

TRANSCRIPTION OF MANGWILO XYLOPHONE MUSIC FROM FILM STRIPS

by

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The purpose of this paper is twofold: firstly to explain a method of transcribing African instrumental music, and secondly to give information on the structure of the *Mangwilo*¹ xylophone music of the Alomwe and Ashirima in Northern Mozambique.

I have often demonstrated how inaccurate it is to transcribe African music solely from recordings and suggested that instruction by African musicians should be attempted. It is, however, not always possible to do this. Are there then other good ways of obtaining accurate information on the structure and playing techniques of African instrumental music? — Transcription from film is one of them.

On my research trip to Northern Mozambique in autumn 1962², I was not able to stay longer than a day or two in each village. A large and little known area had to be covered in only a few weeks, and there was no time to learn the music.

In an example of drumming in the *Vimbuza* dance of the Henga of Malawi which I gave a few years ago³, there was a certain pattern for Mohambu II, which theoretically could have been produced in two different ways, giving the same result. But the drummer kept to one of them. Had I not *seen* how he performed the pattern I would never have found out.

Motor images are of primary importance in much of Africa's instrumental music. I believe the research student should attempt to understand them first, and then their inter-related acoustic images. In some cases the latter are nothing but a mere sector of the total complex⁴.

Cases of particular interest are those where silent or "empty" beats are employed, which form — together with the audible part — the factual rhythm pattern that is played.

I have frequently seen "beating in the air" in drumming of the Baganda and Basoga, in playing the *ngoma* hourglass drums of Wagogo women in Central Tanzania and most recently in clapping at *Makisi* (mask) dances of the Vambwella in south-eastern Angola. I also noticed an empty phase in the motor-patterns of the *Tutanga* wooden gongs, secret instruments used at Vambwella boys' circumcision schools. — Numerous other examples must exist in various parts of Africa.

In all these cases the audible part of the action could not exist without its complementary inaudible part, and no one trying to imitate only what enters through the ears, could arrive at a correct impression.

In the present subject of analysis we shall not find silent beats, although in one tune that, regrettably, was only recorded and not filmed, the xylophone players at some points did not strike the keys, but hit their sticks together in the air. Although this is definitely related to the phenomenon described above, the stick beats can, of course, be heard in the recording.

The purpose of this discussion is to make clear that we may *expect* silent beats in African playing, and that is one of the many reasons why a combined study of both the acoustic and the motor aspect of African music is essential.

¹ Portuguese spelling: *Mangwilo*.

² This trip was made possible through research grants by the Institute for the Study of Man in Africa and the International Library of African Music.

³ In "The Phenomenon of Inherent Rhythms in East and Central African Instrumental Music", *African Music*, Vol. 3, No. 1, 1962.

⁴ This was more extensively dealt with in G. Kubik: "Neue Musikformen in Afrika", *Afrika heute*, January 1955.

The Field Work

To secure the motor images of Mangwilo xylophone music we made a series of 8 mm films in slow motion. These "visual recordings" were made at 24 frames per second.

In this paper I transcribe and analyse one of these films. Detailed information on the instrument, the tuning and the general way of playing has already been given in "Recording and Studying African Music in Northern Mozambique"⁵.

The instrument is a log xylophone with a support of banana stems. It has six keys and a seventh reserve key, which was never used for playing, but put aside or used to sit upon. It is tuned to a hexatonic scale and played by two musicians sitting obliquely opposite each other. Player I is called *Opachera* (the starting one) and player II *Wakulela* (the responding one). Each player uses two sticks. The music is purely instrumental. All six items transcribed were performed by the young virtuoso players S. Venjiwa and S. Jenja from the third settlement in the Mitucue mountains near Nova Freixo.

The film was made by Helmut Hillegeist, a member of our three-man expedition to East Africa in 1961/63. The limited duration of shots when using an 8 mm spring driven camera⁶ and our lack of film material at that time was a certain handicap. Only an extract of each item performed could be filmed. Although we tried to encompass the formal character of the music in the placing and length of shots, the section filmed was often a chance segment of the whole musical piece. Fortunately this does not matter very much in a music with comparatively short themes. By comparing the transcriptions from the films with the recording, I could check whether the filmed section was representative of the whole item or not. Usually it was, and often proved to be long enough to cover more than one formal unit, thus allowing us to study variation as well.

