

# Comparisons of African and Diasporic Rhythm: The Ewe, Cuba, and Martinique

Julian Gerstin

African and African Diasporic rhythms power a vast network of musical styles. Each style has its own sensibility and intricacy, yet the kinship between them is apparent. How can this be explained? What is the current status of comparison, and how can it be strengthened?

Among musicians, discourse about timelines, three-against-two polyrhythms, and certain widespread rhythmic patterns (such as the 12/8 “standard bell” and Cuban son clave) is common. Much scholarship concerns the same phenomena, as well as investigation of cognition, metric organization, and ethnographic detail. Such discourse has given rise to what Polak (2010, par. 6) terms a “mainstream” view of African and Diasporic rhythm. This view is not yet an established consensus, yet its parameters are emerging clearly enough to deserve description and, where necessary, critique.

Two musical cultures well represented in the mainstream view are those of the Ewe of Ghana and Afro-Cuban tradition. Analyses depending heavily on these two cultures constitute an implicit model that many scholars and musicians now apply to styles beyond Ghana and Cuba, indeed all over Africa and the Diaspora. But this risks applying an Ewe/Cuban-centric framework to African/Diasporic music with other rhythmic sensibilities. The mainstream view can overlook or distort crucial elements of rhythm in non-Ewe, non-Cuban African/Diasporic musical cultures.

This article begins with a summary of the emergent mainstream view, suggesting certain ways it may be extended: by including dance along with sonic analysis, giving additional consideration to the underlying hemiola structure of timelines, and looking at how rhythmic roles are orchestrated in ensembles. The article then looks at dance and music in Martinique. Here we find a somewhat different rhythmic sensibility than in Ghana or Cuba—no less African in nature and no less creative in artistic expression, but not reducible to the familiar paradigms. If we wish to compare the rhythms of Africa and the Diaspora, we need an analytic framework broad and flexible enough to handle all the traditions of this broad area.

## COMPARISON IN SCHOLARSHIP OF AFRICAN AND DIASPORIC MUSIC

In the early twentieth century, American cultural anthropology advanced a strong argument against bigotry and injustice by moving away from the unilineal evolutionary paradigm that previously dominated the field, which ranked cultures in an ascending order and judged non-dominant cultures by the standards of dominant ones. Authors like Franz Boas ([1896] 1940) insisted on the specificity of each culture, its historical particularity, and the necessity of understanding people from their own point of view. The field of ethnomusicology

also had its origins in comparison (it was originally known as “comparative musicology”), but the second half of the twentieth century saw a growth in monographs on specific musical cultures. Even works that continued to draw comparisons between musical cultures (e.g., Hood 1971; Merriam 1964) also strove to avoid the assumptions that continued to burden Western-biased musicology and music theory.

In U.S. Diasporic studies, Herskovits ([1941] 1991) challenged a widespread prejudice among both intellectuals and the general public, which Herskovits called “the myth of the Negro past”—that African-Americans had no past; that slavery had erased what little culture they may have had in Africa, so that African American culture was largely a distorted reflection of white America.<sup>1</sup> Herskovits described a huge number of direct cultural “retentions,” and also discussed more intangible processes connecting African to African American heritage, such as syncretism and reinterpretation. Herskovits’s intangible processes appealed to later authors, who wrote of “qualitative” connections between African and African American performance (Wilson 1974), “principles” (Mintz and Price 1976), and “transformations” (Wilson 2001). Among the abiding performative and aesthetic principles described by these scholars were metronome sense, cross-rhythms and polyrhythms, call and response, the use of timelines, fixed support parts juxtaposed to variable lead parts, the connections of music to both dance and language, and others (Thompson 1966; Waterman 1952; Wilson 1974). Such principles are generative; they allow new styles of music to emerge and to remain connected to tradition, even when old styles are suppressed or forgotten. However, while the reinterpretation/transformation approach provides a powerful argument for cultural connection in the face of surface difference, it can be somewhat general in application. For example, the statement that two pieces of music both have polyrhythms is not the same as examining those polyrhythms in detail.<sup>2</sup>

In the Caribbean, nationalist movements arising in the second half of the twentieth century dovetailed with a search for cultural and racial origins. It is no accident that important Caribbean politicians such as Edward Seaga and François Duvalier began their careers as ethnomusicologists and folklorists. However, while these authors by no means ignored the Caribbean’s African links, the concept remained general. In their scholarly publications they focused on collection and description of their own islands’ heritage, engaging in little direct comparison with Africa or with other Caribbean nations.

By now the importance of culture-, style-, and performer-specific understanding is well established, and this security, perhaps, has allowed comparison to edge back into recent studies. Dance scholars have published several historical and cross-cultural works (Chasteen

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1. Another prominent school of thought turned this argument around, avoiding Africa’s taint of primitivism by portraying African American culture as reflecting New World experience rather than African retentions, thereby avoiding Africa’s taint of primitivism (e.g., Frazier 1939). By demonstrating the prevalence of African heritage in the Americas, Herskovits argued against Frazier’s view as well as against the outright dismissal of black culture.

2. Wilson (1974) was one of the few articles in the reinterpretation/transformation vein to directly compare two pieces of music, Ewe agbadza and James Brown’s “Super Bad.”

2004; Daniel 2011; Manuel 2009; Sloat 2002, 2010).<sup>3</sup> Music theory is seeing an interest in analysis that integrates perspectives from across the planet (e.g., Tenzer 2006a and the present journal). Recent comparative work on Africa and the Diaspora has been mainly in the vein of music analysis, rather than ethnography or music history. Such work accepts many of the aesthetic principles discussed by earlier writers, but focuses more closely on formal elements. For instance, it has moved from a general description of African/Diasporic rhythm as characterized by polyrhythms and crossrhythms, towards detailed analyses of specific rhythmic patterns and their combinations (e.g., Burns 2010; Locke 2009, 2011; Polak 2010). Authors like Kofi Agawu (2003) have argued strongly that the creativity and power of African music can be illuminated by analytical approaches used by “Western” musicology, especially when such approaches are combined with ethnographic specificity. Although the present article follows this recent comparative vein, we should not forget how our scholarly ancestors achieved important political and moral work by emphasizing particularity over comparison.

#### COMPARED TO WHAT? THE PRIVILEGING OF GHANA AND CUBA

There are several reasons for basing the first half of this article mainly on Ewe and Cuban traditions. First, these two repertoires have strong structural similarities. According to Eltis et al. (2009, 32–33), Africans from the Gold Coast (modern Ghana) were taken to Cuba in smaller numbers than their neighbors to the east and west, so we cannot be sure of a direct historical connection. This only makes the similarity between Ewe and Cuban rhythm more striking, and their likeness has intrigued many researchers and performers (e.g., Burns 2010; Lehmann 2002; Stover, 2009; Toussaint 2013).

Second, Ewe and Cuban music are well represented in the literature. Agawu (1987, 402) remarks on the prominence of Ewe music in Anglophone studies. England’s colonial history in Ghana created ties between those two countries, and Ghanaians’ widespread use of English has made communication easier for British and American researchers; work has appeared in a steady stream since the pioneering writing of A.M. Jones (1959) and Nketia (1963). Ghanaian musicians teaching in universities abroad have promoted their family networks, so that there are quite a few Agbelis, Ladzekpos and Addys teaching in the United States and England. No other African ethnic group has received as much scholarly attention; the only possible contenders are the Dagbamba (Chernoff 1979; Locke 1990, 2009, 2011), Mande (Charry 2000; Polak 2010; Polak and London 2014), and Yoruba (e.g., Euba 1990; King 1960; Omojola 2014). The region of Central Africa in its entirety has had about the same amount of coverage as each of those groups (e.g., Arom 1991; Kisiuk 1998; Kubik 1998b, 2010). Publications on the music of the Ewe, a relatively small group of people, probably outweigh work on all of these other peoples together. Even in comparative works the Ewe loom large; for instance, while Pressing (1983, 57–61) presents timeline patterns from many cultures, the Ewe account for a third of them—12 of 35, by my count.

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3. Popular music studies have always been comparative, since popular styles are cross-regional and multinational in scope. But popular music studies did not become prevalent in ethnomusicology until the 1980s.

Similarly, studies of Cuban music form by far the largest literature on any Caribbean nation. This is partly due to the Cuban government's support of Afro-Cuban research and partly to the sophistication of Hispanophone music scholarship throughout Latin America. Cuba's prominence is not limited to work in Spanish, as that island's extraordinary role in twentieth-century music around the globe has resulted in widespread interest. Anglophone writing on Cuba has doubtless also been spurred by the migration of Cuban music and musicians to the United States, before and during the embargo.

Musicians from the United States who work with African, Caribbean, or South American styles have also enjoyed considerable exposure to the Ewe and Cuba. The presence in American universities of Ghanaian teachers and knowledgeable American teachers trained in Ghana makes this type of music accessible at home. Ghana's use of English along with its infrastructure of university and cultural centers makes traveling there relatively easy. Likewise, Cuba's musical styles have long been among the most visible "foreign" presences in the United States, highly influential in both popular music and jazz. While United States musicians have not been legally permitted to travel to Cuba for over 50 years—although as of this writing, this is beginning to change—that has not prevented musical exchanges. Americans have traveled through Canada or Mexico, or met with Cuban teachers in those countries.

Professional musicians compare musical styles readily and rather indiscriminately. They are concerned with performing styles competently, rather than with scholarly exactitude. They need to learn new material quickly, so they adapt mental models they are familiar with; for example, if they know salsa, they see its patterns in other "Latin" styles. If they have the time to study a style, they buy workbooks on "Latin piano," "Latin drumset," and the like, but despite their broad titles such books are often limited to just a few styles.<sup>4</sup> Furthermore, Cuban music has an explicit verbal rhythmic vocabulary (e.g., terms for different clave patterns), which many other African/Diasporic styles do not. Musicians in the United States are therefore prone to using Cuban musical terms when they talk about other styles.

The most obvious example of such musical vocabulary is Cuban clave, especially the timeline known as "son clave." I have heard musicians apply clave and the related idea of orientation (having a dynamic contrast between two halves of a pattern, such as the "3 side" and "2 side" of Cuban son clave) to music of Brazil, Trinidad, Venezuela, Colombia, Argentina, New Orleans, Nigeria, Ghana, Democratic Republic of the Congo, and the United States. Some musicians call all timelines "clave," or seem to feel that Cuban son clave is the archetype of all timelines. Similarly, Toussaint (2013) and Peñalosa (2009) call all manifestations of the son clave pattern by that name, even when it appears in other cultures (such as Ga kpanlogo); Toussaint calls all manifestations of the 12/8 standard pattern by the Cuban name "bembe";

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4. Musicians' workbooks are useful for their purpose: teaching competency in specific styles. Musicians who work with a book entitled, say, "Authentic Latin Bass" are not fooled into thinking they have mastered Latin bass (whatever that might be). They just want to be able to play a few basic grooves and get gigs in salsa or cumbia bands.

and Lehmann (2002) calls *all* timelines “clave.” Beyond mere nomenclature, the analyses of Toussaint (2013), Peñalosa (2009), Lehmann (2002) and Stover (2009) rely heavily on a small number of timelines characteristic of Cuban and Ewe music. These authors are, of course, aware of this reliance. Lehmann (2002, 143–45) concludes his thesis with a caveat about “Cuba-centricity,” urging that we treat “clave” as a general concept rather than as one or two specific patterns:

I argue that an expanded notion of “clave” . . . can serve as a cognitive model for the analysis and interpretation of other diasporic idioms, as well as for the large body of sub-Saharan music itself that has been identified in having had a major influence on musical practices in the Americas. I want to suggest that there exists a certain structural rhythmic universality or essence within such music. . . . “Clave,” I assert, has important theoretical implications to the body of African musical practices in general. (12–13)

Despite Lehmann’s caveat, I am wary of privileging rhythmic structures from a limited selection of musical cultures. If there is “a certain structural rhythmic universality or essence” in African/Diasporic music (or, as Lehmann puts it, in the somewhat more limited sphere of African styles that have influenced the New World, and the New World musics derived from them), analyses based primarily on Ewe and Cuban models are not broad enough to account for it. As Kubik (1998a, 221) writes, a comparative approach that fails to take in a broad cultural sample “tends to emphasize identities and analogies while downplaying the differences.”<sup>5</sup> A more ambitious work than this one might sample and compare styles from throughout Africa and the Diaspora. I present music from just one society, that of Martinique, as a foil to an Ewe/Cuban-centric view.

## METHODOLOGY

In order to analyze musical styles, this article must gloss over many details of the traditions it draws from, traditions that contain numerous strands, variations and outright disparities. Instead this article presents a somewhat abstracted, formalized approach to music. Yet the questions raised by formalist approaches are well known. What is the ontological status of observable or derivable formal structures? Where do they exist in the mind and body of performers and listeners, at what levels of consciousness and unconsciousness? How do people negotiate between underlying constructs and lived experience?

Recent studies of rhythmic perception in the field of cognitive psychology attempt to answer such questions by examining quantitatively how people apprehend and construct

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5. Differences at the regional level that would be worth exploring include those between the djembe-playing cultures of Senegal, Gambia, and Mali, on the one hand, and the Ewe, Akan and Yoruba cultures of West Africa on the other; between the music of West and Central Africa; and between those regions and Eastern and Southern Africa. Regional overviews such as those in the *Garland Encyclopedia* (Stone 1998) are a start. West and Central Africa were, of course, most directly influential in the Americas; for studies of their differing influence in Diasporic music and dance, see Crowell (2002); Floyd (1999); Fryer (2000); Kubik (1979); wa Mukuna (1978); for Diasporic culture more generally, Mintz and Price (1976).

music (e.g., London 2012). Phenomenologically based work (e.g., Friedson 1996; Stover 2009) also addresses the construction of perception, but descriptively rather than quantitatively. The question of universality arises in both approaches. Empirical studies of cognition and perception tend to overlook ethnographic particularity, treating experimental results from Western subjects as normative. Similarly, some phenomenologists seem to take their own individual experience as universal.<sup>6</sup> Ethnographers are the most likely to include indigenous aesthetics: Kubik's work includes many statements on rhythm from African culture bearers (see especially 2010); Agawu (2006) considers several analytical interpretations of the "standard bell" pattern and asks whether they are supported by an African perspective.<sup>7</sup>

Although the present article remains somewhat formalist in approach, my aim is to propose analyses and structures that stay close to performance practice and indigenous aesthetics. I believe that the musical structures I present are derived from practice and, conversely, underlie and guide actual performance. My discussion of the underlying hemiola structure of timelines is the furthest I depart from this middle ground.

### Notation

Many of the rhythms presented here are in duple meter with sixteen pulses. Most authors present such rhythms as two measures of 4/4 with binary subdivisions into eighth notes (A in Example 1), or less frequently as two measures of 2/4 with quaternary subdivisions into sixteenth notes (B). In addition, many such patterns divide down the middle into two contrasting halves (see "Orientation," below). Writing them in two measures, as in A and B, makes this contrast clear. B has the advantage of showing quaternary subdivision, which is the actual feel of such patterns (see below). However, like Lehmann (2002, 6–8) and Prieto (2016, 16–18), I am concerned with presenting contrasting half-phrases as phenomena achieved *within* four-beat cycles, so I use one bar of 4/4 (C). In addition, I need to distinguish between patterns like A, B, and C with sixteen pulses, and those with only eight (D), which I write in 2/4. Similarly, rhythms with twelve subdivisions and duple meter are sometimes written as two measures of 6/8 (E) but I use one measure of 12/8 (F).<sup>8</sup>

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6. A noteworthy exception is Friedson's (1996) study of Malawian healing ceremonies, which includes much reportage of Tumbuka participants' thoughts and experiences.

7. Agawu (1995) is of course thoroughly ethnographic. Two illuminating earlier monographs featuring indigenous aesthetics—Keil (1979) and Stone (1982)—situate musical time within a larger context of time concepts and perceptions in particular African societies.

8. A growing number of authors on African/Diasporic rhythm use non-standard notations such as TUBS (Arom 1991; Koetting 1970). TUBS has also become widespread in workbooks intended for working musicians (e.g., Brooks 2001, 2015; Peñalosa 2009). Recent mathematically-based scholarship uses a variety of circles, graphs, sets, necklaces, and other representations (e.g., London 2002; Polak and London 2014; Pressing 2002; Rahn 1996; Toussaint 2013). Each of these notations has advantages. TUBS is useful for showing polyrhythmic relations in large ensembles, and for reaching students who do not read standard notation. Circles make the repetitive nature of many African/Diasporic rhythmic patterns clear, as well as the relation of patterns that begin in different places: they start at different points on the circle. And of course graphs, sets, and necklaces are needed to represent sophisticated mathematical concepts. However, many of these alternative notations are difficult to read, or mysterious to the uninitiated (Stover 2009, 17–28). I retain standard Western notation.

A: pattern with 16 pulses, two measures of 4/4 with binary subdivision

B: 16 pulses, two measures of 2/4 with quaternary subdivision

C: 16 pulses, one measure of 4/4 with quaternary subdivision

D: pattern with 8 pulses, one measure of 2/4 with quaternary subdivision

E: pattern with 12 pulses, two measures of 6/8

F: 12 pulses, one measure of 12/8

Example 1. Notation styles: Time signatures and measures.

Since I am writing largely of percussive rhythm, attacks are more important than durations, but I compromise between emphasizing attacks, relations to main beats, and ease of reading. If Example 2 were played on an iron bell, the sound of each note would probably last only one sixteenth note (line A), but writing it this way is cluttered. Line B is simple but does not show the relationship of the second note to the underlying main beat that it anticipates; it also looks like additive rhythm, which it is not. Line C shows the important relationship between the second note and the second main beat, and this is the method I adopt. If the rhythm were sung and the duration of the second note were important, I would use a tie (D), which continues to show the note's relation to the second beat.

In my descriptions of dance movement I am mainly concerned with establishing the relation of main beats to cycles and timelines. Therefore, I represent basic dance steps rather

A

B

C

D

main beats

Example 2. Notation styles: Attacks, rests, and ties.

than more intricate aspects of movement (cf. Agawu 2016, 182). More detailed study of dance–music correspondence would doubtless be revealing (see, e.g., Gerstin 1998), but only the basic structural relations are relevant here.

### THE MAINSTREAM VIEW

Let us begin with a summary of the current mainstream view of African/Diasporic rhythm (henceforth, “A/D rhythm”).

#### Basic Metric Schemes: Cycles, Main Beats, and Subdivisions

A majority of contemporary scholars view A/D meter as hierarchical,<sup>9</sup> with a norm of three levels: main beats, subdivisions of those beats, and groupings of those beats into cycles or phrases (Agawu 1995, 109; 2016, 156; Anku 1997; Kubik 2010, 13, 31; Polak 2010, par. 6; Temperley 2000).<sup>10</sup> The concept of cycles is similar to that of measures, but since A/D rhythmic patterns often begin or end at places other than the downbeat of measures, it is well to keep these terms distinct.<sup>11</sup>

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9. While this article is not a meditation on the nature of rhythm or meter per se, I must note that there is a gap between the prevalent view of meter as hierarchical and the view of a smaller number of scholars who approach rhythm from a more phenomenological standpoint. In the hierarchical approach, meter is a relatively stable framework within which rhythmic patterns are inscribed. However, a number of important theorists (Hasty 1997; Narmour 1990; Zuckerkandl 1956) and some recent studies (Stover 2009) take a more processual approach: both rhythmic patterns and metrical framework are active constructions on the part of the subject, who assembles them from and in music’s ongoing rush of temporal experience. The construction of meaningful experience extends a certain amount into the immediate past and projects into the future; Narmour (1990) calls this “implication–realization.” The metric frame is part of both implication and realization; it must be continually assembled and refreshed. Although Zuckerkandl (1956) did not use phenomenological terminology, his interpretation of meter as a wave-like projection is an important early contribution to this approach. Interestingly, both sides of the debate lay claim to gestalt theory: from the hierarchical perspective, rhythm involves a figure (rhythm) projected onto a ground (meter); in the phenomenological view, both realms are continually unfolding, but rhythmic figures are still being apprehended against a metric ground.

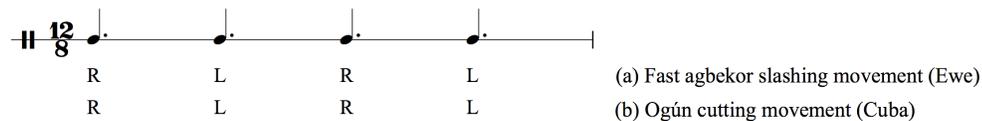
10. These are the same three levels London (2012, 16–17) postulates as basic to all music. In this sense, for London (2012) and Agawu (2003), rhythm in Africa is not much different than rhythm in Europe or other world regions. Earlier scholarship portrayed A/D rhythm as more radically different, largely because its authors had difficulty grasping the relative importance of metrical cycles, main beats, and subdivisions. Cycles in A/D music can be hard to determine, since so many patterns begin somewhere other than the downbeat. In addition, Western meter is partly dependent on dynamic accents, but in African music neither downbeats nor the beginnings of instrumental patterns are usually marked by stresses; conversely, dynamic accents usually occur anywhere but the beginning (Koetting 1970; Kubik 2010, 38–39; Waterman 1952, 235–37). Early transcriptions by A.M. Jones (1959) and others that used frequently shifting time signatures reflected this problem: Jones started measures where he heard accents. In these transcriptions, not only do the time signatures for each instrument shift, but different instruments are written in different time signatures—the presentation is overly polymetric. Contemporary scholarship largely agrees that even strongly contrasting cycles are performed and heard in relation to a common metric scheme (Agawu 2003, 79–86). To put this another way, some earlier scholars like A.M. Jones (1959) and Koetting (1970) argued that instruments in A/D ensemble do not share a common downbeat, “the 1.” The current consensus is that they do (Anku 1997, 215; Locke 2011, 52) and that it is marked by the timeline.

11. Main beats are also called dance beats, regulative beats (Anku 1997; Nketia 1963, 78; Polak 2010, par. 10), reference beats (Kubik 2010, 31), or just plain beats (e.g., Ladzekpo, 1995; Locke 2011); they are equivalent to the old term *tactus* (London 2012, 16–17). Subdivisions are also termed pulse (e.g., Locke 2011), fastest pulse (Polak 2010, par. 6), elementary pulsations (Kubik 2010, 31), density referent (Koetting 1970), and the *n* of the *n*-cycle (London 2012). Cycles are also called phrases or pattern span (Anku 1997, 214–15) and *n*-cycle (London 2012). A phrase

Cycles most often comprise four main beats (Kubik 2010, 38, 41–44; Polak 2010, par. 7). This is not always obvious on the music’s surface, where polyrhythms abound and main beats are often not sounded on instruments.<sup>12</sup> But it is usually clear in dancing. In Africa and the Diaspora, dance, song, and instrumental accompaniment (on drums or other instruments) form a whole (Thompson 1966). Dance movements are not “outside” the music and ought to be considered as part of the metrical scheme. This means that when we have doubts about the analysis of a piece of music, we should look to the dancers for help. Where are they stepping?

As Agawu (2003, 74; 2006, 18–24) notes, dancing is most often on the four main beats of a cycle.<sup>13</sup> The most obvious basic movement, feet alternating left–right or right–left, is only two beats in length, but can be paired to make a four-beat step pattern. Example 3 shows Ewe and Cuban versions of such a step, demonstrated in Video Examples 3a and 3b. Other simple variations, demonstrated in Example 4, expand stepping patterns to the full four beats.

Dance phrases may double the cycle (eight beats), or create even longer forms (16 or 32 beats), but almost always in multiples of the basic four. There are exceptions, such as the Congolese dances *ntutu* and *nzobi*, both in a fast 9/8 subdivided into three triplets; dancers step on the three main beats in each measure.<sup>14</sup> But dancing on four beats is the norm.



