

THE NDONGO BOWL LYRE OF THE BAGANDA OF UGANDA: AN EXAMINATION OF ITS SONIC PROPERTIES

by

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Introduction

The term *ndongo* refers to the eight-string bowl lyre of the Baganda, a people that live in the south central region of the landlocked East African nation of Uganda (see Fig. 1).

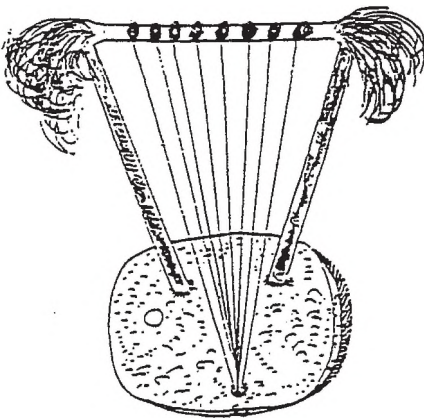


Fig. 1: diagram of the *ndongo* Buganda), where it continues to be played to the present day. Together with the *endingidi* single string tube fiddle, they are the two chordophones most commonly played in the music tradition of the Baganda. Existing historical records reveal that the *ndongo* was introduced into the kingdom of Buganda after an ethnic battle between two neighboring groups of the Baganda and the Basoga. Although oral records give conflicting dates of when this battle actually took place, they clearly indicate how the *ndongo* came to be acquired by the Baganda. I learned that during the said battle the army of the Kabaka routed the opposing army of the Basoga. That resulted in the capturing of prisoners of war among whom were several superb musicians. Admiring the Basogas' musicianship, the Kabaka brought them into the royal palace to train his royal musicians. That is when and how the Basoga musicians introduced their *entongooli* 8-stringed bowl lyre to the royal palace musicians of the kingdom of Buganda. A couple of years later, the *entongooli* had been adopted and adapted into the music system of the Baganda in the shape and character it has maintained to the present day.

In the musical tradition of the Baganda, the *ndongo* is one of their oldest string musical instruments, second only to the *ennanga* 8-string arched harp. Owing to the natural passing away of the people who knew how to play it, the steady decline in use of the *ennanga* as a folk instrument has been noticed. Instead, the *ndongo* has gradually replaced it; and today it is very widely played during many cultural and social functions throughout the entire kingdom of Buganda.

The *ndongo* is not a ritualistic instrument. It first appeared in Buganda in the royal court of the Kabaka (king of

When the Baganda embraced it however, they renamed it *ndongo*, a name it has maintained to the present day. The two terms however, *entongooli* and *ndongo*, are still often casually used interchangeably in Buganda to refer to the same 8-stringed bowl lyre. The *ndongo* is only one of several bowl lyres found in the current 'World Lyre Zone' (Makubuya 1995: 16). In this zone which includes Egypt, Ethiopia, Iraq, Kenya, Oman, Somalia, Sudan, northern Tanzania, Uganda, and Yemen, over twenty different varieties of bowl lyres can still be found in current use by different ethnic groups and in various musical and contextual circumstances. They vary in many ways, including size, materials used in their construction as well as musical function, contextual use, and cultural significance. Timbre, which forms the basis of this paper, is one other significant variation that marks a clear and distinct difference among these lyres.

Significance of the study

In pursuit of the *ndongo* study, I have been fortunate to have met and studied with a number of highly respected traditional masters whose connections with the *ndongo* were in a number of different areas. They ranged from renowned performers including Albert Ssempeke, Ludoviko Sserwanga, Paulo Kabwama and the late Evaristo Muyinda, to teachers like Christopher Kizza (who is also a performer) and renowned musical instrument makers like Joseph Gayira. I will ever be grateful to all of them for giving me a solid foundation for my on-going research on the *ndongo*.

In the past decade, during which I have spent working with those masters, my attempts to buy the *ndongo* for student use became increasingly more frustrating. Almost every time I have attempted to purchase the *ndongo*, I have had to wait for a long time to get as many as three or four. In all cases, the reason has had nothing to do with cost or even with makers, but rather with the acute scarcity of traditional materials for constructing them. This scarcity has very recently been made even more severe by the strict ban placed upon the unauthorized hunting and killing of a number of live species like the *nswaaswa* (monitor lizard). The skin of the *nswaaswa* is used as one of the essential materials in the construction of the *ndongo*. This and other materials (discussed below) utilized in the construction have been crucial components. They have given it a unique timbre, which continues to be highly prized by both makers and players. But the current scarcity and foreseen disappearance seem to threaten the very survival of the instrument.

