhold my discussion of Stumpf’s scholarly work until after a thorough contextualization. Both threads woven together are what led to the events in Berlin’s zoological garden, now almost mythical in status, and discussing them in tandem helps to establish how closely the earliest hints of a comparative musicology followed its anthropological kin, in theory and in practice.
Halle, 1885

On 18 November 1885, Carl Stumpf joined members of the Verein für Erdkunde zu Halle (Society for Geography at Halle) to witness a presentation made by nine representatives of an indigenous First Nation from what had by then become the Canadian province of British Columbia. These nine—all men—had just entered the third month of a tour throughout Germany, during which each of these “Nine Indians of the Bella Coola Tribe of British Columbia” would “exhibit himself before the Public in the performance of Indian Games and recreations in the use of Bows and arrows [sic] in singing and dancing and speaking and otherwise in showing the habits[,] manners and customs of the Indians”—as per the contract they each had marked.12 Whereas many members of “the Public” for whom the Bella Coola performed were seeking to be merely entertained, Stumpf and his colleagues attended this demonstration as members of an academic community whose research was concerned, in one form or another, with people, or, to be more precise, with “primitive” people. Stumpf used this occasion as an opportunity to study the music of—as he later wrote—“less cultivated peoples,” ultimately publishing an article about the “Songs of the Bellakula Indians” the following year.13


13. Stumpf, “Lieder der Bellakula-Indianer,” 405. “Bellakula” is an uncommon rendering of “Bella Coola,” a name used to refer to the Nuxalk, an indigenous First Nation who lived then, as now, near Bella Coola, in what is today the Canadian province of British Columbia. Although the imprecise “Bella Coola” is not preferred among the Nuxalkmc, I will respectfully employ “Bella Coola,” given its currency in many
This was just the latest *Völkerschau*—“show of (foreign) peoples”—to embark on a tour through Germany, a kind of entertainment that owed its success to Carl Hagenbeck, Europe’s preeminent collector, breeder, and supplier of exotic animals, who would also be responsible for transforming the design of zoo enclosures from featureless pits surrounded by fences into the naturalistic habitats familiar today.\(^{14}\) The practice of bringing native human “specimens” from faraway places back to Europe for purposes of demonstration and entertainment was not itself new; Columbus, for example, returned to Spain in 1493 with “Indians” as evidence of what he

\(^{14}\) For more on Hagenbeck and his involvement in shaping the modern zoo, see Nigel Rothfels, *Savages and Beasts: The Birth of the Modern Zoo* (Baltimore: Johns Hopkins University Press, 2002).
had found. Hagenbeck, however, was able to transform it into a viable commercial enterprise, drawing on the experience and relationships he had already gained and cultivated as an animal trader. Following a stagnation in the animal trade in the mid-1870s, Hagenbeck experimented with exhibiting humans, importing six “Laplanders” (Sami) from Scandinavia to display alongside a herd of reindeer that was already en route. The idea to incorporate humans into these living “dioramas,” however, was not entirely his; rather, it was his good friend, the animal painter Heinrich Leutemann, who suggested it as a more lucrative alternative to bringing down people from the region solely for the purpose of caring for the reindeer. “It was in the year of 1874,” Hagenbeck later recalled,


16. Heinrich Leutemann, Lebensbeschreibung des Thierhändlers Carl Hagenbeck (Hamburg: self-published by Carl Hagenbeck, [1887]), 48. There are discrepancies among the three available first-hand accounts—Leutemann’s biography being one of them—regarding the originator of the idea to display humans. In an article from 1875, Leutemann credited Hagenbeck with the idea, whereas Hagenbeck’s 1909 autobiography is consistent with Leutemann’s biography of 1887. For a discussion of these inconsistencies, see Eric Ames, Carl Hagenbeck’s Empire of Entertainments (Seattle: University of Washington Press, 2008), 18–22.

17. The exact timeline for the events leading up to this first Völkerschau as well as the dates of the tour itself are unclear. Whereas Hagenbeck, writing over 30 years afterward, ascribed both the following exchange and the initial importing of the reindeer and Sami to the latter part of 1874, Leutemann, in his biography of 1887, claimed that he received the letter from Hagenbeck in August 1875. No scholars, to the best of my knowledge, have sought to clarify this question, and in fact, some cite both dates without mention of any inconsistency.

What is uncontested, however, is that the Sami Völkerschau opened in Hamburg and traveled first to Berlin and then to Leipzig. Leutemann published an article sometime around the end of October 1875 about these “northern guests,” in which he dated the communication from Hagenbeck to “last winter,” i.e., the winter of 1874–75 (Heinrich Leutemann, “Nordische Gäste,” Die Gartenlaube, no. 44.
when I communicated in a letter to my old friend, the animal painter Heinrich Leutemann, that I would like to import a herd of thirty reindeer in order to provide different zoological gardens with these animals. The artist wrote to me afterward that it should attract still greater interest if I were to have the reindeer accompanied by a Lapp family, who would then naturally need to bring tents, their weapons, sleds, and all of their household effects with them as well. What the artist had in mind in his letter was surely only the picturesque image of the North, which he was able to imagine in self-contained completeness only with humans and animals and possibly a wintry background [Figure 1.5]. Hidden in this proposal, however, was the happy idea of *Völkerausstellungen* [“exhibitions of peoples”], which, over the next years, were strung together like a colorful necklace. In the coming years, Lapps and Nubians, Eskimos and Somalis, Kalmyk and [Asian] Indians, Singhalese and Hottentots, the inhabitants of the most different
of zones—antipodes, really—reached out to another, as it were, on their tours [lit. “on their trains”] through the European capitals.\(^{18}\)

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Nearly 150 different Völkerschauen were mounted in Germany before the First World War, and not all of them involved Hagenbeck: as with any successful venture, Hagenbeck inspired competitors, who each achieved varying levels of success.¹⁹ As the genre aged, impresarios would employ different tactics in order to spark mass appeal, in many cases hyping the “exoticness” or “primitiveness” of the people on display—often in ways that were not entirely truthful—or even choreographing “recreations” of imaginary events that had achieved almost mythical status, as done time and time again with the “Cowboys and Indians” of the American “Wild West.”²⁰

Although primarily intended as a form of mass entertainment, Völkerschauen were also praised for their educational value, as they brought their audiences face to face with examples of foreign peoples and ways of life. Writing again of his “Laplander” show, Hagenbeck recalled: “This first attempt at an anthropological-zoological exhibition had taught me a lot. The ice was, so to say, broken, and I had gained the conviction that such displays, with their great instructive value, would prove popular with the public.”²¹ And indeed, they would. “If H[agenbeck]’s

¹⁹. For a complete listing of all of the Völkerschauen produced in Germany during this period, see Sierra A. Bruckner, “The Tingle-Tangle of Modernity: Popular Anthropology and the Cultural Politics of Identity in Imperial Germany” (PhD diss., University of Iowa, 1999), 472–506.

²⁰. For an extensive discussion of the Hagenbeck’s “Wild West” shows, see Ames, Carl Hagenbeck’s Empire, esp. ch. 3, “Hagenbeck’s Turn to Fiction.”

²¹. Hagenbeck, Von Tieren und Menschen, 83. “Dieser erste Versuch einer anthropologisch-zoologischen Ausstellung hatte mich vieles gelehrt. Das Eis war sozusagen gebrochen und ich hatte die
name had already become well-known owing to his capacity as an animal trader,” Leutemann later wrote, “it became even more so thanks to his expositions of exotic peoples [Völker-Schaustellungen], which he began in 1875 and continued without interruption until 1886, and with which he undoubtedly rendered a great service, in that he gave to the millions of people who were unable to seek out their differently natured fellow humans living in remote parts of the Earth in their homeland the sight of such [humans] here in Europe.”

Perhaps none were more excited by the preponderance of these events than scholars working toward what Hilke Thode-Arora has termed “an all-encompassing science of the human [eine allumfassende Wissenschaft vom Menschen],” as these Völkerschauen offered anthropologists, ethnologists, and psychologists alike convenient and inexpensive opportunities to come face to face with these “exotic” peoples, opportunities that would have otherwise been unfeasible, lest they found the resources to travel abroad themselves. Since consensus had it that “primitive,” “non-civilized,” or “natural” peoples were essentially living time capsules from the pre-historic past, the “truth” of this past lay latent (literally) within them and was expressed in their cultural Ueberzeugung davongetragen, daß derartige Schaustellungen mit ihrem großen instruktiven Wert Anklang beim Publikum finden würden.”

22. Leutemann, Lebensbeschreibung, 48. “War der Name H’s durch dessen Eigenschaft als Thierhändler schon sehr bekannt geworden, so wurde er es noch viel mehr durch seine Völker-Schaustellungen, welche er 1875 begonnen und ununterbrochen bis 1886 fortgesetzt hat, und mit welchen er unbestritten sich ein großes Verdienst erwarb, indem er den Millionen Menschen, welchen es nicht vergönnt ist, ihre in fernen Erdtheilen wohnenden, anders gearteten Mitmenschen in deren Heimath aufzusuchen, den Anblick solcher bei uns vermittelte.”

practices. German anthropology at the time, as a cultural science, aspired to be a scientific discipline and therefore required a scientific approach. This entailed collecting data of an objective nature, unbiased, unaffected, rooted in fact: bodies were to be measured, skin colors documented, photographs taken, artifacts collected. As such, direct contact was crucial to their work, and even with the great innovations in technologies of transportation and the relative “shrinking” of the world that accompanied colonization, traveling remained onerous, expensive, and even risky, especially when heading to the “remote parts of the Earth” whence many of these Völker came.

Hagenbeck’s exhibitions therefore alleviated much (if not all) of this extra burden, allowing anyone to “travel” to exotic places “without,” as one reporter would later write, “the dangers of jungle poisons and of tiger teeth, without weapons in the belt and without quinine”—a medication to prevent and treat malaria—“in the pocket.”

This is not to suggest that anthropologists had done nothing to address this problem before Hagenbeck sparked the Völkerschau industry, nor that Völkerschauen were their only sources of research materials afterward. Centuries of exploration, trade, and domination had already led to the establishment of various relationship networks with global reach, and, as I discuss further in Chapter 3, anthropologists and other cultural scientists were happy to use them to their advantage. They entered into professional relationships of their own with military personnel, missionaries, explorers, and merchants, among others, and had them collect objects and data

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from abroad on their behalf. Völkerschauen were in one sense supplemental, as they offered just
one more way of doing things; yet, at the same time, engaging in both methods of collection
simultaneously served to emphasize the relative positive and negative merits of each, a tally that
came out in favor of Völkerschauen time and time again. This begs the question, then, of why
they would continue using both if the one was far superior.

The answer is, of course, complicated. For one, the so-called Scramble for Africa and the
related Berlin Conference of 1884–85 both saw to the expansion of the empires of Europe’s
imperial powers, including Germany’s; and, with the accompanying increase in the number of
travelers to all of the European colonies, the scope of the anthropologist’s scientific enterprise
could likewise grow. Additionally, whereas only a limited number of Völkerschauen could be
produced in Germany in any given year, each subject to the limits of the impresario’s geographic
and financial reach, steamships traveled back and forth to the colonies far more frequently, which
allowed for greater variety in what could be collected, as well as for larger quantity. At the same
time, the anthropologists waiting back in Europe had to entrust everything to their “amateur
anthropologist” proxies, all with primary objectives of their own, as there was no possibility for
oversight of any kind. As might be expected, the materials that were provided upon return were
not always of a “satisfactory” scientific standard.

This aspect was certainly the main critique leveled against such collection-by-proxy by the
foremost academic champion of Völkerschauen, Rudolf Virchow. Virchow’s “Zur Anthropologie
der Westafrikaner, besonders der Togo-Stämme” (On the Anthropology of West-Africans,
Especially of Tribes in Togo), a paper that he presented at a meeting of the Berliner Gesellschaft
für Anthropologie, Ethnologie und Urgeschichte (Berlin Society for Anthropology, Ethnology, and Prehistory; hereafter BGAEU) on 10 January 1891, began with a discussion of a set of notebooks that belonged to the recently deceased military physician Dr. Ludwig Wolf. During his time in Togo, we learn, Wolf had recorded anthropomorphic measurements of individuals from a number of the tribes he had encountered. Although he would eventually talk about the information the data conveyed, Virchow spoke first to whether or not their quality was sufficient for anthropological research. After pointing to the lack of consistency and comprehensiveness evidenced by Wolf’s notebooks—he had apparently failed to make the same set of measurements for all subjects, and he had not recorded all of the desired demographic information—Virchow concluded “that the task of carrying out anthropological measurements while traveling—even for so well-prepared, so eager, and so devoted a traveler as Ludwig Wolf—is feasible, only in certain limitation.”

Documentation provided by a traveler would, according to Virchow, always be wanting, and was thus not sufficient on its own. To be sufficient would be to describe accurately and thoroughly what is the case, and any unknown rendered that model incomplete. Scientists were only privy to the outcome of these collection efforts once the documentation had reached them, and since the documents usually arrived in Germany in the hands of the traveler, there was


little opportunity to have any additional measurements taken or questions answered. It was thus preferable for the scholars to collect measurements and other relevant information themselves—they were the experts, after all—but if travel abroad was not a possibility, the next best option would be that the people came to them.

Völkerschauen offered a very convenient solution to this problem, and they found in the anthropological community an eager audience from early on, but none was more excited than Virchow. “We can therefore express our thanks but anew to Herr Hagenbeck,” Virchow proclaimed to the BGAEU in 1879,

> for the great opportunity, which he has afforded us, to study living people. The anthropological science cannot be fueled solely by travelers, and indeed it [the science] has learned from these meager enrichments. An examination carried out in real life . . . has disproportionately more lasting worth than descriptions—which are founded on mere impressions and (often enough) highly dubious memories—whose contradictory nature we have come to know far too well. 27

Virchow made a case for the investigational thoroughness that Völkerschauen, in their capacity of bringing scientists face to face with their research objects, allowed them, something that

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“impressions” and “memories,” being subject to interpretive whimsy, were unable to provide. By means of the network of relationships that he (and his father before him) had already established for his business in the trade of exotic animals, Hagenbeck unwittingly eliminated the crucial obstacle that Virchow and his colleagues had been facing since the focus of their work turned toward peoples of non-European origin—namely, the expanses of ocean and land that stood in the way. In presenting this argument as the conclusion to his report on the Nubian Völkerschau that had occurred earlier in the year, Virchow endowed it with great rhetorical weight, as he had already illustrated the main benefits that this “great opportunity” offered them: with the elimination of the “middleman,” Virchow became himself responsible for all steps in the research process, and he could thus demonstrate that the requirement of objectivity—of showing what actually was the case—had been upheld.

This is not to say that their methods and assumptions—not to mention the very institution of the Völkerschau or attitudes toward the colonized more generally—were unproblematic: many were inherently racist, elitist, and baseless. And indeed, they were not without their critics even then, no matter how much the perceived “benefits” were praised.28 Perhaps the most remarkable

28. It is difficult, if not impossible, to determine what percentage of the population was for or against the practice of exhibiting people and/or of using these events as convenient sources for anthropological data. Given that Virchow was, as editor of the Zeitschrift für Ethnologie and director of the BGAEU, a very influential figure with many opportunities to make his feelings known, the amount of support within his scholarly community appears great, but any measure is skewed by Virchow’s overrepresentation. On the criticism of Völkerschauen, see Stefanie Wolter, Die Vermarktung des Fremden: Exotismus und die Anfänge des Massenkonsums (Frankfurt am Main: Campus Verlag, 2003), 141–43.
example is an article that appeared in the *Magdeburgische Zeitung* in response to a Völkerschau in 1880. Penned by the otherwise anonymous J. K., the article, entitled simply “Die Eskimos im Zoologischen Garten zu Berlin” (The Eskimos in the Zoological Garden of Berlin), rightly lambasted anthropologists for their voyeuristic approach to research, research informed by unsubstantiated assumptions and ignorant exoticism.29 “Of course,” the author wrote,

> we shall prudently take care not to start a quarrel with these gentlemen of strict anthropological observance. They like to carry out their observations, their measurements undisturbed; they like to construct all conceivable and inconceivable lines and angles on the faces and skulls of the Eskimo-individuals and identify the numerical relationships among them. . . . Everything is recorded; every residual shard, every small stump of wood, every splintered bit of stone is indiscriminately saved. Before you know it, an “anthropological museum” is there, and an “interesting” one at that. Nowadays, however, as soon as something is able to seem “interesting,” then it has won the game [*sich etwas erst als “interessant” darzustellen weiß, dann ist’s damit gewonnen Spiel*].30

The implication here is that any one of the “gentlemen of strict anthropological observance” was no different than the next person, fascinated only with the allure of difference; yet unlike the other spectators, these anthropologists believed themselves to be above that and attempted

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29. J. K., “Die Eskimos im Zoologischen Garten zu Berlin,” *Magdeburgische Zeitung*, 21 October 1880, Morgen-Ausgabe. The text of this article has not been widely circulated in either German or English, so it warrants extensive quotation. The complete German text is reproduced in Appendix A. I would like to thank Hartmut Lutz for kindly providing me with a copy of the original article.

30. Ibid.
to mask this fact with the “illuminating” business of measuring and collecting—tasks that the
author clearly believed to be futile. “Now, we maintain,” J. K. wrote, “that with the most thorough
inspection of all these ‘interesting details,’ even seen from the so-called anthropological point
of view, nothing at all is gained. Neither our education nor our knowledge has been somehow
expanded or deepened.”

For J. K., in their adherence to anthropological orthodoxy, these academics were devout to
a fault. For all their object-collecting and measurement-making, they had yet to demonstrate
that their work served a greater intellectual purpose, and instead of pausing to reflect on their
methodology and the validity of the assumptions on which it was grounded, they zealously
pressed on, blind to all but data and details—the alpha and omega of objective anthropology.
Theirs was, as J. K. saw it, an anthropology not only without sufficient grounds, but also oblivious
to the human; it was an anthropology that was seemingly identical to zoology, for they treated
and related to their subjects no differently than animals, ignoring the fact that like them, theur
subjects were people, too:

Were one to look at the people just a little more closely, a little more in the
proper sense of “anthropological,” one would immediately notice the melancholy
expressions lingering especially on the faces of the Eskimo women. They know
quite well that they are being exhibited, exposed to the prying, intrusive eyes of old
and young. Who knows what these children of the harshest North must think of
their highly educated European brethren!

That we must even be reminded! We had nearly forgotten about the “interesting” anthropological spectacle! And it would be forgivable enough anyway. Not far away, the “East Indian pachyderms” [“ostindischen Dickhäuter”] romp around in their spacious, firmly constructed enclosures; there one can observe them in their natural expressions of being [Daseins-Äußerungen]. Here, however, one may observe the “northwestern wearers of thick furs” [“nordwestlichen Dickfeller”] romping around in their pens demarcated only with wooden slats—in accordance with their peaceful disposition—likewise in their natural expressions of being. And it couldn’t be said how “interesting” they are. These northerners walk just as we do.32

In J. K.’s eyes, these so-called anthropologists lacked any compassion for their fellow human or appreciation of fundamental sameness, and instead saw in the physical separation between those within the fence and those without an outward manifestation of the experienced division between “them” and “us.” By being relegated to zoos, non-European people were being likened to animals, which effectively eliminated the distinction between the anthropological and the zoological and thus undermined the very project of anthropology. In supporting this practice or even just in declining to speak out against it, anthropologists were complicit in denying them their humanity, thus evidencing the absence of what J. K. later referred to as “a sense of ‘racial decency.’” It was this deficiency that prompted J. K. to voice what is perhaps his most damning criticism of Völkerschauen, in which he suggested a correspondence between the “business” of Völkerschauen—implicating anthropologists by association—and that of slavery:

We, and surely many with us, cannot help but feel very embarrassed about these recently rampant “human exhibitions,” and even more so about these “human exhibitions” in zoological gardens! . . . To our minds, there is something extraordinarily repulsive inherent to this business of human exhibitions. In this respect, we cannot rid ourselves of thoughts of the slave trade.33

Unsurprisingly, Virchow took issue with the article, his anger likely fueled by the author’s invocation of rhetorical conceit; yet in spite of J. K.’s attack on the absolute disregard for any form of ethics underpinning the entire institution of Völkerschauen, it was the implicit critique of the validity of his and his colleagues’ “interest” that appears to have irked him most. To the end of his own report about the same Völkerschau, Virchow appended a rather abrasive retort “to categorically oppose this first attack of a wild columnist.”34 He did not rise to defend the practice or counter the article’s affronts “against this entire manner of presenting foreign races” and “the use of zoological gardens for the display of human beings”—perhaps because he thought them obviously baseless, perhaps because he just did not care—despite J. K.’s implying that Völkerschauen were just slavery by another name; instead, what he “particularly want[ed] to touch on,” was the author’s underlying assumption “that a scientific interest is not at all present, and also, that for the vast majority of people, there exists nothing more than an entirely unrefined

interest of sheer curiosity.”³⁵ He did concede that some things were of interest only as curiosities, but “what we explore in the interests of knowledge, of the ongoing investigations of nature and of humanity,” were otherwise, as they held answers to “the most important and largest questions that the human race can even ask.”³⁶ “Indeed,” Virchow asserted, “these displays of human beings are very interesting for anyone who wants to determine the position that the human occupies in nature and the development that the human race has undergone.”³⁷ Virchow ended his report by “attest[ing] that truly a positive scientific interest of the highest rank is itself associated with these presentations,” once again asserting that the quest of the anthropologist was an important and valuable one.³⁸ “Therefore,” he continued,

I do not wish to allow the opportunity to pass without publicly expressing our special thanks to Herr Hagenbeck and asking that he not permit such attacks to deter him from continuing in the manner as he has so far done, to the greatest advantage of anthropological science.³⁹

³⁵. Virchow, “Eskimos von Labrador,” 270. “… dass ein wissenschaftliches Interesse gar nicht vorliege, und dass auch für die grosse Masse der Menschen weiter nichts existire, als ein in der That ganz rohes Interesse der Neugierde.”

³⁶. Ibid.

³⁷. Ibid. “Ja, in der That, diese Menschenvorstellungen sind sehr interessant, für Jeden, der sich einigermaassen klar werden will über die Stellung, welche der Mensch überhaupt in der Natur einnimmt, und über die Entwicklung, welche das Menschengeschlecht durchmessen hat.”

³⁸. Ibid. “… dass wirklich ein positives wissenschaftliches Interesse höchsten Ranges sich an diese Vorstellungen anknüpft.”

It is not clear if Virchow was actually concerned that this article would unnerve Hagenbeck, or if this were just a rhetorical reaffirmation of their professional association. In any case, the article in the *Magdeburgische Zeitung* and the sentiment it forwarded did little, if anything, to slow or to cease the Völkerschau mechanism. In contrast, the 1880s saw an increase in number and frequency of Völkerschauen, fueled not just by their relative success, but also by the interest such success encouraged in opportunists of all kinds. Impresarios competed with one another for audiences like zoos competed with panoptika and amusement parks, and with competition came variety, which, because the process of induction required many examples, was a cultural scientist’s greatest dream. In December 1878, Virchow announced to the BGAEU,

The most important thing that came about over the course of this year . . . was Herr Hagenbeck’s great enterprise, which . . . delivers living specimens from foreign nations to us; produces formal *anthropological exhibitions of living people*; and, in this way, provides the opportunity for more thorough studies [of them].

Thirteen years later, Virchow found reason again to celebrate Völkerschauen and the great benefits they provided, praising, as well, improvements in modern technologies for circulation:

Angriffe nicht abhalten zu lassen, in der Weise fortzufahren, wie er es bisher zum grössten Nutzen der anthropologischen Wissenschaft gethan hat.”

Fortunately, expanded conditions of transport bring us an ever-increasing number of representatives of different foreign peoples, namely also of primitive peoples, to see and to study. No earlier year has supplied us with such an abundance of exotic and peculiar peoples as the one now ending.41

Virchow continued to vehemently support the institution until his death in 1902, and although some would continue to visit them in order to collect scientific data even afterward, this form of research quickly became unfashionable.42 While the established anthropologist was able to rely on relationships with travelers for the collection of data and artifacts otherwise, Stumpf and his colleagues would visit Völkerschauen to observe and record, even though they were no longer the sole means by which they could collect recordings and information—these opportunities were just too valuable to ignore. Although the foci of their investigations were different, early comparative musicologists were able to benefit from the example of the established—and well-funded—field of anthropology, both as a model and as an intellectual partner. This relationship will be discussed in greater detail in the next chapter, but for now, we can see that Stumpf’s work with the Bella Coola in 1885 was foregrounded by a nearly decade-long interaction between


42. See Anne Dreesbach, Gezähmte Wilde: Die Zurschaustellung "exotischer" Menschen in Deutschland 1870–1940 (Frankfurt am Main: Campus Verlag, 2005), 302–3.
anthropology and a commercial undertaking that was dependent on—and served to nurture—the power and control of one people over the rest.

*Lieder der Bellakula-Indianer*

The paper that resulted from Stumpf’s encounter with the Bella Coola was his first on a specific non-European musical culture, published the following year and entitled, simply, “Lieder der Bellakula-Indianer” (Songs of the Bella Coola Indians). Unlike his later paper on the music of the Siamese, Stumpf did not immediately introduce his subject and the performances that occasioned the study; rather, he opened with a paragraph in which he succinctly outlined the key benefits that the study of the music of “less civilized peoples” had for the all-encompassing science of the human:

> That the study of melodies of less civilized peoples can impart valuable clues to music-historical research, has always been recognized by representatives of the latter; but even psychological-aesthetic investigations cannot abstain from such consideration without disadvantage. Because the fundamentals of musical feeling cannot be understood separate from its [musical feeling’s] historical development, the comparison of their [less civilized peoples’] music with ours likewise facilitates the apprehension of the common agent, and thereby its analysis [*auch erleichtert die Gegenüberstellung jener und unserer Musik die Erkenntnis der gemeinsamen Wirkungsmittel und damit die Analyse*]. In addition to their music-theoretical importance, these studies will incidentally, over time, also gain an anthropological
one, in that they will provide new indications of affinity or of earlier contact between separate tribes.\footnote{Stumpf, “Lieder der Bellakula-Indianer,” 405. “Daß das Studium der Melodien wenig kultivirter Völker der musikgeschichtlichen Forschung werthvolle Anhaltspunkte gewähren kann, ist von den Vertretern der letzteren allezeit anerkannt worden. Aber auch psychologisch-ästhetische Untersuchungen können sich solcher Betrachtung ohne Nachtheil nicht entschlagen. Denn die Grundlagen des Musikgefühls sind nicht abgesondert von dessen historischer Entwicklung zu verstehen; auch erleichtert die Gegenüberstellung jener und unserer Musik die Erkenntniss der gemeinsamen Wirkungsmittel und damit die Analyse. Außer ihrer musiktheoretischen Bedeutung werden diese Studien übrigens mit der Zeit auch eine anthropologische gewinnen, indem sie neue Kennzeichen für Verwandtschaft oder früheren Verkehr getrennter Stämme liefern.”}

In plainer language, Stumpf was arguing that the study of the music of “less civilized peoples” is crucial if we are to fully understand the nature of music’s historical development, as comparing theirs—considered to be of an earlier stage, akin to the “fundamentals” in Stumpf’s analogy—with our own will help us make sense of the developmental timeline and trajectory for all music. Additionally, as more “specimens” are studied and described, similarities in musical content may emerge and thus provide evidence for otherwise unrecognized historical relationships between and among different peoples. Stumpf’s was not a project seeking to trace the history of musical \textit{style}, but one that looked to uncover the story of how music came into being and how our “mature” music developed from the music of cultural infancy, represented in this paper by the songs of the Bella Coola.\footnote{Stumpf would eventually publish his study \textit{Die Anfänge der Musik}, in which he outlined a number of theories regarding music’s origins as well as the nature of music’s development: Carl Stumpf, \textit{Die Anfänge der Musik} (Leipzig: J. A. Barth, 1911). The text has been edited and translated into English by David Trippett as \textit{The Origins of Music} (Oxford: Oxford University Press, 2012). See also Rehding, “Quest for the Origins of Music.”}
As this endeavor was itself in its earliest stages, Stumpf and other researchers still needed to accumulate materials for comparison and analysis, which is the topic with which he began his second paragraph: “At present we possess only little reliable material. It is scattered among many travel writings, and is only seldom collected by keen and objectively hearing ears and committed to paper by expert hands.” Unlike practitioners and scholars of the much more “sophisticated” art music of Europe, Stumpf did not have access to the “reliable material” of manuscripts and scores for non-European musics; instead, they needed to be procured in some way, as, at the time, there was no other method of transmitting the stuff of music, save being present to hear it for oneself. Thus, musical lines would have to be transcribed, an act requiring no less than two specialized skills: that of interpreting the music aurally and that of setting it down in musical notation, both needing to occur almost simultaneously and in “real time” as the musician(s) played or sung. As such, Stumpf was right to be suspicious of the quality of any transcription, unless the ability of the transcriber had already been adequately demonstrated. As with Virchow, objective data were of great importance, as they directly affected the quality and legitimacy of any findings or conclusions; and since comparative musicology was not yet a formally described discipline or even subdiscipline, standards had not been established for a proper methodology. It is not surprising, then, that Stumpf returned to the issue of “reliable material” time and time again, most comprehensively in “Tonsystem und Musik der Siamesen.” Much of what appears

there, however, is a more elaborate rehashing of items he had previously discussed in this and
the other two papers I examine in this chapter, and by tracing this history, we will have a better
understanding of the thinking that foregrounded Stumpf’s decision to take a phonograph with
him to the zoo.

“Lieder der Bellakula-Indianer” divides into three general sections: the first is introductory,
but it is the most substantive for our purposes; the second consists of transcriptions of nine songs,
in addition to commentary for each; and the third sees Stumpf offer some basic comparisons of
the Bella Coola songs with some from a few other cultures, as well as something of a “theoretical
reflection” that he was reluctant to engage: he informs us repeatedly that he was not yet in a
position to wholeheartedly support such hypotheses, as it was possible to forward broader claims
responsibly only after ample materials had been amassed and thoroughly analyzed. “Of greatest
need in this field,” Stumpf asserted, “are monographs, independent of any theory, but with such
considerable exactitude of true description.” Actual, true, real—such language signals objectivity,
the scientific ideal under which Stumpf was working, and it is this quality that he sought in
evidence: accounts of what is the case, communications of fact. “The following [essay] should,”
he wrote, “contribute additional material, admittedly slight, yet recorded (for my ear) with all
attainable accuracy and conveyed through the available means (notes—several drawings—helpful

thut, sind Monographien, unabhängig von jeder Theorie, aber mit um so größerer Gewissenhaftigkeit
der thätsachlichen Schilderung.”
beginning again and again; he did this, however, with inexhaustible bonhomie. And thus, after singing ten times or more, the transcription of a song came to be, which on the following day, after new [songs] were heard and recorded, was checked yet again.48

The process as outlined here is essentially one of dictation, the goal being to capture the essence of the song in a static representation on paper. Stumpf demonstrates a critical approach to the task in his commitment to minimizing the possibility for error: he incorporated redundancy

after redundancy into his methodology, an option that was—significantly—only available to him because the Jacobsen brothers had consented to his special sessions with Nuskilusta.\(^{49}\)

The role that Nuskilusta came to fulfill was essentially one of a sound recording: at Stumpf’s request, Nuskilusta repeated parts of a song or even the song in its entirety so that Stumpf would be able to more easily transcribe the music that Nuskilusta performed and then verify what he had recorded. In light of Stumpf’s primary goal of accuracy—of providing “reliable material”—

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\(^{49}\) Nuskilusta’s name is rendered as “Isk-Ka-lusta” on the group’s employment contract. The original signature page is reproduced in Wolfgang Haberland, “Nine Bella Coolas in Germany,” in *Indians and Europe: An Interdisciplinary Collection of Essays*, ed. Christian F. Feest (Aachen: Rader Verlag, 1987), 339.
these private meetings afforded the optimal scenario, as he was not forced to transcribe such unfamiliar music after a single hearing—a difficult task even for those with the best musical training; with Nuskilusta’s assistance, Stumpf had, as Eric Ames observes, “constructed a new performance context” that was “specifically designed for inscribing sounds in isolation.” In asking Nuskilusta to repeat anything, however, Stumpf introduced an additional uncertainty into the process in that Nuskilusta was an equally “imperfect” human, no more likely to perform something twice in precisely the same way as any other. This did not go unnoticed by the scientist; rather, he appears to have accepted the situation as a necessary concession, even using it to his advantage: he cited the fact that intervals considered “impure” to the European ear occurred in exactly the same places during all of Nuskilusta’s performances (as well as those of Nuskilusta’s one-time substitute) as evidence that these were not errors of intonation, but instead suggested that such intervals were present in the underlying tonal framework of the Bella Coola’s music.51

Stumpf followed this description with a statement concerning the scientific value of materials collected by travelers, which is very much reminiscent of Virchow’s, quoted above: “This experience alone awakened in me a certain distrust toward the transcriptions—so very clean—of travelers, who make no mention whatsoever of a single difficulty encountered during

the transcription process.”\textsuperscript{52} It is clear that Stumpf, who had gone to great lengths to ensure that his own transcriptions were as close to being perfect representations of the original melodies as possible, could not imagine that (mere) “travelers”—the main source for foreign musical “data” at the time as well—would not have to engage in a similarly laborious process in order to produce “reliable material,” especially if the products they delivered were “so very clean.” Further, there is the issue of skill, which Stumpf invoked in a footnote, quoting a text by the “exquisite musician” Alexandre Christianowitsch: “The difficulty that I will face in this notation is indescribable. . . . After having my musician repeat the same song ten times or so in succession, I was no more advanced than after the first.”\textsuperscript{53} If a musician with excellent training encountered such difficulty, Stumpf might have asked, how could one expect a naval doctor or a missionary to complete the task so easily? Without any comment on methodology, it was impossible to determine how the transcriptions came to be and to assess their worth for scientific scrutiny. To be acceptable for use in a scientific study, the transcriptions had to portray their subject as faithfully and comprehensively as possible, and only if the transcriber—be it a professional

\textsuperscript{52} Ibid., 407. “Schon diese Erfahrungen erwecken mir einiges Mißtrauen gegen die so reinlich dastehenden Notirungen der Reisenden, die von einer Schwierigkeit des Niederschreibens gar keine Erwähnung thun.”

\textsuperscript{53} Alexandre Christianowitsch, \textit{Esquisse historique de la musique arabe aux temps anciens} (Cologne: Librairie de M. Dumont-Schauberg, 1863), 5–6. “La difficulté que je rencontrai dans cette notation, est indescriptible. . . . Après avoir fait répéter à mon musicien, une dizaine de fois de suite la même chanson, je me suis vu aussi peu avancé qu’à la première.”
musician, experienced scholar, or amateur explorer—clearly demonstrated that every effort had been made in order to do so would the requirement of objectivity be satisfied.

To illustrate his point, Stumpf returned to his experiences with Nuskilusta, contrasting them with those that Theodore Baker had recounted in his earlier book Über die Musik der nordamerikanischen Wilden (On the Music of North American Savages). Stumpf had earlier cited Baker's text as an example of the kind of monograph “presently in greatest need” for music-historical research, which was perhaps why he thought it to be a useful foil.

Whereas Baker’s Indians, as [Baker] repeatedly assures us, sang very purely, it soon became apparent that, according to our [i.e., Stumpf’s] perceptions, rightly impure intervals did occur. These were not, however, all merely accidental deviations; several turned on the same place again and again and were also intoned thus by Nuskilusta’s substitute. Transcription becomes significantly more difficult in such situations, since one is always initially tempted to assume it to be merely an unintentional alteration and hear it as one or another of our intervals.

