Chapter 1

Global Music Theory: Issues, Possibilities, and Fundamental Concepts

Global Musicianship: Imperative and Dilemma

This book does not purport to constitute a theory for all music. It is not a work of ethnomusicology. Nor is it a study in natural science or mathematics, though it does draw on basic ideas from those disciplines, especially from acoustics and human perceptual theory. Those looking for validation of the concepts and methods in this book by means of formal proofs will likely be disappointed. Rather, this is a book by a musician for musicians, one that attempts to address an increasingly pressing problem in an age of what might be called "global musicianship": how to offer a practical approach to analytical understanding that might be useful for a very wide variety of musics, and which is at the same time manageable for the purposes of music education, especially at the collegiate level.

In the remarkable introduction to his book *Analytical Studies in World Music*, composer, theorist and ethnomusicologist Michael Tenzer astutely notes that:

> In coming years it is conceivable that we will want a *world music theory* … [and] it would have to be an umbrella set of practical concepts for teaching … The purpose of such a theory would be in the first place to start making sense of our complex cross-cultural musical selves and perceptions. We are often told of the world's vast and rapid changes but rarely advised on how to make sense of them as musicians. A world music theory would be a response to economic and cultural transformation making it desirable for musicians to acquire competence not just passively hearing, but contemplating and integrating any music. The well-established ethnomusicological model of bi- or tri-musicality is inadequate to describe us anymore; we are approaching multi- or a virtual pan-musicality. For many this is already a fact of life, and not just for composers: trumpet players do salsa, Corelli, free jazz, and mariachi all in the same week, and the iPod shuffle mode compresses infinite musics, cultures, eras, and locales for listening with consummate effortlessness. (2006a:33–4)

Tenzer goes on to frame a large and critical question, one that is especially relevant to the purposes of this study:

> Yet real musicality actually comes from prolonged exposure to deep details which we learn to experience cognitively and feel bodily. That takes years of

> focused study. To suggest world music theory implies a comparative perspective so diffuse that it would seem to preclude such closeness … Could such a course coexist with the need for students to master particular instruments and traditions? How could the unwieldy breadth of world music theory not stretch it too thin? And who would have the mastery to teach it? The questions are discouraging, yet the problem remains. Music theory in Europe and North America, oriented so heavily toward Western art music, fails to address the needs, selves, and likely life trajectories of more and more musicians. (2006a:34)

The tension between these two concepts, the global musicianship imperative and the global musicianship dilemma, is palpable, and it is in fact what has motivated the writing of this book. We cannot afford any longer to be experts in only one music, yet we cannot possibly become experts in all musics. In fact, this dilemma requires a rethinking of what music theory really is, especially from a pedagogical standpoint. If we have only so much time and capacity for thinking about and teaching how music works, how are our limited resources best spent?

One way through this dilemma is to pinpoint one of the most profound ways the musical world in which we live is different from any of those that spawned the concepts and methods by which most musicians continue to be formally trained. World music education expert Huib Schippers notes that the reality of our globalized musical world:

> has major implications for the way musical skills and knowledge are perpetuated and for the formal organization of music learning and teaching, much of which was designed for the musical realities of the nineteenth century. Many of the key factors we take for granted in our contemporary musical experience did not emerge until the twentieth century. (2010:xv)

Indeed, over the last 120 years or so, the cross-pollenization of global musical materials and practices has accelerated precipitously, due in large part to advances in higher-speed communication and travel. As Kwame Anthony Appiah has recently noted, "A world in which communities are neatly hived off from one another seems no longer a serious option, if it ever was one" (2006:xx). The upshot of this is that we can no more go back to a world of truly discrete musical cultures than we can to one without mobile telephones. All music is to some degree now world music, and world music is the music of synthesis. Thus, Schippers's definition of world music is a very apt one: "the phenomenon of musical concepts, repertoires, genres, styles, and instruments traveling, establishing themselves, or mixing in new cultural environments" (2010:27). The time is now right for students, teachers, and researchers in music theory to begin shaping and sharing analytical concepts and methods applicable to a wide range of human musics, not least the hybrid musics that influence (and increasingly define) more and more of the world's musical practices.

In short, given our limited capacities in a virtually unlimited musical world, *we need first to become experts in the analysis of musical synthesis*: music as a synergism of eclectic influences, as an integration of interrelated and overlapping elements of time, pitch, timbre, and process. We need a music theory—and, eventually, a music theory curriculum—that fosters in musicians both the abilities and the sensibilities for a life of musical freedom and flexibility in the context of a musical world that now has conceptually limitless creative possibilities. We need a music theory that encourages understanding of synthesis rather than one that focuses on the rigid preservation of cultural difference, category, boundary, and hierarchy, not because we would seek to erase difference (as if that were possible) but simply because global fusion—to one degree or another and of one kind or another—is what now most clearly defines and enlivens the activities and products of our musical world. Some understanding of difference is necessary in such a milieu; in fact, thinking integratively actually helps one understand what makes musics different from one another. But it also helps one understand how different musics operate as syntheses of other syntheses, and so on, which is why it is the most appropriate paradigm on which to base a twenty-first-century music theory.