Given the aforesaid, this article intends to accomplish two objectives. One is to provide documentation for the traditional materials that have been and continue to be used in the construction of the *ndongo* in order to provide its unique timbre. The second is to set the stage for thought and experimental study that could lead to the discovery and possible use of alternative materials that will basically maintain the *ndongo* timbre. When properly constructed and played, the *ndongo* produces a timbre that is dissimilar to that of all other types of lyres in the 'world lyre zone'. The following lyres: *krar* and *beganna* from Ethiopia, for example, together with the

obokana and *kibugandet* from Kenya, and even the *odi* and *kidongo* from Uganda, when carefully listened to, all produce a timbre that is very different from that of the *ndongo*. The only other lyre whose timbre is similar to that of the *ndongo* is the *entongooli* of the Basoga. I am always tempted to describe the *ndongo* timbre as buzzing, aggressive, and self-imposing. If, for example, you were to listen to the sound of another chordophone, like the *adungu* 9-string bow harp from Uganda, you would undoubtedly notice the drastic difference in the tone color emitted by the two instruments, because the *adungu* sounds smooth, soft, and round. The timbre characteristic of the *ndongo* is not just 'accidental'. The *ndongo* makers make a definite and calculated effort to ensure that the instrument sounds the way it does, focusing on a deliberate use of particular construction materials which provide its 'sonic properties', to be the focus of the following discussion.

The sonic properties of the *ndongo*

I consider three basic components of the *ndongo* to be primarily responsible for the production of its characteristic timbre. I refer to these components as 'sonic properties' because of the significant role they play in the production of the *ndongo* sound. They are responsible not only for the generation of sound, but also for the tone quality that follows after the vibration is activated. The 'sonic properties' in question are the *lutiba* (resonator shell), the *eddiba* (sound table skin), and the *enkoba* (playing strings).

1. The *lutiba* resonator shell

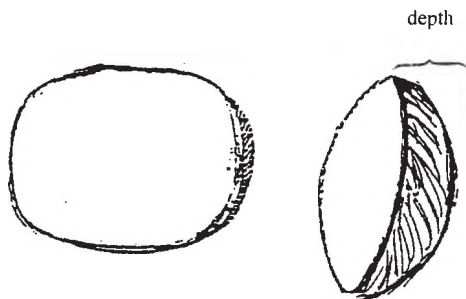


Fig. 2. The *lutiba*

L: from the front, R: from the side
scooped bowl (Fig. 2). The big *ntiba* are between 6 and 9 inches deep (Gayira, 1994). As far as the focus of this paper is concerned, the important point to consider is not how big or small the *ntiba* may be, but rather the type and quality of wood from which the *ntiba* are generally carved.

The term *lutiba* refers to an oval-shaped wooden bowl that functions as the main resonating chamber of the *ndongo*. According to Joseph Gayira, *ndongo* are usually made in two sizes: *ennene* (big) and *entono* (small). The size of the *ndongo* is primarily determined by the depth of the *lutiba*. Generally, the small *ndongo* are made with *ntiba* (scooped bowls), from 3 to 5 inches deep when measured from the center, which marks the deepest point in the

There are about five common types of wood that are traditionally used in the making of the *lutiba*. The type preferred by most *ndongo* makers is the *settaala* (*polyscias fulva*) because of its physical characteristics and texture. If this is not

available, then they may choose either *omusizi* (*maesopsis eminii*), *omubajja ngabo* (*erythrina excelsa*), *omuvule* (*milicia excelsa*) or *enkoba* (*lovoa trichillioides*). These types of wood have a natural physical characteristic which is the main acoustical reason for their being preferred over any other type of wood.

Each of them is characterized by a type of wood fiber whose overall texture is neither too soft nor too hard. Either of the extremes would produce an acoustical inconvenience within the *ndongo* resonating chamber at the initial generation of sound. If the inner surface of the *lutiba* were too soft, it would drown most of the sound generated; if, on the contrary, the inside of the *lutiba* were too hard, it would generate too much echo.

But the traditional *ndongo* makers do not rely on the aforementioned natural characteristics of the wood only. In the process of preparing the *lutiba*, after the wood-scooping stage, the maker smears the inside of the resonator shell with a thin layer of cow dung (*obusa bw'ente*). According to Joseph Gayira, this procedure serves two purposes: it protects the *lutiba* from being eaten by ants, since the odor repels these would-be invaders, and it provides a relatively soft lining that enhances the resonance of the *ndongo* sound chamber (Gayira, 1995). The process of preparing the *lutiba* requires several stages. After the type of wood to be used is identified, it is cut, trimmed, and then scooped into the shape of a large bowl. This should be done while the wood is still raw because it becomes much harder when dry. Then, away from direct sunlight lest it cracks, the scooped bowl is let dry for a period ranging from one to two months, depending on how hard the type of wood may be. After this stage, the scooped bowl should be ready for mounting.