The camera was placed on a tripod at an angle where the keyboard of the xylophone and the hands of both musicians were clearly visible, the *Opachera* on the left, and the *Wakulela* on the right. (See Fig. 1). The filming was usually started shortly after the beginning, when the performers were playing at their best. A tape recording of the whole item was made at the same time.

The musicians would often change the order of the slats to fit the motor patterns of the various musical items. Therefore the sequence of scale had to be recorded after each item in order to have a reference for the conversion of the transcribed motor-images into sound. I transcribed the result from left to right viewed from the side of the *Wakulela*. (See indication of the scale in each musical piece of the graphic transcriptions.)

Transcribing from the Film Strips

In the first stage of the work all we attempt to do is to get the exact motor images. We use an 8 mm editor, through which we can run the film, frame by frame⁷.

Now we have to design a coordinate system with a horizontal axis indicating the succession of frames on the film (No. 1, 2, 3, 4, etc.) and a vertical axis indicating the reference number of each xylophone slat (No. 1—6 or 1—5 if only five slats are played).

The slat called No. 1 (see Fig. 2 and the graphic scores) is always the slat at the front end of the perspective (See Fig. 1). The slat numbers only refer to their *position* and not to their actual pitch which, according to frequent changes in the order of the slats is different in almost every piece.

For our coordinate system we use squared paper⁸, joining it in long strips. We make two such coordinate systems running parallel, one for each musician.

⁵ African Music, Vol. 3, 1964.

⁶ I should advise any student who would like to do this sort of field work to get a battery-driven camera, which allows long shots. 16 mm is preferable if it can be afforded, although 8 mm is sufficient to get entirely clear transcriptions.

⁷ I used a Yashika Editor Model II for its comparatively large screen.

⁸ For the final design for printing I took graph paper to avoid wasting space. For the actual work larger samples are more easily handled.

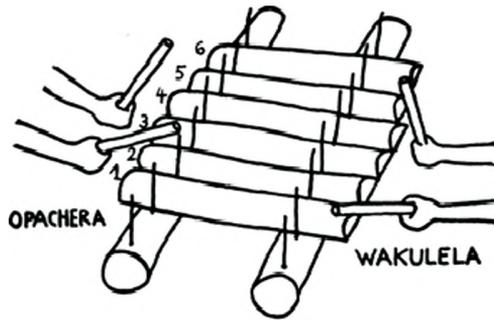


Fig. 1

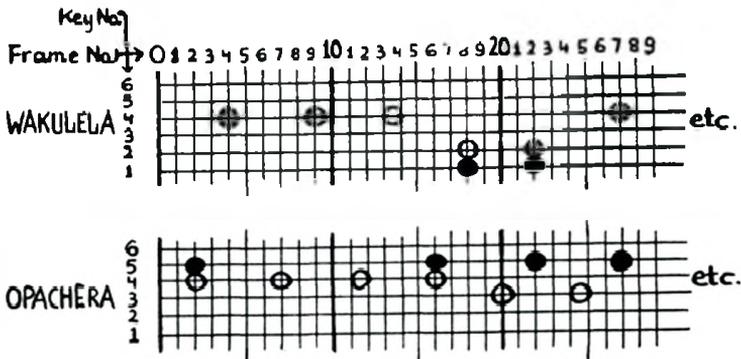
We pass the film through the editor frame by frame and note the actual position of the hands. In a certain frame the player may be striking slat No. 3 with his right hand, while his left hand is still up. In the same frame musician B is perhaps about to strike slat No. 2 with his left hand, while his right hand has just completed striking slat No. 4. All we do is to note the moment when a hand of either musician actually strikes a slat. All right hand strokes are shown by white and all left hand strokes by black dots in the graphic transcriptions.

We cannot expect to have an exact record of every tiny phase of movement at a film speed of only 24 frames per second, particularly in such fast music. In a sequence of frames, we may observe the arm of the player dropping towards a slat, until it almost hits it, but in the next frame it is already rising again. This means that the stroke occurred between two frames and we mark it accordingly between two of the vertical "time" lines. This is not complicated once the transcriber has become used to the interrupted motion of the film. Marking these strokes exactly in the middle of two lines provides sufficient accuracy, since even the fastest pulse in this music lasts from 4-5 frames. The inaccuracy would be as small as an eighth or tenth of the pulse, which is a smaller figure than the natural inaccuracy of playing.