It is unclear from Stumpf’s text if he believed the “purity” of Baker’s subjects’ singing to be an indication that the songs Baker examined coincidentally utilized scales complementary to

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Western equal-temperament, if he was implying that Baker succumbed to temptation and “imposed” the Western system on their music, or if he took “pure singing” to mean *precise* singing (all the more confusing due to his contrasting pure singing with impure intervals). Nonetheless, the effect of this passage was to underscore the fact that different peoples did not necessarily share the same tonal framework, and Stumpf recognized how challenging it was for one “steeped” in a particular musical tradition to “reset” her ears and listen anew. He thus stressed his call for methodological transparency so that the trustworthiness of the resulting transcriptions would be fully demonstrated. Stumpf’s colleagues at the Phonogramm-Archiv would eventually work to establish a standard methodology for such collection, which I explore in detail in Chapter 3, but this was a firm first step in that direction.

Although Stumpf mentioned it while surveying some of the work that had already been done on non-European musics, a story of his earlier attempt to transcribe melodies unintentionally served to illustrate the benefits that access of the kind he had with the Bella Coola could offer, specifically the opportunity for multiple hearings. Stumpf explained that in April 1885, he had attended a Zulu Völkerschau, also in Halle, following the show’s extended residency in Berlin. He did not indicate if the performance he attended was, like that of the Bella Coola, specifically intended for academics (a “conference” about the Zulus had been held at the panoptikum where

56. Based on his wording, the second option seems at first most plausible, but I find this conclusion uncomfortable because Stumpf does not criticize Baker’s findings directly.
their demonstrations occurred), but it is clear that he saw in it an opportunity for research. The Zulus performed various war, victory, and hunting songs—"all very characteristic," he assures us—but "because the leaders of the band were not as accommodating as the Herren Jacobsen, I was dependent on the choral performance and could, with the swiftness of the presentation, bring only a bit of the victory song to paper in rhythmized notes." The excerpt that follows is certainly simpler than the nine Bella Coola transcriptions, discussed below, that Stumpf also included in the paper, and it is understandably void of text (Figure 1.7). With its three three-measure phrases, each set to the same rhythmic pattern, and its somewhat disjunct and unpredictable melody (not to mention the incomplete fourth measure, owing to the use of an incorrect rest, corrected in the seventh), one wonders if the transcription of even these nine measures can be trusted. The “etc.”

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57. The conference proceedings, including Virchow’s introduction, can be found in Verhandlungen der Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte (1885), 13–22.

that follows is similarly questionable, as we are unable to determine if it actually stands in for a continuation in the same manner of what Stumpf transcribed, or if it indicates only that there was more. Stumpf’s own uncertainty is thus written into the notes, rendering them a determined approximation, at best.

This is in marked contrast to the transcriptions of nine Bella Coola melodies that fill the central portion of the paper, all but two of them products of the extended working sessions described above. Stumpf’s Bella Coola transcriptions convey much more information than his attempted Zulu transcription (Figure 1.8). For one, in addition to the notes and time signature, Stumpf included text—albeit still with not altogether meaningful etc.’s—as well as simple articulation markings and even indications of changes in tempo (“viel langsamer. noch langsamer”). Further, Stumpf’s transcription of the “Doktorgesang”—really a “Shaman Song”—also provides information about an accompanying drum, which appears to have mostly reinforced the rhythmic profile of the sung melody. The only symbols in these transcriptions that are not common to Western notation are the $x$ and $o$ markings above certain note heads. These represent Stumpf’s effort to communicate differences in pitch that the Western system of notation could not readily accommodate; in this case, notes that were sung slightly high—at least to an equally tempered Western ear—are marked with an $x$, and those slightly low, with an $o$. With all of the information and potential implications that these subtle symbols carry, it would seem that the absence of something similar was what Stumpf found so objectionable—and suspicious—in the “so very clean” transcriptions made by others.
The final two transcriptions that Stumpf included were provided by Franz Boas (Figure 1.9), then working under Rudolf Virchow and Adolf Bastian at the Königliches Museum für Völkerkunde (Royal Museum of Ethnology), who attended a “celebratory performance” of the Bella Coola along with members of the BGAEU and “numerous other invited individuals” on 19 January.
1886 in Berlin. From the surviving correspondence, it is unclear whether Stumpf solicited them from Boas or not, but one wonders if Boas followed Stumpf’s careful process and what the


60. The correspondence does reveal, however, that between January and March 1886, Boas sent Stumpf transcriptions of at least six melodies, but it does not indicate what the sources of these transcriptions were, or even if they included the two that Stumpf eventually published. In light of the date on Stumpf’s first letter in which he thanked Boas for the “consignment of 4 songs,” it is likely that this initial batch included at least some of Bella Coola melodies, as the Bella Coola Völkerschau that Boas
absence of $x$ and $o$ symbols means: is it because Boas was not instructed (or even able) to make such assessments? Or does this indicate that none of the pitches were “out of tune” according to the equally tempered 12-tone scale? As Boas’s interest was more linguistic than musical, it is fitting that his remarks, as relayed by Stumpf in the essay, concerned only the text, but it is odd that Stumpf did not explain, after lengthy discussions of the other seven songs, just why “no fuller description about the musical aspects is included.” In a letter, Stumpf had assured Boas that “you can be certain that the songs notated by me are as fidelitous as possible,” but we do not know if the same can be said of the others. Even so, this does not render Stumpf’s article any less significant: he outlined a methodology that was geared toward fidelity and, by his own estimation, offered the best possibility of success. Only once did Stumpf make any reference to the new capabilities for sound reproduction, and his remarks captured the essence of his project: “It was our intention to provide only phonographic replications, as it were, of the things heard, attended in Berlin occurred only a few days earlier. See Carl Stumpf to Franz Boas, 25 January 1886 and 8 March 1886, Franz Boas Papers, MSS.B.B61, American Philosophical Society, Philadelphia. (Boas also contributed a report on the Völkerschau to the Berliner Tageblatt: Franz Boas, “Kapitän Jacobsen’s Bella–Coola-Indianer,” Berliner Tageblatt, 25 January 1886. An English translation of the complete article is provided in Douglas Cole, “Franz Boas and the Bella Coola in Berlin,” Northwest Anthropological Research Notes 16, no. 2 [Fall 1982]: 119–22.)


[and] not theoretical reflections upon them.” In translating sound to script, Stumpf aspired to hear with the open ears of the phonograph while filtering out the noise.

**Mongolische Gesänge**

In many ways, “Lieder der Bellakula-Indianer” is Stumpf’s most important paper about the music of a non-European culture from his “pre-phonograph” period, as it was his only publication of this time that resulted from him working directly with sounding music. As demonstrated above, this task prompted him to think a great deal about the way in which such experiences should be properly documented and communicated to others, and even to provide a thorough account of his own experience and his reflections on the value, efficiency, and success of his process. Even without publishing further about performances until his study of Siamese music in 1901, he continued to contribute to the related discourse, building on issues that he had raised in his discussion of the Bella Coola.

In the year following the publication of “Lieder der Bellakula-Indianer,” Stumpf contributed a second piece to the *Vierteljahrsschrift für Musikwissenschaft*, this one about Mongolian songs. This discussion, Stumpf informs us, was based on transcriptions by J. S. Stallybrass, who, as the son of an English missionary, was born in Siberia and had lived there until his fifteenth

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year. In order to establish a certain degree of credibility for this not entirely “native” source, Stumpf explained that while he lived there, Stallybrass and his two older siblings “spoke, read, and wrote Mongolian, particularly Buryat—much like the locals—as well as Russian, English far less well.” After relocating to England, “they still sang the Mongolian melodies frequently among themselves and for English friends,” such that “they did not lose [the songs] from their memories,” leading Stallybrass to notate them in 1850. More than anything, Stumpf’s focus (here and throughout the essay) was on the issue of transmission, specifically with respect to the status of the musical “carrier.” The “provenance” of the Bella Coola melodies was never questioned, as the fact that Nuskilusta and his one-time substitute were themselves Bella Coola ensured their legitimacy, and the responsibility for maintaining that “truth” in the “recordings” of them was borne entirely by the transcriber. In the case of the Mongolian melodies, however, proximity is problematic from the beginning, in terms of space (Mongolia versus England), time (childhood versus adulthood), as well as relationship (Mongolian versus English—them versus us). Stumpf never claimed that Stallybrass was or was not a suitable proxy for a Mongolian, but by providing a focused biographical sketch, he invited his readers to consider this issue, especially as they evaluated whether the ten transcriptions contained within the paper were “genuine” representations of the songs or approximate at best. To this effect, Stumpf anticipated arguments

from both sides, writing: “It remains regrettable that the author [of the transcriptions] did not bring [the melodies] to paper in situ and thus anticipate every objection; yet, on the other hand, he has the entirely invaluable advantage that he sang the melodies . . . countless times himself as a native and settled into their spirit from earliest childhood onward.”

Whereas each of the Bella Coola melodies were accompanied by extensive commentary, very little is included here, as Stumpf did not provide any analysis of his own; instead, he relayed observations and anecdotes as recounted to him by Stallybrass. Following the transcriptions, however, Stumpf echoed his call to defer any meta-cultural analysis until more information had been collected: “We want to and must, as with the Bella Coola songs, here again abstain from theoretical considerations. Yet as a contribution to the enormous amount of material necessary for such considerations, these melodies seem to me of not slight worth.” He did not elaborate on why he believed this to be the case, but given the effort he expended in establishing Stallybrass’s near-native status, it is likely that he considered the transcriptions to be reliable enough. Because Stallybrass had been born in Siberia, learned the songs early, and sang the songs often, the tracings in his mind had been inscribed and re-inscribed, and his memory became


something of a phonographic cylinder. If he had learned the melodies later or had not sung them as much as Stumpf emphasized, it seems unlikely to me, given the amount of care with which Stumpf collected and refined his Bella Coola transcriptions, that he would have thought these transcriptions of any scientific worth, let alone have published them under his name. With respect to the quest for “reliable material,” then, this situation was what Stumpf likely had in mind when, in his later study of music of the Siamese, he remarked that “in some circumstances, notations of songs made from recent memory, by those who lived in the country long enough to sing the songs like those of their own homeland, can be trustworthy.”68

Maine, 1890 • New Mexico Territory, 1891

On a crisp March day in 1890, Jesse Walter Fewkes departed Boston for the small northeastern city of Calais, Maine. There, the American anthropologist met with members of the Algonquin-speaking Passamaquoddy, and, over the course of some days, made the first documented phonographic recordings of stories and songs intended for preservation and study.69 A visit to


Zuni Pueblo the previous year had “inspired” in him “a wish to attempt to record on the cylinders of the phonograph the songs, rituals, and prayers” of the Zuni, a goal he hoped to realize during a second trip to the New Mexico Territory that summer.\(^7^0\) As the technology had only become commercially available in 1889, he went to Calais in order to learn how to use it and to conduct “experiments on the value of the instrument in recording Indian languages.”\(^7^1\) Upon returning, he hailed the trip as a “complete success”: “I was able not only to take the records, but also to take them so well that the Indians themselves recognized the voices of other members of the tribe who had spoken the day before.”\(^7^2\) No longer playing back only hollow shells of the original sounds, the phonograph had “been brought to such a state of perfection” that the recordings could stand in for the speakers and singers themselves.\(^7^3\)

As Fewkes saw it, this was a triumph for all scholars of oral culture, for the promise of “objective” records elevated their kind of work to the realm of science: “What specimens are to the naturalist in describing genera and species, or what sections are to the histologist in the study of cellular structure, the cylinders made on the phonograph are to the student of language. In


\(^{73}\) “Local Meetings and Other Notices,” \textit{Journal of American Folk-Lore} 3 (1890): 165.
the quiet of his study he can hear the song repeated over and over again as often as he wishes, and can, so to speak, analyze it, and in that way separate the constituent sounds.”74 The analogy here is clear: researchers were now able to subject the spoken and the sung to a kind of dissective scrutiny, examine them in the minutest of detail, and even identify connections among them. Further, the phonograph allowed for the researcher to revisit the lost and short-lived, as through the act of recording, the cylinders had effectively become calcified ephemera. “In this way,” Fewkes wrote, “the phonograph imparts to the study of folk-lore”—or of any oral tradition—“a scientific basis which it has not previously had, and makes it approximately accurate.”75

A self-confessed non-musician, Fewkes did not feel qualified to discuss the specifically musical aspects of the events he recorded, nor was he capable of transcribing the songs into written notation.76 With this in mind, he observed that the possibility of recording allowed for the severing of the roles of recorder and analyst, which meant that a non-specialist or even a layperson could capture the moment and delay any further work, seemingly indefinitely: “Moreover, these records on the cylinders can be submitted to specialists for study. The collector may not have a musical ear, as in my own case, and may not be able to write out the songs, no matter how many times they are repeated. He can in that case collect the records, and submit

75. Ibid.
76. Ibid.
them at some favorable time to one who is able to catch the song and set it to music.”77 Such was the case for Fewkes not only with his recordings of the Passamaquoddy—he relied on two different people for the three published transcriptions78—but also with the recordings he made during his next research trip to Zuni Pueblo, for which he had undertaken his phonographic “experiments” with the Passamaquoddy in preparation.79

Fewkes traveled to Zuni Pueblo again during the summer of 1890, this time with the prize of phonographic recordings in his sight. Although both of these trips were undertaken as part of—and funded by—the Hemenway Southwestern Archaeological Expedition, which was then centered around Zuni, Fewkes wrote that he was drawn to the region because the Zuni, when compared to “all the Pueblos, except possibly the Moquis [sic],” had “been least changed from their original condition by contact with Europeans.”80 Because the Zuni ancestral lands were far from the railroad and otherwise difficult to access, it followed that they had “preserved the ancestral traditions and customs in their primitive form,” and therefore offered “an unparalleled


78. See Fewkes, “Study of the Languages of American Indians,” 268; and J. Walter Fewkes, “A Contribution to Passamaquoddy Folk-Lore,” Journal of American Folk-Lore 3 (1890): 262, 268, and 277. In “A Contribution,” the transcription of the “Song of the Snake Dance” is unattributed; however, Fewkes included it in his earlier “Study of the Languages of American Indians,” and there he ascribed it to Mrs. H. E. Holt. The other two transcriptions, appearing only in “A Contribution,” were both made by Mr. S. P. Cheney.

79. Fewkes, “A Contribution,” 258. Although Fewkes wrote here that he visited the Passamaquoddy in April, he actually went in March, as evidenced by his article in Nature (“Preservation of the Languages of the American Indians”), which is signed 20 March.

80. Fewkes, “Among the Zuni Indians,” 687. By “Moqui,” Fewkes was here referring to the Hopi.
opportunity for the study of the religious and secular celebrations of Pueblo Indians, slightly modified from the olden time.”  

Fewkes thus regarded the Zuni as conduits of a pristine and unadulterated culture, and as such, the ability to “freeze” time on a phonograph cylinder was especially crucial, not only because he could “save” songs and sayings from future extinction, but also because he could capture them in their as yet “unspoiled” state. “Granted that some of the [Zuni] songs are not ancient,” Fewkes would later write, “they are undoubtedly purely Indian melodies, little modified by Aryan influences, and as such are interesting as musical expressions of a primitive people.” For Fewkes and his likeminded colleagues, the cylinders did not hold buried traces of an antiquity still to be uncovered, but instead bore living examples of this lost past that they would carry into the future.

Returning to the Southwest that summer, Fewkes was particularly interested in studying the Zuni summer “ceremonials” that had so fascinated him the previous year. Since music featured prominently in these rituals, he was determined to record the music from as many of them as he could, for “no description of these observances would be complete without an analysis of the melodies which occur in them.” Additionally, while presenting his work on the Passamaquoddy, he had discovered the pedagogical benefits of being able “to illustrate lantern views of a sacred dance with an audible reproduction by the phonograph of the song which was sung when the

83. Ibid., 55.
cereency was taking place.” Fewkes filled ten four-inch wax cylinders with music, and although he reported on much that he had observed and learned in the ensuing article, he did not discuss the contents of the cylinders in any depth. Instead, he limited the scope of the study’s final section, “The Music of the Summer Ceremonials,” to remarks about the benefits—real and potential—that the phonograph offered, as well as a description of his method and reflections on the obstacles that he had had to navigate. Although by no means as detailed as the critical methodological overview that Stumpf had provided in his Bella Coola study, this assessment was still clearly written with the expectations and demands of the scientific standard and audience in mind.

For the transcription and analysis of the Zuni melodies, Fewkes left the cylinders in the hands of Benjamin Ives Gilman, a psychologist interested in the psychology of music, who had been entrusted with the task by Mary Hemenway, the patron of the Hemenway Southwestern Archaeological Expedition. Being the first scholar to work with recorded music in this way, Gilman’s report is understandably technical; even in his commentary on the melodies, he forwent


85. The original cylinders are now held by the Archive of Folk Culture in the American Folklife Center, Library of Congress (AFC 1970/069). For the collection catalog entry, see Brady et al., Introduction and Inventory, 61.


any discussion of context or setting. His article is instead notable for its exhaustive discussion of mechanics, with respect to both the recording apparatus itself and the procedure for transcription. He began, for example, with a brief statement on the provenance of the phonographic cylinders, elaborating only to observe that the “many repetitions” of the songs that Fewkes had recorded were “alike in surprisingly minute particulars,” after which he suddenly turned to a detailed description of the method whereby he arrived at his transcriptions.88 From the start, Gilman’s paper reads much more like a scientific report than a research essay.

Like Stumpf, Gilman was everywhere concerned with accuracy and faithfulness to the original example; as such, Gilman employed a harmonium “tuned to concert pitch in the equally tempered scale . . . ranging several octaves up and down from [C₅] = 536 vibrations” to assist in the transcription process, an instrument that, more than anything, would allow him to “check” his own ear.89 “Into this scale of fixed pitch,” Gilman wrote,

it has been sought to make as good a translation as possible of these phonographic copies of Zuñi songs, taking for each of their notes that one on the harmonium which seemed the nearest. . . . The records which follow are therefore to be regarded as an approximation to the actual course of pitch in these melodies, which, were there not aberration in the phonograph reproduction, nor failure to


89. Ibid., 65. Gilman’s harmonium was 42 cents sharper than the later-defined ISO 16 (i.e., the A₄₄₀ pitch standard), wherein C₅ has a frequency of 523.251 Hz.
select the nearest semitone on the harmonium, would everywhere be correct to within a quarter tone.\textsuperscript{90}

This is an illuminating passage, for it demonstrates Gilman’s inclination toward objectivity, yet reveals an undercurrent of suspicion couched in language of ontological difference. On the one hand, he had a standardized set of reference pitches to which he could compare each of the pitches that was emitted from the recordings, but on the other, the resultant transcriptions were twice removed from the original—translations of reproductions—which, despite all caution, could never be more than “approximations.”

Accepting this truth, Gilman walks his reader through his solutions to the obstacles he encountered, outlining recommendations for reducing the margin of error. In doing so, we learn that Gilman did not always aim to “fit” (or force) the melodies into an equally tempered twelve-tone framework. He offered no explanation or speculation as to why pitches were “evidently different from any semitone on the instrument,” but he did outline a process for dealing with such cases, which, by necessity, still required that they be assigned to notes on the staff, albeit with editorial annotations.\textsuperscript{91} Further, he expanded on remarks that Fewkes had made in “A Few Summer Ceremonials” regarding the issue of rotation speed, noting that “the absolute pitch and time of the music to which a phonographic cylinder has been exposed will not be reproduced by

\textsuperscript{90} Gilman, “Zuñi Melodies,” 65.

\textsuperscript{91} Ibid., 66.
it unless at every point of the piece it moves at the same rapidity in exposure and reproduction.”

He thereby highlighted an additional area of potential corruption, acknowledging that rhythm, like pitch, could be affected by the rate of rotation; yet he ultimately concluded that “it may be reasonably inferred that, apart from errors in the work, the following records give a fairly accurate report of these melodic sequences as they came from Zuñi lips,” and included, in support of his conclusion, an appendix with an account of all the experiments that he and Fewkes had undertaken in order to assess the relative fidelity of recordings made using different mechanisms for cylinder rotation. This thoroughness only underscores how important accuracy was to Gilman, so much so that he fine-tuned each stage of the recording and transcription process in order to assure himself—and the scientific community—that every effort had been made to ensure it.

**Phonographirte Indianermelodien**

In his “Phonographirte Indianermelodien,” Stumpf engaged with Gilman’s work specifically in order to refute Gilman’s claim that the Zuni were not yet at a stage of musical development in which fixed scales had formed. Over the course of the paper, however, we learn that it is as

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93. Ibid., 67; the appendix appears on pp. 68–70.

94. Gilman writes: “The evidence of these songs is, in short, that Zuñi music is subject to no restrictions of scale. What we have in these melodies is the musical growths out of which scales are elaborated, and not compositions undertaken in conformity to norms of interval order already fixed in the
much about further refining the approach to the study of non-European musics as it is about Zuni music, if not more so. Stumpf’s disagreement was not about the transcriptions, it was the transcriptions: because of Gilman’s effort to eliminate any indication of interpretation from the notated melodies—his rigid commitment to objectivity—aspects of the final transcriptions were unnecessarily misleading, to the extent that they would cause analysts to draw inaccurate conclusions.

However much the objective playback . . . of the material must be welcomed as an improvement over the many earlier highly subjective notations made from mere listening; however much we also acknowledge in Gilman’s principles for notation the pursuit of uttermost objectivity in the representation of exotic melodies and must guard against arbitrarily introducing our conceptions into them or altering them according to our needs (not to mention the beloved [practice of] harmonization): it would still be unjustified and wrong to consider material recorded in this way [i.e., by the phonograph] as being note-for-note the exact expression of the melodies intended by the singers.95

consciousness of singers. In this archaic stage of the art, scales are not formed, but forming.” Gilman, “Zuñi Melodies,” 89.

With his transcriptions, Gilman sought to notate the melodies exactly as emitted from the phonograph, without any editorial modification, however slight. The goal of “uttermost objectivity” when exercised uncritically, as here, became a false beacon, steering its follower past reasonableness, to the point that objectivity was no longer a means to an end, but the end in itself. “As we mistrust the sophisticated and critical ear of the observer in the case of the earlier methods,” Stumpf continued, “so may we not necessarily trust the alleged raw hearing and the clumsy larynx of the natural singer [des Natursängers] in the case of the new ones, that through their coaction [i.e., that of the singer’s hearing and larynx], they brought forth exactly the notes that corresponded to his musical awareness.”96 Such a methodology, Stumpf suggested, replaced suspicion of the ear with assurance of the voice, and thereby confused faithful transcription with objective representation: “We would have freed ourselves from the troublesome influences on the part of the observer, only to abandon ourselves all the more slavishly to every coincidence on the part of the reciting subject.”97

Such a “slavish” abandonment is evident in the way that Gilman notated the melodies. Recognizing the inherent tension in representing a non-Western music in a Western system of


97. Ibid. “Wir würden uns den störenden Einflüssen von Seiten des Beobachters entzogen haben, nur um uns um so sklavischer allen Zufälligkeiten von Seiten des vortragenden Subjekts preiszugeben.”
notation, he adopted various idiosyncrasies in an effort to reconcile the two. Because the melodies he transcribed did not fit perfectly into the Western equally tempered twelve-tone framework, he took “for each of their notes that one on the harmonium which seemed nearest,” and, “in cases where the heard pitch is evidently different from any semitone on the instrument,” he used either a dash or a textual annotation “to indicate that the heard pitch is higher or lower than the written.”

Further, in an effort to distance the notated melodies from any association with the conventions of Western classical music, Gilman placed certain restrictions on the notation system to make a Western “reading” as difficult as possible: he did not employ key signatures, marking accidentals exclusively with sharps; he did away with time signatures and, with them, bar lines, instead placing neutral typewriter apostrophes (‘) over notes to designate metric accents; and he indicated phrase breaks with wider spaces between notes, introducing rests only “in the case of any actual interruption in the course of the sound.” For all of the care that Gilman took to systematize the procedure in the name of accuracy and objectivity, Stumpf found these measures to be excessive and unwarranted, as they rendered the resulting transcriptions unnecessarily cryptic and could lead the transcriber to misconstrue the melodies in significant ways.

Such is the case, for example, in Gilman’s transcription of “Hay-a-ma-she-que,” the melody from cylinder IV (Figure 1.10a). Were it not for the fifth phrase, which begins at the end of the fourth line, the entire piece would sit comfortably in a D pentatonic scale; but despite

99. Ibid., 67.
recognizing—correctly—that “the fifth and sixth periods are a repetition of the second,”

Gilman, dedicated to representing the melody as he heard it as faithfully as possible, notated this

particular instance a semitone lower, an outlier in an otherwise tonally coherent melody. Stumpf, on the other hand, corrected the inconsistency (Figure 1.10b, indicated with “NB”), championing an approach in which the researcher was permitted “to allow himself conjecture at times about the actual intended pitches,” but only when “motivated from the inside out, by clues . . . provided in the songs themselves, and especially by parallel passages.”

Noting that in Gilman’s original, the final note of the phrase—in addition to being a semitone lower—was marked as being

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sharper than the G# of Gilman’s harmonium, he concluded that “the fluctuation [in pitch] is probably due to an irregularity in the rotation of the cylinder during the recording of the song.”

Similarly, Stumpf rewrote Gilman’s transcription of “Du-me-chim-chee” from cylinder II so that it remained in one “key” throughout (Figure 1.11). (He also simplified the notation, adding a key

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signature in place of Gilman's many accidentals, and, observing the metrical regularity, substituted a time signature and bar lines for Gilman's accent marks.) This time, however, his “clues” came not from the comparison of internal repetition, but from the dynamics, noting that “a steady sinking in pitch occurs parallel with the reduction in power.” Free from obedience to Gilman’s kind of objectivity, Stumpf worked to make the transcriptions more faithful to the melody-as-intended than the melody-as-produced, looking to reason to guide his judgment and inform his truth.

For all his commentary on the approach to transcription, Stumpf, by way of conclusion, took an unexpected detour to remark on the future role of the phonograph in music research. He recognized that the technology brought with it certain benefits but cautioned against a complete reliance on phonographic recordings in academic pursuits, for they were not able to capture and communicate everything of import. “To the phonographic playback of exotic melodies,” Stumpf asserted, “Gilman rightly grants a quite fundamental importance (assuming further improvement in the execution). It allowed for the melodies to be played and examined at any tempo, any number of times, at one’s leisure.”

Quoting Gilman, he continued:

“A collection of phonographic cylinders like that obtained by Dr. Fewkes forms a permanent museum of primitive music, of which the specimens are comparable, in fidelity of reproduction and convenience for study, to casts or photographs of

104. Ibid., 143. “Mit Recht erkennt Gilman der phonographischen Wiedergabe exoticster Weisen (noch weitere Vervollkommnungen in der Ausführung vorausgesetzt) eine ganz fundamentale Wichtigkeit zu. Sie gestattet, in Muße, in beliebigem Tempo, beliebig oft die Weisen vorzuführen und zu untersuchen.”
sculpture or painting.” The considerations above, however, make it necessary for us to make a qualification here as well. In order to obtain an accurate and complete picture, especially one that allows for conclusions regarding the psychological foundations of art, the impression of the living music with the many small and yet meaningful observations possible only during actual singing—about the entire habitus at every moment, the delivery, even the facial expression, the immediate vigor or fatigue, etc.—and sometimes even questions to the singer will forever remain indispensable. One will be permitted to base music research in this direction on only phonographies [auf bloße Phonographien] much less than archaeology and art history on collections of photographs and casts. Wherever possible, the music researcher must couple the study of the original in the old manner with that of the copies [der Abdrücke] in the new manner.

Despite not having had any experience at that point in the “new” method (i.e., using a phonograph), Stumpf, recognizing that the phonograph could not fulfill every important function, was advocating for a methodology that incorporated the phonograph as a tool for


certain purposes while retaining certain processes that it could not facilitate. From his experience with the Bella Coola, he recognized the importance of direct engagement with living music and, by extension, with those who sang and played it into existence. Although the phonograph could help you transcribe, it would never answer your questions; while it could repeat everything it hears, it would never be human.

Berlin, 1900

_Tonsystem und Musik der Siamesen_

“Tonsystem und Musik der Siamesen” (Tone-System and Music of the Siamese) is a substantial 70-page article that Stumpf published the year following the performances and his recording sessions at the Zoological Garden. Initially, Stumpf’s primary motivation appears to be a thorough reevaluation of a claim advanced by Alexander J. Ellis in 1885, that the Siamese used a scale with seven _equal_ steps to the octave.107 For Stumpf, the evidence was not sufficiently conclusive, as Ellis had based his conclusion on measurements of only two instruments—whose tunings did not always correspond—and the testimony of a Siamese envoy, which, Stumpf wrote, “could convey a valid theoretical lesson with which praxis did not necessarily need to be

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Yet Stumpf found Ellis’s argument persuasive enough that he did not dismiss it outright, and instead sought to verify Ellis’s finding and investigate how such a scale could come to be. Thus, Stumpf dedicated the first section of his study to the nine instruments used in the Court Theater Troupe’s ensemble, describing the physical characteristics and timbral qualities of each, and, where applicable, indicating their ranges. Of especial import were those instruments with fixed tunings because their pitches were set and not subject to regular alteration or inconsistency, and as such, they were presumed to be better and more precise indicators of the intended tuning. For these instruments—in this case, two xylophones and two gong circles—Stumpf and Abraham measured the frequency of each pitch, ultimately compiling their data into a table (Figure 1.12). Alongside their measurements (Columns III–VII), they included the measurements that Ellis had supplied (Columns I and II); the average of their frequency measurements (Column VIII); the frequencies of a theoretical equally tempered seven-note scale determined mathematically (Column IX); as well as those for the Western diatonic scale, according to both just intonation and equal temperament (Columns X and XI, respectively).

108. Stumpf, “Tonsystem,” 70. “. . . konnte allenfalls eine geltende theoretische Lehre wiedergeben, mit welcher die Praxis nicht nothwendig in Einklang zu sein braucht.” While taking measurements, Ellis was reportedly informed that the intention was for all of the intervals to be of equal. In order to test the “correctness” of this statement, he played for Siamese musicians both a scale of seven equal steps, which “they unanimously pronounced . . . good,” followed by the scale he had heard from one of the instruments, which was deemed to be “out of tune.” Ellis, “On the Musical Scales of Various Nations,” pt. 2, 1105.
From this information, Stumpf concluded that the data were consistent and proximate enough that “the existence of the equally tempered seven-note scale among the Siamese” was “entirely ensured.”

This is a new direction for Stumpf: in none of his three prior papers did he make any attempt to identify the background tonal framework—the Tonsystem—for any of the musics under consideration. On the one hand, this is purely circumstantial, as only in the case of the Bella Coola did he even have direct access to the music under discussion, yet because the nine Bella Coola men sang monophonic melodies with occasional drum or rattle accompaniment, there was no real opportunity for Stumpf to take exact pitch measurements, as there was no


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expectation—or guarantee—that the singers would produce precise and consistent pitches. At the same time, Ellis’s claim about the use of seven-tone equal temperament would have been especially intriguing for Stumpf given his background in psychology and his interest in matters of perception, but he did not have the opportunity to appraise it himself until the Court Theater Troupe toured Europe in 1900. Only by having access to the instruments could he, by way of the exacting process of precisely measuring frequencies, adequately convince himself of the factual truth of Ellis’s discovery, after which would he could finally seek to answer what was to him an even more gripped question: “How could one reach such scales without root extraction and logarithmic calculation [ohne Wurzelausziehen und Logarithmenrechnung]? That is to say, what could explain the empirical—as opposed to merely theoretical—existence of an equally tempered scale absent a mathematical apparatus for calculating the exact size of each interval?

Since the 1870s, Stumpf had been examining issues of music perception, among them the processes by which combinations of tones were experienced as being either consonant or dissonant and the distances or spaces between two different pitches were evaluated, especially in relation to others. The investigation into the origin of seven-tone equal temperament as

110. Stumpf, “Tonsystem,” 89; emphasis in original.

111. To put the significance of this question into perspective: the ratio of the interval between two consecutive notes in twelve-tone equal temperament (i.e., the “width” of a semitone) is the twelfth root of two to one \((12^{\frac{1}{12}} = 2^{\frac{1}{12}} \approx 1.05946309411)\). Thus, to determine the frequency of \(Bb_4\), multiply the frequency of \(A_4\) by \(12^{\frac{1}{2}}\). (If \(A_4 = 440\) Hz, then \(Bb_4 = 440 \times 12^{\frac{1}{2}} = 466.164\) Hz.) In seven-tone equal temperament, the interval ratio between two consecutive notes is \(7^{\frac{1}{2}}\), or approximately \(1.1040895141\).

employed by the Siamese was thus a particularly exciting prospect, for “if the scale is formed not
according to calculation but through the ear alone,” then it was a necessary requirement, “that
the succession of geometrically equal steps present themselves as equal intervals in the perception.”
If there were no need to determine the tuning system mathematically, then there must have been an
innate capacity to perceive intervallic equality through listening alone, an ability to recognize the
sameness of ratio, to hear “geometrically” and not “arithmetically.”

What follows is a fascinating discussion that is at once both a literature review and an
exploration of possible explanations. While the details are beyond the scope of this chapter, it is
important to note the centrality of first-hand observation and interaction to his methodology.
Much of his thinking was necessarily speculative, yet it was imperative that any hypothesis he
entertained be consistent with empirical reality, and that that reality be used as evidence wherever
possible. The theory he ultimately suggested sought to reconcile the extant equal temperament

Beiträge zur Akustik und Musikwissenschaft 1 (1898): 1–108. Although not specifically about music, he also
discussed aspects of space perception with respect to heard pitches in Über den psychologischen Ursprung
der Raumvorstellung (Leipzig: S. Hirzel, 1873).

Rechnung sondern durch’s blosse Gehör gebildet wurde, die Voraussetzung erforderlich, dass die
aufeinanderfolgenden geometrisch gleichen Stufen auch in der Empfindung als gleiche Tonabstände sich
darstellen.”

114. Writing for Guido Adler’s Handbuch der Musikgeschichte nearly a quarter of a century later, Robert
Lach considered the identification of the process by which musical scales arose to be central (still) to
the program of comparative musicology: “The solution to this problem—one of the most complicated
problems, perhaps even the principal and foundational problem of comparative musicology—is all
the more complicated and difficult, as the question is equally a question of psychology, ethnology,
and sociology, as [it is] of comparative musicology.” Robert Lach, “Die Musik der Natur- und
with the proposition—following from his observation that simultaneous fourths were frequent and the fourth was the interval used for tuning the instrument—that a Pythagorean scale could be the predecessor of the Siamese one. The transformation would have occurred “on account of the inclination to remove the conspicuous inequalities of the steps,” with instruments being adjusted over time “until no noticeable differences of interval were present any longer.” Consequently and concurrently, “the judgment of [intervallic] distance must have evolved more and more toward its present perfection” while people “grew more and more accustomed to the tempering (sharpening) of the fourth, which proved necessary for this purpose.” After proposing his theory, Stumpf wrote:

We can thus make the prehistory of this idiosyncratic scale-form comprehensible to ourselves; [yet] they are also hypotheses, as they still rely on the perceptions of the Siamese in conjunction with analogies to our own experience.
From a consideration of empirical evidence and observation, as well as that of his own knowledge and experience, Stumpf presented a coherent proposal, which although not certain, was nevertheless possible. Further, as hypotheses, elements of the theory were subject to future scrutiny, which could lead to them being verified or refuted, depending on what any new evidence revealed.

Whereas Stumpf met individually with one of the Bella Coola for the purpose of transcription, he spent his sessions with the Siamese musicians carrying out experiments in which he tested their abilities to match interval sizes and identify pitches, and he documented the ways in which they evaluated various “European” intervals and chords. Considering how central questions of psychology and psychophysics were to his study, it makes sense that he would want to assess various aspects of perception and help enlarge his body of empirical evidence. At the same time, he no longer needed to recruit musicians to play pieces over and over again, as he was now able to relegate that duty to the phonograph. Yet, as becomes clear, the phonograph did not instantly make everything easier. Although it certainly had its benefits, in order to use it effectively, plans for recording had to be thoroughly reviewed, and many considerations needed to be taken into account.