2. The *eddiba* sound table

In the assembling of the *ndongo*, two different types of skins are used to mount the *lutiba*. One is *nswaaswa* (monitor lizard) skin and the other is *ente* (cow hide). While the cow hide is used to cover the outer concave side of the bowl, the monitor lizard skin is placed on the front of the *ndongo* and forms the sound table. My research suggests that in building the *ndongo*, the *nswaaswa* skin is a component part that has until now been indispensable to its authenticity, both as an artifact and as a musical instrument. Without it, the *ndongo* would undoubtedly change its visible external appearance, which as far back as my investigation could go, has been religiously and meticulously maintained by its makers. Without it, the characteristic buzzing, aggressive and self-imposing tone color would be lost.

There have been a number of attempts by *ndongo* makers to experiment with possible alternatives. Because of its almost identical external appearance to that of the *nswaaswa*, the skin of the *timba* (python) is the one that has been preferred. Because *timba* skin is much thicker, however, the tone color that results when it is used is thick and dull. It thus falls far short of the traditional *ndongo* tone. A closer look at these skins reveals, however, that they have scales. The latter serve as a protective cover for the inner, more tender skin, a biological characteristic of many reptiles. On

skinning the monitor lizard, the *ndongo* makers carefully remove all the scales from the skin. This leaves a rough surface that, when scratched, produces a dry, hoarse sound with no definite pitch. In the construction of the *ndongo*, the strings are fitted very close to the sound-table skin, with no bridge between them and the sound table. When plucked or strummed, the strings vibrate directly against the rough surface of the sound table, thus producing the loud and aggressive tone characteristic of the *ndongo*. Because of this sound, a single *ndongo* often balances very well with other instruments in standard traditional mixed ensembles, which often include relatively loud instruments, such as xylophones, drums, fiddles, rattles, flutes.

3. The *enkoba* playing strings of the *ndongo*

According to my informants, if there has been any consistency at all in the making of the *ndongo* as an artifact, it has been in the number of playing strings rather than the materials from which these strings have been made. Ever since it was introduced into the royal court of the Buganda kingdom from Busoga and subsequently into the musical tradition of Buganda, the *ndongo* has always been fitted with eight playing strings (Fig. 3).

The generic term used by the Baganda to refer to these playing strings is *enkoba* or *nkoba* (Kabwama 1994). In assembling the *ndongo*, all eight *nkoba* are attached to a knot (*ekkundi*) which is located at the bottom front of the resonating chamber. But although the eight *nkoba* normally measure the same length from the starting knot to the tuning cross-beam they are attached to, their respective gauges differ considerably. The gauge of each *lukoba* is determined in part by its musical function. Although the *ndongo* is not tuned to a single standard pitch, each *lukoba* is tuned to a definite pitch relative to the other strings within the five-tone scale used in the musical tradition of the Baganda. All five pitches of the scale of the Baganda are distributed among the eight *nkoba*. Those that bear the lower pitches of the scale (e.g. strings 4 & 5 in Fig. 3), are made in bigger gauges, while those made with smaller gauge easily produce much higher pitches when plucked or strummed.

