

Time in Indian and West African Music

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Abstract

Time, as expressed in musical rhythm, has been the focus of numerous musicological studies. Cyclic time is said to be an important foundation of Indian and African music. This assertion forms the basis for the study. Having garnered enough information to justify this assertion, a comparison is made between the Indian *tāla* and the West African *time line* using primarily Widdess's (1981) observations on the *tāla* and studies on African rhythmic organization. The comparison is also based on the premise that the *tāla* and the time line seem to have similar roles in the organization of music in the two cultures. Juxtaposing in particular the *ādī-tāla* and the *adowa* time line, the paper examines concepts such as the *sam* vis-à-vis the regulative beat, and pulse organization into measures vis-à-vis a fixed time span. Although it is asserted that musical rhythm in both African and Indian music is predominantly additive, the author argues that, to a large extent, rhythmic patterns employed in strictly-timed African percussion/ensemble music are predominantly divisive, and that conceptually, certain features of the *tāla* and the time line appear to be similar, however, the musical contexts in which they function are clearly dissimilar.

Keywords: *tāla*, time line, *ādī-tāla*, *adowa*, regulative beat, *sam*.

1. Introduction

Music is a temporal art (Stambaugh, 1964; Morgan, 1980; Kramer, 1985). It has been described as “pure temporality – abstract sonorous shapes moving through and creating time” (Kramer, 1985, p. 72). Stravinsky classified it as “a certain organization in time, a chronometry” due to the fact that music cannot be conceived apart from the elements of sound and time (as cited in Morgan, 1980, p. 527). According to Kramer, it is generally agreed that “time is both the essential component of musical meaning and the vehicle by which music makes its deepest contact with the human spirit” (op. cit.). He points out that a great number of theoretical works on time in music deal with rhythm and meter and how they are perceived even though there is much more beyond rhythm, meter and perception.

Time, as expressed in musical rhythm, has, in the words of Stone (1985), “riveted the attention of several generations of inquiring ethnomusicologists, comparative musicologists, and before them travelers of many sorts” (p. 139) and still engages the attention of scholars. This paper seeks to examine the concept of ‘cyclic time’ which is said to be “an important foundation of Indian and African music” (Bel, n.d.) by comparing the West African ‘time line’ or ‘time cycle’ to the South Indian *tāla*. In this study, I will relate Widdess's (1981) observations on *tāla* to concepts of rhythmic organization in West African music with particular reference to the *Ādī-tāla* and the *adowa* time line and try to identify differences and commonalities between the two. As Adler states, comparative musicology or ethnomusicology for that matter, “takes as its task the comparing of tonal products, in particular the folk songs of various peoples, countries, and territories, with an ethnographic purpose in mind, grouping and ordering these according to the variety of [differences] in their characteristics” (as cited in Mugglestone, 1981, p. 13), and Nettl (2005) also notes that, “ethnomusicology is the study of the world's musics from a comparative and relativistic perspective” (p.13).

2. Rhythmic Organization

According to Widdess (op. cit.), “the Sanskrit word *tāla*, and its common vernacular forms *tāl* (Hindi) and *tālam* (Tamil), denote, in musical terminology, both rhythmic organization in general, and specific patterns of organization” (p. 132). There appears not to be a similar terminology in African music for rhythmic organization. As Kauffman (1980) notes, “In India, [...] where rhythm is often very complex, there is at least a theoretical or systematic means of assessing the rhythmic nature of music. In Africa, there are no highly verbalized or systematic means of determining the nature of rhythm” (p. 393). Nevertheless, the identification of a *time line* in African music, which Kauffman notes as “perhaps one of the most significant contributions of Nketia to understanding African rhythm” (p. 399) has greatly illumined the process of rhythmic organization in African music. The concept of the *time line* can thus be described as the fundamental principle underlying rhythmic organization in much of African music. As Agawu (2006) notes, “There is [...] general consensus that time lines are materially real, widely used, and crucial markers of temporal reference in African ensemble music” (p. 3). In this regard, it can be compared, in a certain sense, with the Indian *tāla*. As *tāla* also denotes specific patterns of organization, so *time line* refers to specific rhythmic patterns that form the basis of organization. Rephrasing

Nketia's definition of a time line, Kauffman writes that it is "a rhythmic patterning in either divisive or additive rhythm which serves as a means of sustaining the rhythmic motion" (ibid.).

