# RHYTHMIC DESIGN IN THE SUPPORT DRUMS OF AGBADZA

*by*
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The Ewe percussion music of Ghana is one of the African musics best understood in structural terms at this time, due to the efforts of a number of researchers. Some of the most important studies are those of Jones (1959), Nketia (1963, 1975), Koetting (1970), Ladzekpo (1970, 1971), Pantaleoni (1972 a,b,c,d), Fiagbedzi (1977), and Locke (1979, 1981). Despite this, the number of pieces which have been presented in some kind of depth is small and encompasses *Nyayito, Husago, Sovu, Sogba, Adzida, Agbadza,* (all in Jones 1959), *Atsia* (Pantaleoni 1972 a,b,d), *Atsiabeko* (Locke 1979) and *Takada* (Ladzekpo 1970).

The aim of this paper is to further this accumulation of stylistic information by a detailed analysis of support drum characteristics in the Ewe music *Agbadza*. Enough data are analysed to make suppositions about general guiding principles which appear to operate in this music.

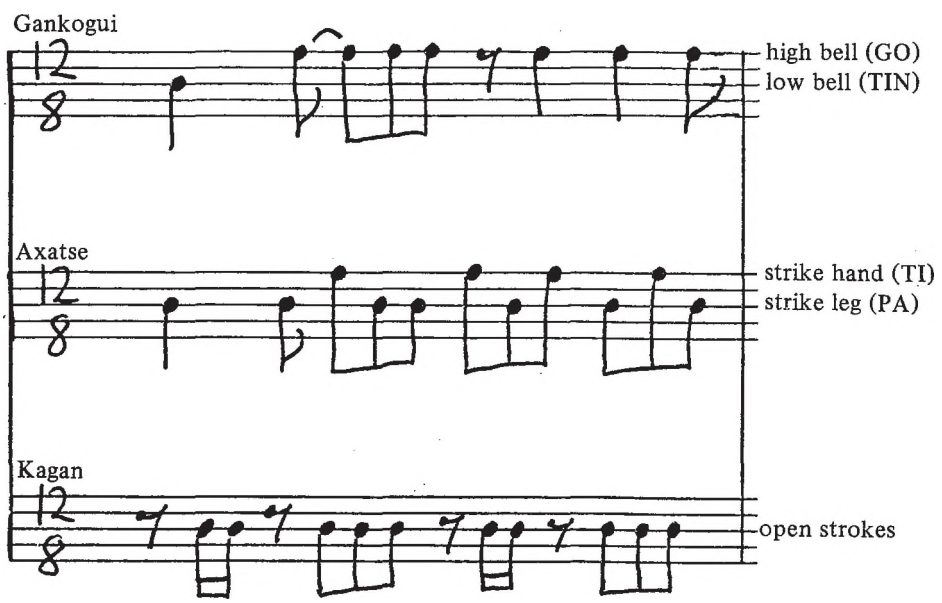
The source of these patterns is primarily my personal study with Ewe master drummer C.K. Ladzekpo, who lives in Berkeley, California. All the patterns were transcribed from performances or demonstrations by African music ensembles led by Mr Ladzekpo. This is then a different context from the only other published work on *Agbadza*, that of Jones (1959), where patterns were transcribed only in relation to the single bell pattern, and not as part of the full Ewe orchestra. This distinction may be rather important, because the patterns presented here differ in a number of minor details from those found by Jones in his work with master drummer Desmond Tay. Yet it is also true that *Agbadza* is a widely known piece and has a number of possible variants, depending on geography and particular master drummer. In fact, Mr Ladzekpo distinguished two forms: *Agbadza Kpoka* and *Agbadza Ageshie*, with the first set at slower tempo than the second, each form having its own extensive and distinctive repertory of support and lead drum patterns. Jones does not draw such a distinction, but the support drum patterns he gives, though only four in number, seem more like those I observed as part of the *Ageshie* form. However, performances I notated were primarily of *Agbadza Kpoka*, and the given examples are, to the best of my knowledge, appropriate to that form.

