**THE INSTRUMENTAL TECHNOLOGY OF AGOGO IN IBADAN AS A WAY TO FOSTER TECHNICAL KNOWLEDGE**

**By**

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**ABSTRACT**

The Agogo is an important African traditional musical instrument of the idiophone family. It comes in various sizes and shapes which thus translates to the type of tone quality and pitch that would be achieved on the musical instrument. The Agogo has diverse names across culture and ethnicity and is attributed to different deities like Ifa, Osunetc. It is therefore not unusual to find the worshippers of these deities perform the Agogo in their liturgical rites either in an ensemble of only Agogo or alongside other traditional drums serving the accompaniment purpose. The igbo of the Eastern part of Nigeria use a bigger size of the Yoruba Agogo which is called Alo.This research examined the designs of Agogo as fabricated by a leading blacksmith hearth, ‘Agbede Adodo’ that is located in Ibadan. The ethnographic method was used to collect facts for this research. The Key informant approach was used and data on the construction details of the Agogo was collected through interviews, participant observation method and literatures among other ethnographic sources. Findings reveal that the size and shape of the mouth part of the Agogo goes a long way in determining the pitch and tone quality of the musical instrument. Conclusively, the knowledge of the construction of a musical instrument like the Agogo is a great way to foster technical knowledge and skill thereby translating to a better economic stance for interested individuals and music technologists to thrive on.

**Keywords:** Agogo, Music technology, Agbede Adodo, Musical instrument, Indigenous performances.

**INTRODUCTION**

Agogo is a musical instrument of the idiophone family of musical instruments. It is a musical instrument that could be made out of diverse metals like: brass, iron, bronze among others. This musical instrument comes in diverse shapes and sizes and is used for diverse purposes in different African communities as well as in diaspora.

According to Nketia while discussing idiophones:

“Some are used where appropriate as signals for attracting attention, assembling People, or creating an atmosphere (especially during religious rites and ceremonies). They may also be used for transmitting verbal messages or for reinforcing verbal communication, for making the movements of special personalities such as Priests and persons undergoing sacred initiations, or for emphasizing the movements of a dancer or a character in a traditional drama. They also use it for scaring birds away from newly ploughed fields, or for marking the movements of cattle and other animals”. Nketia (1974)

Idiophones produce sound through the vibration of their main body either by shaking, striking, scraping, stamping the instrument. Examples of instrument under this group include: Ekwe, Kworia, Sekere, Udu, Ngedegwu, and Agogo which is the focus of this research. There are different approaches used in the construction of African musical instruments in general and this is dependent on the construction technique each instrument maker adopts or inherits, the machines and tools available for its production as well as materials available in the locality where it is being produced.

There are diverse techniques that can be adopted in the performance of the Agogo depending on the texture of sound the performer wants to achieve. The type of material used in striking it, which may be metal or wood, the part of the gong’s body struck, the holding technique which could be dampening a part of the gong to achieve a muffled sound or holding it at its end for an open sound production, among other determinant factors of the timbre and quality of sound achieved while performing the musical instrument. Adeyeye (2019) opines that,

 “The agogo is sounded by simply striking it with stick, in the right hand and the bell-handle held with the left hand, with bell end facing outwardly away from the player. It is struck roughly midway along the bell, otherwise, the timbre may vary from dry sound at the handling end to a robust sound at the open bell end. Adeyeye” (2019:7).

This research analyses the construction process of the metal gong (Agogo) as produced by blacksmiths at Agbede Adodo’s hearth Bere, Oke-Are, Ibadan, Nigeria. It exposes the step by step design and construction process of the musical instrument. Agogo despite being one important traditional musical instrument with an important role to play in most traditional music genres is feared to face extinction soon if care is not taken. The reason behind this is not farfetched, as this is due to the fact that there are less manufacturers of the musical instrument which is commonly made by our local blacksmiths who usually pass down the making of such to their children and young artisans who are not so ready to go on with the trade as a result of wanting to be educated and employed into doing a white collar job like their other counterparts in the rural arena. This has left the instrument with the threat of extinction if the already old blacksmiths are not able to find a way of passing and preserving such knowledge before they pass on. This has warranted the pursuit of this research which is aimed at understudying the custodians of the indigenous art technology of Agogo (metal gong) of the Yoruba, thereby preserving the Art and craft of its making. The objectives of this research are therefore as analysed below.