**Example 3.** Dance steps with two-beat foot alternation but four-beat cycles.

[Video Example 3a.](#) Fast agbekor slashing movement (Ewe). Kwabena Boateng, dance; Julian Gerstin, percussion (10/23/2016). Boateng precedes the slashing movement with a turn.

[Video Example 3b.](#) Ogún cutting movement (Cuba). Miguel Periche, dance; Julian Gerstin, percussion (10/2/2016).

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spanning 12 subdivisions has an n-cycle of 12, one spanning 16 subdivisions an n-cycle of 16, etc. The term “n-cycle” is common in music theory but I will retain “subdivision” for the small units (the “n-”) and “cycle” for their grouping into repeating larger phrase-lengths. Additional terms often encountered in these discussions are “period” and “periodicity,” used broadly in music theory to encompass all levels of grouping and repetition, small to large (see, e.g., Tenzer 2006b).

12. Waterman’s (1952) concept of “metronome sense” captured the idea that performers and listeners complete the music, finding main beats in the midst of polyrhythmic density. But for outsiders, main beats are no easier to determine than are the beginnings and ends of cycles. In many ensembles no instrument plays the main beats; dancers most likely dance them, but few early researchers incorporated this fact into their transcriptions (Kubik 2010, 36). One result of overlooking main beats was transcriptions using additive rhythms, such as 3+3+2 for 3-3-2. As shown in Example 2B, an additive representation obscures the way 3-3-2 relates to its underlying main beats, particularly how its second note anticipates beat 2. Without interaction between the subdivisions and the main beats, there is no anticipation and 3-3-2 loses its tension (Agawu 2003, 86–91; cf. Agawu 2006, 10–11; Pressing 2002).

13. Kubik (2010, 38, 44) notes occasional cycles of three or five main beats.

14. As taught by the dance ensemble Fua Dia Congo in Oakland, California, during the early 2000s.

(a) Agbadza basic step (Ewe)

(b) Kinka basic step (Ewe)

(c) Gahu basic step (Ewe)

(d) Rumba: men's basic step (Cuba)

**Example 4.** Dance steps with four-beat foot cycles.

[Video Example 4a.](#) “Basic Ewe” step in 12/8, in the dance agbadza. Kwabena Boateng, dance; Julian Gerstin, percussion (10/23/2016).

[Video Example 4b.](#) “Basic Ewe” step in 4/4, in the dance kinka. Kwabena Boateng, dance; Julian Gerstin, percussion (10/23/2016).

[Video Example 4c.](#) Gahu basic step (Ewe). Kwabena Boateng, dance; Julian Gerstin, percussion (10/23/2016).

[Video Example 4d.](#) Rumba guaguancó men’s basic step. Miguel Periche, dance; Julian Gerstin, percussion (10/2/2016). Periche begins on his left foot rather than the more usual right, but this does not affect the phrase of four main beats.

Subdivisions normally arrive two, three, or four to the beat (Polak 2010, par. 7), which Locke (2011) calls binary, ternary, or quaternary subdivision.<sup>15</sup> Locke (2011, 54) notes that quaternary subdivision is more frequent than binary (see also Ladzekpo, n.d.). Take, for instance, Ewe kinka and Cuban rumba guaguancó in Example 5. The offbeat, anticipatory sixteenth notes in the timelines, marked with arrows, insist on a quaternary subdivision in relation to the basic steps of the dancers. Playing, hearing, or dancing to these timelines accurately requires being aware of this 4:1 ratio (Agawu 2003, 86–91).<sup>16</sup>

Combining the three levels of the hierarchy, four main beats with ternary subdivision result in a cycle containing 12 small pulses; four beats with quaternary subdivision result in a cycle of 16 (Toussaint 2013, 23–24 and many others). In standard notation, main beats are usually written as quarter notes in binary and quaternary time, dotted quarters in ternary. Thus the basic metric schemes look like Example 6.

15. Kubik (2010, 35–36) notes occasional subdivision by five. It is often impossible to tell from a recording alone how the performers are feeling it, especially when one is unfamiliar with a style. To my ear the two recordings of “Mwingonyi” on Gansemans (2009, tracks 13 and 14) sound like they have quintuple subdivisions, but the performers may be experiencing them as sextuplets.

16. For students, learning to feel four fast pulses per main beat, not just two, is essential to performing A/D music. Very often, A/D music is written in 4/4 with eighth note subdivisions and students are told to feel half notes as main beats. I believe this confuses them more than it helps.

The image shows two sets of musical notation in 4/4 time. The first set, labeled 'kinka timeline', consists of three staves: the top staff shows a melodic line with accents on the first and third beats; the middle staff shows a continuous stream of eighth notes representing subdivisions; the bottom staff shows a drum pattern with notes on the first, second, third, and fourth beats, labeled 'L', 'R', 'R', 'L' respectively. The second set, labeled 'rumba guaguancó timeline', also has three staves: the top staff shows a melodic line with accents on the first and second beats; the middle staff shows subdivisions; the bottom staff shows a drum pattern with notes on the second, third, fourth, and first beats, labeled 'R', 'R', 'L', 'L' respectively.

Example 5. Quaternary subdivision: Music moving four times as fast as the feet.

The image shows two sets of musical notation. The first set is in 12/8 time and consists of two staves: the top staff shows a melodic line with three groups of eighth notes, labeled 'ternary subdivisions'; the bottom staff shows a drum pattern with notes on the first, fourth, seventh, and tenth beats, labeled 'main beats'. The second set is in 4/4 time and consists of three staves: the top staff shows a melodic line with four groups of eighth notes, labeled 'quaternary subdivisions'; the middle staff shows a melodic line with notes on the first, second, third, and fourth beats, labeled 'binary subdivisions'; the bottom staff shows a drum pattern with notes on the first, second, third, and fourth beats, labeled 'main beats'.

Example 6. Basic African/Diasporic metric schemes.

### Beyond the Metric Schemes: Language

Agawu (1987, 1995) contextualizes the basic metric frameworks sketched above within a broader picture of music in relation to language. Ordinary speech has its own rhythm, which carries over into various levels of formalized speech such as poetry, songs without fixed meter such as laments, and non-metered drum language. In the realm of music for dancing, support instruments play repetitious patterns that are tightly connected to movement and thus to fixed meter. Although A/D musicians often assign onomatopoeic or semantically referential phrases to such patterns, their extended repetition in performance decreases their similarity to ordinary speech (Agawu 1995, 185) and encourages musicians to develop them “for their intrinsic value” (III). Lead drummers, less tied to repetition, develop phrases and variations that often challenge metric schemes while staying within them. When lead drumming moves close to referential language it may go even further, departing from strict metric schemes (Agawu 1995, 73; Kubik 2010, 48–50). Lead drumming and music–language connections are

beyond the scope of this article, which concerns mainly the shorter, repetitive, less flamboyant phrases of support instruments, playing for dancers' feet.

### **Between the Metric Schemes: Micro-subdivisions and Analogue Transformations**

The separation of quaternary and ternary metric schemes as presented above does not do justice to a salient feature of African/Diasporic music: performers often slip between different subdivisions of the beat. They may switch directly from one division to the other, or hover somewhere in between. This involves more than throwing an occasional triplet into a quaternary feel. Lead instruments may switch feels for extended periods. Some entire genres, such as jazz and samba, are characterized by in-between feels; American and Caribbean musicians alike often call such feels "swing." Or different instruments in an ensemble may play in different feels (Kubik 2010, 35); in some versions of Cuban rumba columbia, for instance, idiophones are quaternary and support drums ternary. Shakers and rasps, especially, have sounds with more duration than most drums and quite often create ambiguity. In short, competent A/D musicians are adept at shifting feels, and the potential to do so is always open.

The advent of computers capable of measuring extremely small time durations has led to studies attempting to quantify subdivision in-between-ness.<sup>17</sup> Polak has measured micro-subdivisions in Malian djembe drumming and discovered three stable types—short, medium, long—which, in various combinations, characterize certain drum compositions. Polak makes a strong case that realms of micro-subdivision feel should be considered part of musical meter, perhaps adding a fourth level to the three-level hierarchy of cycle, beat, and subdivision (see also London's [2012] "many meters hypothesis").<sup>18</sup>

Pressing (1983) was perhaps the first to point out that certain widespread rhythmic patterns appear in both ternary and quaternary expressions. He called this phenomenon "analogue transformation" (43). This observation has become widely accepted (e.g., Agawu 2006, 38–39; Lehmann 2002, 20; Mauleón 1993, 50; Peñalosa 2009, 38, 41, 112; Spiro 2006, 38–43; Stover 2009, 151, 163–64; Toussaint 2013, 46, 57–66). Shifting between ternary and quaternary expressions may occur at the level of micro-subdivisions, in which case the pattern will feel "in between"; or it may be a more clearly demarcated change, resulting in closely related pairs.

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17. It is an irony of intellectual history that some of the first computerized studies of micro-subdivisions by ethnomusicologists (e.g., Benadon 2006; Gerischer 2006) cited Charles Keil's (1987) influential article on "participatory discrepancies" as a key source. Keil was attempting to establish that feel and groove are legitimate topics for scholarly discourse, and are characterized by tiny but consistent discrepancies, which he approached as processual, performative, subjective, and qualitative. The computer studies aimed to objectify and quantify Keil's subjective discrepancies.

18. Computer measurements show that each of the three Malian subdivision types—short, medium, long—actually encompasses a range of durations (London 2012; Polak and London 2014). Differences between durations inside each range are below the threshold of human perception, but Malian drummers and culturally knowledgeable listeners perceive anything within the range as belonging to its type (short, medium, or long). Such "categorical" perception may explain why computerized studies of swing in jazz (Benadon 2006; Collier and Collier 2002; Friberg and Sundström 2002) have shown apparently inconsistent results: jazz swing, like djembe micro-subdivision types, perhaps involves perceptual ranges rather than absolute quantities.

Among the most important of such pairs, the standard 12/8 timeline and its two five-note variations have 4/4 equivalents with quaternary subdivisions, notated in Example 7. Another important pair, shown in Example 8, is quarter notes in ternary time and the extremely widespread quaternary figure 3-3-2 (Peñalosa 2009, 38; Spiro 2006, 38).<sup>19</sup> When the two patterns in Example 8 are combined with main beats—as happens when people dance to them—the composite results in Example 9 are a three-against-two polyrhythm (hereafter, “3 v 2”) in ternary time, and the figure 3-1-2-2 in quaternary time. These are also analogue transformations of one another.<sup>20</sup>

The 3-3-2 rhythm and its companion 3-1-2-2 are among the world’s most widespread rhythmic patterns, found in traditions throughout Sub-Saharan Africa and the Diaspora, as well as North Africa; around the eastern Mediterranean from the Middle East through Turkey and the Balkans; in South Asia, East Asia and Indonesia; and in much contemporary popular

Example 7 consists of three pairs of musical staves. Each pair shows a 12/8 timeline on the top staff and a 4/4 timeline on the bottom staff. The first pair is labeled '7-note 12/8 "standard" timeline' and 'afrobeat/highlife (Ghana, Nigeria)'. The second pair is labeled '5-note 12/8 timeline A' and 'rumba clave (Cuba)'. The third pair is labeled '5-note 12/8 timeline B' and 'son clave/kpanlogo'. The notes and rests are aligned to show how the 12/8 patterns are transformed into 4/4 patterns.

Example 7. Analogue transformation with four-beat timelines.

Example 8 shows two musical staves. The top staff is in 6/8 time and contains three quarter notes. The bottom staff is in 2/4 time and contains a dotted quarter note, a quarter note, and a quarter note. The labels '3' and '3-3-2' are placed to the right of the staves, indicating the rhythmic patterns.

Example 8. Analogue transformation with two-beat timelines.

19. In Hispanophone Latin America, both triplets and 3-3-2 are called by the same term, “tresillo.”

20. 3-1-2-2 is “habanera” in Spanish. “Habanera” is a much more elegant name, but since I am avoiding culturally specific terms I will use “3-1-2-2.”

The image displays two sets of musical notation. The top set is in 6/8 time and consists of three staves. The first staff has a treble clef and a 6/8 time signature, with three quarter notes on a single line, labeled '3'. The second staff has a treble clef and a 6/8 time signature, with two dotted half notes on a single line, labeled 'main beats'. The third staff has a treble clef and a 6/8 time signature, with a quarter note followed by three eighth notes, labeled '3 v 2'. The bottom set is in 2/4 time and consists of three staves. The first staff has a treble clef and a 2/4 time signature, with a quarter note, a quarter note, a quarter rest, and a quarter note, labeled '3-3-2'. The second staff has a treble clef and a 2/4 time signature, with two dotted half notes on a single line, labeled 'main beats'. The third staff has a treble clef and a 2/4 time signature, with a quarter note, a quarter note, a quarter note, and a quarter note, labeled '3-1-2-2'.

**Example 9.** Analogue transformation: 3 v 2 and 3-1-2-2.

music, from Caribbean reggaetón to U.S. funk to Southeast Asian pop. I will hazard no guesses about why these patterns resonate in Bulgaria or Bali. But in the African/Diasporic context their power is clear: 3-3-2 is the quaternary expression of the 3 line in the fundamental polyrhythm 3 v 2, and 3-1-2-2 effectively *is* 3 v 2. Moreover, 3-3-2 is one of the simplest and most generative of asymmetric rhythmic shapes: three notes spread almost evenly across two beats. Its second note—the offbeat sixteenth anticipation—hanging just before the second main beat and forcing an awareness of quaternary subdivision, is especially energetic, tense, and strong.<sup>21</sup> This note is so characteristic that it may appear by itself and still be perceived as belonging to 3-3-2 (Lehmann 2002, 23). In Cuba this note has its own name, “bombo,” which I will use occasionally in this article despite my intent to avoid Cuba-centric terms.

### Across the Metric Schemes: Polyrythm

Analogue pairs cross ternary/quaternary boundaries at the levels of subdivisions and micro-subdivisions, and may be viewed as a subtle type of polyrythm within very small spans of time. Other types of polyrythms create contrasts at larger scales. There are several ways of doing this; here are three of the most important.

First, phrases played on different instruments, or sung, need not begin in the same place (Agawu 2003, 77; Anku 1997, 215–17; Kubik 2010, 38–39). A. M. Jones (1954, 41) long ago referred

21. The practice of referring to beats 1 and 3 in a four-beat quaternary phrase as strong, beats 2 and 4 as weaker, and offbeat notes as weaker still, ought to be abolished in discourse on African/Diasporic music. Locke (2011, 56) describes these concepts in terms of tones “being at rest (stabile) or in motion (motile). Thus, a tone that occurs on beat 2 will inherently feel more motile; that is, least resolved and most capable of being set in motion, than a tone whose onset matches beat 1.” In other words, beat 2 is not weak, but vibrant. The same applies to beat 4. This is why snare backbeats in U.S. funk, and the low surdo in Brazilian samba, are so effective: they are exciting yet, since they are main beats, relatively stable. In the same manner, offbeats can feel motile and strong in relation to onbeats. Offbeats that match notes in a timeline, such as the anticipatory sixteenth note in 3-3-2, are especially strong (see further remarks on the bombo note in footnote 27).

to this phenomenon as “the staggering of the points of entry.” Similarly, Kubik (2010, 44–47) points out that A/D harmonic cycles usually correspond to the short cycles of rhythmic patterns (or low multiples thereof, such as two or four cycles) and do not necessarily resolve on downbeats (cf. Lehmann 2002, 30).

Second, polyrhythms may exploit alternative groupings of subdivisions within the same cycle (rather than by staggering or overlapping cycles, as above). In Example 10, a symmetrical grouping of notes (A) is played against an asymmetric grouping (B).

Third, and most important for our purposes, polyrhythms may utilize the contrast between threes and twos. This contrast occurs at many levels of the metric hierarchy. We have already seen this as a blurring at the micro-subdivision level. It can also be a crossing or composite of alternative subdivisions within main beats, as in Example 11A; alternative groupings of subdivisions across main beats, which are 3 v 2 and 6 v 4 in Example 11B; or larger alternative groupings, as 3 v 4 in Example 11C.<sup>22</sup>

Note that in Examples 11B and 11C the four main beats remain primary and the groups of three cut across them. That is, the contrasts in Example 11B are 3 v 2, not 2 v 3, and 6 v 4 rather

Example 10 shows two rhythmic patterns, A and B, in 4/4 time. Pattern A consists of quarter notes with eighth rests, and Pattern B consists of eighth notes with quarter rests.

Example 10. Polyrhythm: Same metric scheme, contrasting patterns.

A: 3 v 2 as alternative subdivisions within the beat

Primary subdivisions in ternary time: twelve

Alternate subdivisions: eight

Composite of the above two lines: 3 v 2 within the beat

Main beats

Example 11. Threes and twos at different levels of the metric hierarchy.

22. For a similar interpretation, see Burns (2010, pars. 49–68).

## B: 3 v 2 as alternative groupings of subdivisions

Primary grouping of subdivisions in ternary time: by 3s

Alternate grouping of subdivisions: by 2s

The above two lines as a polyrhythm: 3 v 2 (half cycle) or 6 v 4 (full cycle)

## C: 3 v 2 as a larger alternative grouping

Primary grouping of subdivisions in ternary time: by 3s

Alternate, larger grouping of subdivisions: by 4s

The above two lines as a polyrhythm: 3 v 4

**Example II continued.**

than 4 v 6; in IIC they are 3 v 4, not 4 v 3 (Ladzekpo, 1995.). People unfamiliar with A/D traditions, especially those unfamiliar with dancing, often hear the 3 line of 3 v 2 or the 6 line of 6 v 4 as the main beats. But these are crossrhythms against the basic feel. There are exceptions to this generalization: some Cuban Arará dancing and some slow steps for female oricha deities such as Ochún and Yemayá, for instance, are firmly on “the six” (see also footnote 87). Yet it is striking how few such exceptions there are and how clearly they stand out.

**Multistability and the Metric Matrix**

We have now cast some doubt on the simple duality of ternary and binary/quaternary metric schemes in Example 6. In fact, competent dancers and musicians partake of both realms: they maintain a basic feel, depart on variations, and return without getting lost. To do this, they may rely on composite listening (hearing separate parts combined into a whole). Or they may shift attention between different parts, hearing alternate relationships within the whole. A supporting drummer might at one moment focus on her or his own part in relation to the main beats, at another moment in relation to the timeline, at still another in relation to a second support drummer’s part. The parts not focused upon remain in peripheral awareness. London (2012, 105) notes that the extended repetitions of A/D music *encourage* performers and listeners to explore alternate perspectives.

Pressing (1983, 52) calls the ability to switch in this manner “perceptual multistability.” Locke (2009) calls it “cubism” and refers to the combined ternary-quaternary field as a “metric matrix” (2011; see also Anku 1997, 217–18; Gerstin and Dalluge 2014, 245–55; Pressing 2002, 289; Rahn 1996, 86–87).<sup>23</sup> I will assume that most pieces of A/D music are primarily ternary or primarily binary/quaternary, but that these two feels are so linked experientially that musicians have no trouble switching back and forth, and the alternate feel is always available.<sup>24</sup>

### Timelines

If polyrhythms pull against main beats while instruments and songs begin their phrases in different places, what establishes a common referent? Main beats do not serve this purpose because each beat is the same: their onsets are evenly distributed and the downbeat is rarely marked with an accent, so that you cannot tell whether a beat is beat 1, beat 2, and so on. As Temperley (2000, 80) puts it, “an undifferentiated string of quarters or dotted quarters would be quite ambiguous.”

Instead, much music of West and Central Africa and the Americas relies on timelines: asymmetric patterns that carve distinct phrases in time. As Pantaleoni (1972, 60) put it,

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23. There is some debate as to whether one can truly engage in both ternary and quaternary perception at once, or simply switch back and forth quickly. Put another way, is multistability a well-honed polyrhythmic sensibility, or is it truly polymeter? Predictably, a metric hierarchy theorist like London (2012, 75) claims that “on a given perceptual occasion a musical figure can be metrically construed in only one way” (see also Agawu 2003, 79–86; Temperley 2000). In contrast, Locke (2011, 55) states that “one phenomenal object can be felt in multiple ways simultaneously,” a point also argued forcibly by Stover (2009, 131–32, 237, 311, and *passim*) in the context of a processual, phenomenological approach to A/D rhythm. Friedson (1996, 169) reports indigenous accounts of true polymeter in Tumbuka healing ceremonies in Malawi, where negotiating 3 v 2 rhythms allows healers to erase boundaries between themselves, afflicted persons, and the spirits. Both drummers and others “refer to multiple layers of beat . . . both rates of motion (i.e., beat) are available at all times” (143). Ladzekpo (1995) states that in Ewe culture “a main beat scheme represents a strong purpose in life and a secondary beat scheme represents an obstacle. . . . As a child . . . [my] blocking off a beat scheme to ease the hostility between opposing beat schemes of unfamiliar rhythmic contrast was often severely punished as my avoidance of the real challenges of life.” Ladzekpo’s testimony could support either the view that ternary and quaternary aspects of polyrhythms remain separate (i.e., tension should not be avoided), or the idea that they may be resolved in true polymetric perception (obstacles can be overcome). To pick a nit, if ternary and quaternary unite in perception, then that perception is not exactly polymetric. Perhaps some more careful defining of “multistability” and “polymeter” is needed.

24. Pérez-Fernandez’s (1986) thesis that African ternary rhythms have transformed into mainly quaternary feels in the Americas (“binarización”) seems to be widely accepted, though perhaps more in Latin American than Anglophone/United States scholarship (see brief mentions in Agawu 2006, 38–39; Toussaint 2013, 57–66). I feel Pérez-Fernandez’s thesis is weak on several counts. First, it relies on an oversimplified Marxist dialectical opposition between Africa and modernity. This is in turn related to a series of clichés that circulate among both American and Caribbean musicians: African music is ternary, New World binary; A/D religious music is ternary, secular folklore and popular music binary. Second, Pérez-Fernandez’s thesis is questionable on empirical grounds: he has assembled an impressive array of examples, but he omits many counterexamples, including quaternary religious music from both Africa and the New World, and quite a few styles of popular music with ternary feels—swing and shuffle in the United States, for instance! Third, and most pertinent here, much of A/D music is in practice both ternary and quaternary. A given genre or piece of music may be primarily one of these, but it has the potential of shifting to the other or hovering in between. Ternary and quaternary are neither a historical progression nor a structural opposition, but an open set of possibilities, very much alive in both tradition and modernity.

timelines create “silhouettes”; or as Agawu writes (2003, 76), they create a “distinct shape” (cf. Agawu 2006, 7). Other patterns in an A/D ensemble may also be asymmetric and distinctively shaped, of course. But timelines are the patterns that establish reference: a cycle, a primary subdivision feel, main beats, and a specific dynamic or sense of unfolding through the metrical cycle.