In this context it is perhaps important to mention that tolerance of rhythmic inaccuracy is greater than we might expect. As a rule it increases with the speed of the music. If we look at the graphic scores we can see that the spacing of notes which obviously should form a regular pulse, shows considerable variation. While these notes are *thought* by the musicians to form a regular beat, they can in no way be compared to the regularity of a pulse produced by a machine. We observed a similar phenomenon recently when looking at *sonagrams* of Kiganda xylophone music which were kindly made for us by the Phonogrammarchiv der Akademie der Wissenschaften in Vienna. — Divergencies from rhythmic regularity in these types of very fast music are hardly noticed by listeners or players.

At the end of this article there are graphic transcriptions of seven *Mangwilo* xylophone pieces. Although the graphic notation shows much more clearly than conventional notation what happens in this music, I have nevertheless transferred the graphic scores into staff to help the reader who might not be accustomed to the graphic notation. (See Part II of the transcriptions.) Sometimes only an extract has been transferred. Which extract it referred to is marked by angular parentheses in the graphic scores.

Transferring graph into ordinary notation involved typical problems when writing down African music. The graphic notation is neutral as far as metrical conception is concerned; but in conventional notation one has to include phrasing and this may easily inspire wrong thinking of the flow of the music. If we write down each hand separately, the resultant melody made up of both left and right hand notes may be completely disguised. And if we treat the notes as a continuous melody, regardless of which hand plays which note, we may lose sight of the fact that each player *also*



TRANSFERENCE INTO STAFF :



Fig. 2

EXAMPLE OF TRANSCRIBING FROM THE FILM STRIP

Xylophone Piece No. 1

appreciates each hand's part as a separate line. Even the plain fact that one hand usually plays a steady pulse may be obscured. I decided to balance between these two extremes of notation and use "melodic" notation where melodic content is emphasized (occasionally in the *Wakulela's* part) and separate left and right hand notation where the emphasis lies there. If, from the "melodic" notation, the reader should be unable to decide which hand plays which note, he may look up the graphic scores where the motor images are shown exactly.

With each graphic transcription there is a reference, showing the arrangement of the xylophone slats looking from left to right from the side of the *Wakulela*.

The Tuning of the Slats

In the items transcribed the musicians used six, though sometimes only five, slats which were tuned to the following v.p.s. as measured by the Rev. Dr. A. M. Jones with a Stroboconn in the School of Oriental and African Studies, London:



Fig. 3

We finally decided to notate the above scale in the key of B flat. The v.p.s. indicated above are actually relative pitches, because the tape recorder was running approximately 70-80 cents too slow. This amount should be subtracted from the figures to obtain the absolute values. The tuning of the seventh or reserve slat (not used in these performances) was 604.3 v.p.s. It was in unison with slat No. 4 in the above scale at 603.6 v.p.s. This difference of only 0.7 vibrations between the two slats shows how very carefully the musicians must have tuned their instrument.

An hypothesis on the nature of this scale was offered in the last Journal⁹. Another observation which might eventually provide an explanation of the character of this scale is that the notes of the *Mangwilo* come very close to the location of some of the remotor upper partials of the natural harmonic series. This becomes apparent, if we compare the present *Mangwilo* xylophone scale to the natural acoustic scale that arises if we string the upper partials in a line showing their position relative to each other. This is done in the following graphs. We should first like to give a *table reference of to the acoustic scale* by converting the v.p.s. of the harmonic series into cents values.

Harmonic			Harmonic		
No.	Cents	Cumulative Cents	No.	Cents	Cumulative Cents
8	231	1200	16	112	1200
7	267	969	15	119	1088
6	316	702	14	129	969
5	386	386	13	138	840
4	498	1200	12	151	702
3	702	702	11	165	551
2	1200	1200	10	182	386
1	0	0	9	204	204
TOTAL (four octaves)				4800	

In the following comparison we relate the key notes of both systems to each other. The key note of the *Mangwilo* xylophone is the lowest (biggest) note of the keyboard (in our scores transcribed as B flat).