## The orchestra and its fixed rhythmic elements

The instruments of *Agbadza* are the double bell *gankogui*, the rattle *axatse*, the stick drums *kagan* and *kidi*, and the lead drum *sogo*, played with the bare hands. The instruments have been described previously in the literature (cf. Jones 1959 or Ladzekpo 1970) and the full detail will not be repeated here. It is important for the purposes of this article to note, however, that all the instruments have at least two

distinct tones or states, allowing a rhythmic pattern to be a registral melody.[1] That is, the *gankogui* has two bells of different pitch, the *axatse* is struck either against the leg or the hand, and the two stick drums may be struck with either bounce (open) or mute (press) strokes. Mute strokes are much quieter and less penetrating than bounce strokes, and normally serve a time-keeping function not strongly audible in the context of the full ensemble. In *Agbadza* the mute stroke capacity of *kagan* is not used, and all strokes are open, whereas the drum *kidi* plays various patterns of bounce and mute strokes. The lead *sogo* has a number of different strokes available, similar to those described in Pantaleoni 1972a, but the patterns of this drum are not examined here.

In *Agbadza Kpoka* an unvarying rhythmic background is provided by *gankogui, axatse* and *kagan*, which is most correctly (in Ewe terms) conceptualised in 12/8 time, with four beats per cycle (Locke 1979; C.K. Ladzekpo, personal communication), in the following manner:




Mnemonics are given for the different tones of *gankogui* and *axatse.*

The drum *kidi*, on the other hand, changes patterns fairly frequently in response to signals from the lead drum. In Table I, 15 such *kidi* patterns are given. The table contains all the *Agbadza Kpoka* patterns I was able to record; there has been no preselection.

1. By the term 'registral melody' is meant a melody based on approximate relative pitch relations. The tones making up such a melody can be consistently ranked in order of register, but the intervals between them are not consistent in size over time.

