

Contents

Musical Examples	iii
Figures	v
Sound Examples	viii
Acknowledgments	x
Introduction	1
Timelines, Topoi, and Clave	8
Transcription and Sources	16
1. Some Metric Considerations Refined and Contested	35
Meter and Accent	35
Clave Pendularity	58
Non-Isochronous Meters	67
Diatonic Models	78
Toward a Phenomenological Model	83
2. A Phenomenological Investigation of Three Diasporic Timelines	111
The Standard Pattern	117
West African Evocations in Cuba	133
Beat Spans	148
3. Interpenetrating Calls and Responses: The Dialogic Nature of <i>Rumba</i>	165
Calls and Response in <i>Rumba</i>	169
Projection, Meter as Process	179
Call and Response in a <i>guaguancó</i> performance	198
Cumulative Motions in <i>son montuno</i> and <i>salsa</i>	221
4. Beat and Beat Span in <i>Rumba</i>	228
Beat Span defined	236
Support for Beat Span in the literature	265
A Close Reading: “Pa’ los mayores”	281

<i>Rumba columbia: Beat Span epitomized</i>	304
Conclusion	308
Glossary	318
Bibliography	326
Discography	340

Musical Examples

1.1. A typical <i>cumbia</i> bass line.	43
1.2. Opening of Thomas Mapfumo's "Dangurangu."	50
1.3. Transition between 12/8 and 3/2 in Mapfumo's "Dangurangu" (1:56 to 2:09) .	53
1.4. "Congo Blue" bass line.	54
1.5. Two metric readings of the "Congo Blue" bass line.	56
1.6. "Donde estabas anoche," <i>diana</i> .	61
1.7. "Mueve la cintura mulata," verse.	62
1.8. "Fiesta en Cecilia."	63
1.9. "Abakuá" opening.	96
2.1. Opening of "Abakuá."	145
2.2. Reinterpretation of "Abakuá" opening with downbeat entrainment to lowest drum.	147
2.3. Opening of "Yoruba Song."	156
2.4. "Yoruba Song," Maraca solo (beginning at 1:50).	158
3.1. "Willie and the Hand Jive" topos.	185
3.2. "Willie and the Hand Jive" topos and vocals, first verse.	188
3.3. "Homenaje a los fundadores," 0:00 to 0:58.	206
4.1. Basic conga melody for "Desde el fondo del rio."	228
4.2. "Desde el fondo del rio," 0:26.	229
4.3. "Desde el fondo del rio," Flute entrance at 0:34.	235

4.4. Three examples of metric entrainment in “Desde el fondo del río.”	239
4.5. “Yoruba Song” piano break.	243
4.6. “Mazacote” timbale interruption, 2:04.	258
4.7. Three vestigial remnants of the 12/8 interruption.	259
4.8. Francisco Aguabella’s <i>tumbao</i> in “Wood Place,” 0:19 to 0:23.	262
4.9. Metric superimposition in “Buena noche,” 2:32 to 2:54.	264
4.10. Clave and <i>palito</i> parts for “Cuba Linda.”	274
4.11. “Pa’ los mayores,” beginning to 2:03.	283
4.12. Four differently-inflected <i>cajon</i> figures.	301
4.13. Spiro’s “bell pattern” and “stick pattern” in <i>rumba columbia</i> .	306
4.14. Opening of “Elegia a los Colombianos.”	307
4.15. Jimmy Knepper’s solo on “Haitian Fight Song.”	313
4.16. “Maracatús,” 2:31 to 2:40.	315

Figures

0.1 <i>Son clave</i> and <i>cascara</i> ; <i>rumba clave</i> and <i>palito</i> .	11
0.2. “2-3” clave construal, derived from pendular clave construction.	12
0.3. The Standard Pattern.	15
0.4. Example of TUBS Notation (from Hood).	23
0.5. Comparison of TUBS and Western notation.	24
0.6. Example of Labanotation (from Hood).	27
1.1. Clockface representation of the standard pattern, after London (2004).	68
1.2. Two non-isochronous metric mappings, after London (2004).	69
1.3. Accents and NI-beat grouping in “America.”	75
1.4. Standard Pattern with 4-count isochronous metric grid.	77
1.5. Pushing the pitch-class space / rhythm space isomorphism too far.	80
1.6. Rotations of the diatonic collection in mod 12 space.	82
1.7. NI-metric reading of “Abakuá” topos.	97
1.8. Isochronous reading of “Abakuá” topos.	98
1.9. Two hypothetical alternate metric readings of the <i>gankogui</i> pattern, following Locke.	102
2.1. The Standard Pattern.	118
2.2. Standard Pattern with 3-cycle mapping.	121
2.3. Standard Pattern with 4-cycle mapping.	123
2.4. Standard Pattern with 2-cycle mapping.	126

2.5. Stratified reading, superimposing 2-cycle, 3-cycle, and 4-cycle.	130
2.6. “Abakuá” clave with 3-cycle partition.	135
2.7. “Abakuá” <i>palito</i> .	136
2.8. 4-cycle mapping of “Abakuá” <i>palito</i> .	138
2.9. 2-cycle mapping of “Abakuá” <i>palito</i> .	138
2.10. Waves of consonance and dissonance within cycles.	141
2.11. 4- (and 2-) cycle reading of “Abakuá” clave.	142
2.12. <i>Rumba</i> clave.	149
2.13. 12-cycle inflection of <i>rumba</i> clave.	150
2.14. Superimposition of “4/4” and “12/8” <i>rumba</i> clave.	151
2.15. 3-cycle and 2-cycle partitions of “12/8” stratum.	154
3.1. Basic melody of <i>guaguancó habanera</i> .	170
3.2. Tumba and segundo parts for <i>guaguancó matancero</i> .	171
3.3. Sample call and some possible responses in <i>guaguancó matancero</i> .	172
3.4. Projective model, with potential nested projection.	181
3.5: Hasty’s example 9.5a.	183
3.6. Three levels of call and response in “Willie and the Hand Jive.”	191
3.7. Two layers of beginning-continuation.	193
3.8. Graphic illustration of projected range of responses.	196
3.9. Response projecting a new call.	197
3.10. <i>Son</i> clave.	199
3.11. <i>Rumba</i> clave.	199

3.12. <i>Rumba palito</i> .	200
3.13. <i>Palito</i> and clave strata.	201
3.14. <i>Guaguancó</i> phrasing illustration, after Spiro.	203
3.15. Projection of “early” <i>tumbador</i> note onto <i>segundo</i> melody, mm. 11-12.	215
3.16. Projective relations between <i>tumbador</i> and <i>segundo</i> .	216
3.17. 3-2 clave with <i>casgara</i> topos, 2-3 clave with bell topos	223
3.18. Distribution of attack points and dynamic envelopes in two <i>son</i> topoi.	225
4.1. Four inflections of three-note motif.	238
4.2. Superimposition of “4/4” and “12/8” <i>rumba</i> clave.	246
4.3. Visual representations of the 12-cycle / 16-cycle superimposition.	247
4.4. Multiple beat span potentialities in the 12-cycle / 16-cycle superimposition.	248
4.5. Two notational interpretations of Mangwilo xylophone strata, after Kubik (1965).	252
4.6. Compressed 16-cycle representation of three-note figure.	255
4.7. Alén’s standardized and schematic values for the <i>bulá</i> rhythm in tumba francesa.	276
4.8. Two typical <i>rumba</i> palitos.	295
4.9. Pendular clave flips in “Pa’ los mayores.”	297

Sound Examples

1. Thomas Mapfumo, “Dangurangu,” opening.
2. “Dangurangu,” 1:56 to 2:09.
3. Mongo Santamaria, “Congo Blue,” opening.
4. Sonando, “Donde estabas anoche,” *diana*.
5. Septeto Nacional Ignacio Pereiro, “Mueve la cintura mulata,” verse.
6. Grupo Changüí de Guantánamo, “Fiesta en Cecilia,” verse.
7. Grupo AfroCuba de Matanzas, “Abakuá,” opening.
8. The Standard Pattern (performed by Chris Stover).
9. Standard Pattern with 3-cycle mapping (performed by Chris Stover).
10. Standard Pattern with 4-cycle mapping (performed by Chris Stover).
11. Standard Pattern with nested 2-cycle and 6-cycle mapping (performed by Chris Stover).
12. “Abakuá” clave with 3-cycle mapping (performed by Chris Stover).
13. 4-cycle and 2-cycle mappings of “Abakuá” palito (performed by Chris Stover).
14. Standard Pattern with 3-cycle, 4-cycle, and superimposed mappings (performed by Chris Stover).
15. Maraca, “Yoruba Song,” opening.
16. “Yoruba Song,” 1:50 to 2:16.
17. *Guaguancó habanera*, basic melody (performed by Chris Stover).
18. *Guaguancó matancero*, basic *tumbador* and *segundo* parts (performed by Chris Stover and Anyu).
19. Johnny Otis, “Willie and the Hand Jive,” opening.

20. “Willie and the Hand Jive,” first verse.
21. *Rumba* clave and *palito* (performed by Chris Stover).
22. Los Muñequitos de Matanzas, “Homenaje a los fundadores,” beginning to 0:58.
23. 3-2 *son* clave with *cascara*, 2-3 *son* clave with bell (performed by Chris Stover).
24. Patato Valdez, “Desde el fondo del rio,” opening.
25. “Desde el fondo del rio,” bass entrance at 0:26.
26. “Desde el fondo del rio,” flute entrance at 0:34.
27. “Desde el fondo del rio,” piano excerpts.
28. Maraca, “Yoruba Song,” piano break and percussion *bloque*.
29. Mongo Santamaria, “Mazacote,” *timbal* interruption.
30. John Santos, “Buena noche,” entrance of new metric stratum.
31. Grupo Folklorico y Experimental Nuevayorquino, “Cuba Linda” *palito*.
32. Grupo Afrocuba de Matanzas, “Pa’ los mayores,” opening to 2:03.
33. Superimposed topoi in *rumba columbia* (performed by Chris Stover and Anyu).
34. Los Muñequitos de Matanzas, “Elegia a los colombianos,” opening.
35. Jimmy Knepper, trombone solo on Charles Mingus’s “Haitian Fight Song,” first chorus.
36. Arnaldo Jr. and Ricardo Gomes, “Maracatús,” 2:32 to 2:40.

Acknowledgements

Thanks to Jonathan Bernard for (grudgingly at first, I'm sure he'd admit) allowing me to pursue what appeared to be a quite unorthodox project. Thanks to Áine Heneghan, John Rahn, Philip Schuyler, and Leroy Searle for all of their valuable insights. Thanks to all of the musicians and scholars with whom I've had engaging conversations about this subject over the last few years, or who read and critiqued various pieces of it, and who in varying ways helped shape it: Kofi Agawu, Jack Boss, Shannon Dudley, Orit Hilewicz, Fred Hoadley, Charlie Keil, Justin London, Betsy Marvin, Jairo Moreno, David Peñalosa, Bruce Quaglia, John Roeder, Elspeth Savani, Martin Scherzinger, Mike Spiro, Ben Thomas, and Bob Wason. Thanks to Anyu for his assistance with recording the audio demo tracks. Thanks to all of my fantastic friends and colleagues in the Seattle latin music scene that have been such an inspiration and that helped me (even unwittingly!) develop my obsession with this great music, including especially Tom Bergersen, Jeff Busch, Carlos Cascante, Alex Chadsey, Johnny Conga, Manuela Figueroa, Ricardo Güity, Julio Jáuregui, Joe Santiago, Jovino Santos Neto, Steve Smith, Chris Stromquist, Pedrito Vargas, and of course Fred, Elspeth, and Ben from the previous list. Finally, to Mom, Dad, Cat, Don, Emily (x2), Gary, Greg (x2), Jay, Josh, Lisa, Liz, Mark, Matt, Ruth, Stuart, and everyone else: thanks for putting up with the stretched-way-too-thin version of me over the years... I'm back!

Dedicated to the memory of John Moawad. See you on the other side, Coach...

Abstract

This study proposes a model of flexible spans of time to describe some of the ways in which the actual performed notes of Afro-Cuban musicians locate temporally, as mediated by the improvisational, call-and-response nature of the music as well as the overall teleological motion of the performance. Since it is not really useful to discuss rhythm without considering some of the ways in which rhythm tends to be organized, it begins by addressing the ever-evolving discursive terrain around meter, beat hierarchy, and timelines, including various recent and historical theoretical and ethnomusicological perspectives, and as a dialectic begins to emerge between a listenerly perspective and a performerly one, a deep engagement with a Husserlian phenomenological epistemology unfolds. A number of important metaphors are drawn between metric constructs, phenomenological accounts of meter, and some shapes and forms borrowed from dance, primarily the protean *roda of capoeira*. A detailed analysis begins, then, with a close phenomenological reading of three African and diasporic timelines, or *topoi*, in order to make some generalizations about how such metro-rhythmic events operate from structural and cognitive frames of reference. As the focus shifts from a metric orientation to a rhythmic one, I begin to explore the malleability of rhythm at a local level; that is, how different, but parallel, metro-rhythmic grids affect a performer's interpretation of the rhythmic details of the music. Using *rumba clave* as model, I demonstrate how two very different metric construals of the rumba *topos* provide a basic

framework from which to begin to conceive of the rhythmic fabric of rumba as events that take place within flexible spans of time rather than between, or through, or alongside of, fixed points in time, and I propose a *beat span* model that accounts for, and acts as a restraint on, this flexibility.

The idea of beat span is then abstracted in order to demonstrate how the principles introduced in the context of the near-simultaneities of clave onsets between parallel cyclic construals operate throughout the cyclic terrain. I engage Charles Keil's thoughts on participatory discrepancies, as well as modern theoretical concepts of time-reckoning and recent micro-rhythmic theory, in light of beat span. I look at numerous examples that illustrate how the superimposition of metric strata play out in actual musical performance, culminating in a close reading of a *yambú matancero* performance by Grupo Afrocuba de Matanzas.

Finally, I return to the important phenomenological/psychological/performative/listenerly question of whether we can actually entrain to two metric or rhythmic strands at the same time, or can "merely" shift quickly between them. Clave pendularity and "shadow meters" are addressed as I investigate the ways in which we might face this cognitive challenge, and ultimately I advance the response that not only can we entrain to two (or more) metric strands, but in many cases we *must* do so in order to address the music in the way that it demands of us.

Introduction

“In theories of African rhythm, ...basic questions remain as to where the beat is, what constitutes a pattern, whether meter exists, how many meters are in operation..., how to notate rhythm, and so on. There is, in short, surprisingly little agreement about the basic organizing principles.”¹

“...the notated rhythms have to be performed with a certain amount of elasticity to give what in Brazil is called balanço.”²

“..for the motion in that measure, it may itself be infinitely manifold of shape.”³

That the rhythmic aspects of diasporic African music form rich and complex strata is well documented and is doubtless apparent to the most casual and uninformed listener. Countless authors have commented on this fact; some have left it at that while others have, to varying degrees, made attempts at analyzing the rhythmic characteristics of the music in order to draw meaningful conclusions about its rhythmic and metric structure, but too often it seems that analyses fall short of the sort of close hermeneutic reading that might reveal the most interesting and significant structural aspects of the musical fabric.

Exactly what is it that is complex about these musics? Is it the superimposition of syncopated polyrhythmic figures? In most cases the ratio between perceived polymetric substructures never gets more complicated than a simple 2:3 or 3:4 ratio (say, a 4/4 time grid coinciding with one that parses into a

¹ Agawu (2003), 71.

² Crook (1987), 117.

³ Hauptmann (1888), 189.

12/8 subdivision). This is a far less tangled rhythmic web than that found in much of Elliott Carter's music, for instance, or Stockhausen's, not to mention Nancarrow's, and theorists have found useful and elegant ways to come to terms with these composers' multivalent structures. Is it, as Agawu points out,⁴ the fact that different velocities are being represented simultaneously at different structural levels, each with the potential for its own semiotic identity and musical (and extramusical) purpose in the context of the performance?⁵ Is it the free interplay between such structural levels and the constantly shifting identity of a particular instrumental part as it becomes in turn melody, countermelody, and/or motor-rhythm accompaniment (and the requisite corollary that every event can, or even must, be considered as a possible contributor to any or all of these levels)? Is it that individualized extemporization, and the obvious surface-level unpredictability that comes with an improvised performance, typically plays a significant role? Is it that diasporic African music as it is typically practiced does not often exist as an autonomous musical object and instead is complexly interconnected with all sorts

⁴ Agawu (1986), 69-71.

⁵ Ekwueme (1975-6) attempts to draw an analogy between an idea of rhythmic structural levels to Schenkerian (often via Yeston-ian) designs. Agawu argues that Ekwueme's take fails because it relegates melodic details to a less significant foreground level, although I believe that many Schenkerian theorists would counter that surface-level melodic details, while the very phenomena that give a composition its unique character, are indeed less structurally significant than background harmonic and contrapuntal events. On a somewhat related note, Morrison (1999) invokes a concept of rhythmic structural levels in order to make determinations about accentual emphasis based on the the concurrence of rhythmic events in different structural strata. I will address Morrison's adoption of Yeston's strata in Chapter One.

of ritualistic, sociological, cultural, etc. artifacts and as such is loaded with even more complexly interconnected semiotic codes that, as much as positivist theorists would sometimes like to, we cannot really ignore and still preserve any kind of convincing argument for intellectual honesty?

Of course it is all of these things. Of course each of these points is a topic worthy of dozens of dissertations, books, and articles. But none of these manages to pin down or address in any deeply meaningful way the one overriding issue surrounding diasporic musical practices from Senegalese *mbalax* to Congolese *soukous* to Cuban *rumba* to Brazilian *samba* to North American jazz, funk, and hip-hop. I am going to argue that concept of beat as it is generally considered – that is, as a precise instant in time that serves as a reference point around which the rhythmic design of a piece of music is construed – is an extremely oversimplified notion that must be radically reconceived in order to formulate a deep understanding of the rhythmic malleability of these musics.⁶ Eventually I am going to define beat as a *flexible span of time* rather than a single fixed point (or even *unfixed* point: allowing for a rubato conception of beat still doesn't address some important issues that will be illuminated in due time).

⁶ And of course what I really mean here is an organized progression of flexible spans of time, with a definite teleological structure and a complex network of relationships that link past, present, and future spans in a fluid experiential flux. The early stages of this study will focus on the isolated phenomenon of a single beat, whether it is a single point in time or a span as thus described, and on the small succession of beats that the metric unit defines. Later, with my removal of the West African *standard pattern* from, and subsequent return to, its natural environment, I will reintroduce such phenomena to their natural habitats of (in some way) organized, (to varying degrees) forward-moving musical constructs.

* * *

It is not really possible to discuss rhythm without considering some of the ways in which rhythm tends to be organized. Chapter One explores the ever-evolving terrain of rhythmic and metric discourse, beginning with an engagement with some concepts from Justin London's *Hearing in Time* and then in turn addressing various recent and historical theoretical and ethnomusicological perspectives. In particular, notions of accentual *a priori* in various metric construals are taken to task. This includes construals from music theory that simply attempt to paint a picture of how meter might act as a determinant of at least one particular type of accentual emphasis, and also less sympathetic notions that have been implemented strategically to prop up alternative notation systems, either to emphasize shortcomings of Western notation or to offer new epistemological alternatives that circumvent real or perceived Western hegemonic bias.⁷ The rich literature on diatonic models for metric construals is also interrogated; the aspects of the pitch-rhythm isomorphism that I find to be compelling or useful are extracted, and those aspects that I find to be ontologically tenuous are challenged and discarded. Chapter One concludes by invoking the language of phenomenological looking, primarily that of Husserl and Ihde, a methodological perspective that will be the crux of the chapter that follows. It also draws some (perhaps rather crude) metaphors between metric constructs, phenomenological accounts of meter, and

⁷ For an excellent summary of such epistemological alternatives and the strategic reasons for their implementation, see Agawu (2003), 64-8.

some shapes and forms borrowed from dance, especially the *roda* of *capoeira*, a theme that returns in ensuing chapters.

Chapter Two unfolds as a close phenomenological reading of three African and diasporic African timelines, or *topoi*, including a common rotation of the standard pattern of West African music (sometimes known as the Ewe pattern) and two *topoi* from traditional Cuban practice, in order to make some generalizations about how such metro-rhythmic events operate from structural and cognitive frames of reference. A great deal of language is borrowed from Husserl and Ihde, and I make every effort to be as meticulous and detailed and *unsedimented* and *essentialized* in my investigations and explanations. Chapter Two concludes with a brief reading of the opening of Group AfroCuba's "Abakuá," and an exegesis of the polymetric framework of Maraca's "Yoruba Song," which begins to show how local rhythmic events can slide back and forth between two simultaneously-present metric strata. While throughout the chapter we are concerned with an ongoing investigation into how a specific n -cycle (the 12-cycle) can be segmented into many useful, logical metric divisions, the "Yoruba Song" analysis introduces the more radical notion that *two* n -cycles, with different values for n , can coexist within the same periodic metric grid.

Chapter Three addresses call-and-response as a specific rhetorical device and as a more abstract exchange of directed energy that takes place over the course of a cycle and between cycles. The principles of call-and-response, both literally and metaphorically, influence super-cyclic relations as well as minute subcyclic

interactions, and turn out to be some of the primary guiding forces that help describe, and even determine, how diasporic West African music is organized in time. Throughout the narrative a running dialogue with Hasty's theory of projection will be maintained, including some important extensions of his theory as we consider how the powerful way in which Hasty recasts meter as *process* might pertain to cycle, repetition and variation, and the various, multilayered directed energies that inform two common Afro-Cuban metro-rhythmic constructs. Significantly, the *topoi* with which we began are finally returned to their natural habitats, interpenetrating with two or three metric layers, each with its own projective impulses and nuanced array of relationships with the topos itself.

The shift from a metric orientation to a rhythmic, and microrhythmic, one takes place fully in Chapter Four. In this chapter I begin to explore the malleability of rhythm at a local level; that is, how the push and pull between different, but parallel, metric (that is, cyclic) grids affect a performer's interpretation of the rhythmic details of the music. Using *rumba clave* as generic model, I will show how two very different metric construals of the *rumba* topos provide a basic framework from which to begin to conceive of the rhythmic fabric of *rumba* as events that take place within a flexible span of time rather than as fixed points in time. Notice that there is a calculated shift from a perceptual perspective to a performative one – this chapter is more concerned with how performers come to terms with the complex layers of rhythmic and metric richness that inform this music. After a number of brief analyses, I undertake a detailed close reading of a

yambú matancero performance. Chapter Four concludes with some suggestions about how the principles that inform beat span might apply in diasporic musical settings that are not directly based on clave or other asymmetrical topoi, including North American jazz and Brazilian *samba* and *maracatú*, demonstrating how this approach to rhythm malleability can operate across a broad spectrum of syncretic musical traditions.⁸

In Chapter Four I return to an important question that I defer in earlier chapters, which is the phenomenological / Gestalt psychological / performative / listenerly question of whether we can actually entrain to two metric or rhythmic strands at the same time, or can “merely” shift quickly between them. I address beat pendularity and “shadow meters” as I investigate the ways in which we might address this cognitive challenge, and ultimately I will advance the response that not only can we entrain to two (or more) metric strands, but in some of the cases that I discuss we *must* do so in order to address the music in the way that it demands of us.

⁸ The premise that *samba* is not based on clave is a contentious one, and many authors and musicians (see for instance Spiro 2006, 16-17) would disagree with my placement of *samba* in this more abstract category of non-clave-based metro-rhythmic structures. My justification, which I will touch on in more detail in the chapter, is that the rhythmic design of *samba* is based on an asymmetrical *topos*, but the treatment in performance of that *topos* is much less rigorous than that of Cuban *son* and *rumba* – that is, a performance can switch the “direction” of clave at the performers’ will – and therefore is less of a determinant of rhythmic and microrhythmic trajectory than clave and similar topoi are in their respective musical terrains.

The concept of beat span as I outline it in Chapter Four subtends all of the epistemological threads that the preceding chapters introduce. It is insufficient to describe the fact that musicians place performed attack points at varying locations along a flexible span of time. An attention to motions within beat spans requires a polymorphic conception of metric entrainment, an understanding of a Husserlian *now-horizon* with a complex web of retentive and protensive implications, and an appreciation of how the projective nature of call-and-response behaves at and between many structural levels. A particular rhetorical stance is taken throughout this study, which is the deferral of analytical payoff until all of these themes have been introduced and investigated thoroughly. I ask, therefore, for some small amount of patience on the part of the reader, and offer in return the promise that the various apparent loose ends that appear throughout the following narrative will be tied up succinctly in due time.

TIMELINES, TOPOI, AND CLAVE

Underlying nearly all diasporic West African music is an asymmetrical metric-rhythmic pattern that serves both to group the overall rhythmic flux of a performance into easily entrainable units, and to provide a basis for much of the music's accentual emphasis. An important thread through Chapters One and Three involves how these patterns also effectively divide the cyclic unit into two halves

with a very strong projective relationship, both with and between one another and in the context of the larger teleologic motion of the cyclic progression.

Although many variegated terms have been put forth to describe these phenomena – the “standard pattern,” the “diatonic pattern,” or more generally bell patterns, resultant patterns, timelines, or phrasing referents – I prefer to adopt Agawu’s term *topoi*, which he describes as “commonplaces rich in associative meaning for cultural insiders” and “short, distinct, and often memorable rhythmic figure(s) of modest duration ... [that serve as] point(s) of temporal reference.”⁹ The question of how and whether these phenomena are determined by meter, or are themselves metric determinants, or even *are meter* in some sense is the source of much debate, but Agawu’s definition serves an acceptable starting point, and his evocation of “temporal reference” is in accord with Anku’s Referential Time Point (RTP), which is the latter’s artful dodge around the discursive pitfalls surrounding the word meter. In addition, to speak of a metric-rhythm pattern as a *topos* is to address its namesake in literary theory, as a broadly recognizable theme or formula that operates both within and between works and in many ways defines an episteme, and also to recognize its etymological cousin *topography*, which

⁹ Agawu (2003), 73. In a related footnote (Chapter 4, fn 2, p. 232) Agawu describes Nzewi’s “phrasing referent,” citing the author’s provocative claim that it is “*not* a structural referent in African musical thought and ensemble composition” (Nzewi, 35, emphasis Agawu’s). Nzewi is strongly challenging the many theoretical assertions of structural significance given to *topoi* (particularly that of Koetting (1970)), and downplaying its significance as anything more than a generator of phrase rhythm. This is an interesting point of contention from a theoretical standpoint: what exactly *is* musical structure if not phrase structure?

describes both the physical features of an area and the cartographic representation of those features. Both of these evocations obviously have useful real and metaphoric value in discussions of diasporic African rhythmic constructs.

When the discussion turns to Cuban *son* and *rumba*, I will very often invoke the colloquial term *clave* for a number of reasons. First, *clave* (especially *son* *clave*, described in detail in Chapter One) is qualitatively different than most of its African antecedents, in part because it often carves a different path through the cyclic unit (a path that parses the cycle into sixteen mensural units rather than twelve¹⁰), in part because it doesn't unfold neatly as a progression of longs and shorts, and as such is not well-formed as a diatonic collection, a topic also taken up in Chapter One, and in part because, as a *topos*, *clave* can technically be construed as a deeper middleground phenomenon, a foreground embellishment of which is found in the *cascara* that often embellishes *son* *clave* and the *palito* that accompanies *rumba* *clave*, both of which model more closely typical African *topoi* (at least superficially) and both of which are shown in Figure 0.1.

¹⁰ Peñalosa describes a 16-cycle variant of the standard pattern, but it is comparatively rare (2009, 65).

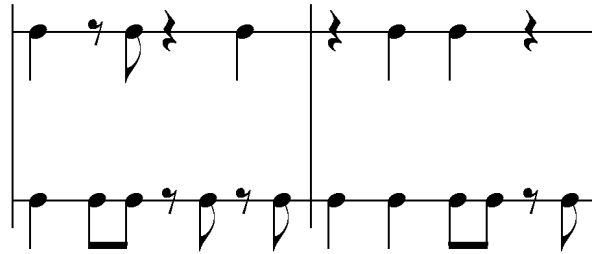
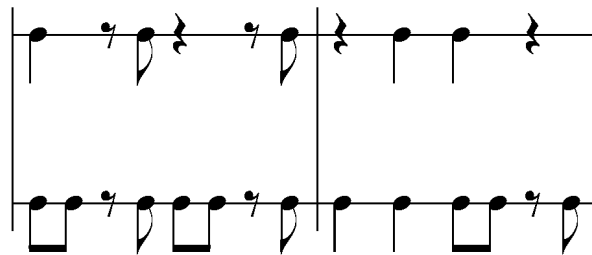
FIGURE 0.1 *SON* CLAVE AND *CASCARA*; *RUMBA* CLAVE AND *PALITO*.A) *son*B) *rumba*

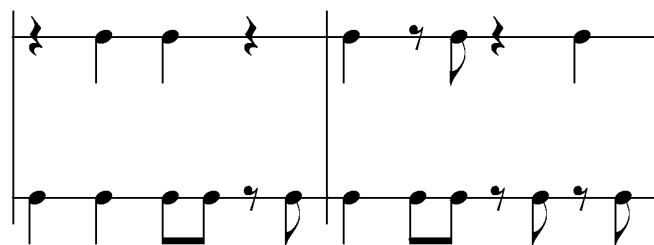
Figure 0.1a shows *son* clave in the top system and the *cascara* pattern in the bottom system. Figure 0.1b shows *rumba* clave in the top system and a *palito* part in the bottom system. We will see below that the lower system of Figure 0.1a is also often found in *rumba* settings, as an alternate *palito* stratum.¹¹ The visual

¹¹ In other words, two *palito* options are available for a *rumba* performance, although once one commences it remains for the duration of that performance – the performers never switch *palito* parts mid-stream.

construals above both represent what is known colloquially as “3-2” clave; that is, the first half of the cycle contains three clave event onsets while the second half contains two. It is crucial to understand that clave is a pendular phenomenon, and that as a performance unfolds there are musical cues that often assert a new downbeat-entrainment point halfway through the cycle (at the *measure* level in the figure above). We refer to the resulting downbeat-construal as “2-3” clave, which is shown in Figure 0.2.

FIGURE 0.2. “2-3” CLAVE CONSTRUAL, DERIVED FROM PENDULAR CLAVE CONSTRUCTION.

A) *son*



B) *rumba*



“3-2” and “2-3” clave construals are equally common; there is no hierarchical privilege given to either construct. Many songs in many Afro-Cuban traditions move freely between them, as we will see Chapter One and then again in Chapter Four, and there are many strategic performative reasons for wanting to do so. Some of these reasons will be discussed at the end of Chapter Three, in an examination of cumulative and countercumulative rhythmic shapes. It is important to note that even through many pendular clave “flips” – again, a common term in the parlance of performing musicians – the cycle itself does not change, but rather that a melodic or harmonic extension, contraction, or elision simply asserts a new cyclic beginning-point.

Finally, clave is a semantically significant word in Cuban and diasporic Cuban musical parlance, charged with multiple musical, social, and ethnic codes. Clave literally means “key,” as in the key that unlocks a door (or a secret, or one’s heart!) or as in the keystone that holds everything else in place. “Just as a keystone holds an arch in place, the clave pattern holds the rhythm together in Afro-Cuban music.”¹² Clave is the generative locus for most of the rhythmic propulsion of Afro-Cuban music – it organizes rhythm and determines a good deal of accentual emphasis. And clave is also an important determinant of cultural (and musical)

¹² Peñalosa (2009), 84.

insider/outsider status, a controversial topic that Washburne takes up in great and enlightening detail.¹³

The question remains as to why and how we hear topoi, including clave, as fundamental determinants of metric structure. Yeston observes that

[i]f events that belong to the same class recur at equal intervals of time, then they define a stratum of motion; they have a simple periodicity for which each new recurrence begins a cycle that ends with [the onset of] the next recurrence.¹⁴

In other words, part of why we hear topoi as structural determinants is simply because of their periodic nature. But more important, we hold topoi in such regard because their asymmetrical shape defines so much about how rhythms behave, where rhythmic consonances and dissonances tend to be found within the span of a cycle, and how and where (and why) energies might be directed during the course of a performance. I will return often through the narrative that follows to the idea that topoi are not meter, but that they are also not merely syncopated rhythms that traverse (or are organized by) meter or cycle, but rather that they occupy a powerful position, heretofore undefined in theoretical or ethnomusicological literature, of being both metric and rhythmic determinants. Topoi, including clave, both define and are defined by meter, and both assert their influence on and are in turn

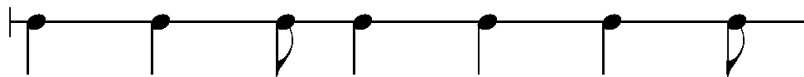
¹³ 2008. Most of Washburne's last chapter is devoted to clave – see especially pp. 178-197.

¹⁴ Yeston (1976), 38.

influenced by complex and constantly changing webs of strategic rhythmic and microrhythmic performance decisions.

The standard pattern of West African music, mentioned above as a particularly pervasive and important topos across many cultural and stylistic boundaries, is given in Figure 0.3.

FIGURE 0.3. THE STANDARD PATTERN.



In a performance situation, we quickly discover that the seven attack points (to borrow Yeston's term) shown in Figure 0.2 unfold as a periodic structure; that is, they continue to return cyclically, in this order, for the duration of the performance. We can observe, too, that the seven attack points can be measured as a series of longs and shorts in which the long is twice as long as the short. The short, then, corresponds to Hood's *density referent*, and by using it to measure the total amount of time it takes for one iteration of the pattern to unfold, we find that the pattern traverses a 12-cycle: twelve density referents go by before the onset of the next cyclic iteration. We might also observe that the sequence of longs and shorts is

isomorphic with the sequence of longs and shorts that make up the rotation of the ordered diatonic pitch collection that corresponds with the major scale: two longs and a short followed by three longs and a short.¹⁵

This is all basic, easily observable information, and is of course very important phenomenologically, as we begin to develop an understanding of the inner workings of the music that it informs. But it doesn't tell us anything, yet, about the specific nature of the pattern, how it behaves, or *why* this pattern in particular is so pervasive. Much of Chapters One and Two addresses these questions. It also doesn't tell us what topoi *do*; how a performance's differently-directed motions, waves of energy, remembered pasts, and predicted futures arise in no small part from the very structure of the topos itself. Chapter Three investigates this reality. And finally, the notation of Figure 0.3 doesn't actually tell us how the attack points of the topos, and how the various intersecting strata of attack points with which it shares its periodic topography, really sound: as Chapter Four describes, there are subtle temporal displacements of attack points that reflect the malleable nature of the *beat span*.

* * *

¹⁵ I will return to Hood's density referent as well as diatonic models in Chapter One.

TRANSCRIPTION AND SOURCES

A few remarks on transcription are in order. Transcription, and notation in general, serves two very different purposes in this work, and will take two very different forms. The first type is transcription-as-visual-aid, and is intended to accompany, rather than stand in for, sound recordings. It is also purely descriptive, after Seeger: in no way are the transcriptions intended to represent a performable “version” of the music that they describe. In these cases I am not striving for painstaking accuracy but rather am providing simplified diagrams that point to the specific aspects of the performance toward which I want the reader’s attention drawn.¹⁶ Now I know that I am risking accusations of one-sidedness in that I am strategically steering the reader toward a reading that is consensual with my own, and that I am willfully downplaying other possible readings in order to eliminate the competition and therefore in some way “prove” that my own conclusions are the correct ones by virtue of there being no other contenders. In doing so I trust that I am not making the same kind of mistake as the one for which Ellingson criticized Fillmore, when he said that Fillmore’s transcriptions were “musically clear and comprehensible but distorted musical truth.”¹⁷ In all of these cases I urge the reader to let the sound recording act as the ultimate authority, and I encourage

¹⁶ In this sense I agree with Austerlitz, who suggests, also after Seeger, that “the purpose of descriptive notation is not to depict every aspect of musical sound, ... [but] rather to describe particular aspects of sounds” (Austerlitz 2003, 99).

¹⁷ Ellingson (1992a), 125. Ellingson is referring to J.C. Fillmore’s 1899 monograph following his study of American Indian songs, in which he “tempers” the actual performed pitches in order to conform to Western staff notation.

whatever alternative interpretations arise from the individual listening experience, including especially those that are contradictory to my own.¹⁸

As Agawu has argued eloquently, the role of notation must necessarily be as a *supplement* to the sounds for which the notation stands in, and failure to understand this will result in the failure of the notational system, although he is careful to point out the interconnected nature of the descriptive–prescriptive nexus: “Even where it is designed to be descriptive, notation remains prescriptive because it involves the translation of actions, reading of codes, deciphering of signs, and ultimately, subjectivising of meaning.”¹⁹ Conversely, the transcriber must realize that the (perhaps artificial) construction of codes, signs, and subjectivized meanings is an unavoidable side effect of the transcription process; there is always a danger that these codes, signs, and meanings will be interpreted by a reader in ways that might be dissonant with the transcriber’s intentions. Agawu also offers convincing

¹⁸ I also concur with Nettl’s oft-quoted caveat: “If human ears were able to perceive all of the acoustic contents of a musical utterance, and if the human mind could retain all of what had been perceived, then analysis of what is heard would be preferable. Reduction of music to notation on paper is at best imperfect, for either a type of notation must select from the acoustic phenomena those which the notator considers most essential, or it will be so complex that it itself will be too difficult to perceive” (Nettl 1964, 98). I also acknowledge that the very endeavor of transcription is rooted in the Western bias of sight = knowledge, a topic that Lochhead takes up in her insightful summary of Western conceptions of time-reckoning from Aristotle and Heraclitus through the early twentieth century (Lochhead 1982, 1-98. See especially her comments regarding the untrustworthiness, on the part of Western classical philosophy, of temporal experience on pp. 5-7ff).

For a particularly useful, detailed account of some of the common issues associated with transcription of African music, see Arom, 94-106.

¹⁹ Agawu (2003), 64.

pragmatic reasons for using widely-accepted notational systems to represent diasporic African music even though those systems are somewhat inadequate for the task.²⁰ And he cites numerous examples of how authors have used Western notation to represent African music with a rather high degree of success:

...if one casts a backward glance at the history of representation of African rhythm, one is struck by the decidedly marginal role played by those who have sought to invent more adequate notations for African music. Even the prospect that new notations will allow users to sidestep some of the assumptions of a monolithic “Western practice” does not persuade practitioners to dump staff notation. Readers of Blacking’s *Venda Children’s Songs*, of Jones’s *Studies in African Music*, of Nketia’s *The Music of Africa*, of David Locke’s *Drum Gahu*, and of Simha Arom’s *African Polyphony and Polyrhythm* benefit immediately from the use, never merely orthodox, of staff notation not because their transcriptions are free from conceptual errors, but because they facilitate entry into the world of African musical art. Whatever differences there might be from Western practice are thus highlighted, while the no less significant similarities are made clear.²¹

Agawu then goes on to challenge the very notion of accentual hierarchy that Western meter is said to imply, which again is a topic that I take up in great detail in Chapter One.

²⁰ For instance, Agawu suggests that “...as a communal practice, we should train our efforts toward the superior and extensive use of staff notation so as to make African music unavoidable in scholarly circles” (Ibid., 66).

²¹ Agawu (1995), 187.

Conversely, in his bold assault on Western notation, Hood cites Kunst's strange proclamation that a notation system "should look the way it sounds"²² and offers a number of alternatives that range from the merely impractical to the whimsically strange. In challenging the prescriptive efficacy of Western notation, Hood is correct in refuting the notion that "theoretically, anyone...willing to learn the meaning of these different musical symbols could reproduce the proper musical sounds."²³ He gives two reasons for his refutation: "(1) certain symbols may be ambiguous, that is, they may not fulfill our basic requirement for clarity of representation in an efficient system of notation; (2) in the course of development, each tradition has emphasized certain aspects of musical expression, and, reflecting this emphasis, its notation may have become too rigid to accommodate a variety of other practices known in actual performance."²⁴

Hood's refutation of the prescriptive aspects of notation is valid, but not quite for the reasons he offers. The implication, lurking just beneath the surface, is that Western notation insufficiently represents non-Western musical performance practices (which is true), but that somehow it *is* sufficient as a prescriptive tool for reproducing Western music. But any performer of Western music knows that Western notation by itself represents inadequately that performance practice as well. Western notation does not easily represent, among many significant details,

²² Hood, 66. This is in direct conflict with Susanne Langer's assertion that "it is...a mistake to symbolize things by entities too much like themselves" (Langer 1942, 65; quoted in Agawu 1995, 187).

²³ Ibid., 71.

²⁴ Ibid., 76.

timbre, or minute rhythmic inflections (including especially, but not limited to, rubato), or non-mathematically-related changes in tempo, or dynamic fluctuations beyond the arbitrary grades of greater or lesser degrees of *piano* or *forte*. A deep and thorough knowledge of the performance practice in question is a necessary condition for accurate recreation of a notated musical composition; the notation is merely a complex of signs, all of which are open to all kinds of interpretational possibilities. And furthermore, there is a long tradition of Western composers and transcribers that have used Western notation, with full awareness of all of its limitations, to represent musics that have little to do with the conventional descriptions of metric *a priori* and pitch rigidity that so often come under attack.

Agawu offers a few examples:

[I]f Stravinsky did not need a new notation for *The Rite of Spring*, if the persistent across-the-bar-line figures in Brahms's symphonies can be accommodated within the conventional representation, and if the highly embellished vocal styles in Romanian, Hungarian, and North African folk songs have been represented (by Bartók, among others) so as to communicate something of their essence, then it is not clear why African music must be held to a uniquely constricting representational mode.²⁵

The problem with all of the various alternatives to Western notation that have been proposed is that they too suffer from exactly the same vagaries of interpretational possibility that arise when one treats the notation prescriptively;

²⁵ Agawu (2003), 66. Earlier, Agawu even challenged the very idea that there should be something called "African rhythm" that is somehow distinct from rhythm anywhere else in the world: "'African rhythm,' in short, is an invention, a construction, a fiction, a myth, ultimately a lie" (61).

that is, when one seeks to use the notation as a means of creating, or recreating, a performance. And new problems are introduced as well, due in some part to the limited scope of their use thus far (that is, they are still comparatively new, unsophisticated, and inelegant, which I suppose is not to say that they may not eventually involve into elegant systems that satisfy Hood's "requirement for clarity of representation in an efficient system of notation"²⁶). Harlan's TUBS notation, for example, effectively circumvents the presumed accentual hierarchies that Western notation is accused of promulgating, but it is very difficult to entrain to (there are few signposts to help the eye "chunk" information), and it still represents an artificial rigidity as far as individual attack points are concerned. Hood (after Koetting 1970) offers the brief TUBS notation transcription of an Ewe ensemble performance reproduced in Figure 0.4.

²⁶ Hood (1982), 76.

FIGURE 0.4. EXAMPLE OF TUBS NOTATION (FROM HOOD).²⁷

The figure displays a musical score for five instruments: Gong, Rattle, Sogo, Kaganu, and Atsimewu. The score is organized into five systems, each with four staves. A thick vertical barline is positioned between the second and third staves of each system. The notation includes various symbols such as dots, circles, slashes, and letters 'c' and 'o' within a grid structure.

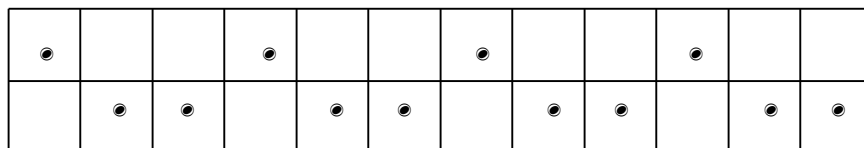
It is not clear how the first, second, and fourth systems (the gong, rattle, and *kaganu* lines) are really qualitatively different from Western notation. After all, there is still a thick vertical “barline” marking the beginning point of the new 12-

²⁷ Hood, 240.

cycle. Furthermore, even a quick investigation reveals that periodicities emerge such as that reflected in the superimposition of the rattle and *kaganu* lines (the second and fourth lines) that are exactly analogous to the four-beat, twelve-pulse reading that a 12/8 time signature offers. In other words, there is no difference between the scheme shown in Figure 0.5a, which extracts the second and fourth systems from Figure 0.4, and that given in 0.5b, except for the way that they look on the page. Neither scheme has any *a priori* advantage, but the notation of Figure 0.5b is undoubtedly familiar to a large readership and as such offers a friendlier entry-point to an investigation of this music.²⁸

FIGURE 0.5. COMPARISON OF TUBS AND WESTERN NOTATION.

A)



B)



²⁸ Or, again, as Agawu puts it, the notation from Figure 0.5b is preferable because it “facilitate(s) entry into the world of African musical art” (1995, 187).

The advantages that TUBS notation is said to offer, such as the various types of performance indications such as those shown in the *sogo* and *atsimewu* lines, can be solved easily with such minor additions to Western notation as different noteheads, and so on – all extensions of conventional Western notation that have been used frequently and successfully in new music and that are readily available in current notation software. And phenomena such as those shown in ops 7 to 9 of the second cycle of the *sogo* line are just as ambiguous here as they would be in Western notation: it is not clear from the notation just where the attack points that overlap the vertical dimensions of the boxes should be performed. Novotney offers a more detailed critique of Koetting’s invocation of TUBS notation, which includes the pointed observation that it has been used in recent years as merely a simplified system for beginners that are not familiar with, or comfortable with, Western notation, and that most sympathetic authors add notation to help group graphics into entrainable metric structures (analogous to 12/8 or 4/4) that reflect something akin to “main beats”; therefore, it has failed to satisfy the condition of representing “musics with no true metric stress structure.”²⁹

Labanotation, another oft-invoked alternate, is even more problematic. The illustration of Labanotation that Hood gives, reproduced in Figure 0.6, is an

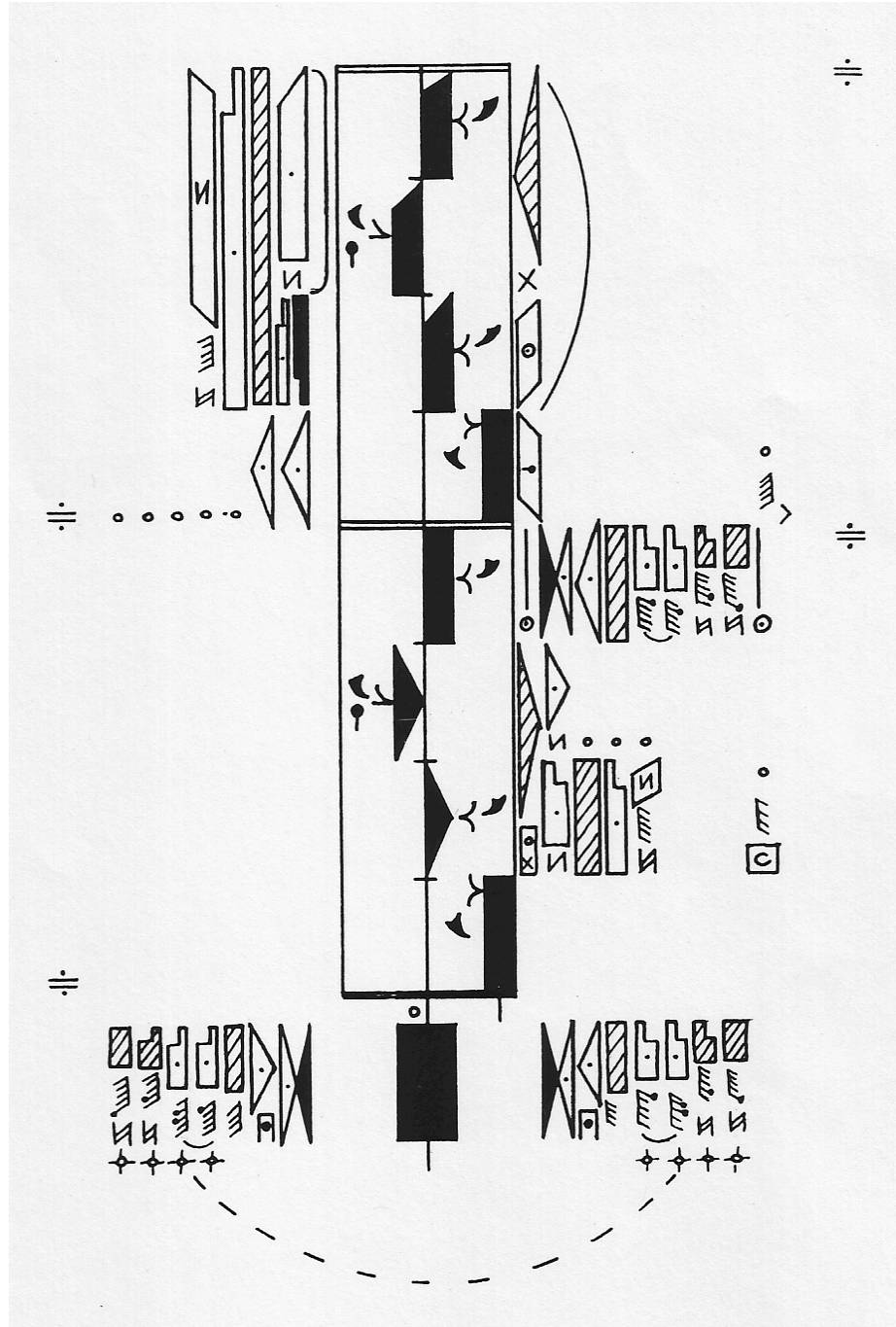
²⁹ Novotney (1998), 267-71. The author minces no words when he concludes: “Clearly, based on defensible rationale, I cannot approve of or support the use of this extremely problematic TUBS notation as a valid tool for either scholarship or performance.”

exercise in an absurdity of abundance – there are so many different symbols and shapes and designs that one is quickly overwhelmed. It also seems to rely on a sort of proportional notation for its temporal aspects: there is no way to measure the relative times at which events happen, or how long they last, except by comparing how large they are, or what shape they assume, in relation to one another (in other words there is no grid against which to measure events).³⁰ The notation in Figure 0.6 is intended to be read from bottom to top and from a central axis (which represents the time grid) out in either direction (with various shapes, designs, and colors indicating various performance directives).³¹

³⁰ Ibid., 120. Pantaleoni also uses Labanotation significantly. For a primer on Labanotation, which originated in prescriptive dance notation, see Hutchinson (1961).

³¹ Hood offers this example with little further comment; therefore it is not at all clear what those various performance directives even *are*, much less how we might interpret them as performers or analysts.

FIGURE 0.6. EXAMPLE OF LABANOTATION (FROM HOOD).



Of course Hood's political agenda is revealed as his narrative moves closer toward his discussion of Labanotation:

The fact that some of us are determined to conquer the problem [of the hegemonic reduction of music into written Western form] will one day result in the abandonment of this ethnocentric crutch. By the time we have reached the Laban Solution, the last traces of doctored Western notation should fade away.³²

While I do not relish entering the ideological minefield that surrounds the adoption of this or that notational system to represent a particular musical practice, I recognize that that minefield remains an unavoidable part of the discursive (and political) terrain across which I must travel in order to reveal at least a few essential truths about the music under consideration. That I choose to invoke Western staff notation, with its barlines, left-to-right orthography, and convenient (but admittedly abstract) rendition of rhythms and pitches as tempered linear grids, does not reflect any political agenda except insofar as I agree with Agawu's entreaty that notation must be as clear, comprehensible, and meaningful to the reader as possible. In this way it *does* reflect a pedagogical agenda – it is important that key points are made with a minimum of fuss; for instance, that the clearly cyclic nature of the music under investigation is represented for the reader in a way that is easily entrainable.³³

³² Ibid., 90.

³³ And, really, its metric nature – as Novotney correctly insists, West African and diasporic West African music *is* organized into pulses, and the failure to recognize this essential truth has been the Achilles's heel of many past studies, as in:

* * *

The second type of transcription that I will use requires some explanation. In Chapter Four I will invoke some additional descriptive elements that modify standard Western notation, mostly horizontal arrows that point to either the left or right and represent minute displacements of attack points in relation to their “proper” position in the notated metric grid. In doing so I will begin to come closer to a notational system that is extremely meticulous in its attention to minute rhythmic details. These transcriptions serve an entirely different purpose: to illustrate in a reasonably precise manner how attack points are found to vary in relation to a fixed time grid. In doing so I acknowledge the apparent irony inherent in a spatial realization of a dynamic time flux – a topic that Hasty takes up at several points, as in the following eloquent summary:

...might there not be a standpoint outside time from which we can analyze temporal phenomena and make atemporal models of things caught up in time? From this standpoint, things might be removed from time and process. As I have already indicated, absolute time is useful for this purpose since it exists independently from the events that occur in it. Thus, a system of time points can be abstracted from events and used to measure their durations by marking discrete points of beginning and end laid out on an ever-present time line. Once this operation is completed, once events are fixed and assigned to a sequential order, time becomes a formality. The ordering of events, their durations, and their relations having been determined, process and becoming are exorcised—all events are equally

“...many African musics do, in fact, have beat structures, and...it is the understanding and representation of these structures that is *crucial to the proper understanding of African rhythmic systems*” (Novotney 1998, 268-9, emphasis added).

available as parts of a completed whole. The future is a formal future; that is, rather than an undetermined realm of possibility, the future is a relation of “later than” applied to already existing entities. Likewise, the past is a formal past—a relation of “earlier than” rather than that which, having really perished (and thus being, in itself, irretrievable), exists in its potentialities for creative use in a newly emerging situation. The notion of permanence, temporal articulation as instantaneous succession, and the visual imagery of point and line—all of which Henri Bergson criticized as a “spatialization of time”—are useful intellectual tools for bringing flux under our control...³⁴

Earlier in the same discussion, Hasty addresses a similar trope in his investigation of Neumann’s *Zeitmaß* and *Zeitgestalt*, the former of which refers to a quantitative, geometric, spatial notion of time (how Neumann regarded meter) and the latter referring to a qualitative, processual, living notion of time (how Neumann regarded the rhythms that exist within and are measured by that meter).³⁵

The observant reader will notice that I truncated Hasty’s words just at the point at which he was about to begin his caveat about how such spatializations are inadequate for truly representing the teleological nature of rhythms as they unfold in time. I couldn’t agree more with this sentiment, but at the same time I do recognize the utility of a model in which we can go backward and forward, and pause and reflect, and risking comparisons to Leadbelly’s butterflies, I do find

³⁴ Hasty (1997), 68. Note that Clifton’s conception conflicts with Hasty’s assertion about absolute time as a useful model (Clifton, 51-4).

³⁵ It is worth noting briefly that Husserl’s assessment of time-past differs from Hasty’s in at least one subtle but important regard, which is that in the latter the past is dead and irretrievable, while in the former the past exists in a continuous state of running-off as it gradually recedes from our memory. I will address both of these viewpoints below.

significant analytical value in a synchronous, bird's-eye illustration of musical process.

At any rate, the points that I will be proving have to do with how events are placed in and around a true polymetric framework, reflecting the relationship between events and one metric grid or another, or more accurately reflecting how such events traverse the space between the two grids. The notation for these examples will reflect the motile nature of the musical material in the context of this polymetric framework while sacrificing clarity and readability as little as possible.

Finally, I should add a few words about the nature of the performance sources that I am using, and my personal relationship with them. This is largely to acknowledge potential criticisms from various, especially ethnomusicological, camps: my position of, as much as I would like to think that my years of experience as a musician in these styles would prove otherwise, cultural outsider (and any etic vs. emic dissonance that arises, real or imagined, from this position³⁶), the fact that I have not lived and performed fieldwork in some of the locales and cultural situations from which my musical sources originate, my status as a Western academic and any accusations of hegemony that might arise from that status. I do share a strong affinity with Chris Washburne in his self-assessment as a musician that constantly engages with his musical persona in an ongoing dialectic between peer, participant-observer, and outsider (and his portrayal of the mobile, even

³⁶ Or imposed, etically, by an established anti-Western-academic hegemony!

fleeting nature of the insider–outsider spectrum), not least including his revealing narrative about the abundance of white trombone players in salsa bands:

[M]y acceptance into the salsa scene was rather swift, attesting to a sincere openness of the Latino community in New York City for cultural interchange. . . . Latin bands in New York typically included white horn players, a practice that was established in the 1940s during the mambo era. . . . In fact, arguably the most influential salsa trombonist was Eddie Palmieri’s longtime collaborator Barry Rogers, who was of Jewish descent and born and raised in Brooklyn.³⁷

Washburne writes of the respect for and knowledge of music as well as one’s “fluency in Latino social expectations” that help propel one along a trajectory toward cultural acceptance:

My own experience was much more fluid and multilayered instead of being a simple shift from “out-ness” to “in-ness.” As my own competency level in playing salsa increased, and as I learned how to navigate the cultural cues and behaviors of the scene, I became more deeply entrenched and many more performance opportunities arose.³⁸

I self-identify as a Latin Jazz musician, as a seasoned *salsero*, as a fledgling *rumbero* on a slow trajectory toward insider-ness, as a competent practitioner of a number of Brazilian music styles, and as a musician who has played thousands of gigs with Cuban, Puerto Rican, Peruvian, Brazilian, Jamaican, and African

³⁷ Washburne (2008), 34-5. As a fellow 6’3” fair-skinned trombone player, it is easy to see where my affinity begins!

