
CHAPTER FORTHY-SIX

THE XYLOPHONE: ITS INSTRUMENTAL TECHNOLOGY IN ANAMBRA STATE

Ogechukwu Jacinta Onyedum

Abstract

The construction of musical instruments among the Igbo is done purposely to cater for their musical expression and commercial reason. The xylophone is an instrument of the idiophone family. It is an instrument of definite pitch. Besides, some are of indefinite pitch. They are many types of xylophone from 2-15 or more slabs with different resonators. The xylophone musical instrument is structurally constructed as a set tuned wooden slabs placed on a wooden box which serves as a resonator (amplifier). The slabs are of varying lengths in accordance with the required keys. This study, therefore, investigated the process of constructing a xylophone instrument and how modernization has impacted its technology among the Igbo in Nigeria. The paper adopted an ethnographic research design in which In-depth Interviews with the technologist (key-informant) from Ndikelionwu in Orumba North was conducted. The findings from the fieldwork revealed that the physical structure of the xylophone show that there is a gradual shift from indigenous practices to the modern method. This paper recommended adequate promotion and enabling environment for traditional musical technologists in Nigeria.

Keywords: Xylophone, Instrumental technology, indigenous practices and key-informant

Introduction

Music means different thing to different people, it therefore follows that musical sounds have to be produced through a variety of source. These sources include voice and instrument. Xylophone which is at the centre of this study is a musical instrument classified under idiophone instrument. Instruments in the idiophone family are being struck, shaken, or scraped. The xylophone is a tuned instrument made of hardwood bars in graduated lengths set horizontally on a metal or wooden frame. With the larger, lower-sounding bars on the left, the notes of the xylophone are laid out much like a piano keyboard. Stricken the bars with hard mallets, produces a bright shape sound. The xylophone is a melodic instrument that originated from primitive men in Africa. There are different types of xylophone and each type has different resonator. The xylophone performs melodic, rhythmic and sometimes harmonic functions in the music of Africa when it is played as solo, duet or trio as the case may be.

Among the different Africa musical instruments, the xylophone is one of the melodic as well as rhythmic instruments. Besides being of different sizes and shapes, the number of keys on each xylophone differentiates one from another. Scholars studying Africa music have attempted to classify the African xylophone thus, Nketia (1979) in Arinze (1992:60), grouped African xylophone into three. He based his grouping on the objects over which the slabs of the xylophones are laid. Echezona (1981) in Arinze (1992:60) grouped Nigeria

xylophone into four, also on the bases of the slabs of which the xylophone is laid. It must be pointed out that xylophone is of various types. The variety is seen in their sizes, a number of slabs, materials from which they are made and their types of resonators.

The literature on Historical Origin of Xylophone and African Xylophone

Sachs (1940) in his book, the history of musical instruments traced the origin of the xylophone to the primitive men. He noted that "the primitive xylophone was set of wooden bars, each supported at two points (the nodes of vibration), and struck with sticks or clubs (p.53)." He described its developmental stages and showed that it started as a leg xylophone with two or three rough slabs of wood which were laid across the legs of the player and struck in turn with two clubs. The players were generally women who sat on the ground with legs stretched out in a typical feminine manner. Sometimes a pit was dug between the legs, probably to form a resonance chamber. Later, the leg xylophone developed into the log xylophone, the bars of which were laid loosely on two parallel logs.

The next stage was where the bars were laid and fastened to a stand like a table (table xylophone) or to a frame which was hung at the player's waist supported from his neck and held away from his body by a semicircular hoop (bail xylophone). According to Sachs (1940) on the origin of xylophone wrote that "the xylophone of African primitives, like many of their implements, was not developed by themselves but borrowed from the higher civilization of Malays in Indonesia, who has a strong influence on Bantu Africa (p.54)." The above statement seems to confirm that the xylophone originated in Africa, and was in existence before the coming of the Indonesians.

Writing on the primitive xylophone, Blades (1970) noted that, "it was the earliest melodic instrument which originated among the primitive men (p.71)." Furthermore, he wrote that it was widespread throughout Asia and Africa. Describing the instrument, he stated that it consisted of a number of wooden bars of varying pitches. The pitches were determined by the length, width and depth of the bars. According to him, the original instrument was a leg xylophone which comprised one, two or three rough slabs of wood which were disconnected and were of different pitches. The slabs were laid across the legs of the player on the ground, sticks or clubs were used to strike the bars. It's noted that the leg xylophone developed the log xylophone with the bars laid loosely on two logs. Jones (1960:36) claims that the African xylophone originated in Indonesia, is therefore questionable. The study now based the origin of xylophone instrument on the evidence of similarities found in the musical cultures of Africa and Indonesia. These musical cultures include:

- I. Singing style
- II. Musical material culture and
- III. Xylophone tuning style

Singing style

In singing style, Jones (1960) asserted that when Africans sing simple harmonies of thirds, fourths, or fifths, they used notes similar to those of the Western major scale. He affirms that

Chopi xylophone Orchestra used a seven-note scale in which there was no semitone (equitonal scale), and that the Siamese xylophone was tuned to the same scale.

