ENNANGA HARP SONGS OF BUGANDA: TEMUTEWO MUKASA'S "GGANGA ALULA"

bу

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For generations up until 1966, the *Kabakas* (kings) of Buganda in Uganda employed up to fifty musicians to entertain at the palace each day. During the time of Muteesa II, separate ensembles of flutes, trumpets, strings, tuned drums and xylophones played twice daily in the royal enclosure for the *Kabaka* (P. Cooke 1996). Perhaps the most privileged musician was the *omulanga* (royal harpist), who was the only musician allowed to enter the inner chambers of the palace. Ganda harpists of the past were renowned for their skill and their ability in composing new songs. Much of the repertory performed by the royal musicians is said to have been composed by harpists. Fortunately, Klaus Wachsmann and Hugh Tracey recorded the last great Ganda harpist, Temutewo Mukasa, in the 1940s and 1950s.

Of all the music of Uganda, most has been written about the *amadinda* log xylophone (called *entaala* in the palace) that formed part of the royal *entamiivu* ensemble. Kubik (1994), Anderson (1968) and Ganda musicologist Kyagambiddwa (1955) have documented a combined repertory of over 100 songs. Much has been written in an attempt to interpret these compositions. Kubik, Anderson and Wegner (1993) have analysed features of the music, for example inherent patterns that emerge when two players combine parts, and the consonance that is heard when parts interlock correctly. Kubik also identified progressions of notes in the resultant pattern that are rare, and others that are common.

An alternative approach was taken by P. Cooke (1970) who acknowledged from the outset that the compositions were instrumental versions of songs. His detailed discussion of the song "Ssematimba ne Kikwabanga" showed that each note in the amadinda composition helps to clarify the verbal structure of well known texts. He stressed (p79) that:

...any approach to a study of how instrumental pieces are composed must first take the form of a detailed comparison of the internal structure of the pieces with that of the sung versions.

It was generally accepted amongst palace musicians that many amadinda songs were composed by the harpist (Kubik 1994:80). In this paper, one performance of the song "Gganga alula" by Temutewo Mukasa (Tracey 1952) is analysed. This is supplemented with information from an earlier performance by Mukasa (Wachsmann 1949) of the same song. Details of these and other ennanga recordings available today are found in the discography.

By slowing recordings down to half speed or more, both the harp and vocal parts can be transcribed, allowing a detailed comparison. Kyagambiddwa (1955:106) observed that Mukasa's vocal part "mysteriously looms up" from his harp. It is remarkable that the harp is heard shadowing everything that Mukasa sings, even the *amagona* (melismatic inflections of the voice). Albert Ssempeke¹ explained (in English) that when singing, he has to listen carefully to the notes of the harp (termed 'tone bank' by P. Cooke 1996) to "fix his channel" correctly. By 'fixing his channel' he appears to mean discerning exactly where what he wants to sing or recite will fit tonally and metrically into the tone bank. This he does by concentrated listening as he plays over the cycle.

The tone bank can be interpreted using P. Cooke's 'rules' of composition as being generated by combining the melody of some 'key' text or texts with other notes, usually of a consonant pitch. These notes, termed 'ancillary' by P. Cooke, enhance the perception of the key texts. Other singing channels are then suggested by the inclusion of these ancillary notes. These channels are brought to the foreground when singing, humming or soloing on the harp.

"Gganga alula" (Gganga had a lucky escape)

Fig. 1 shows a photograph of Temutewo Mukasa's practice ennanga, currently in the care of his nephew at Ggavu village, Kasawo county, Mukono district. The instrument has eight strings, and its construction and basic playing technique is described in some detail by Wachsmann (1953) and Kubik (1994). The instrument has a deep buzzing tone, produced by the grazing of each string against rings of lizard skin positioned carefully beneath the pegs on the neck of the harp. Strings are tuned to a pentatonic scale. If each pitch of the pentatonic scale is numbered 1 to 5, then the lowest string has pitch 3 (the underline indicating lower octave), and the highest 5.

By the turn of the century, Roscoe (1911) was aware that the art of *ennanga* playing was fading, and by the 1950s, Wachsmann (1971:112) knew of only a handful of expert players. Today, Albert Ssempeke is virtually the only living exponent of *ennanga*, though he has guided several students through the first steps of playing the instrument. The song "Gganga alula" is taught after first mastering the song "Olutalo olwe Nsinsi" (see Kubik 1994 for a discussion of this composition). Ssempeke learned in this same way from Evaristo Muyinda during their time together at the Uganda Museum Muyinda in turn had learned from Temutewo Mukasa.

A key text can be identified which gives the song "Gganga alula" its verbal and musical identity. This phrase, sung in most performances of the song, mocks Gganga, who narrowly escaped death after 'stealing meat' at the palace:

"Nze bamutemako engalo bitundu. Gganga alula. Ee! Gganga alula". (They cut off

¹ Ed: Pictured on the front of this journal.