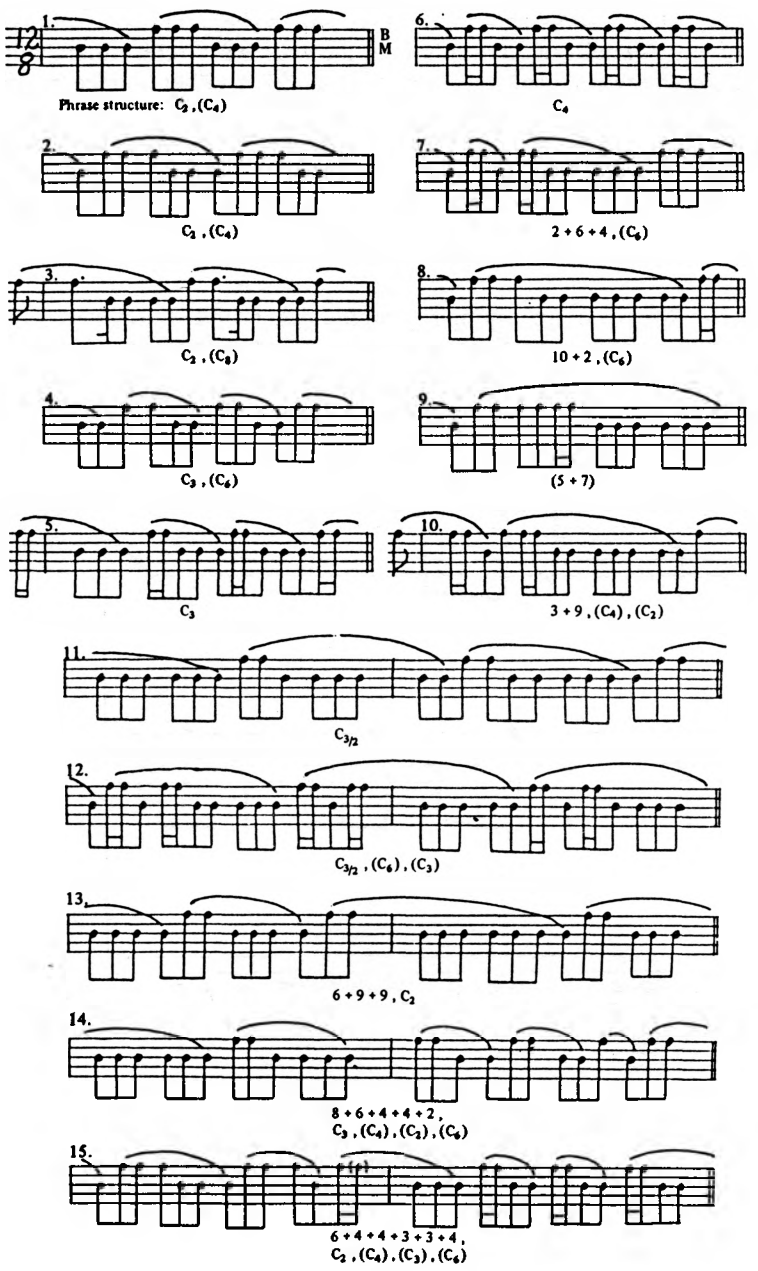



Table I: Support drum *(kidi)* patterns in *Agbadza kpoka*. B = bounce, M = mute.

Now all the parts of the ensemble are considered to be conceptualised in relation to the *gankogui* pattern (Jones 1959, Locke 1979, C.K. Ladzekpo personal communication), which functions as a time-line. The kind of relation that each member has to the time-line varies considerably, however. As has been noted by previous writers, the relation of *axatse* to *gankogui* is one of reinforcement and filling-in, since the strokes on the leg (*PA* mnemonic) coincide exactly with the bell strokes, while the strokes against the hand (*TI* mnemonic) fill in every other 8th note of the cycle except the second.

To understand the relation of *kagan* to the time-line, it is necessary to note that the *kagan* pattern consists of one phrase made up of the sub-phrases  and  , repeated twice. It is the starting points of these subphrases that show the clearest relation to *gankogui*. In the first phrase statement, the subphrases begin between bell strokes, while in the second phrase their beginnings coincide with bell strokes. Also, *kagan* plays its first stroke of the cycle in the only 8th note gap left by *gankogui* and *axatse*. Hence the relation of *kagan* to the time-line may be described as interpolation or quick call-and-response in the first half of the cycle, and reinforcement in the second half.[2]

### Analysis of *kidi* patterns

The following concepts seem appropriate to a detailed analysis of the patterns of table I:

- **Constituent elements**
- **Sticking**
- **Phrase structure**
- **Polyrhythmic sampling**
- **Tonal structure**
- **Relations to time-line**

They will be examined in turn.

The **constituent elements** of the *kidi* patterns are few in number. There are always at least 12 strokes per cycle, the note values  and  overwhelmingly predominate and there are no rests. This is typical of *kidi* patterns in other pieces as well (e.g. Jones 1959, Fiagbedzi 1977, Locke 1979).[3]
These strokes combine to produce strings with the following characteristics (see table at top, p. 8).

The  and  strings may be juxtaposed to achieve up to 6 successive bounce strokes, whereas the 7 stroke limit of mute  strokes is not supervened by the use of s. Averaged over all the patterns, bounce tones sound 85/240 or 35% of the time,

2. It is also of interest to note that the sticking of the pattern is | ϒ R L ϒ R L R |, so that the right hand plays a $C_6$ cycle (see below).
3. Rests occur very occasionally, but apparently not in *Agbadza*.

| String element | Element incidence | String length and description |
|---|---|---|
| ♪ bounce stroke | 59 | 1 to 4 ♪ ; (4 ♪ rare) |
| ♬ bounce stroke | 46 | 2 ♬ only; always beginning on a ♪ pulse. |
| ♪ mute stroke | 154 | 1 to 7 ♪ |
| ♬ mute stroke | 2 | 1 ♬ only; only found in pattern 3 |
| ♪. bounce stroke | 2 | 1 ♪. only; only found in pattern 3 |
| | 263 | |

whereas mute tones sound 155/240 or 65% of the time. No pattern contains more than 50% bounce strokes or has bounce strokes sounding more than 50% of the time.

The **sticking** of the *kidi* patterns taught by Mr Ladzekpo seems to be understandable on the basis of the following rules:

(a) Use alternate sticking whenever possible unless this requires that successive identical phrases will be sticked differently. This issue only occurs in the presence of the unit  , which is accordingly sticked RLL (e.g. pattern 5) or RLR (e.g. pattern 6), to allow musical and kinesthetic recurring phrases to coincide. The first sticking is more common.

