

Music Archaeological Research on pre-Hispanic Music Cultures during the *Belle Époque* (c. 1880 – 1914)

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Paper presented at the Study Day, ‘Historiographical Topics in Music Archaeology and Ethnomusicology’, Institute of Musical Research, University of London, July 4, 2009

The first phase of scientific research on indigenous music cultures of the pre-Hispanic Americas is characterised by a series of studies published between 1880 and 1914, time of the so-called *Belle Époque*, in which Europe and the United States experienced great scientific and technological advancement, while the world was extensively explored and colonised in the light of High Imperialism. This brought westerners not only to hitherto unknown remains of the so-called *high civilizations*, but also in contact with the so-called *primitives*, and their living cultures, including music.

In the following paper I like to discuss some of the objectives and aims of the early researchers, who played an essential role in the development of music archaeological research in the Americas. In the light of today’s transdisciplinarity it is not surprising, that the first steps undertaken are characterized by different approaches, which derived - or were at least influenced - from the various schools of the cultural and natural sciences. Some were yet established, such as philology and conventional musicological disciplines, or in process of rapid development, such as archaeology, ethnography, or ethnomusicology.

As far as I see, the first researchers of the epoch who published studies on pre-Hispanic music cultures followed basically two directions without much interchange, although there was a constant flow of communication within the scientific communities. First, linguists, philologists and historians with a strong interest in music interpreted the 16th and early 17th century written sources, and wrote about the role of music and musical instruments in indigenous societies. Contemporaneously, there were cultural anthropologists (namely archaeologists and early ethnographers) with a strong interest in musicological problems.

These researchers classified and described collections of pre-Hispanic sound artefacts, which increasingly entered the art market and museums. Some included acoustical analysis in their descriptions, and discussed the nature of pre-Hispanic music. In this context, “scale” was one of the most important keywords.

Not surprisingly, much of the research was strongly influenced by the current worldviews and state of knowledge of that time. Sometimes, exotism and Social Darwinism played a role, but there were many researchers – important to say in all fields of research – who largely avoided West-centric positions and undertook more observing, analytical and descriptive studies. Especially these researchers, which were mostly unheard in later times, deserve our attention.

One of the first records on ancient musical instruments and indigenous music traditions from the Americas was published in 1877 by the diplomat and archaeologist **George E. Squier** (1821-1888) in a work entitled *Peru: Incidents of Travel and Exploration in the Land of the Incas*, which I have in a German translation from 1883. Squier, who from 1862-67 was in Peru as United States Commissioner, mentioned some musical finds, including a whistling vessel from Chimú, and stated that these objects might serve as a means of research in pre-Hispanic music.

When reporting a syncretistic feast from the Aymara region of the Bolivian highlands near Tiahunaco, Squier concluded that the “inharmonic noisy”, “strange” and “wild” music performed nowadays must be a “true repetition of the ceremonies and customs” of the ancient times. His description represents perfectly the West-centric positions, which had a strong and continuous tradition dating back to early Colonial times.

In Squier’s view, the indigenous music lacked melodious structures, which were replaced by the noise of large “hollow” frame drums and “shrill” panflutes, while cow horns were blown by “dilettantish” musicians among the spectators. As a proof for his conclusions on the nature of the pre-Hispanic music, he quoted the account of the Spanish conquistador Bernal Díaz del Castillo, who characterized the Aztec music played in sacrificial rites as “wild”, “hollow” (drums) and “shrill” (flutes), but also “terrifying”, “unholy”, and “diabolic”.

From today's point of view it is clear, that Díaz del Castillo followed the musical aesthetics of the Renaissance and the religious worldview of the early Colonial times, which helped to justify the colonization and exploitation of the indigenous societies. Likewise, Squier and many subsequent researchers followed the late 19th century musical aesthetics, which – in comparison with the indigenous aesthetics – differed not much from the 16th century ones.

One of the first serious researchers on pre-Hispanic music was the archaeologist and physician **Hilborne T. Cresson** (?-1894), whose study entitled *Aztec Music* was published in 1883 by the Academy of Natural Sciences of Philadelphia. Cresson carefully examined Aztec flower-flutes preserved in the Pennsylvania Museum of Archaeology - with the aim to reconstruct the indigenous scales. There is no time to explain his method of calculating, but it is important to note that he did *not* come to the conclusion of pentatonic scales.

Instead of what he calls a “hasty conclusion” raised by “musical authorities” (without mentioning names, possibly referring to early ethnomusicologists, who studied the contemporary indigenous music of the Americas in a West-centric view), he figured out that on the flower-flutes the chromatic and diatonic scales can be produced within a full octave. This is most interesting, as contemporaneous and later statements regarding scales were strongly influenced by the musicologists and early ethnomusicologists' conclusions, or were simply adopted without questioning. By contrast, Cresson focussed on material culture, including the precise methods of organology and archaeoacoustical measurements.