² Simha Arom (1991) writes of a set of "key" phrases that form the basis of an instrumental "model" in Linda music. The word "nuclear" has also been used in the context of Ganda music (Kubik 1994:274).

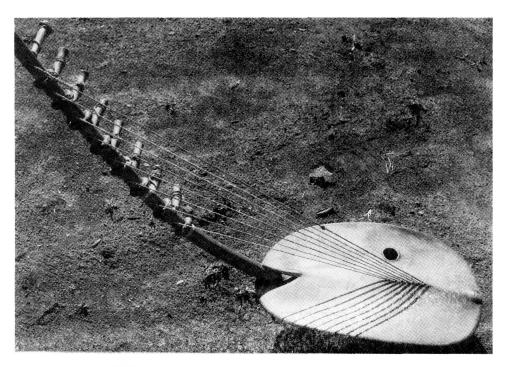


Fig. 1 Photograph of the harp made by Mukasa, and used for practice. The harp is now in the care of his nephew at his former village home in Ggavu, Mukono district. According to his nephew, Mukasa also made two other harps, the whereabouts of which are unknown.

part of his fingers. Yes! Gganga had a lucky escape!)

According to Anderson (1984:132), the following incident gave rise to the song:

Gganga, a harpist, became friends with Princess Nassolo Zawango, daughter of Kabaka Mutesa I (reign c. 1854-1884), and stayed in her compound. Nassolo then made friends with Kiwugu, who had learnt to play the harp. After Gganga "stole meat", Nassolo told him to return home. She called the executioners to remove him, but Gganga held on to the gate at Wankaki and refused to leave. Nassolo came with a knife and cut off his fingers, which were clinging to the gateposts. Thus, Gganga escaped death. Kiwugu began playing this song, beginning around 1914.

Luganda is a tonal language comprising long and short syllables in a length ratio of about 2:1, and using high, low and falling pitches. When phrases are spoken or sung, there is usually also an overall downward drift in pitch. The melody associated with the key text of *Gganga alula* can be transcribed as follows:

clap beat XI	$ \mathbf{x}_2 $	X3	X5	X ₆	
vocal pitch 2 4 4	$\overline{2}$ $\overline{2}$ $\overline{2}$ $\overline{2}$	2 1 5 5 5 5	4 3 2 3	3 1 1	3
text ga lu la	ha mu te ma	k'en galo hi ti	ın du Ggan ga li	la Ee	Ggan

Throughout this paper, a 'TUBS' notation is used, with each box representing a unit of time. Pitches of the pentatonic scale have been numbered 1 to 5, with overlines and underlines indicating higher and lower octaves. At the end of a phrase, the sound of the last syllable is sometimes lengthened, often with a change in pitch (amagona). A line following a syllable indicates this. The timing of the vocal part occasionally does not simply correspond with the unit time boxes of the TUBS system: we try to represent this with careful placement of notes within or across boxes. A vertical line | indicates the beginning of the song line, and the 'clap beat' is given for reference.

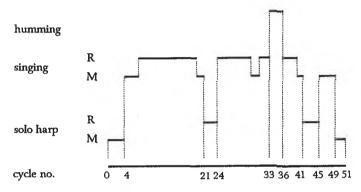


Fig. 2. Summary of the textural events in Mukasa's "Gganga alula" (1952). R and M denote recitative and melodic channels, and are discussed below. (Adapted from De Vale 1984)

Ganda songs have a cyclic structure lasting 4, 6 or 8 clap beats. Each clap beat (played also by the *empuunyi* drum) occurs every 6 units of time, and when singing, phrases are adjusted so that prominent syllables coincide with the clap beat. If there is a chorus, it is faithfully repeated at the same point in each cycle. The soloist however is free to sing at any point in the cycle, sometimes overlapping with the chorus on different pitches.

In the transcription above, the underlined text is often sung as a chorus (P. Cooke 1970:66). However, an *ennanga* player sings solo, and indeed many *ennanga* songs may have no known chorus. Because of the absence of drummers and clappers, the clap beat to which phrases are adjusted is inferred.

A skilled solo singer will use many poetic devices such as parallelism, allusion and alliteration in conveying his messages. Often he will be juggling with several themes at once. The semantics of Mukasa's rendition are not analysed in this paper. However, Cooke and Katamba (1987), Gray (1992) and Kiguli (1996) have given good discussions of Ganda song texts.