³⁸ Ibid., 35. Washburne’s fluid and multilayered progression toward “in-ness” corresponds with the trajectory toward insider-ness that I describe.

musicians (and of course as a music theorist and educator). Unlike Washburne, I live and work in the Pacific Northwest, where the demographic of musicians and audiences alike is tellingly different from that of New York City: a sizeable number of the participants in the environment in which I work – musicians as well as dancers – are not of Latino descent, which introduces all kinds of questions about cultural identity and the motivation for self-identifying with a music, a “scene,” and a lifestyle that might be considered somewhat manufactured with regard to one’s own upbringing and history. This malleable cultural identity is something that Washburne also addresses, after Hall, Frith, and Waterman: “identity is a imaginative and emergent process...where music and its performance both reflect social conditions as well as serve as a constitutive force in the construction of those conditions.”³⁹ The social conditions that surround, determine, and are determined by the culture of diasporic Cuban music in the Pacific Northwest are not unique, but they are markedly different than those found in New York, or Havana, or San Juan, or Lima, and it is a tribute to the allure of the music, dance, and culture that so many non-Cubans, and non-Latinos, have adopted it as their imaginative identity of choice.

For the most part I use commercially available recordings, and do my very best to make educated judgments about which sound emanates from which instrument; in a few instances I perform rudimentary acts of fieldwork as I dissect performances at which I was present, and in one instance I use a recording of a

³⁹ Ibid., 69.

performance in which I was actually a participant. In one of the more persuasive arguments against using commercial (or any) audio recordings, Kaufmann reinforces ethnomusicology's (understandable) bias against those that haven't done fieldwork, as in for instance, "when more than one drum is used in an ensemble, how can a recording indicate what each drummer is playing?" He inadvertently assuages his own concern, however, in the next paragraph: "Not only are the ensembles often large with many multi-linear parts, but the many lines can often be distinguished rather easily by the varied timbres of the different idiophonic instruments and drums."⁴⁰ This becomes increasingly true the closer the transcriber comes to insider-ness, via the hundreds and thousands of hours spent listening, watching, playing, practicing, asking, conversing, reading, and "hanging."

When applicable, audio examples are referred to in bracketed bold face in the text immediately preceding the notated excerpt; for instance: "...the two strata are never presented simultaneously, an illustration of which is shown in Example 1.3 [**Sound Example 2**]" in Chapter One (p. 51). All relevant excerpts from the source recordings, as well as demonstrations of fundamental rhythmic patterns, topoi, and their interactions are available in streaming audio at www.morezero.com/beat_span_examples. A glossary of terms that may be unfamiliar to a reader coming from a background of music theory (mostly Spanish and Portuguese, but also some Yoruba, Carabalí, and Lucumí terms) appears at the end the text.

⁴⁰ Kaufmann (1980), 398.

1. Some Metric Considerations Refined and Contested

The drummers provide the specific rhythmic pattern, or toque, featuring a twelve-beat cycle divided simultaneously into shifting patterns of four and six. It is often difficult to determine exactly where the main beat falls: such is the shifting nature of the music, which provides a dynamic quality in constant motion.¹

METER AND ACCENT

In his important recent book *Hearing In Time*, Justin London examines some ways in which meter might be construed using methodologies based in part on theories of and observations about cognition, and specifically how we group things, ultimately constructing a procedure for metric determination upon the foundation of Lerdahl and Jackendoff's system of well-formedness rules, resulting in a collection of well-formedness *constraints* that are based on limits of perception and cognitive grouping tendencies. London's motivation for retooling Lerdahl and Jackendoff's formula is motivated by his desire to create a generalized conceptual model for metric organization that "should apply to most of the world's musics."² The rhetorical thrust of this chapter will unfold as a multidirectional conduit between methodologies from music theory and ethnomusicology, challenging widely held beliefs about the accentual implications of various metric readings, about what meter *means* and what it is (or can be, or should be) used for, and what role notation serves in such thinking.

¹ Crook (2005), 126.

² London (2004), 114.

Taking after Locke, Nketia, and others, and apposite to the subject of this document, London challenges the utility of analyzing African rhythmic patterns in terms of “Western” metric organizational tools.³ This argument hearkens back to the notion that meter, by definition, implies a specific hierarchy of accents and non-accents, a notion that is only partially true at best, if it can be said to be true at all. The axiomatic decree that accentual hierarchy is a necessary defining characteristic of meter is not only a straw man propped up in ethnomusicological circles any time the hegemony of Western notation is challenged (which is to say, quite often); it is also a regularly recurring trope in Western theories of rhythm and meter.⁴

While it is certainly a convention of many performance practices to assume an isomorphism between metric construction and a hierarchy of accents, it is by no means a necessary condition for that isomorphism to be present. Even the relatively nonthreatening assumption that a metric downbeat deserves an accentual emphasis can be challenged with ease. To cite a few examples from the Western canon that come readily to mind: the agogic accent on beat two of the Viennese

³ Ibid., 111ff.

⁴ Pantaleoni, for instance, states unequivocally that “Western notation implies a stressed beat.” (Serwadda and Pantaleoni 1968, 47) Kolinski begins his entreaty with “It is obvious that an application of specifically Western concepts to non-Western musical styles will result in a more or less distorted assessment of the musics involved” (1973, 494). And Pantaleoni, Knight, Stone, and others question Western notation on the grounds that it does not readily represent timbre and is therefore inappropriate for the transcription of African drumming patterns, which are patterns of timbres as much as discrete pitches (c.f. Knight 1974, Stone 1985). As I discuss in the Introduction above, there is no acknowledgement in any of these sources that Western notation is equally insufficient for the accurate transcription of *Western* music but that it serves quite well as a simplified visual aid.

waltz (a performerly consideration that is not reflected in the notation, but which is a crucial determinant of correct performance, to insiders), the dynamic accent on beat three of the *gavotte* (also a “beginning” accent⁵), the accent on beat two (the result of surface level rhythm organization, which closely informs the metric structure of the dance, and about which more below) of the *mazurka*. In fact, there are so many diverse examples of dances that subvert a beginning-based conception of metric accent that it seems suspicious to claim any *a priori* primacy to beat one or any other part of the metric rubric – unless, of course, one is strategically situating a generalized conception of “Western” meter in a position against which to base an argument for some other notational system (or in some discursive circles *no* notational system!); but again this a fallacious argument that unfairly places a burden of proof on a notational system that seems to be designed for convenience as often as not.⁶ There are even enough conflicting theories about how subsidiary accents operate – e.g. those that favor beat two or three in terms of degree of accentual priority in a measure of 3/4 (that is, given a metric situation in which the first beat of the measure is accentually privileged, does beat two or beat three

⁵ c.f. Lester, 37.

⁶ *À propos* the political motivation behind various notational systems, Agawu addresses the concerns of many earlier writers about trying to make the differences between Western and African music as transparent, as obvious, and sometimes as stark as possible. Refer to my discussion of notation and transcription in the Introduction above, and see also Agawu (2003), 64ff. and Ellingson (1992a, 1992b).

receive the secondary accentual emphasis?) – that we must be suspicious of any axiomatic statements that might be made in this arena.⁷

Opinions abound about how meter and accent interact, about what metric organization *means*, and even about what *accent* is. Yeston, for instance, asserts that meter is the result of the coincidence of at least two regular rhythmic strata, neither (or better, none, assuming more than two strata) of which is sufficient to define meter by itself, but rather that slower periodic movements serve to group and ultimately hierarchize faster moving ones.⁸ Some of Lerdahl and Jackendoff's work supports and formalizes Yeston's conclusion.⁹ Hasty offers an illuminating account of various eighteenth- and nineteenth-century viewpoints, from the relatively straightforward composerly examinations of Koch and Mattheson to the

⁷ Kramer, for instance, interrogates three accentual readings of a four-measure hypermeasure (Kramer 1988, 83-96). Kramer's analysis acknowledges and expands upon a brief overview by Lerdahl and Jackendoff (1987, 31-2). For a peculiarly self-contradictory stance see Kaufmann (1980), in which shortly after the author describes meter's (inappropriately rigid, for transcription of West African music) accentual implications he offers the following: "The distinction between basic pattern and meter seems to be no different than in Western music where minuet, waltz, and bolero are all in 3/4 meter, yet each has distinctive rhythmic/accental patterns" (409). Since Western composers, performers, and theorists are fine with notating all three of these dances, and many more, in 3/4, it seems as though Kaufmann is inadvertently arguing the *merits* of metric notation.

⁸ See especially Yeston, 65-68.

⁹ Lerdahl and Jackendoff assert in unequivocal terms that "for beats to be strong or weak there must exist a *metrical hierarchy* – two or more levels of beats" (19, emphasis in original). Their exposition of their Metric Well-Formedness Rules implicitly follow Yeston, even if they do not actually address the latter in that particular chapter.

complex philosophical discourses of Lorenz, Hauptmann, and others¹⁰, before launching into an explication of his own complex and powerful theory of rhythmic and metric projection. Hasty's theory, which begins to point toward a consideration of meter that does not assume any a priori accentual implications, will be addressed in great detail in Chapter Three below. And of course Kramer subjects virtually every theory of rhythm and meter to intense scrutiny with his powerful, sweeping challenge of the very notion that meter exists apart from music, "as an abstract temporal grid against which rhythm operates":

Meter is not separate from music, since music itself determines the pattern of accents we interpret as meter. Nor is meter mechanical, despite its tendency to continue, even when confronted with syncopations or empty pulses, until definitely contradicted. Music not only establishes but also reinforces and sometimes redefines meter...¹¹

And then it is not even clear what is meant by accent, since there are so many different types of, and reasons for, accentual emphasis. Kramer, for instance, describes three species of accent: stress or phenomenal accents, rhythmic accents, and metric accents.¹² It is obviously the latter with which we are concerned here. Cooper and Meyer define accent as "a stimulus (in a series of stimuli) which is

¹⁰ Hasty (1997), 34-47. The "others" including of course Riemann, Neumann, and Georgiades, all of whom offer fascinating lines of flight that are tangentially related to the current study. I will return briefly to Lorenz later in this chapter (see fn 63) and to Hauptmann in Chapter Four.

¹¹ Kramer (1988), 82.

¹² *Ibid.*, 86.

marked for consciousness in some way,”¹³ and while they are careful to point out that accent and stress are different phenomena – stress representing a particular form of dynamic accent – their reliance on the binary strong/weak accentual structures of prosodic feet allows them to make claims about accent and unaccent that are phenomenologically refutable.¹⁴

It is beyond the purview of this work to go into great detail about metric and rhythmic accounts in tonal music history, but there are surely many interesting parallels between these accounts and perceptual construals of African dance and music that are worth exploring. Jay Rahn’s comments regarding metrocentric, hierarchical construals as opposed to those based on “metronome sense, smallest rhythmic units, basic pulses, nominal values, and the density referent” (and, after Schuller, his description of non-metrocentric construals as “democratic”)¹⁵ are suggestive in this regard. Agawu asserts that, in an Ewe *Gbòlò* performance,

Meter...essentially indicates grouping, and does not carry an *a priori* stress pattern. Stress is produced by a complex of procedures: endings of choral phrases, beginnings of rhythmic patterns, long notes, and so on. The combined effect of these procedures is to undermine audible meter and elevate phenomenal accents to a position of prominence. Once this relationship between meter and phenomenal accents is understood, we as listeners can hear in *Gbòlò* a light and fluid rhythmic texture, unfolding within a secure

¹³ Cooper and Meyer, 8. Emphasis in original.

¹⁴ In their brief analysis of the opening of Chopin’s E minor Prelude, the highly expressive and semantically charged C on beat four of measure 1 is relegated to the unaccented part of the iambic unit for a number of legitimate reasons. But there is no doubt in the listener’s mind that this note is “marked for consciousness” in a way that is unique in the composition thus far (see Cooper and Meyer, pp. 36-37).

¹⁵ Jay Rahn (1996), 75.

metronomic framework, but marking out its periods asymmetrically and sometimes unpredictably.¹⁶

Knight offers a valuable parallel lesson when he describes two possible entry points for entrainment with a *kutirindingo* rhythm, “one of which gives us the proper feel of the rhythm itself, while another helps to explain its synchronization.” This suggests that there are two metric readings that are both viable and that meet with the expert’s approval: “if one carefully plays the rhythm for a Mandinka drummer, thinking first one interpretation, then the other, he will approve both as correct.”¹⁷ Unfortunately Knight states, without further comment, that the two interpretations he gives are the *only* possible interpretations, which does not seem very phenomenologically viable.

And finally, regarding the basic drumming pattern that begins the Malawi *vimbuza* dance, and probably most germane to the present discussion, Steven Friedson notes that “A Western-trained musician, upon hearing this core *vimbuza* pattern, would, I think, immediately assume that the figure was constructed around a straightforward duple compound meter of 6/8 ... but *without the pattern of stressed beats associated with Western meter.*”¹⁸ It is clear that there is little agreement about what meter means, what role accent does or does not play, and

¹⁶ Agawu (1995), 110. The author continues: “There is, then, an overriding tension between the ‘background’ repetition and regularity of African instrumental music and the kaleidoscopic changes of rhythmic/metric weight that characterize its immediate or ‘surface’ structure.” I will take up this last point in Chapter Three.

¹⁷ Knight (1974), 30.

¹⁸ Friedson(1996), 136. Emphasis added.

how (and by whom) meter is or might be used. I would like to offer a few examples from the discourse of performing musicians, from scholarly literature, and from my own experience as performer and listener that challenge notions of accentual primacy even while circling around talk of cyclic metric construals.

In many non-Western traditions a musician will speak of a downbeat even if nothing significant, or even nothing at all in some cases, is occurring there. For example, in *son* and in Cuban, Puerto Rican, and other traditions that derive from *son*, the bass player often accentuates the “and” of two and four and very often plays nothing on the downbeat, while the *tumbador* plays only a comparably soft left-hand palm strike. Most of the melodic phrasing avoids downbeat beginnings and endings (likewise in jazz: a soloist that ends an improvised line on a downbeat is considered by insiders to be “square”), but always there is clear talk of a downbeat; songs are counted off as “one-two-three-four” and so on. Now *son* is a musical tradition that has developed a high degree of rhythmic nuance and metric complexity, but even in traditions that might be considered to be less obviously rhythmically complex, analogous accentual conclusions can be drawn: in *cumbia*, for instance, the bass outlines a rhythm that appears to drive toward the downbeat but in which beat three receives the primary dynamic accent. And reggae musicians speak of the “one-drop,” literally meaning that the first beat is “dropped” and nothing of any real consequence happens there (all of the real accentual action takes place on and around beat three). Example 1.1 shows a typical *cumbia* bass line, with the performative accentual emphasis indicated. Note that this is a

“beginning accent” akin to that which occurs in the gavotte, for instance (that is, a dynamic envelope unfolds from the initial accent and propels through each three-note gesture – this is shown in the example). Note also that, much like in the gavotte (or the waltz, or the mazurka), the proper accentual emphasis is a crucial determinant of a performance’s authenticity – whether it “grooves” in a way that insiders would consider to be stylistically appropriate or not.

EXAMPLE 1.1. A TYPICAL *CUMBIA* BASS LINE.



Barbara Browning touches on the question of accent and meter in a brief but thoughtful explication of Brazilian *samba* and the significance to dance of the suggestive power of silence:¹⁹

The body says what cannot be spoken. Musically, this can be explained as syncopation. Samba is a polymeter, layered over a 2/4 structure.²⁰ But the strong beat is suspended, the weak accentuated.

¹⁹ Agawu’s depiction of the silent downbeat is sympathetic: “it is not that nothing is happening in the downbeats, but rather that that something is silence,” and that the “powerful rhetorical use of silence” is a critical part of forward-propulsion of the music (1986, 72).

²⁰ *sic*. When Browning introduces musical terminology into her discourse she tends to lose some small degree of clarity and accuracy, which might be somewhat

This suspension leaves the body with a hunger that can only be satisfied by filling the silence with motion.²¹

Browning is locating *samba* (as a *dance*, but of course dance and music are inextricably woven in all of the musics discussed herein) in a broad syncretic cultural, social, ceremonial, and musical landscape, and she arrives at some tantalizing conclusions about the nexus formed by these various aspects of musical and cultural life. She later broadens her discussion to include other, mutually interpenetrating, diasporic African practices: the *candomblé* ritual that preserves, in remarkably pure form, many aspects of Yoruba ancestor worship and spirit possession, and *capoeira*, the Angolan-derived dance/martial art form, to which this chapter will later return. The suspension (or at least the deemphasis) of the strong beat that Browning describes is a crucial aspect of many diasporic performance practices, including the aforementioned reggae “one-drop” and Cuban *son* and *rumba*. David García reinforces this in his frequent portrayal of Arsenio Rodríguez’s *son montuno* bass lines as “contratiempo.”²²

Agawu strongly reinforces Browning’s and García’s sentiments in his description of the offbeat pattern that informs Ghanaian highlife music – a completely different musical repertoire, coming from a completely different cultural sphere, but one that obviously has many close affinities with the *samba*,

forgivable as she is approaching her subject from the position of a dance scholar and commentator on the multivalent relationships between dance and sociology, not as a musician, music theorist, or ethnomusicologist.

²¹ Browning (1995), 9-10.

²² García (2006), 41ff.

not least because of the latter's African roots and because of the inseparability that both have from dance:

By articulating the off-beats only of beats 2, 3, and 4 in a 4/4 meter, the *topos* maximizes the energy in the margins and enshrines a potential for movement... listeners know where the main beats are and so coordinate foot movement with these unsounded parts of the *topos*. The dancer thus becomes active interpreter, contributing to the implementation of the pattern. Of course, in the case of dance-band highlife, the unsounded parts of the *topos* may be sounded by other instruments or voice; the background is thus activated. Whether the background is assumed or externalized, it remains an indispensable dimension of the music.²³

As an interesting phenomenological experiment, one might listen as Shona *mbira* musicians begin their incipit to a *bira*, or as a Brazilian *candomblé* ritual commences, or as a group of old *rumberos* on a Matanzas sidewalk launches into a *rumba columbia*. In all of these (and many other) situations, individual performers often begin at what might seem to an outsider to be odd, even nonsensical entry points – Friedson's confusion about *Vimbuza* drummers outlining triple patterns as they enter into what appears to be a duple rhythmic topography serves as an excellent illustration of this phenomenological puzzle²⁴ – but eventually (and fairly quickly) there comes a point when the listener entrains to some sort of downbeat

²³ Agawu (2003), 130. *Topos*, as the Introduction describes, is Agawu's term for the standard pattern, clave, and similar rhythmic constructs that underlie many African and diasporic musical practices. Agawu's invocation of the term "background" to describe the remainder of the music that is present alongside this basic pattern is compelling and will resonate in some very interesting ways with a few of my methodological angles in this and the next chapter.

²⁴ Friedson (1996), 136-8.

and what was once nonsensical and perhaps even in direct conflict with the listener's perception of metric organization settles into its proper place.

Morrison notes that a skilled practitioner (or listener) of this music can and should entrain adeptly to different strata in a polyrhythmic performance:

I do not consider myself to have a fluent grasp of any polymetric relationship until I can smoothly switch between hearing either of the pairs as “primary.” It is only when I can begin to perform this switch back and forth that I feel I can start to incorporate the given polymeter into my playing.²⁵

Morrison, whose theoretical perspective is rooted in Yeston's theory of metric stratification, demonstrates how a downbeat-oriented metrical model is insufficient as a means of organizing African music into periodicities, precisely because there is typically no “single, inherent metric accent to initiate this period at any one time point.”²⁶ Arom offers the term “pulsation,” as a substitute for meter, tactus, or beat, to describe an organized, and presumably regular, beat grouping that does not reflect any regular periodicity of accents such that meter might suggest.²⁷ Arom's

²⁵ Morrison (1999), 39 (fn 91). The question of whether one can actually hear two (or more) polymetric strata simultaneously, or whether one must “merely” switch quickly back and forth between the two, is one that I will take up in part in Chapter Two and then in more detail in Chapter Four. See Lewin (1986, 359-364) for an elegant narrative that supports my reservation about the word “merely.”

²⁶ *Ibid.*, 61.

²⁷ The issue of metric and accentual isomorphism, and in particular how to avoid the implication of accent that metric notation is accused of suggesting, has been the driving force behind many attempts at alternate notation systems. For examples from ethnomusicological circles, see Koetting, who most fully implemented Philip Harland's Time Unit Box System (TUBS) that I describe in the Introduction above (and which remains in use – see also Stone (2005)), and Serwadda and Pantaleoni,

pulsation is meant to convey a series of isochronous, neutral, constant, intrinsic reference units and as such might be better compared to Hood's *density referent* or the N of London's N-cycle rather than as a way to organize those reference units into entrainable periodicities. But again, a metric notational system (and unfortunately this seems to be what many authors are actually arguing about: how to *notate* the nuances of African rhythmic play) does not by definition connote accentual hierarchy. Morrison's comment nicely reinforces what was just described above: the beginning-points of performances in which instruments enter at what often appear to be random intervals, at least to ears expecting synchronous entries, and eventually settle into a "groove," either downbeat-oriented or not, depending on the particular performance practice in question. It should be noted that Morrison and Arom are wrong in insisting that there are no entrainable periodicities that divide the cycle into pulses, and likewise that there is no downbeat or salient (and structurally significant) beginning-point to the cycle as-performed. Novotney asserts that "the first and most essential step in the analysis of African rhythmic systems is to recognize that, primarily, the music is based on

who devised a notational system based on Laban dance notation, and who, with no irony intended, transcribe performances from video with the sound turned off in order to determine exactly which player is playing which event at any given time. For further examples of alternative notational systems, see Rycroft (whose circular representations might be worth revisiting in light of London's discussion of clock-face metrical construals) and Green. For somewhat unsuccessful (in my opinion) examples of attempts at actual polymetric construals using standard staff notation, see Brandel and Jones (1958). For a truly strange solution to a problem that most theorists didn't know existed, refer to Kolinski's "gestalt" re-notating of the C Major Prelude from Bach's *Well-Tempered Clavier*, Book I (1973, 505).

symmetrical and regularly occurring beats,”²⁸ and in his detailed assessment of the various definitions of beat, pulse, and downbeat, he explains that “most examples of African musics, especially musics associated with dance, can be transcribed into metric schemes in Western notation.”²⁹ Like the narrative above, he is careful to clarify that this metric representation carries no internal hierarchic *a priori*, and like Agawu he cites the fact that many post-tonal composers employ standard Western staff notation without any implications of metric hierarchy.³⁰ There is almost always a *specific* pulse periodicity in West African and diasporic West African music, which serves to organize smaller, faster pulses. The fact that this periodicity may be elusive in the early moments of the performance, or may be perceived as changing (see, for instance, the analysis of Patato Valdez’s “Desde el fondo del río” in Chapter Four below) does nothing to refute this essential truth.

To give one example, which also illustrates what a thorny discursive terrain we are setting foot in, I have heard Senegalese and other musicians describe the early stages of a performance in terms of layered entries into which each musician drops at any point that he or she sees fit. But then I have also seen the same musicians give a little head nod or some similar gesture on what could be described as a downbeat in order to help a fellow musician regain bearing after getting lost! And then of course an argument can be made that what African musicians do and what they say might bear little relation to one another, depending on the context of

²⁸ Novotney (1998), 113.

²⁹ *Ibid.*, 72.

³⁰ *Ibid.*, 87.

the particular statement – the relationship between field worker and subject, for instance, is a slippery one and has been addressed in many sources.³¹ So we must tread carefully when we are told that African musicians do not pay heed to metric considerations, even if those metric considerations are more tenuous and elusive than in some other musical circumstances.

I find that the point at which my ears entrain to a specific pulse periodicity, which very often contradicts how I began counting along with the music, is a very interesting phenomenon. To take a relatively opaque example, in the opening moments of the studio recording of Thomas Mapfumo's *Dangurangu*, an interesting perceptual progression unfolds as the guitar starts and is joined shortly by bass and drums, all of which eventually settle into a loping 3/2 groove.³² A

³¹ Berliner, for example, gives a very humorous chronicle of his attempt to learn the familial names associated with the individual keys of the *mbira dzavadzimu*. Only after multiple prevaricative, and frustratingly contradictory, explanations does the master accede to Berliner's entreaty: "'Well it seems to me that this young man is serious after all. I suppose we can tell him the truth now.'" Then, to my utter amazement and relief, Bandambira [the mbira master] proceeded to lay out his entire system clearly and unambiguously." (Berliner, 7) Chernoff, too, addresses at length the discursive dissonance that arises between the participant-observer and the subject, and the playfulness with which the latter often treats the former (Chernoff, 5-23ff.).

³² Released on Zimbovim-7, 1996. *Dangurangu* is an original composition based on a traditional Shona mbira song of the same name, and it shares many surface features with its namesake. One striking way in which it diverges from traditional Shona practice is that the simultaneous polyrhythmic strands that inform much of the language of *mbira* music are in effect separated out and presented individually; that is, sections governed by a "6/4" subdivision alternate with passages that are more "3/2" in their metric organization: these distinctions are coterminous with what might be considered the alternating "verse" and "chorus" structure of modern popular song.

simplified transcription of the opening of this piece, notated with barlines that doubtless reflect my perceptual bias, is given in Example 1.2 [Sound Example 1].

EXAMPLE 1.2. OPENING OF THOMAS MAPFUMO'S "DANGURANGU."

The musical score for Example 1.2 is presented in three systems. The first system consists of two staves (guitar and bass) in G major and 4/4 time. The guitar part begins with a quarter note G, followed by eighth notes A and B, and then a quarter note C. The bass part is silent. The second system also has two staves. The guitar part continues with quarter notes D, E, and F, followed by a quarter note G. The bass part remains silent. The time signature changes to 6/4 in measure 5. In measure 6, the time signature changes to 8/4. In measure 7, the time signature changes to 3/2. The third system continues in 3/2 time with two staves. The guitar part starts with a quarter note G, followed by eighth notes A and B, and then a quarter note C. The bass part starts with a quarter note G, followed by eighth notes A and B, and then a quarter note C.

The example shows the guitar and bass parts only. By measure eight in the transcription all parts have settled comfortably into what is notated here as 3/2; the process of metrical contracting and stretching by which they arrive in that arrangement will be described in more detail in Chapter Four. The unusual metric configuration in measures 5 to 7 is the result of a strategic decision to make the

transcription itself reflect the unsettled nature of the musical passage. Of course there is no suggestion intended of *a priori* accentual primacy during the notated shift from 4/4 to 6/4 to 8/4; rather, the intention is to illustrate that 6/4 is clearly no longer in control, and 3/2 is not yet a consideration.

What is most interesting is that I heard the opening guitar figure in a very particular way (notated as 6/4 in the example and emphasizing its large-scale triple nature) that is really clearly denied by the time the groove settles in in measure 8. As a matter of fact, even when, having listened to this song many dozens of times and having developed a reasonable familiarity with both it and the musical topography in which it is found (that is, in the lineage of the specific Zimbabwean popular music style known as *Chimurenga*, and in the Shona *mbira* tradition from which it derives), I actually *cannot* realistically entrain to the opening guitar figure in 3/2: forcing myself to do so simply promulgates an artificial and uncomfortable relationship with the music *as-it-presents-itself*.

If we continue listening we soon find that an added 12/8 stratum increases “Dangurangu’s” polymetric richness. Mapfumo strategically separates the three metric strands as the performance unfolds; strata are never presented simultaneously, at least in an overtly entrainable way. An illustration of this, from a few moments into the performance, is shown in Example 1.3 [**Sound Example 2**], in which the 12/8 stratum is replaced by a clear foreground 3/2 stratum. The 12/8 layer recedes far into the background, to the point that it actually sounds like a syncopation against the dominant 3/2 layer. This is a situation that is foreign to

traditional Shona *mbira* performance practice, the metric fabric of which is defined to some extent by the superimposition of the two metric strata, and in which much of the rhythmic (and melodic) interest of a performance is the result of the performer subtly emphasizing one or the other (and especially the ebb and flow between the two). Even as one metric stratum is foregrounded, however, the other never recedes entirely, and the potential for the other stratum to emerge is ever-present.

EXAMPLE 1.3. TRANSITION BETWEEN 12/8 AND 3/2 IN
MAPFUMO'S "DANGURANGU" (1:56 TO 2:09) .

"12"
8

(foreground pulse)

guitar

bass

hi hat
kick

(trans.) "3"
2

(kick drum recedes
into background)

etc.

The musical score illustrates the transition from 12/8 to 3/2 time signature. The first system shows the 12/8 section with a foreground pulse, guitar, bass, hi hat, and kick. A transition bracket labeled '(trans.)' spans the change in time signature. The second system shows the 3/2 section, with a note indicating '(kick drum recedes into background)'. The third system shows the continuation of the 3/2 section, with a note indicating 'etc.'.

For another, somewhat anecdotal example I would like to describe one of my early experiences of performing a song that unfolds in a so-called *Afro-Cuban* style – that is, a syncretic musical genre that takes the standard pattern of numerous West African traditions (about which *much* more below) as an important part of its generative rhythmic locus. When I first performed Mongo Santamaria’s “Congo Blue,” I was puzzled by a metric discrepancy that arose when I heard the bass line shown in Example 1.4 [Sound Example 3], which is the first sound one encounters at the beginning of the song.

EXAMPLE 1.4. “CONGO BLUE” BASS LINE.³³



This bass line by itself suggests, even demands, an interpretation in 6/4 with duple subdivisions – this is not necessarily shown in the notation but it is clearly audible in performance: the bass player emphasizes beats one and four, with a secondary emphasis on the first of each pair of eighth notes (remember again that in this and

³³ On Mongo Santamaria, *Skins*. Milestone 47038, 1976.

most of the cases that I examine the notation *follows* performance and does not determine any performance issues). However, when the rest of the ensemble enters the metric makeup of the passage becomes much more polymorphic: the 6/4 reading still exists as a possible construal but there are now other, perhaps more viable options. Of particular interest is the bell pattern's implication of a 12/8 subdivision *vis à vis* the 6/4 bass line, shown in Example 1.5a. What is remarkable, and a source of much confusion in the early stages of learning this style, is that while much of the music does emphasize the 12/8 interpretation (and indeed songs in this type of Afro-Cuban style are typically counted as "one-two-three-four" with the dotted quarter note standing in for each count) the bass is very clearly felt in 6/4, and any attempt to map it onto the 12/8 stratum, such as that shown in Example 1.5b, will result in an unconvincing and very convoluted performance.

EXAMPLE 1.5. TWO METRIC READINGS OF THE “CONGO BLUE” BASS LINE.

A)

1 2 3 4 5 6

1 2 3 4

B)

1 2 3 4

1 2 3 4

These discrepancies are not just matters of notation – notation is actually our *least* important concern at this point (c.f. my comments on transcription in the Introduction above) – they are actually matters of accentual emphasis, drive, and *swing*; that is, the exigencies of the Afro-Cuban style and this song in particular demand that the bass player drive forward in 6/4 with some degree of dynamic

accent on the quarter note pulses, very much in the spirit of North American jazz bass playing and all but ignoring the accentual implications of the rest of the rhythm section. In turn, the bell pattern colors and is colored by a 12/8 timeline that is irrefutably rooted in a four-count partition of the cycle, and does not (necessarily) respond to the accentual demands of the bass line. Also note that there is really no suggestion in this narrative that one should emphasize, say, a downbeat over any other beat – beats are simply privileged over non-beats, with the understanding that the 6/4 notation follows the Western notational practice of standing in for a compound metric structure that might be more accurately portrayed as two dotted half notes per measure, each receiving a beat.

What the 6/4 orientation of the bass line did to the early stages of my perception of the rhythmic topography of the song is that it actually colored my interpretation of the bell pattern when *it* entered. That is, I heard the bell pattern as outlining 6/4 as well! This is not an incorrect reading by any means, being well within the range of the bell pattern's potential polymorphic identity, but it is very much an incomplete reading, as I was *unable* to entrain to a 12/8 reading, at least until I had had considerably more practice in refining both my knowledge of how this music works and my ability to focus on one rhythmic stratum or another. And this is to say nothing of the ability to hear both strata (or more) at the same time!

Chernoff offers a similar anecdote, regarding his work teaching the fundamentals of West African rhythms to Western students:

Many ... students cannot “hear” the music in the sense of perceiving the rhythmic organization. They cannot find the main beat or know how to relate their part to the other parts. A particularly challenging task is for them to find a four-beat pulse in a 12/8 pattern. I normally spend what seems to me an inordinate amount of time on this problem, which is only resolved if the students learn to keep the four-beat with their foot while playing a triple-time part. If they cannot learn to do that, they almost always lose their place in the music. We might say that the students who cannot stay in time with the music cannot “hear” the music.³⁴

“Hearing” in this case, and in accord with the main thrust of Chernoff’s article, equates with understanding or internalizing the music under consideration. He goes on to elaborate: “...when my African associates wondered whether I ‘heard’ the music, they were asking whether I could respond to the music: Did I know the meaning of what I was playing? Did I know the dance? When you ‘hear’ the music, you ‘understand’ it with a dance.”³⁵

CLAVE PENDULARITY

Following the Mapfumo example above, there are some connections between the phrase-beginning ambiguity thus illustrated and how London, after David Locke, describes the ways in which phrasing and the perception of phrase groupings can change how rhythms behave. London engages Locke’s exposition of a Gahu *gankogui* pattern (which parses a 16-cycle into a <3-3-4-4-2> grouping) and

³⁴ Chernoff (1997), 20.

³⁵ Ibid., 23.

inquires as to how, or whether, a change in phrase grouping actually alters the listener's metric orientation. London's, and Locke's, query begins with the premise that the *gankogui* pattern can be interpreted in one of the five metric readings shown in London's Example 7.3; that is, with any of its five events serving as a structural downbeat.³⁶

This suggests a very provocative question: can (or should) either an actual downbeat or a listener's perception of that downbeat change over the course of a performance? Or better yet, is a fixed downbeat (the beginning-point of the N-cycle) a requirement, or can it change, can it be fluid, can the clock rotate and slide a new timepoint into the twelve o'clock position? Of course there are musical situations in which it is quite controversial and probably even inappropriate to ascribe a downbeat at all, but there are many more in which a downbeat is a clear, salient part of the performing and listening experience, and it is toward these scenarios that this query points.

This question can easily be illustrated with a look at a few well-known traditional Cuban songs. Examples 1.6, 1.7, and 1.8 [**Sound Examples 4, 5, 6**] show excerpts from, respectively, "Donde estabas anoche," "Mueve la cintura mulata," and "Fiesta en Cecilia," three songs that feature melodic phrase structures that overlap across unchanging clave cycles (the last is a *changüí*, representing a style of music from the Guantánamo region of Cuba that does not take an

³⁶ London (2004), 112. It is interesting that there is no allowance in Locke's, or London's, analysis for a metric reading with a silent downbeat. This point will be taken up later in this chapter.

asymmetrical clave rhythm as its generative rhythmic topos, but the same overlapping principles are operating in a very clear, meaningful way).³⁷ In the simplified transcriptions shown in the examples the melodies unfold as odd-length phrases that each in its own way effects a perceived shift in downbeat placement; that is, in the first two excerpts 2-3 clave becomes reinterpreted as 3-2, while in the third a periodic ten-beat phrase length results.³⁸

³⁷ This transcription of “Donde estabas anoche” is from Sonando, *Tres*, OriginArts CD 05558, 2006. “Mueve la cintura mulata” is on Septeto Nacional de Ignacio Pereiro, *Soneros de Cuba*, Real Rhythm CD 579806, 2000. “Fiesta en Cecilia,” as performed by Grupo Changüí de Guantánamo, can be found on *¡Ahora sí, Changüí!*, Corason Records COCD 121, 1995.

³⁸ Clave is the colloquial word for the topos of Cuban *son* and *rumba*, is itself the subject of countless books, articles, and heated arguments. A brief exegesis of clave is given in the Introduction, and a good deal of clave-based music is examined in great detail in Chapters Three and Four. For now, it is most important to note that clave is an asymmetrical topos with five attack points that can be divided into a “2” side and a “3” side, as shown in the lower systems of Examples 1.6 and 1.7 (taking two measures as one iteration of the clave topos). How this asymmetry is interpreted, and how it affects performance practice, is the root of most of the discussion around clave (and all of timelines under consideration, really).

EXAMPLE 1.6. "DONDE ESTABAS ANOCHE," *DIANA*.

7

13

19 etc.

EXAMPLE 1.7. "MUEVE LA CINTURA MULATA."

The musical score is presented in six systems, each consisting of a vocal line (treble clef) and a piano accompaniment line (bass clef). The key signature is one flat (B-flat), and the time signature is common time (C). The score includes measure numbers 6, 11, 16, 21, and 26. A double bar line with repeat dots is used at the end of measures 11 and 21. A fermata is placed over the final note of measure 11, and an exclamation mark (!) is placed above the first note of measure 26. The piano accompaniment features a steady eighth-note bass line with occasional rests.

EXAMPLE 1.8. "FIESTA EN CECILIA."

The musical score consists of five staves of music in a single system. The first staff begins with a treble clef and a common time signature (C). It features a triplet of eighth notes (3) and a change to a 2/4 time signature. The second staff continues with a 2/4 time signature, followed by a change to a 3/4 time signature. The third staff starts with a 3/4 time signature, then changes to a 2/4 time signature, and finally to a 3/4 time signature. The fourth staff begins with a 3/4 time signature, includes a triplet (3), and ends with a 2/4 time signature. The fifth staff starts with a 2/4 time signature and ends with a 3/4 time signature. The score includes various rhythmic patterns, including triplets and rests, and concludes with the word "etc." below the fourth staff and a final staff starting at measure 19.

In all three examples only the melody and, when appropriate, clave are shown. Not shown in the first two examples are the accompanying *trés*, bass, and *bongó*, while the melody in the third excerpt is accompanied by *trés*, *marimbula*, *congas*, and *chekere*. Each example begins at the point in the song in which the phrase lengths first change to the irregular divisions shown – in other words, for each excerpt there is a motion from the balanced duple hypermetric structure of the introduction to the hypermetrically dissonant passage shown in the example and

then back. It is important to note that in each contiguous phrase in these passages the relationship between melody and clave changes – a pendular relationship with clave is put into play.

In “Donde estabas anoche” we see a progression of three-measure phrases, or one and a half passes through a complete clave cycle, eventually giving way to the more normative four-measure phrases with which the *diana* began. The three-measure phrase structure is reinforced by the harmonic rhythm, which can be heard unequivocally in the sound example.

In the Septeto Nacional’s version of “Mueva la cintura mulata” we see a consistent mapping of the vocal phrase onto “2-3” clave that flips around in measure 14 by way of an extra measure inserted at the end of the preceding phrase (denoted by an exclamation point in measure 13 in the example).³⁹ Note that, as in example 1.6, the clave continues, unaffected by, and even disregarding, the startling melodic displacement. The end of this last phrase then elides into the beginning of the next refrain as the final clave iteration is truncated: the next melodic line enters a half-cycle early, resulting once again in a phrase structure that maps onto 2-3 clave. This too is shown by an exclamation point, in measure 29 in the example.

³⁹ “2-3” clave is the insiders’ term for the manifestation of clave that begins with a silent first beat and in which the first half of the clave cycle is comprised of two rhythmic events (and with the second half comprised of three events, including, significantly, a single syncopated one). Both example 1.6 and 1.7 are illustrations of *son* clave, one of the two standard forms found in traditional and modern Cuban music and about which much more in Chapter Three below.

“Fiesta en Cecilia” is particularly elegant in that after the initial paradigm of ten-beat phrases is established (notated as a measure of 4/4, a measure of 2/4, and another measure of 4/4 in the example: this reflects how I hear the divisions within the phrase, although I suppose it could just as easily have been notated in two measures, 6/4 followed by 4/4), and just as this division starts to become normative, and as the song progresses into the obligatory improvised *coro / pregón* section, the music abruptly shifts in order to outline the standard four-beat units that the opening mutated phrases now seem to have been standing in for. This is typical of songs in the *changüí* style – in fact, the harmonic/rhythmic figure that the *trés* plays in the empty measure at the end of each phrase – not notated, but heard in **Sound Example 6** – is so consistent from song to song that it has almost become a cliché.

In each of the three examples the melodic phrasing clearly rotates around a pendular metric structure (clave in the first two cases) and shifts the perceived downbeat, but does it change the *actual* downbeat?⁴⁰ London refers to this as a Gestalt flip, and he presents an example, again after Locke, of grouping changes in a Gahu *gankogui* pattern that may or may not temper the listener’s perception of where the downbeat is or should be felt.⁴¹ Samarotto refers to these as “shadow

⁴⁰ Jay Rahn (1996, 85) discusses pendular motion in regard to beats and upbeats, and Brent Yorgason’s recent work (2008) on the shifting perception of downbeat in Chopin’s *Études* is also quite compelling. I would like take the liberty to expand this concept to include the pendularity of the 3- and 2-sides of clave.

⁴¹ London (2004): 112-113. The “Gestalt flip” is also based on Locke and is first discussed on London’s page 85.

meters,” suggesting that the original is lurking beneath the surface of the newly-perceived downbeat construal.⁴² The “shadow meter” model, first conceived of to illustrate perceived metric displacements in nineteenth-century Western music, might provide an interesting alternate means of engaging the problem of grouping issues and their effect on metric perception such as that shown in London’s example 7.3. Whether shadow meters are relevant to perception issues in situations like the pendular clave flips in Examples 1.6 and 1.7 above is a question that must be considered differently, however, since very often there is no need for a return after the move to a global 2-3 clave construal following an exposition in 3-2 clave; in other words 3-2 clave does not necessarily continue on as an underlying, structurally prior background rubric. There are many situations in which a new downbeat construal is merely a perceived change, and at these moments it is a very real concern during performance that one does not let another player’s accentual emphases change one’s downbeat conception – it is easy to get hypnotized and “turn the beat around” if one loses concentration.

* * *

⁴² Samarotto (1999), 235. Describing metric motion in the Beethoven *Sonata* op. 110/II, Samarotto writes: “the main meter, the meter as written, casts a shadow, as it were, of a subsidiary, displaced meter, which we are drawn to hear as *real*...”.

NON-ISOCHRONOUS METERS

One of London's more provocative claims emerges during his discussion of non-isochronous (NI) meters. By non-isochronous he simply means that the beats are not all durationally equivalent, and he proposes a set of well-formedness constraints (again, after Lerdahl and Jackendoff's well-formedness rules) that can be used to generate a satisfactory metric construal for a cyclical rhythmic construct. Noteworthy are his invocations of "near-symmetry" and "maximal evenness," both of which labor to construe a metric rubric that is as sensible (in both senses of the word) as possible under the particular asymmetrical circumstances.

London's discussion of NI-meters gets somewhat tenuous, however, when he begins to discuss African musical practices. He attempts to map an non-isochronous framework onto the seven-event parsing of the 12-cycle shown in Figure 1.1, which is a common rotation of the topos commonly referred to as the "standard pattern" of West (and other) African music, mentioned briefly above in connection with the Mongo Santamaria example, examined in great detail by Pressing, Jay Rahn, Temperley, Clough and Douthett, Jones, Agawu, et. al., and which will serve as the primary point of discussion for the remainder of this chapter and much of the next. Two of London's NI-meter construals are reproduced in Figure 1.2.

FIGURE 1.1. CLOCKFACE REPRESENTATION OF THE STANDARD PATTERN, AFTER LONDON (2004).

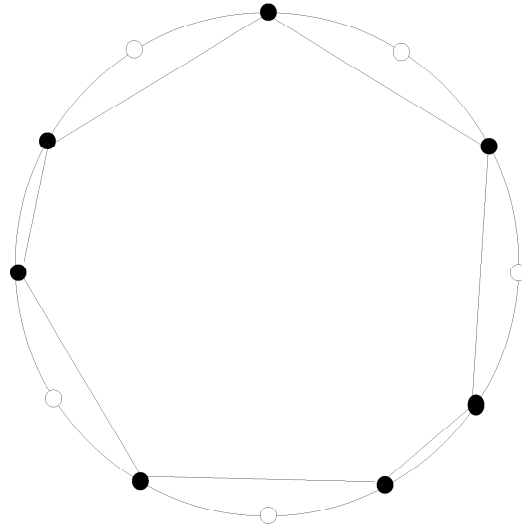
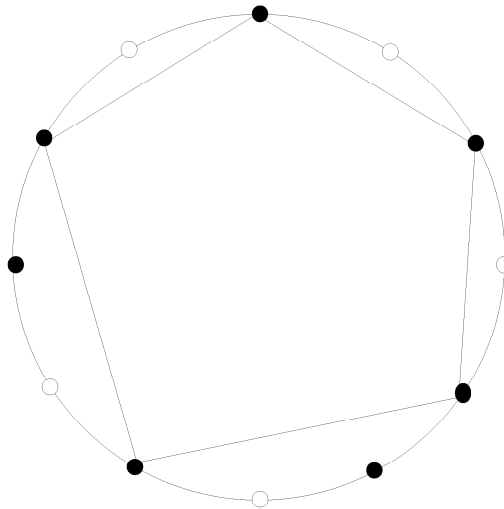
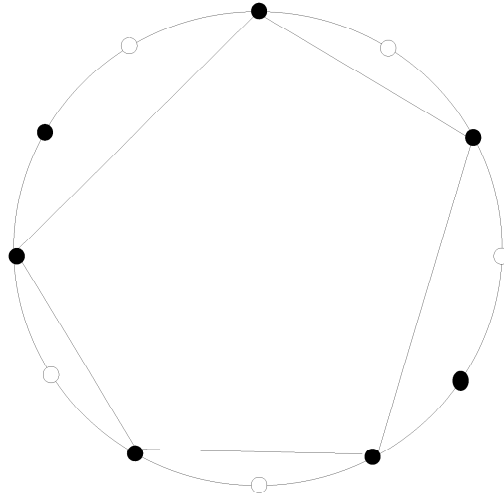


FIGURE 1.2. TWO NON-ISOCHRONOUS METRIC MAPPINGS,
AFTER LONDON (2004).



London is falling into an old trap here, already occupied by Jones, Brandel, and many others, which confuses metric structure with syncopation, underlying structural frameworks with surface-level activity, and the roles that various musical parameters play in metric determination. It is an easy trap to fall into since the analyst does not want to relegate something as obviously structure-deterministic as the standard pattern to the level of syncopated surface activity. But on the other hand it seems to be incongruous with the nature of the music to force a metric grouping that denies the dance-rooted orientation of performance practice, a topic that has been taken up recently by Agawu and Browning among others.⁴³

⁴³ In discussing rhythmic *topoi* (as described previously, his generic term for recurring rhythmic patterns – “commonplaces rich in associative meaning for cultural insiders” – of which the standard pattern is one of the most common examples), Agawu minces no words when he states that

the key to understanding the structure of a given *topos* is the dance or choreography upon which it is based... No one hears a *topos* without also hearing – in actuality or imaginatively – the movement of feet. And the movement of feet in turn registers directly or indirectly the metrical structure of the dance. Conceptually, then, the music and dance of a given *topos* exist at the same level; the music is not prior to the dance, nor is the dance prior to the music. (2003, 73)

This last comment resonates well with some statements Friedson makes that will be taken up later in this chapter. Agawu goes on to describe how, for those not familiar with the choreographic aspects of a performance (a cultural outsider listening to an audio recording, for instance), it is easy to misinterpret the rhythmic grounding of the music. He also takes care to note that this dance-rootedness (what Lévi-Strauss might have referred to as the music’s autochthonous origins and what Robert Farris Thompson would certainly align with the music’s earthbound nature) is a necessary condition even when an actual piece of music does not directly involve dance (a studio recording for a CD release, perhaps):

In his table 8.2, London offers the following four possibilities as NI-cyclic construals for the standard pattern: <22323>, <22332>, <23223>, and <23232>, with integers referring to the number of points in the 12-cycle traversed by each beat. Note that the second and third of these readings correspond with the NI-meter construals shown in Figure 1.2 above. He also points out that N-cycle location 8 (using 1 as the starting point) is a consistent point at which an event takes place through all four readings, resulting in a likely location for the half measure, or next higher sub-cycle, at that point, thus resulting in a division of the 12-cycle into “near-symmetries” of seven and five. This is another point that I would strongly challenge: London’s construal assumes incorrectly that a condition for metric determination is the onset of an attack point, which has been refuted in the discussion of silent downbeats above. As Agawu might say, there is not nothing at op <7>; the something that is there is silence. This important point is addressed in great detail in Chapter Three, in consideration of how differences in directed energies between the largest (longest) subcycles – the measure and half measure –

Although *topoi* originated in specific communities as parts of specific dances, they have by now moved from their communities of origin into a centralized, multiethnic, or detribalized space... The connotations of some *topoi* have thus been abandoned or transformed, even while their structural autonomy has been consolidated. (Ibid.)

I will for the time being choose to sidestep the apparent incongruity of a) describing music and dance as co-existing at the same level, with no priority given to either, and b) the ordinary claims of *topoi* as parts of specific dances, as that opens a dialectic can of worms that I am not prepared to deal with!

are employed strategically by performers. This can be seen in Examples 1.6 and 1.7 above too; the assertion of a new (real or perceived) downbeat that results from the rotation of the melody around clave results in a clave-entrainment that either begins with a strong onset on the downbeat or a conspicuously “empty” downbeat, with radically different affective implications. It *is* interesting to reflect on how the shorts behave differently in each of London’s NI-readings; that is, whether a short translates as a beat in the NI-cycle or an upbeat-like event, especially in the first two readings, in which the first short coincides with a beat while the second does not.

The reason that the standard pattern itself cannot be a metric determinant is that it breaks London’s fifth Well-Formedness Constraint, which states that a well-formed metric subcycle must connect nonadjacent timepoints on the next lower N-cycle.⁴⁴ This is an important consideration from a structural as well as cognitive standpoint because it “ensures the hierarchic integrity of the meter, insuring that each level involves attentional periodicities that are of the same order of magnitude.”⁴⁵ Since the two shorts are themselves single points in the 12-cycle, contiguous with a long that follows, and the 12-cycle is the next lower cycle below that of the NI-metric construal shown in London’s table 8.2, we must search for a grouping structure that absorbs a short into the long that either precedes or follows

⁴⁴ Following an important discussion of why his WFCs differ from the Metric Well-Formedness Rules of Lerdahl and Jackendoff, London’s list of WFCs appear in (2004), 72.

⁴⁵ London (2004), 72.

it (and thus the various five-beat NI-cycles described above). Note that in this exposition, the N of London's N-cycle corresponds directly with Hood's *density referent*, which, perhaps somewhat imprecisely, describes the "fastest regularly recurring event"⁴⁶ in a musical performance. London's WFC 1 formalizes the density referent, with empirical support from his extensive work with cognitive models: "the IOIs [Interonset Intervals] between the time points on the N-cycle must be categorically equivalent. That is, they must be nominally isochronous and must be at least ≈ 100 ms."⁴⁷ This last constraint reflects the findings of cognitive psychologists, which include evidence that the 100 millisecond threshold is about the fastest that we can construe rhythms as discrete elements (which in turn implies that we chunk faster rhythms together into small rhythmic gestalts).⁴⁸

⁴⁶ Kaufmann (1980), 396. Hood (1971, 114) offers the concept of *density referent* as an alternative to a notational system that privileges hierarchic beats and meter as temporal organizers: "What was the fastest pulse in the piece, discounting momentary doubling or tripling characteristic of rhythmic ornamentation? Although no one could say what the slowest pulse of a piece might be, everyone agreed that each piece has a fastest pulse. This measuring device was dubbed the Density Referent..." (114).

My "somewhat imprecisely" comment refers to the fact that the density referent may in some cases be regarded as an arbitrary pulse layer, especially since many surface-level rhythmic figures are performed at velocities that are faster than that represented by the density referent. This said, I still agree with Novotney is asserting that the density referent is a useful tool from both descriptive and prescriptive perspectives (Novotney 1998, 288).

⁴⁷ London (2004), 72. It is worth reinforcing that WFC 1 asserts that even non-isochronous metric readings assume a background of isochrony at the N-level. London's assertion that IOIs be "nominally isochronous" is compelling in regard to my theory of flexible beat spans below.

⁴⁸ For a more detailed explanation, see London (2004), 27-30.

To use a familiar example, London offers Leonard Bernstein's "America" as an introduction to non-isochronous beat cycles. This song, with its <33222> metrical structure, clearly illustrates how a non-isochronous meter can behave. There are of course many more examples, the *gankino horo* ("crooked dance") of the Bulgarian folk tradition, for instance, with its <434> partitioning of an 11-cycle, but Bernstein's song serves as an excellent starting place due to its familiarity (and its division into twelve smallest elements, which places it in the class of N-cycles in which the standard pattern is also found). I would like to argue, though, that the cyclic divisions of "America" are different in kind from those of the standard pattern, even though both are based on subdivisions of 12-cycles. I believe, too, that this difference should resonate well with London's conception of metric cycles since my argument will be based at least in part on listener perception.

"America" does in fact unfold as a non-isochronous beat cycle. Its meter is divided into two symmetrical halves (that is, there is a clear and significant subcycle with emphasis on the first and seventh points in the 12-cycle), each of which has a unique and clearly entrainable lower-level metric division. The first half is divided into two parts (3+3) while the second half features a 2+2+2 segmentation. These metric divisions (and they *are* the primary metric divisions as they exist at the next level up from the 12-cycle itself, as per London's WFC requirements) are of course clearly construable from the song's melody. It is the salient way in which the melody nests into these five beats, and the pattern of accents that results in performance, that gives "America" a five-beat NI-meter

framework and not, say, a four-beat isochronous meter with a syncopated second half (or perhaps even a six-beat isochronous meter with a syncopated *first* half). Consider how one sings the opening line, “I want to live in America,” shown in Figure 1.3. The emphasis is on each NI downbeat, and the subdivisions follow suit in the subordinate manner that one might expect.

FIGURE 1.3. ACCENTS AND NI-BEAT GROUPING IN “AMERICA.”

>	>	>	>	>
I	want	to	live	in
A-	me-	ri	-	ca
3	3	2	2	2

When sung properly there is a dynamic envelope in “I want to” that is repeated in “live in A-” that suggests that each segment begins on a beat and occupies that entire segment of the 12-cycle. Likewise, the last three syllables have a fluidity that belies any suggestion of syncopation, which would likely be performed in a somewhat edgier manner; in addition “me-ri-ca” taken as a whole has the same dynamic envelope, at the next larger durational level, as “I want to” and “live in A-”. This might actually point toward a *three* beat NI-meter, but that of course would go against the WFCs of maximal evenness and maximal symmetry.

Of course this analysis could be read as a contradiction of the earlier claim that a mapping between meter and accent should not be assumed (since that appears to be what is happening here), but given the nature of Bernstein's song, self-consciously exoticized and with exaggerated rhythmic figures that outline its NI-metric construction, I am going to ask for a small amount of leniency. Besides, as with the Mongo Santamaria excerpt in Examples 1.4 and 1.5 above, the analysis merely privileges beats over non-beats and suggests that each beat is accented in performance, not that there is a hierarchy between beats or that any particular beat receives any primacy over any other.

The result is that "America" is actually *not* syncopated: all of its rhythmic dimensions fall neatly in line with its NI-metric construal. This is not the case with the relationship between the standard pattern of African music and its metric framework, however. None of London's four readings, even though they are regular and conform with facility to his WFCs, are very convincing representations of how the music is felt. For instance, the two shorts are very often played much more softly than the longs that surround them – there is often a very strong accent on the third long (or fourth attack overall): this seems to immediately deny London's first two construals based on accentual emphasis alone. More important, though, is that the NI-construal is in direct conflict with the dance-rooted nature of the music under examination, as mentioned above. It is as impossible to remove African drum ensemble music from its dance-rooted topography as it is to dance without the music. The drums do not accompany the dance (nor is the opposite

true) but rather music and dance both inform and respond to each other; neither can function as an autonomous entity and still retain its cultural identity. If one watches closely, for instance, the feet of the dancers, not only is there no hint of a non-isochronous five-count metric pattern cycling through the performance, but the feet consistently gravitate toward the regular isochronous four-count pattern shown in the downward-stemmed notes in Figure 1.4, a rubric that is examined in great detail in Chapter Two.

FIGURE 1.4. STANDARD PATTERN WITH 4-COUNT ISOCHRONOUS METRIC GRID.