Tāla, in modern practice, is said to imply a steady pulse-beat (Widdess, op. cit.). It further implies,

"a pulse organization into measures, each measure containing the same number of pulse beats; the first beat of each measure, called *sam*, is accented, and is regarded as the culmination of the preceding measure as well as the beginning of a new measure. The measure is therefore conceived, in Indian terminology, as a cycle (*āvārd* or *āvartanam*)."

While the *āvārd* or concept of a cycle is made explicit in Indian terminology, there seems to be no terminology in African music to connote the time line as a cycle even though it recurs just like the tāla. Again, "time cycle", seems to be rarely used in studies to describe African time lines. Anku (2000) in his paper "*Circles and time: A theory of structural organization of rhythm in African music*" argues that "the time line concept of the bell rhythm [...] translates as a *time cycle* because African music is perceived essentially as a circular concept rather than linear". Though ethnographic data is required to further support the notion that African music is perceived as a circular rather than linear concept, it is quite logical to think of the time line as a time cycle due to its recurrent nature. According to Anku, it is the cyclic nature of the time line that enables "performers to go in and out of the performance without much inhibition" and that there are "clearly prescribed cues for each event". Thus, Bel's assertion that cyclic time is "an important foundation of Indian and African music" is justifiable.


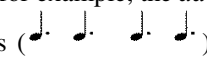
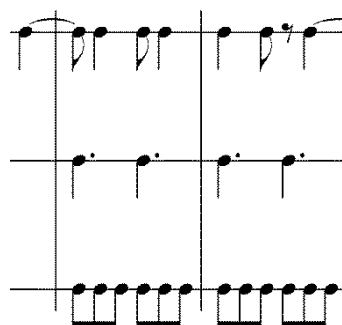
As stated earlier, the tāla implies a pulse organization into measures, with each measure containing the same number of pulse beats. The *ādī-tāla*, for example, is said to consist of 8 pulse beats per measure. The time line, on the other hand, fits into "a fixed *time span*, which can be broken up into an equal number of segments or pulses of different densities" (Nketia, 1986, p. 126). Whereas the number of pulse beats within a measure constitutes in itself the tāla, the time line is a rhythmic pattern that fits a time span which may be divided into two and multiples of two, or three and multiples of three, or a combination of the two (ibid.). According to Nketia, "the time span acts at once as a measure and a standard phrase length to which rhythmic phrases are related" (p. 131). However, it is not agreed whether the time span constitutes one measure or two measures. Some studies show the time span as one measure of 4/4 or 12/8 as the case may be and others argue that there are in fact two measures of 2/4 and 6/8 respectively making up the time span. Consider, for example, the *adowa* time line. The time line () fits the time span of four beat areas () that are divisible into threes and may be considered as one measure of 12/8 or two measures of 6/8 depending on the analytical framework one employs.