Mukasa's "*Gganga alula*" (1952, 1949)

Mukasa's performance heard on the 'Sound of Africa' series (TR.138) was recorded at his village home in 1952 by Hugh Tracey. De Vale (1984) comments on

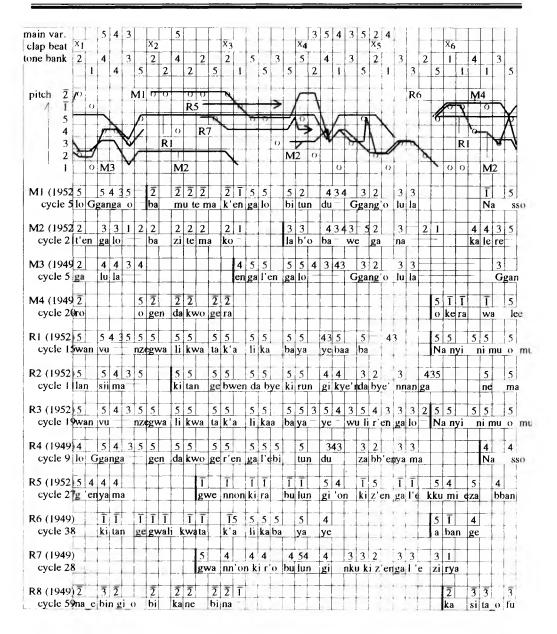


Fig. 3. A selection of the main melodic (M) and recitative (R) singing channels used in Mukasa's 1952 and 1949 performances of "Gganga alula". For each song line, both the vocal pitch and syllable are given. Some of these are also represented graphically, to show how Mukasa threads his way through the tone bank using various channels. (O: harp notes,

: vocal pitch, —>: partially drawn song lines,

this event:

Hugh Tracey, a stranger to Mukasa, made his recordings from a van outfitted with recording equipment. He would ask for the music to be performed, and stay only long enough to record it.

Mukasa sounds excited in his performance: he breaks up his energetic reciting (72% of the whole performance) with only brief episodes of solo harp (23%) and humming (5%) (see Fig. 2). During this performance, he includes many references to the *Kabaka* and his symbols of royalty. Tracey's 1952 recording was published several times, and a full transcription of this performance is provided at the end, together with a translation of the song text.

A more relaxed performance was recorded by Mukasa's friend Klaus Wachsmann in 1949 (KPW 49.45). This performance lasts 13 cycles longer, and has a greater variety of textural events. There are longer solo harp and humming passages and his voice explores more singing channels. He includes a new *ekisoko* (variation of thematic content), which in a proverbial manner suggests that a wealthy man (which Gganga was not) can provide satisfactorily for several wives.

Mukasa's singing channels

Fig. 3 above shows the variety of singing channels used by Mukasa in his two performances. These are broadly classed as being melodic (M1- M4) or recitative (R1 - R8). Some are also represented graphically, allowing a visual comparison between voice and harp.

Melodic channels

These are melodies that are derived from the tonal and rhythmic structure of the associated texts. The key phrase identified earlier is one example. In fact, Mukasa only sings fragments of it in different places, and never straight through in its entirety (e.g. M1 and M3).

Reciting channels

Melodic singing is temporarily abandoned as the singer selects one pitch, usually present in the tone bank, on which to recite texts (e.g. R1, which begins just before the 6th clap beat). The recitation is not entirely on one pitch. Small changes may be made to respect linguistic tone (e.g. R5, R8). Often, the singer ends his reciting by rejoining a melodic contour without a break. This of course makes the classification of singing channels somewhat artificial (e.g. beginning of M2, end of R3).

It is hard to hear Mukasa's harp whilst he sings. However, enough can be heard to infer that he continues to play the tone bank, perhaps with occasional note substitutions. Sometimes Mukasa raises or lowers his voice by one pitch from a commonly used channel. The seemingly dissonant effect is created between the harp and the voice, is exploited by Mukasa to accentuate text. Examples are song lines R5 to R8.

Conversely, there are times where the singer's voice is heard briefly following

a contour in the tone bank from consonant pitches that are two or three pitches above or below the simultaneous harp notes (e.g. M2, between clap beats 1 and 2). Note that the terms consonant and dissonant are really only convenient labels for what might be only subjective effects. In pentatonic music, intervals between pitches can only be consonant (separated by 2 or 3 pitches), dissonant (separated by 1 or 4 pitches) or in unison (or octave).

We see from Fig. 3 that singing channels begin at different points in the cycle. Usually the first syllable is sung at the same time or just after a harp note (e.g. M2) of the same pitch in the tone bank. There is then always a skeleton of harp notes matching the voice (exactly or within one pulse), especially where there is a change in vocal pitch.

At any one point in the cycle, these singing channels may overlap on different pitches. As seen on the graph in Fig. 3, between clap beats 2 and 3, Mukasa is either reciting on pitch 5 (R1, R2), or following the main melodic channel M1. Between beats 6 and 1, Mukasa weaves many different routes through the tone bank (M3, M4, R1, R4, and R6).