Some of Browning's observations on samba dancing complicate this issue as she (correctly) observes that the dancers' feet often land in the spaces between pulses in a four-count isochronous meter, but that does not deny their isochronous rootedness. And the feet are themselves musical instruments: either indirectly as they are heard stepping, stomping, sliding, squishing, or directly as bells, shells, and other sympathetic percussion instruments are frequently attached to the ankles. The standard pattern drives through this four-count framework and colors it in very

interesting ways, constantly changing the way in which the listener (or dancer) perceives an individual beat, and calling into question the very nature of beat (and more so the nature of accent, since some beats, as shown in the previous and following examples, can even be silent). Chapter Two argues for a construal of the standard pattern and similar *topoi* as a phenomenon that falls into a kind of a nebulous and determinately ambiguous identity as both surface (or near-surface) level event and deeper level metric determinant, as well as how it relates to the four-count sequence of beats outlined by the dancers' feet and subtly affects how we perceive them as individual beats and as a projection through time. But first, a few more thoughts on the standard pattern itself.

DIATONIC MODELS

There is now an abundance of literature that addresses the alluring possibilities inherent in the isomorphism between the standard pattern and the diatonic scale. These models, first introduced by Jeff Pressing (1983) and Jay Rahn (1987), formalized by Clough and Douthett (1991), and later visited by numerous others, including especially Temperley (2000) and Toussaint (2003, 2009), address properties of the well-formed diatonic scale and demonstrate how it maps onto the

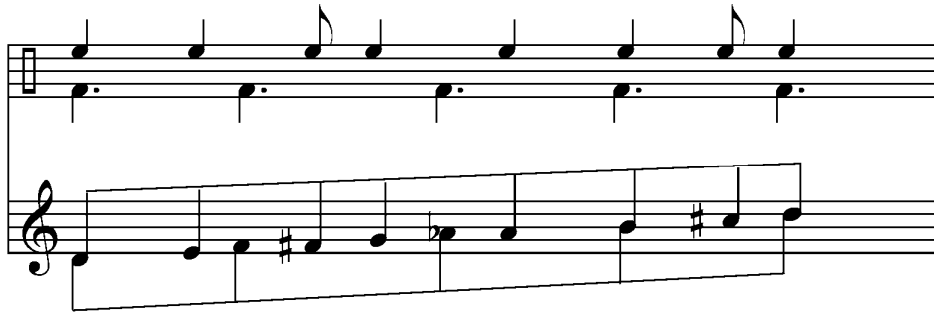
sequence of shorts and longs of the standard pattern.⁴⁹ There are numerous reasons for doing so, and even more reasons for considering diatonic models in the first place – the most impressive of which has to be the way in which the well-formed diatonic collection parses its twelve-unit density referent (whether it be chromatic steps in pc space or eighth notes in a measure of 12/8) into an asymmetrically ordered series of longs and shorts, resulting in a maximally differentiated collection of elements in which each individual element is uniquely situated in its relationships with the remaining six. But when meter and dance – both important and necessary performerly considerations – are introduced into the equation, the isomorphism, while still remaining useful and interesting, begins to lose some of its powerful metaphoric value.

The problem surfaces when we consider the standard pattern from the standpoint of a reading such as that given above, in which it is shown to be coterminous with an at-least equally weighted isochronous beat pattern that governs how those seven attack points behave from a cognitive and, more important, from a performative point of view. This is akin to asserting that a 3-cycle in pitch-class space is somehow a determinant in the structure of the diatonic pc collection. Figure 1.5 is an attempt to draw this isomorphism. Notice how the

⁴⁹ Pressing (1983), Jay Rahn (1996), 76-79, Clough and Douthett. Pressing dares to delve briefly into the “long and hoary tradition of explanations and diatribes” regarding just why the “2212221 structure [is] so special in both pitch and rhythm domains” (40).

isochronous pulses that organize and enrich the rhythmic vitality of the standard pattern turn out to unduly complicate the identity of the pitch-space version.

FIGURE 1.5. PUSHING THE PITCH-CLASS SPACE / RHYTHM SPACE ISOMORPHISM TOO FAR.



If we take the four-count isochronous pulse to be an important constituent of the rhythmic organization of the music occurring around and interpenetrating with the standard pattern, and if we assert the diatonic pitch-to-rhythm isomorphism as being a useful analytic tool, then in the spirit of analytical integrity it seems as if we must take the isomorphism *in toto*. That is, we must consider not only the diatonic scale but also the 3-cycle that nests into it, as well as an underlying 4-cycle (analogous to a three-count isochronous pulse in the rhythmic interpretation, and perhaps even an underlying 2-cycle to account for a possible six-count metric

construal such as that shown in the Mapfumo example above, which correspond in turn to a weaving of an augmented triad and whole tone scale, respectively, into the diatonic collection. Even the staunchest adherent of interval cycles and their utility in nineteenth-century harmonic analysis would agree that this is a terribly inappropriate application of cyclic constructions, not at all in accord with how diatonic scales operate or are or should be heard.⁵⁰

There are two areas of inquiry toward which the pitch-time isomorphism demonstrated by the diatonic model points, and through which truly interesting and potentially meaningful metaphors emerge. One is the question of why this particular path through mod 12 space is so pervasive in so many different musical cultures and through such different cognitive domains. This is not a question that is relevant to the current study, but it has been taken up by numerous writers, including those previously mentioned. The second, which is quite germane to the present discussion, is the *rotational* nature of the diatonic collection. It is well-

⁵⁰ Pressing does address this analytical dissonance, but rather than considering how it might weaken the isomorphic relation between domains (by limiting the extent to which the isomorphism holds), he suggests that there is at least a metaphoric relation between, for instance, “the 4-clap constitut[ing] the ‘basic pulsation’...[and] the diminished 7th chord [that] is a mainstay of modulation for tonal music.” (1983, 46). Similarly, he suggests that “*all* of the properties of the major scale, such as the cycle of fifths, or isomorphic tetrachord construction, may potentially be found mirrored in these African time-lines.” (40, emphasis added) The bail-out phrase of course is “may potentially be...,” but there can be little doubt that this is pure analytical nonsense: I have spent a good deal of time trying to work out how the 7-cycle that unfolds as, to take the key of C for example, F-C-G-D-A-E-B (mod 7 step classes <4052637>, or mod 12 pcs <507294B> to show the underlying 12-unit grid that the diatonic collection parses) might project temporally, to no practical avail from a compositional, performative, or cognitive point of view.

known that the seven rotations of the diatonic pitch collection result in the modes of the major scale. The rotations of the standard pattern relate similarly. The underlying logic of their relationships is that of rotation, as shown in Figure 1.6, but the way that we tend to hear those relationships is by *permutation* –either of swappings of order positions, or of “chromatic” alterations of a basic prototype.

FIGURE 1.6. ROTATIONS OF THE DIATONIC COLLECTION
IN MOD 12 SPACE.

rot₀ <1221222>
 rot₁ <2212221>
 rot₂ <2122212>
 rot₃ <1222122>
 rot₄ <2221221>
 rot₅ <2212212>
 rot₆ <2122122>

Thus rotation is *not* merely a theoretical abstraction, or simply an elegant way to organize the various topoi of West African music. Rotation arises from the performance practice itself, as we will see in Chapter Three in the discussion of Anku’s assertions about how the insertion of “bridge material” to interpolate or otherwise displace standard set material in effect establishes a new reference point for the performer: in other words, a new rotation beginning-point.

* * *

TOWARD A PHENOMENOLOGICAL MODEL

A.M. Jones offers an interesting but somewhat self-contradictory account of metric and (versus?) rhythmic construal in a brief *précis* on the standard pattern. He states, regarding how and where an African singer places a rhythm in a metric framework, that “the words of his songs do not scan metrically nor do they coincide with the beats as is our European custom.”⁵¹ Now, apart from the very real question of exactly what that European custom is that he is referring to, this is a suggestive, and undeniably true, statement. Two paragraphs later, however, in his discussion of a Bantu clapping pattern (London’s 2-2-3-2-3 construal, by the way) Jones reads each clap as a beat and not as a syncopation that does not “coincide with the beats.” But then he finishes with the contradictory observation that “all African music which is capable of being clapped to ...can be divided into bars containing four beats, six beats, or multiples of these.”⁵² This last point suggests that the clapping pattern (and the standard pattern as well) is *not* a metric event but something else entirely.

Regarding the standard pattern then (and the clapping pattern described by Jones, and other analogous events like clave and various other bell patterns and

⁵¹ Jones (1959), 13. Jones uses *beat* in the sense that *pulse* is used in the current study.

⁵² Ibid. There is actually only one “multiple of these” that makes sense, which is 12, or the N-cycle itself. I don’t think that Jones meant to suggest that, for instance, an eight-count stratum could be layered upon the 12-cycle of the standard pattern.

related *topoi*), we have a pretty serious paradox to wrestle with, which is that performers and dancers clearly do not conceive of the standard pattern as a five-beat non-isochronous cycle and in fact are more likely to regard it as a straightforward 3-3-3-3 isochronous cycle,⁵³ yet the rhythmic nature of the standard pattern is clearly more than a surface-level detail and is in fact some sort of significant determinant of the structural rhythmic design of a performance.⁵⁴ How do we reconcile these two oppositional issues?

In his examination of the Tumbuka *vimbuza* drumming of northern Malawi, Steven Friedson offers a stimulating angle of inquiry for this discussion. He derives his fundamental argument, and some terminology, from existential phenomenology, especially Heidegger's notion of "being-in-the-world," and he deftly places concepts from Heidegger's complex ontology into a musical landscape:

Being-in-the-world musically, in its ontological sense, does not mean that there is a world and that musical experience somehow happens within its confines, as if the world were a container filled with a substance called music. It means, instead, that music and

⁵³ Where the cycle begins, and whether the beginning point remains consistent through a performance, and whether it is even important to consider a consistent beginning-point, is another issue entirely that I have touched on briefly and will address in more detail below.

⁵⁴ It is interesting that in his discussion of 16-cycles London allows for a construal of a bell pattern as "only surface rhythms, as these patterns face numerous and ultimately insurmountable problems of metric well-formedness" (London 2004, 134). This causes a rather serious dissonance with the previous discussion involving NI-meters and the standard pattern, and, if pursued to its logical conclusion, may well put the entire well-formedness equation into question.

world are given together. There is no distance between the two; they are equiprimordial.⁵⁵

Friedson goes on to describe the constantly shifting rhythmic perspective from which one might comprehend the complex drumming sounds emanating from the Tumbuka healer's room. It is from this point of view that Friedson investigates the likelihood and efficacy of "imaginative variations" and invokes the phenomenological language of Husserl and Ihde, as well as that of Gestalt theory.

Ihde describes *intentionality* as the most important aspect of experience, a structure that "correlates all things experienced with the mode of experience to which the experience is referred."⁵⁶ It follows that one can only know subjectively by taking in both phenomena and *how* phenomena are perceived, and further, it is this subjective knowing that elevates hermeneutic phenomenology from the level of cognition to the level of philosophical inquiry. I will elaborate upon some applications of phenomenological modes of experience below.

In terms of the aural experience, and to paraphrase Ihde, we must know how to listen to something in order to have an idea about what we are listening to, but in order to hear without preconceptions or prejudices (that is, in order to resist the overly subjective points of view that critics of phenomenology are prone to attack) we must avoid, for as long as possible at least, formally defining the listened-to object. The paradox that arises from these competing beginning-points is known in

⁵⁵ Friedson, 134.

⁵⁶ Ihde (1986), 23.

the phenomenological field as a hermeneutic circle, and Ihde refines it in his definition of a “dialectic of interpretation.”⁵⁷ Post-Husserlian phenomenologists have replaced the Cartesian subject-regarding-object model with one in which a dialectic between *noema* (that which is given by the observed object) and *noesis* (*how* the observed is experienced) ultimately point toward an understanding of the “fundamental parts of the final idea,”⁵⁸ in other words an understanding of the observed object that is true to its essence.

It is one of the early requirements of phenomenological knowing, then, that we suspend or step back from our ordinary way of thinking and approach an object with a fresh mind, free of preconceptions. Or, as Wittgenstein might have admonished, “describe, don’t explain.”⁵⁹ Husserl describes this as the phenomenological *epoché*, which is essentially a temporary bracketing-out, or setting-aside, of a known conception of the phenomenal object in order to address new ways of conceiving the object without the prejudices that arise from the first (or any previous) consideration. We will return to the *epoché* in more detail in Chapter Two below.

Two (seemingly-) contradictory strategies are invoked, then, when listening phenomenologically to a musical performance: first we must approach the experienced object with the proper mode of experience, or “the right ears,”

⁵⁷ This line of thinking might resonate in some ethnomusicological circles as a sort of cultural insider-ness: see, for instance, Nettle (2005) and Agawu (2003). I will address the notion of the cultural insider in some detail below.

⁵⁸ Husserl (1999), 13.

⁵⁹ Ihde (1986), 34.

meaning we should be entering the experience with an idea of how we are “supposed” to listen. But at the same time we must “horizontalize all immediate phenomena” and approach the experienced object with no preconceptions, allowing for the phenomena of experience to appear “as and how they show themselves,”⁶⁰ without the intrusion of our prejudices.

Another tenet of phenomenological looking is the notion that any item that appears does so in strict relation to a background. There is no object without a background field against which the object is placed; this is a noematic structural invariant and is a crucial part of defining a phenomenological ontology.⁶¹ How this field is structured is an important determinant of (and limit upon) the way in which the experiencer takes in data about the experienced object. The opposite is true as well, since the experiencer’s access to the observed world is finite: “the specific shape of the correlation is the condition for my seeing things in the way they are seen.”⁶² Further, a reflexive state is invoked since phenomenology ultimately suggests that one can know one’s self *only* in terms of such a network of correlations with the phenomenologically observed world. These three interwoven notions form one composing-out of the tripartite experiencer → experiencing → experience rubric that Ihde describes as (I) noesis → noema, taking care to

⁶⁰ Ibid., 38.

⁶¹ The setting of the experienced object within and/but against some kind of background is exactly the tantalizing point that I was hinting at when I quoted Agawu on the placement of the highlife topos in a metrical framework. See footnote 23 above.

⁶² Ihde (1986), 62.

demonstrate the right-orthographic order of the function: noema comes first, observed through noesis, and only through this correlation can “I” begin to emerge. In other words, “‘I’ takes on its significance through its encounter with things, persons, and every type of otherness it may meet.”⁶³

A host of questions, then, begins to emerge regarding the experience of listening to a drum ensemble performance that takes as a major processual component an asymmetrical rhythmic construct such as the standard pattern. What is the field of experience when we listen? What is the proper mode of experience? Are there multiple modes of experience? Are there “wrong” modes? How does the dialectic nature of the hermeneutic circle manifest itself in real life (that is, how does one reconcile the fundamentally opposed notions of “listening with the right ears” versus listening with no preconceived judgments)? What about distinguishing between reality and things that only appear to be real, especially things that appear to be real that are then proven to be false? And, particularly germane to the present discussion, how is the experience of listening to a performed piece of music, in time, different from other phenomenological modes like looking at a painting, a figure against a landscape, or a multistable figure like the Necker cube or the hallway/pyramid/etc. puzzle that Ihde elaborates upon?⁶⁴

⁶³ Ibid., 51.

⁶⁴ Much of Ihde’s exposition of the phenomenological method uses multistable figures as illustrations and as case studies. One detailed example is in (1986), 67-79, in which the author gives a close reading of the famous hallway/pyramid illusion that also serves to help familiarize the reader with a lot of Husserl’s highly distinctive and precise terminology.

By way of addressing some of these questions, let us return to Friedson and attempt to draw a metaphor between his take on a Heideggerian being-in-the-world (and the music that takes place in that world) and a sort of being-in-meter and the rhythmic constructs that are coterminous with that meter. In many musical syntaxes one could argue that rhythm is defined by the closer-to-foreground events that fill up a temporal grid shaped by meter. But while it may be true that in many musics meter acts as a container in which rhythmic events are placed,⁶⁵ this is not the case with the standard pattern (and likewise clave, which will be addressed in

⁶⁵ Kolinski, to whom Friedson is somewhat indebted, defines meter as “organized pulsation functioning as a framework for rhythmic design.” (499) Frames and containers are very different metaphors of course, the first suggesting a basic design upon which a structure is built and the latter a fixed object into which other, smaller objects are placed. Frame can also take on an entirely different meaning (and one that is really closer to the container model) when the suffix is dropped: the frame that surrounds an art work and functions as the border that defines where art stops and non-art begins. I prefer the framework metaphor as it suggests that meter is a construct that is not terribly interesting or useful (or aesthetic) until one begins to build something upon it, but that at the same time is necessary in order to give shape and stability to that something. This resonates with Hasty’s summary of Lorenz’s view (Hasty 1997, 34): for Lorenz, the opposition between form (meter) and substance (rhythm) is blurred (perhaps pointing toward an eidetic notion of connectedness and interdependence between the two) such that meter is not a passive container waiting to be filled with rhythm, but is an essential (in both senses of the word: *necessary* and *contributing to the formulation of essences*) contributor to the rhythmic trajectory of the music. Along a similar line of thought, Kramer offers a markedly different, but equally interesting frame metaphor: “Indeed the modern concert ritual seeks, by putting a frame around compositions as we hear them, to isolate musical time from the time of our daily lives” (1988, 17), which resonates with some of Agawu’s observations about rhythm as a polysemous metaphor for the goings-on of daily (and weekly, and seasonal) life (1995, 8-30). And further, Bergson’s privileging of dynamic psychological time is at least in part a refutation of a Newtonian time-as-container model, as Lochhead describes (1982, 95-8).

detail in Chapter Three): this is a real case of a being-in-meter in which rhythm and meter are given together. “There is no distance between the two; they are equiprimordial.” The asymmetrical rhythmic flow of the standard pattern is an integral part of the metric construction of many African musics: it is not meter, it is not necessarily governed by meter (hence Locke’s, and London’s, observations about groupings that successfully obscure beginning-points of metric cycles), and certainly it is not a phenomenon that is merely “contained” within meter. In fact, there is no real parallel in Western music theory (or performance, or composition) to asymmetrical topoi like the standard pattern and clave, and thus theorists have not yet come up with a precise, elegant language to describe them. Nor have ethnomusicologists, however: terms like *timeline*, *topos*, and *pattern* are at best vaguely evocative, but at worst they actually describe incorrectly the phenomena that they seek to illuminate since none of these words actually describe anything qualitative about the entities that they represent. It is hard to conceive of *timeline*, for instance, as anything other than a purely quantitative term. *Pattern* is better: with its dual meaning as a rubric upon which multiple objects are constructed (like a pattern in needlecraft, for instance) and as a describer of predictable behavior it at least hints at the essence of the complex constructs that it is meant to represent. *Topos* too, as mentioned in the Introduction above, has a powerful metaphoric value, especially its value to cultural insiders as invoked by Agawu. It is because of this metaphoric value that *topos* was chosen to for this exposition, but in doing so the reader should understand that *topos* is only the best choice from a long list of

insufficient options,⁶⁶ because even in his clear and elegant description of topoi as “short, distinct, and often memorable rhythmic figure(s) of modest duration ... [that serve as] point(s) of temporal reference,”⁶⁷ Agawu doesn’t quite describe their powerful generative character and the degree to which they influence the metric, rhythmic, and phrasing nature of a performance. It may indeed turn out to be the case that a real epistemological appraisal of topoi like the standard pattern and clave will ultimately require will require an entirely new set of discursive tools, but that is beyond the confines of the present investigation.

Browning, in consideration of the “riddles” of *capoeira*, offers some further food for thought. A pervasive trope throughout her book is the *roda*: the protective circle that is a key component of *candomblé*, *capoeira*, and some forms of *samba*, and she questions the relationship between the circular *roda* of *capoeira* and the “determined linearity” of one of its most important teachers, Bimba, who is credited with the development of *capoeira regional* and many of the syncretic variations that distinguish it from *capoeira angola*. Further, she explicates the meaning of the term *malícia* (a *faux ami* that does not suggest malice but rather cunning or street savvy) and the allusions to double-meaning and trickery that it suggests. Livingstone-Isenhour and García discuss *malícia* in relation to its origins in the culture surrounding *choro* in turn-of-the-century Rio de Janeiro, Lewis

⁶⁶ As the Introduction mentions, this list includes bell patterns, resultant patterns, phrasing referents, referential time points, and even “an accentual grouping of the density referent in the 12-pulse cycle” (Kaufmann 1980, 407), in addition to timelines, topoi, and standard patterns.

⁶⁷ Agawu (2003), 73.

describes it in the context of *capoeira*, and both Berliner and Scherzinger note a parallel trend in the way that the Shona speak.⁶⁸

The double-speak, the cunning, the “riddles” about which Browning writes involve some of the apparent contradictions inherent in *capoeira* practice: its historical alinearity (the newest form of *capoeira* is the one considered to be the most deeply rooted in traditional Angolan practice), its “entanglement in global cultural exchange,” or how *capoeira* both influences and is influenced by so many other dance and martial art forms, and its reflexive sense of self-irony, not to mention the tangled web of seemingly contradictory intentions when graceful dance and violent combat occupy the same circular physical (and metaphoric) space.⁶⁹ The *roda*, then, acts as a metaphor that resonates with the metric constructs in question in this chapter and perhaps can begin to explain the paradox of rhythm that operates within the confines of meter but that also governs metric flow. This is because the *roda* of *capoeira* is not a rigidly structured circle that encloses the action: it is itself in flux and constantly evolving. The members of the

⁶⁸ Browning, 101-104. Livingstone-Isenhour and García refer to *malícia* as “the choro soloist who enjoyed throwing off his accompanists with unexpected modulations and virtuosic improvisations.” (Livingstone-Isenhour and García, 10) Lewis defines it as “deception, trickery, cunning, double-dealing, dissimulation and indirection” (Lewis, 236) and describes some of the ways in which these might unfold in a game of *capoeira*. Scherzinger offers a number of examples of how the Shona use words and phrases to mean very different things (Scherzinger 2001, 47). He cites, for instance, Berliner, who describes how the Shona expression “*zvakanakira wena* meaning literally, ‘it is good for you,’ can also, in some contexts, mean ‘mocking you, laughing at you, making fun of you, fooling you’” (Berliner, 178) as one of many illustrations.

⁶⁹ Browning, 101.

roda are also *capoeiristas*, and they are also musicians – they sing, dance, and in turn assume places in the playing out of the game itself.⁷⁰ The circle expands and contracts and changes shape; people come and go and move about. It has structure but is able to be fluid at the same time, its fluidity controlled by the needs of the game and the wants of its participants. Likewise in the *son* performances described above, the “rules” of clave control much of the musical action but the larger metrical shape is fluid, subject to the structural and psychological needs of the musical materials.

Does this metaphor hold as we describe the symbiotic relationship between meter and the standard pattern? Once it begins, the pattern does not deviate in any

⁷⁰ *Capoeira* is variously referred to as a game, a dance, a martial art, a ritual, and various combinations of these. I prefer the term “game,” because in my experience *capoeiristas* themselves use such language (as in “let’s go play *capoeira*”). Lewis reinforces this: “Among capoeira players, there is a tendency to use ‘game’ (*jôgo*) as the basic, unmarked term” (1992, 1). He goes on to describe how the three Portuguese words for play (*jogar*, or physical play, *tocar*, or playing a musical instrument, and *brincar*, or child’s play) all inform the discourse surrounding *capoeira* and these become important and interesting tropes throughout his book – particularly the second in which he draws parallels between the action of the game and the musical environment into which it is placed. Miller has likewise commented recently on the use of the term *juego* to describe the Abakuá lodge, and he invokes a “game” metaphor when he discusses the playing-out of Ékpè rituals and the implication of ‘aesthetic mastery and physical discipline’ required to do so (2009, 217). Knight similarly observes that a vocal griot performance is often described as *sumongo*, or “visiting,” while a drummer’s “exciting, boisterous performance” invokes the world *tulungo*, or “game” (1974, 27).

I find the discursive terrain surrounding the term “game” to be particularly compelling as I have always considered the act of composing music, and improvising music even more so, as endeavors in which I begin by setting up a sort of “rules of engagement,” strategically limiting myself by requiring myself to operate within the confines of those rules, much in the manner that one would define, and play, a game.

significant structural way – individual strikes may be omitted in one pass or an extra filling-in of a span added in another (say two eighth notes standing in for one quarter⁷¹), and there is a subtle elasticity of rhythmic interpretation that will be the crux of the second half of this document – but for our purposes at this moment it could be said to be invariant. But as Locke and London point out, a simple shift in accentual emphasis – bringing out of a certain part of the pattern – will shift the listener’s perception of downbeat and thus will alter (rotate, in this case) the music’s perceived (and possibly actual) metric rubric. In some cases, say modern salsa with its predetermined written arrangements, this is done ahead of time and carefully planned (see also the transcriptions in Examples 1.6 through 1.8 above), but in most traditional performances (especially in *rumba* – see Chapter Three) this unfolds improvisationally and may be a conscious decision on the part of the performers, about which see Anku’s description of the “bridge” that reorients standard set material to a new regulative time point (RTP), but also may simply be the fallout of a perceptual shift on the listener’s part: yet another playing-out of the polymorphic noetic stage of phenomenological experience.⁷²

⁷¹ By strategically substituting two shorts for the second long of the standard pattern, Martin Scherzinger demonstrated how the resulting bell pattern is maximally rich in permutations of three-element strings of longs and shorts; that is, every possible permutation (LSS, SSS, SSL, SLL, LLL, LLS, LSL, SLS, the last two of course requiring wrapping around into the next cycle) is present exactly one time. A small part of his justification for the substitution is that it is an especially common one in many performances of such music. (private conversation, 5/07)

⁷² Anku (2000). See especially his Figure 17.

So to return to the questions posed earlier: if we are required as experiencers to place the experienced object into a field without which there is no object, what exactly is that field, and what are the possible modes of experience with which we might/should begin to address both the object *and* the field? Before addressing this question we still must first ask: what exactly *is* the object that we are locating in that field? Let us begin this inquiry with a proper musical example, the sacred folkloric song “Abakuá” as performed by Grupo AfroCuba de Matanzas on their 1998 recording *Raices Africanas*, in order to determine an answer to both questions. The opening of this performance is transcribed in Example 1.9 [**Sound Example 7**].⁷³ This is already an artificial experience in a way, because we are regarding the music divorced from two crucial strata: the gripping and sometimes startling visual effect of watching *rumberos* play, and the grace as well as the sheer physicality of their playing – the *motional* quality that Friedson describes, after Hornbostel and Kubik – and the dance that is ubiquitous in a performance of this type.⁷⁴ So we are approaching the phenomenal object as listeners and listeners

⁷³ On Grupo AfroCuba de Matanzas, *Raices Africanas*. Tumi LC 3885, 1999.

⁷⁴ Friedson, 131-6. Kubik (1962) describes the “motor image” of a performance as distinct from the “acoustic image,” (39) meaning that the physical aspects of striking a drum (or performing any instrument, presumably) is an important analytic consideration that is often overlooked in musical transcription. I am convinced that the motional quality of musical performance is not especially useful as an interpretational determinant since any musician that is performing at a high level necessarily finds ways to overcome, and thereby camouflage any physical difficulties that a particular instrument offers. Think, for example, of the trombone player’s exhaustive efforts to make the three-foot traversal of the semitone from first position Bb to seventh position B sound as effortless as the four inch motion from Bb down to the second position A, or a piano player’s careful practice to

only. Whether we are experienced listeners or not is another issue altogether – whether we are insiders or outsiders or insiders that used to be outsiders or somewhere along a trajectory between outsider-ness and insider-ness – and this status is a very important determinant in how we choose to, and indeed are able to, entrain to a mode of experiencing.

EXAMPLE 1.9. “ABAKUÁ” OPENING.

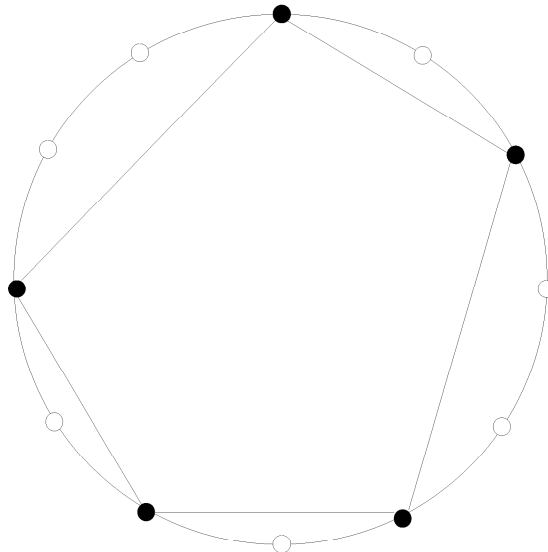
The musical notation shows four staves for different instruments. The **clave** staff has a steady rhythm of quarter notes. The **palito** staff has a similar steady rhythm but with some eighth-note patterns. The **middle drum** staff features a pattern of quarter notes with rests, and the **low drum** staff has a more complex pattern with eighth and sixteenth notes.

In a pure listening state the background does not really attain relevance until we intensify our objective focus in some way. In other words, the object must become some intentional part of the listening experience; some specific aspect of the musical whole that is before us. We can then measure this aspect against the

make the initially comparatively weaker little finger respond with the same range of sensitivity as the stronger index finger. Likewise the conga student practices exhaustively to make the right-hand double *bombo* on the *tumbador* sound as effortless as the motionally simpler left-hand heel-toe motion that precedes it in the *tumbao* pattern.

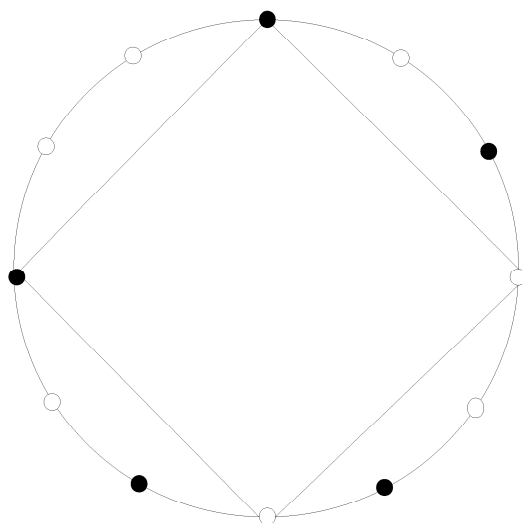
background of the rest of the musical fabric. In the case of “Abakuá” let us take as our initial objective focus the clave that begins the performance. Now a listener who is somewhere along the path toward insider-ness will immediately notice that the clave pattern has a kind of lilt that differs subtly from that usually found in *rumba*. In fact, it is quite easy to entrain to this clave pattern in a way that models London’s five-beat non-isochronous meter and map out a metric structure that unfolds as <23223>, as shown in Figure 1.7.

FIGURE 1.7. NI-METRIC READING OF “ABAKUÁ” TOPOS.



Suppose, however, that we want to resist this reading – say, for reasons of cultural insider-ness, or because of our long experience with Cuban folkloric dance, or because we are uncomfortable with non-isochronous readings. After all, the NI-meter reading effectively removes the clave pattern from its background, which, while not being an illegal move *per se*, is certainly not in the proper spirit of phenomenological looking. The drums enter after a single clave cycle and thus provide the background, and a careful situating of clave within the background, within the field of experience, provides a much different reading of clave than that shown in Figure 1.7. The clave pattern is now shown to be syncopated against an isochronous metric grid, as shown in Figure 1.8.

FIGURE 1.8. ISOCHRONOUS READING OF “ABAKUÁ” TOPOS.



Because the clave is such a salient feature of the recording (it is recorded quite loudly compared to how it generally balances the drums and palito in a “live” performance), it is actually not difficult to adjust one’s focus and shift from the syncopated-against-isochronous-12-cycle to the Londonian 5-beat NI-cycle and back again. This brings us to the next pair of questions from above: what is the proper mode of experience, and are there multiple modes of experience? And of course are there “wrong” modes (and is the 5-beat NI-cycle construal a “wrong” mode of experience, a different “right” one, or somewhere in between, maybe “less good” than some but better than others?). And then, what are the ramifications of degrees of rightness and wrongness, and how might these different modes prove useful as we attempt to understand this music “as it presents itself”? After all, Martin Scherzinger has called for the deliberate, strategic engagement with modes of experience that are not consonant with expected listening designs:

I want to advance the tactical use of methodological frames that...are not...“ready to hand.” That is, I want to consider the political potential for using methods [that]...are most unguessed-at; least encouraged by our current methodological orientations.

and,

It is epistemologically more accurate...to proliferate specific possibilities about what the music could be than to foreclose its complexity by asserting what it is in general terms.

and then,

In a discursive terrain that is riddled with Orientalist (a.k.a. Africanist) assumptions and categories, it is time to risk deliberate methodological perversions and radical interdisciplinary ventures. It

is time to grope in the dark for approaches that are apparently infelicitous, inappropriate, improper, inadequate to the task at hand.⁷⁵

This is, among other things, a pretty radical (and politicized) interpretation of what Ihde describes as an “open possibility search,” a polymorphic way of experiencing the experienced object. Husserl would doubtless agree, in spirit at least, to Scherzinger’s appeals; in his consideration of the phenomenology of temporal experience he clearly distinguishes between an abstract (theoretical?) objective sense and a meaningful experiential sense, the latter of which is really the only useful (the only “real”) way of understanding an experienced phenomenon:

That these lived experiences themselves are temporally determined in an Objective sense, that they *belong in the world of things and psychical subjects* and have their place therein, their *efficacy*, their empirical origin and their being – that does not concern us, of that we know nothing. On the other hand, it does interest us that “Objective-temporal” data are *intended* in these lived experiences.⁷⁶

Although he does not come right out and say it, Husserl is suggesting (and post-Husserlian phenomenologists are demanding) that since we cannot know objectively and instead can only know through our experience, it follows that we must have a plurality of experiences in order to come as close to a full and true understanding as we can. Lewin too has stimulating thoughts on the matter, in his explication of phenomenological spaces in which he deftly demonstrates the

⁷⁵ Scherzinger (2001), 20-21, 25, 36 respectively.

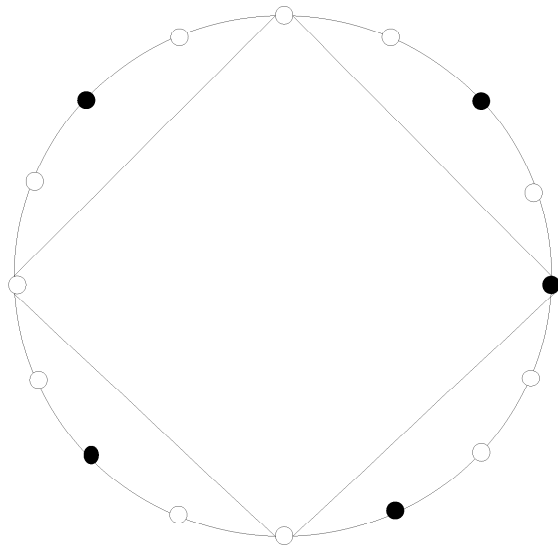
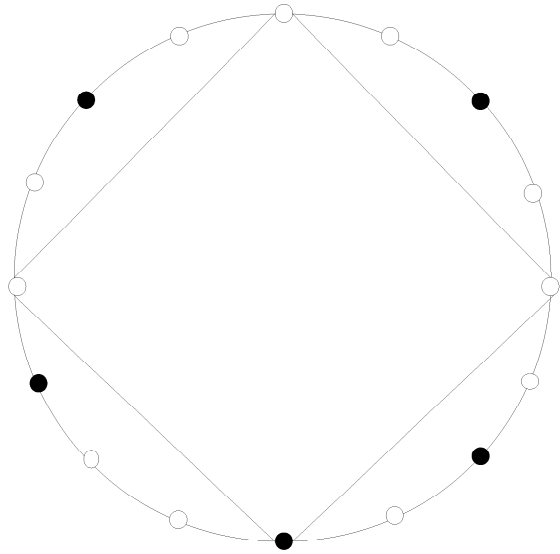
⁷⁶ Husserl (1964), 28-9. Italics in original.

multiplicities of ways in which we can, and presumably must, experience a temporal musical phenomenon.⁷⁷

Locke's five rotations of the Gahu *gankogui* pattern offer a simple illustration of what Scherzinger, Ihde, and Husserl are pointing toward. As described above (pp. 57-8), Locke describes how each of the five events in the <3-3-4-4-2> parsing of the 16-cycle can serve as a perceived (and potentially actual) downbeat. But are these the *only* potential downbeats? If it is infelicitous to assert a metric reading in which the downbeat falls, say, halfway through one of the longs, and in which case the "strong beat is suspended, the weak accentuated," it is only mildly so. Such a reading calls again into question the entire notion of what downbeat, meter, and accent even mean. After all, this is exactly what happens in the pendular rotation of clave, when a new downbeat is asserted based on the needs of the asymmetrical phrase structure, as shown in Examples 1.6 and 1.7 above. Such a reading would then look something like that shown in Figure 1.9.

⁷⁷ Lewin (1986). See, specifically, passages on pp. 334 and 336; the amusing game with the *Eroica* chord on pp. 337-339, and the long, tangled, and ultimately very revealing discussion of Schubert's *Morgenruß* on pp. 343-357.

FIGURE 1.9. TWO HYPOTHETICAL ALTERNATE METRIC READINGS OF THE *GANKOGUI* PATTERN, FOLLOWING LOCKE.



Our primary concern at this point is not whether there is an epistemological advantage to a five-beat NI-meter construal (of the “Abakuá” clave, of the *gankogui* pattern, or of the standard pattern from earlier), but rather to leave the options for construal as open-ended as possible; again to invoke our *epoché* and bracket out an approach to the experienced object with no preconceptions or prejudices. We will return to address this matter in the close phenomenological reading of the standard pattern in the next chapter, during which we will also return the standard pattern, thus far presented in an artificially abstract solitude, to its natural habitat in the performing ensemble.

But might we also, after Ihde, and again returning to our initial battery of questions, consider this as the point at which we should begin to distinguish between that which is real and that which only appears to be real but proves later to be an illusion? That is one possible result of the five-beat NI-meter reading: that, much like the apparently curved lines that upon closer inspection prove to be straight, our senses have played a trick on us and what seemed true early on in the process of phenomenological inquiry turned out to be illusory.⁷⁸ There are at least two different (but related) parallels between the multistable objects that Ihde describes and the metric/rhythmic phenomena suggested by the examples shown thus far. One is the superimposition of duple and triple substructures upon a metric grid (which will be discussed in great detail in the next chapter), which is clearly

⁷⁸ See Ihde (1986), 82-6 for a detailed progression through the phenomenological stages of experiencing the “curved vs. straight” line visual illusion.

analogous to multistable structures like the famous faces/goblet or the rabbit/duck drawings of Gestalt theory. But if the NI-meter/I-meter dichotomy is to be regarded as a multistable event in the same way, one should be able to shift one's attention between, say, a 12/8 isochronous reading and a five-beat NI-meter construal with the same facility that one shifts one's attention between 12/8 and 3/2. It is indeed possible to train oneself to do so, but the result is an artificial, "forced" perceptual mode, akin to Friedson's reading of the Necker cube as "a peculiarly shaped insect inside a hexagonally shaped hole," that is not entirely in the spirit of listening with the right ears.⁷⁹ Still, to repeat Scherzinger's entreaty, we cannot rule out such a reading, and we may well profit from some relationship that it reveals that might otherwise have remained inaudible.

It is also perhaps important to acknowledge who is doing the experiencing.

As Koetting admonishes,

we often place too much emphasis in analysis on ... what we hear and what we see in our transcriptions, and we spend too little time digging beneath the surface to discover what the African carriers of the traditions conceptualize and hear. At the other extreme, some of us devote our efforts to other cultural aspects rather than to music and musicians, hoping to find answers elsewhere.⁸⁰

⁷⁹ Friedson, 141. Ihde would disagree with Friedson's assertion that these are improper readings at all, since the process of "doing phenomenology" ultimately points toward a phenomenological knowing that transcends the mundane, sedimented knowing with which we tend to begin an inquiry, and further that any noetic vantage point has the potential to illuminate a *true* noemic interpretation, and finally that a veteran phenomenological interpreter will consider all experiential possibilities as parallel ("horizontalizing" experience), at least until it becomes no longer necessary to do so.

⁸⁰ Koetting (1986), 58.

This goes beyond issues of outsider vs. insider (or etic vs. emic): it challenges many methodological ideologies in a serious way. I will return to this question as well in the following chapters, in light of issues surrounding transcription, notation, and analytical methods.

Phenomenological knowing presents a much different problem in regard to the listening experience as opposed to the visual. For listening happens in time, and is thus fleeting: we can look at something for as long as we like and let the experience of looking slowly unfold – we can focus and refocus on this or that feature and eventually make informed decisions about the experienced phenomena – but the temporal nature of listening means that what we hear immediately recedes into the past, and our memory is colored by the next listened-to object as it appears (and so on...); we cannot pause and reflect and we certainly cannot go backward to reconsider an event that we have already heard in light of new received information. This is doubly true of music that is to some degree improvised, as is much of the subject matter of this study (since we cannot return to a performance for a second and third taking-in⁸¹), although we may eventually conclude that the

⁸¹ Although through recordings we can of course revisit even an improvised performance as many times as we like. This seems as good a point as any to mention that I am not completely convinced by my own statements here: it seems to be the major shortcoming of studies of musical cognition that a situation involving virgin ears is generally assumed – that the subjects have not heard the music they are experiencing before. It seems much more interesting and useful to consider how an informed listener, educated and listening with the “right ears,” entrains to temporal events – how does one, for instance, knowing full well that the

improvisational nature of the music turns out to be trumped by its processual aspects as we see the same types of musical elements cycling through in different guises.⁸²

In some ways, though, the ever-emergent quality of music-as-performed provides the perfect forum for “doing phenomenology” since we must by definition be constantly reconsidering and refocusing our noetic vantage point.⁸³ And indeed this is one of Husserl’s main points: he takes great pains to explicate his theory of how the temporal object might be regarded from a phenomenological vantage point, first challenging the interesting but comparatively underdeveloped offerings of Brentano and Stern,⁸⁴ and arriving at an elegant model that begins with the object-now, which in the process of observing in time of course immediately becomes an object-past, receding into memory and eventually becoming more

big crashing dominant seventh, flat ninth chords in the development of the first movement of *Eroica* are about to arrive, interpret the dramatic sequence that leads up to those chords? This obviously suggests a much richer complex of noetic vantage points. Since we can (in many cases) study scores, and since we can listen over and over until we have a profound and intimate knowledge of the workings of a piece of music (even if, again, that music was originally improvised), it seems that we must at some point address the cognitive behavior that arises from such knowledge. Lerdahl and Jackendoff touch obliquely on questions of insider-ness when they describe a theory of music as being a “*formal description of the musical intuitions of a listener who is experienced in a musical idiom*” (1987, 1).

⁸² Many strands of (especially early) minimalist music would surely profit from examinations such as this, with attention paid to processual aspects and how our noetic outlook slowly changes over the course of a piece’s processual evolution.

⁸³ “Doing phenomenology” is Ihde’s phrase, reflecting his conviction that “many disciplines are better learned by entering into the doing than by mere abstract study” (Ihde 1986, 13).

⁸⁴ Husserl (1964), 35-44.

cloudy until it disappears completely. Before it disappears completely, though, we find

something remarkable, namely, that every subsequent phase of running-off is itself a continuity, and one constantly expanding, a continuity of pasts. The continuity of the modes of running-off of the duration of the Object we contrast to the continuity of the modes of running-off of each point of the duration which obviously is enclosed in the continuity of those first modes of running-off; therefore, the continuity of running-off of an enduring Object is a continuum whose phases are the continua of the modes of running-off of the different temporal points of the duration of the object. If we go along the concrete continuity, we advance in continuous modifications, and in this process the mode of running-off is constantly modified, i.e., along the continuity of running-off of the temporal points concerned. Since a new now is always presenting itself, each now is changed into a past, and thus the entire continuity of the running-off of the pasts of the preceding points moves uniformly “downward” into the depths of the past.⁸⁵

The “running-off” phenomenon that Husserl describes lends further evidence to the idea that the temporal object is not a series of events, phases, or points that can be parsed and categorized but rather is “a continuity of constant transformations which form an inseparable unit,” a very tantalizing prospect in light of many top-down, in-time music-theoretical methodologies.⁸⁶

⁸⁵ Ibid., 49-50.

⁸⁶ Ibid., 48. My top-down, in-time comment refers to John Rahn (2001a), 59-63. One might imagine, for instance, a stream of neo-Schenkerian thought that takes into account the listenerly temporal ramifications of, say, an unfolding of a harmonic event – both how our memory of the early stages of the unfolding color our interpretation of later points in the transformation and how our awareness of new information alters our (at this point remembered) perception of the original structural event. One might go as far as to say that the bird’s eye, atemporal view

So far I have managed to defer the question of how we should construe the standard pattern and its powerful position with regard to metric phenomena – as both resultant and determinant of metric process. Is there a way that we might focus on some of the beliefs, sentiments, and methodological approaches described thus far in order to come up with a useful theoretical model for the standard pattern? Circular clock-face representations are certainly interesting but I have shown that they do not address the exigencies of the standard pattern in a satisfactory way. Another circle, the protean *roda* of *capoeira*, presents a compelling model, but it requires a substantial paradigm shift as it operates as an outside-in phenomena and the standard pattern seems to act more from an inside-out direction. We still remain far from any kind of immediately useful determination about how the *roda* model might prove useful in a music-theoretical context.

Where London's circular representations unquestionably do succeed is in showing a cyclical timespan that does not privilege any particular beat (assuming that no priority is given to the twelve o'clock location and thus that all rotations of the pattern are equivalent). It still privileges beats over non-beats, and thus does not allow for a model such as that demonstrated by Browning in which an important "triplet" pulse falls in the cracks between the beats delineated by the samba *topos*. Browning writes:

of a musical composition as prescribed in traditional Schenkerian analysis is actually in direct conflict with a Husserlian processual view.

These are not, in fact, true triplets, as one beat is slightly weighted – generally, the second of each set. The bottom-heavy center triplet sets the strong beat off balance – an imbalance recomplicated by the clave’s trip-step.

The basic samba step appears to articulate the triplets. It requires levity, speed, and dexterity; it also requires accuracy, but not in the sense of hitting the rhythm on the mark. It must locate itself between rhythms.⁸⁷

Browning draws direct isomorphisms between music and dance, and in doing so puts forth a very strong argument about how metric and rhythm phenomena are and should be construed. Her comments about the “bottom-heavy center triplet” have a direct parallel in Agawu’s description of Ewe speech patterns:

The rhythmic character of some of the words may be modified by iconicity. Consider as an example the word *kákáká*, which is used to intensify a particular action. “Medzɔe kákáká” means “I waited a long time for him/her.” It is natural in speech to dwell a little longer on the second syllable, thus producing a short—long—short pattern. *Interestingly, kákáká is more nearly a triplet when heard as an “abstract” lexical item that in a concrete communicative situation.*⁸⁸

In other words, the agogic character of a basic lexical shape actually changes when introduced to a performative context, and further, Agawu suggests that there is a semantic reason for doing so. This concept will be made clear in my close examination of microrhythmic elasticity in Chapter Four below.

* * *

⁸⁷ Browning, 11-12.

⁸⁸ Agawu (1995), 35. Emphasis added.

As the ensuing chapters begin to delve into matters of rhythmic performance, perception, and theorization, we will not leave these metric concerns far behind. A consistent trope will be found concerning *why* we don't feel the friction between rhythmic strata that do not line up precisely (with an actual or imagined metric grid, or with one another) as detrimental to the overall effect of the music, a phenomenon that Charles Keil insists is not only unavoidable but is actually necessary for a performance to "groove" in a way that is moving and pleasing to an audience, and which he refers to as *participatory discrepancies* (and which I will in time refer to as nuanced play within a *beat span*, with roots in a particular polymetric framework),⁸⁹ and I will demonstrate through numerous examples how one very alluring explanation for this types of rhythmic friction is found in the superimposition of topographical patterns that outline different paths through a metric cycle. In this sense, then, an accentually unmarked meter is not only present but is indeed a requirement if we are to possibly make sense out of the delicate and intricate rhythmic play that takes place in, on, around, over, and through it.

⁸⁹ See Keil (1995) and Keil and Feld (1994). For accounts of the analysis of participatory discrepancies in jazz and the Cuban *Tumba Francesa* see Prögler (1986) and Alén (1995) respectively. I will discuss participatory discrepancies in great detail in Chapter Four.

2. A Phenomenological Investigation of Three Diasporic Timelines

In order to begin to hear, we must enter into the existential structure of the music itself, where dancing prophets and drummed spirits are brought forth into an embodied phenomenological presence.¹

In this chapter, borrowing some investigative procedures from Husserl, by way of Ihde, we will examine three rhythmic constructs – the standard pattern as it might be found in a West African performative context, the same pattern as it appears in a so-called “Afrocuban” context, and a *guaguancó* clave pattern – from a phenomenological perspective in order to pursue a progression from a sedimented way of knowing (potentially rooted in personal preconceptions) to an *eidetic*, essential one that begins with Ihde’s “concentration upon topographic possibilities.”² This analysis requires that we attend to three correlated factors: the *noemic* object, or that which is being investigated (with extreme care taken to consider various degrees and angles of focus in order to make some sort of determination about where the object ends and the background begins); the *noetic* stance, or the point of view, perspective, direction, and attitude from which we experience the noemic object; and the “I,” or the identity of the experiencer. Special attention will be paid to how the first two factors behave as determinants of the third – in other words, how the experiencer is defined by the experiencing of the experience.

¹ Friedson, 129.

² Ihde (1986), 104.

An open inquiry into these three performances will doubtless reveal much about their rhythmic (and metric) character, their “groove,” their compositional and processual design. I hesitate to suggest that any essentialisms about the larger musical environments in which they are located will be revealed by an analysis that is so limited in scope, but nevertheless a few general conclusions will be drawn about structure and performance practice at the end of the chapter.³ I am also going to perform a few acts of hermeneutic sorcery: Each *topos* will be extracted from its natural musical environment, in order for us to examine more easily its polymorphic potential in an isolated context (and thereby will be interrogated in much the same way that Ihde addresses the two-dimensional-*cum*-implied-three-dimensional drawings that inform the early stages of his explication of phenomenological looking), before being returned to its proper habitat. Upon return, the *topos* will be reexamined in consideration of how its natural surroundings might affect both the listener’s perception and the performer’s interpretation. This is of course an artificial procedure, and, one might argue, not entirely in the dialogic spirit of the performance practice under scrutiny, which more closely resembles a dialectic of interpretative exchange between performers as the subtle nuance of the *topos*-as-performed affects the ways in which the various drummers interpret their parts (influencing not only the precise placement of an individual attack but also its dynamic envelope, its tone color, and even the

³ In this sense I follow Clifton in that I am “interested in uncovering *some* essences rather than *the* essence of any musical event.” (Clifton, 19; see also the Austerlitz (2003) quote regarding transcription in footnote 14 in the Introduction above).

type of stroke used to achieve it), which in turn affects the bell player's interpretation, etc., resulting in a recursive exchange much like Lewin's Siegmund-watching-Sieglinde-watching-Siegmund-etc.⁴ And this is not even to suggest that the bell necessarily has any primacy whatsoever: an argument could easily be made for its interpretation as simply one of many equivalent strata. As discussed in the previous chapter the standard pattern does occupy a very powerful, unique, and elusive position as both surface-level rhythmic event and deeper-level metric determinant, but it must be noted that the actual played bell pattern is a physical manifestation – an interpretation, a representation – of the standard pattern and not the pattern itself; the pattern need not actually be present; that is, the bell (or clave, as we will see in later examples) player can stop entirely and the rhythmic-metric organizational fabric that the pattern helps determine goes on unaffected.

Husserl is not concerned with abstract essentialisms, and we will not be either: this analysis will not address abstract notions of how beats, meters, topoi, rhythms, polyrhythms, or microrhythms *might* behave, but rather how they *do* behave, *as-performed*, by insiders. And since a Husserlian concept of consciousness must necessarily be a *consciousness-of* (responding to Descartes's

⁴ Lewin (1986). What Lewin does not directly address is how in the act of watching Sieglinde, Siegmund is watching Sieglinde watch him, which (presumably) colors the way in which he watches her, and so on. The recursive nature of the exchange is therefore more than just an infinite loop – it is a dialectic *aufheben* that continually transforms the nature of the sibling-watching-sibling process, not a Python-esque alternating utterances of “je t'aime” between two vacant faces!

cogito: there is no *cogito* without *res in cogitatione*⁵; there is no “I think” without an object toward which that thinking points), an epistemology of concrete, specific essentialism must naturally arise from the *process of being conscious-of*, from the process of observing the observed object. The early stages of phenomenological investigation require three preliminary states of consciousness-of. The first involves an *epoché*, which is the bracketing-out of assumptions about the experienced object; to come as close as possible to experiencing with no preconceived interpretations – what the Stoics meant by abstention from belief. In this way we can begin to shape a set of hermeneutic rules appropriate for the particular experience itself. Husserl describes how, in the process of observing the phenomenal object, we must systematically bracket out, or set aside, each individual noemic-noetic dialectic that we invoke, so that we can approach our next experience with a fresh mind, free of the influence of the previous hermeneutic stance. He goes on to suggest that we also bracket out any *meaning* that the previous experience held:

We put out of action the general thesis which belongs to the essence of the natural standpoint, we place in brackets whatever it includes

⁵ See, for example, Husserl (1999), 31-33. Husserl’s epistemology is in no small part a response to the Cartesian model of subject-object dualism. In (1999) Husserl describes the imperative need to recast the Cartesian model as one in which something about the subject is known in regard to the object and in which the subject’s way of knowing is a valid, *real* way of knowing the phenomenal object. For an excellent brief summary of the Classical, nineteenth-century, and early twentieth-century conceptions of time-reckoning that led to the epistemological stance that necessitated Husserl’s phenomenological model, see Lochhead (1982), 26-98.

respecting the nature of Being: this entire natural world therefore which is continually “there for us,” “present to our hand,” and will ever remain there, is a “fact-world” of which we continue to be conscious, even though it pleases us to put it in brackets.⁶

In other words, even in the act of bracketing-out, we still remain conscious of the meaning of the prior experience even though we are deliberately setting it aside so that it doesn't unduly influence the meaning of our next experience.

The second state of consciousness-of is to take care to experience that object *as it presents itself*; that is, to let the noema dictate our noetic stance as much as possible, in order to craft our hermeneutic rules in a way that is apodictic of – that reveals some essential, repeatable truth about – the experienced object. And the third is to avoid enforcing a hierarchy of interpretations, meanings, or realities (the last is Ihde's term) upon the experienced object – we must *horizontalize* the experience until we are in a position to make proper judgments. As Ihde nicely summarizes, “*Epoché* requires that looking precede judgment and that judgment of what is ‘real’ or ‘most real’ be suspended until all the evidence (or at least sufficient evidence) is in.”⁷ Clifton, too, offers some important advice to aid in the initial phenomenological inquiry: “If I listen to a composition and inquire about the purely logical necessities which make it possible to appear, I must consult the composition itself, rather than an intellectual scheme of my own design.”⁸ And in a particularly eloquent summary of the epistemological doctrine of

⁶ Husserl (1931), 110.

⁷ Ihde (1986), 36.

⁸ Clifton, 50.

phenomenological investigation as it might pertain to music theory, Clifton asks us to search for

a kind of musical analysis which seeks to answer the question, How is the work expressive? rather than, What are the theoretical techniques and the historical forces which can explain how the work was made? This is analysis from the inside, not the outside, and what we can hope to gain is not how gaiety or expansiveness can constitute the meaning of a piece of music, but how the music constitutes the meaning of gaiety or expansiveness. In this way, feelings are discovered through, or by means of, the music, which is perhaps different from saying that feelings are discovered in the music.⁹

To “theoretical techniques” and “historical forces” we could also add a long list of social, cultural, anthropological, semiotic, political, etc. modalities; in fact any beginning-point in the consideration of the musical object that begins from without the musical object itself. This even includes generalized notions of types of pieces, performances practices, and synchronic narratives, although Clifton admits that at some point along the analytical trajectory we need to begin returning the singular musical object into larger and larger cognitive fields:

It is always possible to determine a graded sequence between singular and general ultimates. We might start with the experience of “a massive sonority intersected by spiky, rapidly moving lines,” move to “three-dimensional musical space,” then to “musical space in general,” “musical experience,” “sensory perception,” and finally to “experience in general.” These are all essences of one kind or another in the sense that what is named may correspond to a necessary aspect of the music.¹⁰

⁹ Ibid., 77.

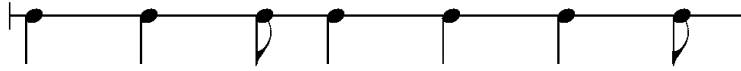
¹⁰ Ibid., 78.

So the broadening of the phenomenal horizon, including the situating of horizons within horizons (or spans within spans, to borrow Heidegger's term) and intersecting horizons as we begin to interrogate the musical object from the standpoint of the various previously listed modalities, ultimately reveals more and more essences about the music-object. Furthermore, all of these essences interpenetrate and aid each other in the eventual formulation of some sort of understanding about what a piece of music *means*. It all begins, though, with the epoché, with the phenomenal object, and with the "I."