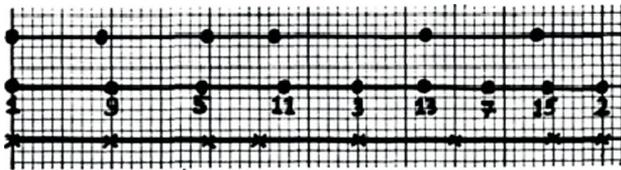


Fig. 4

Triple-division type interlocking

Analysis of the Music

Mangwilo music belongs to the "interlocking style" of xylophone playing, so prominent in various parts of East and Central Africa. This means that the players sitting opposite each other do not feel one meter held in common, but each of them feels that his own beat or pulse is the basis. These two "individual pulses" interlock. To get the music started, the second musician (*Wakulela*) has to "fall in between" the pulse of the first one (*Opachera*) and at the same moment start thinking of his own pulse as the basic one. In "interlocking style" music each of the two players interprets the pattern of the opposite one as "off beat" and his own as "the on beat".

All seven items transcribed belong to the *duple-division type* of interlocking beats (or "Amadinda-type" interlocking) as we would suggest calling it. Another well-known interlocking method in East and Central Africa is the *triple-division type* (or "Akadinda-type") interlocking. It seems to be absent in *Mangwilo* music. At least we have not found a single example so far. The absence of this second interlocking type is the more strange as it occurs in all the neighbouring areas: in Tanzania, Malawi and in Zambia, where it was originally discovered and described by the Rev. Dr. A. M. Jones.

⁹ In "Recording and Studying African Music in Northern Mozambique".

In comparison with other xylophone music of East Africa, the *Mangwilo* interlocking method comprises a remarkable novelty for us: *Opachera and Wakulela interlock with only one hand.* (The unique exception to this rule can be found in item No. 4). Normally the player's *right* hand plays the interlocking equi-spaced note series¹⁰, while the left hands play rhythm patterns which we could call superimposed patterns or over-rhythms.

There seems to be no *single* structural principle of rhythmic combination which is compulsory for all tunes, as is the case in the xylophone music of the Baganda. Although the characteristics pointed out above are binding in this music, many basic structural variants occur from tune to tune, as in the seven examples transcribed. In items Nos. 1, 2, 6 and 7 both *Opachera* and *Wakulela* play the interlocking pulse with their right hand, while the left hand plays over-rhythms to the respective musician's own pulse. In item No. 5 the *Wakulela* plays his pulse as usual with the right hand, but the *Opachera* plays it with his left hand, and the over-rhythm with his right one, thus reversing the normal habit.

An outstanding example in many respects is No. 4. Here the *Opachera* plays his beat with both hands. The *Wakulela* temporarily does the same and at other times puts the notes in between the *Opachera's* pulse. At first glance it may appear that this is a marvellous display of both types of interlocking being employed in one and the same tune, but this does not hold true. The *Wakulela's* notes seen between frame 49 and 63, as well as throughout the second theme do *not* triple-divide the *Opachera's* beat. All notes in the *Wakulela's* part that represent his pulse duple-divide the *Opachera's* beat. Which, then, is the *Wakulela's* pulse?

In the B theme of this item it is all on the left hand notes. In the A theme — for the first four strokes — it is on *both* right and left hand notes; in the following three "double-notes" (from frame 49 to 63) it is the *left* hand notes that carry the beat, and after that the last beat is taken by the *right* hand (frame 68). I think the best way to understand this would be for the reader to take the trouble to tap out this pattern for himself on the table.

In the following illustrations one can detect the essential conceptual difference between the triple-division type of interlocking and the other type present in the B and in parts of the A theme of score No. 4, which is a duple-division type. We have marked all notes on which the beat is felt by the figure 1.



Fig. 5



Fig. 6

In the triple-division type the second player feels his beat on what appears in this notation as the *longer note* of his two note pattern, while in the duple-division with dragged second pulse (Fig. 6) it is the *short note*. "Long" and "short" are, of course, only auxiliary terms used here to show the reader which note is referred to. The African musicians do not think in terms of "long" and "short" notes, but in terms of "*spacing notes apart*", which means that the important notion in African rhythm is not the length

¹⁰ = a series of notes being equally spaced apart. A beat or pulse. I formerly used the term "isorhythmic series of notes" for this, which may, however, be confused with "isorhythm", which is quite another thing.

of notes, but the *distance* between their starting points. The basic idea is accentual rather than durational.