**OBJECTIVES OF THE RESEARCH**

The objectives of this research are:

1. To document the step by step technological process of designing and fabricating the Agogo.

2. To document the materials and tools used in the designing and construction process of the Agogo.

3. To examine the acoustic considerations of Agogo as a factor that helps one to get the musical instrument produced with the best quality of sound.

**METHODOLOGY**

This study engaged the following methodologies for data collection.

This research engaged the ethnographic method of data collection which entails the key informant, in-depth interview and participant observation methods which are as discussed below.

1. **Key informant:** The key informant connects the researcher to the blacksmith hearth where Agogo is being fabricated. This also gave access to meeting with the direct master blacksmiths of the musical instrument (Agogo), thereby engaging them with in-depth interview to collect vital, sacred and useful information about the norms and taboos, constructional process and ethic/rules guiding the process, among other useful details presented in this research.

2. **Participant Observation:**

The researcher also engaged this study by observing and then participating after learning and understudying necessary details in the process of fabricating the Agogo (metal gong). And this method aided the proper documentation of the step by step construction process of the instrument.

In addition to the above primary methods of collecting data, the secondary method was also used. Relevant information on the musical instrument were sourced for in libraries, journals and other vital books on music technology and the musical instrument.

**FINDINGS AND DISCUSSION**

**SOCIO-CULTURAL SIGNIFICANCE OF AGOGO**

Agogo is a social musical instrument which is widely spread all over Nigeria and in diaspora. It assumes diverse names across cultures and ethnicity which includes; Gong, Cowbell, wowowaa, Alo among other names. It once symbolized the political authority of the powerful Ekpe society of pre-colonial Southern Nigeria. It is now also used in funeral procession in Owerri, with raffia palm leaves (Omu) tied round the open end. It is beaten to warn passersby that the funeral procession is using the route (Nzewi: 2000).

Agogo also serve as a timekeeping instrument in dance or instrumental ensembles like the Igbo atilogwu dance, Bamun music of the Cameroun, the Kufo which is a secret funeral dance of the Bamileke, Wowowaa music of Loogun Ede/Osun ceremony, Ewe music of Ghana, Npokiti of the Igbo and many other dance instrumental music.

Agogo is an instrument which could be found all over Africa because of its great cultural importance. Anthony (1961) observed that bells are hung on hunting dogs and other domestic animals so as to be able to locate or track their movement.

Francis (1969) in his writing on “Bamun” music an inter-tribal art which was a “music for the hanging of a minister” made mention of the usage of three iron twin bells and two drums during the performance of “Bamun” music.

Ademiluyi Elizabeth (1991) mentioned an instrument of the gong family called “Laalo” which is played by the Osogun during the Olojo festival in Ile-Ife. He pointed out the fact that it is an instrument associated with the Ogun deity and that it is a gong with pendulum, this makes it different from the normal gong. The instrument is in pairs joined together by a string. Laalo is used to accompany songs rendered during ritual performances to “Ogun” (the Yoruba god of iron) at Ogun shrines. (Ademiluyi 1991).

Adeyeye (1991) wrote about agogo as used in a particular ceremony “Agogo and sekere could be used singly to accompany voice/voices or drum ensemble, Agogo like sekere could also form an ensemble of its own. Few such Agogo ensembles are those used in Logun Ede/Osun ceremony which is called “wowawaa music”, the one used in Ogun cult, and the one used by Ifa priests during Ifa ceremony. He further mentioned some drums like Bata, Dundun which makes use of bells (Saworo) at their rims. But in each case it is the Iya (the largest drum being played by the master drummer) that always contain the small bells.

**NORMS AND TABOOS**

In most African societies, the art of instrument making especially the sacred instrument is seriously backed by myths, and only selected members of a family in the society are designated to play the instruments. Thus it is impossible under the traditional setting, for a particular individual to try to play, repair or construct any type of instrument that is not traditionally included in his family’s professional art or trade. As a general rule, a good instrument maker emerges from the family members (Adeyeye 1999)

But now in this modern world, many African instruments were being made, played and repaired by interested individuals regardless of myths backing up the making of the instrument. This is so because of the religious civilizations Christianity and Islam brought into Africa by the Westerners and Arabs respectively, which has given freedom to teach and learn the construction of these musical instruments without the consultation of gods and goddesses.