THE STANDARD PATTERN

However, in defiance of Clifton's entreaty, we are not yet going to begin with the individual music-object itself, although we will later in this chapter. Instead, let us invoke the hermeneutic sorcery mentioned above and consider the standard pattern, as a *class* of music-objects, phenomenologically. A representation of the standard pattern, in as neutral and unmarked form as possible, is given in figure 2.1 [**Sound Example 8**].

FIGURE 2.1. THE STANDARD PATTERN.



Of course this is really not a neutral representation at all, since a metric primacy is already suggested, based on the notated starting point of the pattern, but let us assume that this is the actual heard starting point in the performance, which is indeed most often the case. Let us also assume for now that all of the attack points shown are equivalent in volume, timbre, and degree of accent, and further that they are spaced exactly evenly along a steady timepoint grid.¹¹ What are some of the ways that we might begin to interpret this rhythmic event?

As described in the previous chapter, the standard pattern unfolds as a 12-cycle; that is, by taking the shortest rhythmic value as the unit of measurement (Nketia's "density referent") we can neatly describe the durational character of the pattern as a progression of longs and shorts, and further that each long is exactly twice the duration of a short. As a rhythmic isomorphism of the diatonic pitch collection, the seven elements of the standard pattern have been shown to possess

¹¹ I cannot reinforce enough that *none* of these presuppositions are true of an actual musical performance (especially the last comment about equidistant timepoints, as I will prove in subsequent chapters); please remember that I am deliberately creating an abstract and artificial environment in order to demonstrate a few key points.

the property of “maximum individuation,” referring to the fact that each element “bears a unique constellation of relations” to the other six elements and beginning to hint at the combinatorial richness of the pattern.¹²

So a preliminary, unmarked hermeneutic reading of the pattern reveals a series of long and short durational values, each value possessing a unique network of relationships with the remaining members of the collection. We might also note that there is no halfway point in the pattern (or, rather, that no audible event occurs at the halfway point), but that the pattern might be divided into two near-symmetrical halves (5+7, taking the short again as the density referent), and that the second half is a permutation, by addition, of the first half (two longs and a short is transformed into three longs and a short).

Now let us call upon our status as trained musicians and, perhaps arbitrarily, invoke a noetic correlate that desires to organize musical events in some kind of entrainable pattern. If we follow London’s (by way of Lerdahl and Jackendoff’s) tenet that the density referent cannot be a metrical determinant, then we must assume that the standard pattern cannot be described metrically as a seven-element subcycle of a 12-cycle, <2212221> (or some rotation thereof). As described in Chapter One, London demonstrates how each short can be absorbed into a long, which results in this case in the two possible non-isochronous metric construals <23223> and <22323>. Of these, perhaps the first is the more experientially viable as it defines each short consistently in relation to a long; that is, the short is

¹² Jay Rahn (1996): 79.

attached at the *end* of a long, whereas in the second reading the first “three” is read as short-long and the second as long-short. In our abstract, unmarked, and uninflected pattern it makes sense to read each short in the same way, at least until we place the pattern into a background context that might suggest some other interpretation. We will soon see, though, that a richer and potentially more interesting reading might arise from considering each short *differently*, affecting the way in which we perceive a beat in its entirety, the way it moves to the next beat, and the role of the short in that move. The reader will remember that in Chapter One I describe, after London, *four* NI-construals in previous discussions: this is because London’s initial exegesis is based on the rotation of the standard pattern <2212212>, itself also a common bell pattern (what Agawu and Anku refer to as the *Yoruba* pattern¹³), and rot_3 of the pattern currently under consideration (or rot_2 if <1221222> is taken as the normal order of the pattern, in which case the pattern with which we are currently concerned is rot_6). In this rotation the last two elements are essentially swapped, resulting in the richer array of NI-construals (<22323>, <22332>, <23223>, <23232>) since the second short can now be considered in connection with the long that either precedes or follows it. Agawu somewhat surprisingly describes it in this way: he refers to the Yoruba pattern as a variant by swapping the order positions of the last two elements, and not a rotation, of the standard pattern.

¹³ Agawu (2003), 74-5; Anku (2000).

Refining our noetic focus (or simply *shifting* it, to avoid any qualitative implications at this early stage in the process of phenomenological investigation), we might inquire into the *isochronous* organizational possibilities that present themselves. It is well known that the number twelve is unusually rich in cyclic possibilities as it is divisible by 1, 2, 3, 4, 6, and 12 (and even by 5 and 7 if taken in modular space). Disregarding 1 and 12 as useful parsings (1 because it contradicts the constraint that the duration that defines the N-cycle cannot be used as metric determinant, and 12 because that represents the entire pattern itself and is therefore no different than our initial unmarked noetic view), let us examine each cyclic possibility in turn. We have already considered the 3-cycle in the previous chapter: this results in what could be read as a 12/8 metric mapping, shown in Figure 2.2 [Sound Example 9].

FIGURE 2.2. STANDARD PATTERN WITH 3-CYCLE MAPPING.



In this reading we find two simultaneities, the first and fourth beats of the 12/8 grid (the downward-stemmed notes in figure 2.2), and five events that are syncopated

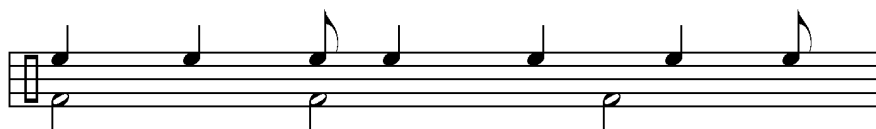
against that grid. In fact we see that the first and fourth beats, taken as occupying the entire span of time up to but not including the beginning of the next beat, are equivalent. The third beat, then, could be seen as a subtractive version of the second; its rhythmic shape generated by omitting the second attack point of the third beat, or in other words ornamentation by omission. Whether we really do consider the first and fourth beats to be equivalent has much to do with the issues Lewin expands upon in his discussion of the context in which an event is located. That is, if we regard each beat as occupying commensurate durations of three pulses of the 12-cycle and no more, it is undeniable that they are equivalent. However, an expectation is set up that we will find in time is either confirmed or denied, which is whether the second event heard suspends into the next beat to form a syncopation against the 3-cycle, or whether it is a short that drives toward the next beat.¹⁴

¹⁴ Lewin formalizes this aspect of phenomenological looking in (1986). His basic formula $p = (EV, CXT, P-R-LIST, ST-LIST)$ contains four arguments that, simplified, translate as follows: an event takes place in a context, which generates a list of perception relations, all of which is described by statements in some language (335). If, in the initial path through the 3-cycle reading shown in figure 2.2, we assert that we expect the short of beat one/four to drive through to the next downbeat, then we have a perception relation of (Perception, denial) in the first case and (Perception, fulfillment) in the second. What this denial \rightarrow fulfillment progression might mean from a cognitive perspective presents an interesting question: perhaps an argument could be made for the primacy of this particular rotation of the standard pattern, based on the strong (Perception, fulfillment) drive of the final short to the next downbeat (a relation that itself corresponds to the drive of the leading tone to tonic in diatonic pitch space, although there is not much else in the time/pitch isomorphism that is germane here).

Of course this is really only a mystery for an instant, since our insider ears will tell us that once we have heard the pattern once we can expect that it will repeat with enough regularity to safely predict that the character of beat one moving to beat two will always be such, and likewise beat four will continue to drive to the next beat one as the cycle spins along. Even surface level variants in the pattern that arise in performance – expressive variations in dynamics, accents, etc.; precise microrhythmic placement of an event onset; events added or removed – will not alter this perception in any significant way.

Figure 2.3 [Sound Example 10] shows another metric interpretation of the standard pattern, this time by 4-cycle, and which I will describe as the 3/2 reading.

FIGURE 2.3. STANDARD PATTERN WITH 4-CYCLE MAPPING.



There seems to be a progression from greater to lesser stability as this reading unfolds. The first beat cleanly divides into two equal halves, the second beat begins with an event onset on the downbeat, followed by two syncopated events, and the

third beat models the second but with the downbeat removed, resulting in a beat that is traversed exclusively by syncopated rhythmic events. Beat three could thus be said to be a subtractive version of beat two. This is a stimulating reading indeed, as the kinetic energy of the now-entirely-syncopated traversal of the third beat reinforces the drive of the final short to the next downbeat even more clearly than in the 12/8 reading above.

While the five-beat non-isochronous construal suggests a number of potentially important investigative positions, a particularly interesting duality emerges between the 12/8 and 3/2 readings. If the standard pattern is indeed considered to be a polymorphic structure like the visual examples described above, then the perceptual shift that takes place when one focuses in turn on the 12/8 and 3/2 structural rubric is directly analogous to the figure/ground reversal demonstrated in the Necker cube and other examples. That is, nothing changes about the pattern itself, but the points of emphasis around which it is construed actually move. Ihde describes how, in the process of refocusing one's attention on one or the other three-dimensional construal of the Necker cube, "the figure seems to move. Giving way from its first stabilization to its second stabilization, it jumps, apparently in motion, before being fixed again."¹⁵ This same phenomenon occurs when we change our noetic emphasis from a 12/8 to a 3/2 alignment and back again. An interesting test is to sing or clap the standard pattern while tapping a regular 12/8 pulse (four dotted quarter notes if one is taking the eighth note as the

¹⁵ Ihde (1986), 93.

smallest value or “density referent,” as in the figures drawn thus far) and then, while keeping the sung or clapped pattern constant, switch the tapping stratum to outline the 3/2 metric underpinning (half notes in this case). This can be done with only a little practice, much as one can train oneself to not only view the Necker cube as pointing upward or downward but to shift from one to the other with facility and clear intentionality. Notice how – again, in the context of our artificial pattern, now organized along one of two isochronous metrical frameworks but still divorced from actual musical performance practice considerations – various events from within the pattern are emphasized in one reading or the other, and notice too how entraining to either metric stratum affects the way in which we perform the various longs and shorts. We don’t know if we are performing them “correctly” (as per the discussion of *Congo Blue* in the preceding chapter, pp. 53-56), but we can by all means notice that there is a qualitative difference in our approach and perception.¹⁶

It is interesting to consider that this is the point which *existential* phenomenology would describe as elevating phenomenology to a higher level of philosophical inquiry – when the ego (the “I”) is introduced and care is taken to make conscious decisions (remembering again that there is no consciousness without a consciousness-of) about the noetic vantage point, thereby using the noetic—noemic dialectic as a path toward defining the ego. An “I” that has

¹⁶ Refer to **Sound Example 14** to hear this pulse shift. In the example, the standard pattern is played on a wood block and the pulse in each case is played as an open tone on the *tumbador*.

attained some degree of insider-ness might recognize, for instance, that while one is tapping the 12/8 stratum one has to resist inflecting the notes of the standard pattern in a way that conforms too readily to the superficial accentual implications of the meter,¹⁷ and conversely, the recognition of various metric interpretations and the implications that each metric reading has in revealing the *meaning* of the topos is part of process of locating the “I” in the trajectory toward insider-ness.¹⁸

We are not finished, though – we must consider as a third isochronous option a 2-cycle parsing with its own nested 6-cycle rubric, as shown in Figure 2.4 [Sound Example 11].

FIGURE 2.4. STANDARD PATTERN WITH 2-CYCLE MAPPING.



¹⁷ And of course Chapter One already confronts the notion that meter should necessarily have any accentual implications at all.

¹⁸ There are many possible points along the “I” trajectory to consider: the newly-curious “I,” the participant-observer “I,” the experienced insider “I,” and so on, each with its own concept of, understanding of, and use for the noetic-noemic dialectic as described.

In this 6/4 reading, the entire first half is rhythmically consonant with the underlying metric framework while the second half is syncopated; further, the syncopation is introduced by the onset that occurs on the upbeat of beat three, a process that serves to propel the music forward to the next cyclic downbeat in a manner that resonates with Agawu's description of the nature of offbeats in Ghanaian highlife.

The superimposition of this interpretation onto the initial 3-cycle reading results in a model that conforms to Novotney's invocation of the 3:2 hemiola as the fundamental generator of rhythm structure and propulsion in West African music. Novotney refers to this as the "3:2 cross-rhythm."¹⁹ In a revealing analysis, which reaches conclusions that are highly sympathetic to the narrative on directed motions of energies in Chapter Three below, Novotney describes the periods of relative consonance and dissonance that result from the coincidence and noncoincidence of pulse between the layers as "moments of static and dynamic motion." He quotes the renowned teacher of West African music, C.K. Ladzekpo:

In aesthetic expression, a moment of resolution or peace occurs when the beat schemes coincide and a moment of conflict occurs when the beat schemes are in alternate motion. These moments are customarily conceived and expressed as physical phenomena familiar to a human being. A moment of resolution is expressed as a human being standing firm or exerting force by reason of weight

¹⁹ Novotney (1998), 117.

alone without motion, while a moment of conflict is expressed as a human being travelling forward, alternating the legs.²⁰

Ladzekpo's assessment of the polymetric structure of West African music is humanist to the point of actually anthropomorphizing the rhythm!

Finally, we might consider the ramifications of a stratified model, *à la* Yeston, in which all three metric strands are shown. This is exactly what Morrison does in his initial examination of the metric potential of the Ghanaian *Agbekor* dance, and a similar construct is shown in Figure 2.5.²¹ Morrison's reading includes these three strata (the 2-cycle, 3-cycle, and 4-cycle) as well as a 6-cycle level, (the dotted half note, here subsumed into the 2-cycle level), and necessarily redundant strata at the 12-cycle (the identity set) and the 1-cycle level (the density referent).²² He does not offer sufficient proof, however, why "this modified metric hierarchy would still allow for a dancer to move in step with *what appears to be the basic beat* [the 3-cycle],"²³ because in fact Morrison's stratified model suggests that the 4-cycle is actually metrically stronger due to the greater coincidence of beats – at three metric levels; the 4-cycle, 2-cycle, and density referent levels – that occur

²⁰ Ibid., 118-19. There are many more details of the 3:2 cross-rhythm that are outside the purview of this study, and Novotney's dissertation is an excellent starting place. Ladzekpo's descriptions remind me of the charming way that my teacher Chaka Chawasarira would assign human characteristics to both the *mbira* and the music that he played on it.

²¹ Morrison's analysis is after Chernoff (1987, 48-9), and is illustrated in his Figure 3.2 and the text that follows (pp. 59-64).

²² He also includes a questionable 8-cycle level that overlaps into the next cyclic iteration, but fortunately does not draw any important conclusions from it.

²³ Morrison, 59. Emphasis added.

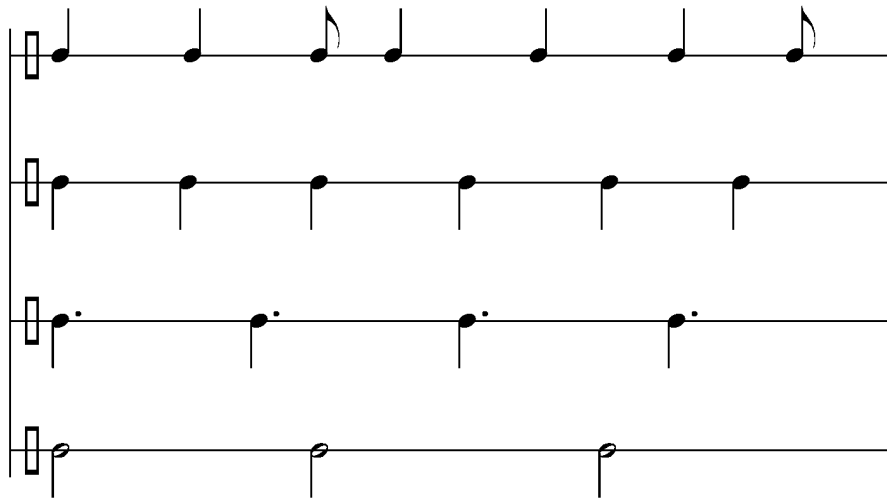
there. The 3-cycle, on the other hand, shares its beats two and four only with the pulse cycle, although of course its first and third beats nest into the 6-cycle and coincide with events in the 2-cycle as well, suggesting that within the 3-cycle there is at least the *potential* for a Yestonian hierarchy of metric accents. I agree with Morrison's ultimate assessment, however, which is that the stratified model in this case suggests polymeter rather than a hierarchical meter:

Since about half of the time points on any one level are realized, it might be possible to hear all of the levels as latently or nascently present. It is in this way that I hear polymetric, as opposed to hierarchically metric, potential in this and other African patterns.²⁴

Therefore the strata in question are less like successive Schenkerian reductions and more like geological strata that, taken together, serve to tell a more or less complete story about the phenomena they describe.

²⁴ Morrison, 64.

FIGURE 2.5. STRATIFIED READING, SUPERIMPOSING 2-CYCLE, 3-CYCLE, AND 4-CYCLE.



Abstract metric considerations aside, we must examine how the standard pattern itself exists within this stratified model and how our perceptual interpretation might be affected. The stratified perspective reinforces our perception of the first event shown as a strong, accented downbeat based on the number of simultaneities between strata that occur there: all three strata line up on beat one; the 12/8 and 6/4 strata share a second simultaneity at the seventh point in the 12-cycle; the 3/2 and 6/4 strata share simultaneities at the fifth and ninth locations. It is worth noting that the pattern itself has three events – the third and

fourth longs and the final short – that do not coincide with *any* of the metric strata; that is, they are syncopated in all readings. This last observation figures strongly into performance considerations: see for example the brief analysis of “Congo Blue” and the discussion of NI-metric construals in Chapter One.

What happens to the topographical possibilities of the standard pattern when we begin to reintroduce it into its proper habitat? Are some of the construals discussed thus far supported or denied? Two important items become immediately apparent when we place the pattern back in its natural habitat: first, we will quickly find that the attack points of the standard pattern are *not* equivalent in volume, timbre, and degree of accent. We will see that there are typical accentual patterns that we can come to expect, but that they should not be taken as *a priori* because there is a considerable amount of play in how the pattern is performed. Second, the instruments that surround, penetrate, inform, and are informed by the rhythmic and metric actualities and possibilities of the standard pattern form a very complex background – we will find that the figure/ground pairing is quite complicated and open to many interpretative possibilities.

Furthermore, I am in full agreement with Novotney in asserting that, at the very least, the 12/8 and 6/4 (the 3-cycle and 2-cycle) readings of the standard pattern actually coexist in many traditional Cuban performance practices and in most West African ones. Friedson hints at this possibility in his description of Vimbuza practice in which drummers initially enter a two-beat, triple pulse

topography (or a 6/8 metric framework) by playing an alternating-hand pattern that clearly suggests a “three-beat, two-pulse meter,” or a 3/4 metric rubric.²⁵ Knight offers a supporting anecdote: “[W]hen the women standing on the periphery of the dance circle clap their hands to encourage the dancer, they outline both of these patterns [the 3-cycle and 2-cycle] simultaneously, some clapping on the two accented syllables of the first pattern, others clapping on the three accented syllables of the second.”²⁶ He then follows with a prescriptive statement for the prospective insider: “If the Westerner can ‘hear’ or, better yet, tap out this drum rhythm with either of these accent patterns superimposed, and switch readily between them without confusion, he is on his way to hearing the rhythm as a pattern of timbres as the African appears to do.”²⁷ More important than switching readily between them though, the performer (and the “properly entrained” listener as well) must actually be able to perceive both metric constructs simultaneously in order to communicate with the music in a way that is consonant with so-called “proper” performance practice, and that it is a necessary early stage in the progression toward insider-ness that one learn to do so with ease. This is in direct conflict with what Gestalt psychologists tell us about perception; indeed the whole point of exercises like the Necker cube, the face/goblet and rabbit/duck figure-ground reversals, and so on is that even if we can train ourselves to flip from one

²⁵ Friedson, 137-8.

²⁶ Knight (1974), 30. Note that Friedson, Knight, Novotney, and many others are referring technically to the half-cycle when they invoke such beat/pulse relationships.

²⁷ Ibid. Recall Chernoff’s use of “hearing” as “understanding” from Chapter One.

view to the other with remarkable speed and facility, we can still only entrain to one at a time.²⁸ I will argue, however, that not only *can* we train ourselves to entrain to two temporal strata, but indeed we *must* do so in order to properly perceive the music as-it-presents-itself.

WEST AFRICAN EVOCATIONS IN CUBA

For another example, and in order to finally begin an investigation with the musical object itself (and thereby enter into our phenomenological inquiry by letting the musical object communicate its intentions to us, as Clifton has asked us to do), let us return to Grupo Afrocuba de Matanzas and their recording of “Abakuá” that we touched on briefly in Chapter One (pp. 93-97). *Abakuá* is the name given to a secretive, all-male society in Cuba with a language and complex system of rituals, behavior, dance, and music that traces directly to the Ékpè society in what is now Cameroon and southeastern Nigeria – *Carabalí* is the generic name given in Cuba to the large array of cultural groups, and languages, that contributed directly to this

²⁸ Lewin addresses the impossibility of simultaneous entrainment to two visual interpretations in his evocation of the “dubbit” as a potential alternate recasting of the rabbit/duck illusion (1986, 370-1). While I am proposing something that is (at least distantly) akin to Lewin’s “dubbit,” I am sympathetic to his description of “and,” as in “duck *and* rabbit,” as being unequal to the phrase “at the same place at the same time.” Still, I will continue to impress upon the reader that a simultaneous conception of coexisting metric strata is a necessary condition for proper entrainment to the various musics discussed herein.

lineage.²⁹ The practitioners of *abakuá* are called *ñañigas*, and many significant figures in Cuban music history (including members of Grupo AfroCuba de Matanzas) are known to have been deeply immersed in the complex, deeply spiritual practice of *abakuá*.³⁰ The song “Abakuá,” then, serves as an excellent bridge between the standard pattern, as representative of many West African practices, and the Cuban rumba examples that follow.

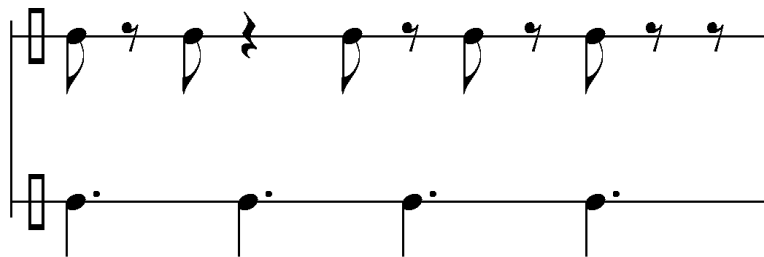
In Chapter One it was shown that the clave pattern that opens “Abakuá” conforms to a <23223> nonisochronous metric rubric, and that it can also be measured against a four-beat isochronous structuring of a twelve-pulse cycle. In doing so we discover that, much like the standard pattern, there is a move away from metric consonance and then back as the first and last clave strikes each

²⁹ Part of the richness of Afro-Cuban spiritual practice (including *abakuá*, *palo*, and *santería*) is the retention in a very meaningful way not only of the concepts, rituals, music, dance, and iconography of its African roots, but also of the associated languages. The *ñañigas* of *abakuá* sing in a syncretic language that is also called *Carabalí*, which fuses many of the dialects just described, while *santeros* sing primarily in *Lucumí*, which is a creolized form of Yoruba with not an insignificant amount of Spanish influence. An interesting additional layer of complexity is added when one realizes that these are not mutually opposed spiritual belief systems: a *ñañiga* can also be, and often is, a *santero*, or a *palero*, or both. In Grupo AfroCuba’s performances this cross-fertilization is emphasized as they perform sacred music from all three traditions, beginning with a *Lucumí* invocation of Eleggua and along the way addressing other significant *orishas* from the Yoruba pantheon, the *brujos* of *palo*, and of course the three secular rumba styles: *yambú*, *guaguancó*, and *columbia*.

³⁰ In addition to its deep connection with ancient West African spiritual practices, *abakuá* is also known in Cuba as being connected with gangster life, which is reflected in the stylized violence of some of its dances. For a good, brief introduction to its history see Sublette (2004: 190-205); for a detailed account of the relationship between *abakuá* chants and their African roots (as well as between *abakuá* and other related diasporic communities) see Ivor Miller (2005, 2009).

coincide with a metric beat, while the second, third, and fourth clave events are syncopated against their respective beats. This is shown in Figure 2.6 [Sound Example 12].

FIGURE 2.6. “ABAKUÁ” CLAVE WITH 3-CYCLE PARTITION.



This projection away from consonance and then back should be quite familiar by now: the $\langle 23223 \rangle$ traversal of mod-12 temporal space is isomorphic with the pentatonic collection in pc space, corresponding with the abstract complement (Pressing’s figure-ground reversal), as well as a simplified version, of the diatonic collection – the latter due to the fact that each short in the seven-element segment can be absorbed into the long that precedes it (each $\langle 21 \rangle$ recast as a $\langle 3 \rangle$), or in other words each long in the five-element version can be replaced with a long-short dyad to form the seven-element diatonic collection: $\langle 23223 \rangle$ becomes

<2[21]22[21]>. And indeed, this is what we might expect to come next when the rest of the ensemble enters.

How surprised we must be, then, to find that the *palito* that enters in the second cycle does *not* conform to the standard pattern at all, but rather plays the rhythmic pattern shown in Figure 2.7 (as earlier, shown in standard music notation, arbitrarily taking the eighth note as the density referent, but in as unmarked a form as possible).

FIGURE 2.7. “ABAKUÁ” PALITO.



Moreover, the <212223> six-element pattern does not conform to any standard diatonic collection, and because it has three different sizes of step classes is not even well-formed! In addition, the pattern situates quite uncomfortably in the four-beat framework that the clave parses so nicely – it is difficult to entrain to the *palito* part in four at all. This presents two phenomenological problems: how might (or should, or can) we entrain to the *palito* part, and as we circle around that solution, how does the *palito* affect our interpretation of the clave stratum?

Resuming the stance of our un sedimented *epoché*, then, we begin by assuming nothing, and we begin to address the music as it presents itself to us. This time we are regarding two strata: *clave* and *palito*, which of course only differ by a single event – the *palito* strike that corresponds with op <3> in mod 12 space. If we scrutinize the *palito* part, we hear that it is played with a slight dynamic accent on the second event as compared with the third, with the result that the two are perceived as related in some way: the first of the pair projects toward the second, or the second corresponds to a release of kinetic energy that was somehow inherent in the first, or simply because they fall onto adjacent timepoints in the 12-cycle; and as Lerdahl and Jackendoff and London have shown, adjacent points on the N-cycle cannot both represent significant metric events.³¹ It is precisely because of the antecedent-consequent nature of this pair of attack points that the four-beat parsing of the 12-cycle is so difficult to entrain to. So setting aside a four-beat reading, what are some of our other options? A three-beat, 4-cycle reading is certainly viable, and produces the metric-rhythmic structure shown in figure 2.8. The six-beat, 2-cycle interpretation shown in figure 2.9 also produces interesting results: at first glance it seems that the two halves, the first of which contains four events and the second only two, are not anywhere close to near-symmetrical (*à la* London), unless we assert that the fourth event actually behaves

³¹ As demonstrated especially by London's WFC 5: "Each subcycle must connect nonadjacent time points on the next lowest cycle. For example, each successive segment of the beat cycle must skip over at least one time-point on the N-cycle" (72).

as an anacrusis leading into the second half of the cycle (refer to **Sound Example 13**).³²

FIGURE 2.8. 4-CYCLE MAPPING OF “ABAKUÁ” PALITO.

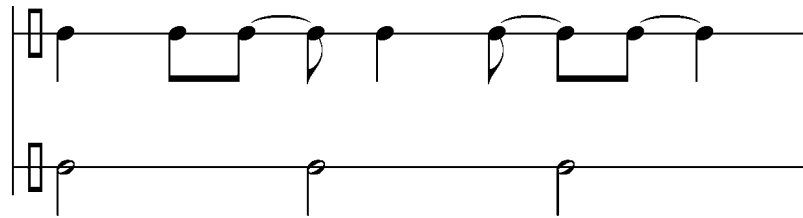
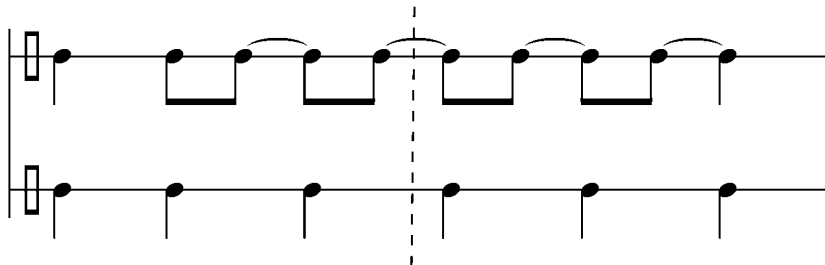


FIGURE 2.9. 2-CYCLE MAPPING OF “ABAKUÁ” PALITO.



³² An assertion that Spiro says is not only valid but *necessary*, and to which I will return in detail in Chapter Three.

The 4-cycle reading is compelling because of a salient feature that it shares with the standard pattern when interpreted in the same way, which is that there is a flow from rhythmic consonance to rhythmic dissonance as the cycle progresses from beginning to end, an effect that is exacerbated by the awkward pause at the end of the cycle. While the rhythmic construction of the standard pattern is constantly pushing through to the beginning of the next cycle (much as the leading tone in its pitch space counterpart is pushing toward tonic – again, in this limited sense the pitch-time isomorphism seems to be quite valid), the forward momentum of the “Abakuá” *palito* part is interrupted by the two full pulses of silence before the cycle restarts.

The resultant effect is that each constituent part of the music described thus far, when taken in tandem with its metric referent, pursues a very different cognitive path through the cycle. The clave pattern, with the coincidence of its first and last elements with beats in the 3-cycle, follows a path that resonates with Zuckerkandl’s *wave* analogy: an “away from-back to”³³ in which the co-occurrence of the fourth beat and fifth clave strike signal a return to the beginning of the cycle. The *palito* part, on the other hand, in the 4-cycle metric reading, models a continual moving-away from the consonance that begins the cycle, a trajectory from most consonant to most dissonant that refreshes itself at the beginning of each new cycle.

³³ Zuckerkandl (1956), 168.

It is fascinating that it only requires the addition of a single detail, the third *palito* strike, to enact this radical change in perceptual perspective.

This is true of the 2-cycle, six-beat reading as well, of course, but it is *not* true of a 3-cycle reading, in which the *palito* and clave are construed as following the same metric path. In this reading, which we still cannot rule out, there are three rhythmic events that are consonant with the metric reading, and the second, off-beat, *palito* event in effect leads to the second beat. In this reading the anacrusis character of the second *palito* event pushes toward beat two and suggests that a stronger metric weight might be assigned to the latter (this is assuming, as before, that “beat one” coincides with the first sound heard in the performance – an assumption that we should still refrain from making in this early noetic stage). Now we have a fascinating cognitive conundrum: two beats in the 3-cycle reading are vying for attention as the “most accented” beat or as the reference point around which the cycle is construed, a dilemma to which we will return shortly.³⁴

To summarize our findings thus far, there are two rhythmic *topoi*, one of which is a subtractive version of the other, and at least two possible metric readings of each, or put another way there are two metric partitions of the 12-cycle and two rhythmic paths that partition them. Based on where the coincidence of rhythmic events with metric beats occur, we can assert any of a number of waves of consonant-to-dissonant flow, including the contradictory ones shown in figure 2.10.

³⁴ Note that I am refraining from any language that suggests that beginning-point of the cycle is the most-accented, for reasons made clear in Chapter One.

FIGURE 2.10. WAVES OF CONSONANCE AND DISSONANCE WITHIN CYCLES.

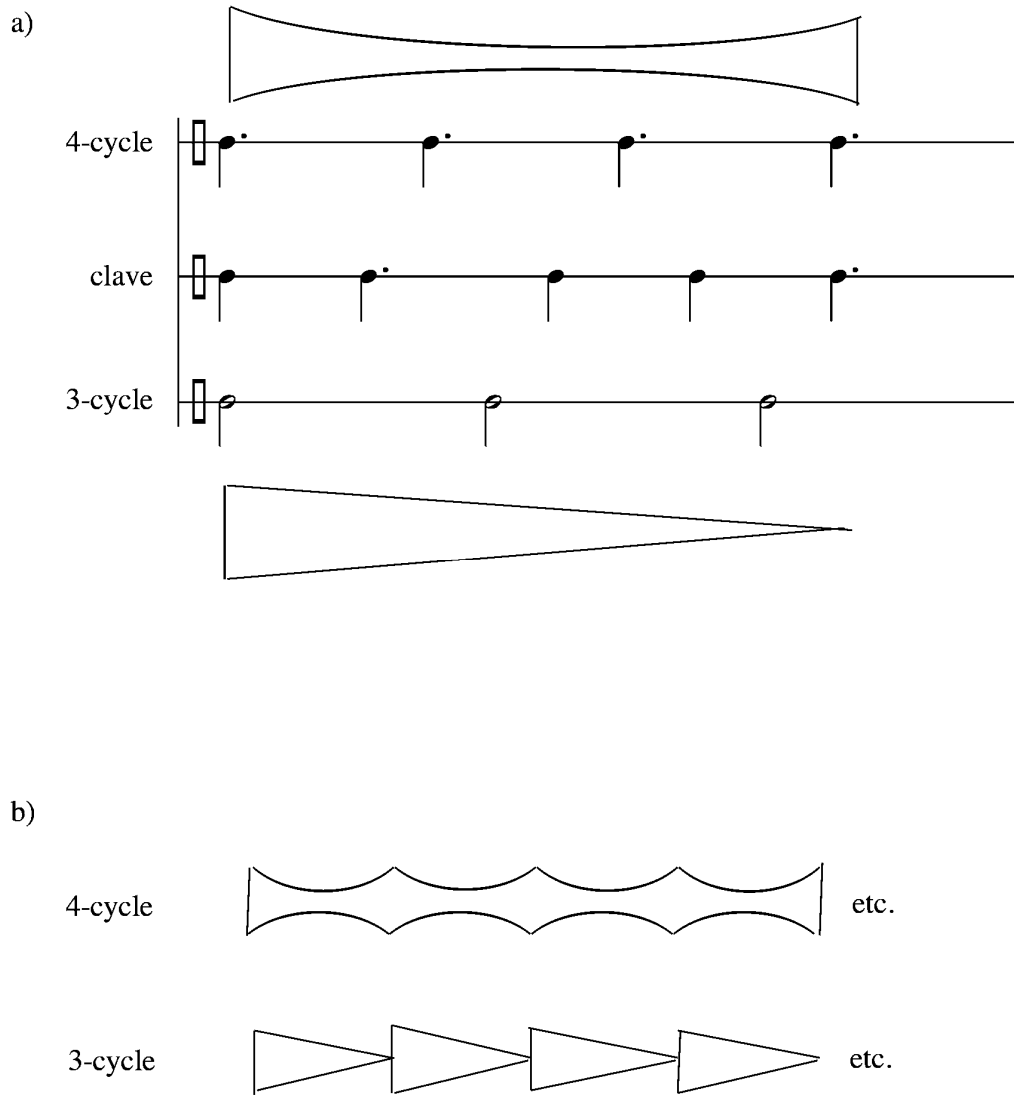
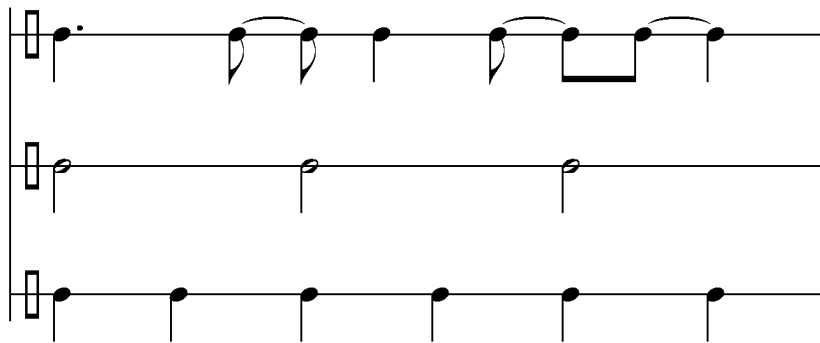


Figure 2.10a is a graphic illustration of the motion from metric consonance to dissonance as the “Abakuá” clave parses the 3-cycle and 4-cycle respectively.

Figure 2.10b then shows how a succession of such waves might look as the cycles continue in time.

We have not, however, addressed the possibility that the clave part with which we began might also be measured against a 4-cycle (or a 2-cycle, for that matter). Why not consider clave through a 4-cycle or 2-cycle lens, in which the first two strikes evenly divide the first beat (or line up evenly with the first two beats), the next two strikes syncopate against the second beat (or third and fourth beats), and the final strike occurs just after the third (or fifth) beat, as shown in figure 2.11?

FIGURE 2.11. 4- (AND 2-) CYCLE READING OF “ABAKUÁ” CLAVE.



This seems perfectly reasonable, and from a metric-consonance perspective is in accord with the 4-cycle projection shown in Figure 2.10. An insider “I” might, however, be slightly troubled by this reading, because of two significant aspects of the heard-object. The source of the sounds heard – a wood idiophone, most likely claves (the instrument, not the topos) or woodblock or some such instrument – as well as the fact that there are five events that occur before the cycle repeats places this particular heard-object in a family of *clave-objects*. That is, even though it doesn’t exactly conform metrically or rhythmically to our learned concept of what clave is supposed to sound and feel like, we still want to entrain to the first five events in “Abakuá” as if it were a distorted version of clave, as described in Chapter One.

Anku supports this reading, and offers a further potential controversial scenario, when he states that

when we hear rhythm without any preconceived beat indications, there is a natural tendency to assume a self-determined perception based on our memory of a previous experience. Hearing therefore is subjectively conditioned by our choice of perception. This, of course, does not necessarily represent the way the rhythm is transmitted, resulting in an obvious disparity between the perception of the transmitter and that of the recipient.³⁵

This is in accord with an unsedimented starting-place for metric determination, and has some obvious analytic merit from a phenomenological point of view. It does not, however, resonate with the assumption that an insider’s reading will be the more “correct” one – that a referential time point (RTP) that coincides with the

³⁵ Anku (2000), paragraph 16.

Yoruba rotation rot_5 <2212212> of the standard pattern will be “wrong” in an Ewe performance that unfolds as rot_1 <2212221>. There are numerous listening situations in which the wrong rotation (the wrong downbeat, or cyclic beginning-point, or RTP, that is) might be ascribed, but we should be able to affirm that those situations are due to either user error (or simply inexperience) on the listener’s part, or due to some aspect of the performance that fools the listener, intentionally or otherwise – a series of accents that disrupt downbeat perception, or an element of the musical fabric that is emphasized in performance for some affective reason. Another possible explanation would be that an outsider’s (or less experienced insider’s) understandable but misguided assumption that a certain musical index will carry its semiotic associations across musical and cultural boundaries, as in the case with the bass drum – in most Western popular music settings the bass drum is associated with downbeats (and thereby with Anku’s RTP), with beginnings, with projections-onto; but in *samba*, to take a simple example, the *surdo* plays very prominently on beat two, and it is very easy for a neophyte to flip the perceived beat around because of this misguided belief in the function (bass drum → downbeat), as will be further illustrated shortly.

In order to address the issues of multiple metric construals and multiple cyclic reference points, we can now return the *clave* and *palito* strata to the environment of the music itself. Example 2.1 reproduces the minimally-interpreted transcription of the opening of the performance shown earlier in Chapter One. Barlines that demark cycles based on the first starting point heard in the performance are given only to help group cycles visually, and again I cannot implore the reader enough to

resist imposing any *a priori* assumptions about barlines and accents, at least until sufficient evidence is in.

EXAMPLE 2.1. OPENING OF “ABAKUÁ.”

The musical score consists of four staves, each representing a different instrument. The staves are labeled on the left as 'clave', 'palito', 'middle drum', and 'low drum'. The 'clave' staff shows a sequence of quarter notes with stems pointing up, grouped in four measures. The 'palito' staff shows a sequence of quarter notes with stems pointing down, also grouped in four measures. The 'middle drum' staff shows a sequence of quarter notes with stems pointing up, grouped in four measures. The 'low drum' staff shows a sequence of quarter notes with stems pointing down, grouped in four measures. The notes in the 'middle drum' and 'low drum' staves are positioned lower on the staff than those in the 'clave' and 'palito' staves, indicating lower pitches.

Note that the transcription reflects the early stages of a phenomenological interpretation. I hear four strata of sounds: *clave*, *palito*, a “low drum” stratum with two related pitches, and a “middle drum” stratum, also with two related pitches. It is not important at this point which drummer is responsible for which sound; but rather that I hear the two lowest drum pitches as being somehow connected phenomenologically, and likewise with the two middle drum pitches. In the case of this performance it turns out that the pairs of drum pitches are connected from a

performerly standpoint too: the lower stratum, for instance, represents open and dampened strokes on the same drum.³⁶

The first non-clave event heard is the low-pitched drum that enters at op <A> at the end of the very first cycle.³⁷ This drum effectively “calls in” the rest of the ensemble, which enters promptly at the beginning of the next cycle, and for the rest of the performance these strata unfold as variously embellished reiterations of this basic rhythmic framework.

The assumption in topos-based music is that the beginning-point of the topos (clave, in this case) remains the phenomenal beginning-point until the music communicates a message that tells us otherwise. We must actually face this possibility in the opening seconds of “Abakuá.” Because of its status as a low, relatively loud event, it is quite easy to entrain to the drum’s entry at op <A> as a new downbeat, thereby displacing clave and the rest of the rhythmic nexus by two positions in the 12-cycle, as shown in Example 2.2.

³⁶ Kaufmann’s concerns about transcriptions based on audio recordings (see p. 34 in the Introduction above) are thus refuted twice here: 1) because insiders recognize from which instrument a particular sound emanates, and 2) because in the end it doesn’t really matter, phenomenologically speaking, where a sound emanates from, since we are concerned with describing heard sounds and the relationships between them, not with how to reproduce them performatively.

³⁷ For reasons of notational elegance and simplicity I employ the commonly-used “A” and “B” to stand in for “10” and “11” in mod 12 space.

EXAMPLE 2.2. REINTERPRETATION OF “ABAKUÁ” OPENING WITH DOWNBEAT
ENTRAINMENT TO LOWEST DRUM.

"12"
8

The musical score consists of four staves. The top staff is labeled 'clave' and shows a sequence of notes and rests. Above the first few notes, there is a bracket labeled '"12"' and the number '8' below it, indicating a 12-beat cycle that is reinterpreted as an 8-beat cycle. The second staff is labeled 'palito' and shows a sequence of notes and rests. The third staff is labeled 'middle drum' and shows a sequence of notes and rests. The fourth staff is labeled 'low drum' and shows a sequence of notes and rests.

The ease of this reading is exacerbated by the lilt of the clave as compared to its more common 16-cycle presentation, and because the palito part nests into clave in such an unusual way. Notice that this reading cuts the clave stratum short (the first cycle is aborted 10/12 of the way through) and asserts a new downbeat almost immediately. While the exigencies of clave, and topoi in general, ultimately deny this reading, it does warrant some merit, and of course it cannot be discarded in the early stages of phenomenological inquiry.³⁸

³⁸ As described above (p. 141), we must be careful not to ascribe too great a structural importance to the low, loud drum. The *low drum = downbeat* mapping is a common cultural projection, based on the Western listener's experience with many North American popular music styles in which downbeat entrainment *is* very often deducible from the bass drum's pattern.

BEAT SPANS

To conclude this chapter, let us consider a modern example: the Cuban flute player Maraca's well-known *timba* hit "Yoruba Song."³⁹ As its title implies, "Yoruba Song" invokes aspects of the West African musical, spiritual, and cultural tradition that has been most fully preserved in many facets of spiritual and secular Cuban musical life,⁴⁰ and the way in which the music unfolds reflects this invocation quite convincingly.⁴¹

Yoruba Song offers to the listener two differently-inflected metric interpretations of a *rumba* topos: it alternately states each as an independent entity, and it superimposes the two to varying degrees. As discussed in the Introduction (pp. 10-12), *rumba* is organized around the five-onset topos (known colloquially as

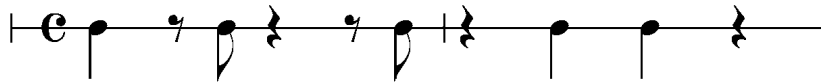
³⁹ On Maraca, *¡Descarga Total!* Ahí-Namá CD AHI-1026, 2000.

⁴⁰ Many elements of Yoruba culture have been preserved in modern Cuban life. The spiritual practice known as *Santería*, for instance, has roots in the slave trade when displaced Africans adopted the names of Catholic saints to stand in for their own spirit deities, or *orishas*, in order to camouflage the practice of their traditional religious ceremonies ("Hiding in plain sight" is how Sublette describes it). It is in large part because of practices like *Santería* that the cultural artifacts of Yoruba society have survived in such an intact state after so many generations and after so many attempts to stifle them in the New World. For an excellent discussion of the interpenetration between music and ceremonial practice see Moore and Sayre.

⁴¹ For instance, the *coro* that begins "Yoruba Song" invokes four *orishas*: "Pa' Changó y Obatalá, Elegguá y Yemayá" ("for Changó and Obatalá, Elegguá and Yemayá," the *orishas* associated with music, wisdom, the crossroad, and the sea respectively (although these are absurd simplifications of the profound and complex layers of meaning that these figures represent). "Yoruba Song" also makes use both of *batá* drums – the trio of sacred drums associated with *Santería* – and some of the rhythmic structures associated with *batá* performance.

rumba clave) shown in Figure 2.12, which traverses a 16-cycle metric terrain and which is commonly notated as two measures of 4/4 time, with the eighth note representing the density referent. Figure 2.12 displays a “3-2” reading of *rumba* clave, meaning that three event onsets occur in the first notated measure, or half cycle, but the reader will recall that, as in the *son* clave examples from Chapter One, this in no way privileges this construal; 2-3 *rumba* clave (with the two-event-onset half notated first) is equally commonplace, and many performances “flip” between the two for strategic musical reasons.

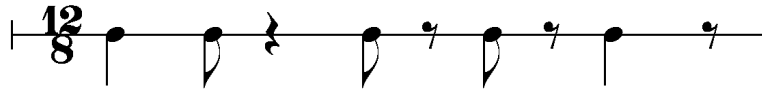
FIGURE 2.12. *RUMBA* CLAVE.



Much of “Yoruba Song” unfolds along this 16-cycle *rumba* terrain. But a close listening reveals that there is an coextensive 12-cycle metric stratum that lurks just beneath the 16-cycle metric surface. This 12-cycle stratum, which includes the metrically inflected interpretation of the five-onset *rumba* clave topos

shown in Figure 2.13, influences many of the surface-level rhythmic features of the opening of “Yoruba Song.”⁴²

FIGURE 2.13. 12-CYCLE INFLECTION OF *RUMBA* CLAVE.

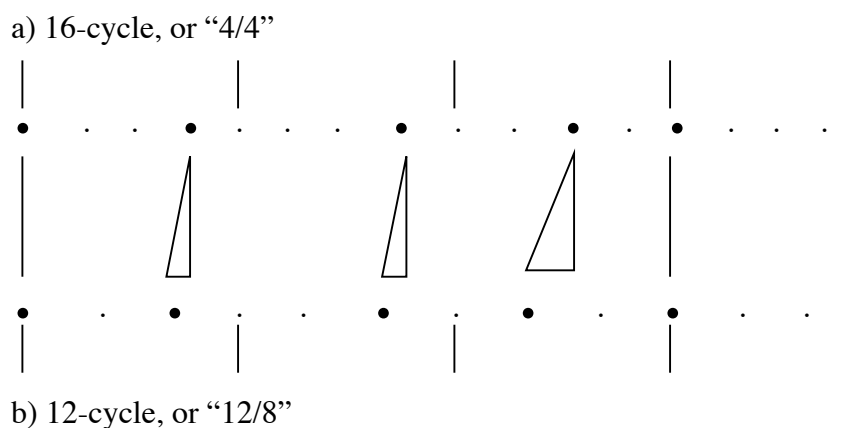


In fact, the metric terrain of “Yoruba song” turns out to be best described as the superimposition of the two cycles, with passages in which one or the other dominates and passages in which the two strata coexist. Figure 2.14 shows the superimposition of these two metric strata. The underlying clave pattern for the 16-cycle interpretation, <34324>, is shown in figure 2.14a. The 12-cycle clave pattern in Figure 2.14b is the same as that described in the “Abakuá” example above, and also corresponds to the <23223> non-isochronous reading of the standard pattern; therefore it is as germane to discussions of West African *topoi* as it is to Cuban

⁴² Again following the practice of performing musicians, this interpretation of the *rumba* clave *topos* is represented as a single measure of 12/8. A small quibble may be raised regarding a transformation that maps a two-measure entity onto a one-measure one, but it is more of a notational inconvenience than a serious methodological flaw. In later analyses in which the two strata are presented simultaneously, I will notate the 16-cycle as a single measure of 4/4, with the sixteenth note as the density referent.

clave.⁴³ The triangles in the figure are intended to draw the reader's attention toward the locations in which event onsets in the two strata are very close to one another but not quite simultaneous.

FIGURE 2.14. SUPERIMPOSITION OF "4/4" AND "12/8" *RUMBA* CLAVE.



Several important issues are raised when these two rhythmic frameworks are superimposed as they are in the figure. First, the duple representation of *rumba* clave, traversing its 16-cycle framework (which in turn might be "measured" by a 4-cycle or 8-cycle partition), is charged with a tremendous amount of syntactical

⁴³ In addition, the superimposition of the two frameworks corresponds to Anku's *cross-set*, which he briefly describes as combining a twelve-timepoint scheme with a sixteen-timepoint scheme Anku (2000), paragraph 9.

meaning with regard to performance practice. Again, performers speak of the “three side” and the “two side” of clave, referring to the half of the cycle that receives either three or two pulses, the former of which is syncopated against a (sometimes imaginary) 8-cycle grid – quarter notes if we are using the eighth note as the density referent, as in Figure 2.12 above – and the latter of which has no such syncopation. Insiders often refer to the three-side and the two-side as the “syncopated” side and the “straight” side respectively. A performer’s knowledge of clave and ability to reflect the ebb and flow of the syncopated $\leftarrow \rightarrow$ straight progression that defines its lower-level cyclic framework is of utmost importance, and any performer that fails to address this aspect of the structure is said to be *cruza* (“cross-clave”) and is quite likely to be subject to peer ridicule. We will see in the next chapter how the “three” and “two” are themselves contentious terms in the verbal discourse around clave, since the third element in the “three” side tends to be grouped cognitively with the two events of the “two” side, and in the parlance of some Cuban performers the model shown in the preceding figures is actually referred to as “two-three” for exactly this reason.⁴⁴

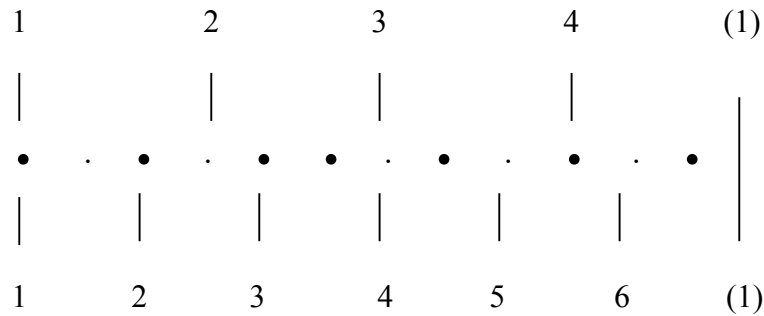
⁴⁴ My friend and colleague Pedro Vargas addressed this cognitive discrepancy during a rehearsal not long ago: during a discussion about whether a song was “in” 2-3 or 3-2 clave he interrupted, with great consternation, by clapping and singing “one-two / one-two-three” to the pattern <34324> (or ops <037AC> in the 16-cycle), thereby semantically linking the third clave strike to the second half of the cycle. While this discursive discrepancy may create confusion during a rehearsal, the reader can be assured that there is consensus within the theoretical and pedagogical literature that 3-2 refers to the scheme shown in Figure 2.12, and that 2-3 refers to the “flipped” version of this; i.e., beginning with the second measure of the Figure 2.12 model.

As crucial as the three-side vs. two-side dichotomy is to the modern *rumba* framework shown in figure 2.14a, no such syncopated/straight opposition is found in its 12-cycle counterpart, which is often represented by something like a 12/8 time signature. In this clave pattern an entirely different set of polarities is invoked: rather than dividing the cycle into two distinct syntactical halves, the performer is required to view the entire cycle simultaneously from the same two metric perspectives, shown in figure 2.15 [**Sound Example 14**], that we arrived at in our discussion of the “Abakuá” topos.⁴⁵ The 3-cycle framework that parses figure 2.14b is superimposed upon a 2-cycle subdivision, and both must be regarded as equal contributors to the rhythmic shape of the performance.⁴⁶ A skilled improviser will navigate seamlessly through the two metrical frameworks and will use the relative metric weight of each, and the possibilities inherent in each for the creation of tension and release, to create rhythmic drama and give a certain balance to a performance.

⁴⁵ **Sound example 14** demonstrates the standard pattern for four iterations each with the 3-cycle, the 4-cycle, and with both superimposed.

⁴⁶ It is important to note that neither metrical division need be present at any given time in the music, but that both are implied by the various polyrhythms that are layered upon them.

FIGURE 2.15. 3-CYCLE AND 2-CYCLE PARTITIONS OF “12/8” STRATUM.



As described above, the superimposition of the 3-cycle and 2-cycle, and the 3:2 hemiola relation that results, is exactly what Eugene Novotney describes as the “3:2 cross-rhythm,” which he asserts as the fundamental determinant of West African rhythmic structure. David Peñalosa refers to “the regular and systematic superimposition of cross-beats over main beats” (the cross-beats in this case referring to the 2-cycle stratum and the main beats to the 3-cycle stratum, the latter coinciding with the pulse that musicians and dancers alike feel as fundamental) and asserts that “*all clave-based music is generated through cross-rhythm.*”⁴⁷

⁴⁷ Peñalosa (2009), 21. Emphasis in original. Later Peñalosa also refers to the main beat / cross-beat relationship as a “primary/secondary dynamic” in light of the fact that the second is subservient to the first in some important ways (including especially the unimpeachable connection of the main beat to the motions of the dancers’ feet). But he also takes care to note (phenomenologically!) that while we can accidentally or intentionally entrain to either stratum, we “must feel the primary beats as the ground” (33) in order to address the music as insiders.

Michael Spiro has elegantly discussed how the two syntactic halves of clave exist in a call-and-response relationship with one another, and he also describes how an individual drummer's relationship with clave, and how a specific drum part situates within the call-and-response framework, is an important determinant, and limiter, of how one can improvise around a given part without stepping on the proverbial toes of another ensemble member.⁴⁸ Spiro also addresses the 16-cycle vs. 12-cycle issue, and he coins the term *fix* to describe the superimposition of the two:

Instead of being evenly spaced, certain subdivisions are pushed closer together, which makes the time feel blurry. Half the time you can't even tell if you're in a duple feel or a triple feel, and we're just not used to that ambiguity... I call this "averaging" of rhythm between a four and a six feel, "fix,"... and it is an *essential* component of learning to swing in these styles.⁴⁹

Returning to "Yoruba Song," we can observe how the interpenetration of rhythmic frameworks might manifest in an actual performance. The opening bars of "Yoruba Song" are organized according to the *rumba* clave pattern shown in figure 2.14a, but already a metric dissonance is invoked in the *batá* and *chekere* parts, as shown in Example 2.3 [Sound Example 15].

The 3:2 hemiola relationship is the overarching thesis of Novotney (1998). Novotney acknowledges Locke and a very few other scholars for recognizing this important generator of rhythmic design in West African music, and he criticizes harshly a great number of authors for failing to do so.

⁴⁸ Spiro, 28-33.

⁴⁹ Spiro, 38. Emphasis in original. *Fix*, of course, is a portmanteau of *four* and *six*.

EXAMPLE 2.3. OPENING OF “YORUBA SONG.”

The musical score consists of four staves. The top staff is for piano, written in treble clef with a key signature of two flats (B-flat and E-flat) and a common time signature. It features complex chordal textures with many accidentals. The second staff is for bass, written in bass clef with the same key signature and time signature, showing a more rhythmic line with some chromaticism. The third staff is for chekere and batás, written in a 12/8 time signature, showing a steady, rhythmic pattern. The bottom staff is a single-line rhythmic notation, likely representing the batás, with a common time signature and a series of notes and rests.

The superimposition of metric grids in this way serves to open up a performance space in which performers can strategically draw upon either cyclic stratum. They might even do so in order to invoke one of two diasporic worlds: the *timba* of modern Cuba that is represented through snare drum, piano, and bass in these opening measures, or the coded allusions to pre-diasporic Africa that the *batá* and *chekere* parts suggest.⁵⁰ As “Yoruba Song” unfolds it begins to float freely between these worlds, layering one cycle upon the other in a variety of interesting

⁵⁰ There are timbral codes as well that suggest these associations: in the case of modern Cuba we hear the “jazzy” harmony from the piano, the distinctly modern tone of the electric bass, and soon the furious horn figures that punctuate the forthcoming *coros*. West Africa, in turn, is evoked by the buzzing resultant tones of the *batá* and *chekere* (which give way to congas and timbales when the 12-cycle yields fully to the 16-cycle, as we will see in the example that follows) and by the intentionally nasal timbre of the *coro* voices.

ways. Consider, as one of many illustrations, the passage shown in Example 2.4 [Sound Example 16], which begins at 1:50 of the recording and shows the end of Maraca's flute solo.