Let us take each of these characteristics in order. First, timelines establish cycles: as noted above, cycles are most often four main beats in length, and most timelines are similarly four beats long, or are two-beat phrases taken as pairs. Second, subdivisions: since timelines are asymmetric, they incorporate onsets at subdivisions in addition to the main beats, thus marking the predominant subdivision feel. They may do so ambiguously, in between ternary and quaternary feels; nonetheless, they require performers and listeners to interpolate subdivisions. We have already seen this with reference to the second note of 3-3-2, which forces a quaternary perception. Third, in the same way, timelines require performers and listeners to interpolate main beats. As Agawu puts it, “No one hears a [timeline] without also hearing—in actuality or imaginatively—the movement of feet” (2003, 73; see also 86–91). To make sense of the music, “the dancer [or listener] thus becomes active interpreter, contributing to the implementation of the pattern” (Agawu 2003, 130; cf. Chernoff 1979, 50 and Waterman’s classic “metronome sense” [1952]). Timelines are often learned together with main beats as composites, embodied in onomatopoeic phrases (see Kubik [2010, 52–84] for several African examples and Manuel [2009, 19] for Hispanophone Caribbean ones).<sup>25</sup>

Timelines achieve all this by *shaping* time, structurally and experientially. They are often played on idiophones with precise, cutting timbres that can be heard even in the loudest ensembles: iron bells, claves (Cuba), tibwa sticks (Martinique). Musicians listen to the timeline as they play, “matching,” as Pantaleoni (1972, 58) puts it, their own patterns against it. As A/D musicians say, “You must always fit with the bell” (58). Because of asymmetry, “Every pattern . . . appears in only one relationship to the pattern played on the bell” (Pantaleoni 1972, 59; see also Pressing 2002; Rahn 1996, 79). Timelines are thus key to perceptual multistability (Pressing 1983, 52): you can shift focus onto different relationships in an ensemble and the timeline will continue to orient you to the overall picture, or help you find your way back if you get confused.

Timelines do more than help musicians keep their place: they organize musical rhythm conceptually. As Nketia (1963, 78) puts it in his foundational description of timelines, they are “a constant point of reference by which the phrase structure of a song as well as the linear metrical organization of phrases are guided.” Percussion parts, instrumental melodies, and

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25. Once researchers began to grasp the importance of timelines, there was a tendency to overemphasize their role in the music, to insist that because musicians are matching to the timeline then main beats must be subsidiary, or even not exist (Pantaleoni 1972). Some researchers argued that subdivisions rather than main beats are the main building blocks of ensembles (Koetting 1970; Pantaleoni 1972). Both Agawu (2006, 18–24) and Kubik (2010, 35, 62) have refuted the latter position, and Polak’s (2010) recent work shows how attention to subdivisions need not deny other levels. The current consensus is that all three levels of metric organization—cycle, beats, subdivisions—are present in and necessary to A/D rhythm.

songs all take on the shape of the timeline they are associated with. For instance, in the Ladzekpo family’s version of the dance gahu, shown in Example 12, the kidi support drum plays prominent “popped” notes (with x noteheads) on the distinctive sixteenth note of 3-3-2 (marked with an arrow) and the squarer “& 4” of the second half.<sup>26</sup> Similarly, in Cuban rumba guaguancó, an accompaniment played with sticks and known variously as palitos, cascará, or guagua, transcribed in Example 13, is clearly an elaboration of the timeline. This relation is often brought out by the strong hand (S) playing the timeline notes. Song melodies correspond to timelines as well, as Examples 14 and 15 illustrate. And, of course, instrumental melodies also correspond to timelines. For examples, see the transcriptions of “Waka Waka” and “Nyoka Musango” in Examples 49 and 50 below.

Even when the timeline itself is not played, competent musicians and listeners can distinguish its effect in the music. This happens frequently in Cuban popular music, and “Esa China Tiene Coimbre,” excerpted in Example 15, is an example: on the original recording

Example 12. Gahu timeline and drum accompaniment.

Example 13. Palitos accompaniment to rumba guaguancó.

26. These are the timeline and kidi drum parts used by the Ladzekpo family; the Agbeli family uses different patterns. Throughout this article, Ewe music and dance examples are from the Ladzekpos’ tradition unless I specify the Agbelis. I have studied the Ladzekpos’ style mainly with C.K. Ladzekpo and his student Dan Gorlin; the Agbelis’ tradition from Nani Agbeli, his student Faith Conant, and other teachers at the Dagbe Cultural Center in Kopeiya, Ghana. There are many local and family strands in the fabulously rich world of Ewe music, but these are the two I am familiar with. Transcriptions and examples are my own. Also throughout this article, Cuban, Martinican, and Brazilian music and dance examples are from my general knowledge of those musical cultures unless a specific teacher, performer or performance is noted. All transcriptions and examples are my own.



rhythmically suspended sixteenth note anticipating beat 2, and partially resolving to a calmer but still suspended offbeat eighth note, which in turn leads to the next downbeat. Stover, in particular, draws attention to the dynamic unfolding of four-beat timelines with a strong call-and-response arc. We will return to this concept in the section on “Orientation,” below.<sup>28</sup>

### TIMELINE STRUCTURE AND ORIENTATION

Timelines continue to fascinate researchers. In this section, I summarize some recent approaches, adding dance and pragmatic performance concepts to the picture. To get us started, Figure 16 shows some representative examples of four-beat timelines (for many more, see Gerstin and Dalluge 2014; Pressing 1983; Rahn 1986).

Figure 16 displays 12 musical staves illustrating various four-beat timelines. The staves are organized as follows:

- Staff 1: 12/8 standard timeline
- Staff 2: 12/8 5-note standard timeline A
- Staff 3: 12/8 5-note standard timeline B
- Staff 4: 12/8 Central Africa/Haiti
- Staff 5: 4/4 son clave (Cuba)/kpanlogo (Ghana)
- Staff 6: 4/4 rumba clave (Cuba)
- Staff 7: 4/4 gahu (Ewe, Ghana)
- Staff 8: 4/4 konpa direk (Haiti)
- Staff 9: 4/4 kpacha/tokwe (Ewe, Ghana)
- Staff 10: 4/4 ijexa (Brazil)
- Staff 11: 4/4 partido alto (Brazil)
- Staff 12: 4/4 Angola/Zaire (Kubik 1979: 17)
- Staff 13: 4/4 Central/West-Central Africa (Kubik 1998: 219)
- Staff 14: 4/4 main beats

Example 16. Examples of four-beat timelines.

28. The multiple functions and experiential dynamic of timelines suggest that they are more than just patterns superimposed on a metrical framework. As Stover (2009, 14) writes, they are “not merely syncopated rhythms that traverse (or are organized by) meter or cycle, but rather . . . they occupy a powerful position, heretofore undefined in theoretical or ethnomusicological literature, of being both metric and rhythmic determinants.” Compare with Lehmann (2002, 52), and the foundational quote on timelines from Nketia (1963, 78), cited above. In short, timelines may break down the meter/rhythm dichotomy. See footnote 9 for further discussion.

Recent literature has examined the first five timelines in Example 16 at length (Lehmann 2002; London 2012; Peñalosa 2009; Stover 2009; Toussaint 2013), effectively treating them as paradigmatic of all A/D timelines. These five share several striking formal properties. For one thing, they appear among the most common analogue pairs, as shown in Example 7; they translate easily between quaternary and ternary feels.

### Asymmetry and Maximal Evenness

A notable property of the first five timelines in Example 16 is their “maximal evenness”: despite being asymmetric, they distribute notes fairly evenly through the cycle (Agawu 2016, 174–75; London 2012, 125–131, cf. well-formedness rules 4.1.1–4.2.2; Pressing 1983, 52; Toussaint 2013, 23–24). The same concept applies to two-beat timelines: 3-3-2 is a maximally even distribution of three notes in eight slots—that’s why it resembles the 3 line of 3 v 2, an even distribution of three notes in six slots. In 12/8, the onsets of standard timeline A are 2-3-2-2-3, while B is 2-2-3-2-3—really, the same distribution with different starting points. Any other distribution of five notes in twelve slots would bunch some notes closer together and spread the other notes further. In quaternary time, the maximal spread of five notes in sixteen slots is 3-3-3-3-4 (the so-called “Brazilian clave”); the widespread son clave/kpanlogo pattern is only slightly less even, 3-3-4-2-4.

Once you start adding more notes, you must place some next to one another. In ternary time, many timelines have seven notes in twelve slots. You could string three (or more) notes together, as in Example 17A, but this is far from maximally spread and rarely occurs. More often, patterns include two pairs of adjacent notes (double strokes or, in musicians’ parlance, doubles), placed either next to one another, as in Example 17B, or separated, as in 17C.<sup>29</sup> The latter is, of course, the 12/8 standard timeline, and is the maximal spread of seven notes in twelve slots.<sup>30</sup>

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29. More precisely, in Example 17C the doubles are separated by one single stroke, then two single strokes at the end of the cycle, before reaching the initial double again. Shifting the starting point of this pattern does not change its distribution; it still has doubles separated by one single on one side, two singles on the other.

30. London (2002, 155–60) and Toussaint (2013) demonstrate that maximal evenness is maintained in both seven- and five-note versions of the standard ternary timeline. Toussaint (2013, 157–64) and Peñalosa (2009, 222–25) also note that the “holes” in the seven-stroke pattern produce the two five-stroke patterns. However, I believe this “holes” relationship is irrelevant to performers. Performers playing the seven-note pattern simply remove two of its notes to produce one of the five-stroke patterns, or they add two notes to a five-stroke to produce the seven-stroke. The patterns are heterophonous rather than hocketed. When playing fast it is helpful to drop one of the notes in a double stroke, so perhaps the five-note versions derive from the seven-note; but then again the seven-note versions are often played quite fast, so this is speculative. Adding notes to a pattern (but not so many that it loses its character and becomes an undifferentiated flow of subdivisions) is a common type of variation in A/D music. The usual term for this is “fission,” because longer durations are being split into smaller ones (e.g., Pressing 1983, 40). I prefer “addition,” which I feel expresses more directly what musicians are doing: taking a pattern and adding a few notes to it. As Agawu (2006: 28–30) warns, adding notes does not imply additive rhythm. The converse would be, of course, “fusion” or “subtraction”: removing notes from a busier pattern. This occurs when a single note stands in for an entire pattern, e.g., the bombo note alone in Cuban music evoking 3-3-2.

A: notes in a string  
B: two doubles, adjacent  
C: two doubles, maximal spread

Example 17. Distribution types for seven-note timelines in 12/8.

Similarly, many quaternary timelines, such as those in Example 18, have nine notes in sixteen slots. Again, the maximal spread is two doubles separated by single strokes. The brackets in Example 19 point out that these busy patterns with maximally even asymmetry continue to remain divided nearly (though not quite exactly) in half.

partido alto (Brazil)  
Angola/Zaire (Kubik 1979: 17)  
Central/West-Central Africa (Kubik 1998: 219)

Example 18. Quaternary nine-note timelines with a maximal spread of doubles.

12/8 standard pattern  
partido alto  
Angola/Zaire  
Central/West-Central Africa

Example 19. Near-even cycle division in maximally spread timelines with seven notes (ternary) and nine notes (quaternary).

As we shall see in the next section, a maximally even yet asymmetric division of the cycle figures in the phenomenon of orientation. There is also an aesthetic dimension to this type of structure, as Toussaint suggests:

Perfectly even rhythms contain too much regularity and symmetry to be musically interesting. . . . To succeed as a musical timeline . . . a rhythm must be somewhat asymmetrical; it must possess some irregularity. . . . Onsets should be distributed *almost* as evenly as possible. (2013, 280; see also Pressing 1983, 52)

However, while maximally even timelines may be mathematically fascinating and aesthetically pleasing, they are not the only type of timeline, especially once we start looking beyond Ewe and Cuban examples—beyond the first five patterns in Example 16. In that example, for instance, Haitian konpa direk is far from maximally even: it bunches notes towards the beginning of each half-cycle, leaving gaps near the end.<sup>31</sup> There are numerous instances of doubles placed adjacent to one another, rather than spread through the cycle; Example 20 shows four such patterns. Example 21 illustrates that in quaternary time, many timelines use a “medial spread” of doubles; that is, not adjacent, but not maximally spread either.<sup>32</sup>

The image displays four musical staves, each representing a different rhythmic pattern. The first staff is for 'djouba (Haiti)/tibwa ternaire (Martinique)' in 12/8 time, showing a sequence of notes with a doublet (two eighth notes) at the beginning of the cycle. The second staff is for 'Arará (Cuba)' in 12/8 time, also featuring a doublet. The third staff is for 'danzón (Cuba)' in 4/4 time, showing a doublet. The fourth staff is for 'Eastern Caribbean Carnival/Brazilian maracatu' in 4/4 time, also showing a doublet. Brackets above the notes in each staff indicate the grouping of notes into doublets.

Example 20. Uneven distribution with adjacent doubles.

31. Interpretations of timelines that take Cuban 2-3 son clave as the paradigmatic example call attention to the absence of beat 3—the beginning of the pattern’s straight side—and to resolution on beat 4, as important moments in the pattern’s “syntactic arc” (Lehman 2002, 50–59; see also Mauléon 1993; Peñalosa 2009; Spiro 2006). But some patterns include beat 3, e.g., konpa direk, kpacha/tokwe, ijexa. In other patterns resolution does not arrive on beat 4; in gahu, for example, eighth note offbeats on the straight side propel the syntactic arc past beat 4 and all the way to the next beat 1. Agawu (2006, 30–31; 2016, 176), analyzing the timeline used in highlife (a pattern closely related to gahu), describes how it evokes, for Ghanaian audiences, a sense of elegance and cosmopolitan nationalism. In other words, Cuban son clave cannot serve as a mathematical or aesthetic paradigm for all timelines; conversely, we cannot dismiss other timelines as aberrations from a son clave ideal.

32. In quaternary time, maximally spread doubles are separated by two single strokes, then three more as the cycle comes around again. Medially spread doubles are separated by just one single stroke, then four. There is no medial spread in ternary time; the two doubles must either be adjacent to one another or maximally spread.

mambo (Cuba)

comparsa (Cuba)

ijexa (Brazil)

samba de caboclo (Brazil)

Example 21. Uneven distribution with a medial spread of doubles.

Central African and Brazilian timelines are often of these uneven types (Kubik 1979, 17; 1998c, 219; wa Mukuna 1978, 11–12, 185, 114, 123, 126, 185). As Stover (2009, 136–38) notes, timelines like these appear to violate some of London’s (2012, 92, 128–29) well-formedness rules. Yet the less-spread timelines are by no means “ill-formed” and work perfectly well in their contexts. Millions of people have danced happily to konpa direk’s bunched-up timeline, and have found it aesthetically pleasing.

### Orientation

Look again at the first six quaternary timelines from Example 16, reproduced as Example 22. In each of these, the first half of the pattern is 3-3-2 or one of its close cognate variations—a delayed third note in rumba clave, only the first two notes of 3-3-2 in konpa direk, 3-2-3 in kpacha/tokwe, a five-note elaboration in ijexa. In every case this first half features the

3-3-2 side      straight side

kpanlogo (Ghana)/  
son clave (Cuba)

rumba clave (Cuba)

gahu (Ewe, Ghana)

konpa direk (Haiti)

kpacha/tokwe (Ewe, Ghana)

ijexa (Brazil)

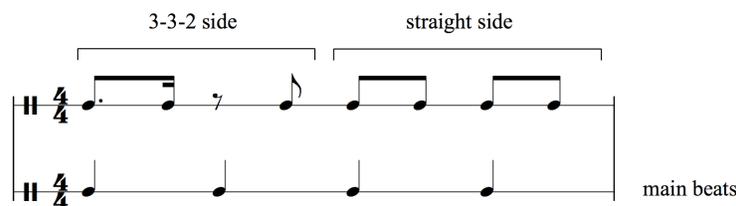
Example 22. Four-beat timelines with distinct call-and-response relationships.

anticipatory sixteenth note before beat 2. In contrast, the second half can be called “straight”: it includes beat 3, beat 4, or both, along with one or two offbeat eighth notes, but no offbeat sixteenth notes. Hispanophone Caribbean and U.S. musicians speak of such contrasting halves as “sides,” and often call the first side “the 3 side” and the second “the 2 side,” for the number of notes in each half of Cuban son clave. I will use the more structurally precise terms “3-3-2 side” and “straight side.” In addition, many musicians call attention to a powerful dynamic between the two sides: the 3-3-2 side is tense, beginning on beat 1 but propelling itself into rhythmic suspension with its second and third notes; while the answering side works its way back to resolution on beat 4 (Mauléon 1993; Peñalosa 2009; Spiro 2006). Lehmann (2002, 50–59) calls this the “syntactic arc” of the pattern.

Timelines with maximally even asymmetry naturally split into two sides, but the dynamic contrast between sides continues to work in non-maximally-spread timelines, such as *konpa direk* and *ijexa* (Example 22), *danzón* and eastern Caribbean Carnival/Brazilian *maracatu* (Example 20), and *mambo* (Example 21). All of these juxtapose a tense, busy side built on 3-3-2 or a close cognate, against a straight side featuring main beats and eighth-note offbeats. The “favorite five” timelines, with their maximal evenness, should not be taken as paradigmatic. I propose the more flexible paradigm of four-beat, oriented quaternary timelines shown in Example 23.

I am not aware of any instances of this pattern being used as an actual timeline.<sup>33</sup> Actual timelines may use a variation of 3-3-2 in the first half, and very often include just two of the four potential notes in the second, straight side. Yet I believe this model lurks, structurally, beneath the surface of much A/D quaternary music.

This powerful call-and-response structure has ramifications throughout an ensemble. When present in a timeline, it is likely to be followed by percussion accompaniment and lead parts, song melodies, and some dance steps (see the section on 3-4-1, below). It is a major feature of A/D music and dance, and we need a name for it. Many musicians steeped in Cuban music as well as some scholars (Lehmann 2002; Peñalosa 2009) call the phenomenon of call-and-response structure in timelines “clave,” once again relying on the Cuban term. In the French Antilles this phenomenon is called “compas”—in Creole, “*konpa*”—which translates loosely as “compass” and suggests the feel of giving music a direction. Following this lead, I



**Example 23.** Paradigmatic oriented quaternary timeline.

33. But see Nketia (1963, 81), Example 41(4)(b), for handclapping in this pattern.

call the phenomenon “orientation.”<sup>34</sup> The timeline orients music and dance. Or more exactly, when music and dance are oriented, the timeline provides a clear and dramatic expression of that orientation for all to follow.

In some cases the straight side may precede the 3-3-2 side. This occurs most famously in Cuban 2-3 son clave, shown in Example 24 and so-called because the “2 side” is first, and because it is characteristic of Cuban son and the many styles of music that developed out of son: son montuno, guaracha, mambo, salsa and others. This switch in orientation is sometimes called “reversal.” Reverse orientation is famous in the literature because of Cuba’s musical prominence, but in fact it is not all that common across the African/Diasporic world.<sup>35</sup>

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34. The term “compas” is used in flamenco as well as the French Antilles, and has a similarly multivocal meaning—not just the timeline pattern, but the sense of organization it gives to the ensemble—but I do not know whether the Caribbean usage derived from Spain. The terms “orientation” and “direction” have been used variously by other theorists. Narmour (1990) writes of “registral direction” in the sense of the upward, downward, or flat contour of a melody. Registral direction is an important part of how listeners construct musical experience through projection, or as Narmour puts it “implication-realization.” In this sense rhythms also have direction; they achieve a dynamic, cumulative effect through listeners’ experience of implication and realization (Narmour’s approach is Gestalt-based but also compatible with phenomenological work such as Hasty [1997]). Lehmann (2002, 31, 104, 111, 145) uses “directionality” in much the same sense; directionality is part of his concept of a rhythmic pattern’s “syntactic arc.” For instance, in the pattern 3-3-2 the second note anticipates beat 2 and can be said to direct the listener to that beat; the third note similarly directs the listener towards the upcoming downbeat. This concept of “direction” is useful and should not be confused with my term “orientation.” For my purposes, “orientation” is the more important term. I use it in the limited sense of a timeline’s contrast between 3-3-2 and straight sides: one or the other side comes first in a rhythmic cycle, and the dynamic between the sides structures the ensemble. However, the word “orientation” also surfaces in previous work. Zukerkandl (1956, 146, 261, and several other brief mentions) uses it to contrast the way in which sight orients us in space—giving us a static sense of position—against the way music creates a sense of motion. But he does not develop the term in any sustained or theoretical way. Anku (1997, 215) uses “orientation” in an entirely different manner, describing how the cycles or subcycles of multiple instruments in a polyrhythmic ensemble come together to establish “an orientation or relationship with the regulative beat,” i.e., a common downbeat. Anku is suggesting how African music creates the sense of a shared, unifying cycle despite the fact that no one is counting and parts begin in various places. In a sense, Anku’s usage of “orientation” is similar to mine: both concern how parts relate to a common cycle. But my usage is more specific. Both Anku and Zukerkandl use the word “orientation” only in passing, without developing it theoretically. I do not feel either of them has laid claim to it, and I cannot think of a better, more descriptive word in English for the phenomenon I am discussing. “Clave” is too Cuba-centric; there is no logical reason to privilege it over “compas” or other similar terms that likely exist in other languages.

35. This statement, I am sure, will raise hackles. But how many genres can you think of in which some songs use the same timeline in one orientation, other songs the reverse? I am aware of the son/salsa complex, Eastern Caribbean Carnival/Brazilian maracatu music based on the timeline shown in Example 20, and some Brazilian samba. (As I will discuss later, escola-style samba does not have a strong 3-3-2 feel, but its timelines do split in half and reverse.) I believe the assumption that reversibility is common throughout the A/D world owes much to Cuba-centricity. Some salsa tunes are in 3-2 son clave and others (the majority) in 2-3 son clave, yes, but, to use an example from the same culture, the 12/8 standard timeline used in Afro-Cuban religious traditions never appears in a reversed orientation. Note that I am not speaking here of apparent reversals within songs. A salsa song may begin in one orientation, then include an extra half-cycle in the melody, flipping its relation to the timeline. Similarly, in Afro-Cuban religious music, songs may have different orientations to the timeline, and a song leader segueing from one song to another will include an extra half-cycle to flip the relationship. In these cases the melodies swivel around the timeline, not the timeline around the melodies. This is distinct from timelines that may themselves appear in alternate orientations in different pieces of music. While that phenomenon may be well known because it occurs in son/salsa, it is not really common in other styles.

Example 24. Son clave in two different orientations.

### 3-4-1 and “Playing to the 1”

So far, I have discussed dance steps that occur on all of the main beats in a cycle—that is, four steps in four-beat musical cycles. However, dance steps may move faster or slower than main beats, or occur on only some main beats. One commonly occurring pattern involves major, weight-bearing steps on beats 1, 3, and 4, with a contrast on beat 2: a pause, a weight shift in place, a small movement, or a busy or intense movement in place. I call this dance structure “3-4-1” (cf. Burns 2010, 79–81). For instance, one of the variations of Ewe gahu dancing consists of three steps followed by a pause, notated in Example 25 as a quarter note with an “x” notehead.<sup>36</sup> The 3-4-1 pattern tells us that dance, as well as music, can be oriented. It reinforces the straight side of oriented quaternary timelines by beginning on beat 3 with a grounded feel emphasizing main beats.

Example 25. Gahu dance variation: 3-4-1.

[Video Example 25](#). Gahu dance variation: 3-4-1. Julian Gerstin, dance and percussion.

36. Unfortunately, I was unable to record this gahu variation with Kwabena Boateng, so I danced it myself in Video Example 25. However, you can see brief instances of Boateng dancing 3-4-1 in some of the other examples. In Video Example 3a at approximately 6–9 seconds, after Boateng turns, he does a 3-4-1 step to his right, then his left. In Video Example 35, Boateng begins with a turn, then at 5–16 seconds makes the “basic Ewe” step of Video Examples 4a and 4b into a 3-4-1 structure by moving on those beats and placing his foot (without fully shifting his weight) on beat 2. He does four of these patterns before beginning the main slow agbekor movement, which itself incorporates 3-4-1. See Example 35 for discussion of 3-4-1 in a ternary context.

The movement of 3-4-1, beginning on beat 3 and resolving on beat 1, reflects a widespread feature in A/D music: “playing to the 1,” or beginning musical phrases after the downbeat and resolving them on the next downbeat (Chernoff 1979, 56).<sup>37</sup> It should be no surprise to find “dancing to the 1” as well. This is another manifestation of the larger phenomenon of “staggering of the points of entry” or phrasing off the downbeat.