The greatest accomplishment resulting from the use of the phonograph is undoubtedly Stumpf and Abraham’s transcription of a piece in full orchestral score (Figure 1.13), but in order to facilitate it, they had to arrange for a special recording session and fill nine cylinders. Because
the phonograph did not have a great range with respect to registering sounds and it produced a good deal of background noise on playback, it was necessary to place the device as close as possible to the source of the sound if clarity were to be improved. Further, since they would need to record and then transcribe the parts for nine different instruments, Stumpf and Abraham
opted to record the entire orchestra once and then the instruments in various combinations so that the phonograph could be closer to the instruments during the recording process, and the individual lines would be easier to differentiate while notating them. They often recorded one melodic instrument with the two drums, as in keeping time, the drums would make the metrical arrangements of the various parts more apparent. When it came time to transcribe, they worked line by line, listening to each of the cylinders again and again, until each of the parts had been fully transcribed and verified against the recording.

In listening to the recording of the entire orchestra playing “Kham hom,” it quickly becomes evident just how difficult transcribing this piece would be. Although it begins with the parts more or less in unison, much of the piece features elaborate passage work and intricate rhythms, which often seem to merge into a mass of sound that makes it nearly impossible to follow individual lines from beginning to end. Further, the quality of the sound is not consistent from instrument to instrument, as the phonograph could not be situated in the ideal position in relation to every musician, and those instruments whose timbres are more focused and direct tend to cut through the sonic wash of the various gongs. Because the ensemble was also recorded in smaller groupings, the resulting transcription is extremely detailed, to the extent that Stumpf and Abraham were able to account for the variations in some of the parts during a repeat, which they included for comparison in smaller notation on staves immediately below.

A curious inclusion alongside the score is a transcription of the composite melody that materialized as Stumpf and Abraham listened to the polyphony of the entire orchestra (Figure 1.14). “Since a European reader, even if he is proficient in score reading,” Stumpf explained,
“cannot, in the case of foreign instruments, readily envision which of them dominates at each moment in the sound mass, we have . . . appended the overall impression of the melodic motion as it emerged from the phonographic reproduction of the ensemble performance.”

Although

the melody as perceived by a listener may differ from person to person, this transcription is nonetheless informative, for it not only indicates that such melodies were characteristic of the music on account of the interplay among the many voices, but also communicates a phenomenon that was experienced in the act of listening. It is certainly not necessary that a listener hear the music via the phonograph for such an experience to occur, but given the many factors that may contribute to it—the listener’s position vis-à-vis the various instruments, her location within the particular acoustic space, the ways in which she perceives certain timbres and frequencies, the ways in which they interact with one another, the force with which a musician plays each note, and so on—I would suggest that having a single exemplar at one’s disposal is largely necessary in order to transcribe one of these emergent melodies. While two listeners may not hear the same melody given the relative consistency of the assorted stimuli, it is much more likely that one will hear the same—or a very similar—melody during the many repetitions needed in order to complete the task. Thus, while Stumpf and Abraham’s composite melody may not hold for every performance of the piece, that they were able to arrive at a transcription of a complete composite melody is significant, for it provides their readers with an actual example of the phenomenon, and with access to the recording, it allows us, in a way, to hear through their ears.

The tasks of measurement and description discussed thus far all contributed to the “reliable material” required of the discipline that Stumpf, some fifteen years after his Bella Coola paper,
still found lacking: “The science of exotic music,” he writes, “still lies in its diapers.”120 In the final section of the article—“On the Investigation of Exotic Music and especially on the Methods for the Procurement of Material”—Stumpf renewed his call, now looking to additional years of thinking and writing, as well as this extensive study that demonstrated some of the potential for the future of the field, to further strengthen his case and inform his methodological recommendations. Having worked through his three prior papers on “exotic music,” I find that much is familiar—the notable exception being his consideration of the phonograph—yet here the various aspects that contributed to his proposed procedure were presented together for the first time. His approach to collecting material essentially breaks down into two steps: first, frequencies of instruments should be measured and the relationships among the various pitches calculated, with the aim of uncovering the background scale or tonal structure; and second, transcriptions of pieces of music should be made, ensuring that the notation is “certain.”121 In his explanations of both, he took care to anticipate a number of unexpected obstacles, including those that the researchers could unknowingly raise themselves. (In the case of the first task, for example, Stumpf insisted that we must consider how expressing data in one way may illuminate a trend or rule, whereas expressing it in another may reveal nothing.)122


121. Ibid., 133–35.

122. The specific example he gave is of representing intervals as ratios or relationships on the one hand, and in cents on the other. See Stumpf, “Tonsystem,” 134–35.
Of especial interest for us are his remarks regarding the “certain notation” of music, particularly those pertaining to the phonograph. Stumpf was right to have stressed the importance of representative transcriptions, for, as he explained, when researchers rely on transcriptions whose validity is indeterminate or clearly suspect, any observations or conclusions they make are accordingly shrouded in a fog of uncertainty. As the results could only be as trustworthy as the research, he described two possible ways for obtaining “certain” transcriptions. The first bypassed any requirement for performance or dictation, and instead saw a sufficiently qualified individual notate the music herself. This could be either a musician from the culture in question, who already knew or was able to learn Western notation and could therefore transcribe directly; or, in the case of a culture with its own musical notation, someone familiar with both, who could “translate” a written score from the foreign system into the Western one. The downside to this option, as Stumpf informs us, is that not only did the investigator need to locate someone who already knew aspects of two different musical cultures or had the time to learn, she also needed to rely on and trust in the skills of others, as the transcriptions would be very difficult—if not impossible—to verify. At the same time, however, it could possibly be very efficient, as it did away with the laborious and time-consuming process of transcribing from life, and the transcriber would already be familiar with the musical tradition, permitting the production of a greater number of transcriptions in a shorter amount of time. The second method, of course, was to transcribe from phonographic recordings, a method

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that allowed for the actual transcribing to be carried out at one’s leisure, and any individual proficient in Western notation would be able to validate a transcription against the recording.\footnote{Stumpf also discussed his test of the “telephonograph”—more frequently called the “telegraphone”—the first device to record sound using magnetism, invented by the Danish engineer Valdemar Poulsen in 1898. Although Stumpf found that the technology surpassed the phonograph in such important areas as sound quality—the device produced “no noise”—it was the fact that recordings could only be repeated in their entirety and had to be “rewound” between repetitions that the balance ultimately swung in the phonograph’s favor. See Stumpf, “Tonsystem,” 136.} Additionally, as mentioned above, the ability to replay the recording enabled one to commit a much longer and more complex piece of music to paper, and, ceteris paribus, it guaranteed that the performance would not change from one hearing to the next. Being committed to a thorough consideration of his methodology, Stumpf also listed some of the difficulties that accompanied the use of the phonograph—that the rotation speed needed to be constant, that extra equipment needed to be transported, and that care needed to be taken to ensure that the sounds were present and clear in the recordings—yet, as the transcription of the orchestral piece indicates, they could be overcome and for good cause.

Also crucial to the “certainty” of transcriptions was the way in which the sounds were visually represented. Echoing his critique of Gilman, Stumpf demanded that researchers not attempt to eliminate “contact with our musical ideas,” for, aside from it being impossible to do so “once we employ our notation system” instead of another, “the science must seek, without the blurring of idiosyncrasies, to make the common traits evident whenever possible.”\footnote{Stumpf, “Tonsystem,” 136–37. “Bei der Aufschreibung der phonographisch abgehörten Melodien in unserer Notenschrift muss man, wie mir scheint, das Princip befolgen, soweit als es ohne merkliche} While one needed to
be sure to respect the characteristic features of a foreign musical practice and avoid noticeably altering a transcription to make it “fit,” one needed to be careful not to unnecessarily amplify difference and sink a trench between “us” and “them.” His example is Gilman, who “made the results of his meritorious work nearly indecipherable due to the manner of transcription.” In his pursuit of objectivity, Gilman made his transcriptions unnecessarily complex, obfuscating central features of the music that were only revealed after Stumpf “rewrote the melodies without substantive alterations.” One must then, as with other kinds of data, think deeply about how aspects of presentation can affect—and effect—an outcome, as, “through inappropriate notational principles, formations of notes can arise from the phonograph that must initially appear to the European eye as wild absurdities, whereas in reality, they possibly correspond to simple and well-constructed melodies.”

Aenderung des vorgefundenen Tonmaterials möglich ist, die Fühlung mit unseren musikalischen Vorstellungen beizubehalten. Denn erstlich ist dies doch überhaupt die Absicht, sobald wir unsere und keine andere Notenschrift anwenden. Zweitens muss die Wissenschaft darauf ausgehen, ohne die Eigenheiten zu verwischen, doch nach Möglichkeit die gemeinschaftlichen Züge ersichtlich zu machen.”

126. Stumpf, “Tonsystem,” 137. “… die Ergebnisse seiner verdienstlichen Arbeit durch die Art der Aufschreibung fast unkenntlich machte.”

127. Ibid. According to Stumpf, “this was so evident that [Gilman] himself subsequently voiced his agreement.”

128. Ibid. “Es geht daraus hervor, dass durch unzweckmäßige Notirungsprinzipien aus dem Phonographen Notengebilde erwachsen können, die dem europäischen Auge zunächst als wüste Sinnlosigkeiten erscheinen müssen, während sie in Wirklichkeit vielleicht einfachen und wohlgelassenen Melodien entsprechen.”
On 20 June 1903, Stumpf attended a meeting of the *Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte* (Berlin Society for Anthropology, Ethnology and Prehistory; hereafter BGAEU) held at Berlin’s Museum für Völkerkunde, where, following discussions of the talus bone of an aurochs, salt production during the Hallstatt Age, and the Smolensk region’s rural Belarusian population, the phonograph would be formally presented to the society for the first time.¹ Although in attendance and welcomed personally by the session’s chairman, Stumpf did not present the instrument himself; rather, he entrusted this task to Felix von Luschan, Otto Abraham, and Erich Moritz von Hornbostel, who together would work to demonstrate the worth of the phonograph for ethnological and musicological study in order to convince those assembled of the enormous value promised by a sound archive. Much rested on the success of this demonstration, for there was more at stake than mere publicity for the Berliner Phonogramm-

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Archiv or promoting the phonograph as a potential research tool; an endorsement from the BGAEU meant entry into the vast political apparatus of German anthropology, a complex of institutional relationships of which the BGAEU was the central node.

Since its founding in 1869, the BGAEU had become the preeminent society of its kind in Germany, “quickly prov[ing] itself to be,” as Woodruff D. Smith writes, “an active promoter of anthropological investigation, organizing support for research projects, building public awareness of cultural science, and helping to create an empirical science of anthropology based on an organized network of amateur data collectors and academic analysts.” Thanks in large part to the strategic maneuvering of prime founder Rudolf Virchow, the BGAEU was able to take advantage of privileged relationships with various government officials, leading to, among other things, the founding of the state-sponsored Museum für Völkerkunde in 1873, the opening of a grand new museum building in 1886, and the establishment of regular faculty positions in ethnology at the University of Berlin in the 1890s. While both the museum and the university


3. Smith, *Politics*, 101–2. Of note is Adalbert Falk, Prussian *Kultusminister* from 1872–79, whom Virchow accredited with “la[y]ng] the groundwork for the Museum für Völkerkunde and promot[ing] with determination all those great scientific undertakings that made it possible for our society to cultivate the entire field of anthropological and ethnological research with great success.” See Virchow's
were sites for research and training, the museum—dedicated exclusively to the anthropological project, and the central repository for objects that explorers, missionaries, and other travelers collected from around the world—was especially vital to the development of the field. At the museum, administrators were also scholars, assistants were scholars-in-training, and obligations to the museum and to the field often coincided. Further, as a state institution, the museum ensured regular contact between the academy and the government, which proved central to the steady supply of the data and artifacts required to facilitate the comparative process that was fundamental to the scientific research method. Acceptance by the BGAEU meant that the Phonogramm-Archiv—and comparative musicology—could avail itself of such resources.

The status of the Phonogramm-Archiv was, at that point, tenuous at best: since Stumpf and Abraham had recorded the Siamese Court Theater Troupe in 1900, they, along with Hornbostel, Stumpf’s assistant at the Phonogramm-Archiv, procured four additional collections of recordings from musicians traveling through Berlin, but with a growing collection, the archive still did not have a proper facility of its own. Rather, it was informally housed in the University of Berlin’s *Psychologisches Institut* (Psychological Institute), headed by Stumpf, which had neither sufficient space to accommodate the growing collection of cylinders and equipment nor funds earmarked to maintain it. That Stumpf, Abraham, and Hornbostel had already found an

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4. Stumpf had been nominated to head a new psychological seminar beginning in 1894, and in 1900, the seminar moved into larger quarters, becoming an actual Psychological Institute. See Mitchell G.
advocate in Luschan was significant, as he was by that point a well-established figure in Berlin’s anthropological community, and, having been the assistant to Adolf Bastian, the director of the Museum für Völkerkunde, since 1886, he had accrued a certain amount of influence within the anthropological community and was experienced in the political intricacies involved in operating the anthropological apparatus. The BGAEU’s assent would surely bring with it a home for the Phonogramm-Archiv in the museum, access to the network of agents who collected artifacts on its behalf, and perhaps eventually a seat for comparative musicology on the faculty of the University of Berlin. Such support meant that the focus of Phonogramm-Archiv affiliates could shift from concerns of funding and infrastructure to the continued expansion of the collection and the development of the fledgling field of comparative musicology. It was thus in the Phonogramm-Archiv’s best interest that Luschan, Abraham, and Hornbostel found enthusiastic supporters among the BGAEU’s membership, for this community of cultural scientists had the power to either stimulate or stymie the archive’s growth.

The presentation to the BGAEU consisted of three papers, one given by Luschan (“Several Turkish Folksongs from Northern Syria and the Importance of Phonographic Recordings for Völkerkunde”), and the others jointly delivered by Abraham and Hornbostel (“Turkish Melodies Recorded with the Phonograph” and “On the Importance of the Phonograph for

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Comparative Musicology”). Luschan was an early advocate for the establishment of a sound archive, and within the correspondence of the Phonogramm-Archiv, there is no exchange better represented—at least through the end of the First World War—than that between Hornbostel and Luschan, which is indicative of the closeness of the relationship between their respective institutions, one that, as Susanne Ziegler has noted, was “substantially shaped” by Luschan. The three presented their papers at the end of the meeting, with Luschan going first. Neither the minutes for the meeting nor the published versions of the papers indicate as much, but a documented exchange among members of the BGAEU informs us that a phonographic demonstration also transpired. A brief discussion followed the presentations, and its transcript was published alongside the three papers in the Zeitschrift für Ethnologie, the official organ of the BGAEU, the following year.


8. Although usually painstakingly detailed, the minutes for this meeting mention only that Luschan “spoke about the ethnological importance of phonographic recordings” and Abraham and Hornbostel “about the importance of the phonograph for comparative musicology,” and include a note that “both
This chapter probes each of the three papers, outlining the case for the establishment of the archive while exploring the intricate web of entities that constituted the anthropological apparatus. My discussion progresses in the order that the papers were presented, beginning with Luschan’s and concluding with the pair given by Abraham and Hornbostel. Luschan’s paper also serves as a catalyst for demonstrating the kind of organizational complexities alluded to above, for it was itself a product of them. Abraham and Hornbostel’s first paper, as a musicological supplement to Luschan’s, demonstrates the kind of work that the proposed archive would enable, while their second explicates their plan for comparative musicology and argues explicitly for the creation of a scientific phonogram archive within the Museum für Völkerkunde.

Luschan on Turkish Folksongs and the Importance of Phonographic Recordings

Standing before the BGAEU, Luschan introduced his paper with stories that established his tested determinedness with respect to employing the phonograph for scientific purposes, a resolve that ultimately led him to be able to give this very presentation. He recounted to the audience that already some twenty-five years earlier, he had prophesied “that one day the phonograph should become an important tool for anthropological research work,” but unfortunately, when

lectures, together with the subsequent discussion, will be published later.” “Sitzung vom 20. Juni 1903,” Zeitschrift für Ethnologie 35 (1903): 667.

Since the lectures were published the following year as a set of three papers, I necessarily proceed under the assumption that the published versions reflect, more or less, the structure and content of the original presentations, while acknowledging that the texts were likely edited, and, at least in the case of Luschan’s, “expanded,” as he indicated in his paper’s first footnote.
he finally tested “the practical utility of a phonograph for our purposes” seven years later, he was disappointed to find that “the instrument was, at that time, technically still highly imperfect.”

Shortly thereafter, Franz Boas had presented his first phonographic findings to the BGAEU, but they were “likewise hardly encouraging.” Having then cast the thought of the phonograph aside, Luschan eventually returned to the idea of incorporating it into the scientific method after attending a lecture given by Abraham and Hornbostel, during which they demonstrated that the “musicological gain” provided by phonographic recordings was “entirely unobjectionable.” His curiosity and excitement sparked once again, he and Emma von Luschan (Figure 2.1), preparing to depart for a new excavation campaign in the Ottoman Empire, proceeded to purchase a small


10. Ibid. I have been unable as yet to locate any other record of Boas’s presentation.

11. Ibid. As with Boas’s demonstration, I have not been able to determine the details of this lecture. In light of the suggested chronology, it was likely a presentation of initial findings following Abraham and Hornbostel’s recording sessions in the autumn of 1901 with the Japanese theater troupe of Kawakami Otojirō, which featured the celebrated dancer, actress, and musician Sadayakko. See Otto Abraham and Erich M. von Hornbostel, “Studien über das Tonsystem und die Musik der Japaner,” *Sammelbände der Internationalen Musikgesellschaft* 4, no. 2 (February 1903): 302–60. On the status of this essay as psychology as well as the “ghosting presences of culture and race,” see Benjamin Steege, “Between Race and Culture: Hearing Japanese Music in Berlin,” *History of Humanities* 2, no. 2 (Fall 2017): 361–74.
phonograph, “which cost only 10 Taler and weighed little more than 1 kg.” The couple brought their phonograph with them to their destination of Zincirli (also Sendschirli), a rural community located near the northeastern corner of the Mediterranean Sea in what was then a northern region of Ottoman Syria (Map 2). When not occupied with matters archaeological—they
MAP 2

Expedition map of the third campaign to Sam‘al/Zincirli (labeled here as “Sendjirli”), 1890–91.

were there to excavate the ancient settlement of Sam'al,\textsuperscript{14} first settled during the Early Bronze Age—the Luschans taught themselves to operate their phonograph through trial and error, and eventually proceeded to record “a number of Kurdish texts” and “about 20 Turkish songs.”\textsuperscript{15} “Our success illustrates in itself,” Luschan concluded, “that even with an infinitesimal expense of time and money, one can already count on results of prime scientific worth.”\textsuperscript{16} All that was required was a phonograph.

The primary purpose of Luschan’s paper was to illustrate just how recordings like the ones he and Emma von Luschan had made amounted to objects of “prime scientific worth,” using his own example to bolster his claim. With this in mind, it is surprising that he failed to mention, in his introduction or elsewhere, a meeting of the Société d’anthropologie de Paris that he had attended while in the city for the 1900 Exposition Universelle, because there, he had encountered sound recordings made specifically for scientific purposes and had been extremely pleased with

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\textsuperscript{15.} Luschan, “Einige türkische Volkslieder,” 178. According to the records held in the Phonogramm-Archiv, the Luschans in fact recorded twenty-five Turkish songs, but only twenty are transcribed and discussed in the papers presented by Luschan, Abraham, and Hornbostel. “Luschan: Vorderasien, Australien I & II, Afrika, 1902, 1903,” Berliner Phonogramm-Archiv, Ethnologisches Museum, Staatliche Museen zu Berlin.

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their quality. This enthusiasm is apparent in the description of the experience that he included in his written report on the exposition:

Never has there been an exposition at which so many natives from the overseas protectorates were brought together. Insofar as I could determine, about 850 coloreds [Farbige] were exhibited, compared with 110 in Treptow 1896.\textsuperscript{17} Owing to the harsh autumn weather, most [had] already [been] repatriated. . . .

This was also the first time that the graphophone\textsuperscript{18} was employed for linguistic recordings on a grand scale. Several members of the anthrop[ological] society graphophonically recorded 450 coloreds altogether. On 27 October, I was invited to an extraordinary session of the anthrop[ological] society, at which some of the results thus acquired were presented. All of the cylinders proved to be exemplary and were distinctly audible throughout the room. . . . I deemed it necessary to incorporate, as well, recording with the graphophone into the ethnographic

\textsuperscript{17} Luschan was here referring to the \textit{Deutsche Kolonial-Ausstellung}, a section of the 1896 \textit{Berliner Gewerbe-Ausstellung}, which was an unrecognized exposition held between 1 May and 15 October in Treptower Park. See Gustav Meinecke, ed., \textit{Deutschland und seine Kolonien im Jahre 1896: Amtlicher Bericht über die erste deutsche Kolonial-Ausstellung} (Berlin: Dietrich Reimer, 1897); and Felix von Luschan, \textit{Beiträge zur Völkerkunde der Deutschen Schutzgebiete: Erweiterte Sonderausgabe aus dem "Amtlichen Bericht über die Erste Deutsche Kolonial-Ausstellung" in Treptow 1896} (Berlin: Dietrich Reimer, 1897).

\textsuperscript{18} To the best of my knowledge, it was a phonograph and not a graphophone that was used to make the recordings at the Exposition; all other first-hand accounts I have seen refer to \textit{phonographic} recordings, although nowhere is the precise model listed. See, for example, Léon Azoulay, “L’Ère nouvelle des sons et des bruits: Musées et archives phonographiques,” \textit{Bulletins de la Société d’anthropologie de Paris}, 5th ser., 1 (1900): 177–78; and idem, “Liste des phonogrammes composant le Musée phonographique de la Société d’anthropologie,” \textit{Bulletins de la Société d’anthropologie de Paris}, 5th ser., 3 (1902): 652–66.


If “exemplary” and “distinctly audible throughout the room,” then why the silence? If the quality of the recording technology had improved adequately enough that Luschan now thought it acceptable—let alone “necessary”—to include instruction in the art of recording in the ethnographic training regime, then why not say so? And if sound recording had already been adopted for use by another reputable society, why not use the example to bolster his case? If a demonstration did indeed take place, then perhaps he was going to let the phonograph “speak” for itself, but especially in light of his discouraging assessment of the outcomes of his and Boas’s earlier phonographic forays, evidence of success—even if anecdotal—would have surely made the argument more attractive, particularly if that success served as precedent.
By 1903, Paris’s Société had already established a sound archive of its own, largely at the instigation of the French histologist and later mycologist Léon Azoulay, who used the 1900 Exposition as an opportunity to experiment with the still-unfamiliar technology and to refine his approach to making recordings. When he first approached the Société to propose such an archive on 3 May 1900, Azoulay framed the project as being analogous to and a direct successor of the kind that had been previously enabled with the advent of photography, arguing that just as “the fixing of the fugitive image” had effected a “revolution for all domains of knowledge and human activity,” “the fixing of sounds and noises by the phonograph” would do no less. As he saw it, the audible, like the visual before, was “an immense world” that “still remains closed to human intelligence and labor,” one “full of new discoveries, of new conceptions, of new industries.”

With the development of the phonograph, however, the sounds and noises of this transient domain became newly accessible, for “the phonograph . . . has the fecund omnipotence to conserve

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20. Beyond his work with sound recording, Azoulay is perhaps best remembered today for his French translations of works by the so-called father of modern neuroscience Santiago Ramón y Cajal, who was awarded the Nobel Prize in Physiology or Medicine in 1906.


23. Ibid., 172–73. “Un monde immense reste ainsi encore fermé à l’intelligence et au travail humains, plein de découvertes, de conceptions, d’industries neuves.”
them and reproduce them, absolute foundational elements of all true science.” Matters of the ear could now be contained, examined, and reexamined, thus expanding the part of the universe available for scientific study.

Azoulay’s petition resonated with his colleagues to such an extent that immediately following the discussion of his presentation, the Société voted in favor of founding a musée phonographique, and Azoulay was promised the equipment he needed to make recordings at the Exposition, which had opened only a couple of weeks before. Speaking at a meeting of the Société in 1911, Azoulay recalled:

In May 1900, during the Universal Exposition, the Musée phonographique de la Société d’anthropologie came into being. . . . With the sadly-too-infrequent help of my friend M. le Professeur Vinson, I was able to obtain, over the course of just five months, more than 400 phonograms on cylinder. Stories; tales; conversations in more than 74 official languages, dialects, and patois; phonetics; songs; and music originating from a great number of regions of the world were recorded and, in part, given public hearings.


It was one of these “hearings” that Luschan had attended in October 1900, at which those assembled were able to listen to recordings of an ancient Chinese epic recited in the Peking dialect, a Sinhalese legend declaimed in song, a Laotian love song performed by a twenty-eight-year-old soldier, and likely others.26

In the concentration of so many different peoples from around the world, the Exposition was, in effect, a Völkerschau on a massive scale, and this provided Azoulay with the kind of diversity of which Stumpf, at that point, could only dream. Of the approximately 5,600 cylinders acquired by the Phonogramm-Archiv between 1900 and the outbreak of the First World War, performances at Völkerschauen would account for 376 of them (about 6.7 percent), spread across 28 collections that together represent only 26 different cultures.27 In order to expand its holdings, he had made during the Exposition, his methodology, and the various problems he had encountered. See Léon Azoulay, “Le Musée phonographique de la Société d’anthropologie,” *Bulletins de la Société d’anthropologie de Paris*, 5th ser., 2 (1901): 327–30; and idem, “Sur la manière dont a été constitué le Musée phonographique de la Société d’anthropologie” *Bulletins de la Société d’anthropologie de Paris*, 5th ser., 2 (1901): 305–20. For a detailed inventory of the collection, including information about the performers, see Azoulay, “Liste des phonogrammes,” 652–66.

26. Luschan included a handout with excerpted transliterations from the Chinese and Sinhalese recordings in his report ("Bericht über die Exposition Universelle," 197), and the Laotian recording is discussed in detail in Jann Pasler, “Sonic Anthropology in 1900: The Challenge of Transcribing Non-Western Music and Language,” *Twentieth Century Music* 11 (2014): 23–24. All of the surviving cylinders from Azoulay’s recording sessions have been digitized and are available for listening at: https://archives.crem-cnrs.fr/archives/collections/CNRSFH_I_1900_001/. (The excerpts of the Chinese epic can be found on cylinders 113 and 114, those of the Sinhalese legend on cylinder 216, and the Laotian love song on cylinder 208.)

27. Numerical data are based on Susanne Ziegler’s meticulous inventory of the Phonogramm-Archiv’s phonographic recordings, in which she also documents those cylinders that have been lost or destroyed: *Die Wachszylinder des Berliner Phonogramm-Archives* (Berlin: Ethnologisches Museum, Staatliche Museen zu Berlin, 2006).
then, the Phonogramm-Archiv needed to broaden its scope to look outside of Berlin and beyond Germany’s borders. Exchanging recordings with other archives and museums, especially as more of these institutions were established worldwide, was one option, as such agreements were mutually beneficial; another was to purchase commercially produced recordings from labels that maintained a catalogue of “ethnic” music. The vast majority of the cylinders, however, came to the Phonogramm-Archiv from explorers, scientists, missionaries, and other travelers, who either made recordings while abroad on the archive’s behalf, or, like the Luschans, made recordings of their own accord and later deposited them in the Phonogramm-Archiv. The thirty-three cylinders that the Luschans made while in Zincirli together represent the first Phonogramm-Archiv collection thus acquired, but there was no guarantee or expectation that more would follow, unless sound recording came to be recognized as a benefit to the anthropological project and then incorporated into the established collection strategy. If this were accomplished, the Phonogramm-Archiv would have readier access to the wide-ranging network of individuals who were largely responsible for the gathering of other kinds of anthropo-ethnological objects and


29. Of the original thirty-three, thirty-two survive in either their original form, as galvanized casts, or as copies therefrom.
data, a network that members of the anthropological community had been working to cultivate and expand since even before Germany had acquired any colonial possessions.

Luschan’s expedition of 1902 occurred during the peak of German excavation in the Ottoman Empire. Prior to the 1880s, little archaeological exploration had been carried out in the region east of Constantinople; “Asia Minor still remained,” according to Suzanne Marchand’s characterization, “largely unexplored and intimidatingly exotic.”

Fueled by a “desperate desire” to amass prestigious museum collections that would rival those of the British Museum and the Louvre, the young Reich, then experiencing warming relations with the struggling Empire, was poised to enter the contest for archaeological acquisitions from the Ottoman territories as it sought to solidify its status as a newly emergent world power. Indeed, recognizing the symbolic weight that a collection of world-historical significance would carry, Prussian Kultusminister Adalbert Falk wrote to Kaiser Wilhelm I, stressing: “It is of particular importance that the collections of the museums, which have thus far been very poor in Greek originals . . . now come into possession of a work of Greek art whose breadth is more or less equal to the great array of


Attic and Anatolian sculptures in the British Museum.” This wish would soon be fulfilled, for in September 1878, the first major German archaeological expedition began at Pergamon, where the remains of the great Pergamon Altar lay on the acropolis overlooking the site of the ancient city. Once uncovered and reassembled, this monumental marble structure, complete with its epic friezes and splendid statues, became the centerpiece of Berlin’s Antikensammlung and the first of many consequential finds that would be brought back to the German capital.

Archaeological interest in Asia Minor only increased following the great success of the Pergamon excavations, but the German government, influenced by chancellor Otto von Bismarck’s staunch opposition to wasting money on “scientific frivolities,” was unwilling to commit much to the enterprise from the state coffers. It was thus necessary to seek additional support elsewhere, lest the undertaking be abandoned altogether, and in 1887, the Comité behufs Erforschung der Trümmerstätten des Alten Orients (Committee for the Exploration of the Ruins of the Ancient Orient), or, Orient-Comité, was formed, a private association whose primary purpose was to raise funds to support such ventures and provide German teams with every

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33. Marchand, Down from Olympus, 82.
advantage. Significantly more state funding became available following the ascension of Kaiser Wilhelm II—“a monarch whose sight is directed at the historical investigation of things”—in 1888 and the forced resignation of Bismarck two years later, which contributed to the rapid expansion of German archaeological excavation in Asia Minor during the 1890s. Between 1888 and 1902, Luschan participated in all five of the German expeditions to Zincirli, four of them funded exclusively by the Orient-Comité, and the other partly by the Kaiser himself.

The archaeological dig of 1902—the last of the five—occurred between 3 January and 14 June, but because it coincided with a harvest, Luschan and his team could not rely on a steady force of local laborers as they had during previous expeditions; consequently, Luschan could not allocate as much time to activities that were not specifically related to the excavation as he otherwise might have, and as such, “only in the last days” was he able “to find time . . . for purely anthropological and ethnographical work.” It was during this period that the Luschans made


35. Ibid., iii.


the majority of their recordings,\textsuperscript{39} but it appears that they had had some opportunity to spend
time with their phonograph in early March—perhaps before the harvest—as Luschan’s inventory
seems to indicate that twelve of the altogether thirty-three cylinders were recorded at this time.\textsuperscript{40}

Emma von Luschan, née von Hochstetter, was the second child and eldest daughter of
Georgiana and Ferdinand von Hochstetter, the esteemed geologist, naturalist, and explorer, who
is remembered best for his work as the geologist to the Novara Expedition (1857–59).\textsuperscript{41} In her
penchant for travel, Emma von Luschan took after her father, joining Felix on every research
trip after they married in 1885. Photographs from the expeditions in Zincirli suggest that she was
regularly the only woman at the expedition site: it was uncommon at the time for women to

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\item \textsuperscript{39} In his paper to the BGAEU, Luschan indicated that they were able to spend no more than two or
three hours on the recordings and then approximately three hours more transcribing the texts. Luschan,
“Einige türkische Volkslieder,” 178.
\item \textsuperscript{40} “Luschan: Vorderasien, Australien I & II, Afrika, 1902, 1905,” Berliner Phonogramm-Archiv,
Ethnologisches Museum, Staatliche Museen zu Berlin.
\item \textsuperscript{41} This was the first and only around-the-world scientific expedition undertaken by the Austrian
Imperial Navy. The journey included an extended stay in New Zealand, during which Hochstetter
carried out a geological survey of the islands. Data from Hochstetter’s field diaries recently enabled
scientists to determine the exact locations of the Pink and White Terraces near Lake Rotomahana,
lost since the 1886 eruption of Mount Tarawera. See Rex Bunn and Sascha Nolden, “Te Tarata and Te
Otukapuarangi: Reverse Engineering Hochstetter’s Lake Rotomahana Survey to Map the Pink and
White Terrace Locations,” \textit{Journal of New Zealand Studies}, n.s., no. 23 (2016), 37–53; and Rex Bunn and
Sascha Nolden, “Forensic Cartography with Hochstetter’s 1859 Pink and White Terraces Survey: Te
\item \textsuperscript{42} A photograph from the third or fourth campaign (1890–91 or 1894) is reproduced in Wartke, \textit{Sam'\textasciiacute;l},
42; a photograph from the 1902 campaign is reproduced in Ralf-B. Wartke, “Felix von Luschan
Universalgelehrten}, ed. Peter Ruggendorfer and Hubert D. Szemethy (Vienna: Böhlau, 2009), 312.
\end{itemize}
travel outside of Europe on account of the commonly held belief that it was “too dangerous.” Yet Emma’s mere presence is not solely what makes her example remarkable; she was there as a ready participant in the project, entrusted with such important tasks as documenting the expeditions in photographs, maintaining the catalog of archaeological finds, and, in the case of the 1902 campaign, serving as Felix’s medical assistant. Emma had received an informal education in the natural sciences, likely from her father, and as such, she was able to provide invaluable assistance to Felix in his work. From Felix’s published writings and private correspondence, we know that Emma routinely performed “significant anthropological work” in support of his projects, producing anthropological photographs, taking anthropometric measurements, and, in 1902, making phonographic recordings.


44. See Wartke, *Sam’al*, 37, 39, and 41. At least during the third campaign of 1890–91, Emma Luschan’s photographs were included with the expedition reports Luschan sent to Berlin, providing a visual timeline of the excavation’s progress (Wartke, *Sam’al*, 37). One of her photographs was also published alongside the official report of the 1902 expedition; see Orient-Comité zu Berlin, *Ausgrabungen in Sendschirli*, vol. iv, Mittheilungen aus den Orientalischen Sammlungen 14 (Berlin: Georg Reimer, 1911), 253.


46. Ibid., 130.

47. Luschan, *Beiträge zur Völkerkunde der Deutschen Schutzgebiete*, 4. Andrew Zimmerman notes that both of the Luschans “were accomplished photographers and together won a gold medal at an 1896 international amateur photography exhibition.” Zimmerman, *Anthropology and Antihumanism*, 288n55.

The main source for their recordings was Avedis, a twelve-year-old Armenian boy from Aintab—now Gaziantep—who, in need of medical care, had traveled the approximately sixty-five kilometers (forty miles) to Zincirli with his father to seek out Luschan. Avedis was “admitted” to the expedition camp, where he remained for at least two weeks while Luschan treated him. It was during this time that, over the course of three separate sessions, Avedis filled eighteen cylinders with twenty different Turkish songs, recording a few of them more than once. “As the son of a lowly huckster in a provincial town,” Luschan recalled,

he had—in spite of his youth—heard an abundance of songs, and, thanks to his doubtless not inconsiderable musical aptitude, also remembered [them]. His exceptional intelligence, his genuinely amiable amenability, and his indestructible good spirits made him especially suitable for our phonographic recordings, whereas our previous experiences with several adults had not exactly been very encouraging.

49. Luschan, “Einige türkische Volkslieder,” 179. Luschan did not indicate why Avedis required medical assistance, nor did he discuss the details of Avedis’s treatment regimen.