In another way than Cresson, but at the same place and only a couple of years later, **Daniel G. Brinton** (1837-1899), then Professor of American Archaeology and Linguistics in the University of Pennsylvania, approached pre-Hispanic music cultures from the other angle - on the basis of the written sources. Among his wide spectra of research, Brinton was interested in translating and interpreting texts written in Nahuatl, the language of the Aztecs.

In *Ancient Nahuatl Poetry* and *Rig Veda Americanus: Sacred Songs of the Ancient Mexicans*, both published in 1890, he translated Aztec song texts, which were written

down by the Franciscan Fray Bernardino de Sahagún, missionary, chronicler and early ethnographer, who compiled one of the most important 16th century records on the Aztecs.

In his introduction of *Ancient Nahuatl Poetry*, Brinton discussed the role of song and music in Aztec society, coming to a precise interpretation of the present archaeological and ethnohistorical information. In §6 *The Instrumental Accompaniment* he referred to the Aztec terminology of musical instruments, gave translations and discussed their individual function. Therefore, he did not only repeat statements of earlier 18th-19th century historians, but also summarized much of the most important information given by the 16th-17th missionaries and chroniclers.

Brinton, who must have known H. T. Cresson and certainly visited the Mesoamerican collection of the Pennsylvania Museum of Archaeology, also referred to his colleagues' studies, stating that his results indicate "for the instrumental accompaniment a much higher position in musical notation than has hitherto been accepted". However, even as Brinton had a much more powerful voice in American archaeology than Cresson, the position did not become widely accepted.

In *Ancient Nahuatl Poetry's* §8, entitled *The Preservation of the Ancient Songs*, Brinton referred to Sahagún, who mentioned that the manuscripts were actually sung, and assumed that the preserved ones should contain musical information - a form of "graphic notation" or visual codification of musical information (which of course still needs some form of oral tradition). Until now, this interesting idea, which requires a broad iconological approach, including ethno linguistics, has only been further developed on hand of the related Aztec system of drum codification, related in the *Cantares Mexicanos*, a 16th century manuscript including Aztec chants.

While Cresson and Brinton published their groundbreaking studies, including organology, acoustics, ethno linguistics, ethno history, and iconography into their research, more and more explorers, ethnographers and archaeologists travelled through the Americas, bringing notes and artefacts back home. Not surprisingly, in the following years descriptions of ancient pre-Hispanic musical instruments were increasingly published. Some of the objects in question, such as the Aztec flutes in Philadelphia, yet

belonged to museum collections; others were excavated in the course of early systematic archaeological activities.

In the beginning of this phase, Basel became another centre of research. Two researchers, **Julius Kollmann** and **Leo Frobenius**, published pre-Hispanic musical instruments preserved in the ethnographical collection of the University of Basel. Especially Julius Kollmann is worth mentioning, as he carefully described organological details of Aztec wind instruments, including a skull-shaped whistle, unfortunately without going into acoustical details. In his extended version from the paper, published in 1896, he stated that the shell trumpet could have been invented independently in the Americas and must not necessary be a European or Asian import, thus speaking a word against diffusionist views.

In 1897 and 1998 a rich discussion on specifically three musical instruments started. First, dispute was settled on the origins of the musical bow and the marimba, and if any kind of stringed instruments existed in the pre-Hispanic Americas (**Daniel G. Brinton**, **Marshall H. Saville**, **Carl Sapper**). In the next years it was the bone rasp, and its use and function in indigenous societies, which was extensively discussed. Especially this instrument fascinated the researchers of that time, as more papers on the subject were published until 1916, when the phase of research came to its end (**Carl Lumholtz/Ales Hrdlicka**, **Frederick Starr**, **Eduard Seler**, **Louis Capitan**, **Herman Beyer**).

I'll skip discussion of these individual studies and follow another important stream, which opened in 1898. Indeed, 1898 was a key year for the Music Archaeology of the Americas. Two archaeologists and curators of museum collections attached to the Smithsonian Institution (Washington), **Thomas Wilson** and **William Holmes** published catalogues of pre-Hispanic musical instruments. Here, for the first time the acoustical dimension was included, as Wilson and Holmes gave the basic fundamental notes obtained on individual instruments, including finger combinations. In following the western notation they did not measure the pitch deviations and thus came only to approximate values. As representatives of the artefact based archaeology - in which listings and exact descriptions played a prominent role - the researchers are among the first systematic "storage hall"-players of ancient musical instruments.

Especially Wilson, then curator of the Division of Prehistoric Archaeology of the United States National Museum, had a wide approach, including not only North American, Mesoamerican, Central American, and South American material, but also prehistoric European finds. In comparison, Holmes focussed on the archaeological remains of Chiriquí, a coastal region in Colombia, in which beautiful ceramic wind instruments were produced. He was the first one in giving cross sections of some of the discussed instruments, thus including a more precise organological description.