Amagona

A striking feature of traditional Ganda singing is the use of melismatic inflections of the voice known as *amagona*. Close examination reveals that the melismatic inflections used by Mukasa often find a match in the tone bank. There seem to be two types of *amagona*:

The following *amagona* are accurately articulated in pitch and duration, often occurring at the end of a phrase:

2 1 5 5	5 5 3 5 4 3 5 4 3 3 2	5 4 3 5	2 1 5 4 3	3 2 1
k'en ga lo	baya ye wu I r'en ga lo	sii ma	ra	na
M1	R3	R2	cycle 32	M2

There are many other slight inflections in the voice that occurred faster than the duration of a harp note, though the significance of these may have been exaggerated by slowing the recording to aid transcription. Some might simply be a natural consequence of articulating syllables such as -lya and -we. Examples are:

434 3+52	3 435	3 43	Notes of the harp often shadow both
434 3 5 2 ba we ga	nnan ga	gya li a	types, as these examples illustrate (see Fig.
M2	R2	cycle 9	3). Sometimes, amagona occur within
1412	7.0	271023	phrases, such as M1 and R3. Perhaps

Mukasa is vocalising falling tones inherent to the spoken words, or perhaps he is simply following the pitches in the tone bank. At the end of phrases, the last syllable is often extended, dropping in pitch (e.g. M2), and sometimes rising again (e.g. R2).

Observe that Mukasa ends most phrases with amagona just before claps 2 and 6, where there are matching patterns in the tone bank. It is possible that patterns such

as [4 4 3 5 2 2] are recognised as markers between phrases. In Mukasa's performance of "Asenga omwami tagayala" (heard on 'Sound of Africa' series TR. 138), many of his vocal phrases are cued by the tone bank patterns [5 4 3 5 2 2] and [4 3 2 4 1 1].

Harp tone bank

The harp can rarely be heard clearly whilst Mukasa is singing, for it is a quiet instrument. However, harp solos at the beginning, breaks and end can be accurately transcribed.

Though Mukasa does vary his notes, a 'model' tone bank and a main variant can be identified:

amadinda			4	3	2			_									[
main var.			5	4	3				5											3	5	4	3	5	2	4			<u>_</u>	Ĺ						
clap heat	x_1	_					x ₂						Х3						X4						×5	_			_	L_	^X 6					
tone bank	2		4		3		2		4		2		2		5		3		5		4		3		2		3		2		1		4		3	
		1		4		5		2		2		5		1		5		5		2		1		5		1	L	3	L	5	LJ	1	LJ	1	1	5

Mukasa begins and ends the 1952 performance by playing this model tone bank, just as his vocal part begins and ends in a melodic channel. Mukasa's variant tone bank clearly gives prominence to the recitative channel: observe the close match with song line R3. For most of the performance, Mukasa plays this variant, matching his vocal recitations.

Mukasa's model tone bank is almost identical to that played by the *amadinda* (as transcribed by Kubik, Anderson and Kyagambiddwa), differing in only two notes (between claps 1 and 2). At this point, Mukasa consistently sings [5 4 3 5] or [4 4 3 5] between these claps, matching the two versions of the tone bank he plays on the harp.

As far as we know, the *entamiivu* ensemble in which the *amadinda* featured never included a singer, though the musicians must all have had some knowledge of the song texts. So although *amadinda* pieces are representations of songs, they need not match a singer's version exactly. In the ensemble, the drums may have had a very important ritual role, but their musical role seems to have been less important. On Hugh Tracey's recordings of the ensemble ('Sound of Africa', TR.137), the drums are heard drifting out of time with the xylophone's internal clap beat in places. Had someone been singing or clapping in accompaniment, this should not have happened, because the pulse of the drum patterns also incorporates the clap beat.

In the repertory, there are a few pieces with which drums could never fit in time with an implicit clap beat, such as the 35 x 2 note song "Agenda n'omulungi azaawa". For most songs, the two main amadinda xylophone parts correspond directly with the notes played by left and right hand on the harp. However in the case of "Agenda n'omulungi azaawa", the notes have been distributed very differently, although the overall tone bank is almost identical with Mukasa's 36 x 2 harp version

(Wachsmann KPW 49.45). The song is still recognisable, yet the timing is anomalous, because it is impossible to maintain a steady clap beat. The absence of a singer in the entamiivu ensemble means a detailed analysis of amadinda tone banks can only give an incomplete picture (P. Cooke 1970).

Harp solos

During the performance, there are times when Mukasa allows the harp to sound alone. Sometimes he simply repeats the tone bank. However, he often brings patterns and implied text to the foreground by plucking notes louder, a technique termed okudaliza by Ganda musicians, and by note substitution. In fact transcribing okudaliza unambiguously proved difficult. Harp notes 5, 4, and 3 are duplicated in the lower octave, and so these already sound louder than the single octave pitches 2 and 1.

In the 1952 performance, the harp solos are typically three to four cycles long (see transcription). There are examples where Mukasa brings to the foreground parts of the pattern [4..5..4..5..5..5..4..5..3..5..4..5..] that is present in the tone bank (cycle 1, 2). Also, there are many examples of note substitution, to imitate his reciting on pitch 5 (cycles 22, 23, 42, 43), and to foreground the repeating pattern [3521..3521..3521..3521..3521..2511..] (cycle 45).