50. Ibid. “Als Sohn eines kleinen Krämers in einer Provinzstadt hatte er trotz seiner Jugend eine grosse Menge von Liedern gehört und dank seiner zweifellos nicht geringen musikalischen Begabung auch behalten. Seine ungewöhnliche Intelligenz, seine wirklich liebenswürdige Gefälligkeit und seine unverwüstlich gute Laune ließen ihn für unsere phonographischen Aufnahmen besonders geeignet erscheinen, während wir vorher mit mehreren Erwachsenen nicht gerade sehr ermutigende Erfahrungen gemacht hatten.”
Considering that Luschan was far happier with the recordings of Avedis than those made some three months earlier—not to mention the fact that they account for more than half of the thirty-three cylinders Luschan later deposited in the Phonogramm-Archiv—it is no wonder that he elected to focus on these twenty songs in his report to the BGAEU. Moreover, Avedis recorded one of the same songs as had one of the Luschans’ earlier subjects—identified in Luschan’s inventory as Ali, a twenty-one-year-old Muslim from Marasch—which, as will be discussed below, would prove exciting to Abraham and Hornbostel because the two renditions of the song were not identical.

As Luschan told it, Avedis’s extended stay at the camp provided Luschan with the opportunity for the kind of relationship that Stumpf had cultivated with Nuskilusta, perhaps to an even greater degree. Besides singing into the phonograph, the Luschans had the amenable Avedis dictate the texts of the songs, which they then laboriously transcribed. Further, they were able not only to have Avedis repeat words or phrases at will, but also to consult Avedis and revise their transcripts based on the comments they received. As we are not provided with a first-hand account from Avedis, however, we do not know if Avedis was in fact a willing participant, as Luschan claimed, or if theirs was an exploitative opportunism that perhaps even hindered the twelve-year-old’s healing. Did his treatment really require a stay of more than two weeks, or was he encouraged to stay that long, perhaps under false pretense? Did the effort that the three

recording sessions required of him—not to mention the unnumbered consultations—contribute to his taking that long to recover, or was he actually as ebullient as Luschan suggested? The documentation held in the Phonogramm-Archiv does not contain any additional details about Avedis or his situation, and it is impossible to assess Avedis’s health or frame of mind from the recordings, so unless such information is uncovered elsewhere, these questions will remain unanswered and uncertain. Nonetheless, it is important to acknowledge Avedis’s contribution to comparative musicology and the Phonogramm-Archiv, a contribution that included not only his singing, but also the invaluable assistance he provided as the Luschans attempted to document the words that he sung for them.

Luschan admitted to having learned what Turkish he knew only “empirically” (i.e., informally in the course of speaking), and he thus aimed to render the texts phonetically, using those German graphemes that, in his estimation, best represented the Turkish phonemes that he heard.52 Because of his ignorance of written Turkish and his self-professed “bad musical ear,” his transcriptions are littered with orthographical errors of various levels of significance: Luschan was unable, for example, to discern a difference between the sounds of the Turkish $k$ and $q$ despite every effort, and this distinction is consequently absent in his transcripts. As a result, his “crude, phonetic private-transcriptions” (Privattranskriptionen) provide readers—albeit one step removed—with a kind of representation of the particular way in which the sounds of Avedis’s words resonated in his ear, making him the subject of these transcriptions as much as the texts he

sought to capture in ink. Their strength, as he saw it, lay in the fact that they have “the advantage of more general intelligibility and can therefore convey at least a rough idea of the actual sounds of the text to the laity more easily than any kind of conventional scientific transcription,” as an understanding of their phonetic presentation did not require Turkish literacy.\textsuperscript{53} Would that it were possible to listen to a recording instead.

Tellingly, Luschan reproduced only six of his initial “amateur” transcriptions in the published version of his presentation, and elected instead to include versions of his texts that adhered more to a “scientific” standard as the centerpiece of his paper.\textsuperscript{54} Rather than commissioning new transcripts to be made from the recordings, Luschan had his originals revised by Hacki Tewfik, a native Turkish speaker “of exceptional education and intelligence,”\textsuperscript{55} who was also present at the meeting of the BGAEU.\textsuperscript{56} Luschan annotated the corrected transcripts heavily, identifying Tewfik’s changes and providing commentary on both the Turkish texts and the German translations that appeared alongside. Luschan clearly went to great lengths to ensure the validity


\textsuperscript{54} Abraham and Hornbostel, however, decided to set Luschan’s “phonetic” transcriptions in their transcriptions of the melodies, perhaps in an effort to make them reflect an entirely aural experience.

\textsuperscript{55} Luschan, “Einige türkische Volkslieder,” 179. A few years later, Tewfik would produce what was probably the first Turkish-German (as opposed to German-Turkish) dictionary: Hacki Tewfik (Galandjizade), \textit{Türkisch-Deutsches Wörterbuch} (Leipzig: Otto Holze’s Nachfolger, 1907).

of the transcriptions and to make certain that there was no possibility for semantic uncertainty, as he provided copious contextual information, to the extent that its abundance masks any sense of singular purpose or aim—Luschan managed to veil the signal with what may very well be nothing but noise.

Following his presentation of the texts, Luschan concluded his paper with an extended argument championing the adoption of the phonograph by the scientific community. Having just used his own example to demonstrate how sound recordings could benefit ethnographic, linguistic, and “purely dialectic” research, he turned to matters of logistics, and envisioned how else the phonograph could serve the larger project of Völkerkunde.57 Luschan projected an air of confidence, at times speaking as if the proposed phonographic archive had already been approved, his present task being to outline the anticipated schedule of its implementation: “The Berlin Museum will hereafter endeavor to prepare as many travelers for phonographic recordings as for other observations,” on the condition that “we succeed in making enough funds available to equip travelers with instruments, diaphragms, and cylinders.”58 With an adequate stock of equipment,


58. Ibid., 201. “Das Berliner Museum wird in Zukunft bemüht sein, möglichst viele Reisende wie für andere Beobachtungen so auch für phonographische Aufnahmen vorzubereiten. Hoffentlich gelingt es uns, genügende Mittel auch für die Ausrüstung der Reisenden mit Apparaten, Membranen und Walzen flüssig zu machen.”
the museum would be able to provide those persons already tasked with collecting other objects and information on its behalf with the supplies necessary to collect sonic artifacts as well, and thus use an extant system to contribute to something new. “It is self-evident,” Luschan asserted, anticipating the growing collection and scholarly interest therein, “that we must henceforth begin to establish, within the museum, a dedicated phonographic division—a kind of archive in which one will be able to study, still in centuries to come, the music of tribes that perhaps will then already be extinct.”

The extinction that Luschan was referring to was not a physical one but a cultural one, yet it was not a total extinction: for cultural scientists, particularly for those studying purely oral aspects of culture, mere change was tantamount to extinction. This belief rested on the naïve assumption that before “first contact” with the more civilized European, a culture remained pristine, and any objects or utterances produced by such a culture were expressions of the pure essence of that culture. This impulse was characteristic of “salvage ethnography,” an approach to the study of human culture that was grounded in what James Clifford has termed the “salvage paradigm,” which “reflect[s] a desire to rescue something ‘authentic’ out of destructive

The salvage paradigm is “a geo-political, historical paradigm that,” Clifford explains, “has organized Western practices [he calls] ‘art—and culture—collecting.’” During the nineteenth century, with the hastening acquisition of European colonial holdings overseas came the realization, as voiced by James Cowles Prichard in his 1839 address to British Association for the Advancement of Science, that

Wherever Europeans have settled, their arrival has been the harbinger of extermination to the native tribes. Whenever the simple pastoral tribes come into relations with the more civilised agricultural nations, the allotted time of their destruction is at hand; and this seems to have been the case from the time when the first shepherd fell by the hand of the first tiller of soil.

Now, as the progress of colonization is so much extended of later years, and the obstacle of distance and physical difficulties are so much overcome, it may be calculated that these calamities, impending over the greater part of mankind, if we reckon by families and races, are to be accelerated in their progress; and it may happen that, in the course of another century, the aboriginal nations of most parts of the world will have ceased entirely to exist.61

As evidenced by Luschan’s comments above, the fear over the imminent loss of clues to the history of humanity had still not been assuaged some sixty-five years later. (Even in 1910, Sir Charles Hercules Read, Keeper of the Department of British and Mediaeval Antiquities and

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Ethnography at the British Museum, would observe: “In proportion as the value of Anthropology is appreciated at its true worth, the material for anthropological study diminishes.”\textsuperscript{62} In addition to the emphasis placed on collection, the race against the inevitable advance of civilization may also help explain the import placed on the production of scientific monographs, since each volume would provide a thorough description of a single culture and perhaps eventually stand in for a culture that no longer existed.\textsuperscript{63}

Under the salvage paradigm, the situation for music was further complicated by the thinking that once the European musical tradition had infiltrated a foreign one, there would be no way to assuredly determine what was native to that tradition and what had been newly acquired—how would comparative musicologists know, for example, if instruments were being tuned more in accordance with twelve-tone equal temperament than they had been in the past, or if

\textsuperscript{62} Quoted in Gruber, “Ethnographic Salvage,” 1296.

\textsuperscript{63} Recall that in “Lieder der Bellakula-Indianer,” which he had produced without the assistance of sound recordings, Stumpf stated that “monographs, independent of any theory, but with such considerable exactitude of true description” were “of greatest need in this field” (405). While he was likely calling for the production of resources that could be consulted in lieu of experiencing the music firsthand, even in the phonographic age, monographs could provide contextual information that sound recordings could not. Abraham and Hornbostel echoed Stumpf’s call in the opening of their 1904 publication “Phonographierte indische Melodien”: “In contrast to music history [i.e., the history of Western music], comparative musicology is today still in a stage of preparatory work. It is first necessary to collect considerable material from areas of non-European culture and to assemble [it] in the form of monographs. The viewpoint of the compilation must, for the time being, be either geographic or ethnographic. Musical or psychological classification principles would assume a knowledge of all musical differences to be found on the globe.” Otto Abraham and Erich Moritz von Hornbostel, “Phonographierte indische Melodien,” Sammelbände der Internationalen Musikgesellschaft 5, no. 3 (May 1904): 348.
vocal timbre was being modified in order to better fit a European conception of beauty? This heightened the already present sense of urgency surrounding the salvage mission, as it became necessary not only to collect examples of non-European musics for the inductive task of cultural science, but also to do so with great haste in order to outpace the very mechanism that was largely responsible for enabling the study of non-European peoples and cultures in the first place.

“For this new branch of our work [i.e., comparative musicology],” Luschan wrote,

the final hour has already dawned on many peoples and tribes. This is true not only of those “savage tribes” [“Wildstämmen”] that we have recognized are more or less fast disappearing; it applies equally as well to all those territories in which European influence is now spreading with incredible speed. ⁶⁴

By means of illustration, Luschan cited the presence of European musicians working in Japan and the earlier appointment of Berlin-born Heinrich Berger as director of the Royal Hawaiian Band by Kalākaua, King of the Hawaiian Islands, as these Europeans would have introduced elements of their own traditions to the people native to Japan and the Hawaiian Islands, even if only unwittingly. The greatest threat, however, were “surely the actions of missionaries, who frequently ‘adapt[ed]’—entirely systematically—native melodies” as part of their strategy for actively disseminating their way of life. ⁶⁵ This practice had already resulted in the creation of

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65. Ibid.
myriad “hybrid styles” that “survive with great tenacity” and might themselves have developed further, making it increasingly more difficult to identify “primordial and primitive” affinities. The very aim of missionaries was to supplant the native belief systems with their own, an outcome that would adulterate or erase cultural differences, the material that gave ethnologists purpose.

Luschan concluded his presentation on a more optimistic note, looking forward to a future in which phonographic recordings were not only resources for study but also for education. In the phonograph, he saw a promise for further innovation in museum display, as guests would be able to listen to what they saw:

Alongside our purely ethnographic display collections, we have exhibited photographs for a long time; in the coming years we will begin to display stereoscopic images to the public as well, and the museum of the very near future will surely also need to accommodate the formative force [dem Bildungstrieb] of the broad strata of the people by means of projection images and even complementary cinematographic presentations—the gramophone, then, must also be there.


67. Here Luschan invoked Johann Friedrich Blumenbach’s notion of Bildungstrieb (Latin: nisus formativus), which Blumenbach originally formulated as “an inherent causal principle to explain the possibility of epigenesis” (Robert J. Richards, The Romantic Conception of Life: Science and Philosophy in the Age of Goethe [Chicago: University of Chicago Press, 2002], 228); in this context, however, Luschan seems to allude to a propensity to learn, leaning on another meaning of Bildung (“education”).

It is clear that Luschan considered the education of the general population to be a moral obligation of the museum, not only because he specified that the cinematographic presentations be gratuitous, but also on account of his insistence that it was a “duty” of an ethnographic museum to use sound recordings to make accessible all those “peculiar” musics that could otherwise not be properly conveyed. “The public has a right to ask,” he declared, “how the languages sound of the peoples whose weapons and appliances, jewelry and clothes we place before their eyes.”

Abraham and Hornbostel on Turkish Melodies

After Luschan concluded his presentation, Abraham and Hornbostel ascended the podium, picking up where Luschan left off. With their first paper, they sought to offer the kind of musicological account of the recordings that Luschan himself could not, yet in a language that all assembled could understand. This is not to suggest that it was not technical; rather, Abraham and Hornbostel presented the melodies in a way that excised the aesthetic or the expressive—

kinematographische Vorführungen dem Bildungstriebe [sic] der breiten Schichten des Volkes entgegenkommen müssen—da darf dann auch das Grammophon nicht fehlen."

69. Luschan, “Einige türkische Volkslieder,” 202. “Das Publikum hat ein Recht zu fragen, wie wohl die Sprachen der Menschen klingen, deren Waffen und Geräte, Schmucksachen und Kleider wir ihm vor Augen stellen.” In order to accommodate public listeners, Luschan suggested that the museum install a series of listening cubicles to be made available to the public in addition to researchers. Luschan’s proposal will finally be realized when the Ethnologisches Museum opens in its new home at the Humboldt Forum, which is scheduled to open in stages beginning in September 2020.
the musical—and reduced the performances to representations that could be experienced and understood visually, rendering them in notation and numbers. This was, however, their aim: to strip their research objects of the qualitative, of any possible trace of interpretation—of their subjective selves. And this motivation comes through not only in their tables and transcriptions, but also in their meticulous discussion of methodology, which began with an air of disclaimer: “The melodies were listened to and taken down in European musical notation; this notation would be entirely correct if the Turkish tone-system corresponded completely to our European tone-system.”70 Because this was not in fact the case, Abraham and Hornbostel placed “+” and “−” symbols above those notes that they had perceived to be sharper or flatter, respectively, than the pitches represented according to twelve-tone equal temperament. (They opted for this solution as a means of ensuring greater intelligibility, rather than employing a bespoke symbolic language that might offer greater precision but require greater investment on the part of the reader.) Continuing their introduction to the transcriptions, they informed their audience that the rhythmic and bar divisions “say just as little about the singer’s conception,” but were “chosen at our subjective discretion” and included only to “facilitate the reading of the melodies.”71


71. Ibid. “Ebensowenig sollen unsere rhythmischen und taktlichen Einteilungen etwas über die Auffassung des Sängers besagen; sie sind lediglich bestimmt, das Lesen der Melodie durch Zusammenfassungen in Gruppen zu erleichtern und wurden nach unserem subjektiven Gutdanken gewählt.” Interestingly, the reference to subjectivity was removed when this article was reprinted in 1922; cf. Carl Stumpf and Erich
Yet while it was appropriate—perhaps even expected—that they would include transcriptions, Abraham and Hornbostel clearly saw them as inferior documents on account of their unavoidable imprecision and relative corruption by subjectivity. (Recall that even Gilman, despite his many efforts, was still unable to produce transcriptions that were suitably “objective” and thus justified in their complexity.) Indeed, in the published version of their paper, the transcriptions are assembled at the end as a kind of appendix, and they receive very little individual attention in the text. Thanks to Avedis’s “remarkably pure intonation,” however, Abraham and Hornbostel were able “not only to reproduce the subjective auditory impression”—the transcriptions—“but also to attempt objective determinations of pitches,” resulting in data acceptable for scientific use. But even if they could promise objectivity in their measurements, they cautioned their audience against using measurements procured from sung melodies as the basis for conclusions regarding the nature of a tone-system because, as Stumpf had suggested in his critique of Gilman’s transcriptions (discussed in the previous chapter), a singer’s rendition of the melody may not reflect the intended pitches and pitch relationships. (In their remarks, Abraham and Hornbostel seem to indicate that Avedis’s youth was also reason to be wary of his renditions, as

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if he had not been alive long enough to absorb the tone-system fully.) With respect to melody IV (“Shebabet gittide elden”), for example, Abraham and Hornbostel indicated that Avedis’s intonation was so unsteady that they “had to refrain from measuring” the frequencies of the pitches, noting as well that it was “hardly possible” to determine the melody’s metrical structure on account of its recitative-like delivery (Figure 2.2). With respect to Avedis’s other recordings, however, Abraham and Hornbostel deemed it “justifiable to utilize the acquired results, albeit cautiously,” but only because they had found “very good consistency” in the measurements they had obtained from Avedis’s two recordings of “Schu jahudi kysy” (melody VIII), on the one hand, and from the separate recordings of “Yar, yar, yar” (melody XIII) that Avedis and Ali had each made, on the other (discussed below).

In addition to their concerns regarding the content of the recordings, Abraham and Hornbostel had to confront obstacles pertaining to the recording technology itself if a wholly objective result was to be ensured. In order to function, manual phonographs must be cranked by hand, which means that there is a direct correlation between the speed at which a cylinder rotates and the tempo of the operator’s arm. In listening to a recording, adjusting the rate of rotation causes the perceived pitch of a recording to change: increasing the speed will raise the

73. “In general, one must be very cautious with the evaluation of tonometric calculations in vocal pieces, and it is precarious to draw conclusions on the nature of the tone-system from the musical production of a singer—and such a youthful one at that—as Avedis [eines, noch dazu so jugendlichen, Sängers wie Avedis].” Abraham and Hornbostel, “Phonographierte türkische Melodien,” 203–4.


75. Ibid., 204.
pitch, whereas decreasing the speed will lower it. A recording can only sound at its original pitch, then, if the rate of rotation during playback matches that from when the recording was made (hence the eventual establishment of standards). Presumably because they were not yet familiar
enough with the technology to anticipate this problem, neither of the Luschans had attempted to standardize the speed at which they cranked the phonograph—by synchronizing their arm to the tick of a second hand, for example—or communicated any estimations of rotation speed. There was thus no assurance that the pitches Abraham and Hornbostel measured corresponded to the actual pitches that Avedis had sung, but they did think to use the spoken title of each song, announced by either Felix or Emma at the beginning of each recording, as a measure for estimating the original rate of rotation.\footnote{This lack of verifiable correspondence, however, did not ultimately undermine their project because even if the \textit{absolute} pitch of each recording were only approximate, the \textit{relative} pitch—the tuning of the pitches relative to one another—would remain the same and the sizes of the intervals unaffected.\footnote{Abraham and Hornbostel, “Phonographierte türkische Melodien,” 204. They had no choice but to presuppose, of course, that the rate of rotation was invariable over the course of each recording, impervious to the effects of such factors as gravity or the fatigue of the operator’s arm over time. Considering how thoroughly they scrutinized each part of their methodology, however, it is surprising that they did not acknowledge or address this in their paper.}}

Before making their measurements, Abraham and Hornbostel had first to determine which notes from each melody would form the exemplary set—whether, for example, two or three notes that differed in frequency by only a few hertz constituted instances of the same pitch, and if so, which one was most exact. In an effort to systematize the selection process and thereby minimize
their reliance on “subjective discretion,” they sought “individual tones in each piece at especially conspicuous locations,” likely because such placement would be indicative of a hierarchical significance within the respective tone-system.78 Additionally, they indicated their preference for “long-held notes” over those of shorter duration because sustained notes were far easier to measure, and the additional time in performance would presumably have allowed Avedis to adjust his intonation had he perceived an inaccuracy. Notes whose durations corresponded to at least a full rotation of a phonograph cylinder made the task of measuring even easier because Abraham and Hornbostel could manipulate their phonograph to isolate them: “On our phonograph, we are able to adjust the lever that supports the reproduction diaphragm in such a way that although the stylus touches the cylinder, the screw guidance responsible for moving the diaphragm parallel to the axis of rotation is lifted. As soon as the stylus has traversed one screw thread of the sound curve [i.e., one complete turn of the cylinder], it thus springs back over the ridge of the groove to its initial position and plays the desired tone continuously or in constant repetition.”79

After isolating the relevant section of the cylinder in this way, Abraham and Hornbostel employed two different devices to aid them in determining the pitch frequencies: a tonometer,

78. Abraham and Hornbostel, “Phonographierte türkische Melodien,” 204.
79. Ibid. “Wir sind imstande, an unserem Phonographen den Hebel, der die Reproduktionsmembrane trägt, so einzustellen, dass zwar der Stift die Walze berührt, die Schraubenführung aber, durch die die Membran parallel der Rotationsachse verschoben wird, ausgehoben ist. Der Stift springt also, sobald er einen Schraubengang der Schallkurve durchlaufen hat, über den Rand der Furche in die Anfangsstellung zurück und bringt den gewünschten Ton kontinuierlich oder in beständiger Wiederholung zu Gehör.”
which consisted of a series of harmonium reeds tuned at regular intervals of frequency; and a
tone variator, which was capable of producing a sounded pitch over a continuous range and
bore a meter that displayed the frequency of the pitch being emitted (Figures 2.3 and 2.4). Once
the frequencies for the pitches in a given melody had been decided, Abraham and Hornbostel
arranged them in order from lowest to highest, forming numerical sets that corresponded to the
melodies’ *Gebrauchsleitern*—“the tone rows that we obtain when we arrange the notes of a piece
according to pitch”—essentially summaries of the discrete pitch classes heard in each melody.\(^{80}\)
Abraham and Hornbostel had discussed the notion of *Gebrauchsleitern* in their first publication

\(^{80}\) Abraham and Hornbostel, “Phonographierte türkische Melodien,” 208.
on non-European music, “Studien über das Tonsystem und die Musik der Japaner” (Studies on the Tone-System and the Music of the Japanese), in which they formulated it as one of three classes of scale, each with its own standing vis-à-vis the background tone-system or cultural conception of pitch space.⁸¹ (Although they did not address the other two categories of scale in

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the present paper, familiarity with them will help to clarify how they thought their findings may have eventually contributed to an understanding of Turkish music writ large.) Gebrauchsleitern, as the term suggests, follow entirely from practice, describing the tonal “stuff” of which a particular piece—or rendition thereof—was made. Thus, when Abraham and Hornbostel observed that “the Gebrauchsleitern of our pieces [i.e., the twenty Turkish songs] . . . exhibit no uniform type,” they were otherwise stating that none of the melodies they analyzed employed pitches with identical intervallic arrangements. This was not to state, however, that the Gebrauchsleitern were not related; such a conclusion would first have required consideration of possible Materialleitern—composite scales assembled from the Gebrauchsleitern of many pieces of music—and how they related to the tone-system. Such a study was, of course, beyond the scope of their paper, as a collection of twenty examples from a single region was hardly broad enough to support a general theory of tone-system. Another problem for them was the fact that they were only able to consult recordings of singers—none featured instruments, let alone instruments with set tuning: “Only a comparison with measurements of instruments with fixed notes would permit the elimination of the source of error that may still be found in the wavering intonation of a singer, no matter how good.” The most valuable information for identifying a tone-system, then, came from

82. This, the most abstract class of scale, received the least consideration in “Studien über das Tonsystem und die Musik der Japaner,” presumably because that study, too, was not sufficiently comprehensive in scope to facilitate worthwhile discussion of theory.

83. Abraham and Hornbostel, “Phonographierte türkische Melodien,” 208. “Erst die Vergleichung mit Messungen an Instrumenten mit festen Tönen würde die Fehlerquelle, die in der schwankenden Intonation eines noch so guten Sängers immerhin liegen könnte, auszuschliessen gestatten.”
Instrumentalleitern, the scales that consisted of only those pitches that an individual instrument with set tuning could produce, the logic being that immediately after such an instrument was freshly tuned (if necessary), it would reflect the preferred tuning system most closely and thus provide the most dependable measurements of frequencies. These measurements would also provide a set of “baseline” readings against which Gebräuchssleitern could be compared, for example, allowing for researchers to observe how pitches were manipulated—intentionally or unknowingly—in performance.

After determining the Gebräuchssleitern for each of the recorded melodies, it was necessary for Abraham and Hornbostel “to convert these different scales into a comparable form,” which they accomplished in two ways. First, they adjusted their frequency calculations so that the Grundton—the pitch center—of each scale corresponded to 401 Hz, making sure that the proportions between the Grundton and the other notes were maintained. Only in this way would formulations of pitch relationships as ratios become readily comparable because the Grundton would serve as the common “denominator.” (They acknowledged that “the selection of a melodic center” necessitated “an element of arbitrariness,” but they maintained that “it is unavoidable if one is to achieve a basis for comparison at all.”)\(^4\) Second, they calculated the sizes of all intervals according to Alexander J. Ellis’s system of “cents,” wherein the octave is divided into 1200 cents

and each equally tempered semitone is composed of 100 cents.\textsuperscript{35} The greatest advantage of this system is, as discussed in the previous chapter, that intervals are expressed as differences rather than ratios—arithmetically as opposed to geometrically—rendering all intervals, whether they include the Grundton or not, immediately more comprehensible and easier to compare. Furthermore, as Abraham and Hornbostel were pleased to point out, “the precision of the cents calculation is an excess rather than a deficiency,” as, for example, “in the one-line octave [i.e., the octave from c’–b’ or C₄–B₄], 1 cent corresponds to about 0.2–0.3 Hz.”\textsuperscript{36} The system of cents, then, had the advantage of being able to convey, in a single integer, information with incredible precision, pairing the desire for accuracy with the convenience of ease. Whereas their transcriptions were wanting in exactitude, in these data, Abraham and Hornbostel achieved precisional surplus, enhancing the attraction of their work for a scientifically minded audience.

Figure 2.5 demonstrates the merits of both of the systems just described, as well as how Abraham and Hornbostel used these data. In this table, Abraham and Hornbostel included information pertaining to Luschan’s recorded melody XIII, “Yar, yar, yar,” a song that was of especial interest to the pair because, as mentioned above, the Luschans had provided them with recordings of the song performed by two different singers—Avedis and Ali—that they could


\textsuperscript{36} Abraham and Hornbostel, “Phonographierte türkische Melodien,” 204–5. “Die Genauigkeit der Centsberechnung ist eher ein Zuviel als ein Zuwenig: 1 Cent entspricht in der eingestrichenen Oktave etwa 0,2–0,3 Schwingungen.”
subject to direct comparison (Figure 2.6). The first column includes their *Schwingungszahlen*—frequency measurements—of the *Grundton* in addition to the major second, neutral third, fourth, and fifth above the *Grundton* from both Avedis’s (“XIII”) and Ali’s (“A”) recordings. In this column, notice that the frequencies of the two pitch centers do not correspond. While Abraham

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87. Nowhere did Abraham and Hornbostel indicate whence they derived the text for their transcription of Ali’s version, but that is likely because the focus of their study was on the musical and not the linguistic. In comparing this text with the text that underlies their transcription of Avedis’s version, there appear to be some phonetic similarities, particularly when “hearing” them through the lens of German phonetics. It thus seems possible that this transcription also came from the Luschans, but whereas their transcriptions of the texts that Avedis sung were created with his active participation, in the case of Ali’s performance, they may have been working from the crackling sounds of the phonograph.

88. The Luschans actually recorded both singers performing this song three times. It is unclear whether Abraham and Hornbostel’s measurements pertain to only one recording or are a composite. Avedis’s recordings appear on cylinders 10 (recorded 31 May 1902?), 11 (11 June 1902), and 12 (31 May 1902), while Ali’s can be found on cylinders 22 (twice) and 23, all recorded on 1 March 1902.
and Hornbostel did not indicate their reason for including their raw frequency measurements here—presumably this was because a table with the adjusted frequency measurements for all of the melodies appeared on the next page—their decision has the consequent benefit of illustrating how cumbersome the system is for purposes of comparison. In this case, we can deduce from these frequency data that Avedis’s major second was wider than Ali’s because both measurements

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Abraham and Hornbostel’s transcriptions of “Yar, yar, yar”: Avedis’s recording (top) and Ali’s recording (bottom).

from Ali’s recording sit “inside” those from Avedis’s, but we cannot safely say by how much without performing any further calculation. For the sake of illustration, what would we make of the intervals if the frequencies for the major second above the Grundton were reversed, and we were dealing with ratios of 450:401 and 457:407 for Avedis’s and Ali’s versions, respectively? In this case, such a deduction is not immediately clear.

The data in the second and third columns remedy that difficulty, as they are expressions of the various intervallic measurements in terms of cents. Column Two provides the measurements for the intervals in both Gebrauchsleitern in consecutive order, while Column Three indicates the sizes of the intervals between each scale step and the Grundton. The data confirm our deduction that Avedis’s major second was indeed wider than Ali’s, but they also reveal to us that they were larger and smaller, respectively, than the equally tempered major second (200 cents) by the same degree. For ease of comparison, the fourth and fifth columns contain information about the same intervals, measured from the Grundton, according to just intonation, which is expressed in both cents (Column Four) and as ratios (Column Five). (Note that Abraham and Hornbostel included information for both the major and minor tone in relation to the major second. Whereas above we noted that the major seconds in both versions differed from the equally tempered major second by the same number of cents, albeit in opposing directions, we can now observe that Avedis’s was much closer in size to the pure major tone and Ali’s, to the pure minor tone.) The final column gives the nearest pitches for each note in the European system of notation, assigning the Grundton to c, presumably again for the sake of simplicity.
Abraham and Hornbostel’s tables and transcriptions constitute what Lorraine Daston and Peter Galison call “working objects,” which can be “any manageable, communal representative of the sector of nature under investigation.”89 “No science can do without such standardized working objects,” Daston and Galison explain, “for unrefined natural objects are too quirkily particular to cooperate in generalizations and comparisons.”90 The need for such working objects is especially acute in the case of comparative musicology, whose “natural objects” are sequences of sounds that lack visible extent yet possess temporal dimension. These sounds must first be transformed into some regulated form in order to facilitate not just comparison, but communication as well, and for Abraham and Hornbostel, this meant translation into number and note. As a result, the working object reflects the manner in which these researchers related to their object of inquiry, inviting the reader to do so alongside.

Abraham and Hornbostel on the Phonograph

In a paper bearing the title “Über die Bedeutung des Phonographen für vergleichende Musikwissenschaft” (On the Importance of the Phonograph for Comparative Musicology), it may be surprising to learn that the phonograph does not itself make an appearance until the eighth of its published ten pages, but this is, I believe, the result of a deliberate rhetorical strategy

89. Daston and Galison, Objectivity, 19.
90. Ibid., 19–21.
on the part of its authors, as the paper is actually *about* much more than its title suggests. This was the final of the three papers presented to the BGAEU and, significantly, the first that was not topically tied to the Luschans’ recordings. While Abraham and Hornbostel’s official purpose was to speak more broadly about the phonograph qua scientific research instrument, in consideration of their larger aim to institute a phonographic archive within the museum, it was also necessary that they convince their colleagues of comparative musicology’s import to their joint project Völkerkunde and the successful realization of its telos. (A more apt title for the paper might be “On the Importance of Comparative Musicology for Völkerkunde and How the Phonograph Will Help.”) Indeed, Luschan had taken time during his own presentation to assure his audience of his conviction that “in a short time, comparative musicology will become one of the most important and most interesting disciplines of Völkerkunde,” yet he declined to elaborate further. Indeed, Luschan had taken time during his own presentation to assure his audience of his conviction that “in a short time, comparative musicology will become one of the most important and most interesting disciplines of Völkerkunde,” yet he declined to elaborate further. This was likely because Abraham and Hornbostel would soon have the opportunity to make the case themselves, but perhaps also because he lacked the necessary authority.

In the first part of their paper, Abraham and Hornbostel were concerned primarily with substantiating comparative musicology’s raison d’être. Having just provided a glimpse of a comparative musicological approach in their discussion of the Turkish melodies, they began by demonstrating the need to establish comparative musicology as a discipline of its own, and proceeded to identify potential areas wherein their work would supplement and even support

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91. Luschan, “Einige türkische Volkslieder,” 201. “... dass die vergleichende Musikwissenschaft in kurzer Zeit eine der wichtigsten und interessantesten Disziplinen der Völkerkunde werden wird.”
that of their colleagues in adjacent fields. They opened with a strategic comparison of the current
state of musicology with the early days of philology, which served to expose the extensive gap in
scholarly commitment consequent to musicology’s preoccupation with the European tradition:

As philology initially investigated individual languages . . . in isolation from
one another, so, until recently, has musicology concerned itself exclusively with
the history of our European tone-system and European forms of composition.
But whereas before long the comparative method fully conquered linguistics
[Sprachwissenschaft], musicology has ventured only a few timid steps along the
new path, and it would [thus] be premature to speak of comparative musicology
as an established cultural heritage [als einem gesicherten Kulturbesitz; i.e., as an
established discipline in our academic tradition].

By situating comparative musicology alongside linguistics, they tacitly aligned it with linguistics's
status as a science distinguished by its adoption of a comparative methodology, and thus placed
comparative musicology in a position of authority, working toward a purpose that extended
beyond the cultural domain of its practitioners. Conceding that “complete overviews of music

92. Abraham and Hornbostel, “Über die Bedeutung,” 222. “Wie die Philologie zuerst die einzelnen
Sprachen . . . jede für sich getrennt erforschte, so hat sich die Musikwissenschaft bis in die
jüngste Zeit ausschliesslich mit der Geschichte unseres europäischen Tonsystems und der
europäischen Kompositionsformen beschäftigt. Während aber die vergleichende Methode sich die
Sprachwissenschaft binnen kurzem vollständig eroberte, hat die Musikwissenschaft auf dem neuen
Wege erst ein paar schüchterne Schritte gewagt, und es wäre verfrüht, von einer vergleichenden
Musikwissenschaft als einem gesicherten Kulturbesitz zu sprechen.”

93. Two years later, Hornbostel would return to the subject, stating: “Initially, philology studied the
individual languages separately, until comparative linguistics spun the connective threads.” Erich Moritz
von Hornbostel, “Die Probleme der vergleichenden Musikwissenschaft,” Zeitschrift der Internationalen
Musikgesellschaft 7, no. 3 (1905): 86; emphasis in original.
history” would generally contain a “fleeting sketch of exotic musical conditions,” they nonetheless observed that when present, these “sketches” came predominantly from “an artistic, subjective-aesthetic perspective,” as “the pursuit of scientific objectivity” was a concern of only “the most recent times.” Whatever the approaches taken in the past, for the study of music, scientific objectivity was the way forward, and comparison, its sine qua non.

From the start, then, Abraham and Hornbostel positioned comparative musicology as a field of scientific enquiry meant to fill the space that musicology had thus far neglected, but even so, they had still to demonstrate the need for such a discipline and clarify how it was of any concern to the BGAEU. “As for all interdisciplinary sciences [bei allen Grenzwissenschaften],” they explained,

the issues that a comparative musicology would address are of a diverse nature. Within the culture of a people, the cultivation of music occupies a space whose breadth cannot be easily overestimated. Musical expressions, as manifestations of a people’s character [Ausdruck des Volkscharakters], are not to be valued less than other art forms. Where from the overall cultural image [dem gesamten Kulturbild] we have already abstracted the idea of a particular tribal or racial type, we also perceive its congruence with the folk melodies and musical art forms of the land.95


As a significant part of a culture, music, they asserted, must not be overlooked in ethnological study, and in its being inherently expressive, it, like other forms of art, could function as a lens through which it was possible to gain insight into the fundamental “character” of a people. Further, they saw in music the possibility for identifying the musical “type” particular to a people, which, once determined, would help facilitate the processes of comparison and classification. In support of this assertion, they listed prominent European composers whose work, they claimed, was easily recognized as being of the composers’ respective regions: “It suffices but to name Bizet, Grieg, or Mascagni in order to indicate what is understood by French, Scandinavian, or Italian music, even if we are far from being able to precisely enumerate the particular characteristics.”