The 3-4-1 pattern occurs in instrumental accompaniment as well as dance. Example 26 illustrates how in Cuban rumba guaguancó, the palitos stick accompaniment may be played not as in Example 13, emphasizing the timeline, but with the strong hand on 3-4-1, plus, on the 3-3-2 side, the anticipatory bombo note.

And, of course, 3-4-1 occurs in melody. The Cuban rumba guaguancó chorus shown in Example 27 provides an interesting example: it is sometimes sung beginning on the third note of the timeline (rumba clave) and connecting strongly to that pattern, sometimes beginning on beat 3 to create 3-4-1. Whether the song is sung emphasizing the timeline or 3-4-1, it is oriented, and both versions are “sung to the 1.”

Example 26. Palitos emphasizing 3-4-1.

Example 27. Cuban song following timeline and 3-4-1.

<sup>37</sup> Many Ewe musicians begin playing the 12/8 standard timeline on the note after the downbeat, not the downbeat. An Ewe onomatopoeia for the timeline, “matikpo matikpo ‘kple ku dza,” (“I will jump, I will jump [to the sound of] ‘kple ku dza’”) begins on the note after the downbeat, which is “dza.” In short, the timeline is played to the downbeat. Similarly, when my teacher C.K. Ladzekpo counts repetitions of dance steps, he counts on the downbeats at the end of cycles: “[step sequence] one, [step sequence] two.”

### Implied Orientation in Dancing and Musical Accompaniment

The movement of 3-4-1 is clearly oriented, with the steps on beats 3 and 4 corresponding to the main beats of the timeline's straight side. For dancing on all four main beats, orientation is more subtle. Again, steps on beats 3 and 4 fit the timeline's straight side. Steps on main beats on the 3-3-2 side may be felt either as pulling against the 3-3-2, or meshing with it to create a composite 3-1-2-2, as illustrated in Example 28.

Whether felt as contrast or composite, the relation of dance steps on main beats to the 3-3-2 side of a timeline feels distinct from their relation to the straight side. This distinction creates a sense of orientation in dancers' bodies, even if they are simply stepping on main beats throughout the cycle. As we will see below, in Martinique I encountered dance and music that contradicts this feel, and found it quite disconcerting.

We also find the combination of four-beat, apparently oriented musical accompaniments with two-beat, apparently non-oriented timelines.<sup>38</sup> The 3-3-2 pattern, for instance, occurs as a timeline throughout A/D cultures. It is not oriented in itself, but in musical cultures where a sense of orientation is strong, it may be treated as paired: 3-3-2-3-3-2. This returns the music to a four-beat cycle.

The Ewe dance *kinka*, for example, uses 3-3-2 as its timeline, but dance movements, drum accompaniments, and songs all primarily use four-beat cycles.<sup>39</sup> The basic four-beat

**Example 28.** Dancing on four main beats, creating 3-1-2-2 on the 3-3-2 side of an oriented timeline.

38. The converse phenomenon arises when a non-oriented, two-beat musical accompaniment combines with an oriented four-beat timeline. The relationship of pattern to timeline will differ on the two sides of the cycle, creating a sense of orientation even for the non-oriented pattern. A familiar example is the standard salsa bass line, which consists rhythmically of the second and third notes of 3-3-2 played on both sides of the four-beat cycle. The bass contrasts against the straight side of the usual timeline, 2-3 son clave, while reinforcing the 3-3-2 side.

39. This is the Ladzekpo version of *kinka*. The Agbeli family uses the Ladzekpos' *gahu* timeline for *kinka*, and vice-versa. By "drum accompaniments" I mean the support drums *kidi* and *sogo*, which in *kinka* play changing patterns in response to the lead drum. Sometimes these are eight beats long, and I know one pattern of twelve main beats; but they are always simple multiples of the basic four-beat cycle. The *kagan* drum plays a very short invariant pattern that repeats within every beat. However, heard in relation to the timeline it covers two beats, and as I am arguing here, a four-beat interpretation is more likely since this is the overall cycle of the music/dance. Songs may use longer cycles of 8, 16, or 32 beats, and sometimes 20 or 24 beats. But like the *kidi* and *sogo* drums they stick with multiples of 4, respecting the basic cycle.

dance step is shown in Example 4b. Dancers depart from this step to show off fancier variations (*atsia*). But they keep the four-beat cycle, and return to the basic step at the beginning of one of its pairs. Returning in the middle of a pair is considered incorrect (C.K. Ladzekpo, personal communication).

Similarly, despite the timeline, most *kinka* support drum patterns and songs have four-beat cycles with contrasting sides. In the transcription in Example 29, open tones are regular note heads; muted tones are headless notes, which are not necessarily well heard in the ensemble but contribute to the feel. Support pattern A in Example 29 features the timeline notes on the first side (arrows), emphasized by the right hand; straight notes dominate the second side.<sup>40</sup> Pattern B includes but does not emphasize the characteristic anticipatory sixteenth note of 3-3-2, and pattern C omits it. They have a call-and-response feel nonetheless, with a busy first side contrasting to a sparser second side. All of these patterns imply an oriented four-beat cycle. In Example 30, from a *kinka* song, both call and response begin on an implied straight side of the timeline, while the syllables “ble vio” articulate the first two notes of 3-3-2.

In *kinka*, both songs and drum accompaniments such as the above, as well as songs, change every few minutes to heighten the energy of the performance. But, like the dancers’ fancy *atsia* steps, songs and drums change in accordance with the implied four-beat, paired-timeline cycle. According to C.K. Ladzekpo (personal communication), this cycle is set by the initial song and drum pattern at the beginning of a performance, and competent performers do not lose track of it even though the cycle is not referenced by the audible timeline.

The image displays four musical staves in 4/4 time. The top staff, labeled 'timeline', shows a sequence of notes and rests. The second staff, labeled 'support drum patterns', shows three patterns: A, B, and C. Pattern A includes notes labeled 'R' and 'L' under specific notes. The bottom staff, labeled 'implicit orientation', has two brackets: the first covers the first three beats and is labeled '3-3-2 or busy side', and the second covers the last three beats and is labeled 'straight or sparse side'.

**Example 29.** Contrasting half-cycle patterns in *kinka* support drums.

[Audio Example 29.](#) *Kinka* bell and support drum. Julian Gerstin, percussion.

40. The right hand actually plays the full *gahu* timeline (see Examples 16 and 45).



with implied orientation in a gaga song (admittedly, gaga is from Eastern Cuba and has a strong Haitian influence).

I have considered the phenomenon of paired two-beat timelines at some length because it recurs throughout the A/D world, yet is not taken into account by theorists focused on overtly oriented four-beat timelines.<sup>41</sup> On the other hand, as I will discuss below, in Martinique I encountered music and dance with a two-beat timeline that is apparently paired in songs, but where any sense of orientation is constantly broken by dancing and drumming. The feel of such performance is quite different than in the Ewe-Cuban nexus.

### Rotation

Another phenomenon I will consider in Martinican music is rotation. A rhythmic pattern, considered as a series of onsets and gaps, may be begun in different places. Example 32 shows that 3-3-2, for example, may begin in any of eight positions. Pressing (1983, 52) calls

original starting point

3-3-2

danmyé variation (Martinique)

2-3-3  
bawa/namdom (Ghana)

Eastern Caribbean Carnival/  
Brazilian maracatu

danmyé (Martinique)

3-2-3  
kpacha/tokwe (Ewe, Ghana)

okónkolo variation in  
chachalokefún (Cuba)

Example 32. 3-3-2 rotations.

41. Much Cuban music is so powerfully oriented that two-beat timelines are unusual. They do occur, however, in gaga from eastern Cuban, combined with oriented four-beat instrumental accompaniment, and four-beat or longer oriented songs. Other well-known two-beat timelines in the New World include the five-note cinquillos of Puerto Rican bomba and other styles. Consider also the familiar “spang-a-lang” cymbal ride pattern in jazz, a two-beat pattern typically thought of in four-beat pairs: a one-measure “1 2 3 4” count encompasses “-lang, spang-a-lang, spang-a-.” Note that, once again, the onomatopoeia is “to the 1.” Though this cymbal timeline is not oriented, jazz melodies often include strong call-and-response structures within a four-beat cycle. See Washburne (1997) and Stewart (2000) for more extensive discussions of call-and-response rhythmic structures in jazz and funk.

this type of variation “cyclic permutation,” but more recent authors prefer “rotation” (Agawu 2006, 13–16, 39–41; Burns 2010, par. 83; London 2002, 137; Stover 2009, 59, 81–82; Toussaint 2013, 73–83). To recall Jones’s (1954, 41) term, rotation is one way of “staggering” patterns to create variations and polyrhythms.

I know of instances of all the 3-3-2 rotations in Example 32 (save one) from various A/D traditions.<sup>42</sup> However, some are more common than others. The rotations 3-3-2 and 3-2-3 are fairly widespread, which might seem to be because they place a note on beat 1. But 2-3-3, also with a note on beat 1, is not common. On the other hand the Eastern Caribbean Carnival/Brazilian maracatu rotation, quite prominent in its region, begins with a rest. I believe 3-3-2, 3-2-3 and the Carnival/maracatu rotation are common because they are the three rotations with a note on the crucial anticipatory sixteenth note before beat 2 (marked + in Example 32).

Rotation is not strictly a property of timelines; it can be done with any pattern.<sup>43</sup> However, it is most recognizable with short patterns such as 3-3-2. With longer patterns the effect can be more subliminal—it is not immediately apparent that partido alto and the Central African timelines in Example 16 are the same pattern, rotated. In addition, an important function of timelines is that they present a characteristic shape or silhouette, but this is changed by rotation.<sup>44</sup> Thus, any given A/D tradition will tend to stick to just one or two positions of a longer pattern, especially a timeline, rather than exploit many possible rotations.

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42. The patterns from Eastern Caribbean Carnival/Brazilian maracatu, Ewe kpacha/tokwe, and Cuban chachalokefún are four beats long; I have shown only the portion of these patterns that incorporate 3-3-2. The Caribbean/Brazilian pattern is a reduction of the full timeline (see Examples 20 and 32) omitting main beats; it is sometimes played in that manner with handclaps or bell. I am aware of instances of my “missing” rotation in various styles, e.g., samba, but in those contexts I hear it as a coincidental fragment within other patterns, not as a structurally significant 3-3-2. I would, of course, welcome more examples.

43. “Any pattern” includes melody as well as rhythm. Several authors have been fascinated by the “cognitive isomorphism” between the 12/8 standard timeline and the Western major scale (Pressing 1983, 2002; Rahn 1986, 1996; Toussaint 2013, 51–55). Both timeline and scale place seven events into twelve slots with the same sequence of onsets and gaps: the sequence | x . x . x x . x . x . x | in the timeline is equivalent to C (C#) D (D#) E F (F#) G (G#) A (A#) B in the C major scale. Beginning the major scale’s interval sequence on its other notes generates the church modes, and rotating the standard timeline generates alternate timelines. The majority of these timeline rotations are indeed found in various A/D traditions, though usually only one or two different rotations per tradition. As to why this sequence appears in different cultures and the different realms of pitch and rhythm, no one has seriously suggested a historical connection. Pressing (1983) demonstrates mathematically that just a few constraints—asymmetry combined with maximal evenness applied to a set of seven events in twelve slots—will generate the sequence. Just as the standard pattern is maximally spread, the major scale is maximally even because of the distribution of whole and half steps across its two tetrachords. However, other authors have questioned the isomorphism. London (2002), using different mathematical concepts than Pressing, argues that despite appearances the two realms are not isomorphic. Agawu asks whether the isomorphism resonates with African performers’ or listeners’ experience. He notes that percussion patterns are usually thought of in terms of specific timbres, which suggests an association of rhythm and pitch, but otherwise finds no supporting evidence (Agawu 2006, 16–18). Not many A/D musicians of my acquaintance are aware of the isomorphism, and when I’ve pointed it out they have considered it a curiosity, not something to be taken seriously. Perhaps it is time to retire the isomorphism from consideration as an important feature of A/D music.

44. Reversal of a timeline may be considered a special type of rotation, by 180 degrees. This seems to affect the perception of patterns less than other rotations, and is perhaps why reversals are relatively more common than multiple rotations of a timeline in a given musical culture (but see footnote 35).

### Ternary Dance and Music

Ternary dance employs structures quite similar to those I have outlined for quaternary time. Cycles are most often four main beats in length, and many dancing patterns outline the four main beats or are on 3-4-1, with rhythms as in Example 33.<sup>45</sup> The presence of 3-4-1 dancing suggests orientation, and indeed the common ternary timelines, like their quaternary analogues, are oriented, as shown in Example 34.

The main step of Ewe slow agbekor, transcribed in Example 35, provides a good summary of this interpretation. The weight-bearing steps are 3-4-1. The first half (the 3 side of the timeline) is the 3 of 3 v 2, with one leg swinging up on the second note, down on the third note—exactly matched by the timeline (beat 1 does double duty as the end of 3-4-1 and the beginning of 3 v 2).

Example 33 shows two musical staves in 12/8 time. The top staff, labeled "dancing on main beats", contains four quarter notes. The bottom staff, labeled "dancing on 3-4-1", contains a quarter note, a quarter rest, a quarter note, and a quarter note.

Example 33. Common dance patterns in ternary time.

Example 34 illustrates three examples of quaternary four-beat timelines and their ternary analogues. Each example consists of two staves: the top staff in 4/4 time and the bottom staff in 12/8 time. Brackets above the 4/4 staves indicate "3-3-2 side" and "straight side".

- afrobeat/highlife:** The 4/4 staff shows a 3-3-2 side pattern (beats 1-2-3, 4-5-6, 7-8) and a straight side pattern (beats 1-2, 3-4, 5-6, 7-8). The 12/8 staff shows a 7-note standard timeline.
- rumba clave (Cuba):** The 4/4 staff shows a 3-3-2 side pattern and a straight side pattern. The 12/8 staff shows a 5-note timeline A.
- son clave/kpanlogo:** The 4/4 staff shows a 3-3-2 side pattern and a straight side pattern. The 12/8 staff shows a 5-note timeline B.

Example 34. Orientation in quaternary four-beat timelines and their ternary analogues.

<sup>45</sup> See Video Example 4a for the “basic Ewe” step on all four beats in ternary time, and Video Example 35 for 3-4-1.

The diagram illustrates the rhythmic structure of the slow agbekor main step in 12/8 time. It consists of three staves:

- Timeline:** Shows a sequence of notes. The first three notes are grouped under a bracket labeled "3 side". The next three notes are grouped under a bracket labeled "straight side".
- Main Dance Step:** Shows notes corresponding to the timeline. The first note is labeled "step". The second note is labeled "leg swing up". The third note is labeled "leg down". The fourth note is labeled "step". The fifth note is labeled "step".
- Main Beats:** Shows notes on beats 1, 3, and 4.

Example 35. Slow agbekor main step.

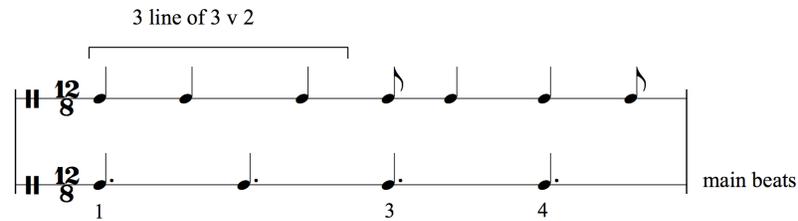
[Video Example 35](#). Slow agbekor main step. Kwabena Boateng, dance; Julian Gerstin, percussion (10/23/2016). Boateng begins with a turn, dances the “basic Ewe” step of Video Examples 4a and 4b four times, then begins the main step of slow agbekor. He finishes with another turn and more basic Ewe steps. Note that in this context he dances basic Ewe from side to side as another 3-4-1 sequence.

Just as the first half of the quaternary versions is 3-3-2 or a close variant, so the first half of the ternary versions is based on 3 against 2, or more exactly, the 3 line of a 3 v 2 polyrhythm. The second half of both quaternary and ternary versions is “straight,” emphasizing eighth note offbeats and often landing squarely on beat 4.<sup>46</sup>

Finding a paradigmatic structure similar to Example 23 for oriented ternary timelines is a little trickier than for quaternary. Lehmann (2002, 50–51) states that beat 3 is rarely included in ternary timelines. Yet probably the second-most widely distributed ternary timeline—the Central Africa/Haiti pattern in Example 16—includes a note on beat 3.<sup>47</sup> The version of this pattern in Example 36 makes both 3 v 2 in the first half of the pattern, and 3-4-1 on the second half, quite clear. To include dance and 3-4-1, and to make the 3 v 2 side/straight side, its

46. My interpretation of ternary orientation differs in certain details from that of Lehmann and Stover. Lehmann’s (2002, 62–63) “syntactic arc” begins with grounding on beat 1, moves into suspension and tension around beats 2 and 3, and resolves again on beat 4 (cf. Stover 2009, 134–35, 140–41, 187). Yet both authors note that, because the perception of main beats is inherent in cognition of timelines (see also Agawu 2003, 73), the omission of beat 3 in fact calls attention to that beat, which is “highlighted by implication” (Lehmann 2002, 63). Or as Stover (2009, 186) writes, “The powerful negating energy of silence incites the dancers to move in order to occupy the space left open by the dominant musical layer.” In other words, if we include dance in the picture—particularly 3-4-1 dancing—then the energetic unfolding of the rhythmic cycle must take into account main beats as well as timeline. In this light, the 3-3-2 or 3 v 2 side of oriented timelines creates tension, while resolution begins on beat 3 and proceeds to a final grounding on the next downbeat. The syntactic arc “plays to the 1.” The phenomenon of reversal supports this interpretation. If Lehmann and Stover’s interpretation is correct—grounding on beat 1, suspension over beats 2 and 3, grounding on beat 4—then reversal ought to switch beats 1 and 4 with beats 2 and 3. But reversal switches 1 and 2 with 3 and 4. The shift between tension and release occurs at beat 3, and then again at the next beat 1.

<sup>47</sup> This pattern is a rotation of the 12/8 standard timeline, beginning on its fourth note. It is found in Central Africa as well as Diasporic cultures with strong Central African influence such as Haiti. In some places both the standard and alternate timelines exist side-by-side; for instance, Cuban palo may use either version.



Example 36. Central Africa/Haiti version of 12/8 standard timeline.

Example 37. Orientation in paradigmatic quaternary and ternary four-beat timelines.

tension/release structure clear, I propose the ternary paradigm in Example 37. I show it with the quaternary paradigm from Example 23 for purposes of comparison.<sup>48</sup>

### Oriented Timelines as Polyrhythmic Hemiola Structures

The proposed ternary paradigm is, of course, the rhythm of the slow agbekor main step, and in the music that accompanies that dance is articulated on the totoji support drum (see Example 44). It is also a hemiola. Brandel (1973) was perhaps the first to discuss A/D timelines in terms of “horizontal” and “vertical” hemiolas. The horizontal dimension is the tension between the three notes of the first side and the two main beats of the second side. The vertical dimension is in the first side itself: three notes played over two beats (cf. Lehmann 2002, 50). However, music is not really two-dimensional; horizontal and vertical are artifacts of music writing. I prefer the terms “sequential” and “simultaneous,” illustrated in Example 38. “Simultaneous hemiola” is polyrhythmic, 3 and 2 played together. In “sequential hemiola,” one structure follows the other.

48. As with my quaternary version, I find few actual timelines matching the ternary paradigm. Almost all actual ternary timelines include one or two offbeat eighth notes in their second half, in addition to beat 4. However, to stress the importance of dancing on main beats and 3-4-1 as well as the straightness of the straight side, my ternary model omits offbeat eighth notes and includes beats 3 and 4 instead. In the quaternary model it is easier to see straightness even with offbeat eighth notes included, but most actual quaternary patterns use only one or two of the four potential notes on the straight side. In short, my ternary model omits offbeat eighth notes while the quaternary model includes them, but I hope that both paradigms illuminate the hemiolas that underlie actual timelines.

The diagram shows two staves in 12/8 time. The top staff has a sequence of six eighth notes: quarter, quarter, quarter, quarter, quarter, quarter. A bracket above the first three notes is labeled '3' and 'vertical/simultaneous hemiola'. A bracket above the last three notes is labeled '2' and 'horizontal/sequential hemiola'. The bottom staff has two dotted quarter notes. A bracket below them is labeled '2'.

**Example 38.** Vertical/simultaneous and horizontal/sequential hemiola.

The diagram shows two examples. The top example is in 12/8 time, with the top staff having six eighth notes and the bottom staff having two dotted quarter notes. Brackets above the top staff are labeled '3' and '2', with 'simultaneous hemiola' above the '3' and 'sequential hemiola' to the right. The bottom staff has a bracket labeled '2'. The bottom example is in 4/4 time, with the top staff having a quarter note, eighth note, eighth note, quarter note, quarter note, quarter note. Brackets above are labeled '3' and '2', with 'simultaneous hemiola' above the '3' and 'sequential hemiola' to the right. The bottom staff has two quarter notes with a bracket labeled '2'.

**Example 39.** Underlying structure of oriented ternary and binary guide patterns.

Example 39 combines the concept of simultaneous/sequential hemiola with my proposed paradigmatic ternary and quaternary oriented timelines. Both ternary and quaternary paradigms are expressions of hemiola in two forms, simultaneous and sequential. I believe much of the power of oriented timelines lies in this underlying dynamic: in both ternary and quaternary expressions, oriented timelines present the fundamental tension between 3 and 2 in both simultaneous and sequential forms. The simultaneous hemiola sets up a polyrhythm; the sequential hemiola creates call and response, tension and release.

### Limits of the Model

The above interpretation of oriented timelines is rather abstract, somewhat like a Schenkerian reduction of Ewe/Cuban rhythm, if there were such a thing. Yet I find it useful in the analysis of much A/D music and dance, particularly anything with oriented structures, not only in Ghana and Cuba but elsewhere. It accounts for the effect of main beats even when they are only implicit in the music; that is, it includes dance. It clarifies the underlying structure of many patterns (not just timelines but also support parts, leads, songs, and melodic

accompaniments), as well as the combination of different instruments in ensembles.

Yet this interpretation does not account for all A/D music. In the first place, timelines are not distributed across the entirety of Africa. They appear mainly in West and Central Africa, from Senegal across the Congolese rainforest basin, with an extension eastwards into Mozambique and southern Tanzania (Kubik 1998c, 308; 1998b, 666). This is obviously the area from which the great majority of enslaved Africans were taken to the Americas. But it is not the whole of Sub-Saharan Africa, omitting much of the continent's east and south.

Even within this broad area, of the dozens of timelines that exist, only five are regularly cited in the literature: the 12/8 standard timeline and its five-note variations (labeled A and B in Example 16), son clave, and rumba clave.<sup>49</sup> These five seem to be favored because they are prominent in Ewe and Cuban music, on which so many authors base their work; and because of their interesting formal, mathematical properties, notably maximally even asymmetry and orientation. But not all timelines are oriented in the strict Ewe/Cuban sense. Two-beat timelines (usually 3-3-2 or one of its five-note variations) are common throughout the A/D world; sometimes these are paired into four-beat cycles with implicit orientation, but sometimes not. Many four-beat timelines lack a dramatic contrast between 3-3-2 and straight sides. Brazilian samba is full of timelines and accompaniments of this type, such as those in Example 40.<sup>50</sup>

The 3-3-2 pattern is not immediately evident in any of these Brazilian patterns; it can be found by deleting notes, but in context it is not prominent (nor are these patterns maximally spread). A different kind of dynamic is at work in them: a contrast between rhythmic

The image shows three staves of music in 4/4 time. The top staff is labeled 'partido alto' and the bottom two are 'accompaniment A' and 'accompaniment B'. Brackets above the notes indicate rhythmic groupings: 'beats/8ths' for the first, third, and fifth notes, and 'offbeat 16ths' for the second and fourth notes. The notes are eighth notes, with the offbeat notes being sixteenth notes.