The performance for Wachsmann in 1949 has five episodes of solo harp. Mukasa begins by unambiguously bringing the pattern [4..5..4..5.. etc.] to the foreground, and possibly also the pattern [22522521] which corresponds to the chorus bamutemako engalo. Later passage, the pattern [4.35..4

An impressive solo harp passage occurs during his 1949 performance. The solo is long, lasting 9 cycles, and Mukasa mimics recitative singing on pitch 5, and also generates the pattern [2 1 5 4 3 5] in the tone bank (emboldened notes are accented by Mukasa, next page, top).

Amadinda tone banks rarely have more than two consecutive notes of the same pitch. It has been suggested (Kubik 1994:274) that this is due to the technical difficulty of repeating three notes or more notes on the harp. This seems unlikely, because during this and other solo harp passages (1952: cycles 23, 24, 43, 44) Mukasa plays the sequence [555].

Humming

Another way in which Mukasa brings to the foreground patterns in the tone bank, or singing channels is by humming. In the 1952 performance, Mukasa hums briefly between cycles 34 and 37 (see Fig. 4, next page, bottom). His humming weaves a new melodic channel through the tone bank, which does not appear to correspond to

main var.	x ₁		5	4	3		x ₂		5				X3						X4		5	4	3	5	2 X5	4	<u>.</u>	-			X6				F	Γ.
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any sung text. The close correspondence of voice and harp notes shows his intimate knowledge of the tone bank. Interestingly, in 1949, Mukasa followed a similar humming channel to this, the humming spanning six cycles.

How was the "Gganga alula" tone bank composed?

Because there are probably no Ganda harpists alive today who can compose in the original style (except possibly Albert Ssempeke), the compositional process can only be surmised.

Rather than beginning from some key text, and then generating a harp tone bank, the process could equally be more interactive, between the harp and voice. Initially, the harpist's fingers may follow common patterns that appear in other songs he has learnt. He may have several key texts in mind, which he alters to give a better fit to whatever his fingers were playing.

There may therefore be an evolutionary process in which the composer refines his model tone bank, until different aspects of the tone bank satisfy him. During this process he may be striking a balance between the representation of different singing channels in the tone bank, as well as discovering new channels with which to fit his voice. There may also be a desire for certain symmetries and patterns to appear in the tone bank which provide rhythmic structure and impetus (as is observable in many transcriptions of *amadinda* songs). Whilst adjusting the tone bank, he may also be composing new texts, and adjusting them to fit his model tone bank.

Bearing all this in mind, P. Cooke's discussion (1970) of how key texts are represented in tone banks is still convincing. Prominent 'morae' of a key text are matched by corresponding notes in the tone bank. The rest of the tone bank then consists of (usually consonant) ancillary notes: these lend prominence to key syllables, and possibly also represent falling tones and stopped sounds of the voice within words, as well as *amagona* at the end of words and phrases.

In the song "Gganga alula", the key text identified earlier, sung often as a chorus, may have been one of those that were in the original composer Kiguwu's mind: it does appear to be well represented by the corresponding tone bank:

clap beat	x_1	Ī	-			X2					X	3	Τ	Γ	Г	Ι	X4			Т	T	X5				-		Х6		-	1	7	-
harp	2	14	4	3		2			2	2	2	1	5	5		5	5		4	3		2		3	3	2		1	1			3	
key text	ga	lu	la			ba		m	u t	e ma	k	'en	ga	lo		bi	tui	n	du,	G	gan	ga		lu	la	-		Ee	-			Gg	an
hагр	1				5		2	4		5	Ţ				3			2	1		5		1				5			4	1		5
	b				b		b	С		b					а			a	а	ı	b		b				С			c	a		b

These ancillary notes, shown below the text, are mostly consonant and help to clarify neighbouring text:

3^a, 2^a, 1. When neighbouring syllables match in pitch, there seems to be a preference for the separating ancillary note to be two pitches lower, though three notes lower seems also acceptable. When the second syllable is one pitch lower, then there is only one choice of consonant ancillary note.

5^b, 2^b, 1^b, 5°: The units 5 2 2, 5 2 1, 5 1 1 are brought to the foreground by Mukasa in his harp solos by note substitution and by plucking strings louder, seemingly (although it is very difficult to determine this unambiguously) with emphasis given to the lower octave string 5 (cycle 44). It seems these units not only lengthen syllables coinciding with the clap beat, but also suggest a rhythmic impetus, matching the internal rhythm of the associated Luganda text. Sometimes Mukasa substitutes pitch 5 instead of 4 (coinciding with syllable -mu after clap 2), reinforcing this impetus.