(b) Choice of parity of sticking is determined from the predominant bounce note string(s); they are sticked so as to give as many bounce strokes as possible to the strong (normally right) hand. If there is no difference, sticking is chosen so as to begin the predominant bounce note strings with the strong hand. In the *Agbadza* patterns given, this second case always obtains.

To illustrate, the sticking for some representative patterns is given, beginning with the first indicated stroke in Table I in each case.

| Pattern number | Sticking |
|---|---|
| 1, 2 | L R |
| 4, 14 | R L |
| 5 | R L L R L |
| 6 | L R L R |
| 9 | L R L R L R L L R L R L R |
| 12 | L R L L R L L R L R |

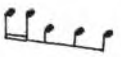
(The ⌣ symbol here refers to 16th notes)

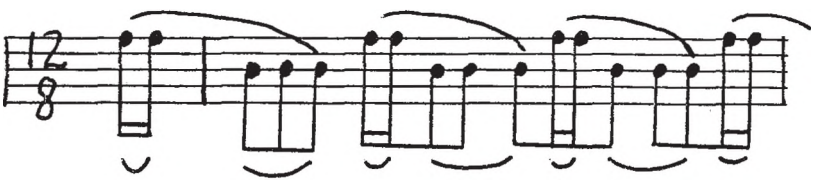
## Phrase structure

Central to an analysis of *kidi* patterns is the issue of phrasing. This may be approached by an examination of criteria for identifying the starting points of phrases. A number of possibilities suggest themselves:

(a) phrases start at every change of tone
(b) phrases start at every bounce stroke forming part of a mute-bounce (MB) boundary
(c) phrases tend to coincide with the felt 4-pulse
(d) phrasing follows the usage of repeating sub-units.

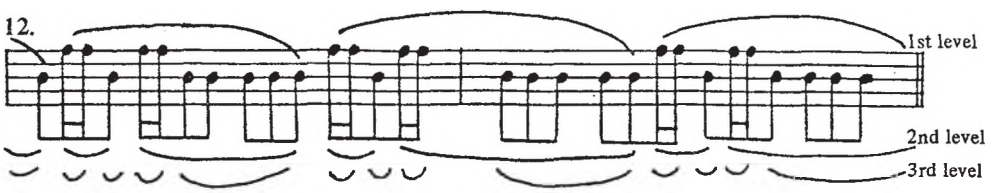
The way I was taught suggests the basic validity of (b) and (d) as criteria for phrasing, with further detail of subphrasing resolved by the use of (a).

The interaction of these two or three criteria may be considered to produce a hierarchy of phrasing two or three layers in depth. For example, pattern 5, the starting pattern for *Agbadza*, consists of the phrase  repeated three times, which constitutes the first level of phrasing; a second is formed by the partitioning of each phrase into bounce (  ) and mute (  ) strokes. These may be indicated as follows:



So here criteria (b) and (d) delimit the first level and criterion (a) articulates the second. This is the normal situation and applies to most of the *kidi* patterns.

Three levels of phrasing are found in a few patterns, such as number 12. This may be indicated as follows:




Here criteria (b) and (d) determine the first level of phrasing, criterion (b) the second, and criterion (a) the third. (First level phrasing for all patterns is indicated by slur marks in Table I).

The following distribution of (first level) phrase lengths is found to hold:

| Phrase length in ♪s | Incidence |
|---|---|
| 1 | 0 |
| 2 | 3 |
| 3 | 7 |
| 4 | 12 |
| 5 | 0 |
| 6 | 10 |
| 7 | 0 |
| 8 | 7 |
| 9 | 3 |
| 10 | 1 |
| 11 | 0 |
| 12 | 1 |
| | 44 |

Considered this way, all phrase lengths except 1, 5, 7 and 11 occur. This provides interesting support for earlier work (Pressing, in press) which singled out these lengths as having special properties in 12/8 meter on cognitive-mathematical grounds.

Related to this distribution of phrase lengths is the pervasive influence of polyrhythm based on the division of one *gankogui* cycle into 2, 3, 4, 6 or 8 parts, or the division of two cycles into three parts. These will be referred to here by the labels $C_2$, $C_3$, $C_4$, $C_6$, $C_8$ and $C_{3/2}$, respectively. All except $C_4$ stand in polyrhythmic relation to the fundamental 4 pulse. These polyrhythmic cycles may start at any of the 12 ♪s of the cycle, and the use of displaced starting points is widespread. Some pertinent information is summarised in Table II, opposite.