Fig. 1 *Adowa* time line and time span



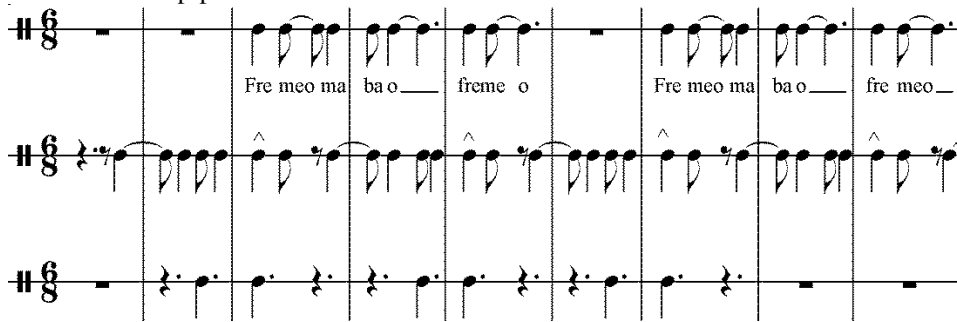
Again, "the first beat of each measure [of the tāla], called *sam*, is accented, and is regarded as the culmination of the preceding measure as well as the beginning of a new measure" (Widdess, op. cit.). In a sense, the *sam* is the point of convergence for all other instruments or voices. In a similar manner, the time line has a "regulative beat". Nketia (op. cit.) describes this as "the initial pulse of the time span" (p. 131). However, studies have shown that the regulative beat "is often bound by ethnic norms of perception" (Anku, 1992, p.9) and does not always occur on the initial pulse of the time span. The regulative beat of the *adowa* time line, according to Anku, falls on the note marked thus ^ (Fig. 5)

Fig. 2 Adowa time line showing regulative beat



In the example below (Fig. 3), line 1 shows the melodic rhythm of the chorus of an adowa song; line 2 – the time line (bell pattern) with the regulative beat indicated (^), and line 3 – a possible clap-pattern. The repetitive clap-pattern always ends on the regulative beat while the chorus (*Frɛ me o, maba o, frɛ me o*) always begins on the regulative beat of the time line.

Fig. 3 Chorus and clap-pattern in relation to the adowa time line



It is the regulative beat that unifies the different musical events within a given performance just as performers relate to the *sam*. Unlike the *sam* which is fixed, the regulative beat can occur on any beat within the time span depending on the norms of perception of the culture.

In his paper, Widdess uses the term ‘metre’ to refer solely to the number of beats within a measure without implying any regular accents except that of the *sam* which occurs on the first beat of each measure. He notes that “Following early Indian theory, a distinction can be drawn between ‘binary’ (*casturaśra*) metres of 4, 8 or 16 beats to the measure, ‘ternary’ (*tryaśra*) metres of 6, 12 or 24 beats, and ‘mixed’ (*samkīrma*) or irregular metres of 5, 7, 9, 11, 13, 15 beats etc.” (p. 132). As mentioned earlier, according to Nketia, the time span (into which rhythmic patterns fit) can be divided into equal number of segments or pulses of different densities: a) two and multiples of two (2, 4, 8, or 16 pulses), and b) three and multiples of three (3, 6, 12, or 24). He labels rhythms based on pulse structure a) and b) as duple and triple respectively, using the terms ‘duple’ and ‘triple’ “merely to refer to the underlying scheme of pulse structure” (p. 127). On a superficial level, one can assume some semblance between binary and ternary metres of the *tāla* and duple and triple time spans. On a deeper level, they are very different in the sense that each beat of an 8-beat *tāla*, for example, can be further be divided into smaller units or pulses (Fig. 2) whereas the 16 pulses of a duple pulse structure (Fig. 3) represent perhaps the maximum number of pulses into which the time span can be divided and from which rhythmic patterns can be created.

Fig. 4 Possible divisions of one measure of the an 8-beat tāla (16, 32, 64 pulses)