Abraham and Hornbostel clearly took these associations between style and geography for granted, and declined even to speculate on the qualities that gave the music its particular “-ness”; but their employment of these specific examples was rhetorically astute, for


Abraham and Hornbostel, “Über die Bedeutung,” 222. “Es genügt, die Namen Bizet, Grieg oder Mascagni zu nennen, um anzudeuten, was unter französischer, skandinavischer oder italienischer Musik zu verstehen sei, wenn wir auch weit davon entfernt sind, die einzelnen Charakteristika genau angeben zu können.”
it was likely that these composers were familiar to at least some audience members, who could then assimilate Abraham and Hornbostel’s evidence, even if they, too, could not explicate further. These individuals would thereby have acquired an intimate awareness of one of the issues that comparative musicology would aim to address, namely, of identifying and elucidating those musical characteristics particular to the culture at hand.

Abraham and Hornbostel were quick to establish, however, that such a project was not entirely self-serving: there was more to be gained than merely a theory of musical development. The accumulation of this kind of knowledge would, they explained, “permit us not only a conclusion on the temperament of a people”—which, from context, they appear to indicate was pertinent to “the delicate question of cultural and psychological characteristics of race [der heiklen Frage nach den kulturellen und psychologischen Rassenmerkmalen]”;

since the cultivation of music, like every artistic expression, is functionally dependent on economic conditions, the cultural stage of a people97 could also be

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97. Here, Abraham and Hornbostel appear to have alluded to the theory of unilinear cultural evolution, as described by anthropologists Edward B. Tylor and Lewis H. Morgan, wherein all societies progressed through a determinate series of cultural stages as they advanced from the most “primitive” to the most “civilized.” See Edward B. Tylor, Primitive Culture: Researches into the Development of Mythology, Philosophy, Religion, Art, and Custom, 2 vols. (London: John Murray, 1871); and Lewis H. Morgan, Ancient Society, or Researches in the Lines of Human Progress from Savagery, through Barbarism to Civilization (New York: Henry Holt, 1877).
inferred from the manner of music-making—particularly from the prevalence and level of musical dilettantism—albeit only with the utmost caution.

The extent to which music was practiced within a society, they suggested, could be taken into account when evaluating its overall status, particularly when measured in terms of its economic development. Widespread musical dilettantism, for example, might support the conclusion that a society was more advanced, for it would suggest that practitioners of music had the means to dedicate time to the cultivation of their skill, to no end other than personal fulfillment.

In order to further align their concerns with those of other ethnological (sub)disciplines, Abraham and Hornbostel proceeded to outline various ways in which they overlapped, being sure to stress how the musicological approach would benefit these other scholarly endeavors instead of just doing the same work under a different name. The comparative musicological enterprise being itself quite new, the examples they provided are at times nebulous and even overly idealistic, but

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98. Max Weber would later cite musical dilettantism as an index of (social) status privilege: “For all practical purposes, stratification by status goes hand in hand with a monopolization of ideal and material goods or opportunities, in a manner we have come to know as typical. Besides the specific status honor, which always rests upon distance and exclusiveness, honorific preferences may consist of the privilege of wearing special costumes, of eating special dishes taboo to others, of carrying arms—which is most obvious in its consequences—, the right to be a dilettante, for example, to play certain musical instruments.” Max Weber, Economy and Society: An Outline of Interpretive Sociology, ed. Guenther Roth and Claus Wittich (Berkeley: University of California Press, 1978), 935; emphasis mine.

given the circumstance, it is understandable—perhaps even expected—that their outlook was expansive and optimistic.

As other forms of art had long been recognized as suitable areas for ethnological investigation, they sought to demonstrate how the study of music could similarly benefit the ethnological cause. “Music,” they declared, “is most intimately interwoven with the other cultural expressions, and its study is able to shed new light on numerous issues in other particular areas of research.” The key to this “interweaving,” we later learn, was rhythm, as rhythm was foundational not only to music, but also to poetry and dance. Although they mentioned dance, they dedicated most of their discussion to the relationship between music and poetry, perhaps because this part of the presentation came on the heels of both textual and musicological analyses of the same material; perhaps because of the fusion of text and tone found everywhere in song. “The connection of music with speech is so close,” they observed, “that the question of the origin of one, as of the other, invariably emanates from this interrelation.” They cited the examples of Herbert Spencer, Charles Darwin, and Richard Wagner as evidence, as the three men had all


formulated such a theory: Spencer located the origin of music in speech; Darwin, the origin of speech in music; and Wagner, the origin of both in a common entity, *Sprechgesang*. Abraham and Hornbostel continued:

> Whatever position science may take with respect to these hypotheses, it will have to adhere absolutely to the inseparability of the arts of poetry and of singing in primitive cultures. The importance of Sprechgesang as a primitive form of art becomes clear to us in many exotic melodies; and whoever has once paid attention to the singsong of our children will have noticed the curious transitions from full intonation to mere rhythmic speaking.

The observable phenomenon of children shifting seamlessly from song to speech (and vice versa) lent support to the conclusion that speech and singing—poetry and song—were inherently linked. At the same time, Abraham and Hornbostel also suggested a correspondence between a child and a “primitive” culture in terms of their (cognitive) development, as they were similarly close to their respective moments of natural origin. Even in their earlier discussion of Avedis’s


melody IV ("Shebabet gittide elden"), Abraham and Hornbostel had cited its rhythm—its unstructured recitative quality—along with the song’s predominantly Persian text as evidence that the melody was likely “particularly old.” Since speech and song had yet to realize their independence of one another, this melody, like the child’s singsong, was of a people still in its cultural infancy.

Abraham and Hornbostel were also keen to demonstrate how a consideration of musical culture could help illuminate aspects of other cultural practices. On account of its emotive power, Abraham and Hornbostel explained, it was no wonder that music featured significantly “in all cultic practices, even primitive [ones].” Because music was so important in the performance of religion, the “scientific delineation [Fixierung] and examination of religious music,” they asserted, “is not only essential for the precise description of cultic ceremonies”—necessary in order to perform a sound analysis—“but in many cases will also be able to provide valuable clues toward their explanation.” Music shared with other aspects of religious practice the quality of having been shaped according to specific religious ideals, and as such, it was as valid a candidate as any for hermeneutic consideration. Further, Abraham and Hornbostel discussed how religious principles could come to be imposed upon a musical practice, outranking and even superseding

107. Ibid. “Eine wissenschaftliche Fixierung und Untersuchung der religiösen Musik . . . ist nicht nur für die genaue Beschreibung der Kultzeremonien unerlässlich, sondern wird auch vielfach wertvolle Fingerzeige zu deren Erklärung geben können.”
aspects of a music that had entered into it organically. “Among oriental cultural peoples [bei den orientalischen Kulturvölkern], as in Europe,” they wrote, “we are able to observe how theory, as a privilege of select minds, loses contact with praxis, and later forces upon the ear the findings it had obtained independently of the regulating force of sensation [von der kontrollierenden Empfindung]”—that is to say, paying no heed to the guidance of intuitive feeling.108

To illustrate this process, they raised the example of the guqin (古琴; rendered by Abraham and Hornbostel as “Kin”), a zither “customary in China and Japan,” whose strings, when depressed at points designated by mother-of-pearl dots inlaid into the sound board (bui: 徽), produced “intervals that no psychological or physiological acoustics is able to elucidate.”109 “Only the yardstick,” they explained, “is able to give us the key to understanding this enigmatic tablature [sic]: the dots are arranged symmetrically from the midpoint of the string outward toward both edges, and the extent and order of the distances is perhaps in part rooted in Chinese numerology.”110 Abraham and Hornbostel thus proposed that in the case of the guqin, evidence


109. Ibid. “Wenn wir die Saiten dieser Zither an den durch Marken vorgezeichneten Punkten niederdrücken, gelangen wir zu Intervallen, die keine psychologische oder physiologische Akustik zu erklären vermöchte.”

suggested that the tenets of numerology took precedence over all else in the structuring of the

guqin’s *Instrumentalleiter*, which thereby grounded any music produced on the instrument in a
framework that echoed the principles of cultic belief, forcing the inclinations and desires of mind
and body onto bended knee.

Having detailed some of the ways that the study of music could enhance the work of
researchers in related fields, Abraham and Hornbostel arrived at the crux of their presentation
wherein they elucidated just what the mission of comparative musicology was. They situated this
task in the interstices between the primary research interests of comparative musicology and
of European music history—viz., non-European musical cultures and the European art music
tradition, respectively—positing it as a means for perhaps eventually being able to reconcile the
two. “If the music of exotic peoples could be regarded as primitive insofar as it is parallel with
earlier developmental stages of European music,” they explained, “it would thus provide us with
indications for how we must envisage practical music in antiquity.” Yet they were quick to point
out that it would be inappropriate to give credence to such a “connection” between comparative
musicology and music history (*Musikgeschichte*) until “the affinity of foundational [musical]

111. Abraham and Hornbostel also used the guqin as an example of how instruments themselves could
function not only as evidence of migration patterns and inter-national trade relationships, but also as
the means by which “intervals and musical practices travel[ed] from country to country” (224).

insofern als primitiv auffassen darf, dass man sie mit früheren Entwicklungsstufen der europäischen
in Parallele stellt, so würde sie uns Anhaltspunkte dafür geben, wie wir uns die praktische Musik in der
Antike vorzustellen haben.”
elements [Keimzellen: lit. ‘gametes’ or ‘germ cells’] and the correspondence of conditions for
development are first ensured.” This requirement contains the essence of what they saw as the
central task for comparative musicology, which they formulated as follows:

From the material that is collected and critically examined, comparative musicology
ought to: uncover similarities and correlations in the development of music in all parts
of the Earth; account for differences from idiosyncrasies in cultural conditions; and
eventually make inferences about the origins [of music] by means of extrapolation.

Abraham and Hornbostel’s statement clearly highlights the centrality of the comparative method
to their project, which Hornbostel would extol as “the most noble tool of scientific knowledge”
in a paper delivered to the Vienna chapter of the Internationale Musikgesellschaft in March 1905.
In the same paper, Hornbostel elaborated on the merits of comparison to scientific endeavor,
explaining that

[comparison] enables the analysis and precise description of the isolated
phenomenon by contrasting it with other phenomena and accentuating its
distinguishing peculiarities; at the same time, comparison distinguishes isolated

Anschluss der vergleichenden Musikwissenschaft an die Musikgeschichte im engeren Sinn zulässig ist,
da erst die Gleichheit der Keimzellen und die Analogie der Entwicklungsbedingungen sicher gestellt
werden müsste.”

114. Ibid. “Die vergleichende Musikwissenschaft hätte aus dem gesammelten und kritisch gesichteten Material
die Gemeinsamkeiten und Zusammenhänge der Musikentwicklung in allen Teilen der Erde blosszulegen [sic],
die Unterschiede aus den besonderen Kulturverhältnissen zu erklären, schliesslich durch Extrapolation auf die
Ursprünge zurückzuschliessen.”

phenomena as special cases by recording similarities and fashioning [them] into “laws.” Classification and theory are equally dependent on comparison. Thus, all science would be comparative, and comparison would not be an exceptional method, but a general one.  

With respect to the program as described above, the critical examination and comparison of musics from “all parts of the Earth” would, it was hoped, eventually permit researchers to formulate a general theory of musical development, as they would come to understand what the cultural prerequisites were for certain musical traits to emerge. Only by considering all musical traditions could a theory valid for all—not just “European”—musical practice be achieved, and in doing so, comparative musicology would contribute to the nomothetic project of the cultural sciences in general.

The Measurement Method

Having elucidated the central “tasks” of the nascent discipline, Abraham and Hornbostel turned to the methods according to which musical traditions would be examined. They began by assessing the work that had already been done “in this direction,” noting that “what preceded the

introduction of modern methods limited itself to purely historical studies on the one hand, and to ethnographic description on the other”—in other words, this work was not properly scientific.\[117\]

As examples of such sources, they cited studies of foreign treatises of music theory and of non-Western notation systems; ethnographic reports of travelers and missionaries; writings by “intelligent natives or people who have lived in the region for a long time”;\[118\] and studies of musical instruments held by museums. They raised specific issues with respect to each kind of source material, but their general assessment was that these materials could only be truly useful to the comparative musicological science after it had become possible to gauge their reliability.

“With the introduction of physical-acoustical methods,” they proclaimed,

comparative musicology has entered into a new era. The earlier process of listening to music on research trips, depicting emotional impressions, and making assertions about rhythm and pitch based purely on the impressions of the ear has the disadvantage of lacking objectivity.”\[119\]

These “physical-acoustical methods,” we soon learn, were the very ones that Abraham and Hornbostel had earlier demonstrated during their presentation of the Turkish melodies,


\[118\] Ibid., 226.

\[119\] Ibid. “Mit der Einführung physikalisch-akustischer Methoden ist die vergleichende Musikwissenschaft in eine neue Aera eingetreten. Das frühere Verfahren, auf den Forschungsreisen Musik zu hören, den Gefühlseindruck zu schildern und über Rhythmus und Tonhöhe Aussagen zu machen, die rein auf dem Gehöreindruck basieren, hat den Übelstand, dass die Objektivität in der Untersuchung fehlt.”
namely, those afforded by such innovations as the tonometer and the tone variator. According to Abraham and Hornbostel, these instruments heralded a new age wherein it became possible to more easily “free ourselves” from the grasp of the European tone-system, a constellation of concepts “so firmly entrenched within us” that “our entire musical thinking is predicated on them.” With the arduous task of overcoming musical habit transferred to objects incapable of thought, the comparative musicologist was granted “a more objective standpoint,” in that she could be certain that her penchant for the music familiar to her did not unconsciously color her account or analysis of the unfamiliar.

While comparison constituted the overarching approach to the study of music as described above, Abraham and Hornbostel identified three specific approaches to procuring the music-related “data” that could later be subjected to comparison. The first of these, what they called “the measurement method” (die Messungsmethode), should by now be familiar: it entailed using tools to determine precise frequencies, but limited to pitches produced on musical instruments with fixed tuning; in other words, the aim of this method was to determine Instrumentalleitern. Although Abraham and Hornbostel had earlier spent much time discussing the process of measuring frequencies aurally with the aid of the tonometer and the tone variator, they here stressed how this method’s resultant exactitude was ensured through a partnership between ear and eye, which

would “continually monitor each other and correct one another’s mistakes.” The example they provided was that of a fretted string instrument, which one would measure “acoustically with the tonometer” and “visually with the millimeter gauge”: “Because string length is inversely proportional to the frequency of the respective pitch, visual and acoustical measurement must obtain parallel results.” In this new era, listening and looking came to stand on equal footing, as one could turn to either—or both—in the quest for objective fact.

**The Psychological Method**

“Between” the measurement method and the study of practical music—discussed below—lay Abraham and Hornbostel’s second manner of investigation, the “psychological method,” which saw the researcher “undertake acoustical experiments” with the “exotic musicians” in order to “obtain interesting information about their tone-system as well as their musical characteristics.” Key to this approach was their insistence that researchers interact directly with musicians rather than make indirect extrapolations about their psychological processes from their music, as, for

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121. Abraham and Hornbostel, “Über die Bedeutung,” 228. “Ohr und Auge kontrollieren sich hier fortwährend und korrigieren die gegenseitigen Fehler.”

122. Ibid. “Saiteninstrumente mit Bünden werden akustisch mit dem Tonmesser, optisch mit dem Millimetermass gemessen. Da die Saitenlänge umgekehrt proportional der Schwingungsanzahl des entsprechenden Tones ist, muss die optische und akustische Messung parallele Resultate erzielen.”

123. Ibid. “Wir haben öfter Gelegenheit, exotische Musiker bei uns zu sehen; wenn wir uns nun nicht darauf beschränken, deren Musik zu hören und zu studieren, sondern auch akustische Versuche mit ihnen anstellen, dann bekommen wir sowohl über ihr Tonsystem wie ihre musikalischen Eigenschaften interessante Aufschlüsse.”
example, Benjamin Ives Gilman had done in his study “On Some Psychological Aspects of the Chinese Musical System.” They advised that the musicians be tasked with tuning their instruments themselves, as this would not only facilitate the collection of valid measurements, but also permit the researcher to “check the tuning of museum instruments and evaluate the musician’s intervallic sense and pitch memory.” They also suggested that further experiments be carried out in order to assess “how the exotic musician feels toward our interval and music forms,” presumably interested to learn if people from other cultures found European music to be disagreeable, and if so, why.

Eager as they were to move on to their discussion of “practical music” and the phonograph, Abraham and Hornbostel did not dwell on the psychological method and thus failed to effectively convey what exactly they hoped it would achieve. From later texts by Hornbostel, however, we obtain a clearer understanding of the extent of their psychological investigations.

124. In the introduction to the first part of his two-part study, Gilman explained that his aim was “to contribute to [the psychology of tone] a discussion of the musical system of China, based upon observations of performances by native musicians. . . . We shall consider [these musical ideas and products] as illustrations of the movements of the human mind in hearing, imagining, and reflecting upon tones and their combination, as material for a comparative psychology of that element of our sensations of sound which is known as the quality of pitch.” Benjamin Ives Gilman, “On Some Psychological Aspects of the Chinese Musical System,” pt. 1, Philosophical Review 1, no. 1 (January 1892): 54.

125. Abraham and Hornbostel, “Über die Bedeutung,” 228. “Sehr zweckmässig ist es, den exotischen Musiker selbst Instrumente abstimmen zu lassen; man kann so die Stimmung der Museumsinstrumente kontrollieren und auf den Intervallsinn des Musikers und sein Tongedächtnis schliessen.”

126. Ibid., 228–29. “Hieran hätten sich dann noch zur Ergänzung Versuche anschliessen, wie sich das Gefühl des exotischen Musikers unseren Intervall- und Musikformen gegenüber verhält.”
Of primary import were what Hornbostel, in the spirit of Stumpf and Helmholtz, called the “consonance” and “distance principles” (das Konsonanz- und das Distanzprinzip). The investigation of consonance had to do with determining what concurrent sonorities members of a particular musical culture considered to be consonant as opposed to dissonant, with the aim to establish whether or not a universal theory of consonance was tenable. It was not enough to conclude that “pure” intervals were inherently consonant solely on account of the natural properties of sound (i.e., that they are found in the overtone series or occur as harmonics on wind instruments); rather, the fact of their consonance needed to be empirically demonstrable, as it was a matter of perception and not of physics. Equal temperament, we recall, is distinctly un-natural, and even in Germany, as Hornbostel noted, “generally, we make music in tempered tuning without our nature rising up against it; indeed, some pure intervals [i.e., perfect fifths] are not supposed to be appetizing to us at all, at least in succession.” Was there, then, a natural inclination toward certain intervals over others, or are notions of consonance entirely products of inculcation? “Our musical conscience,” Hornbostel observed, “is very flexible with respect to interval size, and even here habit is our wet nurse.”

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129. Ibid. “Unser musikalisches Gewissen ist hinsichtlich der Intervallgrößen sehr dehnbar, und auch hier nennen wir die Gewohnheit unsere Amme.”
The matter of “distance” was similarly related to intervals, but here, the focus was on the ability to judge and compare the sizes of intervals (i.e., the “distance” between two notes in pitch space). Following from the confirmed existence of equally tempered scales in non-European musical traditions, of particular interest was the human capacity for intuiting the equality of intervals, and, by extension, whether intervallic distance took precedence over consonance in the musical practice of certain cultures. Since experience had shown that it was impossible to derive scales of equal steps from strings of stacked “pure” intervals, fundamental to the genesis of equally tempered scales was not a dependence on the “simplest possible frequency ratios,” but that the ratios were “all identical”; and, as Hornbostel rightly pointed out, the cognitive act of discerning equal relationships between different sets of pitches “involves something entirely different than consonance”:

It would probably be difficult to differentiate a semitone from a major seventh in terms of its degree of consonance; we are at no time uncertain, however, about the difference in distance. We must take into account that in some circumstances, particularly in the case of music that knows no harmony, the distance principle plays a greater role than then consonance principle [in the formation of scales]; and with this assumption, it is possible for us to account for scales with equal steps, like the heptatonic scale of the Siamese and the pentatonic slendro scale of the Javanese. It is possible, as well, to understand neutral thirds as being products of a halved fifth. A problem thus arises that is just as interesting for musicology as it is for psychology: In what relation do the consonance and distance principles

130. See Chapter 1.
govern the music of different peoples? How do they interrelate? Do they support or displace one another?

For those musics that were not founded on an already established conception of consonance, there had to be some other guiding principle in the establishment of scales, some other process according to which certain pitch relationships were favored over others. One such possibility would be the preference for scale steps of a measured length, but in the absence of an understanding of acoustics and advanced mathematics, their determination would require what amounts to, ceteris paribus, a logarithmic experience of an exponential function. Considering how long it took to produce a true twelve-tone equal temperament in the European tradition, it is no wonder that the prospect of an innate ability to intuit equal intervallic distances was an attractive topic for research.


While these were the two main foci of the “psychological method,” Hornbostel identified other matters of perception that were also of investigational interest, underscoring the importance of studying not just the music per se, but of the people who produced it as well:

Comparative study should further extend to the music-making individuals. Besides anthropometrical measurements, we have already begun to carry out systematic physiological and even psychological examinations on various peoples as well. It would be very easy to extend these to musical areas and to examine not only hearing acuity and sensitivity to pitch differentiation, but also absolute tone awareness [i.e., absolute pitch], interval awareness, etc.¹³³

In positing this area of research as an extension of one already in place, Hornbostel implicitly demonstrated that the outcomes from comparative musicological study were not exclusively of niche significance, but related to more general topics already under investigation, such as the cognitive processes and limits of human perception.

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“Absolute tone awareness” and “interval awareness”—absolute Tonbewußtsein and Intervallbewußtsein—were of particular interest to Abraham, who had previously published a lengthy study of them, and would revisit them a few years later in a response to a rather acerbic critique. See Otto Abraham, “Das absolute Tonbewusstsein: Psychologisch-musikalische Studie,” Sammelbände der Internationalen Musikgesellschaft 3, no. 1 (November 1901): 1–86; and idem, “Das absolute Tonbewusstsein und die Musik,” Sammelbände der Internationalen Musikgesellschaft 8, no. 3 (1907): 486–91.
The Study of Practical Music

The third of Abraham and Hornbostel’s “methods” differs from the others in that it is not actually a method: it is defined not by its methodology but rather by its object. What they referred to as “the study of practical music”\(^{134}\) entailed the examination of music being made—literally the “music itself”—which, they emphasized, “must always also be consulted if one wants to understand entirely the tone-system of a people.”\(^{135}\) As they presented it, practical music could be documented effectively in two ways: by transcribing pieces of music into some form of notation, and by measuring the frequencies of the pitches heard in performance. (In his later essay, Hornbostel would expand the scope of practical music to include considerations of organology—particularly with respect to patterns of instrument distribution and the unrelated existence of similar instruments—as well as the purposes that individual instruments serve and the specific

\(^{134}\) I have elected to render \textit{praktische Musik} as “practical music” rather than “musical performance” or “musical practice” as others have done because, although similar, the latter formulations shift the focus from the \textit{music} (in practice)—as Abraham and Hornbostel clearly intended—to the \textit{practice} (of music), and thus confuse what the research object actually was. See, for example, Ray Giles’s translation of “Über die Bedeutung des Phonographen für die vergleichende Musikwissenschaft” and Richard Campbell’s of “Die Probleme der vergleichenden Musikwissenschaft,” both in Klaus P. Wachsmann, Dieter Christensen, and Hans-Peter Reinecke, eds., \textit{Hornbostel Opera Omnia} (The Hague: Martinus Nijhoff, 1975), 1:183–202 and 1:247–70, respectively.

\(^{135}\) Abraham and Hornbostel, “Über die Bedeutung,” 228. “Da muss man auf die Untersuchung der praktischen Musik eingehen, welche auch stets herangezogen werden muss, wenn man das Tonsystem eines Volkes völlig verstehen will.”
“occasions on which music is made.”)\textsuperscript{136} In contrast to the “measurement method” described above, there was no need to place any restrictions on instrument type in studying practical music, as the researcher did not depend on the instrument to delimit the infinite number of possible pitches to only the permissible few; instead, context dictated the terms, as the mere use of a pitch rendered it available for measure, whether on a staff or in a table. Yet for even the most practiced of musician, they noted, to transcribe—let alone measure—from life is “extremely tedious”: “One must have the same piece of music played for him many times and make one’s notations with most strained attention. Additionally, such an examination requires an excellent musical ear.”\textsuperscript{137}

Enter the phonograph.

“In more recent times,” Abraham and Hornbostel explained, “the invention of the phonograph has come to our aid.”\textsuperscript{138} In contrast to the researcher struggling to notate a melody in real time, Abraham and Hornbostel depicted one who, having captured the music with the phonograph, was then able to scrutinize it “at leisure in the study, where attention is not drawn so much to visual matters of secondary importance [optische Nebendinge] as at performances of foreign

\textsuperscript{136} Hornbostel, “Die Probleme,” 95–96. With respect to the “occasions,” Hornbostel issued a specific request for “monographic summaries from the authoritative ethnomusicological perspective on cult music, music at secular celebrations, theater, and, in particular, dance music” (96).


\textsuperscript{138} Ibid.; emphasis in original.
peoples.” In addition to deterring distraction—however indirectly—the phonograph facilitated a more microscopic listening practice in that it was able to reproduce recordings at slower speeds and isolate small segments of them, making it possible to analyze even those pieces of music whose tempi would otherwise cause them to evade the ear. Lastly, they highlighted the phonograph’s ability to render the ephemeral indelible: “in the phonographic cylinder,” they explained, “we have a lasting document, always ready for demonstration and comparison.”

The phonograph was, of course, not the only sound recording technology available, and indeed, as Abraham and Hornbostel conceded, it was not the best option in all respects: gramophonic recordings, for example, were more precise and were held on flat discs, which were far easier to store and preserve than the phonograph’s hollow cylinders. The gramophonic recording process, however, was a trade secret, so it was “not possible for the private individual to make [gramophonic] recordings,” and as such, the gramophone was not a realistic alternative.

A kind of “hybrid” device had recently been developed for Vienna’s Phonogrammarchiv to

139. Abraham and Hornbostel, “Über die Bedeutung,” 229. “Mit dem Phonographen kann man die Musik fixieren und mit Musse im Arbeitszimmer, wo die Aufmerksamkeit nicht soviel auf optische Nebendinge gerichtet ist, wie bei den Vorführungen fremder Völkerschaften, studieren.” Perhaps in anticipation of such criticism being leveled against him, Stumpf had assured his readers that at the performance of the Siamese theater troupe, “my attention was meanwhile turned less toward the theatrical than toward the purely musical content, as here questions of fundamental importance for both musicology and psychophysics came into consideration.” Stumpf, “Tonsystem,” 70.

140. Ibid. “Schliesslich hat man in der Phonographenwalze ein dauerndes Dokument, immer bereit zur Vorführung und Vergleichung.”

141. Ibid.
address the specific concerns of archiving and conservation, still employing phonographic recording technology, but inscribing the recordings it produced onto wax discs instead of cylinders. While at first blush a seemingly ideal solution, the early Archiv-Phonograph, as it was called, was unfortunately very heavy, and since collection was the most pressing of priorities for Abraham and Hornbostel, ease of transport was an incontrovertible necessity. Even in the mid-1920s, as Hornbostel would then remark, the “cylinder phonograph” remained the “only” viable means for making field recordings on account of “technical reasons”: “the device must be easily transportable, robust, easy to operate, and, if anything, inexpensive.”

The phonograph thus proved to be the optimal instrument, even if partly by default, but whereas nothing could be done to improve the quality of recordings it produced—in 1927, Hornbostel still maintained that the quality of phonographic recordings was “nevertheless completely sufficient for scientific purposes [and] must be tolerated for the time being”—manufacturers of pre-recorded cylinders for the burgeoning recording industry demonstrated that there was a way to address the issue of durability. In 1902, companies began to issue recordings produced from metal molds that had been obtained from the original cylinder.

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143. Ibid. “Die hinter den Grammophonplatten zurückstehende Qualität der Aufnahmen, die indes für wissenschaftliche Zwecke vollkommen ausreicht, muß bis auf weiteres in Kauf genommen werden.”
masters, representing a significant advance in cylinder duplication capabilities. For Abraham and Hornbostel, the implications that this newfound ability had for their archival objective were profound: with the potential to cast the delicate cylinders bearing their invaluable recordings in shields of endurability came an assurance of immortality, for with these matrices, one could again bring to life those sounds otherwise lost to cylinders broken and grooves worn smooth.

Excited by this recent advance, Abraham and Hornbostel informed the BGAEU that by means of galvanoplasty—an electrochemical process wherein a metal cast, typically of copper, is made of any electrically conductive object—it was possible to procure “metal negatives” from cylinders and discs.144 Likely because they had not yet had any cylindrical matrices manufactured, Abraham and Hornbostel declined to elaborate, and it seems that they raised the subject in anticipation of an objection against the proposed archive on account of the (paradoxically) ephemeral nature of the wax cylinders it was intended to preserve. Owing to the ability to obtain these metal matrices, Abraham and Hornbostel concluded, “nothing further is wanting to establish an archive of enduring musical documents of exotic music and to cultivate this branch of ethnology that has hitherto been so badly neglected. It is desirable that the scientific institute

144. This process is today more commonly known as “electrotyping,” but in order to more accurately mirror Abraham and Hornbostel’s language and to point to the connection between the technique and the resultant cylinder casts—which they referred to as “galvanos”—I have decided to employ the more archaic “galvanoplasty.”
assume this responsibility soon, since the rapid spread of European culture threatens to obliterate the originality of exotic music.”

A couple weeks after the presentations, Luschan received a letter from Richard Schöne, then the general director of Berlin’s Royal Museums, from which we learn that in the intervening period, Schöne had encouraged Stumpf to formally petition Prussian Kultusminister Konrad Studt regarding the establishment of a phonogram archive within the Museum für Völkerkunde. The message conveyed Schöne’s initial interest and support for Stumpf’s plan, imparting to Luschan his hope “that the existing desires will be able to be met [dass den bestehenden Wünschen wird entsprochen werden können].” Prompted by this exchange, Luschan subsequently wrote to Stumpf and offered his thoughts on the prospective application.


146. In 1906, Studt was awarded the chivalric Order of the Black Eagle (der Hohe Orden vom Schwarzen Adler) and consequently gained the nobiliary particle “von” (i.e., Konrad von Studt).


letter implies that the two of them had earlier engaged in some “preliminary deliberation” on the matter, and he was now providing a detailed assessment of the future archive’s needs and the funds required in order to fulfill them, expressing as well his belief that Stumpf’s request should be granted “without difficulty.” Stumpf heeded Schöne’s advice, and he tendered his request the following March.

Despite the efforts of Abraham, Hornbostel, Luschan, and Stumpf, the proposal ultimately failed. Upon receiving Stumpf’s submission, the minister solicited Schöne for comment regarding the “expansion” of the museum’s collections “through the insertion of a linguistic and musicological phonogram archive and the incorporation of a yearly sum of 1,000 marks into the museum’s budget for the stated purpose.” In preparing his response, Schöne consulted five directors of Museum für Völkerkunde departments—Luschan was one—who all provided statements expressing their thoughts on the matter. While each voiced his unwavering support for the creation of such an archive, three were opposed to having the yearly allowance come out of the museum’s existing budget, and Luschan, one of the three, also raised concerns over infrastructural adequacy. Schöne’s report, dated 11 May 1904, drew liberally from the directors’

149. This, and the other documents referenced hereafter, can be found in “Acta betreffend phonographisches Material,” IB 61, vol. 1, E 278/05, Ethnologisches Museum, Staatliche Museen zu Berlin. (The statements from the five museum officials are also reproduced in Simon, “Musikethnologische Abteilung,” 361–62.)

150. Luschan may have had an ulterior motive in voicing this concern, as the museum experienced chronic shortages of space, and there had been grumblings about moving the museum into a (much needed) larger building since the 1890s. Within his statement, for instance, Luschan noted that “only in the new building” would it be “easy to provide a better isolated room for phonographic demonstrations and
remarks, declaring that “the institution of a phonographic archive . . . would be desired all the more, as it would facilitate the collection of the hitherto insufficient material for the study of languages, stories, and songs of nonliterate peoples at a central site, thereby enabling a systematic processing and utilization of the material.” Schöne’s conviction suddenly shifted to concern as he described the “prevailing lack of space” at the museum, and, owing to its “limited funds,” asserted that the plan “could be implemented only on condition that special funds be provided for the yearly allowance.”

In February 1905, Studt finally issued his assessment, in which he indicated that he was “well-disposed, in principle, toward [Stumpf’s] proposal,” but with respect to the stipend, “since the museum would not provide the necessary resources,” he advised that the earliest state funds could be made available was in the fiscal year beginning 1 April 1906. In the museum’s record of this exchange, there is a line that reads “resubmission (application for budget of 1906) on 1 June [1905],” but beyond this reminder, there is no indication that museum officials took any further action. It appears, then, that on account of what Artur Simon has since called “administrative pettiness,” the Berliner Phonogramm-Archiv failed to find a home in the Museum für Völkerkunde—for the time being, at least.

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151. “Wiedervorlage (Anmeldung zum Etat für 1906) am 1. 6. cr. [currentis].”

Following the doubtless disappointing conclusion to their campaign, Abraham, Hornbostel, and Stumpf nonetheless persevered. By the end of 1905, Stumpf had been able to allocate one of the rooms within the Psychologisches Institut exclusively for the Phonogramm-Archiv, and he had appointed Hornbostel the director of the newly minted “Berliner Phonogramm-Archiv des Psychologischen Instituts der Universität zu Berlin.”\textsuperscript{153} Stumpf and Hornbostel would successfully lobby the Rudolf-Virchow-Stiftung, the Akademie der Wissenschaften, and even private individuals for “very modest funds,”\textsuperscript{154} although Stumpf and Hornbostel, who was himself

\begin{figure}
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\caption{Stamp of the Berliner Phonogramm-Archiv des Psychologischen Instituts der Universität zu Berlin.}
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\textsuperscript{154} Hornbostel, “Phonogramm-Archiv,” 51.
independently wealthy, were the archive’s primary benefactors during this time.\footnote{Kurt Reinhard, “The Berlin Phonogramm-Archiv,” *Folklore and Folk Music Archivist* 5, no. 2 (Summer 1962): 1; Lars-Christian Koch, “Images of Sound: Erich M. von Hornbostel and the Berlin Phonogramm Archive,” in Philip V. Bohlman, ed., *The Cambridge History of World Music* (Cambridge: Cambridge University Press, 2013), 479. See also Kurt Reinhard and George List, liner notes for *The Demonstration Collection of E. M. von Hornbostel and the Berlin Phonogramm-Archiv* (Ethnic Folkways Library FE 4175, 1963, 2 LPs), 6.} This was the period in which the Phonogramm-Archiv’s collection truly began to expand, owing largely to Hornbostel’s determined tenacity and Luschan’s continued support. The Phonogramm-Archiv would remain a part of the Psychologisches Institut until 1922, when Stumpf and Hornbostel placed the archive “at the disposal of the state with the understanding that the latter would attend to the upkeep and continuation of the collection.”\footnote{Carl Stumpf, “Autobiography of Carl Stumpf,” trans. Thekla Hodge and Suzanne Langerin, in Carl Murchison, ed., *History of Psychology in Autobiography* (1930; repr. New York: Russell and Russell, 1961), 1:411. Following the November Revolution, the Psychologisches Institut moved to a suite of twenty-five rooms in the Berlin Palace, the former principal residence of the Kaiser (403).} As a result, the Phonogramm-Archiv became administratively attached to the Staatliche akademische Hochschule für Musik but continued to reside at the Psychologisches Institut with Hornbostel at the helm.\footnote{Carl Stumpf to Fritz Stein, 11 July 1933, in Artur Simon, ed., *Das Berliner Phonogramm-Archiv 1900–2000: Sammlungen der traditionellen Musik der Welt* (Berlin: Verlag für Wissenschaft und Bildung, 2000), 219–21.}

Following Hitler’s seizure of power in January 1933, Hornbostel, whose mother was a Jew, was forced to vacate his position as director of the Phonogramm-Archiv. Hornbostel consequently left Germany, and his assistant, Marius Schneider, became acting director as of 1 July 1933.\footnote{Ziegler, *Wachszyllinder*, 26.}
arrangement with the Hochschule, as Stumpf wrote shortly thereafter, had “not proved very successful,” and both he and Schneider elected to pursue alternates. On 1 January 1934, the Berliner Phonogramm-Archiv became a department in the Museum für Völkerkunde, putting it, as Artur Simon has remarked, “where it should have been from the beginning.” With Luschan and Abraham both dead and Hornbostel fleeing persecution, some thirty years after their presentations, their proposal to the academy was finally realized.