EXAMPLE 2.4. "YORUBA SONG," MARACA SOLO (BEGINNING AT 1:50).

The musical score is arranged in five staves, all in 12/8 time and a key signature of two flats (B-flat and E-flat). The first system contains the first four measures of the piece.

- Flute:** Starts with a 4-measure rest, then plays eighth notes with triplets (3 eighth notes) and a 3-measure rest.
- Piano:** Provides harmonic accompaniment with chords and triplets.
- Bass:** Plays a steady eighth-note pattern with triplets.
- Perc.:** Features a rhythmic pattern of eighth notes and rests.
- Clave:** Provides a consistent rhythmic accompaniment.

The second system contains measures 5 through 8. The flute part continues with eighth-note patterns and triplets. The piano part features more complex chordal textures. The bass line maintains its eighth-note pattern with triplets. The percussion and clave parts continue their respective rhythmic patterns.

EXAMPLE 2.4., CONT.

9

Musical score for measures 9-12. The score consists of five staves. The top staff is a treble clef with a key signature of two flats and a common time signature. It contains a melodic line with eighth and sixteenth notes. The second staff is a treble clef with a key signature of two flats, containing a chordal accompaniment. The third staff is a bass clef with a key signature of two flats, containing a bass line with triplet markings. The fourth and fifth staves are percussion staves with rhythmic notation.

13

(brass)

Musical score for measures 13-16. The score consists of five staves. The top staff is a treble clef with a key signature of two flats and a common time signature, featuring a melodic line with triplet markings and a key signature change to one flat. The second staff is a treble clef with a key signature of two flats, containing a chordal accompaniment. The third staff is a bass clef with a key signature of two flats, containing a bass line. The fourth and fifth staves are percussion staves with rhythmic notation.

EXAMPLE 2.4., CONT.

17

piano

21

piano

21

bass

21

perc.

25

voice

Pa' Chan - gó y'O - ba - ta - lá, E - leg - guá y Ye - ma - yá.

25

piano

25

bass

25

perc.

25

(clave)

This passage serves as a transition between “more 12/8 Afro-Cuban” and “more 4/4 modern *rumba*.” The former is marked by a prominent 12/8 bell pattern in the

measures immediately preceding those in the example, and continues with the 12-cycle entrainment of bass, *batá*, and *chekere* that the example shows (but note that as early as measure 10 the bass begins pulling toward the 4/4, 16-cycle stratum). The latter is outlined clearly by clave and the piano player's comping figures, and continues with the piano *montuno* break⁵¹ that begins in measure 17 of the example and that invites the *coro-pregón* section that follows to entrain fully to the new 16-cycle layer.⁵² The soloist responds immediately to the resulting metric complexity: Maraca has been playing triplet figures that suggest the 12-cycle, but since the 16-cycle represents the *new* local metric layer, he emphasizes the textural change by playing fast quadruple figures that clearly reflect the 16-cycle layer of the polymorphic metric construction. This is most clear beginning in measure 6 and continuing through the end of the flute solo.

After the piano break the conga player begins to play a variant on a standard 16-cycle *tumbao* pattern, and the piano begins similarly to play a 16-cycle *montuno*, and bass and voices align with this new stratum. We hear, then, a transformation through the course of this excerpt from a musical fabric dominated by the 12-cycle to one in which the 16-cycle subsumes all of the individual

⁵¹ This *montuno* break has its own peculiar little evocation of the 12/8 framework in its lazy lilt that occurs on each third event onset: a brilliant and subtle detail. See Chapter 4 below for a microrhythmic analysis of the nuanced piano inflections during this break.

⁵² In a typical *coro-pregón* the lead singer improvises in between statements of the primary melodic hook, or *coro*, of the song. The *bongocero* also switches to cowbell – this is one of several primary contributors to the overall dynamic intensification that occurs at this point.

instrumental parts. This move is mediated by an extended passage in which both cycles are present to varying degrees: some instruments outline one or the other cycle, and as we will see in Chapter Four some parts reflect one cycle but are pulled upon subtly by the other stratum.

This is all well and good, but it presents a baffling conundrum: how is it that these two simultaneous rhythmic layers, with their differing points of emphasis, differing organizational frameworks, conflicting projections of directed energy, and radically different affective implications can even function as a unit together, much less “groove”? Shouldn’t all of the minute metric clashes and rhythmic infirmities that result simply amount to a big tangled mess? Shouldn’t there be, at the very least, some degree of discomfort, of instability, felt by the listener (and even more so by the dancer) as one or the other of the entrainable metric rubrics is intruded upon?

Actually, though, there is a very good reason that one does not conceive of this music in terms of two clashing metric structures, and the reason has to do with the way metric structure and rhythmic figuration are construed in many West African and diasporic West African musical situations: the way musicians, sometimes consciously and sometimes subliminally, come to terms with the music and the way the listener is expected to, and does, hear these complex relationships. In order to begin to generalize this way of hearing, let us return to Figure 2.14.

Notice first that there are two different kinds of relationships among corresponding events between the two layers: simultaneities and closely

neighboring attack points. That is, the first pair of events both occur on a metric beat in their respective cyclic frameworks; likewise the fifth pair of events occur simultaneously, while in the second, third, and fourth the 16-cycle manifestations are preceded ever so slightly by their 12-cycle counterparts. I suggest that these second, third, and fourth pairs of events actually form the outer limits (or very near the outer limits) of spans of time, each of which stands in for a specific beat. In other words, I would like to begin to consider beat as a scalable duration rather than a single instant in time. In still other words, I propose a radically new definition of beat that includes the outer limits offered by the 16-cycle and 12-cycle abstractions *and the space in between them*, resulting in a measured span any point of which can contain a musical event.

Beat span thus described, which will be explicated in full in Chapter Four below, corresponds directly to Spiro's "fix," and it begins to account to for why Keil's participatory discrepancies exist, and why they are desirable. A conception of beat as a flexible span of time allows us to enter into a discursive terrain in which we can speak of near-simultaneities as actually being temporally equivalent – this will be described in the following chapter as a *now-horizon*, after Husserl – and it gives us the tools to explain how the microrhythmic clashes just described can exist in apparent cognitive consonance. It fails to explain fully, however, *why* we are not bothered by those clashes – why we are okay with (or even prefer) rhythmic event onsets that are slightly out of sync by any rigorous quantitative

measurement.⁵³ For that we need to investigate one further aspect of diasporic West African music, which is the complex array of affective implications given in the rhetorical structure of call-and-response.

⁵³ Chapter Four will also suggest, following Clifton, that rigorous quantitative measurement is not a particularly useful tool for an investigation of this music.

3. Interpenetrating Calls and Responses: The Dialogic Nature of Rumba

When James Brown sings “Get up!”, Bobby Byrd answers “Get on up!”; when Kool sings “Get down,” the Gang’s horns answer. In African music ... the rhythms of a lead singer or musician vary and are cast against the steady repetition of the response. In essence, if rhythmic complexity is the African alternative to harmonic complexity, the repetition of responsive rhythms is the African alternative to the development of a melodic line.¹

The push and pull of individual rhythms between competing metric grids and the *topoi* that navigate through them, and the microrhythmic friction that results, is merely one realization of a complex network of ebbs and flows that occurs over and between a number of structural and temporal levels in Afro-Cuban music, and the nature of that push and pull is rooted in the teleology of the *cycle*. This manifests in a number of different ways: through different partitionings of metric and hypermetric cycles, and through various sub- and supermetric progressions that involve projections-onto, movements-away-from and returning-to, and a wide array of permutations of fundamental musical events. And each of these behaviors is derived in no small way from the dialogic characteristics of call-and-response.

The rhetorical nature of call-and-response is a well-documented aspect of diasporic African music, surfacing in readily apparent form in revivalist church songs, riff-based jazz, work songs, the narrative structure of blues, and the *corosoneo* of *son* and *rumba*. When Chano Pozo cries out “Simba!,” Dizzy Gillespie and company respond in kind. When Baden Powell scrolls through his list of bossa nova icons, the ensemble answers with a resounding “saravá!” And, extending the diasporic reach into blues-based North American popular music, when Bob Dylan sings “Aw, mama, can this really be the end?” it is a query that responds to his own

¹ Chernoff (1979), 55.

narrative about his own absurd cast of characters and their travails. Call-and-response is one of the first characteristics that is mentioned in introductory courses on African music, when one is compiling the ubiquitous list of basic attributes that distinguish African music from European music.² In all of the examples given, though, there is far more going on than a “steady repetition of the response.” The response exists in an organic consequent-relation to the call that precedes it, and as such is infinitely malleable: there are as many nuanced variations of responses as there are calls. The response corresponds to Zuckerkandl’s “‘away from—back to,’ not a flux but a cycle, a constantly repeated cycle, for the ‘one’ that closes one cycle simultaneously begins another,” and his even more compelling “differently directed and mutually complementary cyclical phrases.”³ In other words, there is a directed motion inherent in the call as it points toward the response, which in turn has a semantically different kind of dynamism than the kinetic energy of the call. Zuckerkandl’s language is also suggestive because it invites the possibility that popular labels given to phrase pairs, labels like question-answer, antecedent-consequent, and call-response insufficiently describe the nature of the second term, because in addition to fulfilling some degree of resolution-obligation posed by the first term, it also projects a *new* such obligation onto the next first term, and in doing so sets the dialectic spinning-out of dramatic flux in motion. Note that *flux* is used in the Husserlian sense here, as a temporal succession of orderly appearances (*Ordnung*), which suggests that the dramatic progression of the flux is generated in

² Never mind that such attributes are embarrassingly oversimplified and tend to have so many exceptions that we can’t begin to prove the rule, but such is the nature of the strategic binary oppositions given in introductory courses.

³ Zuckerkandl (1956), 167-8.

this case from the ebb and flow of these contrasting directed motions. Another way of considering this kind of flux is given by Harris:

What we are to observe has been composed for us out of the rough and tumble of actual experience, through the necessary evolution of the modern scientific “spirit.” We begin our observation of the concept of “experience” with the purely *immediate* shape of the concept as it is envisaged in the actual world of modern science. The *immediacy* of experience is the limit-concept of a flux in which everything is “given,” only to be cancelled again at once. Cognitive consciousness begins as the intuition of pure change, pure becoming.⁴

Harris’s “rough and tumble of actual experience” is mediated, then, by the immediately ascertainable flux of conscious experience; that is, by the experiencer’s relationship with present- and immediately-past experience, not to mention the “pure becoming” of a predictable immediately-future experience. His last comment resonates with transformational models in music theory in which the points of change, and the means by which they change, become more the focus of analytical interest than the changing things themselves.

Notice also that in the three specific examples given above, the metric stratum at which the call-response relationship carries out is quite different. In the first example, Chano Pozo shouts “Simba!” and the chorus responds, “Simba!” in a one-to-one, mimetic response to the call (and a quick listen will demonstrate that, taken together, they fill about the space of a single topos). Baden Powell presents a brief adulatory roster of iconic bossa nova figures: “Vinicius de Moraes, capitão do mato, poeta e diplomata, como do mesmo diz, o branco mais preto do Brasil, na

⁴ Harris, 208.

linha direta de Xangô, Saravá!,” and then, “A benção, senhora, a maior ialorixá da Bahia: Dori Caymmi, João Gilberto, Saravá!,” and later, “A benção, Nelson Cavaquinho, a benção, Geraldo Pereira, a benção, maestro Antonio Carlos Jobim, Saravá!,” each followed by the “Saravá” of the chorus in a manner that recalls the “amen” that follows a Baptist preacher’s monologue. And Dylan’s anguished entreaty is repeated at the end of each verse in order to enhance and inflect the various themes of his complex, synchronous narrative (an auto-response, as it were).⁵

I am proposing a model in which call-and-response occurs at a great many different, complexly interpenetrating structural levels, from the level of larger formal units (verses and choruses, for instance) to the level of phrase group and period, to within phrases as subphrases, motives, melodic and rhythmic cells, and ultimately microrhythmic motions interact with each other in tightly interwoven dialogic fashion.⁶ As the following analysis unfolds we will see that some of these calls and responses serve different semantic, rhetorical, or narrative purposes, and that this fact aids in the perception of a network of different, even possibly conflicting, directed motions, resulting in a complex teleological web as certain motions are either affirmed or denied.

⁵ Dizzy Gillespie and Chano Pozo, “Cubano Be – Cubano Bop.” Available, among other places, on *Dizzy Gillespie: The Complete RCA Victor Recordings 1947-1949*. Bluebird/RCA CD 66528, 1995. Baden Powell, “Samba da benção.” Available on *O Universo Musical de Baden Powell*. Sunnyside CD 3016, 2003. Bob Dylan, “Stuck Inside of Mobile with the Memphis Blues Again.” *Blonde on Blonde*. Remastered Sony CD CKG 841, 2004.

⁶ Kaufmann offers the following statement by way of validating the utility of such a model: “...the formal structure of call and response can have some relationship to the more minute rhythmic relationship of parts” (1980, 400).

CALLS AND RESPONSES IN *RUMBA*

In *guaguancó*, the teleology of a performance is the result of an intricate intertwining of many call-and-response interactions between parts: between the *quinto* and the dancers, between *quinto* and *sonero*, between *sonero* and *coro*, between *quinto* and the supporting drummers, between the *tumbador* and *segundo*, between clave and *palito* even, as they help propel the music into one or the other extreme end of the beat span, as suggested in Figure 2.13 in Chapter Two (abetting what Zuckerkandl would call the “rubber” nature of the measure). Even the *palito* part itself (and by association, clave) divides into an antecedent and consequent pair of rhythmic shapes that exist in dialogue with one another, as Spiro explains in his account of Afro-Cuban and other diasporic (including that of *samba* and funk) phrase structure.⁷

To take a comparatively transparent example, let us scrutinize the relationship between *tumbador* and *segundo* by removing them from their natural habitat as we did with the standard pattern in the previous chapter. As mentioned in Chapter One, the *tumbador* and *segundo* are, respectively, the lowest-pitched and middle-pitched of the three drums that, with clave and *palito* (and singers and dancers), make up the traditional *rumba* ensemble, and together they provide not only one of the two *guaguancó* melodies shown, along with clave, in Figure 3.1 [Sound Example 17], but also the sonic and rhythmic primordial ooze (the

⁷ Spiro, 18-26. See especially his section 6, examples 2, 3a, and 3b, in which his notion of upbeat phrase beginnings is reflected in his musical notation.

mazacote), shown in Figure 3.2 [Sound Example 18], from which the wealth of rhythmic interpretations, personalizations, mutations, and distortions emerge.⁸

FIGURE 3.1. BASIC MELODY OF *GUAGUANCÓ HABANERA*.

The figure shows two staves of musical notation. The top staff is labeled 'segundo tumbador' and the bottom staff is labeled 'clave'. Both staves begin with a common time signature 'C'. The 'segundo tumbador' staff contains a melody of notes: a half note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, and a quarter note. The 'clave' staff contains a rhythmic pattern of strokes: a half note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, and a quarter note.

⁸ In the following discussion and analysis I will focus on *guaguancó matancero*, the style of *rumba* from the Matanzas province just east of Havana. I will also employ some standard notation for the types of strokes used to achieve various sounds: *H* for “heel” and *T* for “toe,” referring to the oscillating motion of the palm and fingers, *B* for “bass,” which is a full-hand stroke in the middle of the drum that produces a deep tone (the drummer’s knees are often used to lift the drum off of the ground to enhance this effect), *S* for a high-pitched and aggressive “slap,” *O* for “open,” or a standard reverberant strike toward the edge of the drum head, *M* for “muff,” or a dampened stroke with the fingers parallel to the drum head, and *t* for “tap,” referring to soft “timekeeping” strokes that are often barely (or in-) audible but that contribute profoundly to how the performance swings. L and R, self-evidently, refer to the left and right hands respectively.

FIGURE 3.2. TUMBA AND SEGUNDO PARTS FOR *GUAGUANCÓ MATANCERO*.

R L R L R L R L R R L R L R L
H T T H H T T H O T H H T T H

segundo

tumbador

H B O H H O

Note that in Figure 3.2, all of the notated events are fundamental to *guaguancó* performance, but it is the three open tones taken together that represent the *guaguancó* melody itself.

In our simplified model, the *tumbador* calls and the *segundo* responds. There is a fairly large, but very much finite collection of response figures – all modified versions of the simple prototype melody from Figure 3.1 – that exist as contingent outcomes of a particular call; that is, there are a number of standard calls that, according to the customs of *guaguancó* performance practice, ask for one of a small number of specific responses, a few of which are shown in Figure 3.3. When the *tumbador* plays the cell shown in Figure 3.3a, for instance, the *segundo* might very likely respond with one of the ornamented responses shown in Figure 3.3b.

FIGURE 3.3. SAMPLE CALL AND SOME POSSIBLE RESPONSES IN *GUAGUANCÓ MATANCERO*.

A) This call: B) suggests a possible response of:

segundo

tumba

M M M M O

Anku is following a similar thread when he describes the way in which the master drummer in West African traditions generates improvisational material from a small repertoire of basic rhythmic shapes: “[T]he essential factor is...how the drummer structurally manipulates relatively few set rhythms...drawn from a stock of generative rhythmic vocabulary.”⁹ There are all kinds of ways in which a master drummer will extrapolate, embellish, extract from, interpolate, move around, combine, stagger, and stretch these rhythmic cells, but it is important to recognize that everything is an interpretation (a personalization, a mutation, a distortion) of a rhythmic unit that can be reduced to a recognizable (to insiders) prototype. In this

⁹ Anku, 19.

sense, to quote Dora Hanninen, “recontextualization becomes a compositional technique; phenomenal transformation of repetition creates coherence and continuity, an autogenetic approach to musical form.”¹⁰

Anku provides clear illustrations of how some of these processes work from the perspective of the single master drummer: how generative material can be extrapolated, “masked” (silenced for some iterations or portions thereof), staggered, and so on.¹¹ The same types of processes take place *between* performers in *rumba*. The responses given in Figure 3.3 are those that are most likely to follow that particular call, but there are other ways in which the response to a given call might unfold. The figure does not show, for instance, nuanced dynamic inflections, or modifications in the type of stroke used to perform the notated rhythm, or subtle microrhythmic inflections. All of these variables operate in tandem as part of the *playful* dialogic way that responses behave. And there are *strategic* reasons for choosing one response over another, just as there are strategic reasons for choosing one or another call in the first place. We must, for instance, consider exactly where in the performance we are – the degree of density early on in a performance is markedly different from that found later on, which is marked by the pronounced increase in energy and excitement that accompanies both the arrival of new parts and the elaboration of earlier ones. We might consider a strategic call-decision, in

¹⁰ Hanninen, 61.

¹¹ Anku goes on to describe a number of scenarios in which a master drummer will intentionally displace the relationship between this generative material and the accompanying ostinato, essentially defining a new referential time point (RTP) for a new section of music. There are a number of different ways in which this might be achieved, and a number of different strategic reasons for doing so, especially as an “important rhythmic and choreographic cue to both dancers and performers of response drums” (21), and the astute reader will notice a direct parallel between this and the clave flip / shadow meter scenario discussed in Chapter One above.

the latter case, made in order to refer to the response that just happened. There are also calls, and responses as well, that extend beyond the confines of a half-cycle, so very often we will hear melodic strands that overlap or concatenate in interesting ways. So the *tumbador* is making decisions based on the just-heard *segundo* response, or a previously heard response. Or even an anticipated future response, based on predicting what the *segundo might* do next.

Or, even more importantly, the *tumbador* might make a decision based on something *else* that happens in the greater musical fabric. A particular call might result from a perceived inflection in the clave or *palito* part (or both) – perhaps a shift of energy that slides the clave along a *beat span*, closer to its 12-cycle or 16-cycle limit. A call might also respond to something that happens in the *quinto*, which as the Afro-Cuban analog to the master drum of West African traditions does not itself have a specifically prescribed melodic role to play, but improvises over the top of the nexus created by the *tumbador*, *segundo*, *palito*, and clave, in a complex and nuanced dialogue with the dancers. The *quinto* and the dancers call each other, and respond in kind: they poke and prod, they flirt, they argue, they tease and provoke and whisper and insinuate and intertwine around each other, and their dialogue provides a good deal of the dramatic impetus for the rest of the ensemble. But of course they also *respond* to that *tumbador-segundo-palito-clave* nexus – therefore as a truly democratic organization no single part has complete control of the dramatic direction of the performance.

There is also the singer to consider, which on an audio recording is arguably the most salient part of the musical fabric. In a traditional *guaguancó* performance there is typically a lead singer, or *sonero*, and a chorus of accompanying singers (some of whom also play instruments such as claves or *chekere*). As the

performance slowly unfolds, the lead *sonero* weaves the story, which culminates in the alternating call and response of *coro* and *soneo* that inevitably serves as the dramatic climax to every *rumba* performance – a call and response that differs from the others described above in at least one important regard, which is that the chorus, now, does really respond to the call in a sort of steady repetition, although there is still room for subtle interpretational flux in the response if the singers are so inclined. The *sonero* also responds to *clave* – to its metric exigencies and to its rhythmic flux as it alternately corresponds to or denies its metric rootedness. This is especially apparent in the improvisatory *diana* that often begins a *rumba* performance: it is incredibly exciting, and ultimately satisfying, to hear a *sonero* pause for a half of a *clave* cycle in order to come in on the other “side” of *clave*, effectively enacting a new downbeat-orientation as described in the *son* and *changüí* examples in Chapter One. In *rumba* this is even more fluid and susceptible to the needs and desires of the ensemble, and to the performance itself, as we will see in the extended *yambú* analysis in Chapter Four.¹²

And then of course the *sonero* engages with the *quinto*, and the *quinto* engages with the dancers, and the *sonero* engages with the dancers, and when combined with the intra-level dialogue with and between *tumbador* and *segundo*, and *clave* and *palito*, results in an ensemble aria comparable in complexity to, say, the ensemble finale of a Mozart opera. Because the large-span structural unfolding of *rumba* is somewhat formulaic, and therefore predictable, it could even be said

¹² For two lovely examples, refer to the recording of “Pa’ los mayores” that I analyze in Chapter Four. At 1:46 the *sonero* pauses half a cycle to come in with the new verse on the “3” side of *clave*, and likewise at 3:03 he slyly elides phrases by interrupting the end of the *coro*’s last statement and beginning his new verse this time on the “2” side.

that a performance engages with previous performances, and with the entire *rumba* tradition, and with lines of flight pointing from innumerable West African traditions, a scenario that clearly recalls the African-American cultural and linguistic signification of Henry Louis Gates, Jr. in its placement of the presently-perceived performance on the terrain of past-remembered performances.¹³

So the musical fabric of *rumba* is comprised of a staggering number of nested, overlapping, concatenated, and interpenetrating calls and responses, responses to responses, responses morphed into calls, calls recalling calls, and so on *ad infinitum*. A close reading of this complex web of poly-structural events also necessarily involves situating oneself in the ongoing temporal experience of the performance as a way to determine whether something is calling, or responding, or both, and why, and in the service of what musical strategy. We might therefore find it useful again to invoke Husserl's phenomenological language and engage some questions about exactly how this web of calls and responses situates in the ongoing temporal experience: what the call/response dialectic does from a listener's perspective, and what the teleological nature of the performance-in-time does to our consideration of individual calls and responses and their particular relationships to one another.

In *The Phenomenology of Internal Time Consciousness* Husserl addresses the presently experienced event in its relation to a continuum of past-presents in great detail, a consideration of time with which we will soon find that Hasty's

¹³ In a fine musical interpretation of Gates's theory, Robert Walser (1993) addresses the ways in which a performer "signifies" on earlier versions of the same song in his examination of three performances of "My Funny Valentine" by Miles Davis.

theory of durational projection is mostly sympathetic.¹⁴ Husserl is initially more interested in how the memory of a past event colors the experience of the present event than in how a present event might potentially influence a future event, and thus his is a mode of experiencing that initially defines the response-event (or the responsive attributes of any event) more fully than the predictive potential of the call-event. But the flux that leads up to the present event is a primordially constitutive process, a flux of interpenetrating remembered past → presents, and so the looking-toward-future is animated by these *protensions* – they are what gives it its dynamic energy. And this rich, complex network of protensions eventually allows us to develop a rich and vivid horizon of potentially immanent events, based on our accumulated, emergent knowledge of the identities of the various directed motions that preceded. Husserl effectively illustrates that the basic underlying model of call and response (and likewise, even complex, concatenated chains of calls and responses) is an insufficient way of describing the totality of the nature of the present musical event, since the now-event is located in the complex web of remembered events that led up to it.

This means that as an essential *a priori* phenomenological formation [*Genese*] memory is in a continuous flux ... and is not merely fitted member by member into the chain. Rather, everything new reacts on the old; its forward-moving intention is fulfilled and determined thereby, and this gives the reproduction a definite coloring. An *a priori*, necessary retroaction is thus revealed here. The new points again to the new, which, entering, is determined and modifies the reproductive possibilities for the old, etc. Thereby the retroactive power of the chain goes back, for the past as reproduced bears the character of the past and an indeterminate intention toward a certain state of affairs in regard to the now. It is not true, therefore, that we

¹⁴ Interestingly though, Hasty considers the way in which we presently engage a past-event not as a recollection of a past presence, but rather “as a condition for the particularity of what is presently becoming” (76), a subtle and powerful distinction.

have a mere chain of “associated” intentions, one after the other, this one suggesting the next (in the stream). Rather, we have an intention which in itself is an intention toward the series of possible fulfillments.¹⁵

And further, the “past as reproduced” in memory is itself a now-event: “...every retention is already a steady continuum. The sound begins and steadily continues. The tonal now is changed into one that has been. Constantly flowing, the impressional consciousness passes over into an ever fresh retentional consciousness;”¹⁶ therefore, the consciousness of the shading-off of memory is itself a present-now that coexists with the now of the actual experienced event. This is apparent when we consider any dynamic, improvised music: a performer’s improvisational decisions should necessarily be based on interactions with remembered past actions and experiences in the ongoing flux of the performance. And because those remembered past actions and experiences are themselves modified by the new nows that they have informed (due in no small part to the fallibility of human memory, but perhaps more glamorously to the nuanced organic nature of the performance as it happens in time), their potential for modifying future events is itself constantly being modified.

So the “continuum of retentional modification,”¹⁷ which is itself both a now and a retained now (or memory), points toward a new immanent now, or more accurately a multiplicity of potentially immanent nows. This nexus of interwoven pasts → nows → futures gives us the perception of teleological motion, a continuum on which we can locate a now in two ways: as a discrete point (or span)

¹⁵ Husserl (1964), 77-8.

¹⁶ Ibid., 51.

¹⁷ Ibid., 50.

along the motion's progression, with remembered before and predictable after, and as the "now-actual phase of the motion itself,"¹⁸ in other words, the motion itself as an ongoing now, which *includes* the immanence of the later part of the now-continuum. Clifton describes the retentive relationship between present and past as making "the past meaningful because of the way the past colors and enlivens the present. At the same time the present is made meaningful because of the influence brought to bear on it by the past."¹⁹ Furthermore, he regards the protension of present to future as a relationship that points to the "open future" of the immanent event; rather than speaking of a future that is either exclusively determinate or completely indeterminate, the now-motion points toward a contingent future that is "vital and indispensable, and hence just as real as present and past."²⁰ In the teleological motion of call-to-response, then, the immanent nature of the response is in some way already present in the call, while the call itself is invoking a (now-retentively-present) past nexus of prior call- and response-events.

PROJECTION, METER AS PROCESS

Although Hasty is concerned with a very different musical repertoire, much of his language points toward one of the most important considerations in Afro-Cuban performance practice, which is the continuous transformation of *cyclically* present rhythmic events as they progress through time. Hasty's description of the temporal

¹⁸ *Ibid.*, 52.

¹⁹ Clifton, 60.

²⁰ *Ibid.*, 64.

aspects of music as a “totality of discrete elements joined through a system of relations or transformations” that “flow together as a whole, diversified but unbroken”²¹ is very suggestive in this regard. There is an organicism to the rhythmic flux of a *guaguancó* performance that reveals its transformational nature, and because of the call-and-response aspects of its phrase structure, there is a dialectical twist to its organicism, with its pulsating moves away from and subsequent, newly colored returns to rhythmic events. We can see this in miniature even in the relationship between the two open *tumbador* tones in the prototypical *guaguancó* melody. Hasty describes the character of the second of a pair of terms in “the directed movement away from one moment and toward another”²² in a way that reflects both its specific responsive nature and its generative role in the larger cyclic context of the performance:

...if we are able to perceive the two tones as a unit (that is, as a duration) the immediate qualitative change introduced by the second tone must be thought of as permeating or “spreading through” the two events as a mutual conditioning or relationship, imparting to both tones an order. The continuous change of the first tone becomes a particular qualitative change as it approaches the second tone. The duration of the second tone likewise receives an order to its continuity as it recedes from the first (and progresses to the third).²³

Hasty is referring to the qualitative changes that occur through the duration of a single tone and as that tone gives way to the next, but there are clearly parallels

²¹ Hasty (1997), 67.

²² Hasty (1981), 188.

²³ *Ibid.*, 191.

between the behaviors in the repertoires he examines and in those scrutinized in the present study. In the case of the *tumbador* tones, the first begins, or enacts, the process of moving away-from, while the second completes the structural unit. But taken as isolated events they are identical! It is only by placing the two tones in a context that we can ascribe (or observe) a qualitative character of motion to them. In other words, the context acts as the “mutual conditioning” that Hasty describes.

Figure 3.4 shows a projective model of this type of motion, *à la* Hasty. Note that a new figure has been added in between Hasty’s projective arrows; this serves to link the response to the new call.

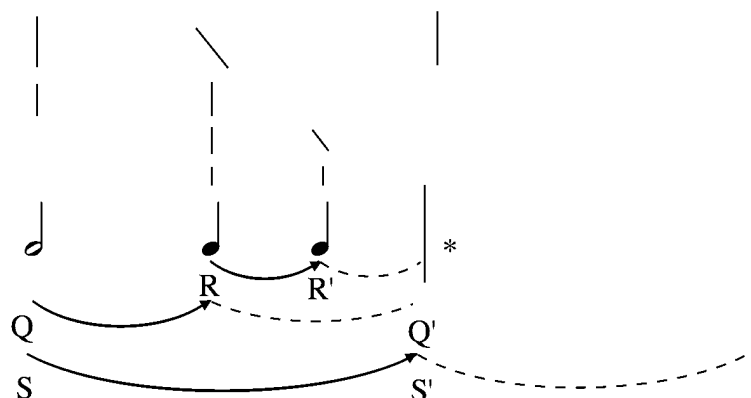
FIGURE 3.4. PROJECTIVE MODEL, WITH POTENTIAL NESTED PROJECTION.

$$C \rightarrow R \rightsquigarrow C' \rightarrow R'$$

Even without yet defining what either arrow means specifically, the added relationship between response and the next call modifies Hasty’s projective model in an important way. Concatenated arrows ($C \rightarrow R$ and $R \rightsquigarrow C'$) suggest that the potential exists for nested projections at the metric and immediate submetric levels, defining the metric level in this case as the level at which one complete call-response pair is located, and the immediate submetric level as that traversed by a single call or response. This seems to contradict Hasty’s axiom of projective

complexity, in which smaller projections are relegated to a subordinate role in regard to the larger projections that they help constitute. Hasty suggests, for example, that a duration S that composes out as a half note Q followed by two quarter notes R and R' (the latter of which is a realized projective image of the former, and the pair of which together represent the duration of Q' in an also-realized projection, both subordinate to, and within the duration of, S) possesses the potential for projection onto an as-yet unrealized S', which in turn may or may not compose out in a similar manner. But he emphatically (and convincingly) asserts that the quarter notes R and R' do *not* project onto S' – that, after hearing S we predict a continuation of the entire duration as a single rhythmic gestalt, and that this overrides any consideration of an R-continuation into the beginning of S'. Hasty's Example 9.5a, reproduced as Figure 3.5, offers a projected model with nested interior projections that behave similarly. The asterisk that follows the R-layer (also in Hasty's example) draws attention to the contentious point at which R' may or may not continue to project its durational characteristics onto the next subcycle.

FIGURE 3.5: HASTY'S EXAMPLE 9.5A.



In one way then, the scenario described above actually presents incompatible projections: a projection of *S* insistently denies the possibility of a projection of *R*, although the mediating *Q* level continues through unscathed. But it might also be reasonable to consider them as *fully compatible*, since the smaller projections serve to measure *S*, in effect making *S* *more* mensurally determinate since on its own it might be too long, cognitively, to accurately entrain to. In this case *S* may be regarded as a duration that is itself traversed by the interior projections of *Q*, and *R* becomes the projective event that we might predict to unfold at the new beginning *S'*. This, as Hasty mentions, is consistent with Narmour's "cumulative" rhythms in which the increase of kinetic energy produced by the perceived acceleration of the dactyl rhythm points toward the new beginning in a dramatic fashion. Conversely,

an anapest rhythm, which Narmour would categorize as “countercumulative” and which Hasty describes as “closed,” doesn’t have the same kind of kinetic energy because of its perceived deceleration.

What Figure 3.4 suggests is that we could potentially recast Hasty’s model such that *S* and *R* are projectively relevant; that the next cyclic iteration is retentive of both the metric and submetric protentions that led to it. In other words, Figure 3.4 offers a model in which nested projection might coexist; the projected-onto object might reflect the influence of one, or the other, or both.²⁴

For a more complex example, one that illustrates the notions of cumulative and countercumulative rhythms as well as how the projective nature of call-and-response starts to figure into such matters, we might consider the famous diasporic topos known colloquially as the “Bo Diddley” beat.²⁵ A version of the “Bo Diddley” beat can be heard in Johnny Otis’s 1958 hit “Willie and the Hand Jive,” the rhythm guitar part for which is shown in Example 3.1 [**Sound Example 18**].

²⁴ Or more: there is nothing to say that these are the only projective strata that might be invoked. Notions of supermetric or a microrhythmic strata might be useful constructs in a detailed analysis of projective motions.

²⁵ So-called because of its appearance in Diddley’s eponymous hit song, and in many subsequent songs by both Diddley and his admirers.

EXAMPLE 3.1. “WILLIE AND THE HAND JIVE” TOPOS.



The x-noteheads refer to nearly-pitchless choked guitar strokes. The solid-headed, upward-stemmed notes clearly correspond rhythmically to 3-2 son clave (that is, they parse the 16-cycle into a <33424> topos), an oft-described parallel between Afro-Cuban and African-American musical practices.²⁶ But the “Bo Diddley” beat differs from son clave in (at least) one important performative respect: it lacks the supporting topos that intersects with and weaves through it and, most importantly, colors its directed motion. The “Bo Diddley” beat has its own rhythmic supporting cast, including significantly the softer, but still played, non-pitched notes that fall between the primary topos events, but these do not intertwine with the basic topos in the same sinuous way that, for instance, the *cascara* pattern weaves in and out of *son* clave, or the *palito* part informs *guaguancó*.

²⁶ See for example Lydon and Mandel (1974): “...the beat, four-quarter time shoved off center like the beat kept by the claves in West Indian music, is complex and changing.” (65) The authors also describe the beat as “dense” (which is an intriguing description in light of how I have heard composer/improviser Denny Goodhew encourage his students to think of “BIG beats,” accompanied by dramatic arms-extended gestures) and point toward its interpretational potential as “its ambiguity of shadings opens it up and keeps it moving.” We will return to this last point in detail in Chapter Four.

From the standpoint of a Narmourian cumulation of directed motions, or a Hastian model of nested projections, the “Bo Diddley” beat exhibits a curious affective ebb and flow as it progresses through one cyclic iteration and into the next. In order to fully address this phenomenon we should also recall Browning’s “expressive power of silence” from Chapter One, in which the powerful negating energy of silence incites the dancers to move in order to occupy the space left open by the dominant musical layer. The “Bo Diddley” beat with its <33424> segmentation of the 16-cycle is decidedly contrametric – every cycle is technically an *end*, a feeling that is only intensified by the chromatic lower neighbor anacrusis that leads to the next beginning, and the result is a stuttering, anapestic, contra-teleological structure that reflects the intentionally static nature of the music’s surface. It is important to note that there is very little dynamic contrast or timbral variation in this music – in many ways it points toward the intentional non-organicism of early minimalism.²⁷ Vijay Iyer touches on the non-teleological aspects of similar musical situations:

Although groove is a highly subjective quality, music that grooves can sustain interest or attention for long stretches of time to an acculturated listener, even if “nothing is happening” on the musical surface. A prime example is James Brown’s ... music, which frequently has precious little melodic or harmonic material and is highly repetitive, but would never be described as static.²⁸

²⁷ Even the lyrics reflect a kind of non-linearism: in “Willie and the Hand Jive,” for instance, the story of the terpsichoric couple progresses toward their eventual marriage and the birth of their child, who in the spirit of a whimsical Greek epic is seen “doin’ that hand jive on TV” as the entire cycle spins on *ad infinitum*.

²⁸ Iyer (2002), 388.

There is also, in the “Bo Diddley” beat, a conspicuously empty “downbeat” at the immediate subcyclic level that reinforces Lydon and Mandel’s description of the basic beat “shoved off center.” The silence at this important structural point in the cycle encourages the dancers to move (as Browning has observed with regard to similar constructs in samba) and contributes to the forward-motion *within* the cycle even while the countercumulative end of the cycle reins in that forward motion. So in essence we have a dialectic that results from the teleologic motion of the middle of cycle, as mediated by the comparative stasis of the cycle’s end, and the affective friction caused by these conflicting directed energies is an important contributor to Iyer’s claim that this music “would never be described as static.”

When we add the vocal melody to the “Bo Diddley” topos, a hypermetric pattern emerges that reinforces and expands upon this projective dialectic in a powerful way. Example 3.2 [**Sound Example 20**] shows the vocal part and topos for the opening verse of “Willie and the Hand Jive.”

EXAMPLE 3.2. “WILLIE AND THE HAND JIVE” TOPOS AND VOCALS, FIRST VERSE.

The musical score consists of four systems, each with a vocal line (treble clef) and an accompaniment line (bass clef). The key signature is three sharps (F#, C#, G#) and the time signature is common time (C). The lyrics are: "I know a cat named Way-out Wil-lie. He got a cool lit-tle chick named Roc-kin' Nil-lie. He c'n rock and stroll and Su-zie Q, and do that cra-zy hand jive too."

1 I know a cat named Way-out Wil-lie. He got a

5 cool lit-tle chick named Roc-kin' Nil-lie. He c'n

9 rock and stroll and Su-zie Q, and

13 do that cra-zy hand jive too.

Two behavioral considerations immediately present themselves. One is the salient way in which we hear the call of the vocal melody answered by the “Bo Diddley” rhythm, as in “I know a cat named Way-out Willie,” “chunk-a-chunk-a-chunk—a— chunk-chunk.” This narrative structure runs through the entire

performance and also reveals something of the music's blues roots. The second is how the lyrics correspond rhythmically to the topos in the first half of the hypermeasure – that is, they reinforce the prolonged silence of the final topos strike – but they actually fill in the commensurate prolonged silence in the second (consequent) iteration of the topos that completes the four-bar hypermeasure, and thereby provide an anacrusis into the next hypermetric statement: “He got a...”, “He c’n...”, “And...”, with the third statement striking a particularly interesting note as it is syncopated against the 2-side of clave, much like the *segundo*'s second melody note in *guaguancó habanero*. And of course since the anacrusis fills in the empty space at the end of the cycle, it thereby complicates the aforementioned dialectic of directed energies. It also perhaps reinforces the “expressive power of [the] silence” of the middle of each cycle, since the corresponding silence of the end of the of the four-bar hypermeasure is now not silent at all. However, since the anacrusis is clearly felt as such, it must be considered from a cognitive point of view as part of the phrase that follows, and not as the end of the phrase with which it is coterminous: again, much like the *guaguancó* melody, in which the final *tumbador* strike is considered as a pickup into the next phrase, the beginning-points of the melodic phrasing of “Willie and the Hand Jive” are not exactly coextensive with the beginning-points of its underlying metric topoi.²⁹

²⁹ Of course this occurs at the topos level as well, with the chromatic lower neighbor figure in the guitar riff that acts as an anacrusis to the next the cycle.

“Willie and the Hand Jive,” as one of many contemporaneous songs based on the “Bo Diddley” topos, offers a useful entry point into a consideration of call-and-response narratives. It illustrates, in a comparatively transparent way, some of the ways in which calls and responses map onto the cyclic grid, as well as how the rhythmic terrain of the cycle begins to influence the nature of either the call or response, or both. For example, we might note at least three, perhaps even somewhat contradictory, layers of call and response in the first two four-bar hypermeasures of “Willie and the Hand Jive.” First there is the call and response of the topos itself with its three-element antecedent and two-element consequent halves. Then there is the call of the first vocal line and the response of its instrumental conclusion (that is, “I know a cat named Way-out Willie,” “chunk-chunk-chunk-a-chunk-chunk”) that nest into the topos with no serious rhythmic dissonance and of course together take up the span of two complete topos iterations. And then there is the second vocal line that responds musically and rhetorically to the first, but with the anacrusis that intrudes upon the countercumulative space provided by the end of the second topos statement. Figure 3.6a offers a Hastian model of these three levels of call and response. Note that, in order to represent most clearly the stratified nature of the model, the order of variables is modified slightly from those of Hasty’s Example 9.5. Figure 3.6b shows the nested beginning-continuation character of this scheme, assuming for the time being that call = beginning and response = continuation.

FIGURE 3.6. THREE LEVELS OF CALL AND RESPONSE IN
 “WILLIE AND THE HAND JIVE”

A)

<u>topos level:</u> (3- and 2- sides of clave)	$Q \rightarrow Q' \Rightarrow Q \rightarrow Q' \Rightarrow Q \rightarrow Q' \Rightarrow Q \rightarrow Q' (\Rightarrow)$
<u>metric level:</u> (voice/guitar call and response)	$R \rightarrow R' \Rightarrow R \rightarrow R' (\Rightarrow)$
<u>hypermetric level:</u> (antecedent and consequent vocal phrases)	$S \rightarrow S' (\Rightarrow)$

B)

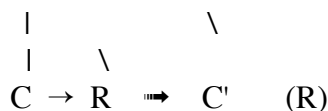
<u>topos level:</u>	\ \ \ \
<u>metric level:</u>	\ \
<u>hypermetric level:</u>	\

The biggest challenge that we face in appropriating Hasty’s theory of projection and applying it to the cyclic, transformationally-motivated web of Afro-Cuban music is making decisions about exactly what the event *is* that is beginning / becoming / projecting / continuing. As with the “Willie and the Hand Jive,” there are numerous nested and overlapping events that occur at the submetric, metric, and

hypermetric levels. But how do we define those events? Part of the problem is similar to the one posed in Chapter One when we attempted to define *topos* – a rhythmic event that is coterminous with meter, that in some ways helps to determine meter, that in some ways helps to determine the flux of accentual emphasis that occurs within meter, but that is none of those things in any complete or even very satisfying way. These events are durations only in the most simplistic sense – they are musical objects that inhabit a roughly fixed span of time – but this does not describe exactly *what* is projecting, or the *ways* in which they project at all.

One way that we might begin to define the projective event (that is, of course, the event that possesses the potential for projection) is to begin with the aforementioned call-and-response dialectic. Call-and-response functions in three obvious ways in this regard: the call projects onto the response, the response projects onto the next call, and the call-and-response as a unit project onto the next call/response pair. We can, then, refine the schematic shown in Figure 3.4 to reflect these nested layers (and thereby add an additional stratum that reflects Hasty's beginning and continuation as they are suggested by the call/response pair), as shown in Figure 3.7.

FIGURE 3.7. TWO LAYERS OF BEGINNING-CONTINUATION.



It is not difficult to imagine this small web of projections as they unfold through time, because the music itself *is* so clearly, regularly cyclic. This is an assumption that we can safely make about Afro-Cuban music in general, and it holds true regardless of tempo changes or real or perceived downbeat shifts (as in the rotations around clave demonstrated in Chapter One, or as in Anku’s bridge material that serves to define a new Referential Time Point). In fact, there are a number of relevant assumptions that we can make as listener-participants with some degree of insider-ness. Regarding *guaguancó*, for instance, we can assume that

1. Once established, clave will continue as an uninterrupted, unbroken flow,³⁰

³⁰ There are examples, especially in the world of ballroom mambos and rhumbas (with an “h,” a peculiar artifact of the Americanization of Afro-Cuban music in the 1930s and 40s), in which the arranger will break the rules and flip clave to serve some particular musical strategy, but these should be regarded as anomalies and are beyond the scope of this paper (although the motivation behind such clave flips might make an interesting study in itself). David Peñalosa describes a similar situation in some modern *timba*, in which 2-3 and 3-2 clave are actually present simultaneously! It is not clear exactly why *timba* composers (Isaac Delgado, for instance) do this on occasion, but they do seem to do it for specific strategic reasons. See Peñalosa (2009), 118-120.

2. When the *tumbador* calls, the *segundo* will respond in kind,
3. At some point after the *diana* and/or verse have played out, a call-and-response between the *sonero* and *coro*, at the metric or immediate hypermetric level, is introduced,
4. The tempo will gradually accelerate over the course of the entire performance,
5. The dialogue that begins between *quinto* and *sonero* will be transferred to quinto and dancer at around the time that the *coro-soneo* begins.

And most important for our purposes,

6. The potential future inherent in a projection is a *contingent* future, with a large but finite range of possible continuations.

This contingent future is based on our expectations that are themselves based on the breadth and depth of our familiarity with experiential situation, on our degree of insider-ness, and on the extent to which we have previously explored, refined, and weeded out our noetic options.

This is corroborated by Hasty when he explains how the past is not completed or fixed since “its relevancy to or efficacy for becoming is constantly changing,” and how the future is not indeterminate “if there are definite and actual anticipations of what might come to pass.”³¹ The anticipation of an immediately future event “is not the projection of a definite outcome but a readiness to interpret emerging novelty in light of what has gone on before,”³² and so we can begin to

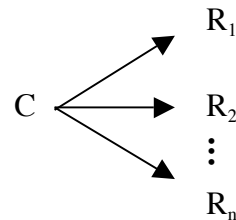
³¹ Hasty (1997), 77.

³² *Ibid.*, 69.

circumscribe a range of predictable future events (responses) based on our experience of present (call) as determined by the articulated, continuously connected flux of past \rightarrow present \rightarrow future. This is analogous to, in Husserlian terms, the trajectory of remembered \rightarrow now \rightarrow immanent events, in which the predictable immanent event is largely determined by the dialectical progression of temporal events leading up to it. Recall, though, that a Heideggerian model of past-as-present differs subtly from Husserl's past as remembered in the present. This important distinction will weigh heavily in the analyses in Chapter Four.

With this in mind, we might consider recasting a projection as a function that maps onto a *range* of contingent events. Figure 3.8 shows what this might look like in consideration of the *guaguancó* dialogue from Figure 3.3 above, in which the call maps onto a contingent range of possible responses (or, in other words, illustrating graphically a multiplicity of potentially immanent nows). In this pseudo-transformational model the arrows might be read as “suggests a response of” connecting the call node, or domain, to its various response nodes, or images. Note that the cardinality of the range of responses is not known, but it is finite, and there are many nodes that are excluded from the collection, including, for instance, rhythmic figures that belong in the same side of clave as the call.

FIGURE 3.8. GRAPHIC ILLUSTRATION OF PROJECTED RANGE OF RESPONSES.



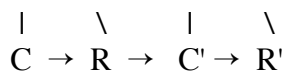
This is not a closed system however, because after the response there is a new call; more important, this new call is not generated autochronously but is inflected by the immediate memory of the most recent response, and of course by the progression of calls and responses that lead up to it. Therefore we will see that if we pursue this model any further than the one cyclic iteration shown in figure 3.8 we will end up with an overly complex (and perhaps unruly) web of projective implications, through which a path might be traced that models the actual path taken in the context of a single musical performance.³³

So again, if the response can project onto the new call even while the call/response pair projects as a larger unit onto the next call/response pair, what

³³ This line of thinking even suggests that an AI algorithm could be designed such that a computer could actually “play” *guaguancó*, and that if the strategic decision-making process that determines which response follows which call (and for what reason), and then which next call results from the nested call-projection and call-response-pair-projection, then that performance would even model authentic performance practice in at least a few rudimentary ways. The number of contingent responses gets quite astronomically high, though, when one begins to consider inflections of dynamic accent and trajectory, inflections of stroke types, and especially matters of beat span and precise microrhythmic note placement.

exactly is projecting?³⁴ This is where Hasty's theory must be amended, because it is not necessarily duration that is being projected in this case (although this is not to rule out the possibility that duration can or might be projected). What is the response projecting? It could be a subtle metric or rhythmic inflection (or a particular, nuanced way of being-in-meter), such as, for example, a shading toward the 12-cycle or 16-cycle stratum as described at the end of Chapter Two. It could also be a dynamic level, or timbre, or a particular drum stroke, or an ornament, or simply an attitude. And it could also be a specific rhythmic figure, as in a call that is invoked by a previous response. In this case the latter itself becomes a call, resulting in an overlapping call-response/call-response-etc. progression in which each individual element is both call *and* response, for which we might consider redrawing Figure 3.7 above with all solid arrows at the nearer-to-foreground level, as in Figure 3.9.

FIGURE 3.9. RESPONSE PROJECTING A NEW CALL.



³⁴ Hasty suggests that this reading may not be tenable, but I find it not only valid conceptually but pervasive in actual practice. For a further illustration of how Hasty's theory subsumes smaller potential projections into the trajectories of larger ones, see Hasty (1997), Example 9.5b, and his supporting commentary on p.110.

The arrows in this case might be read as “has a hand in influencing the nature of,” with obviously widely divergent and context-specific interpretations in each case. We will examine particular instances that point toward this reading in the analysis that follows.

CALL AND RESPONSE IN A *GUAGUANCÓ* PERFORMANCE

So beginning with the premise that now-events are “created under the pressure of antecedent events and ...creative for present and future events,”³⁵ and that the dialogic nature of call and response, and nested strata of calls and responses, informs the ways in which antecedent, now, and future events progress through time, let us engage an actual musical example and observe how all of these multifarious parts fit together to create a performance.

In Chapter Two we began to examine a tricky discursive problem, regarding whether the third event in a clave topos might best be construed as the end of the first half of the cycle, or as an anacrusis to the second half. This problem is compounded when we consider the two versions of clave that we have visited thus far: *son* clave in Chapter One (Examples 1.6 and 1.7), shown in Figure 3.10, and *rumba* clave in Chapter Two and earlier in this chapter, shown in its 16-cycle reading in Figure 3.11.

³⁵ Hasty, 106.

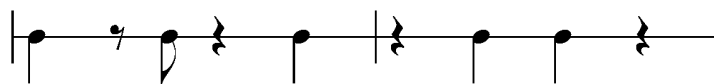
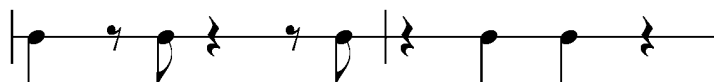
FIGURE 3.10. SON CLAVE.³⁶

FIGURE 3.11. RUMBA CLAVE.



In *son* clave, the third event onset is typically construed as the continuation of the directed motion that takes place through the first half of clave – in other words, as semantically connected to the first half (resulting in the “3” of “3-2” clave in insider discourse). The *rumba* clave shown in figure 3.11, in which the third event occurs one step later in the 16-cycle than its son clave counterpart, is typically described in practice as “3-2,”³⁷ but few performers would argue against the perceptual reality that the third event is semantically attached to the second half of the 16-cycle. Spiro draws an important parallel between this way of conceiving of phrasing and the rootedness of Afro-Cuban music in dance:

³⁶ This is of course also the topos for the “Bo Diddley” beat.

³⁷ But about which see footnote 44 in Chapter Two.

from its co-occurrence with a *palito* onset, as shown in Figure 3.13 [Sound Example 21].⁴⁰

FIGURE 3.13. *PALITO* AND CLAVE STRATA.

op: 0 1 2 3 4 5 6 7 8 9 A B C D E F

It is revealing that Spiro’s definition validates the common notational convention of representing clave as two measures of music rather than a single, seamless iteration of a cycle, even if by using this notation we have to admit two significant caveats: that the phrasing of the topos must overlap with the notated barlines, and that there is a metric hierarchy that is not accounted for by the notation since the primacy of the cycle still governs how we entrain to the topos. Spiro asks us, almost parenthetically, to “think of the second bar as the resolution of the first, almost as if the part were a call and response,” because by playing “as if half of the phrase

⁴⁰ Note that I use integers from 0 through 15 to indicated order positions in the 16-cycle, with A, B, C, D, E, and F standing in for 10 through 15 in order to avoid the discursive confusion that may result when two-digit integers are invoked.

‘asks’ and the other half ‘answers’”⁴¹ will help the music propel forward in a satisfyingly swinging way.

In contrast, the *tumbador*’s contribution to the *guaguancó* melody – the open tone shown on beat four in Figures 3.1 and 3.2 above, or at locations <6> and <E> of the 16-cycle – might not be felt as an anacrusis in the same way; that is, as cognitively (and performatively) connected to the musical material that follows it. The *guaguancó habanero* melody is often described as being phrased as a single four-note melody embedded within the span of the cycle. The *tumbador* note on the 3-side of clave behaves as an anacrusis to the 2-side – its directed energy points to the two segundo tones – while the 2-side *tumbador* tone serves to wrap up the complete melodic gesture. Recalling Hasty’s context-dependent “mutual conditioning” from earlier in this chapter, it is the context of the relationship of each tone to clave and other aspects of the total musical fabric that cause what are essentially identical events (when considered in isolation) to exhibit very different behavioral characteristics in actual performance.

As the following analysis commences, it will be useful to consider one further characteristic of the *tumbador-segundo* relationship, which Spiro again illustrates: “in traditional *guaguancó*, most players consider the 3-side to be the ‘turf’ of the low drum, and they will initiate improvisations there,”⁴² and by contrast the segundo typically improvises over the 2-side, embellishing its melody notes. Figure 3.14 is based on Spiro’s illustration of what he refers to as the

⁴¹ Ibid., 21.

⁴² Ibid., 28.

music's "part-lick (or lick-part)" structure, referring to the half in which a drummer either plays a prescribed melodic figure (the "part") or improvises (the "lick").⁴³

FIGURE 3.14. *GUAGUANCÓ* PHRASING ILLUSTRATION,
AFTER SPIRO.

The figure shows three staves of musical notation for Guaguancó. The top staff is labeled 'segundo', the middle 'tumbador', and the bottom 'clave'. The notation is divided into two sections by a vertical line. The left section is labeled '"3-side"' and the right section is labeled '"2-side"'. Annotations explain the roles of the instruments on each side.

(The segundo plays its part on the 3-side)

Segundo melody notes (open tones) on 2-side. The segundo can play its part or improvise.

The 3-side is the "turf" of the tumbador. Tumbador improvisations may occur here.

(The tumbador plays its part on the 2-side)

⁴³ Figure 3.14 follows Spiro's Section 8, Example 2 (p. 29). Annotations paraphrase Spiro's. Note that in Spiro's example the 2-side is presented first, followed by the 3-side. Spiro does this strategically throughout his book – he randomly alternates which side of clave appears first in his examples in order to reinforce the fact that neither side has primacy over the other.

The melody notes that Spiro refers to are of course the open tones, designated by “O,” in the *segundo* and *tumbador* systems. Not only does this illustration reinforce the call-and-response nature of the performance practice with its invocation of a prototypical improvisatory “turf” for each performer, but we will see that it also points toward the utility of hearing the entire *guaguancó* melody as a complete call in itself – a lot happens in the space on the 3-side of clave besides *tumbador* improvisation, including increasingly virtuosic input from the quinto player and dancers. We will also discover that even though, for instance, the 2-side is nominally the “turf” of the *segundo*, the *segundo* may embellish the 3-side as well, as long as the performer is sensitive to the fact that the 3-side is the *tumbador*’s “turf” and that the *segundo* should tread carefully.

We can observe a rich array of interwoven calls and responses in the opening moments of “Homenaje a los fundadores” by Los Muñequitos de Matanzas, one of the greatest and most well-respected *rumba* ensembles in Cuba.⁴⁴ A transcription of the excerpt is given in example 3.3 [Sound Example 22]. Note that in this transcription only salient melody notes are given in the three drum parts. An *a priori* of *rumba* performance practice is that during what is here notated as rests, some or all of the drums (especially the *segundo*) play the soft motor-rhythm *mazacote* shown in Figure 3.2 above, or some variation on it, and that from this relentless patten of sound the melody notes emerge by altering the type of stroke used to achieve them – open tones (indicated in the example by *O*), bass tones (*B*),

⁴⁴ Los Muñequitos de Matanzas, *Rumberos de corazón: 50 Aniversario* (BIS 233, 2002). As the CD title suggests, this recording commemorates the ensemble’s fiftieth year of performing (there have of course been numerous personnel changes over the years), and as its title suggests, the CD’s opening track, “Homenaje a los fundadores,” pays tribute to the original Muñequitos.

muff tones (*M*), and slaps (*S*). Also note that the vocal parts and the *chekere* are not indicated in the example, as our focus will be on the interaction between *tumbador*, *segundo*, and *quinto*.