Several entries in the column labelled 'number of distinct starting points' require a little further commentary. The cases of $C_6$, $C_4$, $C_3$ and $C_2$ are, I think, clear enough. $C_8$ has three distinct starting points since there are three semiquaver positions in the repeating unit. (Only the $C_8$ which synchronizes with the ♩. pulse is at all common). $C_{3/2}$ and $C_{3/4}$ might have been expected to have 8 and 16 possible starting points respectively, but the starting points here are defined **in relation to the gankogui cycle**, rather than the phrase, so that one must divide these numbers by the number of cycles (8÷2, 16÷4) to obtain four in each case.

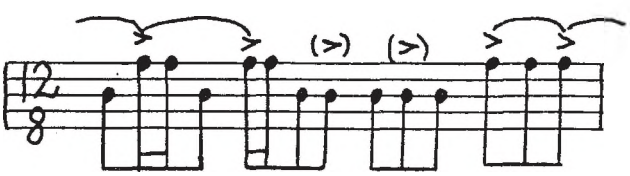
Considered in this way, patterns 1, 2 and 3 are examples of $C_2$, patterns 4 and 5 are examples of $C_3$ (pattern 4 also exhibits $C_6$), pattern 6 articulates $C_4$, and patterns 11 and 12 belong to $C_{3/2}$. $C_8$ is not full articulated by any pattern here, but this may be due to the restricted number of *kidi* patterns examined, as it occurs occasionally in other pieces with the same bell pattern (e.g. *Afavu*, cf. Fiagbedzi p.458).

The remaining patterns 7, 8, 9, 10, 13, 14, 15 have basically additive (unequal) phrase structures, but most of them are organised to simultaneously *sample* one or more polyrhythmic cycles. By **polyrhythmic *sampling*** is meant that enough of the

| Cycle label | Repeating unit length in ♪ s | Number of distinct starting points in relation to *gankogui* cycle | Perceived polyrhythm in relation to ♩. pulse |
|---|---|---|---|
| $C_8$ | 1½ = ♪. | 3 | 3:1 |
| $C_6$ | 2 = ♩ | 2 | 3:2 |
| $C_4$ | 3 = ♩. | 3 | (1:1) |
| $C_3$ | 4 = 𝅗𝅥 | 4 | 3:4 |
| $C_2$ | 6 = 𝅗𝅥. | 6 | 1:2 |
| $C_{3/2}$ | 8 = 𝅝 | 4 | 3:8 |
| $C_1$ | 12 = 𝅝. | 12 | 1:4 |
| $C_{3/4}$ | 16 = 𝅝𝅝 | 4 | 3:16 |

Table II: Properties of Polyrhythmic cycles
(The $C_{3/4}$ cycle — 4 *gankogui* cycles divided into three equal parts — has been included for interest although to the extent of my knowledge it does not occur in *Agbadza*. It is found in the piece *Azenu*, however) (C.K. Ladzekpo, personal communication).

accents of a particular cycle are articulated in such a way, as to allow it to be perceived. For example, pattern 7 samples 4 attacks of $C_6$ as indicated:

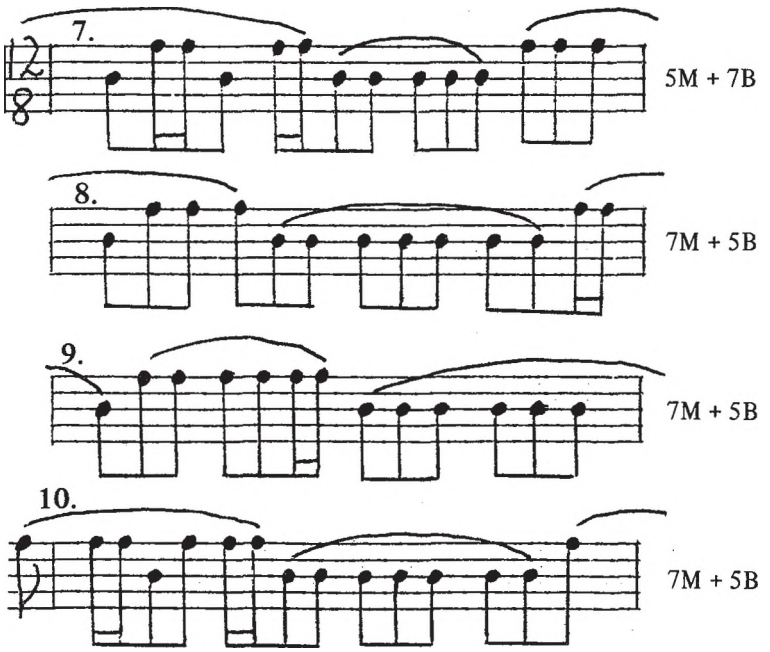



This idea has been mentioned previously by Locke (1979) in slightly different terms.

In Table I exact polyrhythm is indicated by $C_n$, sampling by $(C_n)$, and additive phrasing by arabic numerals. As may be seen, virtually all the patterns, whether fundamentally additive or divisive in character, sample other polyrhythmic cycles. This promotes what has been termed by Locke multiple rhythmic gestalt (Locke 1979) and is apparently a crucial aesthetic component of Ewe music.

The additive patterns deserve special comment. Those of one bell cycle in length (numbers 7, 8, 9, 10) all have the following make-up: a relatively long run of mute

strokes followed by a string composed almost entirely of bounce strokes. If we consider phrasing these patterns on this basis for the purposes of comparison, all the patterns turn out to be examples of a 5+7 structure. To be specific, this conception of phrasing looks as follows:




This is of interest for at least two reasons:
(a) the bell pattern is usually considered to be a 5+7 structure, viz.

(b) it fits well with the notion of 'bisection' proposed by Jay Rahn (Rahn 1978), an idea which points to the essential similarity between exactly equal and approximately equal partitioning of a cycle.

Patterns 13, 14 and 15 show considerable sophistication of rhythmic design. In number 13, the first 'bar' articulates $C_2$, while overall the rhythmic design is 2 ♩. + 3 ♩. + 3 ♩., a nearly equal partitioning of 8 ♩. pulses. Number 14 contains a pattern of steadily decreasing phrase lengths, and at the same time articulates or samples 4 different polyrhythmic cycles. $C_3$ is stated by bounce strokes on ♪'s 1, 5 and 9 of 'bar'

2, $C_4$ is implied by bounce strokes on ♪'s 6, 9 and 12 of bar 2, $C_2$ by ♪'s 7 and 8 of bar 1 and 1 and 2 of bar 2, and $C_6$ by the alternation of bounce and mute strokes on ♪'s 1, 3, 5, 7 and 9 in bar 2. A similar situation obtains in pattern 15, though the phrases are more nearly equal in length: $C_2$ is articulated in bar 1, $C_4$ is implied both there (alternate tones on ♪'s 2, 5, 8, 11) and independently by ♪ positions 4, 7, and 10 in bar 2, $C_3$ is supported by bounce strokes on ♪'s 4, 8, 12 (bar 1) and 4 (bar 2), and $C_6$ by bounce strokes on ♪'s 8, 10, 12 (bar 1) and ♪4 (bar 2).

The final area of inquiry in *kidi* pattern design is concerned with **tonal relations**. In particular, what is the average distribution of bounce and mute strokes with respect to the *gankogui* cycle? It should be quite non-random, since all *kidi* patterns are, as mentioned earlier, intended to be conceptualised with respect to the bell pattern. There are 263 strokes in the 15 patterns, and their distribution within the cycle is summarised in Table III:

| Position | Number of mute strokes* | Number of bounce strokes ♪ | ♫ | Total | Total bounce/ mute ratio |
|---|---|---|---|---|---|
| 1 | 17 | 3 | 1 | 4 | .24 |
| 2 | 12 | 8 | 3 | 11 | .92 |
| 3 | 13 | 7 | 0 | 7 | .54 |
| 4 | 8 | 12 | 5 | 17 | 2.1 |
| 5 | 15 | 5 | 1 | 6 | .40 |
| 6 | 14 | 6 | 2 | 8 | .57 |
| 7 | 15 | 5 | 1 | 6 | .40 |
| 8 | 11 | 9 | 3 | 12 | 1.1 |
| 9 | 16 | 4 | 0 | 4 | .25 |
| 10 | 14 | 6 | 2 | 8 | .57 |
| 11 | 13 | 7 | 1 | 8 | .62 |
| 12 | 8 | 12 | 4 | 16 | 2.0 |
| | 156 | 84 | 23 | 107 | |