Chapter 3

Making Music:
The Formation of the Musical Research Object

On 31 July 1903, Abraham and Hornbostel wrote to the directorate of the Museum für Völkerkunde in order to solicit recording equipment for Paul Schwellnus, a missionary who was returning to southern Africa and had agreed to collect samples of local musics on their behalf:

“With respect to the proceedings of the anthropological society of 20 June,” they began,

we take the liberty of informing the directorate that Herr Missionar Schwellnus . . . will set out on a journey to Rhodesia on 6 August.

1. Himself the son of a missionary, Paul Erdmann Schwellnus (1877–1946) was born and raised on a mission station at Tshakhuma in the northern region of the South African Republic (also known as the Transvaal Republic). Growing up among the Venda, he and his brother Theodor were fluent in the Venda language from a young age—both are purported to have spoken Venda before German—and as a result, they would come to serve as important collaborators in linguist Carl Meinhof’s project to document and analyze the language. See Carl Meinhof, “Das Tši-venda: Linguistische Studie,” Zeitschrift der Deutschen Morgenländischen Gesellschaft 55, no. 4 (1901): 608; idem, preface to “Die Verba des Tšivenda,” by Theodor and Paul Schwellnus, Mitteilungen des Seminars für orientalische Sprachen 7 (1904): 12; and E[rnst O. J.] Westphal, “Obituary: Dr. P. E. Schwellnus,” African Studies 5, no. 2 (June 1946): 140.
He is musical and has been thoroughly trained by us in the technique of phonographic recording. We venture, therefore, to request assistance in providing him a phonographic outfit, in the hope of being able to gain a wealth of scientific material by his agency.

Clearly emboldened by the warm reception that they had received at the BGAEU meeting a few weeks earlier (as conveyed in the published transcript of the discussion that followed the presentations), Abraham and Hornbostel hoped to establish an arrangement with the museum whereby it would provide recording equipment to travelers, who would then make recordings while on their journeys and send them back to the Phonogramm-Archiv in Berlin. The practice of employing non-academics to collect research materials was already common among the cultural sciences, but because the process of making sound recordings required the use of specialized equipment, there were additional logistical matters that needed to be addressed.


   “Derselbe ist musikalisch und von uns in der Technik phonographischer Aufnahmen sorgfältig ausgebildet. Wir erlauben uns daher die Bitte, demselben zu einer phonographischen Ausrüstung zu verhelfen, in der Hoffnung, durch seine Vermittlung ein reiches wissenschaftliches Material gewinnen zu können.”

3. Abraham and Hornbostel, “Über die Bedeutung,” 233–36. Interestingly, some of those who had voiced support for incorporating the phonograph into cultural scientific practice later spoke out against it when they were presented with Stumpf’s proposal.
As the passage from Abraham and Hornbostel’s letter indicates, one such issue was that of resources: where were they going to find the equipment they needed and, perhaps more importantly, who was going to pay for it? It was at Luschan’s advice that Abraham and Hornbostel appealed “officially” to the Museum für Völkerkunde’s leadership, as Luschan had assured them that this was simply “a formality” because he was certain that “in any case, Herr S. [would] receive his device.” Yet despite his assurance, Luschan had also indicated that this arrangement was dependent on Schwellnus having “completely mastered the technique” of making phonographic recordings, for “only in this case would we [i.e., the museum] pay for the device and the cylinders.” On the one hand, this precondition—the only one that Luschan outlined in his letter—would serve to assure the museum that its investment would be worthwhile. On the other hand, such mastery would better ensure that the resulting recordings were indeed of scientific value, as Schwellnus would have been trained to make recordings according to the method that Abraham and Hornbostel had devised. In this respect, this

4. Felix von Luschan to [Otto Abraham?], 25 July 1903, “Schwellnus: Südafrika, 1905,” Berliner Phonogramm-Archiv, Ethnologisches Museum, Staatliche Museen zu Berlin. “Herr S. wird jedenfalls seinen Apparat bekommen.” Although Luschan directed his letter to an unnamed “Herr Doctor,” that he addressed his response to their request—writing on behalf of the museum—to Abraham alone suggests that Abraham was his primary contact at the time and that this letter, too, was intended for him.

requirement is symptomatic of the more general anxiety surrounding proxy collectors, which stemmed from the fact that any opportunity for direct oversight disappeared once their ships set sail. Training was one method that cultural scientists used to guide the actions of travelers; the other was through the creation and circulation of instruction manuals, which are the focus of this chapter.

As they were able to inform the museum that Schwellnus had been trained, Abraham and Hornbostel’s petition for recording equipment was swiftly approved—a note in the Akte indicates that it was authorized three days after it was sent—and Luschan relayed the news to Abraham shortly thereafter.6 The purchase was completed on 7 August, and the following day, Luschan informed Schwellnus that he should expect a shipment of two boxes, which would be sent to him in Naples care of the general agency of the Deutsche Ostafrika Linie (German East Africa Line).7 “The first box,” he explained, “contains 22 cylinders, [and] the other, the actual device, horn, recording and reproducing diaphragms, oil and small oil can, as well as a brush for dusting the cylinders; further, I have enclosed three additional cylinders for your initial tests, which you need not return.” He assured Schwellnus that he had personally tested the phonograph and “found [it] to be excellent.” After asking that Schwellnus acknowledge receipt


of the packages, Luschan requested that he return the 22 cylinders to them “as soon as they have been recorded,” noting that he would “gladly” supply him with a fresh consignment of blank cylinders after the used ones had been received.⁸

Yet as Schwellnus made his way from Naples to Bloemfontein, his phonograph was nowhere in sight: while the process of obtaining equipment from the museum had been relatively painless, that of getting it to Schwellnus proved far more difficult (Map 3). From Berlin, the crates containing the equipment followed in Schwellnus’s wake, but on 1 September, Schwellnus wrote to Luschan from Dar es Salaam to notify him that he had not yet received the shipment. He told Luschan that he had spoken with a Deutsche Ostafrika Linie agent, who arranged to have it sent to him via the next steamboat service to Durban.⁹ There is no record of any further communication between Schwellnus and Luschan until January of the following year, when

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MAP 3

Deutsche Ost-Afrika Linie route map, 1902. Schwellnus’s probable route is indicated in blue.

Schwellnus again wrote to Luschan, now from Bloemfontein, to confirm that he was finally in possession of the equipment. He also informed Luschan that there was a crack in the recording diaphragm—the cause of which he ascribed to the “rough” handling of the crates’ contents by customs inspectors—but he conveyed his optimism that the diaphragm was still serviceable, hoping to dispatch his first group of recordings in June.10

In August 1904, the museum received Schwellnus’s first shipment, which contained five recorded cylinders.11 Upon listening to the recordings, however, Luschan found that the damaged diaphragm had indeed affected their quality, and deemed it necessary to provide Schwellnus with a replacement. As he wrote in his ensuing letter to Schwellnus:

A preliminary examination of [the cylinders], has revealed that your recording diaphragm appears to be damaged. Therefore, I am sending to you a new diaphragm, which I thoroughly tested in advance and have found to be particularly excellent. To be sure, even the recordings you made with the old diaphragm are still scientifically useful, but with the great and extremely

   “Ich hoffe, daß ich etwa im Juni werde meine ersten Aufnahmen an Sie abschicken können.”

thankworthy effort you made in transcribing the texts, it nevertheless seems desirable to me that the cylinders can also be recorded as well as possible. 

In the interest of time, Luschan opted to send Schwellnus a diaphragm of his own, and was consequently given a replacement by the museum. Along with the diaphragm and a letter of explanation, he included a copy of “the new edition of our ‘Anleitung,’” explaining that “by answering even only a portion of the questions contained therein, you would render [us] a great service.”

This “Anleitung”—“manual”—was likely the 1904 edition of Luschan’s Anleitung für ethnographische Beobachtungen und Sammlungen in Afrika und Oceanien (Manual for Ethnographic Observation and Collection in Africa and Oceania), which, in the section devoted to music, contained instructions for making phonographic recordings along with a list of information


that should be documented for each recording made.\(^{15}\) (While this was the first such manual to include guidance for properly making sound recordings, it was not the first to include information about collecting musical objects, as I will discuss below.) In the same way that the training required by the museums allowed Abraham and Hornbostel to exert a certain amount of control over Schwellnus and the recordings he made (albeit indirectly), by means of the *Anleitung*, they were able to extend their influence over Schwellnus’s actions through printed direction, irrespective of physical proximity.

The practice of producing these kinds of texts and circulating them among travelers extends at least as far back as the late sixteenth century,\(^ {16}\) but, as James Urry has noted, it was in the nineteenth century when these manuals and questionnaires became more methodical and focused because newly founded scientific institutions began to oversee their creation.\(^ {17}\) They were particularly common among British anthropologists, and British examples served as models when German scientists began to compile their own in the years following German unification.\(^ {18}\)

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In his examination of the four editions of *Notes and Queries on Anthropology* published between 1874 and 1912, Urry traces “the changing attitudes of [British] anthropology, the alteration of fields of interest and the increase in the range of material considered to constitute ethnographic ‘facts,’” and notes that such documents as anthropological manuals and questionnaires “reflect contemporary theoretical concerns, as well as the desire of the contributors . . . for more factual, ‘unbiased’ field material.”

In this chapter, I look to the constellation of German anthropological manuals produced between unification and 1908 in order to trace the process wherein the scientific object *music* was shaped and (re)defined in accordance with the changing attitudes toward non-European music qua research area, and the development of sound recording technologies. I begin by outlining the “genealogy” of these manuals, which has nowhere been thoroughly documented, before returning to the beginning in order to demonstrate how the study of non-European musics gradually transformed from apparent curiosity into a discipline of its own. The focus on methodology—a recurring theme throughout this dissertation—is here front and center, as the intention to investigate an object or phenomenon requires a manner in which to do so. Because the texts under consideration concern the collection of items and information for later study, any instructions contained therein are more closely tied to the research object than to the method of its analysis; they still have strong implications for the latter, however, as the decision to ask for one thing instead of another—or even to ask that it be collected in a certain way—delimits

the possible scope of any ensuing investigation. Thus, as the various authors and editors—
predominantly affiliates of the Museum für Völkerkunde—revisited their manuals and revised the 
procedures they prescribed, they were also redefining the extent of their respective disciplines and 
working to develop the best and most comprehensive set of guidelines for the procurement of 
ethnological knowledge writ large.

On the Genealogy of Manuals

On 18 July 1872, Virchow, Bastian, and five other members of the BGAEU submitted a proposal 
to the Imperial Naval Ministry, which, they hoped, would result in access to a steady source of 
the materials they needed for their various scientific investigations. They began by identifying 
the precedent for their proposal: the historical importance of the relationship between science 
and sea. They credited the “long sea voyages that triggered the age of discovery and extended our 
view across the entire surface of the earth” with having “laid the first foundations for inductive 
research methods,” methods that “now endeavor to expand the natural scientific system with the 
aid of comparison.”20 Because the materials they required to facilitate such a project needed to be

20. Rudolf Virchow et al., “Rathschläge für anthropologische Untersuchungen auf Expeditionen der 
einleiteten und den Blick über die Gesammtfläche des Globus erweiterten, legten den ersten Grund für 
die inductiven Forschungsweisen, die jetzt mit Hülfe der Vergleichungen das naturwissenschaftliche 
System auszubauen bemüht sind.”
collected from “all parts of the world,” they saw in the navy, whose mandate necessitated extensive travel, a great opportunity. “Above all,” they wrote,

it is the naval ships that cross all seas and land at the most distant shores that are able to provide the most valuable assistance, since onboard, one finds . . . men of thorough scientific training [von wissenschaftlicher Durchbildung] who possess all necessary skills for the furtherance of the desired purposes and will surely be most willing to do so out of their own interest. 21

Such an arrangement between scientists and naval personnel already existed in Britain, 22 but with German unification having transpired only the previous year, German scholars had not had the opportunity to forge one of their own.

In his response to their proposal, Admiral Albrecht von Stosch expressed his willingness “to support the efforts of the Society for Ethnology [sic], etc., in every possible way.” “It will redound to my great satisfaction,” he wrote, “if the personnel of the navy would thus provide stimulus to interesting scientific work on the one hand, and somewhat promote the society’s subject of research on the other.” 23 To facilitate this undertaking, the seven signatories, with the assistance of eight other members of the BGAEU, compiled the first German manual for the

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22. Monteath, “German Anthropology”; Urry, “Notes and Queries.”

collection of objects and information in the service of anthropological research. Bearing the title “Rathschläge für anthropologische Untersuchungen auf Expeditionen der Marine” (Suggestions for Anthropological Investigations on Navy Expeditions; hereafter “Rathschläge”), the manual was quickly published along with the transcripts of both letters in the society’s own Zeitschrift für Ethnologie.24 Organized according to research area, the manual identified the artifacts and information most desired by researchers, and in some cases, it provided procedural instructions of varying detail. (Only the section on photography was concerned purely with methodology, outlining the proper procedures for making both “physiognomical” and “ethnographic” photographs.) Thus began a long tradition of German collection manuals, which were produced in the hope that they would find use in the hands of many travelers.

In Figure 3.1—my “Genealogy of Manuals”—I demonstrate the relationships among the various German anthropological manuals that were produced between German unification and the outbreak of World War I, taking into account especially how each manual addressed music and/or musical objects. In the diagram’s central column are those texts that I consider to be the “primary” manuals: the very first German anthropological manual (the “Rathschläge”) as well as the manuals that were commissioned by the Museum für Völkerkunde between 1896 and 1914. On the periphery are manuals that were expansions, revisions, or adaptations of previous ones, with the exception of Hornbostel’s “Anleitung zur Handhabung des Phonographen für

24. It was also issued as a more practical pamphlet, and Admiral Stosch saw to it that copies were made available both onboard ships traveling in foreign waters and in the navy’s libraries. See Zimmerman, Anthropology and Antihumanism, 154.
Figure 3.1
The Genealogy of Manuals.
Forshungsreisende und Missionare” (Manual on the Handling of the Phonograph for Research Travelers and Missionaries), which was newly written in 1903 and then incorporated into the music section of Luschan’s 1904 *Anleitung*. Solid arrows indicate a direct lineage—the earlier text is clearly a model for the latter one—whereas the dashed arrow designates a much looser connection: while certainly in the spirit of earlier manuals, the 1914 *Anleitung* is not an updated edition, and was essentially written anew.

Three years after the “Rathschläge” was released, the German explorer and geophysicist Georg von Neumayer published the first edition of his *Anleitung zu wissenschaftlichen Beobachtungen auf Reisen* (Manual for Scientific Observation on Travels), a far more expansive text, in which are assembled twenty-eight chapters by as many authors, each devoted to a particular discipline or topic.25 Many of the research areas represented in the “Rathschläge” are again represented in Neumayer’s *Anleitung*, but they are no longer gathered under the general heading “anthropology.” Anthropology was covered alongside prehistory in a chapter by Rudolf Virchow, while ethnology is the subject of the chapter contributed by Adolf Bastian. (This reflects the historical disciplinary division within the German academy, according to which anthropology was the study of human biological development, whereas ethnologists studied human cultures.) While Virchow’s “Anthropologie und prähistorische Forschungen” (Anthropology and Prehistorical Research) contains a fairly detailed list of the measurements that should be taken of each subject and

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discusses equipment and procedure, Bastian’s “Allgemeine Begriffe der Ethnologie” (General Concepts of Ethnology) is more of an introduction to the discipline than a practical guide for what to collect and how to do so. He did, however, include a section from the “ethnographic” portion of the “Rathscläge”—which he probably also authored—that contains a brief list of desired objects and some remarks regarding methodology, but neither is by any means comprehensive. A second edition of Neumayer’s Anleitung appeared in 1888, and because the new edition was even more expansive than the first, it had to be broken into two volumes.

Germany started to acquire colonies in 1884, and because this would all but guarantee an increased German presence in these areas, the Museum für Völkerkunde began commissioning sets of instructions that would be directed toward people traveling in particular regions. The first such document was Luschan’s “Instruktion für ethnographische Beobachtungen und Sammlungen in Deutsch-Ostafrika” (Instructions for Ethnographic Observation and Collection in German East Africa), published in 1896. In contrast to Bastian’s earlier example, Luschan’s “Instruktion” was clearly intended for use by the active collector. It consists primarily of discrete

instructions—eighty-eight in all—itemized according to headword, making the manual far better suited for quick reference. Further, Luschan forwent any kind of general introduction to the discipline—presumably because that information could be found elsewhere—and instead focused his prefatory remarks on matters of methodology and logistics. Only once did Luschan address the purpose of his requests, and in doing so, he provided the reader with additional incentive in the event that the pursuit of knowledge were not enough: “A complete realization of all desiderata listed here for a specific tribe would yield an immensely valuable monograph, which, furnished with the necessary illustrations, could be printed immediately and would bring lasting honor to its originator.”

The following year, Heinrich Seidel issued a similar set of instructions, now particular to Togoland, for which he acknowledged his indebtedness to Luschan’s “corresponding instructions for German East Africa.” Seidel’s “Instruktion” is significantly longer than its precursor, as Seidel expanded not only Luschan’s rather succinct introduction, but also the instructions, both in number and in breadth. Nonetheless, since the instructions inevitably contained mostly information of a general nature, the skeleton of Luschan’s original instructions is still apparent, albeit reconfigured and reclothed. Instead of eighty-eight discrete instructions, Seidel provided

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150, maintaining headwords while also grouping them under subject headings. (Despite this augmentation, Seidel still echoed Luschan in asking for “a complete response to all questions posed here” in his introduction.) Of course, Seidel removed any language specific to German East Africa, but he did not always replace it with a request particular to Togoland. In his instruction on musical instruments, for example, Luschan had noted the need for certain information about flutes from Uganda and neighboring regions, and while Seidel removed this sentence from his instruction, he did not insert a similar kind of request about any instruments from Togoland; he did, however, introduce new specifications to the instruction, which Luschan would retain in his subsequent manual, as I will discuss in more detail below.

After Seidel’s, the Museum für Völkerkunde commissioned no further site-specific sets of instructions, and instead tasked Luschan with compiling a manual for general use. Thus, in 1899, the museum issued Luschan’s *Anleitung für ethnographische Beobachtungen und Sammlungen* (Manual for Ethnographic Observation and Collection), the first such manual intended for use by any traveler, regardless of location. In crafting the new manual, it is clear that Luschan worked from and updated his earlier “Instruktion,” yet he did incorporate some of Seidel’s revisions and additions. Although the *Anleitung* was not intended to be region-specific, the instructions—now numbering one hundred—still included information that was not applicable everywhere. As he indicated in one of the few additions to his original introduction,


As for external reasons the following instructions are supposed to be equally valid across a substantial geographical area, it was thus unavoidable to include certain questions that only come into consideration for certain ethnographic provinces and are completely irrelevant in others. Thus, the questions about metal technology and about animal husbandry, for example, would naturally be omitted or more concisely worded with respect to Oceania. It need not be feared that anyone could be misled by their being included in the general schema, but nevertheless, may it be specifically stressed here, that answers are not to be expected for questions concerning a foreign ethnographic province.  

While the “external reasons” remained unidentified, the decision to have all collectors work from one set of guidelines did better facilitate eventual comparative analysis, for in consolidating this authority in a single document, it eliminated the risk that travelers to different regions would be given incompatible or conflicting directives. And even when an instruction was less pertinent to a particular location, the reader would still have an idea of the kinds of objects or information that were being collected elsewhere and might thus keep an eye out for items that performed similar functions.

To a greater degree than any previous manual, Luschan’s *Anleitung* was clearly intended for practical use by the active collector, as is evident in the way it was assembled and circulated. Unlike prior examples, the *Anleitung* was published as a stand-alone volume—a pamphlet, really— which, with forty-eight pages in total, made it extremely portable. Further, the pages of text were interleaved with blank pages onto which the traveler could record observations, make sketches, and document responses to the printed questions (Figures 3.2a and 3.2b). In case the user ran out of space, ten flyleaves were included at the back of the manual. Copies of the
Anleitung, as Marion Melk-Koch has noted, were distributed free of charge by the Museum für Völkerkunde, and Luschan always provided a traveler with several copies so a separate one could be used for each ethnic group.35

The third edition of Luschan’s manual came in 1904, now bearing the title *Anleitung für ethnographische Beobachtungen und Sammlungen in Afrika und Oceanien* (Manual for Ethnographic Observation and Collection in Africa and Oceania).36 Despite the revised title, Luschan maintained that the third edition was still intended for use in any location—the disclaimer in his introduction to the first edition, quoted above, returned in the new introduction—but in specifying Africa and Oceania, the title situates the publication firmly within the German colonial context, as all of Germany’s colonial possessions were located in those two regions. It also ties the manual and the approach conveyed therein more closely to Luschan, as he had recently been appointed director of the museum’s African and Oceanic department.

It is perhaps unsurprising, then, that this was the most political of the manuals to date, and Luschan’s expanded introduction reads, at times, like a kind of manifesto backed by the authority of the Federal Council, which had previously granted the Museum für Völkerkunde a nearly total right of first refusal over ethnographica collected during any government-funded undertaking. Luschan reproduced the main clauses from the Federal Council resolution—the “Bundesratsbeschluss”—of 21 February 1889, which mandated:

1. that ethnographic and natural–scientific collections arising from expeditions to the German protectorates provisioned at the expense of the Reich will be specifically surrendered, after the separation of duplicates, to the local

36. I have been unable to locate either a copy of or any reference to the second edition of the *Anleitung*, so while the cover of the 1904 version identifies it as being the third edition, I cannot confirm that a second edition was ever published.
[i.e., Berlin’s] Royal Museums of Völkerkunde and of Naturkunde, or else to the botanical institution of the local university, against reimbursement of acquisition, packaging, and transport costs;

2. that copies of the inventories of inbound objects, inclusive of the duplicates, are conveyed to the federal government at its request, and that the latter are provided to the scientific collections of the individual federal states, against reimbursement of acquisition, packaging, and transport costs;

3. that research travelers dispatched at the expense of the Reich are directed to provide, as far as possible, the number of specimens desired by the federal government in their shipments of ethnographic or natural-scientific objects.37

A summary version of the text was routinely printed in the *Deutsches Kolonialblatt*—the fortnightly organ of the Imperial Colonial Office—on behalf of the Foreign Office’s Colonial Department, in order that the policy would “again be brought to the knowledge” of “all officers


“1. dass die ethnographischen und naturwissenschaftlichen Sammlungen, welche von den auf Reichskosten nach den deutschen Schutzgebieten ausgerüsteten Expeditionen eingehen, nach Aussonderung der Dubletten den hiesigen Königlichen Museen für Völkerkunde und für Naturkunde, beziehungsweise den botanischen Anstalten der hiesigen Universität gegen Erstattung der Anschaffungs-, Verpackungs- und Transportkosten eigentümlich überlassen werden;

“2. dass den Bundesregierungen auf deren Wunsch die Verzeichnisse der eingehenden Gegenstände, einschliesslich der Dubletten, in Abschrift mitgeteilt und dass die letzteren den wissenschaftlichen Sammlungen der einzelnen Bundesstaaten gegen Erstattung der Anschaffungs-, Verpackungs- und Transportkosten zur Verfügung gestellt werden;

“3. dass die auf Reichskosten ausgesandten Forschungsreisenden angewiesen werden, ihre Einsendungen von ethnographischen oder naturwissenschaftlichen Gegenständen tunlichst in der von den Bundesregierungen gewünschten Zahl von Exemplaren zu bewirken.”
and military personnel posted in the protectorates.” Either its enforcement was a problem or Luschan felt it his duty to make a preemptive appeal, for following the quotation, he embarked on a lengthy discussion of the ways in which the knowledge acquired by studying these objects might benefit the political and economic expansion of the Reich, stressing the importance that the collections not be split up before the Museum für Völkerkunde had had the opportunity to inventory them. (It was then the museum’s prerogative to decide what objects would remain in its collection and then to determine how the remaining items—if any—would be distributed among the other German museums.) Needless to say, this policy ensured that the museum’s holdings would expand greatly, to the extent that the lack of storage space (not to mention display space) became a serious problem.

Following the publication of this *Anleitung*, Luschan prepared a version that was expanded still for inclusion in the third edition of Neumayer’s *Anleitung zu wissenschaftlichen Beobachtungen auf Reisen.* Whereas in the earlier editions Bastian and Virchow had contributed separate

38. Luschan, *Anleitung* (1904), 5. The entire resolution was first published as “Anweisung, betreffend die Behandlung der aus den deutschen Schutzgebieten eingehenden wissenschaftlichen Sendungen,” *Deutsches Kolonialblatt* 1, no. 9 (1 August 1890): 149–50.


40. Felix von Luschan, “Anthropologie, Ethnographie und Urgeschichte,” in *Anleitung zu wissenschaftlichen Beobachtungen auf Reisen*, 3rd ed., ed. Georg von Neumayer (Hannover: Max Jänecke, 1906) 2:1–123. The chapter was originally meant to be written jointly by Luschan and Bastian, but in February 1905, before he could submit his portion of the chapter to Luschan, Bastian died, while on a research trip to Trinidad and Tobago. Bastian’s relatives eventually gave his draft to Neumayer, and it was included as an appendix, accompanied by a brief introduction by Neumayer: Georg von Neumayer, “Adolf Bastians Beitrag für die dritte Auflage der ‘Anleitung zu wissenschaftlichen Beobachtungen auf
chapters on ethnology and anthropology and prehistory, respectively, for the new edition, Luschan submitted a chapter on anthropology “in the broadest sense,” in which he discussed each of its “three research areas”—physical anthropology, ethnography, and prehistory—in turn. Over the course of the 123-page chapter, Luschan incorporated sections from both Virchow’s and Bastian’s earlier texts, but his main source was his own Anleitung (1904), which, largely unaltered, constituted the central section on ethnography. (The section on music is identical.)

A new edition of Luschan’s Anleitung was planned for publication a few years later, but the history here is murky. On 3 July 1906, Luschan sent a copy of the third edition of the manual to the Phonogramm-Archiv along with a note alerting them that “a fourth edition is in preparation” and requesting a list of corrections to the “section concerning the phonographic recordings” as well as suggestions for other improvements. I did not find the requested errata among the


42. Only the final section of the 1904 Anleitung—“Z. Physische Anthropologie”—was omitted, but this is because physical anthropology was discussed earlier in the chapter in much greater detail.

correspondence, but Hornbostel did write to Luschan on 30 July to ask that a “larger quantity of offprints of the chapter ‘L. Musik’ from the new edition” be reserved for the Psychological Institute, as they had had a number of interested parties.44 Luschan agreed to Hornbostel’s request the following day, but noted that “two or three years may elapse before another new edition becomes necessary.”45 There is no further mention of any manual until the end of the year, when Hornbostel enquired as to when Luschan expected the new edition would be printed.46 Hornbostel explained that their supply of typewritten copies was nearing depletion and suggested that instead of spending money on the “costly typewriting” needed to make additional copies, they could have the music chapter typeset and printed, which would facilitate future


printing. In his reply, Luschan informed Hornbostel that the printing of the new edition had been delayed until at least April 1907 and expressed his opinion that it would not be “worthwhile to have the phonographic chapter typeset beforehand,” assuring Hornbostel that he would try “to expedite the printing as much as possible.”

The next communication on this subject was not until August 1908, when Luschan wrote to Hornbostel from his summer residence in Millstatt, Austria. “As I am now finishing the Ms. for the new edition of our ‘Anleitung,’” he began,

I had your chapter L—on which I had unfortunately never set eyes—sent to me from Gebr. Unger. I have to thank you very much for your work; the chapter has now become very valuable and useful indeed.

This brief excerpt suggests that a new edition of the Anleitung was in progress and that Hornbostel’s chapter “L”—the chapter on music—had already been printed separately. I have only been able to locate, however, a single copy of the latter, so I am uncertain if the new edition


of the *Anleitung* was ever printed (or even completed). 49 In the introduction to his new *Anleitung* in 1914, Bernhard Ankermann mentioned his indebtedness only to Luschan’s 1904 manual, and his comments suggest that no other edition of the *Anleitung* appeared during the intervening years:

Owing to the frequent demand for the third edition of Professor von Luschan’s “Anleitung für ethnographische Beobachtungen und Sammlungen in Afrika und Ozeanien,” which was published in 1904 and has been out of print for several years, a new edition became necessary. The editing thereof fell to the undersigned, after Herr Professor von Luschan had meanwhile resigned the direction of the [Museum für Völkerkunde’s] African and Oceanic department. 50

The revised edition is naturally based on the earlier text, but at the same time, rather substantial changes were made. 51

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49. Another peculiarity in the history of this manual is that the version from 1904 is the third edition and the 1908 offprint is designated the fifth. The 1899 *Anleitung* is widely accepted as the first edition in this numbering, but the question of whether or not the second and fourth editions were published remains unanswered. (It is possible that Luschan’s contribution to Neumayer’s 1906 *Anleitung* was considered the fourth edition, but that still does not account for the second edition.)

50. Luschan stepped down after becoming a full professor at the Charité—a part of the University of Berlin—in 1909, and he became the holder of the first chair of anthropology two years later. See Marion Melk-Koch, “...denn Kuriositäten haben wir,” 91.


"Die Neubearbeitung ist natürlich in Anlehnung an den früheren Text erfolgt, doch sind dabei ziemlich weitgehende Änderungen vorgenommen worden."
Given the available evidence, I am inclined to believe that the fifth edition did not go forward as planned, leaving only Hornbostel’s chapter on music, which I will discuss in detail below.

Music in the Manuals

References to music occur in the manuals from the very beginning, but just as the form and scope of the manuals changed over time, so, too, did the way in which music was figured into the broader ethnological project. In the “Rathschläge,” the earliest of the manuals, the authors called for the collection of two different classes of musical object—musical instruments and songs—but because they mentioned them independently and in disparate contexts, it suggests that they did not conceive of the study of non-European musics as a distinct field of enquiry, likely because they did not consider such an endeavor to be beneficial in itself. Instead, these musical objects seem to have been included in the “Rathschläge” because they could support non-musical ethnographic investigations, and indeed, musical *sound* barely figured into the discussion at all.

In the section on ethnography [*sic*], “Musikinstrumente” appears in a list of objects that “ethnographic [*sic*] museums require for the achievement of their objectives,” alongside such items as weapons, clothing, talismans, and equipment for making butter and cheese.52 Whereas the majority of entries contained additional specifications, “Musikinstrumente” stands alone: it was left to the document’s naval readers to assess the ethnological value of the instruments they

should encounter; to decide if they should prioritize certain kinds of instruments over others; and even to determine what exactly musical instruments are. (The instruction is all the more vague since the authors declined to clarify even the museum’s “objectives.”) The lack of direction can probably be ascribed to a general ignorance on the part of the authors regarding the precise way(s) in which an examination of musical instruments could inform the ethnological project. That musical instruments were included on the list at all is likely because they, like the other objects listed, were products of human culture and thought, and their comparison might suggest commonalities in thinking among disparate cultures or else evidence a history of intercultural relationships and exchange.

The other way in which music entered the “Rathschläge” was through reference to song. “Lieder” were mentioned twice over the course of the manual—first in the ethnography section and later in the section on linguistics—both times amid considerations of the optimal way in which to document products of oral culture. In the first instance, the authors noted that “rendering[s] of fables, proverbs, [and] folksongs will best retain [the] original sense and wording when apparently overheard unintentionally.” From an ethical standpoint, the clandestine listening that the authors endorsed is uncomfortable, particularly because of the intimation that this “overhearing” should be an intentioned one—apparently overheard instead of accidentally. This suggests a consequentialist ethics on the part of the authors, an ethics by which the rightness

(or wrongness) of an action is assessed based on the goodness (or badness) of that action’s outcome—whether the end justifies the means. In this case, that assessment would hinge on the question of whether or not covert observation resulted in transcripts of utterances that were actually closer to their “original sense and wording.” I contend that for these cultural scientists, merely the possibility of this result would have been justification enough, because ultimately, they were driven by their desire to document that which they thought to be the most “authentic,” and the contrived nature of performance—especially before an audience of outlanders—could cause the speaker or singer to act somehow uncustomarily and thus mask the original and authentic with novelty and innovation.

Yet even though the authors elected to include folksongs in the instruction, that they listed them alongside fables and proverbs without special comment suggests that the authors’ concern lay not with the songs’ musical aspects—with what distinguished songs from the rest—but exclusively with their texts; folksongs were, in short, merely repositories of language. Similarly, when songs were mentioned later in the linguistics section, context indicates that they were again of interest for their texts alone:

Everything that is originally expressed in the native tongue, however small, is of greater importance [than items translated into the foreign language]. Assemblages of proverbs in the original language—and also of songs, since they are sung during
the most multifarious events of life [bei den mannichfachsten Ereignissen des Lebens], particularly funerals—would therefore be highly recommended.\textsuperscript{54}

It is surprising, then, that a few lines later, the authors returned to the subject of song in order to suggest that “wherever songs are collected, their melodies should also be musically recorded [musikalisch niedergeschrieben],” a strange turn of phrase that can only refer to transcribing in musical notation.\textsuperscript{55} Tagged on at the end of this very short section, this sentence reads like an undeveloped afterthought and is further evidence of the authors’ ignorance in matters musical, especially when considered alongside the curious (and imprecise) choice of words and utter lack of instruction. As a result, the request for melodic transcriptions, like that for musical instruments, appears to have been added not because there was a research plan in place, but because the authors thought that they ought to be collected in the event that someone may have an idea of what to do with them in the future.

This is especially true of transcriptions, as both their making and their deciphering require specialist knowledge, which may explain why the “musical recordings” were not discussed in more detail. As Barbara Murray has demonstrated in her study of Neumayer’s Anleitungen, anthropological manuals were crafted with a particular kind of reader in mind, and in the case

\textsuperscript{54} Virchow et al., “Rathschläge,” 345–46. “Alles, was ursprünglich in der Muttersprache ausgedrückt ist, und wenn es noch so klein ist, besitzt eine grössere Bedeutung. Daher wären Sammlungen von Sprichwörtern in der Ursprache, sowie von Liedern, wie sie bei den mannichfachsten Ereignissen des Lebens, namentlich bei Begräbnissen gesungen werden, sehr zu empfehlen.”

\textsuperscript{55} Ibid., 346.
of the “Rathschläge,” the manual was expressly addressed to naval personnel, a demographic that could not be assumed to possess advanced musical knowledge.\textsuperscript{56} The authors certainly had this audience in mind, for in their initial proposal, they explained that “whereas carrying out zoological, botanical, mineralogical, and geological collection invariably requires certain specialized studies, the practice of ethnology and anthropology . . . lies within reach of any educated person.”\textsuperscript{57} To be sure, the purpose of their letter was to persuade—this statement did not prevent sections on botany and zoology from appearing in the “Rathschläge”—yet this passage does demonstrate that the authors were cognizant of what they thought they could reasonably request of their seafaring readers, lest they alienate a potentially lucrative resource by asking too much.