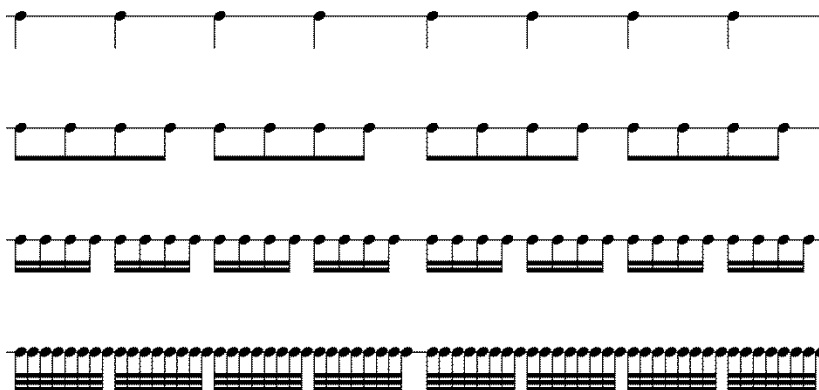
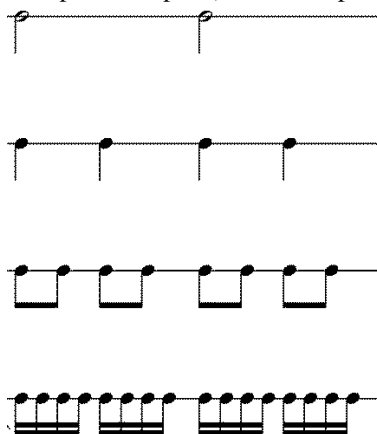


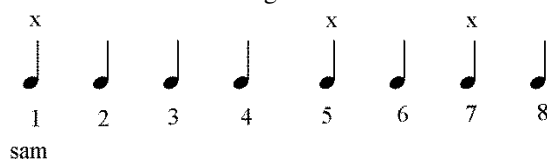
Fig. 5 Divisions of a duple time span (2, 4, 8, 16 pulses) [as illustrated by Nketia]



With regard to irregular metres, there seems to be no such concept in African ensemble music. Besides the duple and triple pulse structures, there is, according to Nketia, the hemiola pulse structure which combines equal sections of duple and triple pulse structures. Similar to this is what Anku has labelled the ‘cross set’ in which case triplets are introduced in 2/4, and duplets in 6/8.

A key difference between the tāla and the time line is the use of clap patterns in Indian music to distinguish one segment of the tāla from the other. According to Widdess, “A particular tāla will be typified not only by a particular metre, but also by a traditional pattern of hand-movements with which to beat time during each cycle” (p. 132). He also points out that, “A feature of almost all clap-patterns is that claps are spaced at unequal intervals through the cycle. The cycle is therefore regarded as divisible into segments (*anga* or *vibhāg*) of unequal length” (ibid.). As Widdess (1981) and Reck (1992) indicate, the *ādī-tāla* consists of segments of 4 + 2 + 2 making up 8 beats. Claps are executed on beats 1, 5, and 7 with waves on beats 6 and 8. The first segment of 4 beats begins with the first beat (*sam*) followed by finger counts on beats 2, 3, and 4.

Fig. 6 *Ādī-tāla*:



In contrast, hand-claps are used in African music to externalize the basic pulse (Nketia, op. cit.). They may either reinforce the time line or highlight the regulative beat. The manner in which the tāla and clap-patterns are bound together is a feature that is distinctive in Indian rhythmic organization. Clap-patterns in African music do not perform the function of highlighting different ‘segments’ of the time cycle for there are no such segments comparable to those of tālas. Although time lines may consist of beats of unequal length, hand-claps do not often emphasize these beats but rather the basic pulse. As one Ewe master drummer is quoted as saying, “The claps [...] serve as a yard-stick, a kind of metronome which exists behind the music” and that “The hand-clap is the rhythmic link between the gong and the other instruments. It takes its time from the Gankogui, [which] is the foundation, par excellence, of the background-rhythm section” (as cited in Kolinski, 1973, p. 416).