Table III: Distribution of bounce and mute strokes

*the ♪ mute strokes of pattern 3 are included at ♪ positions 2 and 8

In the table, the bounce stroke column lists bounce strokes occurring exactly at the indicated position; when this is added to the ♫ column, the next column is produced, which gives the total number of bounce strokes occurring at or between a given ♪ position and the next. This column and the next show a clearly skew distribution:

positions 4 and 12 have disproportionately high B/M ratios (2.1 and 2.0), while those of positions 1 and 9 are disproportionately low (.24, .25). The other deviations from the average ratio of .69 do not appear significant on the basis of these data.

The other potentially significant distribution worth considering is that of the points of tonal transition (bounce to mute or mute to bounce). A summary of findings in this area is given in Table IV.

| | Number of: | | |
|---|---|---|---|
| ♪ Position | *BM* transitions* | *MB* transitions | Total transitions |
| 1 | 10 | 1 | 11 |
| 2 | 2 | 7 | 9 |
| 3 | 4 | 3 | 7 |
| 4 | 0 | 5 | 5 |
| 5 | 10 | 3 | 13 |
| 6 | 1 | 2 | 3 |
| 7 | 5 | 4 | 9 |
| 8 | 2 | 6 | 8 |
| 9 | 6 | 1 | 7 |
| 10 | 2 | 4 | 6 |
| 11 | 4 | 5 | 9 |
| 12 | 1 | 6 | 7 |
| | 47 | 47 | 94 |

Table IV: Distribution of tonal transitions

*the ♩. ♩ figures of pattern 3 are counted with ♪s 2 and 8

The ♪ position column labels the second of the two strokes, since it is at this point that a change becomes audible.

The main findings are the emphasis of ♪ positions 1 and 5 by high B*M* incidence, emphasis of ♪ position 4 by low B*M* incidence, and the paucity of transitions of any kind between ♪s 5 and 6. Some support is given for singling out ♪ positions 9 and 12 as well, due to their skewed distribution (6:1), but more data are needed to be sure.

As a result of both these ways of looking at tonal logic, the following tentative conclusions seem appropriate.

(a) Eighth note positions 1, 5 and 9 are emphasised and at the same time left relatively free of bounce strokes. These positions constitute an undisplaced $C_3$ cycle and the first two are filled by distinctive bell strokes (starting stroke, start of one of the two 2-stroke runs in the bell pattern). The relation of the gap at ♪ 9 is less clear, and this conclusion was, indeed, more tentative than the other two.

(b) Positions 4 and 12 are emphasised, and exhibit a preponderance of bounce strokes. They also are strongly favoured positions for the bounce stroke of a B*M* pair. The relation to *gankogui* seems fairly clear. The 12→1 tonal transition clearly reinforces that of the bell. The emphasis of position 4 seems explainable as well, since this is the location of the second perceived ♩. pulse, the first spot each time through the cycle where the ♩. tempo may be checked.

(c) Tone changes only very rarely between positions 5 and 6. This again appears to reinforce *gankogui* as this is the only spot in the cycle at which 2 bell strokes are adjacent and of the same tone.

## Conclusions

The *kidi* patterns presented here come from one source and yet show considerable variety of design. The patterns consist of a few types of elements strung together to form what are best termed registral melodies. Divisive and additive organisation are both used, with extensive articulation and sampling of polyrhythmic cycles. The more complex patterns sample a number of such cycles simultaneously and form a rich background for improvisation by the lead drummer.

Phrasing is determined by tone and the presence of repeated subunits, and the patterns may be seen to consist of a hierarchy of 2 or 3 levels of phrasing. Tone is used in a fashion which emphasises certain consistent relations with the time-line, primarily that of reinforcement of distinctive positions of tonal change.

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