The practical way of playing theme B in score No. 4 is this: The *Wakulela* regards his left hand notes as the pulse and divides the beat of his opponent into half. His right hand plays a series of *retarded notes*, which "hang behind" the beat notes. By this technique he produces a sort of "double beat" consisting of the real beat and dragged or retarded notes which follow shortly behind the beat notes. This is one of the more subtle techniques of African rhythm production and is very widespread in Southern and Central Africa. It is, of course, not restricted to xylophone playing. I have recorded it many times, for example in the Likembe music of south-eastern Angola, in the drumming of various places in Central Africa and in the guitar music that we recorded in Northern Mozambique on the Malawi border. Here the bass note of the guitarist was a steady pulse followed by a series of *slightly dragged* notes in the upper register, which formed a sort of second pulse. The enjoyable result of this was that you were always in danger of being thrown out of your rhythmic conception by taking the dragged pulse as the real one, which of course, was an illusion, since the musician referred his vocal part to the bass notes. The upper second pulse thus lagged behind both bass notes and vocal part in a very subtle manner.

The important fact to understand when playing dragged or retarded notes is that these notes are literally felt to "lag shortly behind" the real pulse, and *not as standing on any definite point of division* of the basic pulse. In other words you do not count. You just play the dragged note almost simultaneously with the pulse but with a little delay. A certain control is, however possible through the fact that your beats have to give the resultant rhythm shown in Fig. 6 in combination with your partner's part. If you delay the retarded notes *too much* you will get the following resultant rhythm:

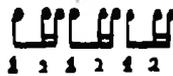


Fig. 7

Then you know that you are not playing your part correctly.

This important point of conception is disguised by the European notation system. To make it clearer I would like to notate the same thing in two different ways.

You do not think of a "double beat" like this:



Fig. 8

But you think it to be rather like this:



Fig. 9

Here and in future we shall use the symbol of a horizontal arrow crossing the note stem, to indicate that the note in question does not exactly coincide with the pulse. The arrow also indicates the *direction* of displacement. (We shall return to these important techniques in African rhythm a few paragraphs further on).

Another interesting playing technique can be found in score No. 3. The *Opachera* plays alternate phrases, where the beat is at first in his right hand and then in his left. I think it would be idle to explain this most playful motor pattern in theoretical terms. Try to tap out for yourself what is shown in parentheses under *Opachera*. You will immediately discover the "point". If you have no xylophone make yourself a "keyboard" by drawing six xylophone slats on paper. Now put it on the table and beat the pattern as if you were playing a xylophone.

Example 3 is only another demonstration of how important motor-images are in African instrumental music. That is one reason why it is so much more enjoyable to play African music than merely to listen to it.

If we look generally at what *Opachera* and *Wakulela* do, we see that they have different musical functions, as is the case with most other African xylophone music played by more than one person. "*Opachera*" was translated to me as "the starting one", and "*Wakulela*" as "the responding one". Musically it means that the *Opachera* plays a basic part and the *Wakulela* a contrasting part combining with it.

The *Opachera* has a number of basic motor patterns at his disposal which are not restricted each for one composition only, but may be used in identical or similar form in various compositions.

A motor pattern well-known all over Africa appears in No. 5: (See Fig. 10). In item No. 1 this pattern has a nice extension yielding a rather large formal entity. (See the



Fig. 10

scores). But the most interesting version of the above motor pattern is the one in item No. 6. There is no doubt: two notes which we would expect to sound simultaneously are beaten slightly "double". When this happens the left hand beat is a split second before the right hand beat. We would have been inclined to overlook this as a playing inaccuracy, if it did not regularly occur every other bar. Although there is admittedly plenty of playing inaccuracy in *Mangwilo* music as a result of that enormous speed, I think it is not too difficult to discover from an analysis of both film and tape, what is accidental and what is intentional. In the present case it seems that the simultaneous beat at frame 159/160, which only occurs once in seven repetitions is the accidental one and not the reverse.

We discovered the same pattern only a few months ago with the Vambwella of south-eastern Angola, where it has the onomatopoeic name "*Mu chana cha Kapekula*" (In the river meadows of Kapekula). There it is used as an accompanying stick pattern both in Likembe music and in music of the drum set *Tumboi*.

Fig. 11 shows this common motor pattern. The arrow shows the note to be displaced and the direction:



Fig. 11

But the reader may now ask an important question: *how much* ahead is it played? The only answer I can offer is "a little". Just consider the speed of this music! At 320 m.m. nobody can divide his pulse by five or six and then count these divisions. If we look at the graphic scores we can see that the value of displacement from the main pulse fluctuates between 1/5-1/6 part of a crotchet. It is never so large as to make the note fall on one of the common divisions of beat either by three or by four.