**Example 40.** Brazilian samba patterns contrasting beats and eighth-note offbeats against offbeat sixteenth notes.

49. Of the five most-often cited timelines, four are widespread, but one of them—rumba clave—is restricted to Cuba, and is not representative of A/D music in an empirical sense.

50. The two Central African timelines in Example 16 are similar to the Brazilian timelines in their lack of strong 3-3-2 feels and their attention to sixteenth note offbeats. This is relevant given the strong Central African influence on Brazilian music.

grounding and suspension. Roughly half of each pattern sticks to main beats and eighth-note offbeats, while the other half sails aloft on sixteenth-note offbeats. Such contrast between rhythmic grounding and suspension could be considered a type of orientation (and in fact any of these patterns may be reversed), but, if so, it is not orientation based on the maximally even asymmetry and double hemiola structure I have outlined for Ewe/Cuban music (for further discussion see Gerstin and Dalluge 2014, 129–31).

In other words, creating a model of A/D rhythm based primarily on Ewe and Cuban music can lead to an apparently powerful, yet limited and inflexible interpretation. For instance, in an extensive analysis based mainly on Cuban music, Peñalosa (2009, 104–105, 179) arrives at a model of the “clave matrix”: a four-part rhythmic counterpoint between main beats, an oriented timeline, support rhythms based on 3-3-2 (quaternary) or 3 v 2 (ternary), and a lead instrument. Peñalosa intends his matrix to apply to all the music of West and Central Africa, as well as those parts of the New World “where the greatest degree of African traditions were preserved” (214). That covers a large swath of A/D music, but not all of it, and when Peñalosa turns to anything that does *not* have the full four-voice clave matrix he is dismissive:

We can say with certainty that popular songs based upon a clave motif, but with no other contrapuntal elements [e.g., “Bo Diddley,” “Willie and the Hand Jive”] are not clave music. . . . A lot of Diaspora music is based on a single-celled tresillo [3-3-2] structure. This is not clave music either. . . . Some music like Jamaican reggae exhibits only the slightest remnants of African rhythmic sensibilities. (2009, 214)<sup>51</sup>

Reggae does not seem African to Peñalosa only because he has defined African music by Cuban criteria. By these same criteria, eastern and southern African music does not have much African rhythmic sensibility either. Nor does much music of Brazil or the United States, nor West African drum proverbs played in speech mode, along with many other examples one can think of. My paradigmatic models are similar to Peñalosa’s, and I believe they help clarify important underlying structures where they apply. But they do not necessarily apply to styles that do not have oriented timelines, and they omit other significant features of those styles. It is time to broaden the picture of A/D rhythm to include some of these differing styles.

## PUTTING THE STRUCTURES INTO PLAY: ENSEMBLES AND EXAMPLES

### Ensemble Roles

Having just criticized Peñalosa, let me amend that his analysis raises an important issue: how rhythmic structures are expressed by ensembles as a counterpoint between several voices. Indeed, up until now I have only looked at individual patterns in themselves or in combination with main beats and timelines. If the perspective I’ve developed is to be useful, it

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51. Stover (2009, 184–91) demonstrates that 3-2 son clave in “Willie and the Hand Jive” is neither monophonic nor uninteresting.

needs to be tested on entire ensembles and actual pieces of music.<sup>52</sup>

A broader view would include Peñalosa's four voices as well as additional elements. A/D musical ensembles typically include instruments playing the following structural roles, represented schematically in Example 41 (for fuller discussion see Gerstin and Dalluge 2014, 356-63):

1. Main beats. Even if not played on drums or other instruments, these may be expressed in clapping or in dancers' feet.
2. The flow of subdivisions (all subdivisions, or a large proportion of them).
3. Offbeats, contrasting against the main beats but also reinforcing them.
4. Timeline. For our purposes these may be sorted into two groups:
  - a. Non-oriented timeline. This may be a two-beat pattern, whether paired into four-beat cycles or not; or a non-oriented timeline of the Brazilian or Central African type.
  - b. Oriented timeline, contrasting simultaneous and sequential hemiolas.
5. Major counterpoint. This is typically played on membranophones or melodic instruments, and has two basic types:
  - a. Non-oriented counterpoint: Membranophone or melodic support parts based on 3-3-2 or its ternary equivalent, the 3 line of 3 v 2. These parts usually repeat every two beats. If they are used with an oriented timeline, they may be conceived as paired into a four-beat cycle, reinforcing the timeline's 3-3-2 or 3 v 2 side and contrasting to its straight side.
  - b. Oriented counterpoint: If there is an oriented timeline, membranophone or melodic support parts usually reflect and reinforce its orientation. They may be additive elaborations of the timeline, adding notes to it while keeping its basic shape. Like oriented timelines, they usually have a cycle of four beats (or eight, or another simple multiple of four).
6. Lead. One instrument typically is responsible for leading the ensemble. Structurally, lead instruments draw upon all the above elements (beats, flow, offbeats, timeline, crossrhythms), or take off on more flexible language-based dialogue.

Each of these roles is typically either fixed or variable (Wilson 1974). Roles 1 to 4 are usually fixed, that is, repeated with little or no variation. Together they set up a framework for the more flexible roles, 5 and 6. Instruments playing the support patterns of role 5 may add

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52. A number of authors have summarized aesthetic features typical of A/D ensembles—call and response, percussive approach, individual expression within-group solidarity, and the like (e.g., Guilbault 1990, 85–86; Waterman 1952; Williams-Jones 1975, 378; Wilson 1974). However, few have tackled ensembles in terms of structural rhythmic roles. Wilson's (1974) "heterogeneous sound ideal" perhaps comes closest.

The image displays two sets of musical notation, each consisting of seven staves. The first set is in 4/4 time, and the second set is in 12/8 time. Each staff is labeled with a number and a description of its rhythmic role:

- (1) Main beats: A single note per beat.
- (2) Flow: A continuous stream of eighth notes.
- (3) Offbeats: Notes on the offbeats (e.g., 2 and 4 in 4/4).
- (4a) Timeline, non-oriented: Notes on the downbeats.
- (4b) Timeline, oriented: Notes on the downbeats with stems pointing up.
- (5a) Major counterpoint, non-oriented: Notes on the upbeats.
- (5b) Major counterpoint, oriented: Notes on the upbeats with stems pointing down.
- (6) Lead: A staff with diagonal slashes, indicating a lead instrument.

**Example 41.** Schematic representations of structural rhythmic roles in Africa/Diasporic ensembles.

variations, or respond to the lead instrument (e.g., the boba drum in Ewe styles such as gahu, the tumba drum in modern versions of Cuban rumba guaguancó, piano and tres in salsa). I call flexible accompaniment of this sort “complementary.” Lead instruments play quite variably, elaborating on or contrasting against other parts, directing and cueing the musical ensemble, and guiding or responding to the social context in which the performance takes place.

Wilson (1974) also contributes the concept of a “heterogeneous sound ideal”; that is, timbres are distributed systematically through the ensemble. Idiophones play mainly roles I

to 4, rarely 5 or 6.<sup>53</sup> Membranophones may play main beats, flow, or offbeats, but rarely timelines, and they are prevalent in roles 5 and 6. Melodic instruments can play any of the roles, and often more than one at once. This breadth may be because the melodic instrument is playing solo or in a small ensemble; or, in a modern band setting, is taking on roles characteristic of percussion in traditional groups. For instance, the rhythm guitar in a funk band often plays busy, asymmetrical parts that function simultaneously as flow (2), timeline (4), and major counterpoint (5).

The above is intended as a broad and flexible portrait of rhythmic roles, not a prescriptive one. In any given piece of music, one or more roles may be omitted, combined together, or duplicated by more than one instrument.

### Flow and Offbeats

Two structural roles that I have not yet discussed much are flow and offbeats. Indeed, these are given little attention in most accounts of A/D rhythm, probably because they do not seem as interesting as timelines mathematically, or as distinctively African/Diasporic.<sup>54</sup>

Flow is expressed by instruments playing all or most of the subdivisions. Often these are shakers or rasps; in modern bands, cymbals, especially high hat. Example 42 gives some typical flow parts. Membranophones tend to play sparser, more “shaped” parts; however, drummers often include all or most of the subdivisions inaudibly (“ghosting”). This helps them keep a sense of flow, and, since their hands are already moving, aids them in bringing out variations.

Offbeats can be played as single or double notes, or as combinations of singles and doubles. They are heard on every type of instrument: idiophones, membranophones, melodic instruments, handclapping. Some familiar patterns are given in Example 43.



**Example 42.** Typical flow parts in quaternary and ternary feels.

53. Many authors have mentioned that the piercing quality of iron bells or hardwood claves makes them useful as timeline-keepers. However, in his foundational description of timelines, Nketia (1963, 78–93) includes handclapping.

54. For discussion of offbeats, see Agawu (2006, 30–31; 2016, 176), Burns (2010, pars. 69–77), Toussaint (2013, 99–105), and Locke’s (2011, 51–54) metric matrices.

single offbeats, quaternary:  
conga in cumbia, high hat in jazz

doubled offbeats, quaternary:  
Ewe kagan, reggae "skank" guitar

doubled offbeats, ternary:  
Ewe kagan, some versions of  
Cuban bembé

single/double, quaternary:  
slaps (x) and tones on conga in salsa

double/single, quaternary:  
gospel clapping

**Example 43.** Typical offbeat parts in quaternary and ternary feels.

Offbeats create a feeling of rhythmic suspension, in contrast to the grounding of beats (Gerstin and Dalluge 2014, 51–99). On the other hand, because offbeats share the same interonset interval as main beats, they reinforce those beats as well as contrast against them; as noted above, they cause beats to be “highlighted by implication” (Lehmann 2002, 63; cf. Stover 2009, 186). This is why offbeat eighth notes occur on the straight side of oriented timelines without compromising their straightness.<sup>55</sup> Finally, again like main beats, offbeats contrast against 3-3-2 and 3 v 2 to create polyrhythms.

Offbeats are especially important to dancers. They very often express a shift of weight, or the lifting of a foot before it lands on the beat. For instance, the “basic Ewe” step, as C.K. Ladzekpo (personal communication) calls it, has strong back contractions on the offbeats, with releases and steps on the beats (see Example 4b above).<sup>56</sup> The contractions are expressed by the kagan support drum, playing doubled offbeats (Example 45, fourth line). We might interpret the second note in each doubled offbeat as continuing the dynamic movement from eighth-note offbeat towards the upcoming main beat. If a musical part adds the upcoming beat as well (“and a 1, and a 2 . . .”), it becomes another instance of “playing to the beat,” as well

55. A good example of the power of eighth-note offbeats is the gahu timeline (Examples 14 and 45). Here both eighth notes are present on the straight side, while both main beats are omitted. An even more powerful example is a timeline often used in Ghanaian and Nigerian highlife, consisting of the gahu timeline without its first two notes. Now the final note of 3-3-2 on the straight side becomes recontextualized as an offbeat eighth note. However, dancers still feel the 3-3-2, and musical parts are mostly oriented—an instance, perhaps, of a partially implicit timeline. Agawu (2006, 30–31; 2016, 176) describes the highlife timeline’s implied main beats as part of highlife’s cosmopolitan, elegant, upwardly mobile aesthetic. We might surmise that the gahu and highlife timelines are historically related, along with other Ghanaian dances such as the Ashanti sikyi, which uses the same three-note timeline (Paulsen 2015, 167); but highlife is more widespread than gahu or sikyi, and I am not aware of any research on this point.

56. The “basic Ewe” movement is the same in ternary time (Example 4a), for example in the dance agbadza. The back contractions remain midway between main beats—on quaternary eighth-note offbeats—even though the musical context is primarily ternary.

as a 3-4-1 in miniature (i.e., with sixteenth notes).<sup>57</sup>

Instrumental parts are more likely than dancers to dwell among the fast sixteenth-note subdivisions of quaternary time, without grounding on beats or even eighth-note offbeats. Lead drumming and improvisation, in particular, comes alive in this realm—quinto phrases in Cuban rumba and boba phrases in Ewe gahu and kinka, for instance. Some patterns, such as the Central African and Brazilian timelines in Examples 16 and 40, and indeed entire styles of music such as samba, focus more on the tension of sixteenth-note offbeats than on 3-3-2 or 3 v 2 hemiola. These are not “clave music” in Peñalosa’s term; they depart from the Ewe/Cuban sensibility. But we should expect different African and Diasporic styles to develop different musical potentials.<sup>58</sup>

### Musical Examples

To test the structures of Ewe/Cuban music as outlined up to this point, I will examine one quaternary and one ternary composition from each tradition. As examples of popular music, and to see whether these structures apply outside the immediate Ewe/Cuban nexus, I also include a quaternary song from Democratic Republic of Congo and a ternary song from Zimbabwe. Most of the parts in these transcriptions are simplified to make their structure clear.

In the slow agbekor composition in Example 44, all of the structural roles are present.<sup>59</sup> Rattles articulate the main beats (role 1), and the small kagan support drum plays doubled offbeats (role 3). A timeline played on iron bell—the famous standard timeline—clearly orients the ensemble (4b). The basic dance step is 3-4-1, with a small jump-and-landing on the 3 v 2 crossrhythm of the timeline’s first half (see Example 35). This is also oriented. A large support drum (totoji) reinforces the timeline’s orientation and mirrors the dancers’ basic step, with muted strokes (headless) on 3-4-1 and open tones (regular noteheads) on the dancers’ jump and landing (5b, oriented major counterpoint). Another support drum (kroboto) expands on totoji’s pattern and can play a complementary role, elaborating its part extensively. The mid-sized support drum kidi fills up the mid-ranged sonic space with a flow of subdivisions (2). It also reinforces the main beats (1), since each brief run of three muted

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57. In salsa, offbeats are heard in the conga drum’s tones on the “&” of beats 2 and 4 (often doubled to “& a”) as well as the bongó bell’s high notes. Analyses of salsa rhythm that focus only on clave overlook the presence of these offbeats, yet they are important to both dancers and musicians.

58. Peñalosa (2009, 110–11) points out that in Cuban music sixteenth-note offbeats relate to the orientation of the timeline: the 3-3-2 side, with its anticipatory bombo note, is more likely to utilize sixteenth-note offbeats than the straight side. Compare Lehmann’s (2002, 23) comment on the ability of a single note to evoke either the 3-3-2 or straight side of a timeline. For instance, in quinto lead drum phrases in rumba guaguancó, offbeat sixteenth notes are concentrated on the 3-3-2 side (Peñalosa 2009, 194–99). In other words, the same phenomenon—offbeat sixteenth—may be interpreted differently in musical styles that emphasize oriented timelines, such as guaguancó, and styles like Brazilian samba that emphasize the contrast between beats and offbeats. Again, we should expect different styles to develop different musical potentials.

59. For sample recordings of agbekor, see S.K. Ladzekpo (1969) and Titon (2016).

The musical score for Example 44, 'Ewe slow agbekor', is written in 12/8 time and consists of seven staves. Each staff begins with a double bar line and the time signature 12/8. The staves are labeled on the right as follows:

- Staff 1: rattles: main beats. Contains a sequence of notes: quarter, quarter, eighth, eighth, quarter, quarter, eighth, eighth.
- Staff 2: small support drum: offbeats. Contains a sequence of notes: eighth, quarter, eighth, quarter, eighth, quarter, eighth, quarter.
- Staff 3: bell: guide pattern. Contains a sequence of notes: quarter, quarter, eighth, eighth, quarter, quarter, eighth, eighth. Brackets above the staff indicate '3 side' (beats 1-3) and 'straight side' (beats 4-6).
- Staff 4: dance: basic step. Contains a sequence of notes: quarter, quarter, eighth, eighth, quarter, quarter, eighth, eighth. Labels below the staff indicate 'step', 'leg swing up', 'leg down', 'step', 'step'.
- Staff 5: large support drum *totoji*. Contains a sequence of notes: quarter, quarter, eighth, eighth, quarter, quarter, eighth, eighth.
- Staff 6: large support drum *kroboto*. Contains a sequence of notes: quarter, quarter, eighth, eighth, quarter, quarter, eighth, eighth.
- Staff 7: mid-sized support drum. Contains a sequence of notes: quarter, quarter, eighth, eighth, quarter, quarter, eighth, eighth.
- Staff 8: lead drum. Contains a sequence of notes: quarter, quarter, eighth, eighth, quarter, quarter, eighth, eighth.

Example 44. Ewe slow agbekor.

or open notes (headless and regular note heads, respectively) resolves on a main beat. Finally, the lead drum (6) elaborates rhythms, cues the ensemble, directs the dancers, and plays language-based dialogues.

In Example 45, *gahu*, all of the structural roles are present. The bell lays down an oriented timeline (4b). Songs, such as that in Example 14, reflect the timeline's orientation. The rattles add main beats to the timeline; the added notes fill up sonic space and create a sense of flow (2), while still reinforcing the timeline. The dancers' basic step is on the main beats (1) but is also clearly oriented: right foot in the first half of the timeline, left in the second half. The high support drum *kagan* adds doubled offbeats (3). The middle support drum *kidi* is oriented (5b), with strong "popped" notes (marked with x noteheads) on the distinctive second note of 3-3-2, and an offbeat eighth and beat 4 on the straight side. The low support drum *sogo* plays open tones on beats 2 and 4 (the backbeats, in U.S. parlance), thus focusing on the main beats (1) at the lower end of the sonic spectrum. An even lower drum, *boba*, plays complementary patterns in alternation with the lead drum *atsimevu* (6).<sup>60</sup>

60. This is the Ladzekpos' version of *gahu*. As noted above, the Agbelis play *gahu* with the bell on 3-3-2 and the rattles playing 3-1-2-2; however, an implicit orientation remains in the dance steps, drum patterns, and songs. For a much fuller explication of *gahu*, see Locke (1987). For a recording of *gahu* in the Agbeli style, see the 1998 reissue of that work.

The musical score for Example 45, *Ewe gahu*, is written in 4/4 time and consists of seven staves. The first two staves are grouped under a bracket labeled '3-3-2 side', and the last two staves are grouped under a bracket labeled 'straight side'. The staves are as follows:

- Staff 1:** bell: guide pattern. Rhythmic pattern: quarter note, quarter note, eighth note, quarter note, eighth note, quarter note.
- Staff 2:** rattles: guide + main beats. Rhythmic pattern: quarter note, quarter note, quarter note, quarter note.
- Staff 3:** dance: basic step. Rhythmic pattern: quarter note, quarter note, quarter note, quarter note. Labels 'R' and 'L' are placed below the first and third notes respectively.
- Staff 4:** high support drum: offbeats. Rhythmic pattern: eighth note, quarter note, eighth note, quarter note, eighth note, quarter note, eighth note, quarter note. 'x' marks are placed above the eighth notes.
- Staff 5:** middle support drum. Rhythmic pattern: quarter note, quarter note, quarter note, quarter note. 'x' marks are placed above the first and third notes.
- Staff 6:** low support drum: backbeats. Rhythmic pattern: quarter note, quarter note, quarter note, quarter note. Labels '2' and '4' are placed below the second and fourth notes respectively.
- Staff 7:** boba (complementary). Rhythmic pattern: quarter note, quarter note, quarter note, quarter note.
- Staff 8:** lead drum. Rhythmic pattern: quarter note, quarter note, quarter note, quarter note.

Example 45. Ewe gahu.

There are quite a few versions of Cuban bembé,<sup>61</sup> with different support and lead parts and even, in some ensembles, the slightly different Arará timeline shown in Example 20. The version shown in Example 46 uses the same “standard” timeline as agbekor (role 4b). Rattles play the main beats (1). There are many dance steps; quite a few use either main beats or 3-4-1. The high support drum both reinforces the main beats with open tones (1) and provides off-beat lifts (3) with a bright slap sound (marked with x noteheads). The open tones of the middle support drum suggest the 3 line of 3 v 2 (or the 6 of 6 v 4), a non-oriented major counterpoint (5b).<sup>62</sup> One version of the low lead drum (6) begins by simply playing beat 1. It may elaborate this by “playing to the 1,” using just a few notes as shown in variation A; by starting on beat 3 and then following the timeline as in variation B; or in a number of other ways.

Apart from (2) flow, the structural roles are all present. The offbeat slap (3) in the high drum is perhaps less obvious than the doubled offbeats of kagan in Ewe music, but its effect is still felt.

61. Good recorded examples of bembé may be found on Cutumba (1997), Grupo AfroCuba de Matanzas (1998), Linares (1981), and Santamaria (1958–59).

62. From the drummer’s perspective, this part feels different: the left hand plays the four main beats; the open tones, played with the right hand, feel like doubled offbeats leading to beats 1 and 3. Thus the four main beats are prominent in the drummer’s perception, rather than the 6 crossrhythm.

The musical score for Cuban bembé is presented in 12/8 time, divided into two sections: "3 v 2 side" (beats 1-3) and "straight side" (beats 4-6). The score consists of eight staves, each with a specific role:

- bell: guide pattern**: A melodic line with eighth notes and rests.
- rattle: main beats**: A steady pattern of eighth notes.
- dance: main beats**: A steady pattern of eighth notes.
- dance: 3-4-1**: A pattern of eighth notes with rests, corresponding to the 3-4-1 dance rhythm.
- high support drum**: A pattern of eighth notes with 'x' marks, indicating specific drum strokes.
- middle support drum**: A pattern of eighth notes with numbers 1 through 6, indicating specific drum strokes.
- low drum: lead on 1**: A pattern of eighth notes with rests, starting on the first beat.
- low drum: variation A**: A pattern of eighth notes with rests, starting on the first beat.
- low drum: variation B**: A pattern of eighth notes with rests, starting on the first beat.

Example 46. Cuban bembé.

Like bembé, Cuban rumba guaguancó has many versions; Example 47 represents Havana style from the second half of the twentieth century.<sup>63</sup> The oriented timeline (4b), rumba clave, is the quaternary equivalent of five-note ternary timeline A (see Example 16). Stick (palitos) part A elaborates the timeline (see Example 13)—perhaps an unusual example of an idiophone playing an oriented major counterpoint (5b). An alternate stick part (B) is closer to flow (2), but remains oriented, with sixteenth-note offbeats clustered on the 3-3-2 side of the cycle. Songs follow the timeline's orientation (as in "Oye Mi Tambo," Example 27). The rattle plays main beats (1): at the beginning of a song it marks beats 1 and 3, the two sides of the cycle; as the song heats up, it switches to all four main beats. The basic men's step is also on the main beats, and, like the basic step of gahu, creates a four-beat cycle. The lowest support drum (tumba or salidor) plays an open tone at the end of each half-cycle—a strong eighth note offbeat (3). However, most drummers also accent the second note on the 3-3-2 side—the bombo note (marked with a diamond notehead)—thus orienting the pattern (5b). Furthermore, the low drum's role is quite flexible (the complementary role), and most of its variations are oriented: they occur in the first half of the cycle. The middle drum (tres dos or

63. Guaguancó has regional differences (e.g., Matanzas, Havana) and continues to change with each generation. Representative recordings of Havana style from the second half of the twentieth century—still considered classic—may be found on Clave y Guaguancó (1994), Llerenas (1994), Marks (1994), Jorge Rodríguez (1991), and Santamaria (1958–59).