4°, 5°: Mukasa also deliberately brings to the foreground the pattern [4..5..4..5..5..5..4..5..], sometimes substituting pitch 4 instead of 5 (coinciding with syllable -ga after clap 3), making the unit [4..5..] repeat more often. Perhaps a desire to hear this pattern in the tone bank favours this choice of ancillary notes over other consonant options. Similar patterns are seen in the tone banks of several other 12- and 18-note compositions (e.g. "Olutalo olwe Nsinsi", "Ekyuma", "Ebigambo ebibulire", and "Mawanda ssegwanga"), as well as many Soga compositions (e.g. "Baliraine", discussed by P. Cooke 1995).

Harp and voice combined

Whilst Mukasa sings, the listener hears the combined sound of the harp and voice. Always the harp seems to complement the voice well, and sometimes in the recordings it is difficult to distinguish between the two.

Often, the sound of a syllable is extended into the next beat by a matching harp note. Consider song line M1 with which Mukasa opens his 1952 performance:

clap beat	x_1						Х2						Хз						Х4						X5						X6					
harp	4	1	4			5		2	5			5					3	Ĺ	5	2	4	1	3	5		1			2	5	1	1	4		3	
voice	5		5	4	5	-	$\overline{2}$		$\tilde{2}$	$\bar{2}$	$\bar{2}$		\hat{z}	Ī	5	5		5	2		4	3	4	3	2		3	3					L.	Ī		5
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Harp notes that are not in unison with the voice are shown above the vocal pitches. Mukasa sings the key text, but stresses the word bitundu by raising the pitch of -tun, and then dropping to pitch 3 to sing -du with amagona. His timing of the word Gganga also differs. Nevertheless, harp notes are present that now extend the sound of -tun and -du into the next beat. Also, the sound of ba-, the first syllable of the key text, is also extended by a harp note.

The harp player has no accompanying chorus singers, and Ssempeke has remarked that the harp acts as a chorus. Certainly, this impression is gained when listening to Mukasa recite. Consider song line R3:

clap beat	хI					Х2						хз						X4						X5						X6						
harp	2 1				5	2	2	5	2	2	5	2	1			3								2	4					1	1	4	1	3		
voice	5	5	4	3	5	5		5	5		5	5		5	5		5	5	3	5	4	3	5	4	3	3	3	2	5	5		5	5		5	
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Most of Mukasa's syllables are matched pitch for pitch by notes of his variant tone bank, except for a moment of consonance at clap 2 with harp notes that match the words bamutema k'engalo of the chorus, and later dissonance at clap 6 with notes matching Ee!

Mukasa allows the chorus bamutema k'engalo to sound in his variant tone bank, yet there are ancillary notes that underpin his solo singing on pitch 5. Also, the rhythmic impetus suggested by harp notes [5 2 2 5 2 2 5 2 1] matches the internal rhythm of Mukasa's solo singing.

Concluding comments

Mukasa shows great skill at controlling his voice and fingers at breathtaking speed. No doubt the composition of tone banks representing new songs would have presented him no problems: the representation of Luganda song text in tone banks was instinctively understood by these palace harpists.

The harp tone bank, though based on some key text or texts, offers the harpist a range of pitches and melodies to fit words. These channels are brought to the foreground when singing, humming, or by substitution of notes during harp solos, or by 'plucking' them out of the tone bank. Usually, these channels relate to song text, though sometimes they may just be pleasing patterns to the harpist's ear.

Postscript

After 1966, when Milton Obote's army stormed the palace, the royal music tradition floundered. Many musicians vowed never to play again while the *Kabaka* Muteesa II remained in exile. Today, despite the coronation of his son *Kabaka* Ronald Muwenda Mutebi II, royal music is rarely heard in Kampala. Indeed, the new generation of Ugandans is barely aware of its existence. Probably more *amadinda* and *akadinda* are played outside Uganda, particularly in teaching institutions. Recordings are found only in western sound archives, and are not available in Kampala, highlighting the need for a National Sound Archive in Uganda.

Some former palace musicians are still alive today, mostly farming in their villages, and occasionally meeting to play and teach their children. Andrew Cooke visited Mukasa's former village in 1995, and met his nephew who was still treasuring Mukasa's practice instrument. However, he said that no one in his village knows how to play it. Apart from 70 year old Albert Ssempeke, who sings expertly with his instrument, and a handful of people who have learned the basics from him, we know of no one else who can play *ennanga*. The instrument cannot be bought in Kampala today, though in 1997 Ssempeke guided drum makers based at Mpererwe in making possibly the first *ennanga* for twenty five years.

Acknowledgements

We are very grateful to Albert Ssempeke and his group Aboluganda Kwagalana, who have been generously sharing their musical tradition with us over the past ten years. Thanks also to Miriam Zziwa for painstakingly transcribing Mukasa's Luganda, and to Peter Cooke for reading the drafts and giving suggestions and encouragement.