The displaced note in item No. 6 is the reverse of what we described above as dragged or retarded notes: here we have an *anticipated note*. The practical way of playing it — You keep on with your regular right hand pulse and play the note in question slightly before your right hand stroke, but you think of this "double stroke" as if it was (almost) simultaneous. The space between the two successive notes has to be extremely narrow.

The occurrence of dragged and anticipated notes is one of those factors which gives African music a sort of irridescent quality, causing hallucinative aural phenomena from a certain state of addiction onwards. Not long ago we experienced another of these factors: the gestalt-psychological phenomenon of inherent rhythms, which however is, not pronounced in *Mangwilo* music. Although inherent rhythms can be found in some passages, the major outcome of the combination in such music is *resultant* rather than inherent melo-rhythmic lines.

In item No. 7, we meet another well-known motor pattern, which I believe could be called the *pan-African bimetric formula*. It is known in many parts of East, Central and West Africa. Two equi-spaced note series are combined in the relation 2:3. Another interesting pattern used by the *Opachera* can be studied in item No. 2.

A complete analysis of the *formal* characteristics of the present material is not claimed since, as I have said, these scores only represent extracts of performances that lasted 2-3 minutes. It is certain that a number of variations have not been included in these transcriptions, although I believe that what happens in the music is fairly well represented. Had we been able to film the complete items and transcribe everything in extenso our gain would have been little compared with the enormous effort of writing it down. Nevertheless, it is possible that some of the present transcriptions are fragmentary in the sense that an important variation, or even a third or fourth theme, may not be represented. For this reason we must restrict ourselves to what is present in the scores.

We can claim that many *Mangwilo* tunes contain more than one theme, or motif. No. 1 and No. 4 have two clear themes. No. 1 is of special interest, because it shows that *Mangwilo* compositions need not necessarily be short, as one would expect. The first theme covers no less than 40 beats of the basic pulse, and the second theme 32, making a total of 72 beats for the entire formal complex. Compared with this, item No. 4 is short with only 8 beats for each theme.

In No. 8 we were not sure whether to call the three different patterns in the *Wakulela's* part "themes" or "motives". The filmed section was unfortunately too brief to obtain a clear picture. We would still like to know in which way the three patterns were repeated, perhaps A + A + B + B + A + A + C.

In No. 6 the *Opachera* does not change his basic pattern, while in No. 1 both parts share in the development of two themes.

No. 3 has only one theme, as far as I can hear from the recording, but there is some variation. In No. 2 and No. 7 there is plenty of variation. Here again it is a question of terminology, whether to speak of a second theme or of a variation. No. 5 has only one theme, which is repeated with little variation.

As to the melodic scope of the two parts, in most cases neither of the two players makes use of all the slats. Each player is restricted to a certain "area", which corresponds with the tendency of *Mangwilo* players to sit obliquely opposite each other. The areas

No. I

WAKULELA

OPACHERA

0 10 20 30 40 50 60 70 80

90 100 110 120 130 140 150 160 170

180 190 200 210 220 230 240 250 260

270 280 290 300 310 320 330 340 350

360 370 380 390 400 410 420 430 440

450 460

Key No. 1 2 3 4 5 6

of playing vary, however, from tune to tune. There is no binding system which would determine the melodic scope of each part, such as we found in Kiganda xylophone music.

Here is a comparison of the "areas" for all seven items:

♩ = 320 M.M.

No. I

WAKULELA

OPACHERA

..... (Fragment of) THEME I

THEME II

THEME I

THEME II

Slats used by each player

	<i>Opachera</i>	<i>Wakulela</i>	
Item No. 1	3, 4, 5, 6.	1, 2, 3, 4.	
No. 2	3, 4, 5, 6.	1, 2, 3, 4.	
No. 3	2, 3, 4, 5.	1, 3, 4, 5.	
No. 4	1, 2, 3, 4, 5.	Theme A: 1, 2, 3, 5.	Theme B: 2, 3, 4.
No. 5	1, 2, 3, 4, 5.	1, 2, 3, 5.	
No. 6	4, 5, 6.	1, 2, 3, 4.	
No. 7	3, 4, 5, 6.	1, 2, 3, 4, 6.	

Melody in Mangwilo is mainly a *resultant* phenomenon. Each part taken by itself does not show much melody, but the two combined usually yield very attractive melodies as can be seen for example in No. 4.