3-3-2 side      straight side

clave: timeline

sticks A: elaboration of timeline

sticks B: flow/orientation

rattle: marking the sides

dance: basic men's step

R      R      L      L

low support drum

middle support drum

main melody

3      3      2      3      3      2

low and middle drums combined

guide      middle drum

call and response between middle drum and guide

lead drum

Example 47. Cuban rumba guaguancó.

segunda) joins with a second oriented counterpoint (5b) and may add variations in the second half of the cycle. Together the two support drums create a melody that marks out 3-3-2 (third line from bottom). Interestingly, the main part of this melody (marked with a bracket) is on the straight side of the cycle, “crossing” the timeline (“contraclave”) and creating a call and response with it.

The net result is a busy, complex polyrhythmic field, onto which the lead drum (quinto) leaps with improvisations that often focus on sixteenth-note offbeats. Example 48 shows two typical examples. Lead A places two notes on the subdivisions between the timeline’s first two notes—creating a dialogue with the timeline—as well as on the timeline’s distinctive third note. Lead B sounds upbeat sixteenth notes until it reaches that same third note of the timeline. Both examples resolve, but they resolve *to the timeline* rather than to a main beat. They speak to the power of timelines in A/D music.<sup>64</sup>

64. Rumba guaguancó is one of the most popular Cuban folkloric styles, and a number of works have examined it in detail. On the lead quinto drum alone, see Brooks (2001, 2015) and Peñalosa (2010).

Timeline  
Timeline  
lead A  
lead B

Example 48. Rumba guaguancó lead drum.

3-2-3 side straight side 3-2-3 side straight side  
implied guide pattern  
guitar 1  
guitar 2  
horns  
lead voice  
chorus  
Wa - ka wa - ka  
bass  
drums:  
high hat  
kick

Example 49. “Waka Waka,” Sam Mangwana, Democratic Republic of the Congo.

“Waka Waka” (Mangwana 1979) is in the soukous style of the Democratic Republic of the Congo. As shown in Example 49, the drummer lays down main beats on the kick drum (1) and a five-note elaboration of 3-3-2 on a closed high hat cymbal, which can be heard both as flow (2) and a non-oriented timeline (4a). The bass plays a non-oriented counterpoint centered around beats 1 and 3 in each measure (5b). That makes three non-oriented parts—kick, high hat, and bass—but the two guitars, the initial horn line, and the vocal response all add major counterpoints that are clearly oriented (5b). They suggest an implicit timeline in which, interestingly, 3-3-2 appears in one of its rotations, as 3-2-3. The arrows in the transcription mark the second and third notes of this figure. The lead vocal (6) also expresses 3-2-3. Not all of the structural roles are present in this song—there is no offbeat eighth-note part (3)—and

the timeline remains implicit rather than explicit. Yet the ensemble follows the general structural principles of the Ewe/Cuban nexus.

The chimurenga song “Nyoka Musango” (Mapfumo 1983) demonstrates rhythmic organization in a ternary popular song. Zimbabwe is slightly south of the eastward extension of the West/Central Africa timeline area (Kubik 1998c, 308; 1998b, 666), yet the structures seem to hold. In Example 50 bass drum and claps lay down strong main beats (1), while the high hat fills in ternary offbeats (3) that also create a sense of flow (2). The first guitar I hear on the recording seems to quickly become inaudible, so I have transcribed only what I hear as guitars 2 and 3. Both guitars, as well as the bass, play oriented support parts (5b) that imply the 12/8 standard timeline (4b). The bass’s part spans four four-beat cycles and focuses on the straight side of each, landing solidly on beat 4. Guitar 2 also spans four cycles; rhythmically, its parts in

The musical score for "Nyoka Musango" is presented in two systems. The first system includes staves for guitar 2, guitar 3, bass, high hat, and bass drum and claps. The second system includes staves for guitar 2, guitar 3, bass, high hat, and bass drum and claps. Above the first system, there are four measures with labels "3 side", "straight side", "3 side", and "straight side" indicating the rhythmic structure. The score features a mix of eighth and quarter notes, with rests and ties, and ends with double bar lines and repeat signs.

Example 50. “Nyoka Musango,” Thomas Mapfumo, Zimbabwe.



## MARTINIQUE: A DIFFERENT PERSPECTIVE

I arrived in Martinique as a musician familiar with Ewe, Cuban, and other African and Diasporic traditions; jazz; and A/D popular styles such as highlife, afrobeat, mbaqanga, soukous, salsa, samba, soca, reggae, funk, and rock. I was also a sort-of decent dancer in Ewe styles—not that I looked good, but I felt the rhythms and understood the connection of dance and music. Yet at first I was troubled by Martinican rhythms, both danced and drummed. It wasn't that the basic patterns are difficult; as I transcribe them here, they don't *look* tricky, and anyone perusing this article will have no problem reading them. But something about them was confusing and irritating. They *felt* weird. To embody them, I had to contravene some key rhythmic principles I had absorbed, and ideas I had developed, in my previous experience.

Martinique's *bèlè* tradition,<sup>65</sup> from the northeastern part of the island, is a complex of secular entertainment dances, performed for the enjoyment of oneself, one's friends and the crowd at *swaré bèlè* ("bèlè evenings") (Gerstin 2001; Cyrille 2002, 2009).<sup>66</sup> *Bèlè* dancing is accompanied by a pair of sticks, *tibwa*, playing an invariant timeline (also called *tibwa*) on the shell of a drum or on a length of bamboo; and one drum, *tanbou*. The drummer interacts closely with dancers, playing grooves when they dance in place, and acting as a lead drum to guide them through changes in the choreography.<sup>67</sup> Sometimes a cylindrical metal shaker, *chacha* (Crowley 1958), joins the ensemble, playing the basic *tibwa* pattern but adding duration, since its notes swish and linger more than sticks on wood. In terms of the structural rhythmic roles discussed previously, *tibwa* is timeline (4), *chacha* is flow (2), and the drum is alternately major support (5) and lead (6). Martinicans themselves, comparing their reduced ensemble to larger groups in Africa or on nearby islands such as Haiti, sometimes lament that *bèlè* has lost much of its Africanness. But their stripped-down ensemble fills major A/D rhythmic roles quite effectively.<sup>68</sup>

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65. There are several overlapping uses of the term *bèlè*. At its broadest, Martinicans use it to refer to folk dance traditions in general. Next, they distinguish between dances from the northeast of the island, usually called *bèlè* but sometimes *bèlè linò*; and dances from the south, specified as *bèlè lisid*. This article concerns the northeastern dances. Within that domain are five dances based on quadrille choreography and another five based on line and circle choreography; the quadrille dances are collectively *bèlè* and the line and circle dances *lalin klé*. One of the five quadrille-based dances is also *bèlè*, sometimes specified as *bèlè kourant*. In addition, there is a dance step *bèlè* that appears in the quadrille dance *bèlè kourant*. Finally, the drum pattern accompanying that step is *bèlè*—but this same drum pattern also accompanies several *other* steps, in both the quadrille and *lalin klé* subgenres. Thus, one might find the *bèlè* drum pattern accompanying the *bèlè* step in the *bèlè* dance in the *bèlè* subgenre in the northeastern *bèlè* tradition; or the *bèlè* drum pattern accompanying the *bidjin* step in the *kanigwé* dance in the *lalin klé* subgenre in the northeastern *bèlè* tradition.

66. Not many recordings of *bèlè* are available outside of Martinique. Look for *Maison du Bèlè* (n.d.); Gerstin and Cyrille (2001, 2004).

67. See Gerstin (1998) for a study of dancer-drummer interaction during these semi-fixed, semi-improvised changes.

68. Martinicans debate the degree to which their culture is African-influenced. Discourse on this issue encompasses not only *bèlè* but also other musical styles, racial identity, politics, oral folktales, written literature, the Creole language, and other areas. Major intellectual and artistic schools of thought include *négritude*, which privileges black and African heritage, and which was instrumental in breaking the hold of Eurocentric attitudes over Martinican intellectual life; and *créolité*, which emphasizes a transculturation of African and European

Within this realm are four subgenres. One of these, also called *bèlè*, consists of five dances based on late-eighteenth-century French quadrille choreography: *bèlè kourant*, *bèlè bidjin*, *bèlè pitché*, *gran bèlè* and *bélia*.<sup>69</sup> A second subgenre, *lalin klé* (“full moon dances”), includes the line dances *kanigwé*, *bénézwel*, and *mabelo*, along with two circle dances, *ting bang* and *woulé mango*. *Kalenda* is a solo display dance, akin in this respect to Guadeloupean *toumblak*, Cuban *rumba columbia*, Puerto Rican *bomba* (Barton 2002), and others.<sup>70</sup> *Danmyé*, or *ladjia*, is a martial art done to music, akin to Brazilian *capoeira*, Cuban *maní* and others in the A/D world (Michalon 1987; Obi 2008).

A *swaré bèlè* begins with several *danmyé* contests, then moves into the quadrille dances, which occupy the bulk of the evening. The choreography of the quadrilles is French, with couples engaging one another and exchanging partners in a strict order. But the dancing has been creolized with African-based, hip-oriented, bent-knee and sometimes improvisatory movement; and with *zabap*, a movement where men try to grab women’s hips or bump bellies, similar to Cuban *vacunao* and Brazilian *umbigada*.

The order of quadrille dances is not fixed; in this respect, *bèlè* is unlike other Caribbean quadrilles or “set dances” (Daniel 2011; Guilbault 1985; Manuel 2009; Szwed and Marks 1988). However, like other quadrille traditions, participation is restricted to experienced dancers: there are only eight dancers at a time; they are expected to remain on the floor through several pieces, performing whichever pieces the lead singer calls; they are expected to look good and to entertain the onlookers. Towards the end of the evening there is usually a set of *lalin klé* for general participation. In *lalin klé* the choreography is simpler (lines and circles), there are fewer different steps, the lead singer often calls out changes in choreography, and any number of people (rather than only four couples at a time) may join. The evening concludes with *kalenda*, with a succession of soloists demonstrating their skill.<sup>71</sup>

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elements into something autochthonous yet also cosmopolitan. In daily life, discourse about identity seems to partake uncritically of both these schools of thought as well as less well-defined elements of Diasporic identity, such as alignment with transnational representations of African American culture. For discussion of these schools of thought, see Bernabé et al. (1989), Burton (1992, 1995), and Césaire ([1955] 1972). For their relevance to *bèlè*, see Gerstin (2000). As for *bèlè*, some Martinicans view it as part of their African heritage, others as a Creole invention, and I am sure there are additional positions as well. In light of these questions it may be asked why I am positioning *bèlè* within the African/Diasporic sphere. In comparing various styles from this sphere (Ewe, Cuban, Martinican, etc.) I am not claiming that these have no non-African influences or that they have not developed their own unique creative features. But nobody seriously claims that *bèlè* has no Africanity. It would be impossible to compare styles without assuming some connection between them.

69. The five dances listed are the core dances; occasionally people perform less well-known dances such as *bèlè marin* and *fouyté*.

70. I am speaking here of the northeastern style of *kalenda*, not the southern *kalenda lisid* or what I call “tourist *kalenda*.” For more on the polyvalent term “*kalenda*” in Martinique and elsewhere, see Gerstin (2010).

71. The ritual feel of a *swaré bèlè*’s sequence of dances is clear to Martinican performers and audiences. To use Victor Turner’s ([1953] 1972) description of ritual as marked by phases of separation, liminality, and return, *danmyé* acts as the separation phase; its serious, overtly martial attitude sets the *swaré bèlè* off from everyday life. The *bèlè* quadrille dances begin the liminal phase, which culminates in the highly participatory, sometimes ribald, *lalin klé* dances. *Kalenda* serves as the return phase; it is a serious, sober dance, appropriate for the end of liminal celebration. It is also strongly associated with a sense of Martinican identity and resistance to French cultural assimilation, and consolidates the feeling of solidarity that has built through the evening.

### Ambiguous Orientation: Cycles in the Tibwa Timeline, Songs, Drum Accompaniment, and Dance

The bèlè subgenre includes dances in both quaternary and ternary time; the lalin klé dances, kalenda and danmyé are all quaternary. The quaternary dances share the same timeline, tibwa.<sup>72</sup> Formally trained Martinican performers speak of this pattern as tibwa binaire (as distinct from tibwa ternaire, discussed below); they mean that it is in duple meter.

Example 52 illustrates that tibwa is an additive elaboration of 3-3-2; both the sticking (right hand on 3-3-2) and the onomatopoeia (“tak” on 3-3-2) make this association clear. Note that tibwa retains the crucial sixteenth note anticipating beat 2; it simply adds a stroke leading to that note.<sup>73</sup>

Although the same rhythmic pattern appears on many Caribbean islands, in Martinique and its sister island Guadeloupe it is a strong part of local identity. Tibwa is present not only in Martinican bèlè but also Guadeloupean gwoka drumming, in the older popular style biguine, and in modern zouk from both islands. As cultural organizer Dalila Daniel once exclaimed to me, “Tak pitak pitak, tak pitak pitak, sé nou, sé nou, sé nou!” (it’s us, it’s us, it’s us!). The identification with tibwa is so strong that performers and audiences sense also its underlying pattern, 3-3-2, as tibwa. In the popular style zouk, for instance, 3-3-2 often appears on drum set as rim shots or a high hat pattern; this is close enough to be sensed as tibwa. Martinican ragga, a local version of Jamaican dancehall, has adopted dancehall’s 3-3-2 timeline unchanged; yet despite its Jamaican provenance Martinicans again interpret it as their own.

Example 52. Tibwa binaire (quaternary).

72. One quaternary dance in the lalin klé subgenre, bénezwel, has a different timeline.

73. Tibwa is just one of several five-note variants of 3-3-2 in A/D music. See Manuel (2009, 19–22) for a summary of these, along with a few other closely related patterns. The five-note versions are especially common in the Caribbean, and in the literature are often given their Spanish name, cinquillo. Like 3-3-2, there are eight possible rotations, but the most commonly found are those emphasizing the second note of 3-3-2 (the bombo note). There has been some question in Caribbean studies about which came first, 3-3-2 or its five-note variants. For some reason, more authors cite the five-note variants as primary; Grenet (1939, xviii), for example, calls 3-3-2 a “simplification” of the five-note pattern. I have not seen evidence for this, and to me it seems more logical the other way around: 3-3-2 is a simple yet powerful musical idea, and easy to elaborate upon. However, trying to determine which of these closely related rhythmic patterns came first on the basis of logic, in the absence of historical data, seems fruitless. More important is their structural relatedness.



orientation.<sup>74</sup> In “Ba mwen pèl-la” the response is sung to the rhythm of tibwa, and thus based on 3-3-2. The call is trickier: it can be felt as a widespread five-note variant on 3-3-2, 1-2-1-2-2 (see footnote 73). But if you focus on beat 2 instead (with an asterisk), the call feels straight. If both call and response are based on 3-3-2, “Ba mwen pèl-la” is not oriented; if the call is straight and the response based on 3-3-2, it is oriented. “Kanigwé” seems oriented, with 3-1-2-2 in the call and an emphasis on beats in the response. Finally, “Manmay-la” the song featured in Video Example 59, is straight throughout. In short, there is ambiguity here: some songs might be oriented, many are clearly not.

A great many songs, such as that in Example 54, have four-beat cycles with call and response each occupying two tibwa patterns—four tibwa in all, or eight main beats.<sup>75</sup> I show two representative lead lines for “Paul Paulo Nana.” In the first of these, “Nana ba mwen domi” uses triplets and “oswé” is on sixteenth-note offbeats; both of these could imply 3-3-2, in which case 3-3-2 occurs in both halves of the cycle. In contrast, the second lead is straight throughout (with main beats marked by asterisks). The response, “Paul Paulo Nana,” is quite straight, entirely on beats and offbeat eighth notes; interestingly, it is also a tibwa pattern in half-time. Overall, there is little suggestion of orientation here.

In short, neither songs with four- or eight-beat cycles are clearly oriented. Some are predominately straight, some predominately use 3-3-2, others mix in sixteenth-note offbeats and triplets, and there is often a contrast between busier and sparser halves. But whether this creates Ewe/Cuban-style orientation is doubtful. On the other hand, Martinican songs are in even cycles of two, four, or eight timelines. It is still possible they are conceived in cycles of paired timelines. To examine this further, let us look at dance steps and drum accompaniments.

The musical notation for Example 54 is presented in 4/4 time. It consists of two staves of music. The top staff is a vocal line with lyrics: "Na na ba mwen do-mi o - swé-a Paul Paul - o na - na Na". The bottom staff is a vocal line with lyrics: "Paul Paul - o Paul Paulo - o Paul Paul - o na - na Na". Annotations include asterisks (\*) above certain notes in both staves, and a bracket labeled "3" (triplet) under the first three notes of the top staff. The word "Call" is written above the first and last notes of the top staff, and "Response" is written below the first and last notes of the bottom staff. The music is divided into two measures by a double bar line.

Example 54. Martinican song with 8-beat cycle: “Paul Paulo Nana.”

74. The three main beats are 3-4-1, but 3-4-1 is rarely present in Martinican dance and music and is not structurally significant.

75. There are also songs spanning eight tibwa cycles, and some even longer.

Dances in the *bèlè* (quadrille-based) subgenre alternate between “groove sections”—male and female partners dancing in front of one another with repeating steps—and *changements* (changes), where dancers move to new positions. Certain steps for the groove sections can be used in multiple dances. For instance, you can dance the step *bidjin* in *bèlè kourant*, *bèlè bidjin*, and *kanigwé*; you can dance *aléviré* in *bèlè kourant*, *bèlè bidjin*, and *gran bèlè*. At any moment during a quadrille, different dancers are likely to be doing different steps. Part of the pleasure of this art is choosing a fitting step—you might match your partner, but you might pick a different step that you do well, or that heightens the energy of a dance.

Drummers play repeated patterns for the groove sections and semi-improvised breaks for the changes. As noted above, this means they alternate between major support parts (structural role 5) and lead (6). Ideally, to instigate a change of place, the drummer reads the body language of one of the female dancers, changes when he sees she’s ready, and everyone else follows. In practice, if the drummer feels the dancers are inexperienced or are taking too long, he can signal a change.<sup>76</sup>

Steps in the groove sections of the quaternary dances can be one, two, or four beats long. There are two basic drum patterns: *danmyé* for the one- and two-beat steps, shown in Example 55, and *bèlè* for the four-beat steps, in Example 56.<sup>77</sup> I have shown the steps with right foot preceding left, but left preceding right is equally acceptable, and does not change the length of the step—that is, its cycle.<sup>78</sup>

Timeline: tibwa

Drum: danmyé pattern

one-beat step: djaka

two-beat steps: tonbé lèvé, aléviré

**Example 55.** One- and two-beat steps with *danmyé* drum accompaniment.

[Video Example 55.](#) One- and two-beat steps with *danmyé* drum accompaniment: *djaka*, *tonbé lèvé*, *aléviré*. Julian Gerstin, dance and percussion.

76. The rule about following one of the women can be broken, but it depends. I tried following a male dancer into changes to see what would happen; this was noticed and criticized. Rastocle, in “Manmay-la,” follows some of the men. The difference was status—I was a newcomer, Rastocle a recognized master. See Gerstin (1998) for more details on dancer-drummer interaction.

77. The drum pattern *danmyé* is also prevalent in the martial art *danmyé*, but here it’s in a dance context.

78. Dancers often start on the opposite foot in order to mirror their partners. The time signature in this and the next few examples, 4/4, reflects the cycle of the steps. We have not yet determined whether the timeline should be conceived as a two-beat pattern paired into a four-beat cycle.

Example 56 consists of four staves of musical notation in 4/4 time. The first staff, labeled 'timeline: tibwa', shows a sequence of eighth notes and rests. The second staff, labeled 'drum: bèlè pattern' and 'drum onomatopoeia', shows a sequence of notes with labels 'doum doum' and 'be'. The third staff, labeled 'dance steps: bèlè' and 'bidjin', shows a sequence of notes with labels 'R L R L R L' and 'R L R L'. The fourth staff, labeled 'balansé', shows a sequence of notes with labels 'L down' and 'R up'.

**Example 56.** Four-beat steps with bèlè drum accompaniment.

[Video Example 56.](#) Four-beat steps with bèlè drum accompaniment: bèlè, bidjin, balansé. Julian Gerstin, dance and percussion.

The bèlè drum pattern is straight, while the danmyé pattern—which perhaps looks straight in the transcription—is in context a rotated 3-3-2, as we shall see below. Both patterns are only two beats long, and they do not create contrasting halves in a four-beat cycle. Like the tibwa timeline, they are not oriented.

The four-beat dance steps offer a possibility of orientation, in that the first two main beats begin on one foot, the second two on the other. Such feet patterns are similar to Ewe kinka and gahu. But kinka and gahu also include some 3-4-1 steps, which are oriented; their songs and drumming include oriented patterns; and, as we have seen, an apparently non-oriented timeline in kinka (3-3-2) is conceived in pairs as a four-beat cycle. In contrast, since bèlè dance, songs, and drumming remain non-oriented, there is no compelling reason to conceive the dance steps as oriented either.

The best evidence that bèlè’s timeline, drum patterns, and two-beat dance steps are not paired (and thus not oriented) comes during position changes. Dancers may break from their repeated “groove steps” and begin changing position at the beginning of any tibwa pattern, and the next groove section may also begin on any tibwa. In a two-tibwa song such as “Ba mwen pèl-la,” a change can begin on either the first or second tibwa pattern, the call or the response. If dancers happen to be in the middle of a two-tibwa, four-main-beats dance step (e.g., biguine or bèlè, danced R-L-R, L-R-L) when they begin a change, they leave the step unfinished.<sup>79</sup> Schematically, this might look like Example 57 (we will examine actual examples in a moment). Similarly, Example 58 illustrates how at the end of a position change, dancing can resume on either timeline, regardless of where it was placed earlier.

79. For these rules about starting and stopping, it does not matter whether a song is (apparently) oriented or not, and I have shown dance/drum changes with the ambiguous “Ba mwen pèl-la.”



[Video Example 59](#). “Manmay-la” (bèlè bidjin). Performed by Bel Alians in rehearsal, 1994. Siméline Rangon, lead vocal; Mme. Alina, Mme. Rastocle, chorus; Paulo Rastocle, *tanbou* drum; Julian Gerstin, *tibwa* sticks. Dancers: Marie-Victoire Lapoussinière, Guylaine François Adelman, Suzelle François-Adelman, a woman whose name I did not learn, Casimir Jean-Baptiste, Etienne Jean-Baptiste, Wiltor Cébarec, Marc-Antoine Otvás.

We need to look at non-paired phrasing in context. To familiarize yourself with bèlè dancing in general, please watch the full-length video in Example 59 of “Manmay-la,” a bèlè bidjin, performed in rehearsal by the group Bel Alians in 1994. The basic choreography of this dance, as of all the quadrille-style dances, is:

- *kouri won* (circle run): The eight dancers, four women and four men, enter the dance space and make a counter-clockwise circle. Some groups add a clockwise circle.
- *kwadrils*: The eight dancers split into two quadrilles, each quadrille containing four dancers (two sets of partners). The members of the second quadrille move out of the way while the first quadrille has its turn. Partners in the first quadrille dance together, advancing towards one another but maintaining awareness of their position in the square; they exchange places and dance again; they trade partners and dance a third and fourth time with the new partner. There are thus four positions in the quadrille. When the first quadrille is finished, the second quadrille proceeds through the same sequence.
- *couples*: Each partnership has a turn in the center. They advance towards one another, exchange places, and dance towards the drum (*monté tanbou*).
- *kouri won* (circle run): The eight dancers finish with another counterclockwise circle.

Use the guide in Appendix I to help yourself follow the choreography in more detail.