EXAMPLE 3.3. "HOMENAJE A LOS FUNDADORES," 0:00 TO 0:58.

The musical score is arranged in five staves, labeled on the left as **clave**, **palito**, **quinto**, **segundo**, and **tumba**. The notation includes various rhythmic symbols such as eighth notes, quarter notes, and rests. The **tumba** staff features specific rhythmic markings: **B**, **B B**, **B B B B**, and **MMM M M M MM M MM M S B O O S**. The score is divided into two systems, with the second system beginning at measure 5, indicated by a '5' above the first staff of the second system.

9

Musical score for measures 9-12. The score consists of five staves. The top staff contains a melodic line with eighth and quarter notes. The second staff contains a rhythmic accompaniment with eighth notes. The third staff is mostly empty with some rests. The fourth staff contains a sequence of notes with 'OO' markings above them. The fifth staff contains notes with 'MM BO' markings above them.

13

Musical score for measures 13-16. The score consists of five staves. The top staff contains a melodic line with eighth and quarter notes. The second staff contains a rhythmic accompaniment with eighth notes. The third staff contains notes with 'O' markings above them. The fourth staff contains notes with 'O' markings above them. The fifth staff contains notes with 'B' and 'O' markings above them.

17

Musical score for measures 17-20. The score consists of five staves. The top two staves are a grand staff with a treble and bass clef. The bottom three staves are a guitar-style arrangement with a single bass clef. Measure 17: Treble clef has quarter notes G4, A4, B4, A4, G4. Bass clef has eighth notes G2, A2, B2, A2, G2. Guitar staff has a whole note G2. Measure 18: Treble clef has quarter notes G4, A4, B4, A4, G4. Bass clef has eighth notes G2, A2, B2, A2, G2. Guitar staff has a whole note G2. Measure 19: Treble clef has quarter notes G4, A4, B4, A4, G4. Bass clef has eighth notes G2, A2, B2, A2, G2. Guitar staff has a whole note G2. Measure 20: Treble clef has quarter notes G4, A4, B4, A4, G4. Bass clef has eighth notes G2, A2, B2, A2, G2. Guitar staff has a whole note G2. The guitar staff includes fret numbers: B (1st fret), O (open), B (1st fret), O (open).

21

Musical score for measures 21-24. The score consists of five staves. The top two staves are a grand staff with a treble and bass clef. The bottom three staves are a guitar-style arrangement with a single bass clef. Measure 21: Treble clef has quarter notes G4, A4, B4, A4, G4. Bass clef has eighth notes G2, A2, B2, A2, G2. Guitar staff has a whole note G2. Measure 22: Treble clef has quarter notes G4, A4, B4, A4, G4. Bass clef has eighth notes G2, A2, B2, A2, G2. Guitar staff has a whole note G2. Measure 23: Treble clef has quarter notes G4, A4, B4, A4, G4. Bass clef has eighth notes G2, A2, B2, A2, G2. Guitar staff has a whole note G2. Measure 24: Treble clef has quarter notes G4, A4, B4, A4, G4. Bass clef has eighth notes G2, A2, B2, A2, G2. Guitar staff has a whole note G2. The guitar staff includes fret numbers: B (1st fret), B (1st fret), O (open), O (open), MM (1st fret), O (open).

25

Musical score for measures 25-28. The score consists of five staves. The first two staves are a grand staff with a treble and bass clef. The third staff contains a triplet of eighth notes marked with 'O' above them. The fourth staff contains eighth notes marked with 'S' above them. The fifth staff contains eighth notes marked with 'B' and 'O' above them.

29

Musical score for measures 29-32. The score consists of five staves. The first two staves are a grand staff with a treble and bass clef. The third staff contains eighth notes marked with 'S' above them. The fourth staff contains eighth notes marked with 'O' above them. The fifth staff contains eighth notes marked with 'B', 'O', 'MM', 'B', and 'O' above them.

33

Musical score for measures 33-36. The score consists of five staves. The top two staves are a grand staff with a treble and bass clef. The bottom three staves are a three-part setting with a soprano, alto, and bass clef. The notation includes various rhythmic values, rests, and accidentals. Circled 'O' symbols are placed above notes in the lower staves. A circled 'B' is placed above a note in the bottom staff of measure 35.

37

Musical score for measures 37-40. The score consists of five staves. The top two staves are a grand staff with a treble and bass clef. The bottom three staves are a three-part setting with a soprano, alto, and bass clef. The notation includes various rhythmic values, rests, and accidentals. Circled 'S' and 'O' symbols are placed above notes in the lower staves. The letters 'MM' and 'MMO' are placed above notes in the bottom staff of measure 37. A circled 'B' is placed above a note in the bottom staff of measure 39.

41

Musical score for measures 41-44. The score consists of five staves. The top staff contains a melodic line with eighth and quarter notes. The second staff contains a rhythmic accompaniment with eighth and quarter notes. The third staff contains a bass line with notes marked with 'O' above them. The fourth staff contains a bass line with notes marked with 'O O O O' above them. The fifth staff contains a bass line with notes marked with 'B B O O O' above them.

45

Musical score for measures 45-48. The score consists of five staves. The top staff contains a melodic line with eighth and quarter notes. The second staff contains a rhythmic accompaniment with eighth and quarter notes. The third staff contains a bass line with notes marked with 'O O O O' above them. The fourth staff contains a bass line with notes marked with 'O' above them. The fifth staff contains a bass line with notes marked with 'B O O B O O' above them.

49

Musical score for measures 49-52. The score consists of five staves. The first two staves show a melodic line and a bass line. The third staff contains fingerings: MMM M M M, S S, MMM M M. The fourth staff has an 'O' above the first and third measures. The fifth staff has 'B' above the first and third measures, and 'O' above the second and fourth measures. A circled exclamation mark (!) is placed above the second measure of the fifth staff.

53

Musical score for measures 53-56. The score consists of five staves. The first two staves show a melodic line and a bass line. The third staff has an 'O' above the fourth measure. The fourth staff has an 'O' above the second measure and 'MM' above the fourth measure. The fifth staff has 'MM B O' above the first measure, and 'B B B B O' above the second, third, fourth, and fifth measures. Three triplets are indicated by brackets and the number '3' under the second, third, and fourth measures of the fifth staff.

etc.

A few preliminary aspects of the performance are worthy of attention. First, the notation does not reflect the subtle microrhythmic lilt of the opening clave iteration. A careful listening will reveal that the fourth clave onset, in measure 2, occurs ever so slightly early compared to where it “should” line up with the 16-cycle grid, and instead nudges toward its 12-cycle counterpart as described in Chapter Two. Many similar microrhythmic inflections will of course be scrutinized in the next chapter. Second, notice that it takes a few cycles for something like a normalized version of the *guaguancó matancero* melody to emerge (seen in measures 13-14 in the *segundo* and *tumbador* parts), and that the path that the music takes to get there is quite unusual.⁴⁵ For instance, the four *tumbador* strikes in measure 7 are decidedly syncopated against the 3-side of clave, a rhythmic figuration that serves to temporarily destabilize the listener’s relationship with the clave *topos*. These four strikes point toward the completion of the long *tumbador* melody that ends on the downbeat of measure 8, the role of which is to call in the rest of the drums (or, perhaps more accurately, invite them to begin contributing to the melodic fabric of the performance, since they have been marking time with their *mazacote* strokes all along), and a playful dance results between *tumbador* and *segundo*, beginning with a single, “proper” melody note in the *tumbador* part, measure 9, then a seven-note *segundo* passage that effectively responds to the length and complexity of the *initial* *tumbador* call. Another way of considering the *segundo* improvisation in measure 10 is that the long *tumbador* call

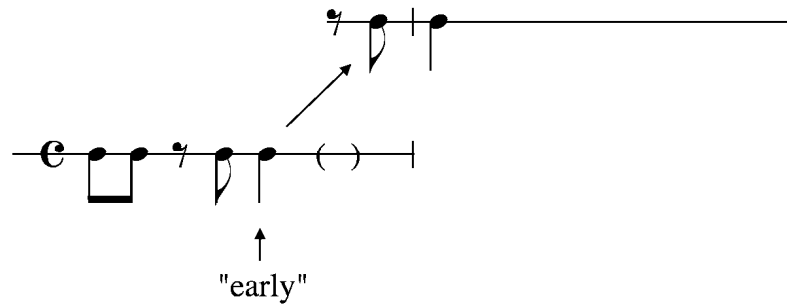
⁴⁵ Measure numbers are provided solely for ease of reference and notational felicity. Note that two measures equals one cycle of clave (one 16-cycle), which as mentioned above is consistent with typical notational conventions in much of the Afro-Cuban diaspora.

in measures 5 to 8 sets up a response-expectation, which is fulfilled by the *segundo* in measure 10.

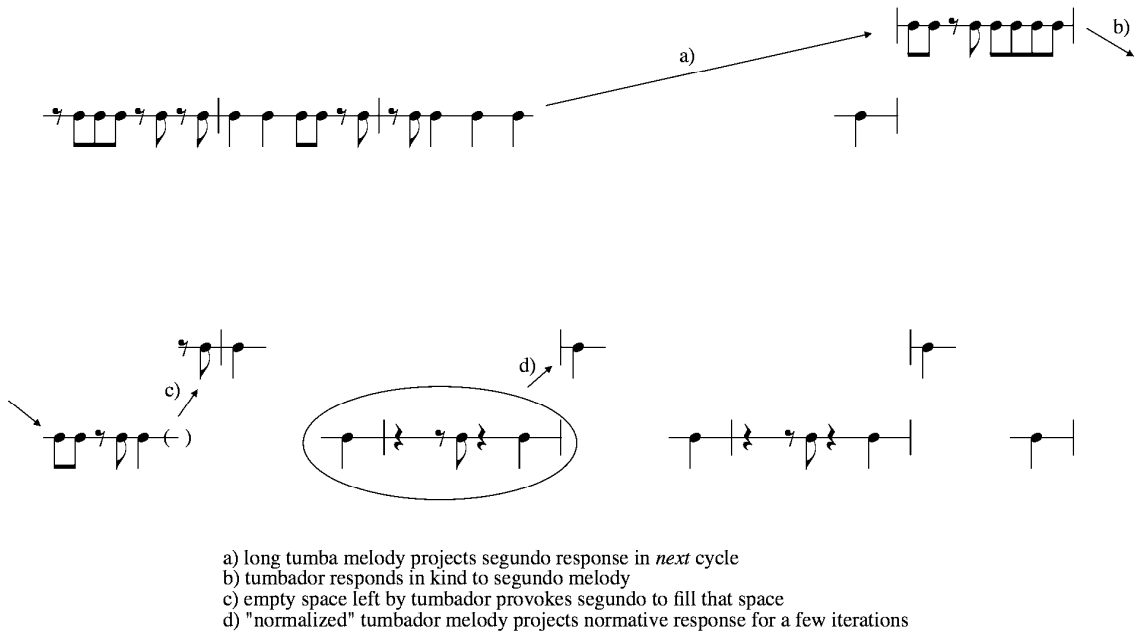
The dense *segundo* response then in turn projects a response-expectation onto the *tumbador*, toward which the latter responds with the pair of muff strokes (replacing the single prototypical open melody tone) shown in measure 11, which then signals the ornamented *segundo* response that begins with the pickup to measure 12. When the iteration beginning in measure 13 arrives, we see that the *guaguancó* melody has finally achieved its normative state; that is, the basic *guaguancó matancero* melody shown in Figure 3.2 above is presently clearly. The *quintero*, silent up to this point, immediately realizes this and begins inserting simple melodic statements, and the three-way dialogue is put fully into effect.

Also worthy of note through these opening moments is the *tumbador*'s melody note in measure 11, which is early (op <4> instead of <6>) and follows the *bomba* (the accented bass tone on the "and" of two) immediately, which itself follows the aforementioned pair of muff tones that respond to the *segundo*'s highly ornamented figure in measure 9. A second possible reading for the *segundo*'s response notes leading into measure 12, then, takes the "early" *tumbador* melody note and projects onto the *segundo* the directive (or at least the suggestion) to fill up some of the space that should have been occupied by the *tumbador* melody in its proper placement, as shown in Figure 3.15. In this diagram the arrow should be read as "asks the response to fill in the empty space left by the call."

FIGURE 3.15. PROJECTION OF “EARLY” *TUMBADOR* NOTE
 ONTO *SEGUNDO* MELODY, MM. 11-12.



The projective network shown in figure 3.16 can be drawn, then, for this entire passage, showing nested layers of projections at two temporal levels, that of the half-cycle (as, for instance, the *tumbador* melody projects onto the *segundo* response, which in turn projects its own interpretive potential onto the next *tumbador* call) and at the cycle, as melodic statements push ever forward toward the “normative” *guaguancó* gestures that begin to take shape in measure 13. One can clearly see how the attainment of normality is made that much more poignant by the striking degree to which these early melodic statements digress from expected norms, the four cross-clave *tumbador* strikes in measure 7 and the missing open tone in measure 11 representing only the most salient (and egregious) digressions.

FIGURE 3.16. PROJECTIVE RELATIONS BETWEEN *TUMBADOR* AND *SEGUNDO*.

Following this initial flurry of activity, it becomes clear that in the early part of this performance the *segundo* is comparatively well behaved, and that most of the call-and-response dialogue occurs between the *tumbador* and *quinto*, although the *segundo* does contribute in some subtle yet significant ways as the performance unfolds. Beginning in measure 23 there is an interesting exchange as the *tumbador* calls with two muff tones that invite a melodic response from the *quinto*. The *segundo* player picks up on this and mimics the *tumbador* call with two slap tones as the next cycle commences (measure 25), and the *quinto* again responds in kind. Taking care to avoid the monotony that would result from too much repetition, the

quintero does *not* respond in kind when the *segundo* repeats the call figure for the third time (measure 27); instead the *quinto* waits and responds with the *same* figure as the call at the beginning of the next cycle (measure 29). The call, then, undergoes three subtle transformations as it is passed from player to player, and to sum up the exchange the *quinto* completes the last cycle with a brief melodic response that in turn calls the *tumbador* to begin a new process of calls, as evidenced by the two muff tones that begin measure 31.

Those two muff tones, as it turns out, anticipate the next nested series of calls and responses, a process that begins in measure 35. The very salient *tumbador* call – five open tones, beginning on the downbeat of measure 35 – projects some fascinating response-implications that are taken up by both the *segundo* and *quinto*. The *segundo* responds with a double open stroke, which is one of the typical “contingent outcomes” mentioned earlier that an insider might expect in response to this particular *tumbador* call. But the *quintero*, ever quick on his toes, responds with a *mimetic* version of the *tumbador* call, and further, it commences, *stretto*-like, before the call has even finished. It is also noteworthy that the beginnings of both the *tumbador* call and *quinto* response, taken together, reproduce the *palito* part – in other words, the *palito* topos is itself being used as source material for the creation and development of melodic strands.

Another of the predictable “contingent outcomes” in the *segundo* occurs in the passage that begins in measure 41. Here we see the *tumbador* play the same melodic figure, this time employing bass tones, that began the long chain of responses in measure 23, which is answered by the *segundo*’s four open strikes.

The *tumbador* call itself is invoked, though, by the offset *quinto* strikes that precede it (the four syncopated strikes that begin in measure 39), and we see that in fact the *tumbador* and *quinto* play the measure 41 figure in unison, which reinforces the prospect that the latter figure is indeed a logical, predictable choice for a response to the prior melody. And it also reinforces the earlier proposition that this is a truly democratic ensemble – the flux of calls and responses is constantly shifting, and every response contains the potential to become a call and thereby project a new response.

One of the possible responses that a performer might choose to make, based on some strategic performative directive, is to refrain from playing, to simply sit idle and let the music breathe for an instant. A beautiful example of this occurs in the phrase beginning in measure 49, in which a long *quinto* melody provokes the *tumbador* to respond by omitting the structural melodic note of measure 50, indicated in the example by an exclamation point. Instead, the *tumbador* waits patiently for two more cycles to pass, and then in measure 55 begins playing increasingly busy, syncopated onsets. This in turn provokes a substantial increase in activity from the *quinto*; in fact, a rather astonishing display of microrhythmic virtuosity unfolds in the *quinto* part, while the *segundo* assumes the role of primary responder. This recording of “Homenaje a los fundadores” is atypical in its brevity (but *is* typical of studio recordings – perhaps it is assumed by the performers, or producers, that it will be a challenge to maintain listener interest without the visual

spectacle that the dancers provide⁴⁶), and one of the byproducts of that brevity is that the virtuosic role of the *quinto* increases at a somewhat artificial rate compared to a typical “live” performance. That is the main reason that the transcription stops where it does, although the dense and swirling texture of the ensuing passage is captivating.

We have seen call and response invoked in a number of interesting ways, but it is not yet clear exactly how responses are invoked, or why a performer might choose one response over another. We do know that performance practice suggests a finite number of contingent responses, which we can expect certain calls to project. Clear examples of this can be found between the *tumbador* call and *segundo* response in measures 35-36 and 41-42. We have seen that an ornamented *tumbador* improvisation (when the *tumbador* decides to fill the 3-side “turf” in some salient way) invites an ornamented response from either the *segundo* or *quinto* or both. We have seen that split-second response decisions are being made constantly, and even if multiple drums are improvising at the same time, rarely do they duplicate an onset. An example of this can be seen in measures 23-26, in which all three drums are engaged in dialogue, yet their parts interlock without ever overlapping. We have seen how the removal of an expected melody note invites a response to fill up that space, and conversely how a particular dense

⁴⁶ And even in the age of digital recording it is still of course common to limit the length of individual songs on a CD – like the pervasiveness of the three-minute pop song, this is a bit of interesting residue from the limitations of older recording technologies.

improvisational passage might invite a response of omission of a prototypical melody note. We have seen how responses respond to rhythm projections from the call, or to a particular kind of stroke (especially slaps inviting further slaps). We have also seen that call and response is found at a number of temporal levels besides the obvious cyclic level (the first half-cycle projecting a response onto the second half), including especially calls and responses that communicate across temporal levels. One thing that is not at all clear from the notation is how nuanced timbral or dynamic changes frequently invite mimetic responses, and we will see in Chapter Four how microrhythmic inflections (beat span traversals) frequently invite similar motions from the response.

Of the projective implications of various parts of a cycle, Zuckerkandl remarks that “the elements of meter are not equal stretches of time but differently directed phases. It is not length which makes the beat, but kinetic impulse. The condition is not that [beat two] must be equal in length to beat one, but that it shall close a cycle.”⁴⁷ Zuckerkandl describes how the kinetic energy of the beat differs from that of the upbeat (or how that of a wave’s trough differs from that of its crest); that each has a projective potential that is intricately aligned with its role in the flux of the performance. The above example illustrates that even in the comparatively opaque opening moments of a *guaguancó* performance there is much more going on than a predictable ebb and flow of directed energies: the behavioral roles of individual musical events are constantly changing, and very

⁴⁷ Zuckerkandl (1956), 175.

often what seems like a response, with all of its inherent moving-away-from implications, turns out instead to project a new responsive role onto the next event, and so on in a polysemous interweaving of call/response identities.

CUMULATIVE MOTIONS IN *SON MONTUNO* AND SALSA

One further example might serve to reinforce the notion of directed motion and its implications for the overall expressive shape of a performance. In Chapter 1 we described how in *son montuno*, and in the modern dance music that derives from son montuno,⁴⁸ the surface level musical phrasing is often constructed in such a way as to wrap around clave; that is, the phrase lengths serve to recast the halfway point of a clave cycle as a new perceived downbeat. This can be achieved in many ways: a percussion breakdown, an explosive horn section *bloque*, or, in a manner that recalls Koch's expansions and contractions of basic phrase models, simply an appended phrase suffix by means of an added half-cycle, or the elision of two phrases whereby the end of one becomes the beginning of the next. A very common practice in *son* is for a performance to begin in "3-2"⁴⁹ clave and then eventually transform into "2-3," perhaps with subsidiary, local, changes along the

⁴⁸ (most often referred to colloquially as salsa, although this generic term subtends numerous contemporary performance genres, including *pachanga*, *guaracha*, *boogaloo*, *cha cha chá*, and many others)

⁴⁹ In addition to the projective reasons to be described momentarily, many songs start out in 3-2 clave simply because it is desirable to begin with the strong downbeat of the 3-side rather than the open, empty downbeat of the 2-side (about which see the Patato Valdez analysis in Chapter Four below).

way. But one constant is that this final transformation into 2-3 clave is coterminous with the increased intensity of the *mambo*, or *estribillo*, or *coro-soneo*, which are marked by an increase in volume as both the *bongocero* and *timbalero* switch to bell, and often a subtle increase in tempo as well.

What is most striking about this transformation is that the topos that accompanies clave, played by the *timbalero* (and the layer that is directly analogous to the *palito* level in the *rumba* examples above), changes dramatically in several ways, as shown in Figure 3.17 [**Sound Example 23**].

FIGURE 3.17. 3-2 CLAVE WITH *CASCARA* TOPOS, 2-3 CLAVE WITH BELL TOPOS.

a)

clave

cascara

tumbao

b)

clave

bell

tumbao

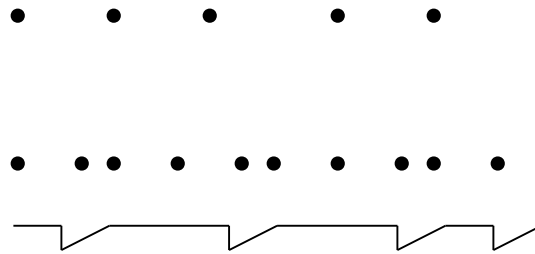
First, the timbre (and the dynamic level) changes: the *cascara* part, shown in the second system of Figure 3.17a, is played on the side (the “shell”) of the *timbal* while the topos shown in the second system of Figure 3.17b is played on the cowbell. It should go without saying that the second is considerably louder as well.

The pattern itself changes too, and the projective results of that change have interesting ramifications for the dynamic flux of the music. Part of this change has to do with the dynamic envelope of the added topos. If we renotate the *cascara* part as a series of longs and shorts; that is, as <2122122121> parsing the 16-cycle, we notice that the performer's interpretation results in each short leading into the long that follows it, or in other words the short is played at a slightly softer dynamic level than the longs that surround it. Since the shorts are as maximally distributed as they can be in the 16-cycle, the net result that the topos is relatively unmarked, dynamically speaking. The bell topos, on the other hand, parses the 16-cycle as <221112111211>, with the most salient aspect of its dynamic envelope being a crescendo through each series of shorts. The overall effect, then, of the *cascara* pattern is of comparative stasis (although see Iyer's comments regarding James Brown's music above), while the dynamic ebb and flow of the bell pattern is much more pronounced.

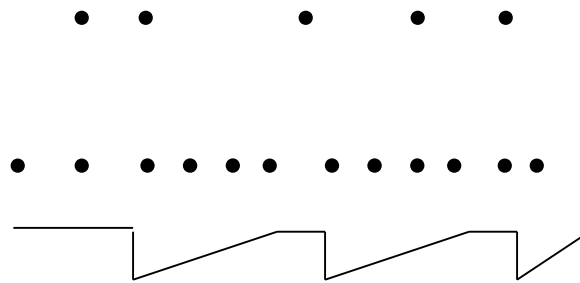
Furthermore, the distribution of attack points among the two topoi, when taken in tandem with clave, suggests a subtly stronger kinetic push in the bell topos (with its, in Narmourian terms, comparatively cumulative rhythmic impetus), an acceleration that pushes toward the next cycle. Again, this effect is intensified by the crescendo with which the player interprets the shorts. Figure 3.18 shows the distribution of attack points that result when clave and its secondary topos, either *cascara* or bell, are taken in tandem. The dynamic envelope that unfolds through each cycle is given as well.

FIGURE 3.18. DISTRIBUTION OF ATTACK POINTS AND DYNAMIC ENVELOPES IN TWO SON TOPOI.

A) 3-2 clave with *cascara*



B) 3-2 clave with bell



op: <0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 >

Most notably, figure 3.18a shows that a single attack point is left unfilled at op <14>, whereas in its counterpart in figure 3.18b that op is filled, which leads toward the perceived cumulative increase described above. This resonates with the

cumulative nature of the 2-3 clave layer itself, since as described above 2-3 clave has a stronger projective implication toward the next cycle than 3-2 clave, which can be regarded as somewhat conmetric or anapestic in nature. We also see that the dynamic envelope is both larger (the dynamic extremes are greater) and more focused toward the end of the cycle. These phenomena taken together result in a significant increase in the directed motion that points toward the next cycle beginning.

Husserl, describing how present events are colored by the behavior of past events, remarks that “as an essential *a priori* phenomenological formation [*Genese*] memory is in a continuous flux because conscious life is in constant flux and is not merely fitted member by member into the chain. Rather, everything new reacts on the old, its forward-moving intention is fulfilled and determined thereby, and this gives the reproduction a definite coloring.”⁵⁰ But not only does the new react on the old (even, as we have seen, the very-recently-old), but the new points to the new new, which corresponds directly with Hasty’s now-present becoming a now-past and thereby influencing the new now-present. Furthermore, each intention does not direct solely to the next “now” – it is not merely a chain of projections (Husserl’s chain of “associated” intentions), but rather “an intention which in itself is an intention toward the series of possible fulfillments.”⁵¹ In other words there is

⁵⁰ Husserl (1964), 77-8.

⁵¹ *Ibid.*

a “unitary intention which is based on a multiplicity of interconnected objectivities and in which a discrete and manifold givenness comes gradually to fulfillment,” this fulfillment being, in *guaguancó*, the satisfactory unfolding of projected directed motions and melodic gestures that contribute toward a performance that, ideally, reflects a unitary intention on the part of all of the ensemble’s members. Or in other words, an ideal improvised performance that unfolds as cleanly and logically as a composed one, with a flux of intentions-intending-intentions, flowing forth toward a future continuation and eventual conclusion, in constantly overlapping and dynamic intentionality. This progression of nested intentions behaves, then, as a single unitary thread that recognizes the multiplicity of individual directed energies that all ultimately point toward the “discrete and manifold givenness”⁵² of the performance as a single, complete gesture.

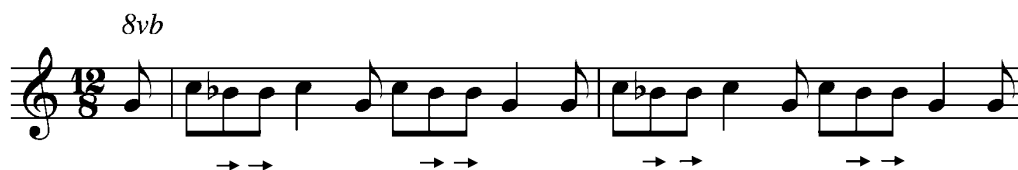
⁵² Ibid.

4. Beat and Beat Span in *Rumba*

The cardinal principle of African music is the clash and conflict of rhythms.¹

Patato Valdez begins his groovy, ethereal “Desde el fondo del rio” with the conga melody shown in Example 4.1 [Sound Example 24], which clearly and unequivocally outlines a 12/8 metric construct (or a 12-cycle) and which as such projects a number of protensive implications on the immediate future of the performance.

EXAMPLE 4.1. BASIC CONGA MELODY FOR “DESDE EL FONDO DEL RIO.”²



These protensive implications include at the very least “will continue outlining 12/8” and “will likely continue as an embellished version of the prototype thus given;” that is to say, the conga melody will function as a kind of template and that

¹ Jones (1954), 27.

² On Patato Valdez, *The Legend of Cuban Percussion*. Six Degrees CD 1027, 2000. The example is written in pitched staff notation for a strategic reason that will be revealed shortly. The left-pointing arrows in this and subsequent examples indicate nuanced microrhythmic deviations from the notated meter.

we should be able to regard increasingly complex statements, if present, as elaborations of this fundamental design in much the same way that we saw the *segundo* and *tumbador* improvisations in Example 3.3 above as elaborations of a fundamental melodic structure. And indeed, as the performance unfolds we realize that this is the case. As *chekere*, bass, and snare drum enter in turn, the 12-cycle rubric best represented by a 12/8 time signature is firmly established, culminating in the ensemble texture shown in Example 4.2 [Sound Example 25].

EXAMPLE 4.2. “DESDE EL FONDO DEL RIO,” 0:26.

The musical score for Example 4.2 is presented in four staves, all in 12/8 time. The bass staff (bass clef) shows a melodic line with a slur over the first four notes: a dotted quarter note, a quarter note, a quarter note with a flat, and a dotted quarter note, followed by a whole note. The chekere staff (percussion clef) shows two quarter notes with a 'y' symbol. The snare drum staff (percussion clef) shows a rhythmic pattern of eighth notes with stems pointing down, grouped in pairs with arrows below. The congas staff (treble clef) shows a melodic line starting with a rest, followed by a dotted quarter note marked *8vb*, and then a series of eighth notes with stems pointing down, grouped in pairs with arrows below.

A quick comparison of the two examples reveals a curious inconsistency as far as the visual presentation of the conga stratum goes. In Example 4.1, the beginning-point of the conga melody is shown to be a one-density-referent anacrusis to what appears to be a structural downbeat, while in Example 4.2 that originally-apprehended beginning-point has been rotated to op <2>. Two questions arise from this perceived rotation: why did we entrain to the beginning-point shown in the first example, and what happened to make our perception change?

I initially heard Valdez's conga melody in the rotation shown in Example 4.1, and many repeated listenings have done nothing to deny, or even alter, this perception, even when listening with the knowledge that the downbeat-entrainment shown in Example 4.2 will ultimately prevail. Perhaps this is because the low-high relation between the two initial attack points suggests to me that the first somehow leads to the second in a manner analogous to the dominant anacrusis to a tonic arrival (and the interval of a perfect fourth between the two open tones only abets this reading).³ Or perhaps it is because as a listener I am not yet prepared cognitively for what will soon be revealed as a silent downbeat: as much as downbeats are downplayed in so much diasporic African music (about which see Chapter One), it is undeniably difficult to ascribe an empty downbeat that begins a performance, and in this case there is simply not enough musical information at the start of the performance to imagine where that downbeat might even be. This is not

³ Knight (1974) might agree grudgingly with this rationale, as much of his thesis concerns timbral and tonal (in the sense of tones, not tonality) relationships between instruments in West African drum ensembles.

an isolated case, although I have found that decisions like these have to be made more frequently in West African music than in Afro-Cuban music (this might of course also be due to differences in the degree of my embeddedness in the two traditions, but I think that most would agree that downbeat-entrainment in West African settings can sometimes be an elusive prospect). What this begins to illustrate, though, is that when confronted with a listening situation like that of the opening seconds of “Desde el fondo del río,” we must in a sense assert a downbeat *retentively*; that is, after we have already heard, and while we continue to hear, some small amount of music. In other words, our experience of a downbeat-entrainment emerges as part of the retentive aspect of our now-perception. But we are doing this while also making judgments about it *protensively* – we are predicting what will happen once that downbeat occurrence launches the periodic structure of the cycle in motion. In doing so we are expanding the horizon of our now-present experience: *now* is not a tiny point in time⁴ but a broader envelope of time that is at once approaching and receding, and, most important, we are apprehending that span of time *all at once*.⁵ *Now* lasts perhaps a few seconds, and includes both a very recent past and an immediately immanent future. We will return to this now-perception shortly.

⁴ Hasty would even say that *now cannot* be a tiny point in time, since that point is by definition infinitely small and therefore has no duration (Hasty 1997, 70-71).

⁵ In fact it is cognitive situations like this that seem to call for the present indicative as a convenient way to interface with the present as a span of time. “*We are* apprehending...”, meaning that the act of apprehending is not just something that we do, but something that we have been doing and will continue to do for at least some small contingent future.

That our initial perceived downbeat turns out to be wrong is less important phenomenologically than the fact that we arrived at that conclusion by calling on our ability to interpret our present-perception of time as a *span* rather than as a finite location with a definable point at which *before* ends and a predictable point at which *after* begins. This is in some part due to the fact that our perception of present includes both the re-presentation (the making-present again) of past events and the prediction of contingent future events. In this way of thinking, past and future are also present realities; Clifton observes, for instance, that time is not unidirectional or irreversible, since we “re-present the past phenomenally: we can relate it to the present without confusing it with the present.”⁶ But even more so, when we regard the present, after Husserl, as a *horizon* of experience, we fold some essences of past and future into the *actual* present experience – past is not merely re-presented in the present, but it actually *is* present in some fundamental way.

Clifton describes the horizon of experience as:

a temporal background [or] the temporal edge of a single field, which itself may enclose a multitude of events interpreted by the experiencer as belonging to this field. The horizon may be regarded as a field of presence, filled with a content which may be purely phenomenal.... This indicates that the temporal horizon has a dilatory character: in everyday language, we speak of “the business day,” “the work week,” or “the fiscal year.” These terms help define the limits of what we mean by “now.”⁷

⁶ Clifton (1983), 55.

⁷ Ibid., 57.

Numerous authors have made the observation that in many cultures there are very different ways of time-reckoning that can, and do, coexist easily, as in Agawu's invocation of "5:30 p.m. vs. late afternoon" or Kramer's description, after Park and others, of the nonlinear languages of Bali and the Trobriand Islands.⁸ What Clifton's, Agawu's, and Kramer's examples illustrate is that a post-Husserlian concept of horizon is not nearly as radical as it sounds; we conceive of the present as a span of time in all sorts of real-life situations. We can speak of many musical situations, too, in which we construe as simultaneous – and move freely between – different time-apprehensions: "I am playing this note," "I am playing this phrase," "I am playing this movement," "I am playing this composition," "I am playing this concert." In fact one of the basic tenets of Schenkerian analysis, although not explicitly stated as such, is that we can and must regard our experience of a composition (as performers and listeners) in exactly this way. Of course the fundamentally asynchronous nature of a Schenkerian ontology might seem to place it at odds with the epistemological vantage-point of the current study, but both share some important defining features, including an understanding of, and an attempt to describe, the teleological aspects of musical process, an emphasis on the role of improvisation in defining that teleology, and the recognition of the co-existence of alternate time-reckonings (and their rich interconnectedness) as among the most significant components of the experiential and analytical process.

⁸ Agawu (1995), 24. Kramer (1988), 24. It is curious that few authors acknowledge the fact that the intersecting use of differing, even contradictory modes of time-reckoning is true of, and pervasive in, Western culture as well!

Returning to the opening of the Valdez performance, it is significant that even in our misconception about the beginning-point of the cycle we did entrain to the pattern in a way that is consonant with the metric pulse; we still felt a beat as the same beat that we asserted ultimately as primary in the four-pulse metric interpretation of the 12-cycle. This suggests another potential reading of the opening of the performance: perhaps our initial downbeat-construal *is* correct, if briefly, but then as new strata enter the performance material rotates three points along the 12-cycle to establish a new (real or perceived) downbeat, as described in Chapter One’s narrative on shadow meters and pendular clave relationships. Assuming that the downbeat entrainment that dominates beginning at 0:26 is the *real* downbeat (by virtue of the fact that it remains the dominant downbeat entrainment for the remainder of the performance’s seven minute duration), then we have, in this reading, a “shadow meter” beginning that stands in for, and is soon displaced by, the real meter.⁹

Only a few seconds later, a much more significant metric curiosity than the simple recasting of downbeat-reckoning emerges. At 0:34 the flutes enter and immediately establish the *16-cycle* terrain shown in the top two systems of Example 4.3 [**Sound Example 26**]. We will soon discover that the same conception of now as a horizon of experience will manifest in very significant ways at the microrhythmic *beat span* level.

⁹ This is at least loosely analogous to the concept of a non-tonic beginning in tonal music.

EXAMPLE 4.3. "DESDE EL FONDO DEL RIO," FLUTE ENTRANCE AT 0:34.

The musical score is arranged in two systems. The first system includes staves for flutes, bass, chekere, snare, and congas. The second system includes staves for flute, bass, chekere, snare, and congas. The key signature is two flats (B-flat and E-flat), and the time signature is common time (C). The flute part features a melodic line with slurs and accents. The bass part has a steady eighth-note pattern. The chekere part uses a 12/8 time signature and features a rhythmic pattern of eighth notes. The snare part also uses a 12/8 time signature and features a rhythmic pattern of eighth notes. The congas part uses a 12/8 time signature and features a rhythmic pattern of eighth notes. The score is written in a standard musical notation style with various symbols and markings.

When the flutes enter, the bass joins them and together they establish the terrain of the new metric stratum (the 16-cycle, represented as 4/4 in the example). But as the example shows, this new metric layer does not replace the existing 12-cycle stratum; rather, the two begin to engage in an easy coexistence. The snare drum and congas clearly continue to outline a somewhat nebulous 12-cycle (that is, even though they remain clearly in the 12-cycle terrain, they adhere to it rather loosely, for reasons that will be described shortly), while the flutes and bass (and, after a few more cycles have passed, *timbal* bells) traverse their newly-established 16-cycle terrain unequivocally. The result is a basic metric unit that is actually measured by two coextensive cyclic grids.

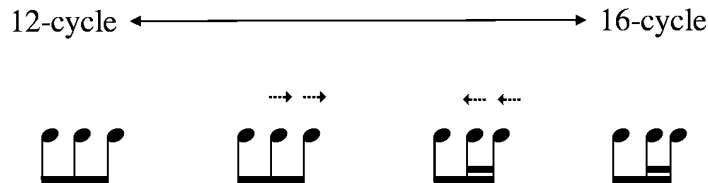
BEAT SPAN DEFINED

Chapter Two concluded with a brief analysis of Maraca's "Yoruba Song," focusing on superimposed metric strata that unfold as coextensive cycles of twelve and sixteen timepoints respectively and beginning to demonstrate how such superimpositions – whether explicit, as in the Maraca and Patato examples (both strata present either at the same time or in alternation) or implicit, where one strata is dominant but the other tugs at it in subtle ways, as will be shown in some examples below – both behave and influence musical decisions. This chapter will examine several very different musical situations in which the two strata coexist. At times both are stated overtly, as in the two examples mentioned above and

especially in the case of *rumba columbia*, which will be scrutinized toward the end of the chapter. At times one stratum dominates but the other exerts a subtle gravitational pull, as we will see is often the case when *rumberos* play *son*, salsa, or latin jazz, or any time in which a performer wishes to invoke the rhythmic substrate from the complementary layer. Most often this occurs when a subtle 12-cycle inflection occurs in the context of a dominant 16-cycle terrain, but the converse obviously can happen as well, as Peñalosa has observed in his description of the 16-cycle interpretation of the standard pattern that occurs rarely in certain Afro-Cuban and West African practices.¹⁰ Valdez's opening conga melody, for instance, is notated in 12/8 in Example 4.1, reflecting its mapping onto the 12-cycle, but even in the early moments of the performance the latent 16-cycle stratum exerts a subtle pull. In other words, the way in which Valdez stretches the second and third onset of every three-note motif might be thought of as a rhythmic compromise that falls somewhere along a spectrum represented by a 12-cycle interpretation at one extreme and a 16-cycle at the other, as shown in Figure 4.1.

¹⁰ Peñalosa (2009), 65.

FIGURE 4.1. FOUR INFLECTIONS OF THREE-NOTE MOTIF.



In “Desde el fondo del río,” the new layer (the 16-cycle) becomes the most salient layer, but the 12-cycle never completely disappears; it is always present even if it recedes slightly into the background compared to the dominant 16-cycle. This is a case, then, of the real superimposition of two metric grids, and the performers (especially those that are not directly occupied with establishing one grid or the other) behave appropriately, playing rhythmic ideas that at various times list in one direction or the other; that is, toward the 12-cycle or 16-cycle limits of the *beat span*. Example 4.4 [Sound Example 27] offers three passages in which pianist Rebeca Mauleón plays montuno-like figures, ostensibly in 4/4, that in a variety ways, and at varying points along the cyclic terrain, hint at the 12-cycle’s subtle influence.

EXAMPLE 4.4. THREE EXAMPLES OF METRIC ENTRAINMENT IN
 “DESDE EL FONDO DEL RIO.”

A) 1:12 to 1:18

B) 3:15 to 3:22

C) 3:38 to 3:49

The musical score consists of three systems, each with a treble clef staff and a bass clef staff. The key signature is three flats (B-flat, E-flat, A-flat). The first system shows a melodic phrase with a delayed onset. The second system shows a similar phrase with a different rhythmic pattern. The third system shows a melodic phrase with a delayed onset.

In Example 4.4a, Mauleón's second and fourth onsets are delayed in the first phrase, while in the second phrase four onsets (the fourth, fifth, sixth, and seventh) pull against the 16-cycle grid. It is very interesting that in three of these cases the delayed onset clashes with the *rumba* clave topos (given in the bottom system of the example). In the first phrase of Example 4.4b, as Mauleón begins to gradually introduce the *montuno* that will finally take shape a few cycles later, the 12-cycle exerts a strong enough influence that three onsets are actually notated as quarter-note triplets (that is, they line up perfectly with density referents in the 12-cycle).

The last three onsets of the second phrase then pull against the 16-cycle stratum in a manner that sounds like an brief surface-level deceleration (about which see the discussion of Benadon below) against the fixed metric grid. Again, the result is that the very idiomatic two-quarter-note arrival on the 2-side of clave occupies a significantly later part of the beat span than the performed clave topos itself.

Example 4.4c shows the beginning of a more clearly developed *montuno*, and we can see an interesting progression unfold as Mauleón’s rhythmic interpretations gradually settle on something close to that asked for by the prevailing 16-cycle stratum. In the first phrase, Mauleón omits the first *montuno* onset and likewise leaves a rather large, and quite striking, countercumulative space in the fourth notated measure.¹¹ She duplicates this pause in her second phrase as well, although she begins this second phrase with a very strong downbeat-beginning. She also plays with the listener’s expectations about metric entrainment: in the first phrase she displaces her seventh onset by moving it to a saliently earlier part of the beat span; the result is that the seventh onset appears very close to its equivalent 12-cycle location. Mauleón displaces three event onsets, however, in the first half of her consequent phrase, while the latter half entrains firmly to the 16-cycle grid. Finally, Mauleón’s third phrase – which represents the first of several complete *montuno* iteration that are not shown in the example but which can be heard in **Sound Example 27** – is marked by the beat span displacement of two

¹¹ Note that “phrase” is used rather loosely here, referring to a musical gesture that occupies about the space of one breath. Mauleón’s phrases through this passage generally occupy the space of two clave iterations.

events, one presented just before its 16-cycle representation and the other just after (in both cases edging the onset in question closer to the 12-cycle grid).

The metric terrain of “Desde el fondo del rio” can be described as the real superimposition of 12-cycle and 16-cycle strata. The foregoing narrative describes the piano part in terms of beat-span deviations from the 16-cycle grid, but that is largely due to the fact that through most of the performance the piano is among the group of instruments (including flutes, bass, and timbal bells) that *do* measure against the 16-cycle stratum. The fact that salient parts of the piano *montuno* stray from a 16-cycle representation is significant, as is the fact that they do so in order to lean toward their 12-cycle metric counterparts. Likewise, Valdez’s conga melody and Changuito’s snare drum offer subtle evocations of their own latent 16-cycle representations, as evidenced by the way in which they pull and stretch against their own dominant 12-cycle grid. It is clearly not enough to say that the 12-cycle and 16-cycle are simultaneously present, because the actual performed music events that traverse them are metrically influenced to varying degrees by both.

Conversely, Maraca’s “Yoruba Song” unfolds for the most part as an alternation between the two cyclic strata, although there are both passages in which they coexist and transitory passages in which a performer hints that the new stratum is about to be invoked. Example 2.4 from Chapter Two describes one such passage: Maraca’s flute solo that effects a transition between a dominant 12/8 passage and one in 4/4. Footnote 51 from Chapter Two hinted at a subtle metric

inflection in Irving Ferreyro's piano *montuno* (and the subsequent percussion *bloque*) that immediately follows Maraca's solo, which is now shown in Example 4.5 [Sound Example 28].

EXAMPLE 4.5. "YORUBA SONG" PIANO BREAK.

The musical score for Example 4.5 is presented in three staves. The first staff shows a piano break in 2/4 time, featuring a series of chords and melodic fragments. Arrows point left under the first three measures, and an asterisk is placed under the fourth measure. The second staff continues the piano part, starting at measure 5, with arrows pointing left under the first three measures and a double asterisk under the fourth measure. The third staff, labeled "(drums and congas)", shows a rhythmic pattern with an arrow pointing right under the final measure.

Throughout this passage (that is, through the end of the improvised flute solo that precedes the piano break that the example shows, and continuing on into the *coro/sonéo* that follows¹²), the 16-cycle is the dominant layer, but the 12-cycle clearly exerts its influence. This is evident in the lilt of the piano performance through the break, and in the percussion *bloque* that leads into the *coro/sonéo*, and

¹² See Example 2.4 above (pp. 155-7) to contextualize this passage.

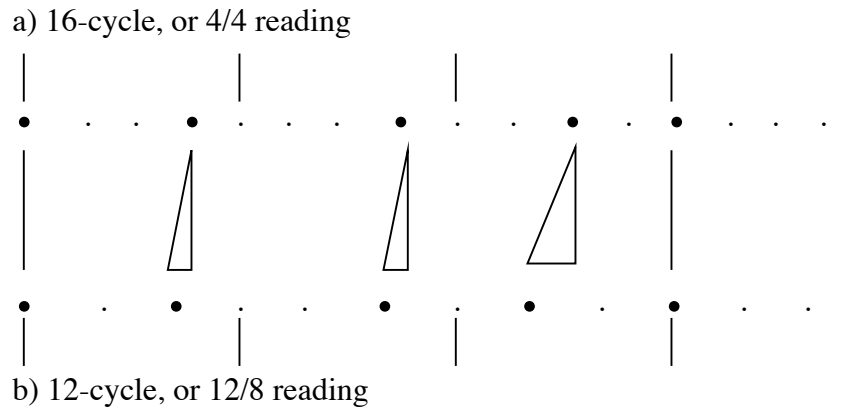
like Example 4.4 above is illustrated in the example by the small horizontal arrows beneath certain notes, which indicate respectively that the third piano *montuno* onset in each measure occurs slightly earlier than a literal reading of the notation suggests, and that the final *bloque* onset is delayed slightly (or “laid back”). The piano *montuno* phrasing therefore corresponds to Changuito’s snare drum phrasing in the Valdez examples above. In this case, however, the performed rhythm is interpreted as a transformation of a basic 16-cycle model, with each third onset anticipating the point in the grid at which we would expect to find it in a quantified, isochronous setting), while in “Desde el fondo del río” the third snare drum onset was realized as a delayed version of its 12-cycle representation. In both cases the notated interpretation reflects the way the music asks us to entrain to it; that is, it reflects the fact that we hear it as a transformation of the n-cycle stratum that is dominant at the point of its entry.

Three more details merit mention. First, a vastly different strategy is employed in the “Yoruba Song” piano break, regarding how the 12-cycle beat span representation is addressed. While Mauleón’s performance involved a great variety of nuanced moves across beat spans, Ferreyro deliberately, and consistently, inflects the third of every group of four onsets in the direction of the beat span’s 12-cycle limit. Second, in the fourth notated measure, a variation of the regular *montuno* figure is presented, and in this case the performers adheres strictly to the 16-cycle grid: the third onset lines up evenly with the abstract grid. This event is marked with an asterisk, and a close listening will reveal that it actually sounds *late*

in relation to the three corresponding events that precede it – an interesting phenomenological illusion. A third detail is found in measure 7 in Example 4.5, in which Ferreyro’s onset that anticipates op <3> of the 16-cycle and the percussion *bloque* (played by drum set and congas in rhythmic unison) that lands squarely on op <3> actually clash metrically; that is, they form one of the “near-simultaneities” described in Chapter Two, hinted at in a similar description following Example 4.4 above, and about which much more shortly. This is marked by a double asterisk in the example.

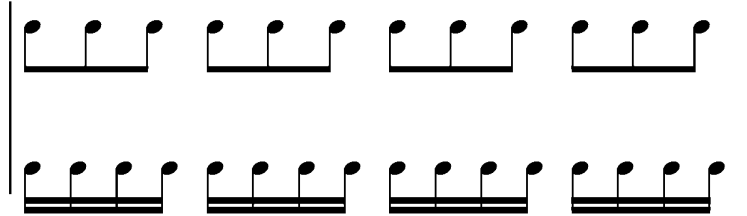
So in the case of the “Yoruba Song” piano *montuno*, we see that the 12-cycle stratum is exerting some kind of a gravitational pull on the dominant 16-cycle stratum, continually pulling a single event onset away from a strict adherence to the metric grid. Before examining exactly how the 12-cycle’s influence is felt, though, we should once again address the concept of beat span in order to understand how it works from a performative standpoint.

In Chapter Two, beat span was shown to derive from the “near-simultaneities” that formed from the superimposition of two metric interpretations of the *rumba* clave topoi. Figure 4.2 reproduces Figure 2.14 from Chapter Two, and illustrates the two simultaneities and three “near-simultaneities” that result when the 12-cycle interpretation and the 16-cycle interpretation of *rumba* clave are layered.

FIGURE 4.2. SUPERIMPOSITION OF “4/4” AND “12/8” *RUMBA* CLAVE.

This model serves as a useful starting point for an investigation of beat spans, but it is obviously limited in scope since it only actually offers three variable spans of time within which a rhythmic event might be placed. In order to proceed we need a more generalized model that allows us to traverse across beat spans at any point along the cycle's topography. In drawing such a model we might begin with the simple superimposition of density referents that comprise both cycles, such as the arbitrary (but commonplace) metric rendition of nested 12/8 and 4/4 layers shown in Figure 4.3.

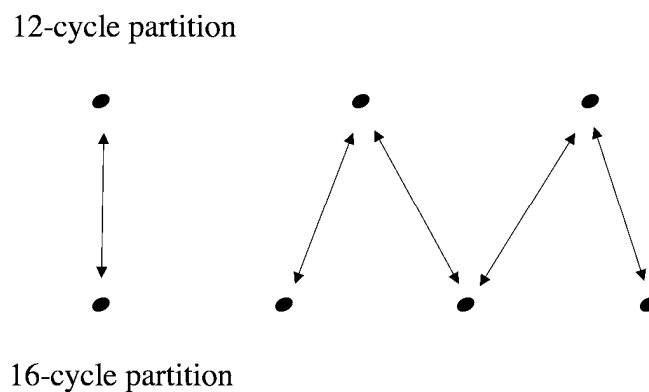
FIGURE 4.3. VISUAL REPRESENTATIONS OF THE
12-CYCLE / 16-CYCLE SUPERIMPOSITION.



As Figure 4.2 suggests, we can fairly compare the two strata in terms of the similarity of their four-beat partitions (the 3-cycle that segments the 12-cycle stratum and the 4-cycle in the 16-cycle stratum, shown in the particular way in which the n-cycle groupings are beamed); this is of course due to the co-occurrence of the beginning-points of each subcycle. We cannot assert a 16-cycle parallel to the 4-cycle partition of the 12-cycle since the 16-cycle obviously does not divide into three (or six, for that matter, to complete the trio of subcyclic partitions given in Chapter Two). But as we compare the four-beat partitions shown in figure 4.3, we can make some interesting observations about the nature of the relationships among individual and groups of attack points between the strata, and we can explore what those relationships might mean from a potential performative standpoint, such as the fact that the first events of each partition exist in a one-to-

one correspondence while the remaining events (the near-simultaneous events) have a more complex web of beat span implications, since each second and third event of the 12-cycle has the potential to correspond with more than one event in the 16-cycle, as shown in Figure 4.4. It is also worth noting that in each of the latter potential beat span limits there is one cross-cycle mapping that is closer temporally, and that therefore might possibly stand in as a more likely candidate for beat span entrainment, than the other. As Figure 4.3 illustrates, op <1> of the 12-cycle is nearer to the 16-cycle's op <1> than it is to op <2>, and conversely op <2> of the 12-cycle has a slightly closer affinity with the 16-cycle's op <3> than it has with op <2>. We will examine shortly how the mapping of the three 12-cycle onsets onto the corresponding first, second, and fourth 16-cycle events forms the basis of an important analytic (and performative) ambiguity.

FIGURE 4.4. MULTIPLE BEAT SPAN POTENTIALITIES IN THE 12-CYCLE / 16-CYCLE SUPERIMPOSITION.



We can also make an argument therefore, from the point of view of a stratified model of metric entrainment, for the structural significance of the four-beat traversal of the cycle, precisely because of the co-occurrence of event onsets at those points in both layers.¹³

It is worth noting that there is no attempt here to construct a model that is in any way mathematically rigorous, since the nature of the music in question does not readily conform to, say, precise measurements in milliseconds, or fractions of distances along some sort of measured beat span segment. Another way of saying this is that the malleability of the musical flux, the subtle and nuanced way in which the two metric strata gently tug on the actual performed musical objects, is such that precise measurement is not only futile but also yields little useful information for the analyst. This is very much in accord with Clifton's concerns about time-perception and the utility of abstract, measured time, which he asserts does not exist as a valid cognitive tool:

[O]bjective time (or real, or absolute time) is a contradiction in terms. It presupposes the existence of a time which exists independently of us, and of a "time sense" whereby the person perceives this time.¹⁴

In other words, Clifton does not accept a conception of time apart from the objects – including the perceiver; perhaps the most important object! – that exist in time, or

¹³ Of course, as discussed frequently above, the four-beat traversal is significant too because it coincides with the structural movement of the dancers' feet.

¹⁴ Clifton (1983), 51.

in which time exists.¹⁵ Some theorists will find the preceding and subsequent narrative maddeningly imprecise, with such vague descriptive terms as “a little later than,” “just before,” and “shading toward.” But these are precisely the terms that are required for such descriptions. It is not the fact that an attack point is displaced by $n\%$ or by x milliseconds or by a $y:z$ ratio as much as the observation that the gravitational force of the contrasting stratum is pulling the attack point away from a quantifiably measurable grid. It is equally important to recognize that the performer is doing this consciously, strategically, and playfully: to perform rumba – or any highly interactive improvisational music – at a high level is to have absolute control of one’s physical, intellectual, and artistic performance materials (including, I am asserting, a conception of time as horizon and a profound awareness of how one might choose to occupy any point of that horizon when traversing the 12-cycle / 16-cycle nexus), to have a concrete idea about how the performance is going to unfold (and an empathetic relationship with one’s fellow performers – including of course the dancers! – that allows one to make subtle adjustments to one’s conception of the performance direction when the necessity arises), and to have the lightning reflexes and playful attitude that one has when playing a game. Sometimes this last consideration can unfold as simply as a responsive figure that answers the nuanced rhythmic shape of a call (the answering performer in essence saying “yes, I heard you,” by responding in kind). Sometimes

¹⁵ Clifton continues: “In addition, the motivation behind the activity of timing indicates a confusion about whether the composition is in time, or whether time is in it” (Ibid.).

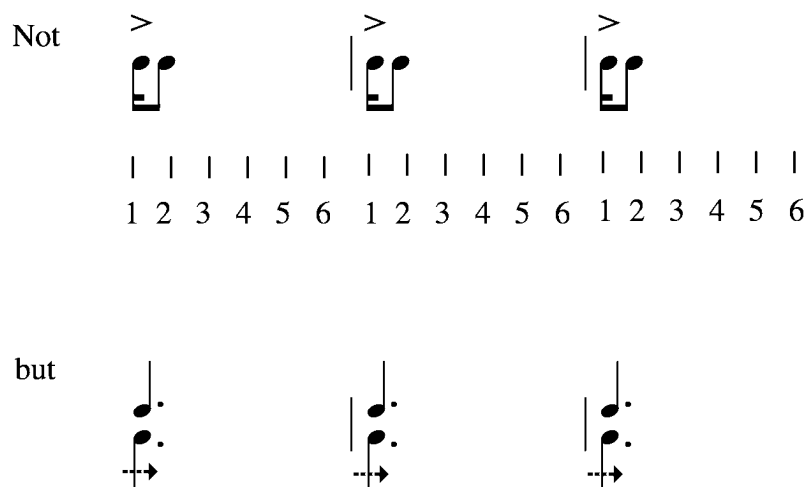
the response will be an exaggerated version of the call (or an exaggerated version of one of the contingent response-figures requested by the call, as described in Chapter Three), which may or may not provoke a dialectic exchange of increasingly nuanced melodic figures. We saw examples of both of these in Example 3.3 above, and we will see more in the examples that follow.