References

Anderson, Lois Ann

1968 "The miko modal system of Kiganda xylophone music", Ph.D. diss., Univ. of California,

Los Angeles

1984 "Multipart relationships in xylophone and tuned-drum traditions in Buganda", Selected

Reports in Ethnomusicology, 5: 120-44

Arom, Simha

1991 African polyphony and polyrhythm, Cambridge Univ. Press

Cooke, Peter

1970 "Ganda xylophone music: another approach", African Music, 4(4): 62-80

"Orchestral melo-rhythm in southern Uganda", in For Gehard Kubik: festschrift on the occasion of his 60th birthday, Frankfurt, 147-160

1996 "Music in a Ugandan court", Early Music, August: 439-452

De Vale, Sue Carole

"Prolegomena to a study of harp and voice sounds in Uganda: a graphic system for the notation of texture", Selected Reports in Ethnomusicology, 5: 285-315

Gray, Catherine T.

1992 "Patterns of textural recurrence in Kiganda song", IRSAM 23(1): 85-100

Katamba, Francis and Cooke, Peter

1987 "Ssematimba ne Kikwabanga: the music and poetry of a Ganda historical song", World of Music, 24(2):49-68

Kiguli, Susan Nalugwa

1996 "Kiganda oral poetry: the role of bisoko in the poetry of Ssempeke's songs" M.Litt. diss., Univ. of Strathelyde

Kubik, Gerhard

1994 Theory of African music, Wilhernshaven, chapters 1, 4 (with CD)

Kyagambiddwa, Joseph

1955 African music from the source of the Nile, New York: Praeger

Roscoe, John

1911 The Baganda, London: Macmillan, p33

Wachsmann, Klaus, with K. M. Trowell

1953 Tribal Crafts of Uganda, London: Oxford Univ. Press

"Musical instruments in Kiganda tradition and their place in the East African scene", Essays in music and history in Africa, Evanston: Northwestern Univ. Press: 93-134

Wegner, Ulrich

"Cognitive aspects of amadinda xylophone music from Buganda: inherent patterns reconsidered", *Ethnomusicology* 37(2): 201-241

Recordings of Ennanga

HUGH TRACEY RECORDINGS (1953)

The disc TR.138 in the ILAM 'Sound of Africa' series features several excellent performances by Mukasa, including "Gganga alula", the subject of this paper, as well as "Kitumbu", "Weebale", Omusango gw'enyama", "Ekyuma", "Omusango gw'abalere, "Asenga omwami tagayala" and "Okwagala omulungi". Mukasa's "Gganga alula" was also duplicated on several other discs released at around the same time, including Nos. 6, 8 and 27 in the ILAM 'Music of Africa' series. Order from ILAM, address inside the cover.

A selection of these recordings was re-released on the Sharp Wood Productions CD 'Royal Court Music from Uganda 1950' (SWP008/HT02). The CD begins with 3 performances by Mukasa, "Okwagala omulungi kwesengereza", "Gganga alula" and "Asenga omwami tagayala". Later (track 12) we hear Everisto Muyinda sing "Ssewaswa kazaala abalongo". Order from <bar>
| Comparison of these recordings was re-released on the Sharp Wood Productions CD 'Royal Court Music from Uganda 1950' (SWP008/HT02). The CD begins with 3 performances by Mukasa, "Okwagala omulungi kwesengereza", "Gganga alula" and "Asenga omwami tagayala". Later (track 12) we hear Everisto Muyinda sing "Ssewaswa kazaala abalongo". Order from <a href="mailto:balance-balance

KLAUS P. WACHSMANN RECORDINGS (1949)

These recordings of Mukasa were never released on records, but can be heard, for example, in the National Sound Archives, British Library, London

KPW 49.5: "Gganga alula"

KPW 49.45: "Agenda n'omulungi azaawa"

RECORDINGS OF ALBERT SSEMPEKE

The cassette "Ssempeke! – Traditional music from Uganda" (KAC 1003), was recorded and produced in 1988 by P. Cooke with Ssempeke's home market in mind. It includes performances on *ennanga* of the songs: "Gganga alula", "Akawologoma", "Ensiriba ya munnange Katego", and "Balagala enkonge". The cassette is available by mail order from K & C Productions, 29 Shepherds Pool Road, Sutton Coldfield, B75 6NB, UK.

In 1995, Ssempeke recorded the song "Amagombe tegaluwa" for "Music from Uganda I: Traditional", Caprice Records, CAP 1495. In 1997, Ssempeke and his group recorded a CD of Ganda traditional music, including some *ennanga* songs, for the Realworld (WOMAD Select) label, which is due to be released in 2000.

Translation of Mukasa's "Gganga alula" (1952)

Cvcle no.