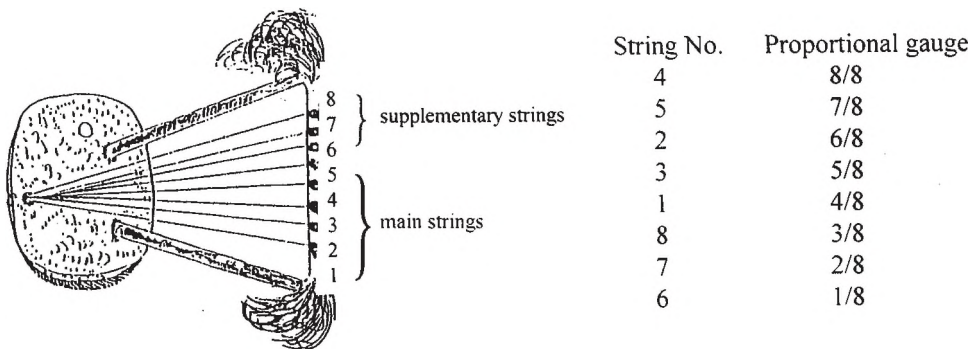


Fig. 3. The position and gauges of the *enkoba* on the *ndongo*

In considering the sonic properties of the *ndongo*, it is important to examine not only the gauges of the strings, but also the materials from which they are made. Until the last twenty to twenty-five years, animal skin was the only material from which the *nkoba* were made. Specifically, strips were cut from skin, soaked and wound into the required gauges, then fitted on to the *ndongo*. When carefully prepared, these strings perfectly satisfy the quality of pitch and timbre as demanded of them. But their relatively short lifetime, combined with the arduous task of preparing them, the difficult process of locating good-quality cowhides, and the high cost of these hides has prompted makers to look for substitute materials. As a result, skin strings have been steadily replaced by strings made from synthetic materials during the last fifteen years or so. The *ndongo* that are made today, typically utilize nylon strings in place of animal skin. The nylon strings do not have to be replaced as frequently, even under constantly fluctuating climatic temperatures. For all these reasons, animal skin is already outmoded as the principal source for the *nkoba*.

Of course the change from skin to nylon has not come without a high price. The traditional tone color has been sacrificed to some extent. When the *ndongo* sound is generated from the nylon-based *nkoba*, we get a timbre that is comparatively less sonorous and mellow, though bright. I must quickly add, however, that although I lament the loss of the so-called authentic tone, the advantages of using synthetic materials for the *nkoba* far outweigh the continued use of skin. It is important to note that the case of the *nkoba* points to a direction that is almost irreversible in the case of the *ndongo* and many other folk instruments from the African continent. Much as we may wish to cling desperately to the materials from which the instruments were originally made, the reigning circumstances may (as they indeed do) force us to examine other options. To the best of my knowledge, there are no efforts so far for artificial breeding of the *nswaaswa* species. Its skin is also used by the Baganda on other instruments like the *ngalabi* (long necked drum) and the *ennanga* harp. We cannot allow our traditional instruments to perish with the living species that are no longer available. We must begin to explore the use of alternative materials, and adjust as well as modify the instrument to fit in and continue through the twenty-first century. The more obvious move is the use modern laboratories to explore the possible use of synthetic leather, for example, and develop replicas of the *nswaaswa* skin. We can give that synthetic laboratory leather the artificial sonic characteristics otherwise naturally provided by the *nswaaswa* skin. We could also give it the aesthetic appearance of the typical *nswaaswa* skin in all its design and colors. That way, the *ndongo* as an instrument will survive although it will be dressed in a slightly different attire.

Bibliography

Barbour, J. Murray

1953 *Tuning and temperament*, East Lansing: Michigan State College Press

Bartholomew, Wilmer T.

1960 *Acoustics of music*, New York: Prentice Hall

- Chow, Mark D.
1975 "An analysis of acoustic guitar properties", Masters thesis, Massachusetts Inst. of Technology
- Douglas, Alan Lockhart
1957 *The electronic musical instrument manual: a guide to theory and design*, New York: Pitman Publishers
- Duckworth, William
1995 *A creative approach to music fundamentals*, 5th ed., Belmont, Ca.: Wadsworth
- Gayira, Petero
1994/5 Interview with author during fieldwork research in Uganda, June-Sept, 1994-5
- Grey, John
1975 *An exploration of musical timbre*, Palo Alto: Stanford Univ. Press
- Kabwama, Paulo
1994/5/7 Interview with author during fieldwork research in Uganda, June-Sept 1994/5/7
- Katende, A.B., Ann Birnie & Bo Tengnäs
1995 *Useful trees and shrubs for Uganda*, Nairobi, Kenya: Regional Soil Conservation Unit
- Kubik, Gerhard
1998 "Intra-African streams of influence", *Garland Encyclopedia of World Music: Africa*, Ruth Stone, ed., New York: Garland
- Levarie, Siegmund & Ernest Levy
1968 *Tone: a study in musical acoustics*, Kent State Univ. Press
- Makubuya, James K.
1995 "Endongo: the role and significance of the Baganda bowl lyre of Uganda", Ph. D. diss., UCLA
- Slauson, Wayne
1985 *Sound color*, Berkeley: Univ. of California Press
- Turicchi, T.
1966 "A study of the acoustical properties of a renaissance flute...", Ph.D. diss., Catholic University of America, Washington, D.C.
- Wachsmann, Klaus P.
1953 *Tribal crafts of Uganda*, Part 2. London: Oxford University. Press
1971 "Musical instruments in Kiganda tradition and their places in the East African scene", *Essays on Music and History in Africa*, K. P. Wachsmann, ed., Evanston, Ill: Northwestern Univ. Press