The notion that performed rhythms behave as subtly inflected versions of prototypical rhythms is corroborated in an early study by Gerhard Kubik. Kubik describes an important performative stratum of Mangwilo xylophone music as “a series of *slightly dragged notes*,” a second pulse layer that “lag[s] behind both bass notes and vocal part in a very subtle manner.”¹⁶ Kubik goes on to demonstrate how conventional means of Western notation do not capture the essential relationship of this pulse stratum as a nuanced variant on the fundamental pulse layer: “these notes are literally felt to ‘lag shortly behind’ the real pulse, and *not as standing on any definite point of division* of the basic pulse. In other words, you do not count.”¹⁷ He then offers the two illustrations reproduced in Figure 4.5, the first of which demonstrates how *not* to feel the perceived “double beat,” and the second revealing a new notational directive that clearly has much in common with that introduced herein.

¹⁶ Kubik (1965), 41. Emphasis in original.

¹⁷ Ibid. Emphasis in original.

FIGURE 4.5. TWO NOTATIONAL INTERPRETATIONS OF MANGWILO XYLOPHONE STRATA, AFTER KUBIK (1965).



The “double beat” that Kubik describes, the latter of which “lags shortly behind” the actual pulse layer, clearly has parallels in Afro-Cuban practice. Kubik does not consider a superimposed (even latent) 16-cycle stratum that is responsible for at least some of that lagging-behind, but neither does he offer another rationale, other than that is how performers “feel” it. And he makes no attempt to try to measure the distance between event onsets using durations or ratios; indeed the whole point of his foregoing narrative is that it is not in the spirit of the performance practice to do so. Kubik continues:

But the reader may now ask an important question: *how much* ahead is it played? The only answer I can offer is “a little.” Just consider the speed of this music! At 320 m.m. nobody can divide his pulse by

five or six and then count these divisions. If we look at the graphic scores¹⁸ we can see that the value of displacement from the main pulse fluctuates between $1/5 - 1/6$ part of a crotchet. It is never so large as to make the note fall on one of the common divisions of beat either by three or four.¹⁹

It is the fact that the deviations fluctuate, that they breathe, that they pull playfully and strategically toward and away from the dominant pulse layer, as well as the fact that the fluctuations are very small and nuanced, that suggests we should not concern ourselves overly with exact measurement, in *rumba* or in any African or diasporic context.

In a sense *rumba* is similar to *capoeira*, in that the roles of the performers are constantly changing, albeit much more quickly and subtly than in the latter. Of the three drummers, the *quinto* generally fills the role analogous to the master drummer in West African traditions, and therefore assumes the preponderance of the improvisational duties and the most responsibility for the overall dramatic direction of the performance, but there are many instances in which the *quinto* players steps aside (figuratively of course; unlike *capoeira* no one actually leaves the performance arena while the performance is in motion!) to allow the *segundo* or *tumbador* to assume the foreground role for a few beats, or a phrase or two.

¹⁸ Kubik is referring to the “graphic scores” that follow his description (p. 44ff), in which he represents a number of performance excerpts by locating the performers’ attack points along an equidistant temporal grid. Of course this grid represents the “clock time” that Clifton is (and, by extension, I am) trying to avoid invoking for the experiential reasons described above.

¹⁹ *Ibid.*, 43.

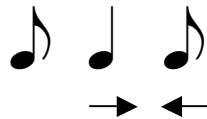
Likewise the three drummers as a unit comprise the most salient texture during the early moments of the performance, but when the dancers enter the role of the drummers recedes ever so slightly into the background. At this point too the *quinto* really emerges as the dominant of the three drummers and the foreground dialogue between *quinto* and dancers begins, but again this is peppered with constant little exchanges of energy as other instrumentalists, singers, and dancers interject. In Chapter One, the *roda* of *capoeira* was offered as a metaphor for the protean way that meter can behave in many West African and diasporic West African settings. We will return to this metaphor at the end of this chapter, in the context of beats and microrhythmic motions across beat spans.

Analogous to the plurality of performance relationships between ensemble members is the profusion of directed energies that influence the ways that rhythms can behave in relation to the metric grids, which are constantly changing and adapting according to the needs of the performance. We can assert at least five ways in which a performed musical passage can behave in relation to the polymetric grid. It can map directly onto either the 12-cycle or 16-cycle, it can behave as a stretched or compressed version of either the 12-cycle or 16-cycle, or it can occupy a middle ground that is more or less equally influenced by both.²⁰ We are already beginning to see that these behaviors can shift quickly, and that often it

²⁰ A case could also be made for a sixth type of relationship in which the performed musical material does not reflect either stratum (such as, perhaps, a performer layering a quintuplet figure over the distance of the span), but that is a special case that is outside the purview of this study.

is not clear exactly which stratum is most clearly operative on a musical figure. A good example of this is Changuito's snare drum line shown in Example 4.2 and 4.3. The lilt of Changuito's performances is, perhaps somewhat surprisingly, evocative of *samba* (about which below), and it is represented in the examples as a stretched version of a 12/8 metric interpretation. This is the way that I hear it. But a case could also be made for its interpretation as a compressed version of an amphibrach figure that traverses four density referents in the 16-cycle, a representation of which is shown in Figure 4.6.

FIGURE 4.6. COMPRESSED 16-CYCLE REPRESENTATION OF THREE-NOTE FIGURE.



That the performed rhythm can be analyzed as a stretched 12-cycle construal or as a compressed 16-cycle one is exactly the ambiguity that was described above in reference to the mapping of event onsets between the two cycles and the fact that the third of each four density referents in the 16-cycle does not bear as close a relationship to a corresponding event in the 12-cycle as the first, second, and fourth

events do. The third density referent is, after all, the one left out in order to define the amphibrach.

In reality the snare drum part from “Desde el fondo del rio” occupies that elusive middle ground in its dual reference to both metric strata. I (choose to?) hear it as a stretched version of a triplet figure, which is in agreement with Browning’s description of the *samba caixa* part: “these are not, in fact, true triplets, as one beat is slightly weighted – generally, the second of each set...,” as discussed at the end of Chapter One above.²¹

Let us look at three more brief examples. Mongo Santamaria’s *descarga* “Mazacote”²² is a *cha cha chá*, which due to its tempo and other performance considerations is not an Afro-Cuban style that we typically associate with superimposed metric grids.²³ In other words, “Mazacote” and other *cha cha chás* unfold as clear 16-cycles with a large number of performance factors (including tonal harmonic relationships) that point toward 4/4 metric constructs with balanced,

²¹ Browning, 11-12.

²² On Mongo Santamaria, *Afro Roots*. Prestige 24018, 1958.

²³ Michael Spiro includes tempo as an important determinant of whether a performance (or a performance style) that is nominally in 4/4 is allowed to shade toward a 12/8 stratum. When I asked him about 12-cycle inflections in *yambú*, for instance, he responded unequivocally that no, the tempo is too slow for the metric superimposition to groove in a satisfying way (private conversation, 8/07). From this point of view (which I agree with in general, by the way), the analysis of the *yambú matancero* below might be seen as somewhat of an anomaly, although I will offer some rationales for why this particular performance behaves metrically the way that it does.

binary phrasing and predictable hypermetric structures, as well as a very common repertoire of rhythm constructs that are idiomatic to the genre.

It is quite shocking, then, to hear *timbal* player Willie Bobo, responding to a nuanced rhythmic call from Santamaria, erupt into the aggressive 12/8 bell pattern (outlining the standard pattern) shown in Example 4.6 [Sound Example 29] a few minutes into the performance. As the example shows, the rest of the ensemble continues to play in 4/4, essentially disregarding Bobo's and Santamaria's interruption.²⁴

²⁴ A close listen will reveal, however, that bassist Al McKibbon is laboring to remain entrained to the 16-cycle stratum: his performance lines up metrically with that grid but there is something about the way that he attacks his notes through this brief passage that sounds strained, as if he is really struggling with the entrance of the new layer.

EXAMPLE 4.6. "MAZACOTE" *TIMBAL* INTERRUPTION, 2:04.

The musical score for Example 4.6 is written in 12/8 time and consists of four staves: piano, bass, timbal, and congas. The piano part features a series of chords with rests, while the bass part has a rhythmic pattern of eighth notes. The timbal and congas parts have complex rhythmic patterns. The score ends with a double bar line and the word "etc.".

This passage, it should be noted, reflects a self-consciously exaggerated superimposition, really more for special effect than anything. But it has powerful protensive implications that echo in subtle ways through the remainder of the performance. Three of these later evocations are shown in Example 4.7.

EXAMPLE 4.7. THREE VESTIGIAL REMNANTS OF THE 12/8
INTERRUPTION.

A) 5:08 to 5:12

piano

bass

timbal

bongó

B) 6:45 to 6:49

bass

timbal

bongó

fill.²⁵ It is also noteworthy that *Afro Roots* is an album in which Santamaria, at that time best known to the North American public as latin jazz *conguero* and one of the first *boogaloo* stars, explores a number of more obviously African-influenced Cuban styles, including many that unfold as 12-cycles or superimposed 12- and 16-cycles; this fact makes the intrusion of 12/8 into the terrain of the cha-cha-chá perhaps somewhat less surprising.²⁶

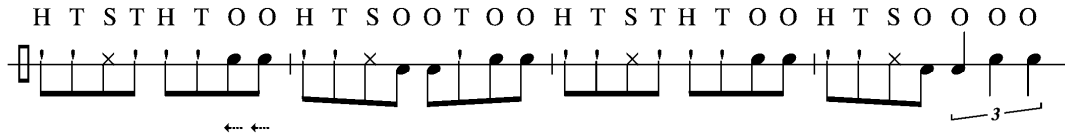
A more subtle example of superimposed metric strata can be heard in Francisco Aguabella's "Wood Place."²⁷ Example 4.8 [**Sound Example 30**] shows Aguabella's conga *tumbao* that links the introduction to the main body of the song. Note that in the example, one 16-cycle occupies the space of two notated measures, again following conventional notational practice in similar musical styles.

²⁵ Keil might choose to say that they were *invited to participate* in this particular way by Santamaria and Bobo's interruption.

²⁶ Ken Schweitzer has noted recently (2009) that Santamaria and many of his contemporaries began, as early as the 1950s, to invoke aspects of West African iconography and musical and spiritual practice (especially *abakuá* and *santería*) in a self-conscious effort to appeal to a booming, perhaps exoticized, popular interest in African-ness.

²⁷ On Francisco Aguabella, *H2O*, Olm R 463047, 1999.

EXAMPLE 4.8. FRANCISCO AGUABELLA'S *TUMBAO* IN
 "WOOD PLACE," 0:19 TO 0:23.



"Wood Place" is undeniably in 4/4. But in two out of four iterations, Aguabella's two open tone strokes on the high drum are performed with a lilt that is subtly evocative of its 12/8 counterpart. An interesting progression from greater to less and then back to greater dissonance unfolds through Aguabella's four traversals of the clave topos: as the example shows, his first pair of open tones shades toward the 12-cycle stratum, then the next two pairs of open tones situate easily into the 16-cycle layer, and finally the fourth iteration situates nearly perfectly into the 12-cycle grid, enough so that the final iteration is actually notated as a quarter-note triplet in the example. Aguabella is a *conguero* from the Matanzas *rumba* tradition, and a recognized master of the Yoruba-based *batá* tradition, so it comes as no surprise that his latin jazz *tumbao* bears the subtle nuance of the 12-cycle / 16-cycle superimposition.

Example 4.9 [**Sound Example 30**] offers one further illustration. In John Santos's "Buena noche,"²⁸ a slow 12/8 folkloric rhythm, played on *batá* drums, is joined by horns, the latter of whom begin with melodic phrasing that conforms metrically to a 2-cycle partition of the prevailing 12-cycle stratum.²⁹ But after a number of call and response phrases between horn section and solo trombone, a shocking transformation occurs: the horn section begins to play melodic figures that conform precisely to a 16-cycle grid, while the *batá* drummers continue outlining the 12-cycle, heedless of the 16-cycle intrusion. Example 4.9 shows the last 12-cycle phrase and then the 16-cycle intrusion.

²⁸ On John Santos and the Machete Ensemble, *Machetazo! Ten Years on the Edge*. Bembé 2018, 1998. Thanks to Fred Hoadley for bringing this example to my attention.

²⁹ As described in Chapter Two (pp. 123-8), the 2-cycle stratum that the horns introduce adds an additional metric layer to the prevailing 3-cycle/4-cycle complex that the bell pattern and *batá* suggest.

EXAMPLE 4.9. METRIC SUPERIMPOSITION IN “BUENA NOCHE,”
2:32 TO 2:54.

The musical score consists of three systems, each with a 'topos' staff (soprano clef) and a 'horns' staff (treble clef). The topos part is a melodic line with eighth and sixteenth notes. The horns part provides harmonic support with chords and rhythmic patterns. The first system is in 12/8 time. The second system shows a change in the horns part, with an asterisk (*) above the first measure of the topos staff, indicating a new downbeat entrainment point. The third system continues the melodic and harmonic development.

Only the standard pattern topos and the horn section calls are shown in the example. Not only do the horns introduce a new 16-cycle stratum, but their call, which outlines 2-3 clave, effectively announces a new downbeat entrainment point, marked by an asterisk in measure 5 in the example and following the half-cycle

topos iteration shown in measure 4. Just as in the pendular clave examples from Chapter One, the topos goes on unaffected, but because of the introduction of the new layer we perceive its former op <6> as a new beginning-point reference.

SUPPORT FOR BEAT SPAN IN THE LITERATURE

A few theorists and ethnomusicologists have offered narratives that support the foregoing description of microrhythmic motions, deviations from standard prototypes, and directed energies that result in subtle pushes and pulls against a prevailing metric grid, and suggest that a conception of beat span is indeed a useful way to conceive of musical motion. None of them allude to the possibility that it is really the superimposition of metric grids that defines, allows, or encourages these motions, fluctuations, and directed energies, but their language is clearly sympathetic to such a theory. Following is a brief survey of a few of their thoughts.

Hasty, in an exposition that resonates with Zuckerkandl's theory of waves of musical motion, asserts that

there is a continuous motion from the beginning of one cycle to the beginning of another. The phases of this cycle are differentiated by their unique kinetic qualities in relation to the whole.... To the extent the cycle is considered a continuously directed impulse, the importance of division by equal pulses or beats wanes.³⁰

³⁰ Hasty (1981), 187.

In other words, a precise adherence to a real or imagined metric grid is less important than the kinetic quality of the musical phrase as it moves away from one point in the cycle and toward another. This is as true of Western music as it is of the diasporic West African musical circumstances described in the present study. Hasty continues: “likewise, rests, pauses, syncopation, change of tempo and the significant liberties often taken with notationally equal durations in genuinely rhythmic performances can in fact intensify the motive quality of the cycle.”³¹ Bengsston concurs: *à propos* his examination of microrhythmic flux in the Viennese waltz, Bengsston states clearly that

rhythm does not exist “in” notation, however much there is in notation that “has to do with rhythm,” e.g. schematic time value relationships – chronometric patterns – and the information (not unambiguous) given by “bar-lines,” time signatures and the like.³²

Bengsston’s findings are not surprising: he describes, for instance, how the second beat of the Viennese waltz is quantitatively longer than the first and third beats (and in turn that the third beat is slightly longer than the first), and he offers precise empirical data (measurements in milliseconds) that proves as much. We must be careful with such quantitative data, however. As Benadon has discussed, it is not

³¹ Ibid., 188. The relationship between motive in this sense (having to do with motion), motive (or motif, as a generative melodic shape), and motive (as someone’s, or something’s, *raison d’être*) might be a stimulating point of departure for further research on the behaviors of rhythms and microrhythms in performed musical contexts.

³² Bengsston (1972), 68.

particularly useful, or perhaps even intellectually honest, to make assertions about performance practice based on tiny fluctuations that cannot even be heard by the human ear. Benadon sets a lower limit of about fifty milliseconds for microrhythmic deviations that he is willing to assert as cognitively useful.³³ So to make assertions about metric deviations of as little as ten milliseconds (as Bengsston does) is perhaps reading more into a quantitative analysis than is actually viable from a cognitive standpoint.

Like Bengsston, however, Hasty is careful to reinforce the role of the metric grid as structural determinant: “motion, though it may be imbued with a great variety of quality, arises from the structural unification of events.”³⁴ So even though we conceive of the events that occur in time as dynamic and in flux (again, as in Chapter Three, in the Husserlian sense of the word), and even though we address the notion of measured time, from a cognitive perspective, with healthy skepticism, we acknowledge that there is a structural (or in the case of the current study, poly-structural) background that informs the way events are performed in

³³ Benadon (2009b), 5-6. London’s research reveals that 100 milliseconds is about the lower limit for what we can entrain to as a unit of rhythmic measurement (2004, 27). These two premises are not contradictory – it seems logical that, given a cognitive temporal threshold of 100 milliseconds, that we should be able to regard onset intervals of about half that duration as nuanced variations of our fastest perceivable rhythm.

Benadon also offers a brief summary of a few of the cognitive illusions that accompany the act of listening in time, which is consonant with my description of the varied piano *montuno* in measure 4 of the Maraca example above as sounding “late” even though it lines up evenly with the prevailing 16-cycle grid.

³⁴ Hasty (1981), 192.

time, and that acts in a way as an abstract, perhaps even Platonically-idealistic prototype, of which such performed events are transformed versions.

Kramer, too, acknowledges the co-occurrence of alternate time-reckonings, including such potentially conflicting representations as a relative notion of time-as-perceived and a purely quantifiable grid that organizes what he calls “ordinary time.” This latter is often considered to be an important, perhaps necessary cognitive tool for music analysis, since we tend to want to measure performed music against this real or imaginary grid.

But Kramer, like Clifton (and Hasty), is wary about assigning too important a role to quantitatively measureable time. For Kramer, time is first and foremost “a relationship between people and events they perceive. It is an ordering principle of experience.”³⁵ In other words, Kramer asserts that a notion of absolute time is merely a social convention – time can be measured but the information obtained is ultimately meaningless since data can be, and is, constantly manipulated by the individual perceiver (either intentionally or unconsciously). Kramer offers a number of categories of time-reckoning, which he insists are suggestions for listening and are not intended as rigorous theoretical formulations.³⁶ Of particular interest are his notions of linear and nonlinear time, which Kramer describes as “becoming” and “being” respectively: “linearity and nonlinearity are

³⁵ Kramer (1988), 5.

³⁶ *Ibid.*, 8.

complementary forces in *all* music”³⁷ that coexist at different hierarchic levels. Meaning arises, then, from the intersections, interactions, and conflicts between these two time-reckonings.

In Kramer’s linear conception, time is processive; something happens based on something that happened earlier. This is of course consonant with the dialectic of calls and responses described in Chapter Three. In nonlinear time, on the other hand, things happen based on general principles that govern, say, a piece of music, or a performance style. Nonlinear time implies that there is no causality. *Guaguancó*, as described in Chapter Three, provides an excellent example of the coexistence of linear and nonlinear time: the fundamental structural aspects of *guaguancó* – *clave*, *palito*, the basic *tumbador/segundo* melody, the general conventions that determine roughly how the performance will unfold – do not change (at least very much, and at least from the global perspective of the performance as a whole) and therefore represent the nonlinear stratum, while the nested, concatenated calls and responses that Chapter Three investigates are clearly, strategically linear in the way that Kramer describes.³⁸

But underlying this model is a conception of inflexible, evenly spaced *beats*, which Kramer regards as timepoints and which may or may not actually exist in the musical performance. Kramer distinguishes between this rigorous formulation of beats-as-timepoints and *pulses*, which are “events (short notes or

³⁷ *Ibid.*, 19.

³⁸ Of course the thesis of this chapter is that from a *local, microrhythmic perspective* these parameters exist in a constant state of change.

onsets of long notes) in the music *that occur at or near beats*.”³⁹ Disregarding his overly-rigid conception of beat, then, Kramer’s “pulse” resonates with the formulation of “beat” in the current study, since it implies some small degree of flexibility on the part of the performer’s relation to the underlying beat (or density referent, or topos). Of course there is an important epistemological difference between Kramer’s conception and mine, which is that I do not regard beat as a timepoint, but rather as a time *span*; therefore the event onsets⁴⁰ that correspond with Kramer’s “pulse” do not necessarily interact, intersect, or conflict with the beat, but in fact *are* the beat in the sense that the entirety of the beat span is behaving at once as present.

Agawu offers additional support. In his discussion of the repetition inherent in the cyclic nature of Northern Ewe music, Agawu describes the “overriding tension between the ‘background’ repetition and regularity of African instrumental music and the kaleidoscopic changes of rhythmic/metric weight that characterize its immediate or ‘surface’ structure.”⁴¹ His evocation of nuanced “changes of rhythmic/metric weight” against a steady background seems to resonate with the model put forth in the current study. In an earlier study, Agawu offers convincing evidence that the relationship between a steady, repetitive background and a more kinetically charged foreground is fundamental to an understanding of musical process:

³⁹ Kramer (1988), 97. Emphasis added.

⁴⁰ Including of course silence, or continuation, as a potential event onset.

⁴¹ Agawu (1995), 110.

And if this “structural tension” is to be phenomenologically meaningful, we need to preserve a simple background against which can be heard subsequent clashes of meter, whether these be in the horizontal or vertical domains of the piece.⁴²

Agawu demonstrates this simple background, and the way that a performed-object might clash against it, in his description of the stretching of agogic accents in Ewe speech, quoted in Chapter One above. He cites the common Ewe modifier *kákáká*, which unfolds rhythmically as short-short-short when presented in a purely lexical sense. In practice, however – in actual spoken communication – the second syllable is stretched, resulting in a short-long-short rhythmic shape.⁴³ While I disagree fundamentally with Agawu’s description of performed rhythms as “clashing” against an underlying background⁴⁴ (and likewise with his evocation of the tension that results from said clash), I acknowledge the important point that he is making, which is reinforcing the idea that there is an underlying structural

⁴² Agawu (1986), 70. The invocation of horizontal and vertical domains is at least partially in response to Brandel’s construal of horizontal (temporally consecutive) hemiola versus vertical (coextensive) hemiola (see Brandel 1961, 15).

⁴³ Agawu (1995), 34-5.

⁴⁴ Elsewhere Agawu actually takes issue with the term “clashing” as well. In his criticism of A.M. Jones’s assertion that “in African music there is practically always a clash of rhythms: this is a cardinal principle” (Jones 1954, 27), Agawu counters that “‘clash and conflict’ are antithetical to African traditional philosophy, which is more likely to be communal and cooperative” (Agawu 2003, 78). In the Mongo Santamaria example above I used the term “interruption” to describe the sudden, shocking introduction of the 12-cycle into a 16-cycle terrain, but in that context that seems to be the appropriate word, since the new layer is so alien to insiders’ expectations of *cha cha chá*. I might reconsider, however, my use of “intrusion” to describe the horn section’s 16-cycle entrance in “Buena Noche,” however, since in that case the playful way that the strata interact belies the insidious connotations that “intrusion” brings.

framework that may or may not actually be performed, which in turn represents a grid against which we measure the many nuanced variations of rhythms that appear as performed in time. In fact Agawu even offers language that approaches a similar thesis to that proposed here, only from the angle of imaginative variations of a fixed prototype:

African musicians play with competing accents in order to enhance pleasure, delight the ear, and stimulate spiritual renewal. Such flights are possible only as temporary, imagined, or simulated departures from solid ground.⁴⁵

I take the smallest of issue with Agawu's wording, in that it is my background that is imagined and the performed foreground rhythms that are real. The background is indeed "enabling," as Agawu goes on to describe, but primarily in the sense that it provides an abstract model against which we can compare the very real performed rhythms (they are phenomenal objects, there in the world for us to perceive, after all), and thereby make valid the notion that the time points suggested by written notation (and most verbal description) are merely illusory placeholders standing in for the more elusive, microrhythmically fluctuous, beat spans described herein.

Perhaps no one has championed the concept of microrhythmic flux as deviation from a standard model more than Charles Keil. Keil coined the term *participatory discrepancies*, which he has alternately described as "inflection,"

⁴⁵ Agawu (2003), 78.

“articulation,” “creative tension,” “relaxed dynamism,” and “semiconscious or unconscious slightly out of syncness,”⁴⁶ and which he insists is a necessary condition for music to groove in a way that incites dancers to move. In Keil’s epistemology, the “little discrepancies,” which are both an inevitable and desirable product of active human participation in the music-making process, “create the groove and invite us to participate.”⁴⁷ For example, Keil offers the following anecdotal illustration, following a performance by Bo Diddley at which he was present:

(Bo Diddley’s) recent performance in Buffalo found him shading his “beat” and “sound” from song to song with varying degrees of success in terms of getting the backup band into the groove and the dancers moving happily. ... The matrix is not stable. The “Bo Diddley” beat takes a slightly or markedly different form each time out. In this music, at least, the process and texture are tightly meshed and dictate whatever syntax there will be.⁴⁸

Two points are worth emphasizing. Keil’s proclamation that “the matrix is not stable” is a far more radical construal of rhythmic and metric relationships than, for instance, Agawu’s “temporary, imagined, or simulated departures from solid ground,” since the implication in the former is that even the metric grid itself is in flux in a way that is consistent with Clifton’s assertions about regular, quantifiable time. Second, a typical construal of rhythmic behavior is that syntax determines

⁴⁶ Keil (1994), 96. Of course I would add a very significant “or conscious” to Keil’s list of “out-of-syncness” modalities.

⁴⁷ *Ibid.*, 98.

⁴⁸ *Ibid.*, 106.

the ways in which musical processes unfold – that the musical rules of engagement are set by syntactical grammars, and that musical process (whether improvised or composed) is a strategic acting-out of that syntax. Keil argues, though, that process is actually a determinant *of* syntax; that, for instance, the calls and responses of rumba are not just the product of a set of behavioral rules, but that their directed energies actually determine those rules. Example 4.10 [Sound Example 31], from “Cuba Linda,” a *guaguancó* performance by Grupo Folklórico y Experimental Nuevayorquino,⁴⁹ offers an illustration of performative context defining syntax; in this case the microrhythmic inflections of the final *palito* onsets in the cycle actually change the way the rest of the players entrain to the musical progression by introducing an overt 12-cycle layer.

EXAMPLE 4.10. CLAVE AND *PALITO* PARTS FOR “CUBA LINDA.”

The image shows two staves of musical notation. The top staff is labeled 'clave' and contains a sequence of notes and rests: a quarter note, an eighth note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, and a quarter note. The bottom staff is labeled 'palito' and contains a sequence of notes and rests: a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, and a quarter note. At the end of the palito staff, there are two arrows pointing left, indicating a continuation or a specific rhythmic pattern.

⁴⁹ On Grupo Folklórico y Experimental Nuevayorquino, *Concepts in Unity*. Salsoul 6001, 1975.









The last two *palito* onset are rushed such that the last coincides exactly with its 12-cycle counterpart. The result is a progression from a 16-cycle entrainment to a 12-cycle one as the cycle itself is traversed, and drums and trécs respond accordingly in what ultimately becomes a very microrhythmically, and polymetrically, active performance.

Elsewhere Keil offers similar anecdotal accounts of microrhythmic pushes and pulls in Midwestern polka bands, using adjectives like “tense” and “relaxed” to describe the ways in which drummers and trumpet players engage with the beat.⁵⁰

While Keil prefers to traffic in colorful and anecdotal language, several of his former students have begun rigorous investigations of a number of musical genres in order to determine precisely how participatory discrepancies behave. Olavo Alén employed a device called the Winckel repeater to measure durations in milliseconds, using the *tumba francesa* of eastern Cuba as his source repertoire. Among other statistical results he arrived at an “average value of standardized values,” with an acceptable degree of mean deviation, to stand in for durations as represented in Western notation. Figure 4.7 summarizes one such comparison, after Alén’s Figure 13.

⁵⁰ Ibid., 99.

FIGURE 4.7. ALÉN'S STANDARDIZED AND SCHEMATIC VALUES FOR THE *BULÁ* RHYTHM IN *TUMBA FRANCESA*.

												
standardized												
value (%):	7.6	8.5	17.2	15.8	8.0	17.0	7.9	18.0				
schematic												
value (%):	8.3	8.3	16.7	16.7	8.5	16.7	8.3	16.7				
op:	0	1	2	3	4	5	6	7	8	9	A	B

Alén's standardized values reflect the average durational values compiled from a number of performances in a controlled environment. It is of course important to note that a rather large mean deviation – as much as 0.7, a discernible distance, essentially amounting to 42 milliseconds given a tempo of ♩ = 120, very close to the 50 millisecond threshold that Benadon offers and that is described below – mediates each figure. What Alén's examination most clearly does is reveal certain microrhythmic tendencies that surface in, in this case, the *bulá* part. For example, the second eighth note, or op <1>, tends to receive a significant agogic accent as compared to the first. In fact, it tends to enter early, thereby invading the turf of the downbeat, the latter which in turn seems comparatively insignificant (the downbeat

is the shortest, and therefore presumably least salient, of the four notationally equivalent onset intervals, at least if we consider agogic accent to be a significant determinant of degree-of-salience⁵¹). Likewise, the onset at op <2> is significantly longer than its counterpart at op <4>, but not nearly as long as the final onset at op <A>.

J.A. Prögler focuses his study on microrhythmic “discrepancies” that occur between the bass player’s quarter notes and the drummer’s ride cymbal pattern in a jazz rhythm section. Prögler uses Macintosh SoundEdit software to measure and compare event onsets, and he seeks to create an “etic grid, for measuring degrees of synchrony and discrepancy between musicians,” using famous bass/drum duos as his study material.⁵² Prögler’s analysis reveals that bass and “ridetap” onsets do indeed often manifest as near-simultaneities, as evidenced in his Figures 3 and 4, for example.

Of course Alén’s and Prögler’s findings are not surprising, but they provide the kind of quantifiable evidence that some feel is necessary in order to invoke a

⁵¹ Alén does not account for dynamic or timbral relations between onsets, and unfortunately his source recordings do not seem to be readily available.

⁵² Prögler (1995), 21. A serious methodological flaw in Prögler’s study is that he transcribes recordings of Charles Keil playing “like Elvin Jones” and “like Kenny Clarke,” for instance, which is a pretty questionable beginning-point: if one is asserting that, say, Elvin Jones plays consistently in the front part of the beat span, then it makes sense to present recordings of Elvin Jones doing just that. But to make that assertion and then demonstrate by playing in a way that you describe as emulating Jones’s style is tautological in the extreme! Prögler does address this problem briefly, but he leaves unanswered his own important question, “could it be that Keil the theorist was trying too hard to ‘swing’ because he had something to prove?” (35).

radical claim such as Keil's: that it is okay, commonplace, and desirable for musicians to be slightly out of sync with one another, and might even be a necessary condition for music to affect humans on an emotional level and encourage them to participate actively. Perhaps, too, Keil's deliberately playful, "unscientific" language asks for a degree of scientific rigor to give it a kind of epistemological *quid pro quo*. Keil offers many evocations like the following, which are wonderfully whimsical (and, it should be said, absolutely true and stimulating):

Another goal may be to connect participatory discrepancies, PDs as I have come to call them, to Particles Dancing—the imperfections of an unfolding universe; the physics of energy and matter; chaos and cosmos; the sense we humans have that, across cultural boundaries, music puts us in touch with the ultimate forces.

Between these two extremes—participation in the universe and the mediation-mechanization of grooves—PDs have everything to do with pleasure in the Public Domain: the presence of shared tradition and an ever deepening sense of the subtle ways in which wrights and rites, skills and events, craft and culture, are connected in public space and time. If the microtiming is not right among the *batá* players the *orishas* will not descend. If the textural brightness and processual relaxed dynamism of the paired trumpets are not there a lot of polka dancers may sit tight.⁵³

This last statement is corroborated by a scenario that Nketia describes: "If the supporting drummers are not giving the dynamic level an *atumpan* player in the Ashanti *fontomfrom* ensemble wants, he will turn around and look at them or even yell at them, or exclaim '*adukurogya! dukurogya!*,' meaning 'give me the intensity

⁵³ Ibid., 107-8.

of a flame lit in the buttress of a tree’.”⁵⁴ Nketia is not referring to dynamics in the Western musical sense of the word, but rather to the same kind of dynamism that results from the vital rhythmic engagement between parts of the ensemble that Keil describes.

Finally, we must address some of the recent work of Fernando Benadon. Benadon has offered a number of very stimulating and fruitful analyses of microrhythmic motion in jazz. In (2009b) Benadon introduces his *flux* and *shift* operations that transform prototypical rhythms: flux “distorts a basic rhythmic template into an acceleration, a deceleration, or a combination of these,” while shift temporarily alters the tempo of the grid upon which a melodic figure is placed.⁵⁵ Benadon’s examples are analytically encouraging – especially the revelation that some of the very complex, idiosyncratic syncopated rhythmic figuration of early jazz can be explain in terms of the local superimposition of *tempi*.

In an excellent earlier study, Benadon offers his Beat-Upbeat ratio, which explores the series of ratios from 1:1 to 3:1 (represented in his examples as two equivalent eighth notes at one extreme and a dotted eighth – sixteenth at the other) that can be used to measure the microrhythmic timing of a jazz improviser’s “swing” feel.⁵⁶ Among Benadon’s conclusions is a convincing refutation of the

⁵⁴ Nketia (1988), 57.

⁵⁵ Benadon (2009b), 2.

⁵⁶ Benadon (2006). There are obvious affinities between Benadon’s work and that of Prögler described above.

myth of the swing triplet, which his analysis demonstrates to be far less common than generally believed.⁵⁷

Benadon's methodologies are very enticing: one can easily imagine, for instance, a fruitful marriage of his *flux* and *shift* operations with beat span, with at least two interesting results. First, even though the current study is not concerned with precise measurements of time-span displacements – for the epistemological, philosophical, and cognitive reasons described above – there may be times in beat span analysis where a graduated series of moves (such as Benadon investigates in the perceived accelerations that *shift* models) will be best represented by the relationships that *shift* reveals. And conversely, beat span should ultimately have more than a small hand in explaining why the performers that Benadon investigates do what they do – why Armstrong and Hawkins and Stewart make the strategic choices that they make about onset placement and their temporal relationships with their fellow bandmates. Benadon actually hints at such a consideration in his graphic depiction of the deviations from parallel eighth-note and eighth-note triplet grids in his Example 7c.⁵⁸

⁵⁷ Benadon gives numerous examples of authors that have asserted triplets as primary to a proper swing feel (see especially Benadon's Table 1, p. 90). The swing triplet – the performance directive by which the first of each pair of notated eighth notes is twice as long as the second of each pair – is a myth that is perpetuated most egregiously in modern jazz pedagogy. I have found through my years as a jazz educator that retraining young musicians to think in terms of a more flexible time-conception is one of the first, and most difficult, pedagogical hurdles to overcome.

⁵⁸ Benadon (2009b), 9.

It is also very interesting to note that Benadon's observations about tempo considerations in jazz – slower tempi corresponding with more room for microrhythmic flux and local tempi shift – is exactly the opposite phenomenon as that which takes place in Afro-Cuban traditions. In the latter, slower styles (*yambú*, *cha cha chá*, and so on) tend to promote stronger adherence to a single metric grid, while in faster styles (*guaguancó* and especially *columbia*) there is considerable interaction between two clearly entrainable metric strata.

A CLOSE READING: “PA’ LOS MAYORES”

In their performance of “Pa’ los mayores,” Grupo AfroCuba de Matanzas explore the musical landscape of the folkloric *yambú* in a way that engages all of the interrelated epistemological vantage-points outlined thus far, including especially beat span considerations but also important call-and-response dialogues, the intricate role of retentive recollections and protensive implications, fulfillments and denials of projective expectations, strategic reconsiderations of downbeat entrainment points, and other playful metric, rhythmic, and microrhythmic interactions. The following analysis scrutinizes the first two minutes of the performance, beginning with four iterations of the opening chorus and continuing through the first verse statement, and will ultimately act as a synthesis of all of the various methodological threads pursued thus far.

“Pa’ los mayores” is a *yambú matancero* – a *yambú* as filtered through the performance tradition of the Matanzas province in Cuba, performed in this case by *clave*, *palito*, *tumbador*, *segundo*, *cajon* (rather than the *quinto* of *guaguancó*, although the *cajon* player has a *quinto* handy and plays it on rare occasion), *sonero* and *coro*, and dancers. *Yambú* is traditionally a couples’ dance – it reenacts the male’s protracted seduction of the female in a way that is suggestive and coy and playful from both parties (and which typically results in a successful liaison between the two!). Like many *yambú* performances, the narrative trajectory of “Pa’ los mayores” changes rather dramatically as it unfolds: it begins with a sort of offering, a proverbial bringing of gifts to the audience, and then transforms suddenly into a rather precious story of two lovers arguing over whether or not to get married. In these early moments the dancers have not yet entered the performance arena, so what is heard on the recording is essentially a complete text.⁵⁹

Example 4.11 [**Sound Example 32**] shows the *clave*, *palito*, *cajon*, *tumbador*, and voice parts for the opening two minutes of “Pa’ los mayores.” The *segundo* part is not shown, as it is relatively passive, and is indeed hardly audible through most of the recording, playing a soft *mazacote* behind the more elastic surface-level improvisation of the *cajon*.

⁵⁹ It is important to keep in mind that, in this analysis, the sound recording *is* the text, and the notated transcription is merely a visual aid for ease of reference. For this reason, the example is annotated frequently with clock-time indications, for easy synchronization with the recording.

EXAMPLE 4.11. "PA' LOS MAYORES," BEGINNING TO 2:03.

clave

palito

cajon

tumba

voice

5

5

5

5

5

Yo

10

10

10

10

10

10

traí-go pa' los ma - yo - res de pue-blo nue - vo,

14

14

14

14

14

14

Yo traí-go pa' los ma - yo - res de pue-blo nue -

18

18

18

18

18

18

- vo, Yo

22

22

22

22

22

22

traigo los an-gelitos vestidos d'oro Las

26

26

26

26

26

26

flo-res más e-le-gan-tes de mi can-te-ro. Yo

30 :39

30

30

30

30

30

traí-go pa' los ma-yo-res de pue-blo nue-vo, Yo

34

34

34

34

34

34

traí-go pa' los ma - yo - res de pue - blo nue - - vo, Yo

38

38

38

38

38

38

traí-go los an - ge - li - - tos ves - ti-dos d'o - - ro, Las

42

42

42

42

42

42

flo-res más e-le-gan-tes de mi can-ter-ros. O-ye, - - - - Yo

46 1:00

46

46

46

46

46

traí-go pa' los ma-yo-res de-pue-blo nue-vo, Yo

50

50

50

50

50

50

traigo pa' los ma - yo - res de - pue - blo nue - vo. Yo

54

54

54

54

54

54

traigo los an - ge - lí - tos ves - ti - dos d'o - - - ro Las

58

58

58

58

58

58

flo-res más e-le-gan-tes de mi can-te-ro. Yo

62

62

62

62

62

62

traí-go pa' los ma-yo-res de pue-blo nue-vo, Yo

66

66

66

66

66

66

traí-go pa' los ma - yo - res de pue - blo nue - vo, Yo

70

70

70

70

70

70

traí-go los an - ge - li - tos ves - ti - dos d'o - ro, Las

74

74

74

74

74

74

flo-res más e-le-gan - tes de mi can - ter - ros. E Cla -

79 1:42

79

79

79

79

79

- ra le di-go'a Ci-ri - lo, "Ci -

83

83

83

83

83

83

- ri - lo, _____ no me bus - que - mas." Ci -

87

87

87

87

87

87

- ri - lo _____ le di-go'a Cla - ra, - - - - "Tu e - res a mu-jer,

91

91

91

91

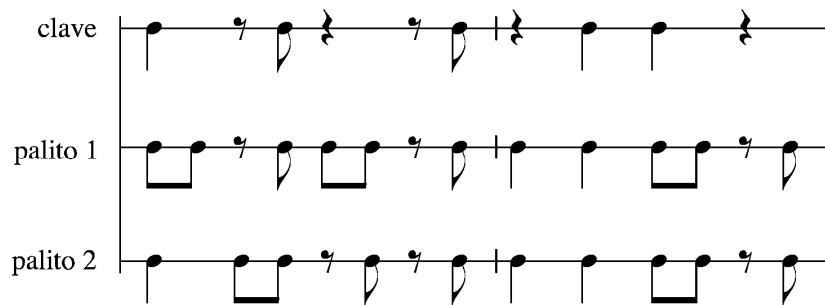
91

tu e-res a mu-jer de mi - co - ra - zon."

The first thing that one will likely notice is that the opening clave pattern does not conform to our expectations of such patterns. There are seven event onsets, which traverse the cycle as a <3131224> segmentation (*four* interval sizes – far from a well-formed diatonic collection!). A closer examination reveals that the performed pattern can be read as an embellished version of the *rumba* clave that we expect in a *yambú* performance: the first, second, fourth, sixth, and seventh onsets correspond to the 16-cycle interpretation of 3-2 *rumba* clave, and therefore the third and fifth onsets might be read as ornamental rhythmic figures similar to those found in the *palito* part in *guaguancó*. The clave pattern is, in fact, a simplified version of the *guaguancó palito* described in Chapter Three above.

The *palito* part that enters in measure 3 is actually a syncopated traversal of the cycle that corresponds to a *timbalero*'s *cascara* pattern and also to a common alternate construal of a *guaguancó* *palito*. In fact, both of the *palito* patterns shown in Figure 4.8 are often found in both *guaguancó* and *yambú*.⁶⁰

FIGURE 4.8. TWO TYPICAL *RUMBA* PALITOS.



“Pa’ los mayores,” then, actually outlines *both palito* parts in a sense: *clave* is playing a subtractive version of the second system of Figure 4.8, while *palito* is playing the pattern shown in the third system.

Like most *rumbas*, “Pa’ los mayores” begins with 3-2 *clave*, but it does not take long at all for the first metric ambiguity to arise. Following a series of short

⁶⁰ I have heard and played *yambús* that use *rumba* *clave* and *son* *clave*, and both standard *palito* patterns, in every conceivable combination. From my experience, a specific performance practice called “*yambú*” is an elusive entity indeed!

phrases from the *cajon*, each of which begins to stretch the beat span terrain of the performance a little further, the vocal part enters with an anacrusis to the 2-side of clave. The new downbeat entrainment, which begins in measure 10 and lasts for a considerable time, is clear, unequivocal, and unproblematic. There are three more significant downbeat shifts that occur as the performance progresses. The first of these is shown in the example, at measure 79, or 1:42 in the sound example. The second comes a few moments later, at the onset of the second verse, at 3:02, that begins “Dun, dun, dun ¿Quién va?” which is not shown in the example but marks a return to a 3-2 metric construal. This second verse also features a fairly stunning array of local downbeat shifts. The last shift occurs at the onset of the climactic *coro/soneto* passage that concludes the performance, which begins at 5:26 (also not shown in the example). All of these pendular clave flips, and the new clave-entrainment that results, are shown in Figure 4.9.⁶¹

⁶¹ Refer back to Chapter One (pp. 57-65) for a discussion of pendular clave relationships and the new downbeat-entrainments that result from such flips.

FIGURE 4.9. PENDULAR CLAVE FLIPS IN “PA’ LOS MAYORES.”

<u>clock time</u>	<u>new clave entrain- ment</u>	<u>text</u>
0:00	3-2	
0:12	2-3	“Yo traigo pa’ los mayores...”
1:42	3-2	“Clara le dijo a Cirilo...”
3:02	2-3	“Dun, dun, dun ¿Quién va?...”
5:26	3-2	Coro: “Llorona llorona...”

The first chorus iteration beginning in measure 10 introduces ambiguity at the hypermetric level as well. Our expectations in clave-based music, as in a great deal of tonal music, is that hypermetric structures will model metric structures in some fundamental way, and that instances that deviate from multiples of regular metric groupings are regarded as transformed versions of prototypical models. Even in music in which there is a great deal of hypermetric irregularity we still tend to construe phrases that unfold as stretched or condensed versions of four- or eight-measure prototypes. This is true of clave-based music as well. Taking the basic metric unit as one complete cycle, or one statement of the clave topos (or *two* measures according to the notation in the example⁶²), we begin with an assumption

⁶² It would have been easy to notate Example 4.11 such that one measure maps onto one complete cyclic iteration, in which case all durations would of course be halved. The rationale for my notational choice, here and through most of this study, is simply that it is commonplace in contemporary Afro-Cuban practice to do so (in other words, there is no ulterior political agenda for my doing so).

A further practical reason for notating a single cycle as two measures of 4/4 is that it represents pendular clave flips in a manner that is consistent with how

that the first significant hypermetric unit will be twice that, and then twice that, and so on: groupings of twos, fours, and eights. The opening chorus begins, though, with *six*-measure hypermeasures (or *three* clave iterations), at least for the first two vocal phrases. It is very interesting to note how the *cajon* player responds to the stretched hypermetric phrase structure: the *sonero*'s dramatic pause invites the *cajon* player to fill the space, which he does by presenting two short rhythmic interjections (in measures 12 and 14) that invoke clearly the latent 12-cycle stratum. This happens in direct response to a rhythmic inflection in measure 11 in the vocal part, although as we will see below the *cajon* player had been hinting in the direction of the 12-cycle beat span limit throughout the opening measures of the performance.

The *sonero*'s invitation to the *cajon* player to fill a cycle's worth of space provides an excellent example of the elastic nature of call and response and the crucial importance in this music of close listening and lightning-fast reactions by all of the performers. If we scrutinize this opening passage, we can observe many intersecting layers of call and response between various strata and within, between, and across cycles. Some obvious examples include the mimetic choral response to

performers construe such flips. Notating one clave cycle as a single measure (with the sixteenth note as the density referent) means that whenever there is a new downbeat-entrainment asserted, there must be a single measure of 2/4 inserted to accommodate that flip. The notation of the current example (and elsewhere in this study; see for instance Examples 1.6 and 1.7 from Chapter One) reinforces the important fact that the cycle itself continues unscathed even though a new perceived beginning-point has been asserted. See Example 4.9 above for an illustration of the conceptual awkwardness that results from notating a pendular topos as a single measure.

the opening vocal refrain (which models the conventional way in which we expect calls and responses to unfold), the antecedent/consequent tonal implications of the vocal phrases, and the predictably increased activity of *cajon* improvisations between vocal phrases. And of course we have already described the complexly nested ebbs and flows of call and response relationships that the *topos* itself generates within the context of a cycle and in the flow from one cyclic iteration to the next. There are other, more subtle instances as well. For example, it was already mentioned that through the opening moments of the performance the *segundo* is quite well-behaved, content to operate in a background role to the point that it is hardly a salient contributor at all to the audio recording. But the *tumbador* and even the *cajon* are also quite controlled and patient in these early moments. There is only one instance in the first 47 measures of the performance in which the *tumbador* adds an embellishing open tone to the prototype rhythm shown in the example as two syncopated events on the 2-side of clave, and two bass tones and a beat four *ponche* on the 3-side. This is in measure 17, and it is in direct response to a small space left by the *cajon* – in this case the *cajon* invites the *tumbador* to participate, if briefly, in the foreground improvisational fabric of the performance. In measure 48, then, the *tumbador* plays an embellished four-event figure, which actually calls in his own new 2-side figure that begins in measure 49 and continues for much of the ensuing passage.

A brilliant illustration of call and response occurs just before this last example. In measure 47, just prior to the repeated statement of his first chorus, the

sonero cries “Oye!” (“Listen!”), an important rhetorical device in the *rumba* tradition that serves to draw the listeners and dancers in, in order to focus on some particular aspect of the performance that is unfolding or that is about to commence. In order to emphasize this directive, the *cajon* responds immediately with the loudest, densest flurry of notes heard up to that point in the performance. Likewise, a subtle inflection is invoked in measure 13, this time by the *tumbador*. Beginning in measure 13, and continuing through most of the rest of the performance, the *tumbador*’s two bass tones are reinforced: the *tumbador* uses his knees to lift the drum from the ground in order to give the bass tones a degree of added resonance (and volume). This new sonic layer invites the *cajon* to fill the ensuing space with the metrically shifting rhythmic shapes in measures 14 to 16. The beat span implications of this progression of *cajon* events will be described in detail shortly.

Now let us turn fully to the beat span implications of the performance. Recalling Spiro’s comments (footnote 23 above) about how, because of its tempo and other performance considerations, *yambú* is not a *rumba* style that we typically associate with interactions between metric strata, we should expect that the dominant 16-cycle will continue, unaffected and uninflected, through the duration of the performance. But from the opening moments of “Pa’ los mayores,” it is clear that the latent 12-cycle is exerting a significant pull on the explicitly present 16-cycle. Three overt examples of this can be seen in measures 12-14 (described above), measures 37-38 (in which we actually hear the hemiolic 3:2 cross-rhythm

that results from the superimposition of strata), and measure 45, in which the *cajon* plays a dense flurry of triplet flams that leads to the next *sonero* passage.

As mentioned earlier, however, the opening measures of the performance already begin to open up a discursive space in which we can begin to consider superimpositions of cycles. Example 4.12 shows the *cajon* figures found in measures 5, 7, 8, and 9 of the transcription.

EXAMPLE 4.12. FOUR DIFFERENTLY-INFLECTED CAJON FIGURES.

The diagram shows four measures of cajon figures on a single staff, connected by arrows indicating a sequence of variations. Measure 5 is labeled 'm.5' and 'prototype'. Measure 7 is labeled 'm.7' and 'dynamic accent on first onset', with a dynamic accent symbol (*acc.*) above the first note. Measure 8 is labeled 'm.8' and 'return to prototype'. Measure 9 is labeled 'm.9' and 'dynamic accent reinforced by agogic accent; second dynamic accent introduced', with dynamic accent symbols (*acc.*) above the first and third notes, and a slur over the first two notes indicating agogic accent.

In these four iterations, the *cajon* begins to open up a space in which we can regard the prototypical figure of measure 5 as a beginning-point for a series of developing variations. First we see the dynamic accent of the first onset of measure 7 – the flam figure that begins this iteration. Measure 8 then returns to a simple, uninflected version. Measure 9, then, repeats the varied figure from measure 7,

with two important additional features. First is a second flam that results in a dynamic accent on the fourth event onset. But more important to our beat-span reckoning, the first flam is delayed slightly, resulting in an agogic accent that maps the figure onto a space somewhere in between the explicitly present 16-cycle and the latent 12-cycle. For the first time in the performance, the 16-cycle grid has been stretched, and a polymetric rhythmic space, a beat-span, has been opened.

Compare these early inflected version of the *cajon* figure to those found at measures 19-21. In measure 19, two events enter early, shading toward their 12-cycle manifestations. In contrast, the second and third events of measure 20 are late, laying back slightly later than the notation indicates. And then in measure 21 we find a return to a more rigid 16-cycle entrainment. Only thirty seconds have gone by, and we have seen a rather astonishing array of microrhythmic interpretations of this single prototypical rhythmic figure.

There are a number of instances in which the *cajon* part outlines a progression from strict adherence to the 16-cycle toward the 12-cycle or vice versa. One of these is found in measures 90 to 92, in which a rhythmic shape firmly grounded in the 16-cycle (measure 90) gives way to a triplet figure that coincides perfectly with the 12-cycle (measure 92). This is mediated by the rhythmic shape of measure 91, which occupies a beat span location in between the preceding and following limits. Another example can be found much earlier, in measures 14 to 16. The 12-cycle figure in measure 14, itself the result of the aforementioned filling-up of space invited by the *sonero*'s pause, eventually gives way to a

rhythmic gesture that entrains to the 16-cycle, beginning at the end of measure 15. But again this is mediated by a pair of event onsets that situate neatly in between the two metric extremes.

There is at least one case in the notated passage in which there is even a clear move away from and back to the 16-cycle. In measure 41, following a passage in which the 12-cycle is dominant (in the *cajon* part at least; the remaining strata remain, as always, firmly entrenched in the 16-cycle), there is a short gesture that reflects the 16-cycle limit, which then stretches toward the 12-cycle (but falls slightly short, again occupying the beat span that defines the space between cyclic extremes) and then immediately returns to follow the terrain of the 16-cycle.

These passages constitute some of the most interesting relationships, and make the most convincing case for the utility of beat span as a way to describe rhythmic flux. There are many other examples that serve as illustrations of the ways in which a performer may navigate through and between cyclic boundaries. The 12-cycle, for instance, with its triple division of the basic pulse, is manifested in more subtle ways. One such instance occurs at the *quinto*'s first appearance (and its only appearance through the two minutes reflected in Example 4.11), at measure 56 to 57. The five *quinto* events syncopate against the four-count pulse of the 12-cycle grid. The *cajon* translates this syncopation in similar "triplet" syncopations at several other points, notably in measures 63 to 64, in which four event onsets unfold in a three-count cross-rhythm against the prevailing 16-cycle pulse, and in measures 81 to 84, beginning on the "and" of 4 in measure 81, which presents a

similar three-count cross-rhythm, this time intruded upon by the brief beat-span-inflected figure in the beginning of measure 82.

And many other local beat span inflections can be found, in for instance measures 19 to 20, 36, 39, 41, 48 to 51, 61, 69, 71, and 82, each of which reveals the structural weight of the dominant cycle as well as the gentle pull of the latent cycle that displaces certain event onsets from the notated position on the dominant grid. The motion from measure 88 to 92 is noteworthy, with the two identical 12-cycle triplet figures in measures 88 and 92 respectively again mediated by a compressed iteration in measure 91 (in this case, with the first event onset delayed slightly) that links the two.

RUMBA COLUMBIA: BEAT SPAN EPITOMIZED

By way of introducing the basic metric terrain of *rumba columbia matancero*, as played by the renowned group Porto de Cárdenas, Spiro describes the interaction between metric strata:

Rumba columbia is based on the idea that there is a standard 6/8 bell pattern..., [which] is the basic framework that we're going to work from. [But along with] the 6/8 bell they play the *gua-gua* pattern from *guaguancó*. Now think about that for minute. *Guaguancó* is considered a duple rhythm, and the 6/8 bell [pattern] is a triplet feel, and they play the two together as if they're supposed to fit that way always, that somebody's in a triple feel and somebody's in a duple feel the entire time, and that's what it's supposed to be! ... This is the best example I can think of of playing in *fix* – you're not in four, you're not six, you're in *fix*. And the ability to feel and play this

music as if those two things are, rather than in opposition to one another, ...they complement each other, that they fit together, that they don't rub against each other to create something that's not in harmony....

When [the drummer] plays with the bell pattern, he'll probably play in a straight triplet feel. But if he's playing along with the stick pattern, it's going to push him a little bit into playing a little bit more of a *fix* feel. It's not that he's going to play *guaguancó*, it's that somehow it's going to affect that triplet feel.”⁶³

Spiro's “6/8 bell pattern” is of course the standard pattern, and his *gua-gua* pattern is a standard traversal of the 16-cycle that is often found both as a *timbal cascara* pattern and as a basic *guaguancó palito* part. The superimposition of these two topoi is shown in Example 4.13 [**Sound Example 33**].

⁶³ Spiro (2009). <http://congamasterclass.com/index.php/Columbia-Spiro/Columbia-Overview/Page-3.html>. Verbal presentation transcribed by Chris Stover. Accessed 23 September, 2009. A demonstration of the superimposed 12- and 16-cycle strata (Spiro's “bell pattern” and “stick pattern”) can be heard starting at 3:47 in the video. Note that Spiro's language is directed toward musicians that are learning how to play this music, and is not particularly rigorous from a theoretical standpoint: for instance, he unintentionally privileges the 16-cycle by referring to rhythms that reflect the 12-cycle stratum as “triplets.”

EXAMPLE 4.13. SPIRO'S "BELL PATTERN" AND "STICK PATTERN"
IN *RUMBA COLUMBIA*.

The image displays four staves of musical notation, each representing a different rhythmic pattern. The first two staves are in 12/8 time, and the last two are in common time (C). The patterns are as follows:

- 12-cycle palito:** A staff in 12/8 time with a treble clef. The rhythm consists of a sequence of eighth notes and rests: quarter, eighth, eighth, quarter, eighth, eighth, quarter, eighth, eighth, quarter, eighth, eighth.
- 12-cycle clave:** A staff in 12/8 time with a treble clef. The rhythm consists of a sequence of eighth notes and rests: quarter, eighth, eighth, quarter, eighth, eighth, quarter, eighth, eighth, quarter, eighth, eighth.
- 16-cycle palito:** A staff in common time with a treble clef. The rhythm consists of a sequence of eighth notes and rests: quarter, eighth, eighth, quarter, eighth, eighth, quarter, eighth, eighth, quarter, eighth, eighth, quarter, eighth, eighth.
- 16-cycle clave:** A staff in common time with a treble clef. The rhythm consists of a sequence of eighth notes and rests: quarter, eighth, eighth, quarter, eighth, eighth, quarter, eighth, eighth, quarter, eighth, eighth, quarter, eighth, eighth.

Example 4.14 [Sound Example 34] contextualizes the *rumba columbia* superimposition, showing the opening measures of a performance of “Elegia a los Colombianos” by Los Muñequitos de Matanzas.

EXAMPLE 4.14. OPENING OF "ELEGIA A LOS COLUMBIANOS."