- 1 They cut off parts of his fingers, Gganga escaped. Nassolo Gganga
- 2 When they cut off the fingers, those which used to steal meat. Nassolo Gganga
- 3 What I'm telling you, the remaining fingers, listen to the fingers, think about the strings
- 4 My friends, Kabaka Walugembe is at Mengo. Nassolo Gganga
- 5 My friends listen, Walugembe is ruling. Nassolo Gganga
- 6 Our friends listen, where the fingers were which stole meat. Think about the fingers
- 7 My father, what I have seen is good, I have seen ennanga, I have appreciated
- When I have seen the good things, when I see entenga, I like them
- 9 Father, what I have seen is good, I have seen people. Nassolo Gganga
- 10 He is going to say where the fingers were. It was a bad thing sir!
- 11 It was a dangerous thing, that which made them cut Gganga, baaba! The tall owner of
- 12 the house, whoever he touches will cry out Yaye baaba. It is the same village, Sir
- 13 You are bewitching me, something that I refused. I will pass here at our place
- 14 I will pass here where there is a white man, baaba. I want you to come up with
- 15 suggestions. What I'm telling you, that made them cut Gganga, that's it. The tall
- 16 owner of the house. Whoever he touches will cry out Yaye baaba, listen to the fingers
- 17 My friends, I am to be pitied, that's what I'm telling you. See if you are denying it,
- 18 bring the fingers. They were cut off!
- 25 Fingers, fingers, fingers, fingers, ten fingers. Think about the fingers
- 26 Father, because of the fingers, which are used for eating. My friends, look at the fingers
- 27 You are better than me, you have ten fingers, which used to steal meat
- 28 Father, you are wealthier, you have more big fingers Listen, fingers
- 29 My friend, where the fingers were, they should have beaten with a stick and left the
- 30 fingers which eat. My father, they should have cut off his feet
- 31 but left him with parts of his fingers. See what I'm telling you
- 32 My friends, see where the fingers were! My father, that which you do
- 33 to the Lord, that which you do, that thing about alcohol. The tall owner of the house
- 34 whoever he touches will cry! mmm....
- 37 Walugembe, he is at Mengo. Nassolo, Gganga
- 38 My friends, my friends, people of Walugembe, he is ruling. Think about fingers
- 39 What I'm telling you, where the fingers were which stole meat. My friends, I am to be pitied
- 40 When I see you, because of the parts of fingers which stole meat. Think about fingers
- 41 They cut them off! If you are denying it, bring the fingers!

- 42 They were cut off!
- 46 The fingers, the fingers, Gganga you have escaped. This Nassolo, Gganga
- 47 They cut off his fingers, my friends listen, the fingers. Think about the fingers
- 48 When I see you, you are better off than me, you have the big fingers that stole meat
- 49 They were cut off. You are better off, because you have fingers which eat

continued from page 46

Besides the regular bursaries the ESEM typically reserves for scholars from the Eastern block and for postgraduate students, we hope to secure at least five additional stipends to subsidise researchers coming from abroad, for which priority will be given to former Queen's Ethnomusicology students now working in Third World countries. Bursaries will only be given to delegates presenting a paper at the conference. Candidates should indicate their wish to apply for any of the three types of bursary outlined above in a letter accompanying their abstract. The letter should outline the candidate's current engagement with the discipline in his/her home country (e.g., professional status and activities, relevant publications in the last five years etc.); students must also include a letter of recommendation from their supervisor, and priority for student bursaries will be given to candidates within Europe.

The deadline for submissions of papers and alternative presentations is 30 February 2000. Abstracts should be sent to: Suzel Ana Reily (chairperson of the Programme Committee), School of Anthropological Studies, The Queen's University of Belfast, Belfast BT7 1NN, Northern Ireland, UK; phone: +44 ([0]28)9027-3880 (office); +44 ([0]28) 9061-5811 (home); e-mail: s.reily@qub.ac.uk. Further information relating to the Conference can also be requested at the address above. The web site for the Conference can be found at: http://www.qub.ac.uk/pas/sa/resources/esemconf.

INTERNATIONAL SOCIETY FOR ORAL LITERATURE IN AFRICA

The International society for Oral Literature in Africa (ISOLA) was established on 23 October 1998 to celebrate, study and promote the oral arts of Africa. The Society pursues these aims by circulating information on scholarly research and by organising regular international meetings of scholars, oral artists and other interested persons.

Three preliminary conferences have already been held; the fourth will be held in either Kenya or Uganda in 2001. Japan has been accepted as the location for the fifth conference.

In order to promote communication and the exchange of ideas, the initial task of the Council is the compilation of a database of persons interested in African oral literature. Also planned is a newsletter, for which items for inclusion will be appreciated, and the framing of a code of ethics for fieldworkers in African oral literature.

Initially there will be no membership fee. If you would like to become a member of ISOLA, please send: your name and title, institutional affiliation, address, e-mail, and area of interest (in 20 words or less) to Jeff Opland, Administrative Secretary, c/o The International African Institute, School of Oriental and African Studies, University of London, Thornhaugh St, London WC1H 0XG, United Kingdom, e-mail: jeffopland@compuserve.com

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