According to Nketia, “the use of additive rhythm in duple, triple, and hemiola patterns is the hallmark of rhythmic organization in African music” (p. 131). Widdess also notes that, “it is frequently asserted that Indian musical rhythm is predominantly ‘additive’, on the grounds that the tāla cycle is ‘not *in principle* divisible into subsections of equal length but has rather to be assembled by adding up its *vibhāg* or *anga*” (p. 133). He, however, points out that there is the need for distinctions to be made between the clap-pattern rhythm, rhythm of the melody, and also between binary, ternary, and irregular metres (ibid.). Widdess explains that despite the additive nature of clap-patterns, binary and ternary metres in northern and southern Indian music traditions are usually treated in melody “as divisible into subsections of equal length.” Irregular metres, on the other hand (i.e. 5, 7, 9 beats, etc.) can only be treated as additive. This, he notes, is because equal subdivision is impossible except in the case of 9. He therefore concludes that with the exception of irregular metres, “the musical rhythm of Indian *art*-music is predominantly ‘divisive’ rather than ‘additive’” (ibid.).

While certain time lines are additive in nature, the fixed time span into which they fit as Nketia posits, is clearly divisible into “an equal number of segments or pulses of different densities”. If this assertion is plausible, then clearly, additive rhythms cannot be analyzed independently but rather in relation to a time span which is divisible. The time span, then, suggests a metric framework within which to analyze a particular rhythmic pattern. The rhythmic pattern can be said to be organized, as Kolinski puts it, commetrically within an

irregular metric framework or contrametrically within a regular metric framework. Since irregular metres are rarely used especially in strictly timed African percussion music, one can conclude that more often than not, additive rhythmic patterns are organized contrametrically within a regular metric framework (whether in 2/4 or 4/4, 6/8 or 12/8), and that, to a large extent, strictly timed African percussion music is divisive.

The tāla is often played on a *mridangam* in Carnatic music. In practice, the drummer does not simply repeat the beats of the tāla cycle but rather plays a series of rhythmic patterns while keeping the fundamental beats and segments of the tāla in mind (See Fig. 7). As Reck (1992) notes,

“At the basis of the *mridangam* drummer’s art are between fifteen and seventeen drum-strokes – distinctive individual tones produced on different parts of the drumheads by different finger combinations or parts of the hands. These strokes, individually and when put together into rhythmic patterns can be expressed in *solkattu*, spoken syllables that imitate the sound of the drum-stroke and precisely duplicate each rhythmic pattern.” (Reck, 1992, p. 245)

While the *mridangam* drummer alone can provide the entire rhythmic accompaniment in a given performance, the time line as played by the bell is only “one layer in a polyrhythmic texture comprising handclaps, rattles, support drums, lead drum(s), and voices” (Agawu, op. cit.). To completely understand rhythmic organization in African music, then, one must look holistically at the interplay of rhythmic patterns produced by the various instruments in a given ensemble as well as the sonic outcome. In learning and practice, African drummers also use spoken syllables similar to the Indian *solkattus*, although there is no specific name for this art in African music.

Fig. 7 Sample *Ādi tāla* exercise [Note: Almost each note represents a different drumstroke].



This exercise shows 8 cycles of the *ādi tāla* ending on the sam. The numbers 1, 5, and 7 represent the segments of the tāla (4 beats + 2 beats + 2 beats). The exercise was transcribed from a video on Youtube (www.kanjira.fr).

3. Conclusion

Menon (1972) notes that “In common with the musics of West Asia and of Southeast Asia, that of South Asia [which includes India] is essentially a melodic music” (p. 43). This assertion does not override the complexity of rhythmic organization in Indian music. In the case of African music, Temperley (2000) writes that it is a “widespread popular notion” that rhythm is of paramount importance in African music, and [is] a major source of its richness and complexity” (p. 65). Thus Indian and African music share a common feature of rhythmic complexity howbeit in different dimensions. In this study, I have tried to place side by side the Indian tāla and the West African time line on the bases of their cyclic nature and their role in rhythmic organization in their respective cultures. The two share some features that appear similar in concept, but the musical contexts in which they function are clearly dissimilar.

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