Followers of the Wilson & Holmes school were not too many, but at least a few important researchers, again archaeologists, such as **Charles W. Mead** and **George Grant MacCurdy**. At a time, when the organological classification of musical instruments was still in the beginning, Mead published the first exhibition catalogue of pre-Hispanic musical instruments in display, *The Musical Instruments of the Incas* from 1903. Following a common classification of that time, he subsumed drums, bells, rattles and cymbals under percussion instruments, and under wind instruments he described flutes and whistles, including whistling vessels, and trumpets. In his acoustical analysis, Mead added a systematic comparative approach.

Although to him most instruments indicated the use of a pentatonic scale, he stated that “there are some puzzling exceptions” and that more instruments would need to be collected and tested in order to determine the ancient indigenous intervals.

Coming back to what I consider the key-year for the Music Archaeology in the Americas, 1898. This was not only the year, in which Wilson and Holmes published their studies, but also the year, in which two decades of research influenced by the German scholar **Eduard Seler** (1849-1922) began, in which archaeological finds, written sources, and iconographical data was systematically put in relation. Such as one of the groundbreaking forerunners, Daniel Brinton, Seler included all obtainable information, but avoided to “listen” and never taken into account acoustical analysis. Although Seler and Wilson new from each other, it did not come to cooperation, indicating that the objectives followed in each individual stream did not compare.

I fear there is no time to cite any of Seler’s and his followers detailed conclusions on the role of pre-Hispanic music and musical instruments, especially among the Aztecs (see,

for instance, **Auguste Genin** and the late **Herman Beyer**), but it is important to mention that much of their interpretation is still valuable today, although many aspects so carefully discussed remained subsequently unrecognized.

I'll finally conclude my brief historiography of research with another scholar, who must be mentioned separately. This is the physician and US Patent Office examiner **Charles Kasson Wead**, a representative of the discussed worldviews and approaches in one person. In his *Contribution to the History of Musical Scales* (1902), he carefully examined the tonal ranges of a variety of pre-Hispanic wind instruments, including exact acoustic calculations for the first time.

Wead came to a very precise observation on one side, but integrated his results into the social Darwinistic worldview. In doing so, he established four stages in the development of musical scales, roughly corresponding with Spencer's and Morgan's culture stages, namely the savage, barbarous, civilized, and enlightened.

1. The stage of primitive music, where is no more indication of a scale than in the sounds of birds, animals, or of nature.
2. The stage of instruments mechanically capable of furnishing a scale.
3. The stage of theoretical melodic scales (Greek, Arab, Chinese, Hindu, Mediaeval, etc.).
4. The stage of the modern harmonic scale and its descendent, the equally tempered scale, which are alike dependent both on a theory and on the possibility of embodying it in instruments.

Finally, he came to the conclusion that the pre-Hispanic instruments belonged to the second, barbarous stage, in which the instruments were only "mechanically capable of furnishing a scale".

One of his conclusions may stand as an example of the descriptive-objective method applied to a questionable evolutionary model: "[...] the whole discussion makes it evident, that the people who made and used these instruments [...] had not the idea of a scale which underlies all our thinking on the subject, namely: A series either of tones or of intervals recognized as a standard, independent of any particular instrument, but to which every instrument must conform. Modern Europeans for the sake of harmony nearly

banished all scales but one [...]. But for these people the instrument is the primary thing, and to it the rule is applied, while the scale is a result, or a secondary thing; and the same rule applied a hundred times may possibly give a hundred different scales. Naturally one does not expect to find much concerted music among people in this stage of development.” (Wead 1902: 438).

Conclusions

Within a few decades, the first modern researchers in the music archaeology of the Americas published a series of studies, which were related to a variety of disciplines. Their works formed the basis of music archaeological research, which -from the beginning on- was at least interdisciplinary and much later allowed for the formulation of multidisciplinary approaches (which are systematically applied only until recently).

In this paper I mainly referred to two streams of research with different approaches and different objectives, an organological-acoustical direction, which archaeologists and musicologists took, and a textual-linguistical, including iconographical interpretation, followed by early cultural anthropologists. Left and right of these directions were many individualists and there was much cooperation, but interestingly not between the main protagonists of the two streams. It seems as if there was a kind of barrier, which had much to do with the respective objectives and approaches, and possibly also a kind of disinterest.

And what about the early ethnomusicologists? Well, there was not much common in this phase. In the Americas, phonogram recordings of indigenous music were made from 1893 onwards (Boas, Kwakiutl), but nearly all researchers, with very few exceptions, focussed on the description and interpretation of the current, without taking historical dimension into account. This was especially the case in North America, but also further south a common practice. Sachs and others studied the recordings, but also avoided to compare with any historic. From the other direction, only a few researchers dared to compare aspects of the living cultures, which were generally seen to be “primitive”, with the pre-Hispanic societies.

However, many important questions on music in the pre-Hispanic societies were raised and even answered before 1914, sometimes in a visionary way. It is an enigma of the

history of music archaeological research that many of these early studies remained mostly unknown or subsequently were neglected.

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