Musical material culture

Jones (1960) asserted that the musical material feature of a percussion instrument existing among the Ewe of Ghana was called *atoke*. It was neither a bell nor a normal gong. It was like a leaf, six inches in length. It has a stem, and the two sides curved upward as nearly to touch each other, forming a sort of tube. To play the instrument, it would be held in the palm of the left hand and would be struck with a metal rod.

To support his contention of the material evidence, he wrote that the consistent evidence of material features point to one conclusion: “that the Indonesian colonists settled on the East coast of Africa opposite Madagascar, in the southern part of the Congo basin and in Uganda, and in the lower basin of the Niger, including the Northern shores of the Gulf of Guinea” (Jones 1960:40). This means that at some time in the past there had been continuous contact between Africa and Indonesia, which the result of the contact might be explained to be due to Negro slaves who settled among the Polynesians. Moreover, the evidence did not show in any way that there were xylophones in those parts of Africa before the Indonesian colonists came.

Xylophone tuning style

In his study of the xylophone in Africa and Indonesia, Jones noticed that in their tuning system, after the "fine-tuning" stage, the wax blob was applied. This consisted of the application of little blobs of bee-wax (a mixture of bee-wax and a metallic substance) under the keys and near their ends. These gave the keys an additional accuracy of pitch. He contended that xylophone makers tune by an actual pitch and not by assessing intervals. According to him, this tradition was widespread. The contention appears a valid one because most indigenous xylophone makers cannot explain what an interval is, but they can explain what they did to get their different tones and pitches.

Some areas in certain parts of Africa have particular slabs on which they based their tuning of other slabs. For example, Jones referred to Chopi craftsman when he wrote that "the first thing a craftsman would do during construction was to make the centre tone or tonic." This central key was the most important to him because all the other keys were tuned from the pitch of the central key, and when tuning the octave he would try to give each interval the same value.

In an experimental study entitled “Experiment with a xylophone key” Jones summarized African system of tuning the xylophone, according to him, "Africans tuned xylophone in the same way, and the tuning was in two phases: rough tuning and fine-tuning" (Jones, 1963:6). By rough tuning, it meant getting the pitch of the xylophone keys round the right note. This was done by selecting pieces of wood of different sizes in length and thickness, then making the low keys longer and thinner than the high keys. According to what he observed in

constructing the keys, the xylophone maker would hollow out the central section of the underside of the keys to get the low ones. Jones (1963) in Ezeh (2008) defined fine-tuning as "the scraping off of wood here and there." Explaining further, he asserted that the result of the scraping depended largely on the part scrapped. If it was underside, the key would be flattened, but if it was carried out at the end, the key would be sharpened. As the tuning progressed, each key was tested in relation to others by striking them in turn with a stuck beater. The tuning demanded a very critical ear. Jones noted that the above tuning system was the usual tuning method in Africa.

The African Xylophone

The modern traditional xylophone consists of tuned wooden slabs placed on a wooden box which serves as a resonator (amplifier). The slabs are of varying lengths in accordance with the required keys. According to Nwafor (2008) "the African xylophone is a complex idiophone made up of a set of wooden slabs of different pitches traditionally arranged on two banana stems or soft materials like Dunlop or foam acting as a resonator (p.45)." Similarly, Okafor (2005) defines the xylophone thus: "xylophone is a number of flat wooden bars or keys graduated and tuned and arranged in a certain sequence (p.172)." In line with this view, new Harvard Dictionary of music, Randel (1986) in Ezeh (2008) wrote; "xylophone is a musical instrument of a percussion family consisting of tuned bars of hardwood in keyboard arrangement graduated in lengths to provide a chromatic scale of three to four octaves (p.19)." All these definitions have a unanimous view that xylophone is a percussion instrument of definite pitch consisting of wooden bars of varying lengths mounted on a resonator and struck with a wooden beater which is coated with soft materials such as foam or Dunlop.

Nketia (1979) did a broad study of African xylophones. He grouped them into three types according to the object over which the slabs are laid. Those in which keys are mounted over a resonance chamber, such as a pit, a box or trough, or a clay pot, are in the first group. The second group has two banana stems as the based, and the third group uses the wooden frame as the base also. The African xylophones are of various types. From what had been discussed, they range from one-key type to twenty-two key type. Echezona (1981), in his studies, grouped Nigeria xylophone into four, these include simple xylophone, compound xylophone, log xylophone and xylophones with cow horns or gourds as resonators.