Music featured in a similar way in the next manual, the first edition of Neumayer’s far more comprehensive \textit{Anleitung zu wissenschaftlichen Beobachtungen auf Reisen} (Manual for Scientific Observation on Travels), which, as its subtitle informs us, was likewise crafted “with particular consideration of the needs of the Imperial Navy.” Bastian was tasked with contributing the chapter on ethnology, and although it is markedly longer than the corresponding section in the “Rathschläge,” his “Allgemeine Begriffe der Ethnologie” (General Concepts of Ethnology)

\begin{footnotesize}
\begin{enumerate}
\item[57.] Virchow et al., “Rathschläge,” 325. “Während die Ausführung zoologischer, botanischer, mineralogischer und geologischer Sammlungen immer gewisse Fachstudien voraussetzt, liegt die Betreibung der Ethnologie und Anthropologie . . . im Bereich jedes Gebildeten.”
\end{enumerate}
\end{footnotesize}
contains no new information about collecting musical objects. The references to music in the chapter are identical to those found in the ethnography portion of the earlier “Rathschläge,” for both are contained within a section that Bastian reproduced more or less verbatim. 58 (In the chapter on linguistics, all references to Lieder were excised, save for a passing reference to the “joyful and sad songs” with which one might “become acquainted” in the course of observation.) 59

In revisiting the article for the second—and much expanded—edition of Neumayer’s Anleitung some 13 years later, Bastian retained the section from the “Rathschläge” but also appended a second list of “desiderata of ethnological museums” in which he supplied “special information” (Specialangaben) alongside the enumerated items. 60 In providing this additional information, one would expect that Bastian’s aim was to delimit the objects requested for collection, as he did, for example, in his remarks concerning item ten:

Writing samples and materials. Native alphabet[,] Stories, songs, sayings with translation. Script substitutes: pictography, characters, totems, quipus, knots,
notched and etched sticks, figures on bark and other means for sending messages or recording events. Samples of carving, drawings, paintings.\(^6\)

Here, Bastian guided the collector not to collect just any object related to a particular writing practice, but to seek out specific kinds of items that would presumably be of use for scholars. The majority of the “special information” Bastian provided follows a similar template.

In contrast, the entirety of Bastian’s item twelve reads thus: “*Musical instruments. Music samples.*”\(^6\) Not only is the entry much shorter than the example provided above, the effect of Bastian’s “special information” is not one of refinement or restriction but rather one of expansion; in this formulation, Bastian introduced a new class of object altogether, which was itself especially vague. Yet while the instruction did not follow the expected model, it is still significant, for it was the first instance in which the two kinds of musical object were placed together and recognized for their being somehow connected, even if the nature of this relation is somewhat confused: “music samples” does not qualify “musical instruments,” and indeed, they relate to one another only insofar as they both relate to the thing called “music.” While musical instruments may function as a means for instantiating musical expressions, the voice—not an instrument according

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to the implied definition, as it was not available for collection—may also serve the same purpose. This discordance would be addressed in the manuals that followed.

The instruction for collecting music-related ethnologica finally received significant expansion across the three manuals published in the latter half of the 1890s, culminating in the version that appeared in Luschan’s *Anleitung* of 1899:63

*Musical instruments.* As yet only partially represented for most tribes, [they] should therefore be collected as exhaustively as possible. For many instruments, a good photograph with the typical posture of the player would be very desirable.

Since stringed instruments lose their tuning during transport, it should be ascertained and written down in situ, if at all possible. In general, it would be very meritorious to document simple and typical pieces of music with musical notation, only wherever possible.

For particular flutes, not even the manner in which they are blown is known here. The greatest possible number of specimens are desired of flutes with adornments and also of instruments of the panpipe variety. Attention should also be paid to whether there are specific musicians by trade and specific artisans that produce musical instruments, particularly stringed instruments.

In the case of drums, it must be clearly distinguished whether they are struck for dancing or are otherwise musical instruments in the strict sense and/or whether they are used as signal devices. “Drum language” deserves the most in-depth study; despite its pervasiveness over a very large part of Africa and Oceania,

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63. Because there is much repetition across the three versions of the instruction, I include here only a translation of the text from Luschan’s 1899 *Anleitung*. For reference and to facilitate comparison, I have assembled the original texts and provided translations for all three versions, as well as for the music-related instructions from later manuals that I discuss below, in Appendix B.
it has hitherto been examined and made accessible to us only in the case of very few tribes.  

Although Luschan based this version almost entirely on the instruction he wrote for his earlier “Instruktion,” the final paragraph is new, inspired by some of the additions Seidel had made when he reworked the text for his own “Instruktion.” (Interestingly, Luschan did not follow Seidel in changing the lemma to “music and musical instruments.”)

The most significant change in this instruction, when compared to Bastian’s, is its length: whereas Bastian’s final version consists of only two words, Luschan’s amounts to four short paragraphs. The majority of the expanded instruction, as the headword suggests, concerns musical instruments, and the instruction now includes requests for specific types; yet the language reveals that Luschan (and presumably some of his colleagues) were interested in more than just the physical specimens. In the second paragraph, for example, Luschan noted that a stringed instrument would “lose” its tuning over time, the process certainly quickened by the inevitable jostling it would experience during its journey to Berlin. Thus, he asked that the collector determine and record the instrument’s tuning—how, he did not say—immediately upon receiving it so that this information, unlike the instrument’s tuning, would survive the trip. Not only does this demonstrate an understanding, on Luschan’s part, of the mechanics of stringed instruments, it also indicates that scholars were actively interested in studying tuning systems. For the collector

64. Luschan, Anleitung (1899), 18.
reading this instruction, not only would he know *what* to collect, but he would also have a sense of *why*.

Other remarks ancillary to the collection of musical instruments are scattered throughout the instruction, and they similarly indicate that Luschan had given more thought to how the study of non-European musics could figure in to the project of Völkerkunde. Bastian’s “music samples” resurfaced in Luschan’s request for transcriptions of “simple and typical pieces of music,” but in asking that they be made “only wherever possible,” the request was softened and any sense of urgency lost, as was any indication that there was somebody in Berlin waiting to study them. Nonetheless, the inclusion of this request does suggest that Luschan saw in them a potential, but the extent of that potential was not yet clear to him. Entirely new to this version were the expressions of interest in performance practice (the players “typical posture”); the presence within a society of professional musicians and instrument makers (particularly luthiers, although Luschan did not indicate why they were of especial interest); and even the functions that societies assigned to certain instruments (especially the question of whether or not drums were used as a means of communication—the presence of a “drum language”). In all, the instruction touches on many aspects of musical culture, but as a reflection of the general thinking among Berlin ethnologists, it is clear that music was not recognized as being itself a singular research area.

Guidance for the making of phonographic recordings was first published in the first half of 1904, initially as an appendix to Abraham and Hornbostel’s “Über die Bedeutung
des Phonographen für vergleichende Musikwissenschaft," and was soon after incorporated into the third edition of Luschan’s Anleitung. Almost certainly authored exclusively by Hornbostel—a later version is credited to Hornbostel alone—the “Anleitung zur Handhabung des Phonographen für Forschungsreisende und Missionare” (Manual on the Handling of the Phonograph for Research Travelers and Missionaries) offers a concise, step-by-step guide for collecting phonographic recordings and comprises three sections: first, a list of required materials, both for making the recordings and for maintaining the equipment; second, an eleven-step procedure for the collector to follow when making recordings; and finally, a list of desiderata for the collector to document in journal entries, which would accompany the cylinders when sent to the Phonogramm-Archiv (Figure 3.3). This appendix is evidence of an effort complementary to the one Luschan demonstrated with the production of his manual in 1899, namely, that of ensuring that the collector return with artifacts of the greatest value for scientific scrutiny, analysis, and comparison, achieved through explicit systematization.

In crafting his manual, Hornbostel must have benefited from the experience that he and his colleagues Abraham and Stumpf had gained while making recordings in Berlin. (The document rehearses, for instance, observations and practical recommendations made in Stumpf’s 1901 paper on the Siamese Court Theater Troupe as well as earlier writings Hornbostel co-authored with

65. Abraham and Hornbostel, “Über die Bedeutung,” 232–33. There is no indication that this document, or an earlier version of it, was presented at the meeting in 1903.
66. Luschan, Anleitung (1904); the now-expanded section on music is on pp. 58–65.
67. See [Ankermann], Anleitung, 4.
Consequently, Hornbostel was equipped with experiential knowledge and foresight enough to anticipate and account for certain issues that would or could arise, either during the recording process or back at the Phonogramm-Archiv where the recordings would eventually be studied. His list of equipment, for example, includes not only spare cylinders, spare parts for the recording device, and tools required for its general maintenance, but also a pitch pipe tuned to 435 Hz, which the collector was asked to play into the phonograph at the beginning of
each recording. Hornbostel did not explain why he requested this of the collector—why should an amateur question the motives of a scientist?—but we can infer that the recorded pitch was intended to function as a guide-tone for those who would later listen to the recording, helping them to ensure that the cylinder was rotating at the same speed as when it was being recorded. (It would be far easier to determine the correct speed of rotation from a standardized pitch than from the collector’s spoken introduction, which Abraham and Hornbostel had needed to do for the Luschans’ recordings, as discussed in Chapter 2.) Due to the mechanical nature of the device, the rotation speed was highly variable, and as the winding mechanism in the clockwork began to unwind, the speed of rotation would slow. By asking the collector to include this reference pitch at the beginning of each recording, Hornbostel increased the likelihood that those at the Phonogramm-Archiv could recreate the performance as accurately as the technology would allow, and thereby establish a “baseline” performance before exploiting the technology’s variable rotation speed as they made their measurements and verified their transcriptions.

Hornbostel’s appendix was incorporated into the third—and largely expanded—edition of Luschan’s Anleitung, copied almost exactly, save one egregious error: the substitution of Grammophon for Graphophon in the list of equipment.68 What at first glance may seem to be

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68. Luschan, Anleitung (1904), 61. Although I have not been able to confirm the timeline, I believe that that the third edition of Luschan’s manual was published after the issue of the Zeitschrift für Ethnologie in which Hornbostel’s appendix appeared. That issue—the second of the six that form volume 34—contains minutes for the BGAEU meeting on 19 March of that year, with those for the following meeting on 23 April appearing in the subsequent issue. Certainly, Luschan’s manual could have been published sometime during the prior three or four months, but that would have made the inclusion
an innocuous typo, the potential consequences for the unsuspecting layperson would have been acute, as the gramophone, unlike the phonograph and graphophone, recorded onto discs as opposed to cylinders and relied on electricity in order to operate, rendering any attempt to otherwise follow Hornbostel’s directions fruitless. This discrepancy notwithstanding, Hornbostel’s phonographic manual was a significant addition to the 1904 edition of Luschan’s manual, an edition notable as well because music was no longer the focus of a single instruction, but was instead granted a distinct section of its own.

This section on music, like the instruction in the 1899 edition, was still largely concerned with the collection and documentation of musical instruments, and indeed, it incorporated the entirety of the 1899 instruction, albeit spread out and expanded. The most significant addition, Hornbostel’s manual aside, is the introductory paragraph in the third item, which functions as a “preamble” to the directions for making phonographic recordings and recalls language from Luschan’s paper on Turkish folksongs and the phonograph, discussed in the previous chapter:

Every traveler in an area that is still little-explored should be equipped with a phonographic device and record as many typical pieces of music (solo singing, orchestra, etc.) as possible. In the process, proceed according to the following instruction.69

69. Luschan, Anleitung (1904), 61. “Jeder Reisende in einem noch wenig erforscht Gebiete sollte mit einem phonographischen Apparate ausgerüstet sein und möglichst viele typische Musikstücke (Einzelsang, Orchester usw.) aufnehmen. Dabei ist nach der folgenden Anweisung zu verfahren.”
Thus, Luschan reaffirmed his support for and dedication to the Phonogramm-Archiv’s project, while stressing the importance of collecting recordings of music. In this manual, Luschan—no doubt with Hornbostel’s support—gave music its own section, affording it the same status as such other ethnological areas of interest as: “dwellings and furnishings”; “body modification” \( (\text{Künstliche Veranstaltungen}) \); “toys, games, sport”; “trade, money surrogate, measurements and weight”; and “administration of justice and social conditions.” No longer was everything related to music collected in a single instruction under the rubric “musical instruments”; instead, music was here recognized as a research area unto itself.

Notably, neither Luschan nor Hornbostel elaborated on the request—still tagged onto the paragraph on stringed instruments (now instruction two)—for documentations of “simple and typical pieces of music.” Because of the phonograph, transcription was no longer the sole means by which such pieces could be documented, and indeed, because transcription required both specialist knowledge and practiced skill, it was not the preferred method. (One need only recall the great effort that Benjamin Ives Gilman had expended in attempting to adequately represent Zuni melodies in Western notation.) In contrast, very nearly anyone could operate a phonograph and make a recording: the end result was determined less by the skill of the operator and more by the quality of the guidance given. Producing a manual that would see a layperson make \textit{transcriptions} of “scientific worth” was essentially an impossible task; communicating a procedure for properly handling a machine, on the other hand, was easier by far, and the achievement of a good result infinitely more likely. Once the cylinders had arrived in Berlin, persons with the requisite skill set could make transcriptions from the recordings, and that they would be able to
listen to them again and again meant that they would have opportunity not only to revise their transcriptions, but also to determine how best to represent what they heard in Western notation. Even for the most skilled of ear, that task would be an onerous one if working from life—probably even a futile one.

The music chapter was substantially revised a few years later when Hornbostel revisited it in preparation for the *Anleitung*'s fifth edition.\(^70\) While it does not appear that the new edition was ever completed, Hornbostel’s chapter was published separately, and a copy survives in the library of the Ethnologisches Museum (Figure 3.4). As it was an offprint, there is no introductory material to accompany the chapter, so the publication itself does not provide any background information such as the reason for producing a new edition, the name(s) of its author(s), the rationale behind publishing the single chapter as an offprint, and, by extension, the whereabouts of the rest of it. (From Luschan’s letter to Hornbostel in which he referred to “your [Hornbostel’s] chapter L,” discussed above, we do know that the completed chapter was shaped by Hornbostel’s hand alone.)\(^71\) That the offprint again included interleaved blank pages indicates that it was intended for use in the field, as the sixteen-page booklet—of which eight pages are blank—would have been far less cumbersome to carry than the 128 pages of the 1904 *Anleitung*


(not to mention Luschan’s 23-page chapter from 1906, which did not include any blank pages for notes). If practicality were in fact the main impetus behind releasing the chapter as an offprint, this would indicate that Hornbostel (and perhaps Luschan) was anticipating that enough travelers would be setting out to collect musical objects in particular, which could have justified the work and the cost.

If order is any indication of hierarchy, then musical expressions—Bastian’s “samples of music”—are finally granted pride of place: the very first item in the chapter is an expanded
version of the paragraph that notified travelers of their duty to take a phonograph with them and to make as many recordings as possible. Now, however, they were given further direction, as Hornbostel asked that they avoid favoring those pieces of music “that appeal to the European ear” and instead record the kinds of “musical utterances” described in the manual. From the beginning, then, there is an indication that Hornbostel had a particular comparative musicological program in mind, a strategy that permitted him to delimit the extent of “as many as possible.” In the time since his and Abraham’s reports to the academy, he had had opportunity to reflect further on the aims of the emerging discipline as well as on the methods by which those aims could be achieved; as a result, he had a clearer idea of what objects and information were needed to further the comparative musicological project as he envisioned it, and in directing travelers to focus on just those items, he used the manual as a means of remote supervision, transferring to the page the weight of his authority.

As in the previous edition, the directions for operating the phonograph and making recordings follow the revised version of the “preamble.” Unsurprisingly, they, too, were revised, the most significant changes being the inclusion of specific equipment needed for travel in “the tropics” (recall that the German colonies were in Africa and Oceania); the request for a few additional pieces of information about each recording; and a new instruction regarding the recording of “pieces of music in which several [persons] make music together [but] not in unison.” Gone, however, is the list of “facultative” items: because they concerned musical practice or tradition as opposed to sound recordings or the process of making them, Hornbostel
redistributed these questions within the *Anleitung*, arranging them much more systematically according to topic.

The instructions for making phonographic recordings run just over two pages, and because they pertain to the same subject, Hornbostel contained them all within the first item in the manual. Nearly twice as long is the portion dedicated to musical instruments, which is a far cry from the single word devoted to them in the “Rathschläge” some thirty-six years earlier. This expansion, even when compared to the chapter in the 1904 *Anleitung*, is indicative of Hornbostel’s growing interest in organology, especially with respect to the manner in which instruments are categorized and classified. This is further reflected in the manner in which Hornbostel formulated his instructions for musical instruments. No longer do they consist of just a list of instrument names and instrument types; rather, the instructions progress from the general to the particular, beginning with remarks and questions that could apply to any number of instruments, then turning to those that pertain only to certain classes of instruments or subcategories thereof.

The instrument section—items two through nine—is thus a mixture of instruction manual and questionnaire, covering such topics as instruments’ physicality and manufacture; tuning systems and the manner in which instruments are tuned; performance practice and posture. Interspersed are requests for material things: for a sample of the plant of which an instrument is made; for phonographic recordings of local musicians playing instruments that had been freshly tuned. For those items that concerned specific instruments, Hornbostel grouped them according to family—percussion instruments, wind instruments, and stringed instruments—and subdivided them further based on how the instrument was sounded; in this regard, it can be seen as a very
rudimentary draft of the “Systematik der Musikinstrumente” that he would author with Curt Sachs a few years later. Hornbostel included requests for information among the requests for instruments, in some cases asking after technique or performance practice, but also after the physical characteristics of the instruments themselves, as he did not expect that the traveler would collect and transport every instrument he came across, or that every musician would surrender her instrument willingly.

The remainder of the chapter concerns topics that, by and large, would fall under Abraham and Hornbostel’s rubric of “practical music,” as discussed in Chapter 2. It takes the form of a questionnaire, asking the user to record information about such things as the instrumental composition of ensembles, the means of vocal sound production, musical economy and trade, and the occasions on which music is performed or restricted. In light of the studies of non-European musics discussed in the previous chapters, it comes as no surprise that the manual also includes questions regarding the presence of an indigenous music theory or musical origin myths, and asks that phonographic recordings be made to demonstrate aspects of the former. An outlier among the twenty-one items would seem to be the twentieth, whose focus is dance. Its inclusion almost certainly relates to Hornbostel’s interest in the relationship between dance and music,


73. In item two, he wrote: “Where the transmittal of the original [is] infeasible descriptions that are as precise as possible with photographs (taken from various sides), sketches of the technical details (e.g., for drums, the cross section, the clamping devices, and the like), specifications of the dimensions are highly desirable.” [Luschan and Hornbostel], Anleitung, 5.
and is perhaps indicative of his desire to continue his research into the psychological connection between aural stimulus and physical movement, which he had discussed in 1904 in a brief essay responding to a performance by Isadora Duncan. The final item is the only inclusion in any of the manuals of a request for information relating to the psychology of music, specifically with respect to the tonal awareness and musical aptitude of non-European musicians, which could only be gathered by means of direct assessment. Likely because Hornbostel was not a trained psychologist, he referred those who would be able to carry out such experiments to Stumpf’s “extensive instruction.” Notwithstanding, Hornbostel did include a description of a “simple experiment” designed to evaluate the subject’s ability to match pitches, and, of course, asked that these experiments be recorded with the phonograph.

What emerges from this manual is the investigative framework of a discipline with direction, one that was no longer fueled by indiscriminate requests in the hope that whatever was received would eventually be of use. Gone is the feeling that requests were made “just because” or “just in

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75. Hornbostel did not provide titles of specific texts, but from context, it seems that Stumpf had assembled instructional materials on the subject and made them available for consultation.

case,” as a sense of deliberation is conveyed in the specificity of Hornbostel’s language and the systematization of the manual’s form, despite the rationale remaining unsaid. Of course, given the worldwide scope of the comparative musicological project and the preservative mission of the Phonogramm-Archiv, the future remained a guiding force, but it was now a specific future, one that comparative musicologists could anticipate and prepare for in advance. All they needed were some phonographs.
This dissertation contributes to the critical examination of the Berliner Phonogramm-Archiv during its “phonograph era,” an area of research that remains understudied. This is likely the consequence of historical circumstance, as for nearly fifty years, the majority of the Phonogramm-Archiv’s collection of cylinders was inaccessible. In the fallout from the Second World War, the recordings were inadvertently divided, and East German authorities ultimately sealed the preponderance in rooms at the Akademie der Wissenschaften der DDR, where they remained until after German reunification. Following the return of the cylinders to the Phonogramm-Archiv on 16 January 1991, it took Susanne Ziegler and other researchers over a decade to inventory the entire collection of cylinders, assess the extent of any damage, locate any corresponding records, and determine which cylinders had been lost, finally culminating in
the publication of Ziegler’s comprehensive catalog of the Phonogramm-Archiv’s collection of cylinders in 2006.¹

In this dissertation, I have examined how the founding of the Berliner Phonogramm-Archiv contributed to the establishing of an objective methodology for the nascent discipline of comparative musicology, and further, how the Phonogramm-Archiv’s mission to collect recordings of musics from all over the world as well as the comparative musicological project it was designed to support were enabled by and dependent on the context of German colonialism. Additionally, I explored how the German cultural sciences—particularly anthropology and ethnology—served as a model for the comparative musicology, with respect to both its epistemological framework and its methodology, and, by extension, for the collection strategies that Stumpf, Abraham, and Hornbostel employed in procuring sound recordings for the Phonogramm-Archiv. In this way, I demonstrated that the disciplined study of non-European musics grew out of, and participated in, an intellectual tradition governed by the tenet of scientific objectivity and deeply enmeshed within the German colonial apparatus.

The ability for comparative musicologists to engage with the other cultural sciences was aided significantly by the arrival of the phonograph. Previously, as Stumpf’s example illustrates, the task of transcribing pieces of music under the requirement of objectivity had posed a considerable challenge, especially when the music was of a foreign culture. With access to a phonograph, 

¹. Ziegler, Wachszyllnder.
however, it became possible to listen to the same performance repeatedly, which permitted researchers to revise their transcriptions as needed and ensure that their transcriptions were in fact objective representations. Further, the inductive method championed by the cultural sciences required the examination and comparison of an abundance of different examples, and the phonograph, owing to its portability, facilitated the collection of recordings in the field. Abraham and Hornbostel were thus able to equip travelers to the European colonies with phonographs and blank cylinders, which were returned to the Phonogramm-Archiv after the cylinders had been filled.

As I have shown in this dissertation, the Berliner Phonogramm-Archiv has been a colonial archive from its beginning, built with recordings of musicians in the colonial margins and the product of the same colonial discourse that shaped early comparative musicology. Yet this study represents only a beginning in the project to fully comprehend the role of the colonial apparatus in the histories of the Phonogramm-Archiv and comparative musicology. In the immediate historical context, for example, the situations in which the recordings were made need to be investigated in order to better understand how the recording sessions unfolded, the dynamics between the collectors and the musicians, and the kind of work that was required of the musicians. This would entail the close examination of individual collections within the Phonogramm-Archiv, and focusing on those that were made during official government-sponsored expeditions, such as the Deutsche Marine-Expedition and the Kaiserin-Augusta-Fluß-Expedition, would allow us to see the colonial mechanism in action.
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Am vergangenen Sonntag [sic] haben, wie es in den öffentlichen Ankündigungen heißt, die Eskimos aus Labrador und Grönland ihre “Vorstellungen” begonnen.

Was stellen denn aber diese seltsamen, kleinen, verkümmerten Menschengestalten aus dem unwirthlichen Norden vor?

Nun, das Beste ohne Zweifel, was sie zu bieten haben und was uns “mittelmäßige Söhne dieser Erde” (die Töchter sind selbstverständlich mit einbegriffen) am meisten reizt—nämlich: sich selbst.

Und somit wären wir an einem Punkte angelangt, der freilich nicht innerhalb der neuerdings so sehr in Aufnahme gekommenen Anthropologie, zu deutsch bekanntlich der Lehre vom Menschen, liegt, der aber dennoch in einem anderen Betracht zu der besagten Lehre gehören dürfte.

Wir werden uns wohlweislich hüten, mit diesen Herren von der strengen anthropologischen Observanz irgendwie anzubinden. Sie mögen ungestört ihre Beobachtungen, ihre Messungen anstellen; sie mögen alle denkbaren und undenkbaren Linien und Winkel an den Gesichtern und Schädeln der Eskimo-Individuen

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1. An inaccurate rendering of a line from August Wilhelm von Schlegel’s translation of Hamlet (“mittelmäßigen Söhnen dieser Erde”). Shakespeare’s original is: “indifferent children of the earth” (Hamlet II.ii.222).

Daß man aber auch daran erinnert werden muß! Beinahe hätte man es über dem “interessanten” anthropologischen Schauspiele vergessen. Und verzeihlich genug wäre es immerhin gewesen. Gar nicht weit entfernt tummeln sich die “ostindischen Dickhäuter” innerhalb der geräumigen, fest eingefriedeten Gehege; man kann sie dort in ihren natürlichen Daseins-Aeußerungen beobachten. Hier hingegen mag man die, ihrer friedlichen Neigung entsprechend, innerhalb der bloß mit Holzlatten abgegrenzten Hürden sich

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2. The author is likely alluding to Ludwig Seeger's translation of “the readiness is all” (Hamlet V.ii.200), which Seeger renders as “Bereit sein, das ist Alles.”

3. Faust 1.1300=2.

4. Lit. “thick-skins.”


5. Lit. “thick-furs.”

6. Named for the French scientist René Antoine Ferchault de Réaumur (1683–1757), the Réaumur scale is a temperature scale according to which water freezes and boils at 0 degrees and 80 degrees, respectively. 40°Ré is equivalent to 50°c and 122°f.


Berlin, 20. October. J. K.
Appendix B: Texts and Translations of Musical Manuals


Da Saiteninstrumente beim Transporte ihre Stimmung verlieren, wäre dieselbe, wenn irgend möglich, an Ort und Stelle festzustellen und zu notiren. Ueberhaupt würde es sehr verdienstlich sein, einfache und typische Musikstücke, wo nur immer es angeht, mit Notenschrift festzulegen.


*Musical instruments*. As yet only partially represented, [they] should therefore be collected as exhaustively as possible. Only for *sese*- and *gubu*-type instruments is the accounting of the existence [of musical instruments] sufficient for a particular tribe; but for these instruments, too, a good photograph with the typical posture of the player would be very desirable.

Since stringed instruments lose their tuning during transport, it should be ascertained and written down in situ, if at all possible. In general, it would be very meritorious to document simple and typical pieces of music with musical notation, only wherever possible.

For particular flutes—especially those from Uganda and ones similar to them from the vicinity—not even the manner in which they are blown is known here. The greatest possible number of specimens are desired of flutes with adornments and also of instruments of the panpipe variety. Attention should also be paid to whether there are specific musicians by trade and specific artisans that produce musical instruments, particularly stringed instruments.
Musik und Musikinstrumente. Ueber letztere sind wir noch längst nicht vollständig unterrichtet, bedürfen also eingehender Sammlungen. Gute Photographien oder zeichnerische Darstellungen, welche die charakteristische Haltung des Spielenden veranschaulichen, sind gleichfalls sehr erwünscht.

Da Saiteninstrumente beim Transporte ihre Stimmung verlieren, so wäre dieselbe, wenn irgend möglich, an Ort und Stelle festzulegen und zu notiren. Ueberhaupt würde es höchst verdienstlich sein, einfache und typische Musikstücke, wo es immer angeht, in Notenschrift niederzuschreiben. Die mit europäischen Instrumenten, Harmonien, Geigen etc. ausgerüsteten Missionsstationen könnten hier die beste Hülfe leisten und uns namentlich weitgehende Einblicke in das musikalische Leben der Eingeborenen eröffnen.


Music and musical instruments. We are still nowhere near being fully informed about the latter, [and] therefore require in-depth collections. Good photographs or graphic representations, which illustrate the typical poster of the player, are likewise very desirable.

Since stringed instruments lose their tuning during transport, it should thus be determined and written down in situ, if at all possible. In general, it would be highly meritorious to copy down simple and typical pieces of music in musical notation wherever possible. Mission stations equipped with European instruments, harmoniums, violins, etc., could provide the best assistance in this respect and give us extensive insights, especially into the musical life of the natives.

Drums. Varieties and production of them. Is there a drum language? What purposes do drums that have skulls and other human bones attached to them serve? Do these bones come from enemies or from locals? Horns, flutes, pipes, along with information about how these instruments are blown. (Photograph or drawing.) Adorned instruments and also those of the panpipe (shepherd’s flute) variety deserve particular attention. Collect! Are there musicians by trade, do they form formal ensembles? Ensemble playing. Melody and accompaniment. Are there professional instrument makers, especially those who produce stringed instruments?

Da Saiteninstrumente beim Transporte ihre Stimmung verlieren, wäre dieselbe, wenn irgend möglich, an Ort und Stelle festzustellen und zu notiren. Ueberhaupt würde es sehr verdienstlich sein, einfache und typische Musikstücke, wo nur immer es angeht, mit Notenschrift festzulegen.


Bei Trommeln ist streng zu unterscheiden, ob sie zum Tanz geschlagen werden oder sonst Musikinstrumente im engeren Sinne sind und oder ob sie als Signalapparate Verwendung finden. Die “Trommelsprache” verdient das eingehendste Studium; trotz ihrer Verbreitung über einen sehr grossen Theil von Afrika und Oceania ist sie bisher nur bei ganz wenigen Stämmen untersucht und unserem Verständniss näher gebracht worden.

Musical instruments. As yet only partially represented for most tribes, [they] should therefore be collected as exhaustively as possible. For many instruments, a good photograph with the typical posture of the player would be very desirable.

Since stringed instruments lose their tuning during transport, it should be ascertained and written down in situ, if at all possible. In general, it would be very meritorious to document simple and typical pieces of music with musical notation, only wherever possible.

For particular flutes, not even the manner in which they are blown is known here. The greatest possible number of specimens are desired of flutes with adornments and also of instruments of the panpipe variety. Attention should also be paid to whether there are specific musicians by trade and specific artisans who produce musical instruments, particularly stringed instruments.

In the case of drums, it must be clearly distinguished whether they are struck for dancing or are otherwise musical instruments in the strict sense and/or whether they are used as signal devices. “Drum language” deserves the most in-depth study; despite its pervasiveness over a very large part of Africa and Oceania, it has hitherto been examined and made accessible to us only in the case of very few tribes.

A. **Ausrüstung.**
2. Reservemembranen oder Reparaturausrüstung
3. Ölkanne, Staubpinsel, Lederlappen, Schraubenzieher.
5. Stimmpeife (Normal-a = 435).

B. **Aufnahme.**
1. Uhrwerk vor jeder Aufnahme ganz aufziehen.
2. Uhrwerk gewöhnlich mit mittlerer Geschwindigkeit laufen lassen; bei sehr hoher, sehr leiser oder sehr schneller Musik grosse Geschwindigkeit.
3. Der Apparat ist festzustellen und während der Aufnahme nicht zu verrücken.
4. Jede Aufnahme hat damit zu beginnen, dass das a des Stimmpeifchens in den Apparat hineingeblasen, dann die Journalnummer und der Titel der Aufnahme hineingesprochen wird.
5. Schallkörper des Instrumentes, Mund des Sprechers oder Sängers möglichst dicht an den Schalltrichter bringen, ohne diesen zu berühren.
6. Der Spieler (Sänger) möge, wenn angängig, den Takt durch Händeklatschen markieren (möglichst nahe der Schallöffnung des Trichters).

A. **Equipment.**
1. Phonograph or graphophone with recording- and playback-diaphragm, horn, key.
2. Reserve diaphragm or repair kit.
3. Oil can, dusting brush, leather cloth, screwdriver.
4. Cylinders, protected against shaking, excessive heat, moisture, if possible.
5. Pitch pipe (normal-a = 435).

B. **Recording.**
1. Wind clockwork completely before every recording.
2. Normally, one should set clockwork to operate at medium speed; for very high, very soft, or very fast music, at high speed.
3. Situate the device securely and do not move it while recording.
4. Begin every recording by sounding an a on the pitch pipe into the device, then announcing the journal number and the title of the recording.
5. Bring the resonator of the instrument [or] the mouth of the speaker or singer as close as possible to the horn without having them touch.
6. The player (singer) may, if feasible, mark the beat with hand clapping (as near as possible to the sound opening [i.e., the bell] of the horn).
Nach Gesangsaufnahmen ist der tiefste und höchste Stimmton des Sängers aufzunehmen (Stimmumfang).

Instrumentalmusiker mögen die vollständige Skala ihres Instrumentes in der bei ihnen üblichen Reihenfolge in den Phonographen hineinspielen; bei Saiteninstrumenten sind die leeren Saiten besonders aufzunehmen.

Jede Aufnahme ist sofort probeweise ganz zu reproduzieren.

Notierung der Journalnummer, des Orts und Titels der Aufnahme auf der Walzenschachtel.

Möglichst sorgfältiges Ausfüllen des Journals.

Es empfiehlt sich, gelegentlich von einem Musikstück zwei Aufnahmen zu machen (auch von verschiedenen Musikern).

C. Journal.

1. Fortlaufende Nummer der Aufnahme:
2. Datum und Ort der Aufnahme:
3. Person des Sprechers oder Musikers:
   a) Volksstamm:
   b) Name:
   c) Alter:
   d) Geschlecht:
   e) Beruf:
4. Gegenstand der Aufnahme:
   a) Sprache (Konversation, Deklamation)?
      Gesang (Solo, Zwiegesang,
      Chor, Instrumentalbegleitung)?
      Instrumentalmusik (Name, Beschreibung,
      Zeichnung oder Photographie des Instrumentes)?

At the end of song recordings, record the singer’s lowest and highest vocal tone (vocal range).

Instrumental musicians may play the complete scale of their instrument in the order customary to them into the phonograph; for stringed instruments, record the open strings separately.

Immediately test each recording by reproducing it in its entirety.

Note the journal number, the location and title of the recording on the cylinder’s box.

Fill out the journal as meticulously as possible.

It is recommended to make, on occasion, two recordings of the same piece of music (also by different musicians).

C. Journal.

1. Successive number of the recording:
2. Date and location of the recording:
3. Speaker’s or musician’s person:
   a) Tribe:
   b) Name:
   c) Age:
   d) Sex:
   e) Occupation:
4. Subject of the recording:
   a) Speech (conversation, declamation)?
      Singing (solo, duet, choir, instrumental accompaniment)?
      Instrumental music (name, description, drawing or photograph of the instrument)?
b) Titel des Stückes:  
c)Gattung des Stückes (Tanzgesang, religiöser Gesang, Volkslied usw.)?  
d) Einheimischer Name der Tonart:  

5. Text des Liedes oder der Sprachprobe in möglichst sorgfältiger Transskription, event. mit Übersetzung (auf der rechten Seite zu notieren):  


7. Bemerkenswerte Nebenumstände (Haltung, Ausdruck des Vortragenden; Gebärden, Tanz, Zeremonien):  

Fakultativ:  

8. Einheimische Theorie? Leitern (5 stufig, 7 stufig? Wie motivieren die Einheimischen die Stufenzahl?) Mehrstimmigkeit in Gesang und Instrumentalmusik?  

9. a) Berufsmusiker (Organisation, soziale Stellung usw.)?  
   b) Liebhabermusik (Ausbreitung, Unterricht usw.)?  

10. Verhältnis der Einheimischen zur europäischen Musik?  

11. Einheimische Ursprungsmythen und Geschichte der Musik?  

Facultative:  

8. Indigenous theory? Scales (5-step, 7-step?) How do the natives explain the number of steps?) Polyphony in singing and instrumental music?  

9. a) Professional musicians (organization, social status, etc.)?  
   b) Amateur music (prevalence, teaching, etc.)?  

10. Relation of the natives to European music?  

11. Indigenous origin myths and history of music?

Angaben, wie z. B. “die übliche Form” und ähnliche sind zu vermeiden, weil oft selbst kleine Abweichungen wichtig sind. Wo also die Einsendung der Originale untunlich, sind möglichst genaue Beschreibungen mit Skizzen oder Photographien sehr erwünscht.