Despite civilization, we still have many instrument makers that still undergo the process of appeasing gods or goddesses before they can teach anybody who is not part of custodian family of the musical instrument to be made or repaired. Thus, this calls for the purchase of some items by the researcher for the use of the instrument maker to appease their god or goddess. In other cases, money would be given to the instrument maker for the purchase of the necessary items.

Information gotten from the key informants reveals that it is normal for women to do blacksmithing work. For instance, the daughters of the blacksmith instructors do participate in the work, it is therefore not a taboo.

On the other hand, there are some special myths associated with the blacksmithing work passed down from the blacksmith’s elders, though norms and taboos vary from place to place as not all the under-listed myths are applicable to all blacksmiths. The norms and taboos of the blacksmith at Agbede Adodo are therefore as follow:

1. It is a taboo for them to make traps and gun.
2. The sound that is being produced by the hitting of the mallet on work done during construction process must not be imitated by anybody. The reason for this taboo is that with the imitation, the blacksmith working could loose concentration leading to the damage of the blacksmith’s tool and the blacksmith could also secure injury in the process.
3. It is a taboo for them to paint or plaster the walls of the blacksmith’s workshop. The floor is always sand-filled to prevent the workers from stepping on sharp objects or fire dropping from hot metals or coal.
4. It is a taboo for blacksmith’s to eat Ire (cricket)
5. The blacksmith would say “Sango ko gbodo ja ko wo ile aro”, meaning, the god of thunder (Sango) must not fight and enter the blacksmith’s workshop (Ile aro). In Yoruba land, people whose goods are stolen always consult the god of thunder to reveal the person who stole the goods, and thunder will strike such person to death, thereby placing the stolen goods on his/her chest. But if the thief is in the blacksmith’s workshop, the god of thunder can never strike him/her there, because it is a taboo. It will rather happen after such person might have left the blacksmith’s workshop.

**ACOUSTIC CONSIDERATION OF AGOGO**

Acoustics which is a scientific study of sound is a necessary thing to consider in the construction of musical instruments. The aim of a professional instrument maker is to produce an instrument with a good sound quality. Traditional musical instrument maker are therefore always conscious of things that will enhance the sound production of the instrument they construct.

Acoustics was described by modern scientist as the study of systems that produce and propagate what we recognize as sound. (Backus 1969). Unlike the Western instrument technologist who make use of mathematical and scientific calculations to construct an instrument that has a well rounded acoustical sound, an African instrument on the other hand relies on his experience of indigenous technology in the art of instruments making which he acquired from his elders in the profession. (Adeyeye 1993).

The acoustics of the iron bell (Agogo) would not only be taken from the context of its constructional acoustic considerations, but also from the acoustics of the mode at which it is being played, that is, the acoustics of the materials used and the performance technique will also be considered. In addition, the acoustics of any musical instrument depends solely on the choice of material used by the instrument maker, and the method used for the construction of the musical instrument.

The following factors therefore determine the acoustics of Agogo:-

**MATERIALS USED FOR CONSTRUCTION**

There are varieties of metallic materials that can be used for the construction of agogo, and these include; iron, bronze, brass among many others. But most importantly, the choice of metallic material used for the Agogo is a determinant factor of its tone quality and overall sound production. And this is due to the individualistic properties of each material.

**THICKNESS OF THE MATERIAL**

The thickness of the material used for the construction also determines the sound quality of the musical instrument. Adeyeye (1999) opines that, “the thicker the wall of a vibrating material, the lesser the vibration of the unit, and the thinner the wall, the more vigorous or higher the vibration”.

**SIZE OF THE MATERIAL**

The size of the materials entails its length (how long or short), width (how wide or broad) as well as its diameter. In a cylindrical or conical pipe opened or closed at both ends, the frequency (pitch) of the sound emitted through it is inversely proportional to the length and viceversa. This means that the longer the pipe, the lower the frequency. The natural pitch law does not change even the diameter is reduced or increased. (Adeyeye 1999).