There are several elements worth noting in “Manmay-la.” Siméline Rangon (1925–2008) was one of the most important lead singers of her generation, and one of the few women to sing lead. Paulo Rastocle is widely considered one of Martinique’s best drummers. The dancers range from the young François-Adelman sisters, who older members of the group thought adequate but unformed; to Casimir Jean-Baptiste, who when this was recorded was just beginning to be recognized as a highly skilled dancer; to Marie-Victoire Lapoussinière, recognized as one of the island’s best female dancers.

The first quadrille is straightforward. Since the dance is bèlè bidjin, the dancers concentrate on the steps bèlè and bidjin, both four beats (two *tibwa* timelines) in length. Rastocle matches them with the drum pattern bèlè. In the fourth position, all four dancers

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half timeline into the melody. The melody, not the timeline, gets the extra half-cycle; the timeline remains steady and the melody rotates around it. In contrast, Martinican songs do not change their position; they do not add or subtract extra *tibwa* patterns.

switch to two-beat steps, and Rastocle matches them with the drum pattern danmyé.<sup>81</sup>

The second quadrille provides a good example of the flexibility built into the bèlè genre. The first position includes four-beat steps and drum patterns; the second position has two-beat steps and drumming; and the third position returns to four-beat patterns. The fourth position is much looser, as all four dancers choose different steps: the women two different four-beat steps and the men two different two-beat steps. Rastocle plays danmyé; he is clearly shadowing the strongest dancer in the quadrille, Casimir. Notice the transition at 5:17:22, where Casimir reaches for Guylaine (a form of zabap) and Rastocle matches his move.

Following the second quadrille, the four couples dance in turn. Typically, couples advance towards one another with either a four-beat or two-beat step, then use a more intense two-beat step during the monté tanbou, the dramatic highlight of their dance. Couples 2, 3, and 4 follow this pattern, while the first couple, Marie-Victoire and Wiltor Cébarec, dances two-beat steps in both sections. Marie-Victoire dances bodzé; she has a powerful hip movement and wants to display it. Wiltor's steps are idiosyncratic and humorous, which is typical of his dancing. "He's not always on the rhythm but he has a manner of expression. He looks like he's going to fall, but he never does" (Etienne Jean-Baptiste, personal communication).

The following analyses of specific moments in "Manmay-la" highlight the flexible relation of bèlè dancing and drumming to the song—specifically, how dancers and drummers are free to ignore any implicit pairing of the two-beat tibwa timeline into a four-beat phrase.<sup>82</sup>

Example 60 and its accompanying video excerpt show a straightforward transition that respects the song's four-beat phrase. Rastocle preps the dancers during Rangon's lead vocal; they react at the beginning of the choral response—notice Etienne Jean-Baptiste, the taller male dancer, stepping forward. The dancers change positions through the next few measures, and Rastocle prepares the return to a groove by playing his signature motif (the notes joined by a slur in measures 4–6).<sup>83</sup> Dancers and drummer return to a groove in the final measure. Rastocle's drum transition has taken six measures—three calls and three responses, though the dancers are a little less exact.

Example 61 is a brief transition by the first couple, Marie-Victoire and Wiltor, between their advancing towards one another and their monté tanbou. Wiltor initiates the change by rushing towards Marie-Victoire and poising in front of her during a choral response; Rastocle is still playing his groove pattern (a variation of danmyé). Wiltor breaks his pose and comes down on the downbeat of the second measure; Marie-Victoire reacts swiftly, planting both

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81. Throughout the performance, Rastocle uses several variations of each drum pattern, but they are all based on bèlè and danmyé.

82. The song "Manmay-la" is "straight" in both call and response, as seen in Example 53. A song with an implicit orientation might have provided a more obvious example of dancers and drummers ignoring that orientation. However, "Manmay-la" is the most complete and clearest video recording I have available. The features analyzed in this performance recur frequently in other songs.

83. Many drummers develop such personal signatures.

Tanbou (drum) key

low tone (open, no heel)      slaps (may be played with heel off or on)      tone partially raised with heel      tone raised to high pitch with heel

Call      Response      Call      Response

Tibwa

Tanbou

M. Paul preps dancers      Dancers enter transition; Etienne steps forward      Dancers change positions

Call      Response      Call

The slurred notes are M. Paul's signature motif; dancers continue changing, but some have already begun the next movement      M. Paul begins bèlè pattern (variation); all dancers are dancing bèlè

**Example 60.** First quadrille, transition from second to third positions.

[Video Example 60.](#) First quadrille, transition from second to third positions.

Response      Call      Response      Call      Response

Tibwa

Tanbou

Wiltor rushes forward and poises; M. Paul is still playing his pattern      Wiltor lands on both feet; Marie-Victoire also plants both feet; M. Paul begins break      Marie-Victoire spins      Marie-Victoire begins her next step      M. Paul begins danmyé pattern

**Example 61.** First couple, exchange of positions between advance and monté tanbou.

[Video Example 61.](#) First couple, exchange of positions between advance and monté tanbou.

feet, and Rastocle also hits the downbeat and begins playing a break. Marie-Victoire takes only two measures (mm. 2–3) for her transition, spinning in the third measure and beginning her next step in measure four. For her, the transition respects the song's implied phrase length. Rastocle, however, clearly ignores the song, playing a three-measure transition (call-response-call), as marked by the double bar lines.

The image displays three systems of musical notation in 2/4 time, illustrating call and response cycles. Each system consists of two staves: a top staff with a treble clef and a bottom staff with a bass clef. Brackets and arrows connect specific musical phrases to descriptive text below.

**System 1:**

- Call:** M. Paul is playing a variation of bèlè.
- Response:** Casimir kneels ...
- Call:** ... advances on his knees ...
- Response:** ... rises, and poises in front of Guylaine.

**System 2:**

- Response:** Both dancers plant their feet ...
- Call:** ... then exchange places.
- Response:** The dancers face one another and wait ...

**System 3:**

- Response:** ... and continue waiting.
- Call:** M. Paul begins playing danmyé, and the dancers begin dancing with him, on the downbeat.

**Example 62.** Second couple, exchange of positions between advance and monté tanbou.

[Video Example 62.](#) Second couple, exchange of positions between advance and monté tanbou.

In Example 62, both the dancers and drummer override the two-measure call and response cycle of the song. The transition begins during the choral response; Casimir kneels, and Rastocle reacts instantly by breaking his pattern. The dancers exchange places quickly but then hover in front of one another for two measures; Casimir may be waiting for the less experienced Guylaine to ready herself. They begin the monté tanbou together with Rastocle, and the entire transition has taken five measures (response-call-response-call-response).

Example 63 presents transitions between advance and monté tanbou, and the full monté tanbou along with its ending break. The transition begins as Etienne spins and lands; the dancers exchange places quickly and begin the monté tanbou in the sixth measure. Their transition has taken four measures. The monté tanbou, however, breaks the song's two-measure cycle: the dancers dance the step alévirié five times, and Rastocle plays his drum pattern five times. Midway through the fifth iteration, Etienne prepares to jump (he can be seen raising his left leg), and Rastocle simplifies his pattern slightly, preparing to respond. Etienne's two jumps take up three measures—another overriding of the song. He and his partner exit, and Rastocle prepares the next couple to enter by playing his signature motif, the same as in Example 60. However, in that example the two-measure motif (minus pick-up

Call      Response      Call      Response      Call

M. Paul is playing a variation of bèlè

Etienne spins

Etienne lands

The dancers exchange places

The woman dancer plants both feet on beat 1, and steps back on beat 2 as preparation for dancing

Response      Call      Response      Call      Response

Monté tanbou: the dancers dance alé viré; M. Paul plays danmyé

Etienne raises left leg, preparing to jump; M. Paul simplifies pattern

Call      Response      Call

Etienne jumps ...

lands ... jumps again ... and lands

Response      Call      Response

As the dancers exit, M. Paul prepares the next couple with his signature motif. This is on the opposite "side" from Example 60.

M. Paul begins playing bèlè, and the dancers begin with him, on the downbeat

**Example 63.** Third couple, exchange of positions between advance and monté tanbou, and monté tanbou.

[Video Example 63.](#) Third couple, exchange of positions between advance and monté tanbou, and monté tanbou.

notes) spanned call to response, while here it spans response to call. In other words, Rastocle plays his motif following the dance, not the cycle of the song.

When I began drumming and dancing bèlè, I found such disregard of the song cycle disconcerting. In Cuban and Ewe music, not to mention jazz, funk, rock, samba, and many

other genres, the melody (and chord progression, if present) is something to respect. A jazz drummer thinks in four-, eight-, sixteen- and thirty-two-bar cycles; a salsa percussionist thinks “in clave.” Ignoring the cycles implied by *bèlè* songs—making changes in what felt like the wrong place—took some getting used to.

To make matters more complex, two dances in the northeastern tradition (*bèlè pitché* and *kalenda*) have dance steps and drum patterns with four-beat cycles to which dancers and drummers (mostly) adhere. Again, this suggests an element of flexibility in Martinican tradition. There is, of course, an element of flexibility in Cuban music—as evidenced by successful popular songs that are not in clave, or by salsa dancers who position themselves on the “wrong” beats but still look good. Perhaps our rules for A/D rhythm need to account for such flexibility rather than assume a strictly ordered paradigm, however fascinating theoretically, as the norm.

### Contrast and Rotations in Dance and Drum Patterns

In Ewe/Cuban rhythm, drum accompaniment parts most often support timeline patterns and their orientation. There are exceptions: for instance, two-beat accompaniment patterns that support one side of an oriented timeline and contrast against the other, such as the rhythm shown in Example 64 of the standard salsa bass *tumbao* (though not its melody, which is four beats long). But such partial contrasts against the timeline’s orientation usually occur in large ensembles in which other instruments support the timeline. The Martinican *bèlè* ensemble has only two instruments, *tibwa* and *tanbou*. If the drum contrasts against the timeline, it stands out sharply.

As noted above, there are two main quaternary drum patterns, *danmyé* and *bèlè*. The *danmyé* pattern accompanies dance steps with cycles of one or two beats. These steps emphasize main beats, which are also part of the drum pattern. But the *danmyé* pattern also incorporates 3-3-2. Recall that 3-3-2 together with main beats creates the composite pattern 3-1-2-2, as shown in Examples 9 and 28. *Danmyé* is also a composite of 3-3-2 plus main beats, creating 3-1-2-2. But as Example 65 demonstrates, these figures are rotated from their usual Ewe/Cuban position: they begin on beat 2, not beat 1. Example 66 shows that since the *tibwa* timeline contains 3-3-2 on beat 1, the rotated 3-3-2 embedded in *danmyé* contrasts against it.

**Example 64.** Contrast and reinforcement of two-beat rhythmic pattern with oriented timeline.

(a) 3-3-2  
 (b) beat 2 added, making 3-1-2-2  
 (c) 3-3-2 on beat 2  
 (d) beat 1 added, making 3-1-2-2 on beat 2 (full danmyé pattern)

**Example 65.** 3-3-2 and 3-1-2-2 on beat 1; 3-3-2 and 3-1-2-2 on beat 2 (danmyé).

**Audio Example 65.** (a) 3-3-2 on beat 1; (b) 3-1-2-2 on beat 1; (c) 3-3-2 on beat 2, first with both beats 1 and 2 counted and then with only beat 2 counted; (d) beat 1 added, making 3-1-2-2 on beat 2 (danmyé), first with both beats 1 and 2 counted and then with only beat 2 counted.

3-3-2 in tibwa, on beat 1  
 3-3-2 in drum, on beat 2

**Example 66.** Contrasting 3-3-2s in timeline and danmyé drum pattern.

**Audio Example 66.** (a) 3-3-2 in tibwa plus the full danmyé pattern (played without its usual timbres to make its rhythm clear); (b) 3-3-2 in tibwa contrasted against 3-3-2 in the drum (this is the transcribed Example 66); (c) the full tibwa and danmyé drum patterns played together as they would be heard in performance

In addition, drummers often play a variation of danmyé starting on the subdivision after the downbeat (“e” in the common count “1 e and a”). This variation, transcribed in Example 67 and demonstrated in the accompanying audio example, is 3-3-2 starting on a sixteenth-note offbeat, creating a strong rhythmic suspension against 3-3-2 in the tibwa timeline.

These two versions of danmyé might be thought of as no more than interesting examples of staggered entry, clever and sophisticated phrasings. There are many such instances of rotated 3-3-2 in the A/D musical world (see Example 32). However, in most of those cases a rotation occurs in large ensembles, where it is cushioned by instruments reinforcing 3-3-2 in its standard position. In Martinique, drum and tibwa are the only two instruments, and the contrast of 3-3-2s is stark.

(a) 3-3-2 in timeline

(b) basic danmyé: 3-3-2 in drum on beat 2

(c) danmyé variation: 3-3-2 in drum on "e" of beat 1

**Example 67.** 3-3-2s in danmyé basic drum pattern and variation on “e.”

**Audio Example 67.** (a) 3-3-2 in tibwa; (b) 3-3-2 on drum in the standard danmyé position (played without the usual timbres to make its rhythm clear); (c) the danmyé drum variation with rotation to “e” of beat 1; (d) the full tibwa pattern and rotated variation as they would be heard together in performance.

timeline

3-3-2 in timeline

support drum

3-3-2 in support drum, on beat 2

**Example 68.** Contrasting 3-3-2s in timeline and support drum in toumblak (Guadeloupe).

Bèlè’s unusual positioning of 3-1-2-2 is echoed in the most commonly performed traditional drum rhythm of Martinique’s sister island Guadeloupe, toumblak. Like bèlè, Guadeloupean drumming involves just a few instrumental roles: a timeline identical to Martinican tibwa, played with sticks on bamboo or by a shaker; support drums all playing the same pattern; and a lead drum. Again, any conflict between parts stands out. The support drum pattern for toumblak, shown in Example 68, adds one note to danmyé’s basic pattern, and as in bèlè the contrast to 3-3-2 in the timeline is readily apparent.<sup>84</sup>

Let us turn now to the drum pattern bèlè, which is the other main quaternary drum pattern in the bèlè dance complex alongside danmyé. The bèlè pattern, as well as the dance steps it accompanies (bèlè and bidjin), all use a rhythm of two eighth notes and a quarter note,

84. Toumblak’s five-note pattern is yet another of the type described in footnote 73. As discussed earlier, the most common 3-3-2 rotations all feature a note on the anticipatory sixteenth before beat 2—the characteristic bombo note of 3-3-2 in its primary position. Neither of the two danmyé drum patterns discussed, nor toumblak, have this note; instead they anticipate beat 1.

which, together with 3-3-2 in the tibwa timeline, create a composite 3-1-2-2. There is little reinforcement between timeline and these drum or dance steps, only the first note of 3-3-2, marked with arrows in Example 69.

Tension between timeline and drum/dance steps becomes clearer if we see the drum pattern in the context of danmyé, as in Example 70. Danmyé and bèlè drum patterns, lines a and b of the example, differ by only one note. If one is familiar with the danmyé pattern, it is easy to hear bèlè as the same, omitting the last note of danmyé (the pick-up before the downbeat). In this perspective, bèlè, like danmyé, implies a rotated 3-1-2-2 starting on beat 2 (lines c and d). So the drum pattern contrasts against 3-3-2 in the timeline, as do its associated bèlè and bidjin steps.

Dance steps with the same timing as bèlè and bidjin are familiar in other A/D performance styles, including Ewe and Cuban dance. For instance, two of the most common steps in salsa, salsa on-1 and on-2 (McMains 2015, 146–56), have the same rhythmic pattern as

Example 69 consists of three staves in 4/4 time. The first staff, labeled '3-3-2 in timeline', shows a rhythmic pattern of three eighth notes followed by a quarter rest, then another eighth note, a quarter rest, and a final eighth note. Arrows point to the first eighth notes of the first and second groups. The second staff, labeled 'bèlè drum pattern', shows a sequence of eighth notes: quarter, quarter, quarter, quarter, quarter, quarter. The third staff, labeled 'bèlè and bidjin steps', shows a sequence of eighth notes: quarter, quarter, quarter, quarter, quarter, quarter, with 'R' and 'L' labels under the notes.

Example 69. Bèlè and bidjin dance steps with 3-3-2 in timeline.

Example 70 consists of five staves in 2/4 time. The first staff, labeled '3-3-2 in timeline', shows a rhythmic pattern of three eighth notes followed by a quarter rest, then another eighth note, a quarter rest, and a final eighth note. The second staff, labeled '(a) danmyé drum pattern', shows a sequence of eighth notes: quarter, quarter, quarter, quarter. The third staff, labeled '(b) bèlè drum pattern', shows a sequence of eighth notes: quarter, quarter, quarter, quarter. The fourth staff, labeled '(c) 3-1-2-2 on beat 2 in danmyé', shows a sequence of eighth notes: quarter, quarter, quarter, quarter, with a bracket over the first three notes and a '2' under the fourth note. The fifth staff, labeled '(d) implicit 3-1-2-2 on beat 2 in bèlè', shows a sequence of eighth notes: quarter, quarter, quarter, quarter, with a bracket over the first three notes and a '2' under the fourth note.

Example 70. Bèlè drum pattern in relation to danmyé pattern.

the *bèlè* and *bidjin* steps.<sup>85</sup> In salsa, also, these dance steps get little reinforcement from the 3-2 side of the timeline (usually 2-3 son clave). But they get support from the straight side of the timeline, and from slap sounds on conga and bongó, as shown in Example 71.<sup>86</sup> In other words, potential conflict between dance step and music in salsa is cushioned by the large ensemble. In *bèlè*, with only two instruments, the contrast remains more obvious.

Martinican performers and listeners do not feel these juxtaposed patterns as clashes, of course. But to an ear accustomed to Ewe/Cuban patterns they are troubling. For me, hearing 3-1-2-2—the extremely widespread habanera pattern in Cuba—in the “wrong” place in *danmyé* was especially disconcerting. I had to play *tibwa* for some time before I stopped worrying, when the drummer began *danmyé*, that I had fallen out of phase; and when I played *danmyé* on drum I felt out of phase with *tibwa*. But the point is not that a new style of music sounded strange to an outsider at first. The point is that we should not base a model of A/D rhythm solely on Ewe/Cuban music’s rules about agreement with the timeline, for these rules may not apply, or may apply less strictly, in other traditions.

2-3 son clave

slaps on bongó (B) and conga (C)

salsa basic steps ("on-1" and "on-2")

**Example 71.** Reinforcement of salsa basic steps by timeline, bongó, conga.

85. As McMains (2015, 147–48) explains, for salsa dancers salsa on-1 and on-2 are quite different in feel, with a “break” (change of direction) on 1 in the former and on 2 in the latter. However, both have the same basic foot rhythm: three steps and a pause, beginning on the downbeat, repeated on opposite feet in the second half of the pattern. Salsa dancers count both on-1 and on-2 steps “1-2-3 (pause) 5-6-7 (pause),” suggesting that the full pattern comprises two measures of 4/4. Salsa musicians usually count at the same rate, and salsa charts are usually written the same way, with clave presented as two measures of 4/4 using quarter and eighth notes. All this suggests that salsa uses binary rather than quaternary subdivision (which would feature sixteenth notes). On the other hand, despite the way they count notes, salsa musicians (particularly percussionists) insist that the real feel is quaternary and that charts should be felt in cut time with half notes as main beats. I have retained quaternary time in my transcriptions. I believe that true binary A/D styles are a rarity and that salsa dancers are simply numbering their steps without thinking of musical time in any technical way. On the other hand, if binary A/D styles exist, salsa is a good candidate. Or perhaps the answer is deeper: what if the music admits of flexible metric interpretations, and both dancers’ binary feel and percussionists’ quaternary feel are valid?

86. Both salsa dancers and musicians have remarked on this link to me. The combined conga-bongó slaps reinforce both on-1 and on-2 styles. McMains (2015, 153, 155) notes further that the conga slaps reinforce on-2 dancing, while the bongó reinforces on-1; dancers use these details to argue for their preferred step.

### Metric Ambiguity: Triple or Duple?

Musicians and dancers describe the most common timeline for ternary rhythms in Martinique, *tibwa ternaire*, transcribed in Example 72, as *tibwa binaire* plus two notes (played by the right hand, or “tak” in the onomatopoeia). Two of the most commonly performed dances using *tibwa ternaire*, the quadrille-style *bélia* (part of the northeastern *bèlè* complex) and the popular style *mazouk*, both have steps on the three main beats, as Example 73 and Video Example 73 show. So do popular *zouk* songs in *mazouk* rhythm, for instance Akoustik Zouk’s 1992 “Fond Larion.”

The feel of such music and dancing—three main beats with quaternary subdivision—is quite distinct from Ewe/Cuban and other A/D rhythms that share the same cycle length of twelve fast pulses, but organize it as four main beats with ternary subdivision.<sup>87</sup> Compare

Example 72 consists of three staves of musical notation. The top staff is labeled 'quaternary tibwa' and has a 2/4 time signature. It shows a sequence of notes: R (tak), L (pi), R (tak), followed by a fermata, then L (pi) and R (tak). The middle staff is labeled 'ternary tibwa' and has a 3/4 time signature. It shows a sequence of notes: R (tak), L (pi), R (tak), followed by a fermata, then L (pi), R (tak), R (tak), and R (tak). The bottom staff is labeled 'main beats' and shows three evenly spaced pulses.

Example 72. Quaternary and ternary *tibwa*.

Example 73 consists of three staves of musical notation, all in 3/4 time. The top staff is labeled 'tibwa' and shows a sequence of notes: R (tak), L (pi), R (tak), followed by a fermata, then R (tak), L (pi), R (tak), followed by another fermata, and finally R (tak), L (pi), R (tak). The middle staff is labeled 'bélia basic step' and shows notes: R, L, R, RL, L spin. The bottom staff is labeled 'mazouk basic step' and shows notes: R, L, R, L, R, L.

Example 73. *Bélia* and *mazouk* basic steps with *tibwa ternaire* timeline.

[Video Example 73](#). *Bélia*, two positions of a quadrille. Bel Alians rehearsal, 1994.

87. I have mentioned some Cuban *Arará* and female *oricha* steps as examples of dancing “on the six,” a related phenomenon. Examples of dancing to three main beats with a twelve-pulse timeline may be found in Cuba as well: the dance *frenté*, in the *tumba francesa* genre (from Santiago de Cuba), and *minuet* (from Guantanamo), which uses the same timeline as Martinican *tibwa ternaire* (Ramón Marquez Dominguez, personal communication). These are from eastern Cuba and have Haitian/French influence, and so share a cultural sphere with Martinique.

The image shows two musical staves. The top staff is in 3/4 time and contains a melody of six eighth notes: quarter, eighth, quarter, eighth, quarter, eighth. A vertical line with a slash and a dot (representing a quaternary subdivision) is placed between the second and third notes. Below this staff is a 'main beats' line with three quarter notes. The bottom staff is in 12/8 time and contains the same melody of six eighth notes. A vertical line with a slash and a dot is placed between the second and third notes. Below this staff is a 'main beats' line with four quarter notes.

Example 74. The same onset pattern treated as 3/4 and 12/8.

Haiti’s djouba dance in Example 74, which uses “the same” timeline as *tibwa ternaire* but treats it as having four main beats. Djouba is also known as *tanbou Matinik*, “Martinican drum,” and presumably there is an historical reason why the same timeline is found on both islands. But the Haitian version is interpreted to fit the four-main-beat, ternary-subdivision feel of other Haitian music. *Bèlia* and *mazouk* unambiguously use three beats with quaternary subdivision.<sup>88</sup>

However, another ternary dance, *gran bèlè*, can shift feels, depending on which step a dancer chooses or a drummer plays and how they express it. *Gran bèlè*, like *bèlia*, is among the northeastern *bèlè* quadrille dances. Its basic step is a left-right alternation (or right-left; as with other Martinican dances, this doesn’t matter). Some dancers move fairly evenly through the steps, as shown in Example 75(a). Drummers play on all six steps. Given the context of other ternary dances in Martinique, this combination suggests a feel of three main beats. But as shown in 75(b), other dancers deemphasize the first and fourth steps, barely moving their feet, while emphasizing the second and fifth steps with knee bends and hip swings. Drummers may match this variation by dropping their first and fourth notes, and emphasizing the drum’s low “doum” on the dancers’ second and fifth steps. This styling draws attention away from a simple right-left alternation and suggests a duple grouping (brackets), with each half of the phrase spanning three quarter notes. For a clear example of the ternary version of the basic step, watch Marie-Victoire Lapoussinière in Bel Alians’s rehearsal of “Glorié.”