As to the question of *harmony* we observe some striking facts:

(a) Any of the notes of the instrument may be played together. Both two-note

No. II

0 10 20 30 40 50 60 70 80

WAKULELA

OPACHERA

90 100 110 120 130 140 150 160 170

180 190 200

Key No. 1 2 3 4 5 6

No. III

0 10 20 30 40 50 60 70 80

WAKULELA

OPACHERA

90 100 110 120 130

Key No. 1 2 3 4 5

evident playing inaccuracy

chords and triads occur. There seems to be no system prescribing that certain notes only should be played with certain others, as is the case in much African music, where consonant sounds are clearly aimed at. The form-producing elements in this music are rhythm and melodic progressions rather than harmony.

No. II

WAKULELA: 

OPACHERA: 

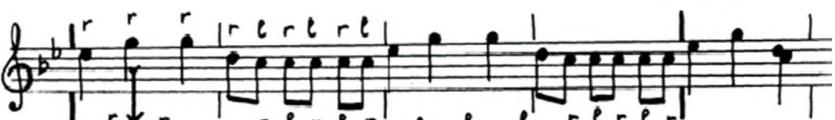
 Basic pattern

 Basic pattern

$\text{♩} = 310 \text{ M.M.}$

No. III

$\text{♩} = 300 \text{ M.M.}$

WAKULELA 

OPACHERA 

Resultant melody: 

 etc.

* This note is frequently replaced by E_b .

But *tonality* is clearly established. If we observe the hand of the *Opachera* which plays the pulse, we notice a tendency to adhere to a repetition of *one ostinato note* that establishes the tonal basis of the tune. This is the case in No. 4, 5 and 6. In No. 1, 2 and 7 there are a few progressions to side-notes, notably the third.

No. IV

WAKULELA

OPACHERA

REPETITIONS

REPETITIONS

Key No. 1 2 3 4 5

No. V

WAKULELA

OPACHERA

Key No. 1 2 3 4 5

NOTE: The original transcription of this item comprises 414 frames. We have decided to publish only an extract, because the *Wakulela* very often omits his left hand part in order to have a free hand for pushing back the xylophone slats that slide out of position. Moreover, the *Opachera's* part is repeated throughout.

These, however, do not contradict the firmly established tonality. The only exception seems to be No. 3 where both players have "melodic" patterns, but here again there is a clear tonality in the resultant combination.

The establishment of tonality is also supported by the *Wakulela's* part, which often adheres to the same ostinato note in his interlocking pulse.

No. IV ♩ = 230 M.M.

WAKULELA

OPACHERA

Resultant melody:

No. V ♩ = 320 M.M.

WAKULELA

OPACHERA

Resultant melody:

The tonal basis or repeated key note in all compositions is the lowest note of the range; thus it is B flat where six keys are used, and C where there are only five.

(b) Although any note may be played with any other note, we notice that preference

No. VI

0 10 20 30 40 50 60 70 80

WAKULELA

OPACHERA

90 100 110 120 130 140 150 160 170

180 190 200 210 220 230 240 250 260

etc.

etc.

Key No. 1 2 3 4 5 6

No. VII

0 10 20 30 40 50 60 70 80

WAKULELA

OPACHERA

90 100 120 130 140

Key No. 1 2 3 4 5 6

Key No. 1 2 3 4 5 6

seems to be given to *seconds*. There are also some instances of parallel seconds in the scores. (See item No. 1 and 2).

This is a strange fact, which can also be observed in the vocal music of Northern Mozambique, and was confirmed by Mrs. Margot Dias in a private discussion between us in Lisbon. Mrs. Dias made this observation during extensive research which she carried out in 1957/58 among the Wamakonde, and also among other tribes of Northern Mozambique.¹¹

¹¹ A work in *two* volumes on the Wamakonde is being published by Prof. Dr. Jorge Dias and his wife.

No. VI ♩ = 310 M.M.

WAKULELA

OPACHERA

Basic pattern

Motif II

*)

Basic

etc.

pattern

Motif III

No. VII M.M. = ♩ 330

WAKULELA:

OPACHERA:

c.H.

n.H.

Basic pattern

Variations

Variations

Basic pattern

etc.

etc.

Basic Pattern

We have tried to show in this paper a new method of research in practice and the results obtained. In the four years that have passed since recording in Northern Mozambique I have made similar analytical films with a better camera in other parts of Africa, and with other instruments such as the *Likembe* and drums. It is a quick method of preserving African instrumental music at a time when action is needed more than anything else.