**MATERIALS USED AS ‘BEATER’ IN PERFORMANCE**

There are two mostly used materials that can be used in beating the agogo during performance, they are metal and wood. Each of these materials affect the acoustic sound that will be produced when used to strike the agogo. Aside the type of the beater used, the weight and size of the beater also count.

**PERFORMANCE TECHNIQUE**

The technique used by the performer in playing the agogo also determines its sound production. For example, the performer may use the left hand to alter the sound of the agogo when played by either dampening it by holding the instrument at its middle or close to its bell or holding the gong at its tail end to allow for free vibration. For a sitting performer, the thigh/legs could also be used to close (dampen) and open (release) the agogo when struck. This creates an on and off dampening sound effect.

**MATERIALS AND TOOLS USED IN CONSTRUCTING THE AGOGO**

**MATERIALS**

The major material used in the construction of Agogo is iron. Iron pipes which could be gotten from obsolete machine parts like, vehicles, motorcycles etc are favourable selected for use. The size of the iron pipe used for the construction of Agogo is a determinant factor for the achieved size of the instrument which therefore translates to the achieved tone and pitch. The bigger and longer the size of the material used the lower the frequency while the smaller and shorter the material, the higher the frequency.

Other materials used for the construction of agogo include: sand, water and palm kernel coal (eesan).

**TOOLS**

The tools used for the construction of agogo are as listed below:

1. Hammer (Mataaka)
2. Anvil (Akanmole)
3. Below (Ewiri)
4. Big stone (Iyaogun)
5. Small stone (Omoogun)
6. Flat-headed iron hammer (Iya-owu)
7. Medium sized iron hammer (Ateleowu)
8. Small sized iron hammer (Omoowu)
9. Tongue (Emu)
10. Plier (Emu)
11. Punch (Ilu)
12. Chisel (Iko)
13. File (Ifarin)

**DESIGN AND CONSTRUCTION DETAILS OF AGOGO**

There have been different methods derived by specialist blacksmith in the art of constructing agogo in various parts of West Africa, but this constructional process is one out of all gotten from workshop hearth at Agbede Adodo, Beere, Oke-Are, Ibadan, Oyo State, Nigeria.

The major material to be used for the construction of the gong is an iron pipe and the size of the iron pipe used will determine the size of the Agogo when finished.

The iron pipe undergoes serious heating process before it can form an Agogo. The heating system is a locally made one consisting of a bellow that pumps air through a hole made in a prepared clay mould. The air passes through the hole on the clay mould to a source of heat generated from a palm kernel coal, which enhances its burning power. Water would be poured on the clay mould until soaked to allow for easy absorption of heat when firing starts. The passage of air from the bellow to the coal must be free to allow for flow of oxygen which helps the air to circulate between coals. A long flat iron rod would be inserted into the hole passage in the clay mould to clear any dirt that would affect the free flow of air from the bellow to the coal. When the bellow is set to the hole on the clay mould, fire would be set on the coal then the pumping of air from the below to enhance the fire starts.

The construction process of the Agogo begins with the bottom of the iron pipe when the coal is red hot. The bottom of the iron pipe would be inserted into the hot coal diagonally using the tongue then firing continues. There would be regular checking of the part being fired when it is red hot, a bluish red hot flame comes out from the hole of the outer part of the iron pipe and a long tongue (Emu) would be used to remove the iron from the hot coal. It is then immediately taken to the medium-sized flat-head stone called Omo Ogun. The iron mallet Omo Owu would be used to hit the fired part to the stone until the bottom gets flat, leaving the other side opened.

The next process is the cutting out of the tip of the flat bottom, and this is done to remove the dead part usually at the tip of the iron pipe. Each time any cutting or work would be done, the iron must pass through heat. The flat bottom would be inserted into the furnace again to shapen the handle of the gong to a desired structure which is usually in a curled form.

The next stage is the mouth part, which is the open ended part. The technical thing about the mouth part is that it would be hit to flatness before expanding the mouth again. When the mouth part is inserted into the furnace and it gets red hot, soft sand would be poured into the mouth hole and the Iya Owu would be used to hit the mouth to flatness.