The step *dékatché*, shown in Example 76, varies the underlying three feel in another way. The dancer swings one leg high in front, swings it back down, steps on his or her back foot, and pivots on his front foot to bring the back leg forward, repeating this sequence on the other side. The large movements of the leg swings strongly imply three main beats, while the intervening step to the back foot crosses those beats. This looks like a typical A/D 3 v 2, but

88. Martinique has one traditional style, *lasoté*, with ternary subdivisions in a four-beat cycle. *Lasoté* is played at agricultural work parties in Martinique’s northwest, but it is not part of the northeastern *bèlè* genre, and is virtually extinct. There is also an invented “*kalenda*” performed for tourists that uses a four-beat 12/8 feel (not to be confused with *kalenda ti kanot*; Gerstin 2010). Martinicans are aware of the typical ternary metric scheme of West Africa and nearby islands such as Haiti; tourist *kalenda* deliberately imitates that scheme to evoke tropical exoticism. But it clearly differs from the three-main-beat, quaternary subdivision of *bèlia* and *mazouk*.

Example 75. Interpretations of basic gran bèlè dance and drum patterns.

[Video Example 75](#). Basic gran bèlè step, version with ternary subgrouping. Marie-Victoire Lapoussinière, 1994.

Example 76. Dékatché step in gran bèlè.

[Video Example 76](#). Dékatché step. Casimir Jean-Baptiste, 1994.

given the Martinican tibwa ternaire context it may be interpreted as 2 v 3. Casimir Jean-Baptiste’s monté tanbou in “Glorié” provides a clear example of the dékatché step.

If the basic step, its variation, and dékatché are all versions based on three main beats, other gran bèlè steps are clearly based on four main beats. All of these are also used in quaternary dances such as bèlè kourant and bèlè bidjin. Example 77, with Video Examples 77a and 77b, show three such steps. Example 77a repeats part of Video Example 75, but now watch the male dancer Wiltor Cébarec.

$\text{H} \frac{12}{8}$  R L R L bodzé  
 front leg up step onto back foot front leg down step onto back foot tonbé-lèvé  
 legs open legs close legs open legs close ouvé-fèmen

**Example 77.** Gran bèlè steps with four beats.

[Video Example 77a.](#) Bodzé in gran bèlè. Wiltor Cébarec, 1994.

[Video Example 77b.](#) Tonbé-lèvé and ouvé-fèmen in gran bèlè. Julian Gerstin, percussion and dance.

$\text{H} \frac{12}{8}$  R forward L R back L aléviré  
 $\text{H} \frac{12}{8}$  suggested main beats  
*(rattle on recording; not used in actual performance)*  
 $\text{H} \frac{12}{8}$  R forward L R back L aléviré variation  
 $\text{H} \frac{12}{8}$  suggested duple feel  
*(with internal threes)*  
 $\text{H} \frac{12}{8}$  rattle on recording; not used  
*in actual performance*

**Example 78.** Aléviré step in gran bèlè.

[Video Example 78.](#) Aléviré step in gran bèlè. Julian Gerstin, percussion and dance.

The step aléviré, which also appears in quaternary time in bèlè kourant and bèlè bidjin (Example 56), is used again in gran bèlè, but as Example 78 shows, here it may appear in either a quaternary or ternary version. Dancers may perform it squarely on four main beats, or they may delay the right foot movements, so that it matches the rhythm of the basic step variation shown in Example 75(b). As in that case, this suggests a duple grouping with internal onsets in threes.

Bear in mind that dancers choose their steps, so that at any given moment in gran bèlè one dancer might be doing a step emphasizing three main beats, another dancer four, and yet another a duple grouping with internal threes, or the 2 v 3 of dékatché. Most drummers have a preferred version of the basic drum pattern, which they play regardless of the dancers' variations. The resultant flexibility may be seen in Video Example 79 and the description of Bel Alians's "Glorié," and is detailed in the accompanying guide in Appendix 2.

[Video Example 79](#). “Glorié.” Gran bèlè performed by Bel Alians in rehearsal, 1994. Siméline Rangon, lead vocal; Mme. Alina, Mme. Rastocle, chorus; Paulo Rastocle, *tanbou* drum; Julian Gerstin, *tibwa* sticks. Dancers: Marie-Victoire Lapoussinière, Guylaine François Adelman, Suzelle François-Adelman, a woman whose name I did not learn, Casimir Jean-Baptiste, Etienne Jean-Baptiste, Wiltor Cébarec, Marc-Antoine Otvás.

In this performance, dancers are fairly consistent during the first quadrille, with Marie-Victoire Lapoussinière and Etienne Jean-Baptiste providing excellent examples of the duple-feel variation of the basic step. The second quadrille shows more variation. Guylaine François-Adelman and Casimir Jean-Baptiste each use two different steps with four main beats, *bodzé* and *ouvé-fèmen*. Marc-Antoine Otvás dances the basic with a duple feel in the first position, then shifts between three different four-feel steps. Suzelle François-Adelman also shifts between duple and four, and in the quadrille’s third position adds the 2 v 3 of *dékatché*.

In the couples section, most of the dancers advance towards one another with the basic step in a duple feel, then switch in the *monté tanbou* to either a four-feel step or to *dékatché*’s 2 v 3. These *monté tanbou* are perhaps the clearest examples of different time feels occurring together.

Bel Alians’s dancers particularly like the “duple three” feel of the basic step variation of Example 75(b); for most other dancers, however, the usual style is the even six steps shown in 75(a). Given the context of other Martinican ternary dances, three main beats seem to remain dominant in *gran bèlè*. When dancers switch to one of the steps with four beats (*bodzé*, *tonbé-lève*, *ouvé-fèmen*, the first version of *aléviri*), they create a crossrhythm against the basic three. In contrast, in Ewe/Cuban performance the dominant feel is almost always four main beats divided by triplets. When 3 cuts against 2, or 6 against 4, the duple main beats remain dominant. It may be more accurate to characterize *gran bèlè* as ambiguous or multistable rather than based on three main beats.<sup>89</sup> Even so, it is multistable in a different way than Ewe/Cuban dance/music, as Example 80 illustrates. Those styles employ analogue transformation to switch between quaternary and ternary subdivisions of the main beats, which remain steady; in *gran bèlè* the subdivisions remain steady, but may be grouped into longer or shorter main beats.

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89. In discussions with formally trained Martinican musicians skilled in *bèlè* traditions, I found them aware of the ambiguity of *gran bèlè*’s meter and unwilling to make judgments excluding one interpretation or the other (Daniel Bardury, Etienne Jean-Baptiste, Paco Charlery, Alfred Varasse, personal communications).

Analogue transformation: changing subdivisions, same main beats

The diagram illustrates an analogue transformation where the subdivision of time changes while the main beats remain constant. It consists of three horizontal staves. The top staff is in 4/4 time, showing a continuous eighth-note pattern. The middle staff is in 12/8 time, also showing a continuous eighth-note pattern. The bottom staff shows four main beats represented by dots on a line, indicating that the overall duration of the four beats is the same in both time signatures.

Regrouping: steady subdivisions, changing main beats

The diagram illustrates regrouping where the subdivision of time changes and the main beats also change. It consists of three horizontal staves. The top staff is in 3/4 time, showing a continuous eighth-note pattern. The middle staff is in 12/8 time, also showing a continuous eighth-note pattern. The bottom staff shows four main beats represented by dots on a line, indicating that the overall duration of the four beats is the same in both time signatures.

**Example 80.** Analogue transformation contrasted against regrouping of steady subdivisions.

## CONCLUSION

Martinican rhythm follows Ewe/Cuban rules in major respects. It utilizes a hierarchy of cycles, main beats, and subdivisions. In duple meter it uses quaternary subdivision and patterns based on both 3-3-2 and straight eighth notes, often in the form of simultaneous hemiolas. The fixed timeline is played on an idiophone (Example 41, rhythmic role 4a), while a membranophone plays semi-fixed, semi-flexible accompaniment (5a) as well as a variable lead (6). Rhythmic patterns may be varied by elaboration with added notes or by changing their starting point (rotations). General African/Diasporic aesthetic features in Martinican performance include repetition, fixed and variable parts, call-and-response singing, tight dancer-drummer interaction, and individualized expression in solidarity with a group.

But Martinican performance differs from Ewe/Cuban in other ways. The *bèlè* ensemble consists of just two percussion instruments filling only three structural rhythmic roles, not the five or six that may appear in larger A/D ensembles. Songs are usually in four-beat cycles (or eight- or sixteen-beat cycles) and may appear oriented, but this is ambiguous. Percussion rhythms are not oriented: the main quaternary timeline (*tibwa binaire*) is based on 3-3-2 and has no straight side; it is only two main beats in length and is not paired into implicit four-beat groupings. The rotations of 3-3-2 in one of the major drum rhythms (*danmyé*) create stark polyrhythms against the 3-3-2 of the timeline; this contrast is not softened by additional instruments supporting one position or the other. Dance, like drumming, lacks orientation and often overrides the song's call and response cycles. Martinican rhythm offers little ternary subdivision; its 12-pulse cycles are predominately organized as triple rather than duple meter, with quaternary subdivision. But one important dance, *gran bèlè*, hovers between duple and triple meter. Although multistable perception is characteristic of Ewe/Cuban music, especially

in ternary time, its manifestation in those styles involves shifting subdivisions (analogue transformation), while in Martinique subdivisions remain steady and main beats change.

Are we to say that Martinican music is somehow “less African” than other African/Diasporic styles? That it is incorrect, misshapen A/D music? Or should we craft more generous rules for analyzing A/D rhythm? Such rules would be broader and more flexible than those based primarily on Ewe and Cuban rhythm, which predominate in today’s analytical literature. They would include the swung micro-subdivisions of Senegambia, Brazil, and the United States; the profusion of offbeat sixteenth notes in Central African and Brazilian music; the lack of orientation in Martinique; southern Africa’s focus on main beats (Roberts 1998, 281); an emphasis on eighth-note offbeats in styles as diverse as cumbia, reggae, U.S. gospel, and swing; the super-fast tempos and deemphasis of main beats in Baganda akadinda (Koetting 1970); an emphasis on staggered cycles in 4/4, rather than 3 v 2 or 6 v 4 crossrhythms, in Ga kpanlogo (Unruh 2015, 191–92, 198–200); and much more. Structural connections between these styles must include but go beyond timelines, orientation, and 3 v 2 polyrhythm, the phenomena dominating much of today’s theoretical discussion.

If we propose rules, paradigms, or structures for African/Diasporic rhythm, these must be able to encompass the A/D world’s amazing variety of rhythmic sensibilities. They should distinguish styles from one another as well as link them, not in either/or relationships, since there is so much overlap, but as a cladistic tree or (to use Darwin’s metaphor) a tangled bank. The rules should be generative and adaptable, in the spirit of Herskovits’s reinterpretations or transformations.<sup>90</sup> There is not just one monolithic African rhythmic sensibility, incarnated by Ewe or Cuban music or any single tradition and tapped into more or less perfectly by others. The structures of African/Diasporic rhythm allow musicians and dancers to explore different possibilities, to focus on oriented timelines at one moment and on offbeat eighth notes at another, to switch between ternary and quaternary subdivision or hover in between. The flexibility of these musical styles, and the rules that generate them, is both the secret of their survival despite centuries of oppression and poverty, and a key to the endlessly varied creativity of African and Diasporic performing artists.

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90. As for what these rules might be, I can only speculate. They probably resemble the generative rules of Chomskian transformational linguistics (Agawu 2006, 28–36; Pressing 1983), originating at a deep level of cognition and passing through several successive levels to reach a surface expression. The deeper rules might include such abstractions as difference and marking, repetition (these together creating periodicity), hierarchy, symmetry and asymmetry, multistable perception, 2 and 3 relations, and so forth. The rules should also account for the way in which the rhythms of music connect to language more or less tightly in different situations, and to movement. Personally, I believe music is based in the human ability to use language, an ability that our brains (and tongues, lips, etc.) have developed to a great degree and a major feature of all cultures. We cannot help but discern or construct meaning in patterned sound. In this sense music is a byproduct of language, an accidental flowering. We are attuned to patterns in other realms as well: vision, movement, and more. But sound, and therefore language, is the dominant pattern-forming aspect of music. Since music is patterned it is also mathematical, but math is not the main thing that makes it feel meaningful. It don’t mean a thing if it ain’t got that sing.

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**APPENDIX I: “MANMAY-LA” VIEWING GUIDE (VIDEO EXAMPLE 59)**

The times refer to the white “window guide” numbers onscreen (ignoring the final two digits, 1/30s of a second). The video was made in 1994 at a rehearsal of the group Bel Alians; videographers were Ilisa Barbash and Lucien Castaing-Taylor.

5:15:54 Siméline Rangon, lead singer (*vwa*), begins. The musicians are Paulo Rastocle on drum (*tanbou*) and Julian Gerstin on sticks (*tibwa*). The chorus (*repondyé*) are Rastocle’s wife Mme. Rastocle, next to Rastocle, and Siméline Rangon’s sister Mme. Alina, on Rangon’s left.

5:16:09 Tibwa and drum begin. All eight dancers enter in a circle (*kouri won*).

**First Quadrille**

The dancers split into two groups of four, the quadrilles (*kwadril*). Dancers in the first quadrille are Etienne Jean-Baptiste (the tall man), Wiltor Cébarec (the shorter man), Marie-Victoire Lapoussinière (the larger woman) and a woman whose name I did not learn.

5:16:29 First position of quadrille: The camera returns to the singers and musicians.

5:16:42 Second position of quadrille: The camera comes back to the dancers midway through the quadrille’s second position. All four dancers dance the step *bèlè*; Rastocle plays the drum pattern *bèlè*.

5:16:50 Transition.

5:16:55 Third position: Marie-Victoire and Etienne, on our left, dance *bidjin*. The second woman (back right) dances *bèlè*; her partner Wiltor is not visible. Rastocle plays the drum pattern *bèlè*.

5:17:00 Transition.

5:17:06 Fourth position: All four dancers dance *bodzé*. Marie-Victoire and Etienne, on our right, dance the step clearly. The second woman (back left) seems unsure of her movement, possibly because Wiltor, her partner, is doing an unorthodox variation. Rastocle plays the drum pattern *danmyé*.

5:17:11 End of first quadrille (Wiltor rushes up to his partner) and transition to second quadrille.

**First Quadrille: Comments**

In all three positions visible to us, dancers match one another with steps either two beats (one *tibwa*) or four beats (two *tibwas*) in length. Rastocle matches them with either the two-beat drum pattern *danmyé* or the four-beat pattern *bèlè*.

## Second Quadrille

Dancers in the second quadrille are Casimir Jean-Baptiste (the more assertive man, who grabs the women), Marc-Antoine Ovas, Suzelle François-Adelman and Guylaine François-Adelman. Guylaine is on our left during the first position and has a slightly thinner face than Suzelle.

5:17:15 First position: Guylaine, on our left, dances bidjin. The other dancers dance bèlè. Rastocle plays bèlè.

5:17:22 Transition. This is easy to spot; it begins as Casimir reaches for Guylaine.

5:17:26 Second position: All dancers dance bodzé; Rastocle plays danmyé.

5:17:32 Transition. Casimir reaches for Guylaine again.

5:17:36 Third position: All visible dancers dance bèlè; Rastocle plays bèlè.

5:17:40 Transition.

5:17:44 Fourth position. Rastocle plays danmyé as all four dancers choose a different step.

Casimir	<i>partnered with</i>	Suzelle
tonbé-lévé		bèlè déyé

Guylaine	<i>partnered with</i>	Marc-Antoine
bidjin		balansé

5:17:48 Transition, beginning as Casimir leaps.

### Second Quadrille: Comments

First, second, and third positions: Dance steps and drum patterns match in length.

Fourth position: All four dancers use different steps. The two women dance four-beat steps; the two men dance two-beat steps. Rastocle chooses a two-beat pattern, matching the men.

Throughout, Rastocle is clearly following the strongest dancer, Casimir. His transitions at 5:17:22 and 5:17:48 follow Casimir's dramatic movements. He matches Casimir's two-beat step in the quadrille's fourth position, rather than the women's four-beat steps.

### Couples

After the two quadrilles, each couple has a turn. The two dancers advance, exchange places, and dance towards the drummer (monté tanbou).

*First couple: Marie-Victoire and Wiltor*

- 5:17:54 Marie-Victoire dances bodzé in a wide-legged position. Wiltor invents a step. Rastocle plays the danmyé drum pattern.
- 5:17:59 Exchange of place begins as Wiltor rushes up to Marie-Victoire and poises in front of her.
- 5:18:02 Monté tanbou begins. Again Marie-Victoire dances bodzé and Wiltor invents a step. Rastocle plays danmyé.
- 5:18:12 Transition to second couple.

*Second couple: Guylaine and Casimir*

- 5:18:17 Both dancers dance bèlè; Rastocle plays bèlè.
- 5:18:22 Exchange of place. Casimir kneels, then advances towards Guylaine.
- 5:18:27 Monté tanbou. Both dancers dance bodzé. Rastocle switches to the danmyé drum pattern.
- 5:18:35 Transition to third couple.

*Third couple: Etienne and the female dancer whose name I don't know*

- 5:18:39 Both dancers dance bèlè; Rastocle plays bèlè.
- 5:18:48 Exchange begins as Etienne spins.
- 5:18:51 Monté tanbou. Both dancers dance alévirié. Rastocle plays danmyé.
- 5:19:01 Transition to fourth couple.

*Fourth couple: Suzelle and Marc-Antoine*

- 5:19:03 Suzelle dances bèlè dèyé; Marc-Antoine dances bèlè. Rastocle plays bèlè.
- 5:19:10 Exchange of place.
- 5:19:14 Monté tanbou. Both dancers dance an unnamed two-beat step. Rastocle plays danmyé.
- 5:19:20 Transition.
- 5:19:24 Ending circle.

### **Couples: Comments**

Couples 2, 3, and 4 all begin with *bèlè* (a four-beat step) and switch to more intense two-beat steps for the *monté tanbou*. This is typical.

Couple 1 dances a two-beat step for both sections. This is also common.

Rastocle matches all steps with a four-beat pattern (*bèlè*) or two-beat pattern (*danmyé*).

### **APPENDIX 2: “GLORIE” VIEWING GUIDE (VIDEO EXAMPLE 79)**

The times refer to the white “window guide” numbers onscreen (ignoring the final two digits, 1/30s of a second). The video was made in 1994 at a rehearsal of the group *Bel Alians*; videographers were Ilisa Barbash and Lucien Castaing-Taylor.

5:07:43 Siméline Rangon, lead singer (*vwa*), begins. Dancers circle in the *kouri won*. The musicians are Paulo Rastocle on drum (*tanbou*) and Julian Gerstin on sticks (*tibwa*). The chorus (*repondyé*) are Rastocle’s wife *Mme. Rastocle*, next to Rastocle, and Siméline Rangon’s sister *Mme. Alina*, on Rangon’s left.

### **First Quadrille**

The dancers split into two groups of four, the *quadrilles* (*kwadril*). Dancers in the first quadrille are Etienne Jean-Baptiste (the tall man), Wiltor Cébarec (the shorter man), Marie-Victoire Lapoussinière (the larger woman), and a woman whose name I did not learn.

5:08:14 In the first quadrille, Marie-Victoire (in the lower left of the screen, with her back to us) and Etienne (beginning the quadrille in the lower right of the screen) dance the *gran bèlè* basic step through all four positions. The woman whose name I don’t know (facing us throughout) dances *dékatché* in all four positions. Wiltor (beginning in the upper left) is not visible during the first position. In the second position he dances *ouvé-femèn*, and in the third and fourth positions an idiosyncratic version of the basic step.

### **First Quadrille: Comments**

Etienne and Marie-Victoire dance the basic *gran bèlè* step in six throughout; the second woman’s *dékatché* is 2 v 3; Wiltor’s *ouvé-fèmen* is in four, while his basic step is an approximate six.

### **Second Quadrille**

Dancers in the second quadrille are Casimir Jean-Baptiste (the more assertive man, who grabs the women), Marc-Antoine Ovas, Suzelle François-Adelman and Guylaine François-Adelman. Guylaine is on our left during the first position and has a slightly thinner face than Suzelle.

For this quadrille I have indicated who is partnered with who, and where they are located on your screen. You can see who is dancing in which feel (duple 3, 4, or 2 v 3) during any of the four positions, or follow one dancer through the quadrille.

5:08:42 First position.

Guylaine not visible (blocked by Marc-Antoine)	<i>partnered with</i>	Casimir bodzé (4)
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Marc-Antoine basic (duple 3)	<i>partnered with</i>	Suzelle basic (duple 3)
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5:08:49 Second position.

Marc-Antoine nika (4)	<i>partnered with</i>	Suzelle basic (duple 3)
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Guylaine ouvé-fèmen (4)	<i>partnered with</i>	Casimir ouvé-fèmen (4)
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5:08:55 Third position.

Guylaine nika (4)	<i>partnered with</i>	Marc-Antoine three or four ouvé-fèmen (4), followed by three or four nika déyé (4)
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Casimir does not settle on a step	<i>partnered with</i>	Suzelle dékatché (2 v 3)
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5:09:00 Fourth position.

Casimir ouvé-fèmen (4)	<i>partnered with</i>	Suzelle nika déyé (4)
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Guylaine ouvé-fèmen (4)	<i>partnered with</i>	Marc-Antoine nika déyé (4)
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### Second Quadrille: Comments

In each position except the last, there are dancers moving in different times (3 with a duple grouping, 2 v 3, or 4). Taken individually, some of the dancers also shift between times. Guylaine and Casimir stay in one time frame throughout, both using two different steps in 4. Suzelle, however, dances in a duple 3 feel for the first two positions, then 2 v 3, then 4. Marc-Antoine dances in 6 in the first position, then shifts between three different steps in 4. Finally, partners are not bound to the same step as one another, and sometimes choose steps in different time feels (e.g., Marc-Antoine and Suzelle in the second position).

### Couples

5:09:10 First couple.

Advance: The woman whose name I don't know dances dékatché (2 v 3). Etienne dances basic (duple 3).

Monté tanbou: The woman continues dékatché (2 v 3). Etienne dances three basic steps (duple 3) followed by two dékatché (2 v 3).

5:09:25 Second couple.

Advance: Suzelle and Marc-Antoine both dance basic (duple 3).

Monté tanbou: Suzelle dances dékatché (2 v 3). Marc-Antoine dances bodzé (4).

5:09:39 Third couple.

Advance: Marie-Victoire and Wiltor both dance basic (duple 3).

Monté tanbou: Marie-Victoire continues basic (duple 3). Wiltor dances bodzé (4).

5:09:57 Fourth couple.

Advance: Guylaine dances nika (4). Casimir dances basic (duple 3).

Monté tanbou: Guylaine dances ouvé-fèmen (4). Casimir dances dékatché (2 v 3).

### Couples: Comments

Although the second and third couples choose the same step for their advance, in all four monté tanbou the partners use different steps in contrasting time feels. Only Etienne, beginning his monté tanbou with basic, joins his partner's dékatché near the end.

5:10:12 Ending circle.