The musical score is divided into two systems. The first system includes four staves: bell, palito, chekeres, and drums. The second system continues the notation for these instruments.

bell: 12/8 time signature. The notation consists of a sequence of eighth notes with beams, forming a rhythmic pattern that repeats across the system.

palito: Common time signature (C). The notation shows a series of eighth notes with beams, starting in the second measure of the first system and continuing through the second system.

chekeres: 12/8 time signature. The notation features dotted quarter notes and eighth notes with beams, creating a syncopated rhythmic pattern.

drums: 12/8 time signature. The notation shows a complex rhythmic pattern with eighth notes and beams, characteristic of a drum part in this style.

Note that in this example the *palito* plays the pattern shown in the second system of Figure 4.8: like *yambú* (and *guaguancó* for that matter), either pattern may be found in a *columbia* performance. In these opening seconds we hear the polymetric terrain that is established immediately between bell and *palito*, the former outlining the 12-cycle and the latter the 16-cycle. The *chekere*'s anacrusis onsets occupy a space in between the cyclic limits, with the result that at two points along the cyclic terrain we have *three* beat span entrainments coexisting easily. There is even one instance in which *four* onsets fill a single beat span: this occurs when the *tumbador* plays the quick ("late") anacrusis into measure 6 in the example.

CONCLUSION

In Chapter Two an important question was asked, regarding why, with all of the minute pushes and pulls that result when different performers interpret the beat span in different ways at the same time, neither listeners nor dancers seem to be bothered by the rhythmic frictions that result. Why, for instance, when bassist Walter Page narrates the way in which the Count Basie band would entrain to its rhythmic topos as "[guitarist] Freddie [Green], [drummer] Jo [Jones], and I would place the beat here, and then [lead alto saxophonist] Marshall Royal would play a little behind that, and then the rest of the band would play a little behind that,"⁶⁴ not only are we not concerned about the resulting rhythmic discrepancies, but as

⁶⁴ Charles Keil quoting Walter Page, personal conversation (Spring 2006).

insiders we regard the way the Count Basie band played together as one of the iconic sounds of the big band era, and one of the favorites of dancers over the decades. This last point seems to be the ultimate affirmation for the consideration of beat span as a normal and desirable way to conceive of pulse entrainment.

Beat spans behave as *horizons* in the Husserlian phenomenological sense of the word. Because we are able to consider the immediately recent past and the immediately contingent future as real, active components of our perception of present, we can regard what we might measure quantifiably as the near-simultaneities of event onsets as genuinely, cognitively simultaneous.

Networks of continuous and concatenated beat spans then expand the perceived, and perceivable, horizon. The call of the early beat span limit invites a response from the later limit. Each discrete beat span calls to the next as the teleological motion of the performance unfolds. The horizon of the discrete beat span reflects in the call-and-response structure of the topos and the way that the topos engages with its cyclic terrain. The behavior of one cyclic iteration as it calls to the next, and the dramatic flux of call-response motions that ensues, models at the metric level the same teleological motions that the submetric beat span traversals offer. And the same types of directed energies continue at the hypermetric and phrase levels as well. We therefore have a complex, stratified network of nested and intersecting horizons, layers of horizons, and horizons within horizons, all generated from the superimposition of metric grids, and all mediated by the dialogic nature of call and response.

While the current study focuses on music from a number of Afro-Cuban genres, a conception of beat span is a useful tool to conceptualize rhythm as performed in any diasporic West African performance traditions, and likely in most other world traditions as well. Following Agawu's entreaty that we should seek the points of analytical similarity between Western and non-Western music rather than exploiting their differences,⁶⁵ Scherzinger has argued that there is a significant epistemological value in finding those aspects of non-Western analysis that might be brought to bear on Western rhythmic constructs:

While the strategic use of Western methods for the study of African music should be vigorously supported on political grounds, the epistemological dimensions of the inquiry should be deeply interested in the moments that do not quite fit the theoretical archetype. These are the moments where a consideration of African rhythmic process may force a revision of general theories of rhythm and meter in genuinely global terms.⁶⁶

How might beat span be regarded as an example of "moments that do not quite fit the theoretical archetype"? Performance situations in which it is not stylistically appropriate to adhere too closely to the notated rhythms – the aforementioned Viennese waltz, the expressive microtimings in a Chopin nocturne, or a Verdi aria, or a Mozart cadenza – might benefit from a consideration of rhythmic process such as that described herein. Might we not gain from the construal of a latent metric layer that influences our performative decisions and the degree to which deviation

⁶⁵ See, for instance, Agawu (2003), 58, 64, and 168-71, although similar threads appear throughout Agawu's study.

⁶⁶ Scherzinger (2003), 245.

from the written rhythms is acceptable? After all, it is generally accepted that a Chopin nocturne allows for (or even demands) a certain amount of rhythmic elasticity, but also that there comes a point at which an insensitive performer has gone too far and the expressive rubato dissolves into absurdity; what was expressively poignant becomes maudlin. Likewise in jazz: even though there is a great deal of room for expressive interpretation as far as swing eighth notes go, there is an outer limit at which insiders clearly agree that the music is no longer “swinging.” No one has addressed specifically the performative considerations that determine these limits, but the notion of superimposed metric grids is a significant step in that direction.⁶⁷

There is also the question, mentioned several times throughout this study, of how we entrain to these superimposed grids, and my assertion that – contrary to what Gestalt theory tells us – we can and must regard both strata as simultaneously present. We don’t shift quickly back and forth between them, and we don’t regard them as a single cross-rhythm, but like in an informed “insider” listening to (or performing) Ligeti’s “Désordre,” we actually entrain to two coexistent metric layers, each independent but both closely and complexly intertwined, at once.

* * *

⁶⁷ Morrison (1999) and Benadon (2006, 2009a, 2009b) have offered suggestive language that points toward future research, but have not proposed any specific methodology that might help determine those points of “going too far.”

Let us conclude by invoking two further brief examples, in order to project a conception of beat span onto other, parallel diasporic repertoires. The first is from jazz trombonist Jimmy Knepper, longtime sideman of Charles Mingus and a performer noted for his “slippery” approach to prototypical bebop rhythms. The second is a *maracatú*, a traditional ceremonial rhythm from Recife in northeastern Brazil. Neither North American jazz nor *maracatú* is typically thought of as mediated by an asymmetrical topos like clave, but we will see that the same kinds of metric ambiguities invite the possibility of an analytical epistemology that begins with the beat span invoked by superimposed metric strata.⁶⁸

Example 4.15 [**Sound Example 35**] shows the opening of Jimmy Knepper’s solo on Charles Mingus’s blues composition *Haitian Fight Song*.⁶⁹ The example clearly illustrates how Knepper employs an archetypical bebop phraseology and harmonic vocabulary: swing eighth notes and eighth-note triplets, mordents and grupettos (or simply “turns” in jazz terminology), and melodic constructs that represent dorian and melodic minor scale segments and diminished seventh arpeggiations.

⁶⁸ See footnote 8 in the Introduction above for my comments on whether *samba* and other Brazilian genres are indeed based on asymmetrical topoi in the same way that Afro-Cuban music is. Washburne has noted that there is at least a vestigial suggestion of clave in swing-based North American jazz (Washburne, 1997), and I have strong suspicions that Thelonious Monk’s particular way of relating to a beat span (to give one particularly noteworthy example) is deeply rooted in an awareness of a latent asymmetrical clave topos.

⁶⁹ On Charles Mingus, *The Clown*. Atlantic 1260, 1961.

EXAMPLE 4.15. JIMMY KNEPPER'S SOLO ON "HAITIAN FIGHT SONG."

The image shows a musical score for a bass solo in 4/4 time, key of B-flat major. The score consists of four staves of music. The first staff contains measures 1 through 5, featuring triplet eighth notes and various articulations. The second staff contains measures 6 through 10, with a prominent triplet in measure 7. The third staff contains measures 11 through 14, showing more complex rhythmic patterns and articulations. The fourth staff contains measures 15 through 17, ending with a triplet. The score is annotated with arrows and numbers (3) to indicate specific rhythmic features and triplet groupings.

Benadon's Beat-Upbeat ratio describes the behavior of the second of each pair of eighth notes in relation to a metrically entrained first. But in this passage some of Knepper's *first* eighth notes (in a pair of swing eighth notes) anticipate their expected position on the metric grid. This can be seen in measures 6, 12, and 14. Furthermore, Knepper's triplet figures are compressed in a variety of interesting ways, as indicated in measures 1, 2, 6, and 13. In these cases it seems as if a latent 16-cycle stratum is pulling the prototypical bebop triplets away from their expected

metric locations; the performed figure is as close to a two-sixteenth – eighth note dactyl rhythm as it is to the expected (and notated) evenly-spaced triplet. There are also instances in which Knepper plays “behind the beat” in a manner that is quite common in jazz practice. Measures 4, 5, and 11 offer illustrations of Knepper’s “laid back” entrainment to the beat.⁷⁰

Knepper’s solo obviously does not adhere to a single metric grid. Nor is a microrhythmic conception like Benadon’s Beat-Upbeat ratio sufficient to describe the ways in which Knepper’s solo intersects with the metric terrain of “Haitian Fight Song,” since often it is the first of a pair of notes that is displaced. Even allowing that the notation of Example 4.15, as is typical of jazz notation, assumes a rather large degree of interpretational latitude on the part of the performer – the personalization of microrhythmic flux that is generically referred to as “swing,” Knepper’s conception of swing is best described in terms of a series of intersecting beat spans. In this case, a 12-cycle seems to dominate (which is defined by the triplet feel that is rooted in the medium swing tempo of the song), but a latent 16-cycle tugs on Knepper’s 12-cycle entrainment in an astonishing variety of ways.

Finally, let us examine an excerpt from the *maracatú* tradition of Recife in northeastern Brazil. Example 4.16 [**Sound Example 36**] shows a brief passage from the middle of “Maracatús” by Arnaldo Jr. and Ricardo Gomes.⁷¹

⁷⁰ Recall Keil’s quote, about how the Count Basie band would play behind the beat, above.

⁷¹ *On Code: Brasil – Target: Recife*. Melt 1999, 2000.

EXAMPLE 4.16. "MARACATÚS," 2:31 TO 2:40.

The musical score for "MARACATÚS" from 2:31 to 2:40 is presented in common time (C). It consists of four staves: shaker, repinique, alfaia, and voice.

- shaker:** A continuous eighth-note pattern.
- repinique:** A sequence of eighth notes, including a triplet of eighth notes followed by a quarter note, with a dotted line indicating continuation.
- alfaia:** A sequence of eighth notes.
- voice:** A melodic line in treble clef, featuring eighth and quarter notes.

The score is divided into two systems. The second system ends with "etc." indicating that the pattern continues.

There are three noteworthy rhythmic inflections that coexist in this brief passage.

The prototypical three-event rhythm that has been described above as an evenly spaced triplet at one beat-span limit or as an eighth-quarter-eighth amphibrach at

the other occurs here in at least three beat-span manifestations. First the *repinique* plays it, in measures 2, 4, and 6, in a way that pulls more strongly toward the 12-cycle (but with the third event stretched against the 12-cycle grid). Then the voice inflects the same rhythm in measures 2, 3, and 4 such that it maps directly onto the 16-cycle limit. In the fourth voice iteration, in measure 5, the second event is stretched slightly, which becomes even more startling when compared with the *repinique* iteration that follows. Finally, when the *alfaia* reenters, the prototypical *maracatú* rhythm entrains exactly to the 16-cycle, although an interesting aural illusion is invoked by the strong dynamic accent, idiomatic of the *maracatú* performance tradition, which makes the second onset of each figure sound ever so slightly late. This last phenomenon of course recalls how the consistent beat-span displacement of the piano montuno in “Yoruba Song” caused us to feel the subsequent metrically-aligned figures as late.

Meter, and the individual measure, functions in part as a frame in which rhythms behave, interact, and develop. Hauptmann describes the relation of rhythmic motion to meter succinctly: “For the motion in that measure, it may in itself be infinitely manifold of shape.”⁷² Keil has described rhythmic motions as “Particles Dancing.” Hasty has suggested that the “continuously directed impulse” of the microrhythmic flux of performed rhythms might even trump “the importance of division by equal pulses or beats.” And earlier I invoked the *roda* of *capoeira* as a

⁷² Hauptmann (1888), 189.

metaphor for the malleable way in which rhythms behave in relation to a protean metric frame. This last metaphor holds equally true at the microrhythmic level: the acceptable outer limits of a beat span might be determined by the superimposition of 12-cycle and 16-cycle, but the specific ways in which performers locate their performed rhythms in that frame are determined by strategic, playful decisions based on the rules of the “game.” Throughout the foregoing examples, we have seen how beat span can be invoked as a powerful conceptual tool for the examination of the microrhythmic motions of a great variety of diasporic musics. Beginning with the directed energies of two interpretations of *rumba* clave, and then abstracting the resulting motions into other clave- and non-clave-based performance situations, we have a nexus of flexible now-horizons, rooted in the powerful rhetorical character of call-and-response, that helps begin to explain how all of Hauptmann’s “infinitely manifold” microrhythmic motions behave.

Glossary of Terms Used

Abakuá	Since the 1800s, an all-male secret society in Cuba that, among other things, has been a key contributor to the preservation of <i>Carabalí</i> history, language, and musical traditions in Cuban music and religious contexts. The <i>Abakuá</i> lodges, or <i>juegos</i> , continue to be centers of profound spiritual practice with carefully guarded rituals and musical practices. <i>Abakuá</i> also refers to a specific musical style, as well as a specific rhythmic construct.
alfaia	Bass drum used in the northeastern Brazilian <i>maracatú</i> and its modern derivatives.
batá	One of three sacred hourglass-shaped drums (see <i>Iyá</i> , <i>Itótele</i> , <i>Okónkolo</i>), used in Cuban <i>Santería</i> and other religious ceremonial situations. In recent years <i>batá</i> drums have been introduced into secular music as well.
bloque	A unison ensemble figure in <i>son montuno</i> and its modern derivatives, which functions as a way to propel the music forward to the last <i>coro-soneo</i> section.
bongó	A pair of small, high-pitched drums. The smaller drum is referred to as the <i>macho</i> , or male drum, and the larger is referred to as the <i>hembra</i> , or female drum. In <i>son</i> and modern <i>salsa</i> the <i>bongocero</i> (bongó player) will typically play cowbell as well, switching to that instrument when the dynamic flux of the performance calls for it.
caixa	The Brazilian equivalent of a snare drum, used in <i>samba</i> and other Brazilian musical genres.
cajon	A wooden box played like a drum: the performer sits on top of the <i>cajon</i> and strikes it with palms and fingers to produce a wide variety of sounds. The <i>cajon</i> originated with the dockworkers in Havana and Matanzas.
capoeira	A dance / martial art hybrid in Brazil, with roots in Angolan practice. <i>Capoeira</i> has provided its practitioners with a way to communicate ideas across geographic and historical boundaries, to preserve cultural identity, and even as a means

of self-defense. A *capoeira* performance takes place inside of a *roda*, or a circle formed by its participants.

- cascara A rhythmic pattern played on the sides of the *timbales* ; basically an ornamented version of the *son* or *rumba* *clave* *topos*.
- cha-cha-chá A popular Cuban and diasporic Cuban dance form, derived from *danzón*.
- Changó In Brazil, Xangô. The Yoruba *orisha* associated with thunder, lightning, and significantly, music. In Cuba, Changó is the owner of the sacred *batá* drums that accompany *Santería* rituals.
- changüí A folkloric style from the eastern part of Cuba. *Changüí* is one of the few folkloric Cuban genres that is not based on a *clave* *topos*.
- chekere A bead-covered gourd shaker.
- Chimurenga Literally “freedom,” *Chimurenga* was the battle cry of the independence movement in Zimbabwe’s war against British occupation in the 1970s, and also the name adopted by Thomas Mapfumo and others to describe the new *mbira*-based pop music that was associated with it.
- clave The *topos* from which most of the rhythmic activity in *son* and *rumba* is generated. Unlike many Western African (and Cuban) *topoi*, *son clave* and *rumba clave* are five-onset patterns that are typically thought of as traversing a 16-cycle framework as segmentations of <33424> and <34324> respectively. These patterns are often played explicitly, but they need not be; the rhythmic behaviors that *clave* generates are adhered to regardless of the physical presence of the *topos*. *Claves* refers to the pair of wooden sticks that often play this pattern.
- columbia One of the three basic folkloric *rumba* styles. *Rumba columbia* is very fast and virtuosic, and unfolds as a superimposition of 12-cycle and 16-cycle metric strata in a very clear, discernible way. The dance associated with

rumba columbia is a virtuosic solo exhibition, danced by a single male dancer in close dialog with the *quinto*.

conga	One of three or four barrel-shaped drums, played in nearly Cuban styles. A wealth of different sounds can be produced based on various open and closed strikes and different hand positions. The various sizes of conga drums have specific names as well: in rumba the lowest drum is referred to as the <i>tumbador</i> or <i>tumbadora</i> (or sometimes the <i>salidor</i>), the middle drum is referred to as the <i>segundo</i> or <i>tres golpes</i> , and the highest-pitched drum is called the <i>quinto</i> .
coro-pregón	The section in a <i>son</i> or salsa composition during which a repeated chorus alternates with improvised material from the lead singer or <i>sonero</i> . Also known as <i>coro-sonero</i> .
cruzao	“Cross-clave,” when a performer does not follow the rhythmic guidelines given by the clave topos.
cumbia	A popular dance style in Colombia, with variants in a number of Central American countries.
diana	The somewhat improvised vocal introduction to a <i>rumba</i> performance. The <i>diana</i> precedes the main body of a song, and is often much more free rhythmically.
Elegguá	The Yoruba <i>orisha</i> associated with the road, and the guardian of the crossroad. Elegguá is also known as a trickster figure and is often syncretized with the Devil of Christian mythology.
estribillo	A transitional passage in <i>son montuno</i> that points to the arrival of the first <i>coro-pregón</i> .
guaguancó	One of the three basic folkloric <i>rumba</i> styles. Two styles of guaguancó are commonly found: <i>guaguancó habanera</i> , from Havana, and <i>guaguancó matancero</i> , from the neighboring town and region of Matanzas.
guajeo	See <i>montuno</i> .
Iyá	The “mother drum,” the largest of the three <i>batá</i> drums of Cuban <i>Santería</i> practice.

Itótele	The middle <i>batá</i> drum of Cuban <i>Santería</i> practice, often referred to as the “father drum.”
Lucumí	A Cuban syncretism of Spanish and Yoruba language, often invoked in Afrocuban folkloric and popular song. <i>Lucumí</i> also refers to Yoruba descendents in Cuba and their folklore, religion, music, and dance.
mangue	“Swamp,” the generic name given to the new wave of Brazilian popular music (since the early 1990s) based in Recife.
maracatú	Traditional ceremonial music of Recife and elsewhere in northeastern Brazil; the framework upon which the modern styles collectively referred to as <i>mangue</i> are based.
marimbula	A large bass instrument, by which sound is produced by plucking a number of metal tines attached to a wood resonator.
matancero	A modifier used to designate the “Matanzas” version of a particular <i>rumba</i> style, as opposed to the “Havana” style.
mazacote	The soft “patter” than drummers play in the opening moments of a <i>rumba</i> performance. Drummers play <i>mazacote</i> until called in by the <i>tumbador</i> to begin the song proper.
mbira	Shona “thumb piano,” a hand-held instrument with a number of tuned metal tines attached to a wooden resonator. Sound is produced by plucking the tines with the thumbs and forefingers. Also known as <i>kalimba</i> , <i>karimba</i> .
montuno	Piano or <i>trés</i> ostinato commonly found in <i>son</i> and salsa. Along with the bass <i>tumbao</i> , the <i>montuno</i> outlines a song’s harmonic framework while also contributing to its rhythmic momentum. It does this by means of a cycle of syncopated chord arpeggiations. Frequently referred to as the <i>guajeo</i> .
Obatalá	One of the most important <i>orishas</i> in Yoruba spiritual practice. Obatalá is considered to be the creator of the world and is associated with wisdom and purity.

Okónkolo	The largest of the three <i>batá</i> drums of Cuban <i>Santería</i> practice, often referred to as the “baby” drum.
Orisha	In Brazil, <i>Orixá</i> . In Cuban <i>Santería</i> and Brazilian <i>Candomblé</i> respectively, one of many spirit deities adopted from traditional Yoruba practice. In both diasporic situations direct analogies were drawn between <i>orishas</i> and important Catholic icons in order to camouflage the fact that displaced Africans in the New World continued to practice their ancestral spiritual belief systems.
Palo	The religious practice originating in the Congo and Angola regions of Central Africa. Along with <i>Santería</i> and <i>Abakuá</i> , palo is one of the most important spiritual influences on Afrocuban musical practices. Arsenio Rodríguez famously invokes <i>Palo</i> in his “Bruca manigua.”
pregón	The improvised vocal phrase that engages in a call-and-response dialogue with the <i>coro</i> . Also referred to as the <i>soneo</i> .
quinto	The smallest <i>conga</i> drum, which generally assumes the lead role in a <i>rumba</i> setting. In a manner that is analogous to the master drummer of many West African traditions, its performance practice is highly improvised and virtuosic.
RTP	“Referential Time Point,” Willie Anku’s term for the perceived beginning-point of a cyclic musical phrase structure. In many West African drumming musics, as Anku describes, the master drummer may play rhythmic figures that suggest a new RTP, and musicians, dancers, and insider listeners are expected to, and do, entrain immediately to the new beginning-point.
reggae	A generic term that subtends a number of Jamaican popular music styles. Reggae incorporates aspects of the early Jamaican <i>ska</i> and <i>rock steady</i> as well as North American soul, R&B, rock, and hip-hop.
repinique	A metal-shell, double-headed drum used in many Brazilian styles, including <i>samba</i> and <i>maracatú</i> .

roda	The protean circle that forms around a <i>capoeira</i> performance, or around some kinds of <i>samba</i> . This study uses the <i>roda</i> as a metaphor for the way in which metric entrainment may change according to local performative needs.
rumba	Generic name for several Cuban musical styles, including especially <i>columbia</i> , <i>guaguancó</i> , and <i>yambú</i> , with close roots in ancestral West African styles. The word <i>rumba</i> is thought to be of Congolese etymology.
rumba clave	An Afro-Cuban <i>topos</i> that is often construed as event onsets at ops 0, 3, 7, 10, and 12 of the 16-cycle. More so than <i>son clave</i> , the performed events that are informed by the <i>rumba</i> clave <i>topos</i> are very often inflected by a latent (or in the case of <i>rumba columbia</i> , existent) 12-cycle stratum, although similar inflections are certainly a potentially valid performative aspect of <i>son</i> as well.
salsa	Generic term for popular dance music of the Cuban and Puerto Rican diaspora. Salsa is a term that originated in the 1960s in New York City, and (depending on who is doing the describing) can subtend such disparate styles as <i>bachata</i> , <i>bomba</i> , <i>cha cha chá</i> , <i>guaguancó</i> , <i>mambo</i> , <i>pachanga</i> , <i>plena</i> , <i>rumba</i> , <i>son</i> , <i>son montuno</i> , <i>songo</i> , and <i>timba</i> .
samba	Brazilian musical style that originated in Rio de Janeiro in the early twentieth century. The most well-known samba is undoubtedly <i>samba de enredo</i> , which is associated with the parades of Carnival, but there are many other popular syncretic genres, including <i>samba de roda</i> , <i>samba de partido alto</i> , <i>samba de pagode</i> , and <i>samba de morro</i> .
Santería	Literally “Saint Worship,” the syncretized religious practice that combines West African spirit worship with Catholic iconography, originally in order to disguise the former from Catholic slave owners in the early days of the slave trade. <i>Santería</i> has played a large role in the preservation of Yoruba tradition in Cuban culture.
segundo	The middle of three basic drums in rumba styles. Known in some Cuban regions as <i>tres golpes</i> .

son	A Cuban style, pioneered in the 1940s by composer and <i>trés</i> player Arsenio Rodríguez, slightly more “Westernized” than <i>rumba</i> , and considered to be the main predecessor of modern <i>songo</i> and <i>timba</i> .
son montuno	Musical derivative of <i>son</i> , best exemplified by the music of Arsenio Rodríguez, and considered to be one of the most important genres that lead to <i>salsa</i> and <i>songo</i> .
soneo	See <i>pregón</i> .
sonero	The lead singer in many folkloric and popular Cuban styles.
songo	A modern Cuban derivative of <i>son montuno</i> , extremely popular and influential since the 1970s. Juan Formell and Changuito of Los Van Van are often credited with inventing <i>songo</i> .
timba	A high-energy form of Cuban dance music that fuses <i>songo</i> and North American styles like funk and hip hop, popularized in the early 1990s by bands like NG La Banda and Manolito y su Trabuco.
timbal	One of two metal-framed drums used in many Cuban styles.
topos	From the Greek τόπος, <i>topos</i> translates literally as “place.” Ernest Robert Curtius first introduced <i>topos</i> as a way to describe commonplaces that manifest across literary and historical boundaries, and it has since become an important thematic device in literary theory. Kofi Agawu has recently invoked <i>topos</i> to describe “commonplaces rich in associative meaning for cultural insiders,” and uses them to describe what are often referred to as timelines, bell patterns, and the like. The present study follows Agawu’s definition and usage.
trés	A popular Cuban guitar with six strings, organized in three courses of two. Two pairs of strings are tuned in unison and the third in octaves, the result of which is that <i>montuno</i> ostinati seem to wrap registrally around on themselves much like a Shepard tone.

tumbador	The lowest of three basic drums in <i>rumba</i> . Sometimes called the <i>salidor</i> .
tumbao	The basic conga pattern for many popular Cuban styles. Also the word for a common rhythmic pattern played by the bass, which highlights the “and” of 2 and 4 in a measure of 4/4.
umbigada	A gesture used in samba dance to invite the next dancer to enter the <i>roda</i> .
vacunao	An important gesture in <i>rumba</i> dance, symbolizing the possession by the male of the female’s genitals.
yambú	One of the three basic folkloric rumba styles, along with <i>guaguancó</i> and <i>columbia</i> . <i>Yambú</i> is a comparatively slow and stately dance, and involves the acting-out of a stylized courtship ritual.
Yemayá	The Yoruba <i>orisha</i> associated with water and the sea. Yemayá is considered the mother of the world and the protector of fishermen.
Yoruba	The cultural group, hailing from what is now southwestern Nigeria, whose spiritual practice has been most fully preserved in New World diasporas: most notably for the purposes of this study in the <i>Santería</i> of Cuba and the <i>Candomblé</i> of Brazil.

Bibliography

- Agawu, Kofi. 1986. "Gi Dunu, Nyekpadudo, and the Study of West African Rhythm." *Ethnomusicology* 30/1: 64-83.
- _____. 1995. *African Rhythm: A Northern Ewe Perspective*. Cambridge: Cambridge University Press.
- _____. 2003. *Representing African Music: Postcolonial Notes, Queries, Positions*. New York: Routledge.
- _____. 2006. "Structural Analysis or Cultural Analysis? Competing Perspectives on the 'Standard Pattern' of West African Rhythm." *Journal of the American Musicological Society* 59/1: 1-46.
- Alén Rodríguez, Olavo. 1986. *La Música de las Sociedades de Tumba Francesa*. Havana: Casa de las Americas.
- _____. 1995. "Rhythm as Duration of Sounds in *Tumba Francesa*." *Ethnomusicology* 39/1: 55-74.
- Amiri, John and Steven Cornelius. 1992. *The Music of Santería: Traditional Rhythms of the Batá Drums*. Crown Point, Indiana: White Cliffs Media Company.
- Anku, Willie. 2000. "Circles and Time: A Theory of Structural Organization of Rhythm in African Music." *Music Theory Online* 6/1.
- Arom, Simha. 1991. *African Polyphony and Polyrhythm: Musical Structure and Methodology*. Translated by Martin Thom, Barbara Tuckett, and Raymond Boyd. Cambridge: Cambridge University Press.
- Ashley, Richard. 2002. "Do[n't] Change a Hair for Me: The Art of Jazz Rubato." *Music Perception* 19/3: 311-322.
- Austerlitz, Paul. 2003. "Mambo Kings to West Africa Textiles: A Synesthetic Approach to Black Atlantic Aesthetics." In *Musical Migrations, Vol. 1: Transnationalism and Cultural Hybridity in Latin/o America*. New York: Palgrave.
- Benadon, Fernando. 2004. "Towards a Theory of Tempo Modulation." *Proceedings of the 8th International Conference on Music Perception & Cognition*: 563-6.

- _____. 2006. "Slicing the Beat: Jazz Eighth-Notes as Expressive Microrhythms." *Ethnomusicology* 50/1: 73-98.
- _____. 2009a. "Gridless Beats." *Perspectives of New Music* 47/1: 135-64 .
- _____. 2009b. "Time Warps in Early Jazz." *Music Theory Spectrum* 31/1: 1-25.
- Bengsston, Ingmar, Per-Arne Tove, and Stig-Magnus Thorsen. 1972. "Sound Analysis Equipment and Rhythm Research Ideas at the Institute of Musicology in Uppsala." *Studia Instrumentorium Musicae Popularis* 2: 53-76.
- Benjamin, William. 1984. "A Theory of Musical Meter." *Music Perception* 1/4: 355-415.
- Bergson, Henri. 1998. *Creative Evolution*. Translated by Arthur Mitchell. New York: H. Holt & Co., 1911. Dover Unabridged Reprint Edition.
- Berliner, Paul. 1981. *The Soul of Mbira*. Berkeley: University of California Press.
- Bilmes, Jeffrey Adam. 1993. *Timing is of the Essence: Perceptual and Computational Techniques for Representing, Learning, and Reproducing Expressive Timing in Percussive Rhythm*. MS Thesis, Massachusetts Institute of Technology.
- Blacking, John. 1969. *Process and Product in Human Society*. Johannesburg: Witwatersrand University Press.
- _____. 1973. *How Musical Is Man?* Seattle: University of Washington Press.
- Brandel, Rose. 1961. *The Music of Central Africa: An Ethnomusicological Study: Former French Equatorial Africa, The Former Belgian Congo, Ruanda-Urundi, Uganda, Tanganyika*. The Hague: M. Nijhoff.
- Browning, Barbara. 1995. *Samba: Resistance in Motion*. Bloomington: Indiana University Press.
- Chasteen, John Charles. 2006. *Born in Blood and Fire: A Concise History of Latin America*. Second Edition. New York: W.W. Norton & Co.
- Chernoff, John Miller. 1981. *African Rhythm and African Sensibility: Aesthetics and Social Action in African Social Idioms*. Chicago: University of Chicago Press.
- _____. 1997. "'Hearing' in West African Idioms." *The World of Music* 39: 19-26.

- Clifton, Thomas. 1983. *Music as Heard: A Study in Applied Phenomenology*. New Haven: Yale University Press.
- Clough, John and Jack Douthett. 1991. "Maximally Even Sets." *Journal of Music Theory* 35/1-2: 93-173.
- Cohn, Richard. 1992a. "Metric and Hypermetric Dissonance in the Menuetto of Mozart's Symphony in G-Minor, K. 550." *Integral* 6: 1-33.
- _____. 1992b. "Transpositional Combinations of Beat-Class Sets in Steve Reich's Phase-Shifting Music." *Perspectives of New Music* 30/2: 146-177.
- Cone, Edward T. 1968. *Musical Form and Musical Performance*. New York: Norton.
- _____. 1985. "Musical Form and Musical Performance Reconsidered." *Music Theory Spectrum* 7: 149-158.
- Crook, Larry. 1982. "A Musical Analysis of the Cuban Rumba." *Latin American Music Review* 3/1: 92-123.
- _____. 1987. Review of "Ritmos brasileiros e seus instrumentos de percussão" by Edgard Nunes Rocco. *Latin American Music Review* 8/1: 116-119.
- _____. 2005. *Brazilian Music: Northeastern Traditions and the Heartbeat of a Modern Nation*. Santa Barbara: ABC-CLIO.
- Dessen, Michael. 2004. "Improvising a Different Clave: Steve Coleman and AfroCuba de Matanzas." *The Other Side of Nowhere: Jazz, Improvisation, and Communities in Dialogue*, ed. Daniel Fishlin and Ajay Heble. Middletown, CT: Wesleyan University Press: 173-192.
- Downey, Greg. 2002. "Listening to Capoeira: Phenomenology, Embodiment, and the Materiality of Music." *Ethnomusicology* 46/3: 487-509.
- Euba, Akin. 1988. "The Music of Yoruba Gods." In *Essays on Music in Africa, Vol. 1*. Bayreuth: Iwalewa-Haus, 1-30.
- Ekwueme, Lazarus. 1975-6. "Structural Levels of Rhythm and Form in African Music with Particular Reference to the West Coast." *African Music* 5, no. 4: 27-35.
- Ellingson, Ter. 1992a. "Notation." *Ethnomusicology: An Introduction*, ed. Helen Myers. New York: Norton: 153-64.

- _____. 1992b. "Transcription." *Ethnomusicology: An Introduction*, ed. Helen Myers. New York: Norton: 110-52.
- Erlmann, Veit. 2004. "Resisting Sameness: À Propos Kofi Agawu's 'Representing African Music.'" *Music Theory Spectrum* 26: 291-304.
- Fiasbedzi, Nissio. 1980. "A Preliminary Inquiry into Inherent Rhythms in Anlo Dance Drumming." *Journal of the Performing Arts* 1/1: 83-99.
- Folio, Cynthia. 1995. "An Analysis of Polyrhythm in Selected Improvised Jazz Solos." *Concert Music, Rock, and Jazz Since 1945*, edited by Elizabeth West Marvin and Richard Hermann. Rochester: University of Rochester Press.
- Friberg, Anders and Andreas Sundström. 2002. "Swing Ratios and Ensemble Timing in Jazz Performance: Evidence for a Common Rhythmic Pattern." *Music Perception* 19/3: 333-349.
- Friedson, Steven M. 1996. *Dancing Prophets: Music Experience in Tumbuka Healing*. Chicago: University of Chicago Press.
- García, David. 2006. *Arsenio Rodríguez and the Transnational Flow of Latin Popular Music*. Philadelphia: Temple University Press.
- Gerischer, Christiane. 2006. "O Suingue Baiano: Rhythmic Feel and Microrhythmic Phenomena in Brazilian Percussion." *Ethnomusicology* 50/1: 91-119.
- Gjerdingen, Robert O. 1989. "Meter as a Mode of Attending: A Network Simulation of Attentional Rhythmicity in Music." *Intégral* 3: 67-91.
- Green, Doris. 1977. "The Liberation of African Music." *Journal of Black Studies* 8: 149-67.
- Hagedorn, Katherine. 2001. *Divine Utterances: The Performance of Afro-Cuban Santería*. Washington, DC: Smithsonian Institution Press.
- Hanninen, Dora. 2003. "A Theory of Recontextualization in Music: Analyzing Phenomenal Transformations of Repetition." *Music Theory Spectrum* 25/1 (Spring): 59-97.
- Harris, Henry Siltón. 1997. *Hegel's Ladder, Vol. I: The Pilgrimage of Reason*. Indianapolis: Hackett Publishing.

Hasty, Christopher. 1981. "Rhythm in Post-Tonal Music: Preliminary Questions of Duration and Motion." *Journal of Music Theory* 25/2: 183-216.

_____. 1997. *Meter as Rhythm*. Oxford: Oxford University Press.

Hauptmann, Moritz. 1888. *The Nature of Harmony and Metre*. Translated and edited by W.E. Heathcote. London: Swan Sonnenschein & Co.

Heidegger, Martin. 1962. *Being and Time*, translated by John Macquarrie and Edward Robinson. San Francisco: Harper Collins.

Hernandez, Horacio and Giovanni Hidalgo. 2004. *Traveling Through Time*. Book and Accompanying DVD. Warner Bros.

Horlacher, Gretchen. 1992. "The Rhythms of Reiteration: Formal Development in Stravinsky's Ostinati." *Music Theory Spectrum* 14/2: 171-187.

_____. 1995. "Metric Irregularity in *Les Noces*: The Problem of Periodicity." *Journal of Music Theory* 39/2: 285-309.

Hood, Mantle. *The Ethnomusicologist*. New Edition. Kent, OH: Kent State University Press, 1982.

Hornbostel, Erich M. von. 1928. "African Negro Music." *Africa* 1: 30-62.

Husserl, Edmund. 1931. *Ideas: General Introduction to Pure Phenomenology*. Translated by W.R. Boyce Gibson. New York: The MacMillan Company.

_____. 1964. *The Phenomenology of Internal Time Consciousness*. Translated by James S. Churchill. Bloomington: Indiana University Press.

_____. 1999. *Cartesian Meditations: An Introduction to Phenomenology*. Translated by Dorion Cairns. Dordrecht, The Netherlands: Kluwer Academic Publishers.

Hutchinson, Anne. 1961. *Labanotation*, illustrated by Doug Anderson, New York: New Direction Books.

Ihde, Don. 1976. *Listening and Voice: A Phenomenology of Sound*. Athens, OH: Ohio University Press.

_____. 1986. *Experimental Phenomenology: An Introduction*. Reprint of 1977 Putnam and Sons Publication: State University of New York Press.

Ishemo, Shubi L. 2002. "From Africa to Cuba: An Historical Analysis of the Sociedad Secreta Abakuá (Ñañinguismo)." *Review of African Political Economy* 29/92: 253-272.

Iyer, Vijay. 2002. "Embodied Mind, Situated Cognition, and Expressive Microtiming in African-American Music." *Music Perception* 22/3: 387-414.

Jairazbhoy, Nazir. 1977. "The 'Objective' and Subjective View in Music Transcription." *Ethnomusicology* 21/2: 263-273.

Jones, A.M. 1954. "African Rhythm." *Africa* 24, vol. 1: 26-47.

_____. 1958. *African Music in Northern Rhodesia and Some Other Places. The Occasional Papers of the Rhodes-Livingstone Museum, no.4.* Livingstone, Zambia: Rhodes-Livingstone Museum.

Kauffman, Robert. 1980. "African Rhythm: A Reassessment." *Ethnomusicology* 24, no. 3: 393-415.

Keil, Charles. 1966. "Motion and Feeling Through Music." *Journal of Aesthetics and Art Criticism* 24: 337-349.

_____. 1995. "The Theory of Participatory Discrepancies: A Progress Report." *Ethnomusicology* 39/1: 1-19.

_____. n.d. "Groovology and the Magic of Other Peoples' Music." <http://www.musicgrooves.org/articles/GroovologyAndMagic.pdf>. Accessed 16 October, 2009.

Keil, Charles and Steven Feld. 1994. *Music Grooves.* Chicago: University of Chicago Press.

Knight, Roderic. 1974. "Mandinka Drumming." *African Arts* 7: 24-35.

Koch, Heinrich Christoph. 1983. *Introductory Essay on Composition.* Translated and edited by Nancy Kovaleff Baker. New Haven: Yale University Press.

Koetting, James. 1970. "Analysis and Notation of West African Drum Ensemble Music." *Selected Reports in Ethnomusicology* 1/3: 115-46.

_____. 1986. "What do we know about African Rhythm?" edited by Roderic Knight. *Ethnomusicology* 30: 58-63.

- Kolinski, Mieczyslaw. 1973. "A Cross-Cultural Approach to Metro-Rhythmic Patterns." *Ethnomusicology* 17/3: 494-506.
- Kramer, Jonathan D. 1988. *The Time of Music: New Meanings, New Temporalities, New Listening Strategies*. New York: Schirmer Books.
- _____. 1996. "Postmodern Concepts of Musical Time." *Indiana Theory Review* 17: 21-61.
- Krebs, Harald. 1999. *Fantasy Pieces: Metrical Dissonance in the Music of Robert Schumann*. New York: Oxford University Press.
- Kubik, Gerhard. 1962. "The Phenomenon of Inherent Rhythms in East and Central African Instrumental Music." *African Music* 3/1: 33-42.
- _____. 1965. "Transcription of Mangwilo Xylophone Music from Film Strips." *African Music* 3/4: 35-51.
- _____. 1972. "Oral Notation of Some West and Central African Time-Line Patterns." *Review of Ethnology* 3/22: 169-76.
- _____. 1985. "The Emics of African Musical Rhythm." In *Cross Rhythms 2*, edited by Daniel Avorgbedor and Kwesi Yankah. Bloomington: Trickster Press, 26-66.
- _____. 1994. *Theory of African Music Volume I. Intercultural Music Studies 7*. Wilhelmshaven: Noetzel.
- _____. 1996. "Emics and Etics: Theoretical Considerations." *African Music* 7/3: 3-10.
- Kvifte, Tellef. 2007. "Categories and Timing: On the Perception of Meter." *Ethnomusicology* 51/1: 64-83.
- Langer, Susanne. 1942. *Philosophy in a New Key*. Cambridge: Harvard University Press.
- Lerdahl, Fred and Ray Jackendoff. 1983. *A Generative Theory of Tonal Music*. Cambridge: MIT Press.
- Lester, Joel. 1986. *The Rhythms of Tonal Music*. Carbondale: Southern Illinois University Press.

Lewin, David. 1981. "Some Investigations into Foreground Rhythmic and Metric Patterning." *Music Theory: Special Topics*, edited by Richmond Browne. New York: Academic Press: 101-37.

_____. 1986. "Music Theory, Phenomenology, and Modes of Perception." *Music Perception* 3/4: 327-92.

Lewis, J. Lowell. 1992. *Ring of Liberation: Deceptive Discourse in Brazilian Capoeira*. Chicago: University of Chicago Press.

Lezcano, José Manuel. 1991. "African-Derived Rhythmical and Metrical Elements in Selected Songs of Alejandro García Caturla and Amadeo Roldán." *Latin American Music Review* 12/2: 173-186.

Livingston-Isenhour, Tamara Elena and Thomas George Caracas García. 2005. *Choro: A Social History of a Brazilian Popular Music*. Bloomington: Indiana University Press.

Lochhead, Judith. 1982. *The Temporal Structure of Recent Music: A Phenomenological Investigation*. Ph.D. dissertation, State University of New York at Stony Brook.

Locke, David. 1982. "Principles of Off-Beat Timing and Cross-Rhythms in Southern Ewe Dancing." *Ethnomusicology* 26/2: 217-46.

_____. 1987. *Drum Gahu: A Systematic Method for an African Percussion Piece*. Crown Point, Indiana: White Cliffs Media Company.

_____. 1992. *Kpegisu: A War Drum of the Ewe*. Tempe, AZ: White Cliffs Media Company.

London, Justin. 1999. "Hasty's Dichotomy: A Review-Essay of Christopher Hasty's *Meter as Rhythm*." *Music Theory Spectrum* 21/1: 260-74.

_____. 2002a. "Rhythm in Twentieth-Century Theory." *The Cambridge History of Western Music Theory*, edited by Thomas Christensen. Cambridge: Cambridge University Press.

_____. 2002b. "Some Non-Isomorphisms Between Pitch and Time." *Journal of Music Theory* 46/1-2: 127-151.

_____. 2004. *Hearing in Time: Psychological Aspects of Musical Meter*. Oxford: Oxford University Press.

- Loza, Steve. 1990. Review of Rolando Antonio Pérez Fernandez, *La binarización de los ritmos ternarios africanos en América Latina*. *Latin American Music Review* 11: 296-310.
- Lydon, Michael and Ellen Mandel. 1974. *Boogie Lightning*. New York: Dial Press.
- Magill, Jonathan M. and Jeff Pressing. 1997. "Asymmetric Cognitive Clock Structures in West African Rhythms." *Music Perception* 15/2: 189-222.
- Manuel, Peter. 1985. "The Anticipated Bass in Cuban Popular Music." *Latin American Music Review* 6/2: 249-261.
- Manuel, Peter, ed. 1990. *Essays on Cuban Music: North American and Cuban Perspectives*. New York: University Press of America.
- Merleau-Ponty, Maurice. 1962. *Phenomenology of Perception*. Translated by Colin Smith. New York: Humanities Press.
- Miller, Ivor. 2005. "Cuban Abakuá Chants: Examining New Linguistic and Historical Evidence for the African Diaspora." *African Studies Review* 48/1: 23-58.
- _____. 2009. *Voice of the Leopard: African Secret Societies and Cuba*. Jackson: University Press of Mississippi.
- Miller, Izchak. 1984. *Husserl, Perception, and Temporal Awareness*. Cambridge: MIT Press.
- Moore, Kevin. 2006. *Timba: Understanding Cuban Rhythms*. Online Book, www.timba.com/artists/bookpre/index.asp (accessed 14 October, 2009).
- Moore, Robin and Elizabeth Sayre. 2006. "An Afro-Cuban Batá Piece for Obatalá, King of the White Cloth." *Analytical Studies in World Music*, edited by Michael Tenzer. Oxford: Oxford University Press: 120-160.
- Morrison, Kenneth James. 1999. *A Polymetric Interpretation of the Swing Impulse: Rhythmic Stratification in Jazz*. Ph.D. Dissertation, University of Washington.
- Narmour, Eugene. 1992. *The Analysis and Cognition of Melodic Complexity: The Implication-Realization Model*. Chicago: University of Chicago Press.
- Nettl, Bruno. 1964. *Theory and Method in Ethnomusicology*. New York: Collier-Macmillan Publishers.

_____. 2005. *The Study of Ethnomusicology: Thirty-One Issues and Concepts*. New Edition. Champaign, IL: University of Illinois Press.

Nketia, J.H. Kwabena. 1974. *The Music of Africa*. New York: W.W. Norton.
 _____. 1988. "The Intensity Factor in African Music." *Journal of Folklore Research* 25/1-2: 53-86.

Novotny, Eugene. 1998. *The 3:2 Relationship as the Foundation of Timelines in West African Musics*. DMA Dissertation, University of Illinois, Urbana-Champaign.

Nzewi, Meki. 1997. *African Music: Theoretical Content and Creative Continuum: The Culture-Exponent's Definitions*. Olderhausen, Germany: Institut für populärer Musik.

Ortiz, Fernando. 1950. *La africanía de la música folklórica de Cuba*. Habana: Ministerio de Educación, Dirección de Cultura.

_____. 1993 [1951]. *Los bailes y el teatro de los negos en el folklore de Cuba*. Third edition. La Habana: Publicaciones del Ministerio de Educacion, Dirección de Cultura.

Pantaleoni, Hewitt. 1972. "Three Principles of Timing in Anlo Dance Drumming." *African Music* 5/2: 50-63.

Park, David. 1978. "The Past and the Future." *The Study of Time, vol. 3*, edited by J.T. Fraser, Nathaniel Lawrence, and David Park. New York: Springer-Verlag, 351-67.

Pasmanick, Philip. 1997. "Décima and Rumba: Iberian Formalism in the Heart of Afro-Cuban Song." *Latin American Music Review* 18/2: 252-77.

Peñalosa, David. 2009. *The Clave Matrix. Afro-Cuban Rhythm: Its Principles and African Origins*. Edited by Peter Greenwood. Redway, CA: Bembe Books.

Pérez Fernandez, Rolando Antonio. 1987. *La binarización de los ritmos ternarios africanos en América Latina*. Havana: Ediciones Casa de las Américas.

Pressing, Jeff. 1983. "Cognitive Isomorphisms Between Pitch and Rhythm in World Musics: West Africa, the Balkans and Western Tonality." *Studies in Music* 17: 38-61.

- _____. 2002. "Black Atlantic Rhythm: Its Computational and Transcultural Foundations." *Music Perception* 19/3: 285-310.
- Pressing, Jeff, Jeff Summers, et.al. 1996. "Cognitive Multiplicity in Polyhythmic Pattern Performance." *Journal of Experimental Psychology: Human Perception and Performance* 22/5: 1127-48.
- Prögler, J.A. 1995. "Searching for Swing: Participatory Discrepancies in the Jazz Rhythm Section." *Ethnomusicology* 39/1: 21-54.
- Rahn, Jay. 1978. "Evaluating Metrical Interpretations." *Perspectives of New Music* 16/2: 35-49.
- _____. 1987. "Asymmetrical Ostinatos in Sub-Saharan Music: Time, Pitch, and Cycles Reconsidered." *In Theory Only* 9/7(1987): 23-37.
- Rahn, John. 2001a. "Aspects of Musical Explanation." In *Music Inside Out: Going Too Far in Musical Essays. Critical Voices in Art, Theory and Culture*, edited by Saul Ostrow. G+B Arts International: 51-68.
- _____. 2001b. "Notes on Methodology in Music Theory." In *Music Inside Out: Going Too Far in Musical Essays. Critical Voices in Art, Theory and Culture*, edited by Saul Ostrow. G+B Arts International: 69-82.
- _____. 2001c. "Repetition." In *Music Inside Out: Going Too Far in Musical Essays. Critical Voices in Art, Theory and Culture*, edited by Saul Ostrow. G+B Arts International: 7-19.
- _____. 2004. "The Swerve and the Flow: Music's Relation to Mathematics." *Perspectives of New Music* 42/1: 130-149.
- Roeder, John. 2003. "Beat-Class Modulation in Steve Reich's Music." *Music Theory Spectrum* 25/2 (Autumn): 275-304.
- Rothstein, William. 1989. *Phrase Rhythm in Tonal Music*. New York: Schirmer Books.
- Rycroft, David. 1967. "Nguni Vocal Polyphony." *Journal of the International Folk Music Council* 19: 88-103.
- Samarotto, Frank. 1999. "Strange Dimensions: Regularity and Irregularity in Deep Levels of Rhythmic Reduction." *Schenker Studies* 2, edited by Carl Schacter and Hedi Siegel. Cambridge: Cambridge University Press, 222-238.

Schachter, Carl. 1999a. "Rhythm and Linear Analysis: A Preliminary Study." *The Music Forum* 4, edited by Felix Salzer and Carl Schachter. Reprinted in *Unfoldings: Essays in Schenkerian Theory and Analysis*, ed. by Joseph N. Straus. Oxford: Oxford University Press: 17-53.

_____. 1999b. "Rhythm and Linear Analysis: Durational Reduction." *The Music Forum* 5, edited by Felix Salzer and Carl Schachter. Reprinted in *Unfoldings: Essays in Schenkerian Theory and Analysis*, ed. by Joseph N. Straus. Oxford: Oxford University Press: 54-78.

_____. 1999c. "Rhythm and Linear Analysis: Aspects of Meter." *The Music Forum* 6, edited by Felix Salzer and Carl Schachter. Reprinted in *Unfoldings: Essays in Schenkerian Theory and Analysis*, ed. by Joseph N. Straus. Oxford: Oxford University Press: 79-117.

Scherzinger, Martin. 2001. "Negotiating the Music-Theory/African-Music Nexus: A Political Critique of Ethnomusicological Anti-Formalism and a Strategic Analysis of the Harmonic Patterning of the Shona Mbira Song Nyamaropa." *Perspectives of New Music* 39/1: 5-118.

_____. 2003. "Notes on a Postcolonial Musicology: Kofi Agawu and the Critique of Cultural Difference." *Current Musicology* 75: 223-50.

Scheub, Harold. 1970. "The Techniques of the Expansible Image in Xhosa Ntsomi Performances." *Research in African Literature* 1/2: 119-46.

Schweitzer, Kenneth. 2009. "Crossing Over: Afro-Cuban Religious Musicians as Innovators of Popular Music." Paper presented at the Society for Ethnomusicology Annual Conference, Mexico City.

Serwadda, Moses and Hewitt Pantaleoni. 1968. "A Possible Notation for African Dance Drumming." *African Music* 4/2: 47-50.

Sisman, Elaine R. 1982. "Small and Expanded Forms: Koch's Model and Haydn's Music." *The Musical Quarterly* 68/4: 444-475.

Sloat, Susanna, ed. 2002. *Caribbean Dance from Abakua to Zouk: How Movement Shapes Identity*. Gainesville: University Press of Florida.

Spiro, Michael. 2006. *The Conga Drummer's Guidebook*. Petaluma, CA: Sher Music Co.

_____. 2009. *Conga Master Class*. <http://www.congamasterclass.com> (accessed 23 September, 2009).

Stone, Ruth. 1982. *Let the Inside Be Sweet: The Interpretation of Music Event Among the Kpelle of Liberia*. Bloomington: Indiana University Press.

_____. 1985. "In Search of Time in African Music." *Music Theory Spectrum* 7: 139-48.

_____. 1998. "Time in African Performance." *The Garland Encyclopedia of World Music, Volume I: Africa*, edited by Ruth M. Stone. New York: Garland: 124-55.

_____. 2005. *Music in West Africa: Experiencing Music, Expressing Culture*. New York: Oxford University Press.

Stover, Chris. 2008. "Construing Rhythmic Spaces in Diasporic African Music." *Musical Currents from the Left Coast*, edited by Jack Boss and Bruce Quaglia. Cambridge: Cambridge Scholars Press: 84-108.

Sublette, Ned. 2004. *Cuba and its Music, From the First Drums to the Mambo*. Chicago: Chicago Review Press.

Temperley, David. 2000. "Meter and Grouping in African Music: A View from Music Theory." *Ethnomusicology* 44: 65-95.

Tenney, James. 1985. "Review of Thomas Clifton, *Music as Heard: A Study in Applied Phenomenology*." *Journal of Music Theory* 29/1: 197-213.

Tenzer, Michael. 2006. "Categorizing Periodicity." Paper presented at the Society for Ethnomusicology International Conference, Honolulu. www.michaeltenzer.com/categorizing_periodicity.pdf (accessed 9 March, 2009).

Thompson, Robert Farris. 1983. *Flash of the Spirit: African and Afro-American Art and Philosophy*. New York: Random House.

Toussaint, Godfried. 2003. "Classification and Phylogenetic Analysis of African Ternary Rhythm Timelines." *Proceedings of BRIDGES: Mathematical Connections in Art, Music and Science*, University of Granada, Spain, 23-26 July, 25-36. Extended version at <http://cgm.cs.mcgill.ca/~godfried/publications/ternary.pdf> (accessed 28 April 2007).

_____. 2009. "Analysis of Emergent Beat-Class Sets in Steve Reich's Clapping Music and the Yoruba Bell Timeline." *Perspectives of New Music* 47/1: 111-34.

- Varèse, Edgard. 1998. "Rhythm, Form and Content." *Contemporary Composers on Contemporary Music*, Expanded edition, edited by Elliott Schwartz and Barney Childs. New York: Da Capo Press: 201-204.
- Walser, Robert. 1993. "Out of Notes: Signification, Interpretation, and the Problem of Miles Davis." *The Musical Quarterly* 77/2: 343-365.
- Washburne, Christopher. 1995. "Clave: The African Roots of Salsa." *Kalinda!: Newsletter for the Center for Black Music Research*: 7-11.
- _____. 1997. "The Clave of Jazz: A Caribbean Contribution to the Rhythmic Foundation of an African-American Music." *Black Music Research Journal* 17/1 : 59-80.
- _____. 2008. *Sounding Salsa: Performing Latin Music in New York City*. Philadelphia: Temple University Press.
- Wegner, Ulrich. 1993. "Cognitive Aspects of amadinda Xylophone Music from Buganda: Inherent Patterns Reconsidered." *Ethnomusicology* 37/2: 201-240.
- Yeston, Maury. 1976. *The Stratification of Musical Rhythm*. New Haven: Yale University Press.
- Yorgason, Brent. 2008. "Tracing the Path of Metric Focus in Four Chopin Études." *Musical Currents from the Left Coast*, edited by Jack Boss and Bruce Quaglia. Cambridge: Cambridge Scholars Press: 2-19.
- Zuckerkandl, Victor. 1956. *Sound and Symbol: Music and the External World*. New York: Pantheon Books.
- _____. 1959. *The Sense of Music*. Princeton: Princeton University Press.

Discography

Aguabella, Francsico. 1999. *H2O*.

Grupo AfroCuba. 1998. *Raices Africanas*. Shanachie 66009.

Grupo Changüí de Guantánamo. 1995. *¡Ahora Sí! Changüí*. Corason 121 .

Grupo Folklorico y Experimental Nuevayorquino. 1975. *Concepts in Unity*. Salsoul 6001.

Mapfumo, Thomas. 1996. *The Singles Collection 1977-1986*. Zimbozim zim-7.

Maraca. 2000. *¡Descarga Total! Ahí-Namá* AHI-1026.

Mingus, Charles. 1961. *The Clown*. Atlantic 1260.

Los Muñequitos de Matanzas. 1992. *Rumba Caliente 88/77*. Qbadisc 9005.

_____. 2002. *Rumbas de Corazón: 50 Aniversario*. BIS 233.

Santamaria, Mongo. 1958. *Afro Roots*. Prestige 24018.

_____. 1976. *Skins*. Milestone 47038.

Santos, John and the Machete Ensemble. 1998. *Machetazo! Ten Years on the Edge*. Bembé 2018.

Septeto Nacional Ignacio Piñeiro. 2000. *Soneros de Cuba*. Real Rhythms 579806 .

Sonando, *Tres*. 2006. Origin 05558.

Valdez, Patato. 2000. *The Legend of Cuban Percussion*. Six Degrees 1027.

Various Artists. 2000. *Code: Brasil – Target: Recife*. Melt 1999.