During the process of hitting to flatness, the mouth may melt together and will not be separable again, that is why it is necessary to pour the soft sand into the bell to avoid being melted. After flattening the mouth, it would be inserted into the furnace again, and the hitting of the flat mouth would be repeated as much as four to five times to gain maximum flatness. The number of times to hit to flatness is determined by the thickness of the iron pipe, and this enhances the sound production of the iron gong by giving it a good tone quality. Each time the iron pipe is hit to flatness, it has to undergo heat, so that it could be flexible enough to avoid damage of the gong. The hammer (Motaaka) would be used to hit the mouth part on the anvil (akanmole) which is done in the last flattening process.

The next stage is the opening of the bell part which has already being flattened, and this is done with a tool that looks much like the chisel, although it is flatter and smaller in size. The chisel-like tool will be used to open the mouth using the hammer to drive it lightly through the closed mouth, and through this process, the soft sand that was initially poured into the mouth part to prevent the agogo from melting together would be expelled.

Another round and long rod that is a little bigger than the chisel-like tool was used to give more expansion to the mouth. The mouth was put in the furnace for the final expansion and immediately when hot, a round medium-sized atele owu was inserted into the mouth of the Agogo to give it a final expansion by tapping the Omo owu gently with another Omo owu.

The final stage is to shape the handle, and this is done by putting the bottom part into the furnace, it is then shaped to a desired pattern when hot.

**TIMELINE RHYTHMS THAT COULD BE PLAYED ON THE AGOGO**

**Konkolo rhythm**

 **Adeyeye (2019: 8 & 9)**





 **Akpabot (1986:52 & 84)**





The rhythms pictured above are some out of the diverse timeline rhythms that could be played on the Agogo. They are the variations of the Yoruba “Konkolo” rhythm. We also have the Yoruba “Soginikoko” rhythm as expressed below.

 **Adeyeye (2019:9)**

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**SUMMARY AND CONCLUSION**

**SUMMARY**

This project has been able to explain in details the technology of Agogo among the Yoruba of South-western Nigeria. It highlights the history of Agogo as an instrument which originated in South-East Asia. However, it is also a common musical instrument found in Africa which serves the purpose of time keeping in instrumental and dance ensemble.

This research also highlights the ethics of the blacksmith association as portrayed by the blacksmith in Agbede Adodo, Beere, Ibadan. More importantly, construction of traps and gun, imitation of sound produced by their tool while working, eating of cricket (Ire) and the painting or plastering of the walls of the blacksmith workshop are taboos that are well observed. The Agbede Adodo blacksmiths with their keen observance of professional ethics, occupational myths and taboos, have a strong belief that Sango (the god of thunder) cannot strike in their hearth. There are different materials that can be used for the construction of the bells in general. They are: brass, bronze, iron, ceramic and wood. However, iron pipe was used in carrying out this research.

This research also highlights the acoustics of the Agogo as it considers: acoustics in its construction and acoustics as it affects performance practices. The constructional acoustics consideration entails the materials used for the construction, thickness of the walls of the iron material used, size of the materials and the shape of the gong. The performance acoustic consideration entails the materials used during the performance proper, as beaters which may be wood, metals among others which may be used and the technique used during the performance of the Agogo. For example, the dampening of the sound of the bell by using the hand to seize vibration or on the other hand allowing the agogo to vibrate freely on its own when beaten. The specialist blacksmiths at Agbede Adodo were said to be the head of all blacksmiths in Ibadan, hence installation of the blacksmith chieftain is celebrated at their workshop at Agbede Adodo, Beere, Ibadan.

**CONCLUSION**

Conclusively, this research explored the technology of Agogo in Yoruba land, detailing on its history, constructional process, the materials and tools used for its fabrication and the acoustic considerations of the musical instrument. This research thus creates an avenue for willing individuals, music technologists and other music enthusiasts to have a systematic constructional process of the Agogo (gong) as one important musical instrument that has a great role to play in diverse musical genre across nations. This is also an avenue to further enhance vocational skills as related to music technology. Agogo is a musical instrument that is popularly used by Nigerian indigenous musicians and could therefore be a source of economic support to anybody who engages in its production and sales.

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