There are varieties of xylophones in Nigeria. There are horn-xylophone designed from animal horns, gourd xylophone, 2-row bucket xylophone, 8-12 row xylophone mounted on banana stems and 12-18 row xylophone mounted on wooden frame or box to mention but a few. However, the recent type of xylophone in Nigeria is a modern xylophone known as chromatic xylophones.

The chromatic xylophone is an improvement on all the various types of xylophone, because of its sharp, flat and natural keys. This type has a hollowed log of wood as its resonator. Its presence and usage are gaining grounds in most parts of the State. According to Dr,

Humphrey Nwafor (key informant) explained that:

In Nigeria, there are assertions that xylophone was introduced in Plateau State by the people who came to Maiduguri from Borno State. They played the xylophone for entertainment in local beer parlours' where Burukutu drinks were sold. In this way, the xylophone became popular in various parts of Nigeria in different makes and species (KI, 2008).

Methodology

Instrumental technology among the Orumba North of Anambra State of Southeast Nigeria is done for aesthetics and utilitarian purpose to cater for their musical expression. The paper adopted an ethnographic research design in which In-depth Interviews with the technologist (key informant) from Orumba North in Anambra State. The process of the construction was recorded and pictures of the interview were taken.

Construction of the xylophone in Anambra State according to my informant

The construction of the xylophone begins with the choice of the required wood. The nature or the type of wood of the slabs determines the sound quality of the xylophone. The tree that is cut down to produce the wood for the slabs must be full grown and mature in order to produce sizeable slabs. Besides, pieces of woods that are treated for longer periods, several months or over years are more likely to produce high-quality slabs that are not detonable after pitching. Slabs can be produced from softwoods such as *Okwe*, *Ulu* and *Uhie* (Camwood). These slabs are likely to produce soft and low sounds usually used to pitch tenor and bass notes conversely. Slabs produced from hardwoods, such as *Uko*, *Iroko* and *mahogany*, often produce high notes for tenor, alto and soprano parts. After selecting the right wood, the wood is split into slabs of about 2 inches wide and 18 inches long. Then, the slabs are smoothed and left to dry properly. The next stage is the tuning of the slabs to produce the required notes or keys. There are two ways of tuning the slabs; the first is by reducing the lengths by cutting. Reducing the lengths by cutting follows the acoustical laws, which holds that the longer the sounding body the lower (deeper) the pitch and the shorter the body the higher the pitch. By cutting the slabs, the keys of the xylophone are produced. The second method of tuning the slabs is by scraping or chopping the underneath (opposite side) of the slabs, using carpenters shave or sharp knife. This method also obeys the acoustical laws. After tuning the slabs, a resonating box is provided, and finally, the slabs are placed successively in ascending order across the resonating box. The slabs are separated and kept in position with wooden pins or nails. Then, the mallets or beaters are provided for playing the xylophone. Commenting on the mallets for playing the xylophone, Dr Humphrey Nwafor (key informant) explained that; in some aspects, the nature and the size of the mallets affect the quality of the sound. Mallets are supposed to be coated with soft materials such as foam or Dunlop straps to avoid sounding wood-to-wood or iron-to-iron. The soft material gummed (glued) to the mallets will have a positive impact on the mallet to produce high-quality sound. Also, the size of the mallet must not be out of proportion with the xylophone.



Tuning by cutting



Tuning by scraping



Resonating box and mallets

However, it is important to note that the nature of the frame affects the quality of the sound of the xylophone. In this context, “frame” refers to all resonating materials upon which the slabs are laid. Obviously; the resonators are made of different materials such as bowls, animal horns, gourds, buckets and wooden boxes, etc. It follows then, that small frames will produce minimal sounds, while big or large frames are likely to produce voluminous sounds. Moreover, frames which contain no soft materials glued to their top surfaces usually produce harsh or rough sounds, while frames which have foams or Dunlop surfaces produce soft and mellow sounds. Generally, the size and quality of the frame determine the quality of the xylophone sound.

Recommendation and Conclusion

Among the different African musical instruments, the xylophone is one of the melodic as well as rhythmic instruments that also play harmonic roles. Besides being of different sizes and shapes, the number of keys on each xylophone differentiates one from another. Different woods used in the construction of the xylophone were noted and studied. The modernization of chromatic xylophone has enhanced its portability and accessibility. However, this paper recommends that the school principals, departments of music and Anambra State government should recognize and promote our traditional music culture where the usage of this melodic traditional instrument displays our cultural heritage.

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