2. Da Saiteninstrumente beim Transporte ihre Stimmung verlieren, wäre dieselbe, wenn irgend möglich, an Ort und Stelle festzustellen und zu notieren. Überhaupt würde es sehr verdienstlich sein, einfache und typische Musikstücke, wo nur immer es angeht, festzulegen.


A. Ausrüstung.
   a) Phonograph oder Grammophon mit Aufnahme- und Wiedergabemembran, Schalltrichter, Schlüssel.
   b) Reservemembranen oder Reparaturausrüstung.


1. Musical instruments are as yet only partially represented for most tribes, [and] should therefore be collected as exhaustively as possible. For many instruments, a good photograph with the typical posture of the player would be very desirable.

   Statements like, for example, “the usual form” and similar should be avoided because often even small differences are important. Thus, where the transmittal of the original [is] infeasible, descriptions that are as precise as possible with drawings or photographs are highly desirable.

2. Since stringed instruments lose their tuning during transport, it should be ascertained and written down in situ, if at all possible. In general, it would be very meritorious to document simple and typical pieces of music, only wherever possible.

3. Every traveler in an area that is still little-explored should be equipped with a phonographic device and record as many typical pieces of music (solo singing, orchestra, etc.) as possible. In the process, proceed according to the following instruction.

A. Equipment.
   a) Phonograph or gramophone with recording- and playback-diaphragm, horn, key.
   b) Reserve diaphragm or repair kit.
c) Ölkanne, Staubpinsel, Lederlappen, Schraubenzieher.
d) Walzen, tunlichst vor Erschütterung, grosser Hitze, Nässe zu schützen.
e) Stimmpfeife (Normal-a = 435).

B. Aufnahme.
a) Uhrwerk vor jeder Aufnahme ganz aufziehen.
b) Uhrwerk gewöhnlich mit mittlerer Geschwindigkeit laufen lassen; bei sehr hoher, sehr leiser oder sehr schneller Musik grosse Geschwindigkeit.
c) Der Apparat ist festzustellen und während der Aufnahme nicht zu verrücken.
d) Jede Aufnahme hat damit zu beginnen, dass das a des Stimmpfeifchens in den Apparat hineingeblasen, dann die Journalnummer und der Titel der Aufnahme hineingesprochen wird.
e) Schallkörper des Instrumentes, Mund des Sprechers oder Sängers möglichst dicht an den Schalltrichter bringen, ohne diesen zu berühren.
f) Der Spieler (Sänger) möge, wenn angängig, den Takt durch Händeklatschen markieren (möglichst nahe der Schallöffnung des Trichters).
g) Nach Gesangsaufnahmen ist der tiefste und höchste Stimmtonton des Sängers aufzunehmen (Stimmumfang).
    Instrumentalmusiker mögen die vollständige Skala ihres Instrumentes in der bei ihnen üblichen Reihenfolge in den Phonographen hineinspielen; bei Saiteninstrumenten sind die leeren Saiten besonders aufzunehmen.
h) Jede Aufnahme ist sofort probeweise ganz zu reproduzieren.
i) Notierung der Journalnummer[,] des Orts und Titels der Aufnahme auf der Walzenschachtel.

B. Recording.
a) Wind clockwork completely before every recording.
b) Normally, one should set clockwork to operate at medium speed; for very high, very soft, or very fast music, [at] high speed.
c) Situate the device securely and do not move it while recording.
d) Begin every recording by sounding an a on the pitch pipe into the device, then announcing the journal number and the title of the recording.
e) Bring the resonator of the instrument [or] the mouth of the speaker or singer as close as possible to the horn without having them touch.
f) The player (singer) may, if feasible, mark the beat with hand clapping (as near as possible to the sound opening [i.e., the bell] of the horn).
g) At the end of song recordings, record the singer's lowest and highest vocal tone (vocal range).

    Instrumental musicians may play the complete scale of their instrument in the order customary to them into the phonograph; for stringed instruments, record the open strings separately.

h) Immediately test each recording by reproducing it in its entirety.
i) Note the journal number, the location and title of the recording on the cylinder's box.
k) Fill out the journal as meticulously as possible.
l) It is recommended to make, on occasion, two recordings of the same piece of music (also by different musicians).

C. Journal.
a) Successive number of the recording:
b) Date and location of the recording:
c) Speaker’s or musician’s person:
   a) Tribe:
   b) Name:
   c) Age:
   d) Sex:
   e) Occupation:

d) Subject of the recording:
   a) Speech (conversation, declamation)?
   b) Singing (solo, duet, choral [or] instrumental accompaniment)?
   c) Instrumental music (name, description, drawing or photograph of the instrument)?
   d) Title of the piece:

c) Genre of the piece (dancing song, religious song, folksong, etc.)?

d) Indigenous name of the mode:
e) Text of the song or speech sample in as meticulous a transcription as possible, poss. with translation (written on the right-hand side):

f) Does an indigenous musical notation of the recorded piece exist? (poss. transcription in this notation on the right-hand side).

g) Noteworthy concomitants (posture, expression of the performer; gestures, dance, ceremonies):
Fakultativ:

h) Einheimische Theorie? Leitern (5stufig, 7stufig? Wie motivieren die Einheimischen die Stufenzahl?) Mehrstimmig [sic] in Gesang und Instrumentalmusik?

i) a) Berufsmusiker (Organisation, soziale Stellung usw.)?
   b) Liebhabermusik (Ausbreitung, Unterricht usw.?)

k) Verhältnis der Einheimischen zur europäischen Musik?

l) Einheimische Ursprungsmythen und Geschichte der Musik?

4. Von einzelnen Flöten ist hier nicht einmal die Art bekannt, in der sie angeblasen werden.


6. Auch darauf ist zu achten, ob es besondere Musiker von Beruf gibt und besondere Künstler in der Anfertigung von Musik-, besonders Saiteninstrumenten.

7. Orchester.

8. Mehrstimmiger Gesang.


10. Bei Trommeln ist streng zu unterscheiden, ob sie zum Tanze geschlagen werden oder sonst Musikinstrumente im engeren Sinne sind oder ob sie als Signalapparate Verwendung finden.

Facultative:

h) Indigenous theory? Scales (5-step, 7-step? How do the natives explain the number of steps?) Polyphony in singing and instrumental music?

i) a) Professional musicians (organization, social status, etc.)?
   b) Amateur music (prevalence, teaching, etc.?)

k) Relation of the natives to European music?

l) Indigenous origin myths and history of music?

4. For particular flutes, not even the manner in which they are blown is known here.

5. The greatest possible number of specimens are desired of flutes with adornments and also of instruments of the panpipe variety.

6. Attention should also be paid to whether there are specific musicians by trade and specific artisans who produce musical instruments, particularly stringed instruments.

7. Orchestras.

8. Polyphonic singing.


10. In the case of drums, it must be clearly distinguished whether they are struck for dancing or are otherwise musical instruments in the strict sense or whether they are used as signal devices.

12. Glocken.


16. Tamburin, Cymbel [sic], Kesselpauken.

17. Trommeln mit regulierbarer Stimmung.

18. Klarinette, Oboë, Dudelsack.

19. Saiteninstrumente:
   a) gezupft.
   b) geschlagen.
   c) gestrichen.

20. Feierlichkeiten, bei denen Musik gemacht wird.

21. Musik bei der Arbeit (z. B. beim Rudern)[.] 

22. Takt, musikalische Befähigung.

23. Kriegstänze.

24. Tänze, bei denen Tiere nachgeahmt werden.

11. "Drum language" deserves the most in-depth study; despite its pervasiveness over a very large part of Africa and Oceania, it has hitherto been examined and made accessible to us only in the case of very few tribes.


13. Rattles and clappers.


15. Gong, lithophones [lit. "sound stones"].

16. Tambourine, cymbal, kettledrums.

17. Drums with variable tuning.

18. Clarinet, oboe, bagpipe.

19. Stringed instruments:
   a) plucked.
   b) struck.
   c) bowed.

20. Festivities during which music is made.

21. Music while working (e.g., while rowing).

22. Time, musical ability.

23. War dances.

24. Dances during which animals are imitated.
1. Every traveler in an area that is still little-explored should be equipped with a phonographic device and record as many typical pieces of music and songs as possible. In the selection of pieces, do not favor those that appeal to the European ear, but consider, as far as possible, all below-mentioned musical expressions. Occasional recordings of European melodies sung by natives are also desired. See also 5. b. [and] d., 7. a. f., 8. a. a. 3., 17. b., 21. When recording, proceed according to the following instruction:

**A. Equipment.**

a) Phonograph with recording- and playback-diaphragm, 1–2 horns (cf. 1. b. f). For the tropics, transmission belt from linen strap (not leather or rubber).

b) Reserve diaphragm or repair kit.

c) Pitch pipe. (Normal-\(a^2 = 435\) oscillations.)

d) Oil can, dusting brush, leather cloth, screwdriver.

e) Cylinders, protected against shaking, moisture (mold), if possible (tropics-safe packaging, approximately 20 units in hermetically sealed zinc canisters).

A. Ausrüstung.


b) Reserve Diaphragm oder Reparaturausrüstung.

c) Stimmpfeifchen. (Normal-\(a^2 = 435\) Schwingungen.)

d) Ölkanne, Staubpinsel, Lederlappen, Schraubenzieher.

e) Walzen, tunlichst vor Erschütterung, Nässe (Schimmel) zu schützen (tropensichere Verpackung, etwa zu 20 Stück in luftdicht verschlossener Zinkbüchse).
B. Aufnahme.
   a) Uhrwerk vor jeder Aufnahme ganz aufziehen.
   b) Uhrwerk gewöhnlich mit mittlerer Geschwindigkeit laufen lassen; bei sehr hoher, sehr leiser oder sehr schneller Musik grosse Geschwindigkeit.
   c) Der Apparat ist festzustellen und während der Aufnahme nicht zu verrücken.
   d) Jede Aufnahme hat damit zu beginnen, dass das a des Stimmpeifchens in den Apparat hineingeblasen, dann die Journalnummer und der Titel der Aufnahme hineingesprochen wird. Ein fingerbreiter Rand zu Anfang der Walze ist unbespielt zu lassen.
   e) Schallkörper des Instrumentes, Mund des Sprechers oder Sängers möglichst dicht an den Schalltrichter bringen, ohne diesen zu berühren. Richtige Stellung und Tonstärke durch eine blinde Aufnahme ausprobieren (Uhrwerk laufen lassen, ohne die Membran zu senken).
   f) Der Spieler (Sänger) oder ein Zweiter möge, wenn angängig, den Takt durch Händeklatschen oder Trommelschläge markieren (möglichst nahe der Schallöffnung des Trichters). Eventuell zwei durch ein T-Rohr verbundene Trichter benützen.
   g) Von Musikstücken, bei denen Mehrere zusammen nicht unison musizieren, sind auch die einzelnen Stimmen, jede für sich, aufzunehmen, und zwar in der Weise, dass die eine Stimme unmittelbar vor dem Trichter, die anderen im Hintergrunde aufgestellt werden, so dass bei jeder Aufnahme zwar alle spielen, aber durch den jedesmaligen Platzwechsel immer eine andere Stimme in den Vordergrund tritt.

B. Recording.
   a) Wind clockwork completely before every recording.
   b) Normally, one should set clockwork to operate at medium speed; for very high, very soft, or very fast music, [at] high speed.
   c) Situate the device securely and do not move it while recording.
   d) Begin every recording by sounding an a on the pitch pipe into the device, then announcing the journal number and the title of the recording. Leave a margin the width of a finger unrecorded at the beginning of the cylinder.
   e) Bring the resonator of the instrument [or] the mouth of the speaker or singer as close as possible to the horn without having them touch. Test the proper position and level of sound using a blind recording (let the clockwork run without lowering the diaphragm).
   f) The player (singer) or a second one may, if feasible, mark the beat with hand clapping or drumbeats (as near as possible to the sound opening [i.e., the bell] of the horn). Possibly use two horns connected by a T-pipe.
   g) For pieces of music in which several [people] make music together [but] not in unison, record each of the individual parts separately as well, in the manner that the one part is positioned immediately in front of the horn, the others in the background, so that for each recording all in fact play, but in changing the position each time, always a different part comes into the foreground.
h) Nach Gesangsaufnahmen ist der tiefste und höchste Stimmton des Sängers aufzunehmen (Stimmumfang).
i) Instrumentalmusiker mögen die vollständige Skala ihres Instrumentes in der bei ihnen üblichen Reihenfolge in den Phonographen hineinspielen (vgl. 5. D.). Bei Saiteninstrumenten sind auch die leeren Saiten für sich aufzunehmen.
k) Nach Gesangsaufnahmen ist gelegentlich der gesprochene Text aufzunehmen. Ebenso bei Trommelsprache.
l) Ist die Walze vor dem Abschluss der Melodie abgelaufen, so ist dieser noch besonders aufzunehmen.
m) Jede Aufnahme ist sofort probeweise einmal ganz zu reproduzieren. (Macht den Eingeborenen meist Vergnügen und ermutigt sie zu weiteren Produktionen). Spätere Reproduktionen möglichst unterlassen, um die Walze zu schonen.

n) Notierung der Journalnummer und des Titels der Aufnahme auf der Walzenschachtel.
o) Möglichst sorgfältiges Ausfüllen des Journals.
p) Es empfiehlt sich, von einem Musikstück gelegentlich zwei Aufnahmen an verschiedenen Tagen zu machen (auch von verschiedenen Musikern).

C. Journal.

a) Fortlaufende Nummer:
b) Datum und Ort der Aufnahme:
c) Person des Sprechers oder Musikers:
   1. Volksstamm, Geburtsort, Wohnort.
   2. Name.
   3. Alter.

C. Journal.

a) Successive number:
b) Date and location of the recording:
c) Speaker’s or musician’s person:
   1. Tribe, place of birth, place of residence.
   2. Name.
   3. Age.
   4. Sex.
5. Beruf.
7. Zeitweiliger Aufenthalt ausserhalb der Heimat.
8. Ansehen bei den Stammesgenossen in bezug auf musikalische Begabung.

d) Gegenstand der Aufnahme:
1. Sprache (Konversation, Deklamation)?
2. Gesang (Solo, Zwiegesang, Chor, Instrumentalbegleitung)?
3. Instrumentalmusik?
4. Titel des Stückes.
5. Gattung des Stückes (Tanzgesang, religiöser Gesang usw.).
6. (Eventuell) Einheimischer Name der Tonart oder des Melodieschemas (vgl. 17. b).

e) Text des Gesanges, der Sprachprobe oder der Trommelsprachprobe in möglichst sorgfältiger phonetischer Transkription, womöglich mit Interlinear-Übersetzung, mindestens Angabe des Sinns.

f) Existiert eine einheimische Notation des aufgenommenen Stückes? Eventuell Notierung in derselben.

g) Bemerkenswerte Nebenumstände (Haltung, Ausdruck, Gebärdenden des Vortragenden; Tanz, Zeremonien). Vgl. 6., 20. Haben die Eingeborenen Angst vor dem Apparat? Sind sie erstaunt, belustigt?

2. Musikinstrumente sind bisher von den meisten Stämmen nur ganz unvollständig in den Sammlungen vertreten, sind daher möglichst vollständig zu sammeln. Wo die Einsendung der Originale untunlich, sind möglichst genaue

5. Occupation.
7. Temporary residence outside of the homeland.
8. Reputation among tribespeople with respect to musical aptitude.

d) Subject of the recording:
1. Speech (conversation, declamation)?
2. Singing (solo, duet, choir, instrumental accompaniment)?
3. Instrumental music?
4. Title of the piece.
5. Genre of the piece (dancing song, religious song, etc.)?
6. (Possibly) indigenous name of the mode or melodic schema (cf. 17. b).

e) Text of the song, speech sample, or drum language sample in as meticulous a phonetic transcription as possible, with interlinear translation if possible, at least indication of the meaning.

f) Does an indigenous notation of the recorded piece exist? Possibly transcription in this notation.

g) Noteworthy concomitants (posture, expression, gestures of the performer; dance, ceremonies). Cf. 6., 20. Are the natives afraid of the device? Are they astonished, amused?

2. Musical instruments are as yet only partially represented in the collections for most tribes, [and] should therefore be collected as exhaustively as possible. Where the transmittal of the original [is] infeasible, descriptions that are
Beschreibungen mit Photographien (von verschiedenen Seiten aufgenommen), Skizzen der technischen Details (z. B. bei Trommeln der Durchschnitt, die Spannvorrichtung u. ä.), Angabe der Dimensionen sehr erwünscht. Angaben wie z. B. “die übliche Form” und ähnliche zu vermeiden, weil oft selbst kleine Abweichungen wichtig sind. Der einheimische Name, sowohl der Instrumentalgattung als auch des einzelnen Instruments, und seine Bedeutung ist stets genau zu ermitteln. Für jedes Instrument sind ferner die folgenden Punkte 3. bis 6. zu beachten. Um das Verbreitungsgebiet der verschiedenen Typen festzustellen, ist die Angabe wichtig, ob die Aufzählung (sicher oder wahrscheinlich) vollständig ist.

3. **Material.** (Bei Pflanzenteilen (Holzarten) der botanische Name oder Einsendung von Blüten oder Früchten.)

4. a) Die **Herstellungsweise** ist womöglich selbst zu beobachten, gelegentlich Instrumente in verschiedeneren Stadien der Vollendung einzusenden (namentlich Panpfeifen).
   b) Gibt es besondere Künstler in der Anfertigung von Musik-, namentlich Saiteninstrumenten?
   c) Wird nach Modellen gearbeitet? etwa von auswärts importierten?

5. **Abstimmungsweise.**
   a. Nach **aussermusikalischen** Prinzipien.
      a) Zufall. (Bei Bambusflöten z. B. könnten die Löcher ungefähr in die Mitte der natürlichen Internodien gebohrt werden.)

as precise as possible with photographs (taken from various sides), sketches of the technical details (e.g., for drums, the cross section, the clamping devices, and the like), specifications of the dimensions are highly desirable. Statements like, for example, “the usual form” and similar should be avoided because often even small differences are important. The indigenous name, both of the instrumental type and of the particular instrument as well as its meaning must always be accurately ascertained. Further, for every instrument, the following points 3. to 6. should be considered. In order to determine the distribution area of the different types, the information is important, whether the list is (certainly or probably) complete.

3. **Material.** (For parts of plants (kinds of wood) the botanical name or transmittal of blossoms or fruit.)

4. a) If possible, observe the **manner of production** yourself, occasionally send in instruments in various stages of completion (especially panpipes).
   b) Are there specific artisans who produce musical instruments, namely stringed instruments?
   c) Are they made from models? perhaps imported from elsewhere?

5. **Manner of tuning.**
   a. In accordance with **extra-musical** principles.
      a) Chance. (For bamboo flutes, e.g., the holes could be bored approximately in the middle of the natural internodes.)
b) Bequemlichkeit bei der Verfertigung des Instruments.
c) Rücksicht auf die Handlichkeit für den Spielenden.
d) Längenmaasse (vgl. N. 26).
e) Optisch-ästhetische Prinzipien (etwa ornamentale Anordnung der Flötenlöcher).
f) Ist Zahlensymbolik massgebend für die Anzahl der Töne (Flötenlöcher usw.) oder die Maasse des Instrumentes?

B. Nach musikalischen Prinzipien. (Eventuell phonographische Aufnahme.)
a) Wird der Ausgangston nach Gutdünken oder nach einem Vergleichston (Modellinstrument oder Stimminstrument) bestimmt?
b) In welcher Reihenfolge,
c) In welchen Intervallsprüngen erfolgt die Abstimmung der weiteren Töne?
d) Werden die zu vergleichenden Töne gleichzeitig oder nacheinander angegeben?

C. Technik der Abstimmung. (Xylophone können z. B. durch Abschneiden, Abschaben oder Abfeilen der Tasten oder durch Ankleben von Wachs oder Harzmasse (meist an der Unterseite) abgestimmt werden.)

D. Phonographische Aufnahme nach (zur Zufriedenheit der Eingeborenen!) vollendeter Abstimmung. Auch an verschiedenen Tagen oder nach Abstimmung durch verschiedene Personen. (Bei kurzdauernden Tönen trillerartige Wiederholung desselben Tons.)

b) Convenience for the instrument’s production.
c) Consideration of the handiness for the players.
d) Measures of length (cf. N. 26).
e) Optical-aesthetical principles (such as ornamental arrangement of flute holes).
f) Is number symbolism determinative of the number of tones (flute holes, etc.) or the instrument’s dimensions?

B. In accordance with musical principles. ( Possibly phonographic recording.)
a) Is the fundamental determined at discretion or in accordance with a comparison tone (model instrument or pitch instrument)?
b) In what order,
c) In what intervallic leaps does the tuning of the additional tones occur?
d) Are the tones to be compared given simultaneously or successively?

c. Technique of tuning. (Xylophones can be tuned, e.g., through the cutting, scraping or filing of the keys, or through the adhesion of wax or resinous compound (usually to the underside).)

D. Phonographic recording following consummate tuning (to the satisfaction of the natives!). Also on different days or after tuning by different people. (For tones of short duration, trill-like repetition of the same tone.)
   a) Stellung des Spielers.
   b) Haltung des Instruments.
   c) Technik des Spiels.

7. Schlaginstrumente.
   A. Trommeln.
      a) 1. Felltrommeln. Befestigungsweise des Fells genau beschreiben.
          2. Schlitztrommeln.
      b) Abstimmung.
          1. Feste Abstimmung auf eine unveränderliche Tonhöhe.
          2. Veränderliche Abstimmung.
          3. Während des Spiels veränderliche Abstimmung. Auf welche Weise wird die Veränderung bewirkt?
      c) Anschlag.
          1. Mit der Hand (Fingerspitzen? Handfläche?).
          [2]. Mit Klöppeln.
          3. Anschlag an verschiedenen Stellen der Trommel bzw. des Fells, um verschiedene Tonhöhen, Intensitäten oder Klangfarben zu erzielen?
      d) Es ist streng zu unterscheiden, ob die Trommel bloss als Musikinstrument im engeren Sinne oder bloss als Sprech- bzw. Signaltonnem oder beiden Zwecken dient.

6. Handling of the instrument. Photographs of the player in his characteristic posture are very desirable.
   a) Stance of the player.
   b) Position of the instrument.
   c) Playing technique.

7. Percussion instruments.
   A. Drums.
      a) 1. Headed drums. Manner of attaching head described in detail.
          2. Slit drums.
      b) Tuning.
          1. Fixed tuning on an invariable pitch.
          2. Variable tuning.
          3. Variable tuning while playing. In what way is the change effected?
      c) Impact.
          1. With the hand. (Fingertips? Palm?).
          2. With mallets.
          3. Impact on various places of the drum or of the head in order to achieve different pitches, intensities, or timbres?
      d) It must be clearly distinguished whether the drum serves only as a musical instrument in the strict sense, or only as a speech- or signal-drum, or both purposes.
e) Bei Musiktrommeln beachten, ob sie
1. zum Solovortrag,
2. zur Begleitung von Tänzen,
3. zur Begleitung von Gesang oder anderen Instrumenten dienen.
1. Ahmt die Trommelsprache Rhythmus und Tonfall der Wortsprache nach?
2. Entspricht die Trommelsignale vereinbarten Parolen?
3. Oder sind die Trommelsignale von der Wortsprache ganz unabhängig (etwa wie das Morse-Alphabet)?
4. Werden Sätze der Trommelsprache nur als Signale oder Mitteilungen getrommelt oder auch zur Unterhaltung, zum Tanz usw.?

B. Bei den folgenden Instrumenten ist zu beachten, ob sie bloss als Lärminstrumente oder zur Markierung des Rhythmus verwendet werden.

a) Rasseln, Klappern.
b) Kastagnetten, Schlaghölzer.
c) Tamburin.
d) Kesselpauken.
e) Gong, Glocken, Becken.
f) Klangsteine.

e) For music-drums, observe whether they are used
1. for solo performance,
2. for accompaniment of dances,
3. for accompaniment of singing or other instruments.
f) “Drum language” deserves the most in-depth study; despite its pervasiveness over a very large part of Africa and Oceania, it has hitherto been examined and made accessible to us only in the case of very few tribes. Phonograms (highest speed of rotation) very desirable. Cf. also 1. B. k.
1. Does the drum language imitate the rhythm and inflection of the spoken language?
2. Do the drum signals correspond to agreed-upon paroles?
3. Or are the drum signals completely independent of the spoken language (such as the Morse alphabet)?
4. Are sentences in the drum language drummed only as signals or communications or also for entertainment, for dance etc.?

B. For the following instruments, observe whether they are employed only as noise instruments or for the marking of rhythm.

a) Rattles, clappers.
b) Castanets, clapsticks.
c) Tambourine.
d) Kettledrums.
e) Gong, bells, cymbals.
f) Lithophones [lit. “sound stones”].
8. Blasinstrumente.


a) Panpfeifen (vgl. 4.–6.).
1. Anzahl der Rohre.
2. Länge der Rohre.
3. Tonhöhen (phonographisch).
4. Art der Verbindung der Rohre zu einem System.

b) Flöten. Auf die Art des Anblasens ist genau zu achten, die Technik womöglich selbst zu erlernen.
1. Längs- oder Querflöte? Wo sitzt das Anblaseloch?
2. Wird das Anblaseloch teilweise mit den Lippen verschlossen? Oberlippe, Unterlippe oder beide?
3. Beteiligung der Zunge?
5. Anzahl und Stellung der Löcher.
6. Werden einzelne Löcher dauernd verschlossen gehalten, durch Wachs oder dergleichen?
7. Werden Zwischentöne durch nur teilweisen Fingerverschluss hervorgebracht?

D. Angerissene Lamellen.

a) Maultrommel.
b) Lamellenserien (z. B. Sansa).

B. Klavierähnliche Schlaginstrumente (vgl. 5. d.).
a) Xylophon (Holzklavier, z. B. Marimba).
b) Metallklaviere (geschlagene Platten, "Metallharmonikon").
c) Glockenspiele, Gongspiele, Klangsteinserien.

c. Piano-like percussion instruments (cf. 5. d.).
a) Xylophone (wood piano, e. g., marimba).
b) Metal pianos (struck plates, “metal harmonica”).
c) Glockenspiels, gong groups, lithophone series.

D. Plucked tines.
a) Jew’s harp.
b) Tine series (e.g., sansa [mbira]).

8. Wind instruments.

A. Flute–like instruments. The greatest possible number of specimens are desired of panpipes as well as of flutes with adornments.

a) Panpipes (cf. 4.–6.).
1. Number of pipes.
2. Length of the pipes.
3. Pitches (phonographic).
4. Nature of the pipes’ connection to a system.

b) Flutes. Pay close attention to the manner of blowing, [and] if possible, learn the technique itself.
1. End-blown or transverse flute? Where is the embouchure hole situated?
2. Is the embouchure hole partly sealed with the lips? Upper lip, lower lip, or both?
3. Involvement of the tongue?
4. Nose flutes.
5. Number and position of the holes.
6. Are particular holes kept permanently sealed with wax or suchlike?
7. Are overtones produced by means of covering [the holes] with the fingers only partially?
B. Blasinstrumente mit Mundstücken und Zungen.
Die Art des Mundstücks und der Zungen genau zu beachten.
   a) Klarinetten, Oboen.
   b) Sackpfeife (vgl. 5. D.).
   c) Zungenpfeifenserenien (Mundorgeln, z. B. das chinesische Sheng).

C. a) Posaunenartige
   b) Trompetenartige Instrumente.
   c) Hörnerartige
   d) Muschelhörner
   e) Signalpfeifen. Lockpfeifen.

A. a) Mit oder ohne Resonanzkörper?
   (Musikbogen werden zuweilen gegen die Zähne angestemmt, so dass die Mundhöhle den Resonanzrum bildet.)
   b) Anzahl der Saiten.
   c) Material der Saiten.
   d) Befestigungsweise der Saiten. Wirbel.
   e) Steg. Fest oder beweglich?
   f) Griffbrett. Bünde. Fest oder beweglich?
      Tastknöpfe oder Marken für die Saitenteilung.
B. Gezupfte Saiteninstrumente: Gitarren, Mandolinen, Zithern, Harfen.
   a) Mit dem Finger oder
   b) mit einem Plektron angerissen?
   c) Wird die Saitenspannung während des Spiels durch Druck unterhalb des Stegs variiert?
C. Geshlagene Saiteninstrumente: Schlagzither ("Psalterion").

B. Wind instruments with mouthpieces and reeds.
Note exactly the type of mouthpiece and reed.
   a) Clarinets. Oboes.
   b) Bagpipe (cf. 5. D.).
   c) Reed pipe series (mouth organs, e.g., the Chinese sheng).

C. a) Trombone–like
   b) Trumpet–like instruments.
   c) Horn–like
   d) Conch horns.
   e) Signal whistles. Birdcalls.

A. a) With or without sound box? (Musical bows are sometimes braced against the teeth so that the mouth cavity forms the resonance chamber.)
   b) Number of strings.
   c) String material.
   d) Manner in which strings are attached. Pegs.
   e) Bridge. Fixed or movable?
   f) Fingerboard. Frets. Fixed or movable?
      Studs or marks for the division of strings.
B. Plucked stringed instruments: guitars, mandolins, zithers, harps.
   a) Plucked with the fingers or
   b) with a plectrum?
   c) While playing, is the string tension varied by means of pressure below the bridge?
C. Struck stringed instruments: struck zither[s] ("psaltery").
D. *Gestrichene* Saiteninstrumente:

a) Bogen ohne Bespannung (einfaches Holz, Knochen usw.).
b) Bogen mit Bespannung.
c) Ist die Bogenbespannung unter den Saiten des Instruments durchgezogen?
d) Wird beim Streichen ausschließlich der Bogen oder auch das Instrument bewegt?


a) Welche Instrumente spielen zusammen?
b) Gibt es einen Orchesterleiter oder Dirigenten?
c) Welche Instrumente begleiten zum Gesang?

D. *Bowed* stringed instruments:

a) Bows without hair (plain wood, bone, etc.).
b) Bows with hair.
c) Does the bow hair pass between the strings of the instrument?
d) While playing, is only the bow moved or the instrument as well?

10. Chamber music and orchestras.

a) Which instruments play together?
b) Is there an orchestra leader or conductor?
c) Which instruments accompany singing?

II. Gesang.

a) Besondere Eigentümlichkeiten
   
1. der Tonbildung (z. B. Quetschen, Falsettöne),
2. der Vortragsweise:
   
a) Emphase, Inspirationsgeräusche, Tremolo.
   
β) Für bestimmte Gesänge charakteristisch?
   
γ) Sprechgesang.
   
   
ε) Glissandos.
   

b) Vorkommen und Verbreitung von:
   
1. Einzelgesang.
2. Zwiegesang, Wechselgesang.
3. Chor.
4. Solo mit Chorrefrain.
   
c) Texte (vgl. 1. B. k., 1. C. e.).

II. Singing.

a) Particular idiosyncrasies
   
1. in sound production (e.g., squeezing [i.e., guttural tones], falsetto tones),
2. in style of performance:
   
a) Emphasis, sounds of inspiration [inhalation], tremolo.
   
β) Characteristic of certain songs?
   
γ) Sprechgesang.
   
δ) Longest possible periods without pause for breath? Legato.
   
ε) Glissandi.
   

b) Occurrence and prevalence of:
   
1. Individual singing.
2. Duet, antiphony.
3. Choir.
4. Solo with choral refrain.
   
c) Texts (cf. 1. B. k., 1. C. e.).
   a) Pfeifen:
      1. mit den Lippen,
      2. zwischen den Zähnen.
   b) Zungenvibrato (Zungen-r), Lippenvibrato (sog. Kutscher-r).
   c) Schreien.
   d) Händeklatschen, Schenkelschlagen, Stampfen.

13. Gibt es Berufsmusiker?
   a) Soziale Stellung, Organisation.
   b) Bezahlung.
   c) Reisen.
   d) Unterricht (vgl. 16.).

14. Wird allgemein und häufig musiziert und gesungen oder nur von einzelnen Personen und bei bestimmten Gelegenheiten?
   a) Feste, Zeremonien, Krankenheilungen (vgl. 20.).
   b) Gebete.
   c) Arbeitsgesänge.
   d) Liebeszauber.
   e) Ausrufer (Herolde, Händler usw.), Signale.

15. Gelegenheiten des Musizierens:
   a) Celebtrations, ceremonies, healings of the sick (cf. 20.).
   b) Prayers.
   c) Work songs.
   d) Love spells.
   e) Crieffiers (heralds, merchants, etc.), signals.

17. Einheimische Musiktheorie.
   a) Leitern. Stufenzahl. Wie wird die Stufenzahl motiviert?
   b) Melodieschemata, die vom Spieler (Sänger) variiert werden. Bei einzelnen derselben fragen, was als für sie charakteristisch gilt (eventuell phonographische Aufnahme der charakteristischen Stellen).
   c) Notenschrift oder sonstige Gedächtnishilfen.

18. Ursprungsmythen, Geschichte der Musik.

19. Import und Export von:
   a) Instrumenten (vgl. 4. c, 5. b. a).
   b) Melodien.
   c) Theorien.
   d) musikalischen Gewohnheiten.

16. Are there particular musical prohibitions (taboo)? May certain instruments or melodies be played or sung only by certain persons (sex, age, membership in an association, etc.) or only on certain occasions (times of day, times of year, ceremonies)? Is there private ownership of melodies? Is the right to perform the melody sold in certain circumstances? Amount of the fee? Are pieces of music (songs) intentionally modified during teaching or during performance in front of foreigners? What can be determined as the reason for these customs?

17. Indigenous music theory.
   a) Scales. Number of steps. How is the number of steps explained?
   b) Melodic schemata that are varied by the player (singer). For particular ones, ask what is considered to be characteristic of them (possibly phonographic recordings of characteristic passages).
   c) Notation or other mnemonics.


19. Import and export of:
   a) instruments (cf. 4. c, 5. b. a).
   b) melodies.
   c) theories.
   d) musical customs.

a) Kriegstänze.
b) Religiöse Tänze (vgl. T. 4).
c) Erotische Tänze.
d) Maskentänze (vgl. K. 13).
e) Mimische Tänze, speziell solche, bei denen Tiere nachgeahmt werden. Dramatische Szenen.
f) Solotänzer. Vortänzer.
g) Begleitung durch Gesang, Instrumentalmusik, Trommeln, Lärminstrumente. Begleiten die Tänzer sich selbst?
h) Kinderspiele. Auszähllieder.

21. **Tonsinn und musikalische Begabung.**


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20. **Dances.** Series of snapshots, better *cinematographic* recordings, very welcome. Precise description, also of dance steps.

a) War dances.
b) Religious dances (cf. T. 4).
c) Erotic dances.
d) Mask dances (cf. K. 13).
e) Mimic dances, specifically those in which animals are imitated. Dramatic scenes.
f) Solo dancers. Lead dancers.
g) Accompaniment by song, instrumental music, drums, noise makers. Do the dancers accompany themselves?

21. **Sense of tone and musical aptitude.**

One should make sure not to assess non-European music from a European point of view; general statements like “musical,” “beautiful,” “ugly,” “strange,” [and] “melancholic” are worthless. On the other hand, the natives’ aesthetic judgements about their own and about European music (sung or presented to them on the phonograph) should be collected. Occasional or systematic experiments with intelligent natives would be very meritorious. They require, however, certain musical aptitude and psychological training of the observer. The musically experienced intending to stay in a *single* region for considerable time are referred to the extensive instruction of C. Stumpf, prepared on behalf of the German Society for Experimental Psychology and deposited
Experimentalpsychologie ausgearbeitet und im Institut für angewandte Psychologie und psychologische Sammelforschung zu Berlin deponiert ist.

Ein einfacher Versuch wäre der folgende: Man singe der Versuchsperson einzelne Töne vor und lasse dieselben unmittelbar nachsingen; hierauf pfeife man einzelne Töne und lasse sie ebenfalls nachsingen; auch das a des Stimmpfeifchens; eventuell auch verschiedene (sukzessive) Intervalle und Tonleitern. Die vorgesungenen usw. Töne sowie die reproduzierten sind phonographisch aufzunehmen.