As Appiah (2006) might put it, a "cosmopolitan" theory of music is now in order, a theory that acknowledges that we are (or ought to be) citizens of a much broader musical world. But, since we cannot be full citizens of every musical culture, we must instead become musicians who more readily apprehend musical universals as they are manifested in musical localities. That is, we must focus on learning how musical elements are woven together to create various unique styles and practices. To be sure, this is itself a type of analysis deeply informed by Western contributions, but also one that might be applicable to a wider range of musics precisely because it is more susceptible to a kind of flexibility that Kofi Agawu suggests could "facilitate a more even-handed traffic in intellectual capital between musical cultures"; a method by which "Eurocentric cross-culturalism [could be] replaced by a dense network of exchanges in which origins and destinations change regularly and swiftly and are accessible to, and at the same time enriching for, all actors" (2003:188). In short, we need to ground ourselves and our students in a music theory that allows us to operate effectively in the complex web of globalized musics that defines our time, of which the ongoing traditions of the West are certainly an important part, but not the totality.

Moreover, though analytical studies focused on illuminating the music of each discrete culture have obvious value, a global music theory is ultimately needed to help us understand the accelerating process of synthesis that is surrounding and transforming those same cultures year by year. Along with Tenzer and Agawu, John Blacking (1973:xi, 31, 108) and others have suggested implicitly the value of such an enterprise, and Bruno Nettl (2005:42–9, 58–9) has noted its potential sensibility (along with its challenges). Further still, such a music theory needs to be developed and implemented in ways that do not preclude subsequent immersion in the deep details of one or more specific musics, but that are not at the same time paralyzed by legitimate yet too often overwrought concerns about

cultural "authenticity." Schippers goes so far as to speak of "the myth of authentic traditions in context," especially as it relates to music education, and lauds Janet Mills for saying that "'no music stands still in time, even without the involvement of schools. It would be inauthentic to view any music as a museum piece …'" (2010:41, 50).

"Global" musical analysis, then, might productively focus on description of the dynamic interaction between musical elements, with quantification of detail sufficient to provide the data from which descriptive meaning can arise. However, this sort of differentiation ought not to be aimed in any sense at demonstrating the intrinsic superiority of any musical culture, system, or style over any other, but rather at discovering and celebrating similarities along with differences, both as a good in itself and as an aid to understanding the stylistic syntheses that surround us. The concepts and methods of a global music theory might illuminate many aspects of 12-tone serial music, African music, or Mozart, but they will not necessarily reveal the same things as theories designed specifically from or for those musics. Nevertheless, such a theory could reveal much of unique value about the disposition of any or all of these musics in relation to one another in an intercultural musical world where they are in perpetual dialogue. Again, "disposition" is not here meant to suggest any sort of stylistic hierarchy, but rather the dynamic interaction of characteristics.

To be sure, theories that have sprung indigenously from specific musics they seek to illuminate remain worthwhile due to the special insights they give to their respective musics. Indeed, it is hoped that the theories put forward here might remain in fruitful dialogue with more culturally focused theories, for surely each would inform the other. What is at stake, however, is the question of whether we might move beyond specialization and distinction as the only arbiters of music theory, and toward the notion that much of value might be gained by uncovering certain similarities between musics. The risk of loss is real in such an enterprise, for the temptation to reduce and consolidate beyond what is healthy (or even accurate) is ever with us.

The difficult question, then, is whether the potential rewards of theories more applicable to the global musical syntheses that continue to accelerate around us are worth such risk. This study is certainly not the first attempt at such a theory; as will become apparent, some of its bases lie along well-established acoustical and psycho-acoustical lines, along with much other prior research. Proponents of pitch class set theory have recently claimed, implicitly or explicitly, that it may offer a high level of useful universality with regard to pitch. As an example, Robert Gauldin's examination of what set theory may reveal about the development and nature of world pentatonicism and diatonicism (1983) is especially fascinating. But there are many aspects of pitch that this approach does not take into account, and it does not even claim to address other critical musical elements such as rhythm and texture. Thus, set theory may in the end be another example of a highly useful but more narrowly targeted system. And so the dilemma remains: just as it is not practical for twenty-first-century musicians to become experts in all musics,

so we are faced with the need to limit the number of theories of music with which we are familiar. There appears to be room to put forward a sufficiently robust foundational approach to music theory that serves the overall needs of a global era, while keeping the dialogue open at a more detailed and/or culturally informed level. That is the purpose of the present study.

Moreover, the global musicianship imperative suggested herein applies not just to theorists, but to all musicians, since the act of music-making and sharing nearly always requires the conveyance of musical concepts between persons. In some cases, theoretical studies and concepts have seemed designed to be opaque to those who might want to use them as aids to musical creation or re-creation. In other cases, theories have proven to be largely irrelevant to actual musical lives. Without a music theory that is applicable to a wide variety of musics, and most importantly to globally integrated musics, there is a real danger that efforts to educate both listeners and music-makers will become increasingly ineffective in our time.

So, to return to Tenzer's exhortation, a set of well-integrated, elegant, and practical conceptual tools could assist us in making sense of diverse musics and their interaction. This book proposes a number of such concepts and methods under a concise and unified theory: *for practical analytical purposes across human cultures, musical elements, structures, and processes can be fundamentally understood and expressed as complex webs of relationships operating around the interaction of "twos" and "threes": as durational groupings of twos and threes at various hierarchical levels; and as pitch relations organized around acoustical ratios of 3:2 and 2:1.*

What follows is an exploration of how this theory is manifested in various interrelated aspects of music, including time and pitch (that is, rhythm, melody, and harmony); consideration of how such elements interact to form texture and other processes; and, finally, suggestions for how such concepts and methods might be applied effectively to the creation, re-creation, learning, and sharing of music in a variety of contexts in ways that invite further investigation, critique, and application. Before delving into these matters, however, a more detailed discussion of the nature of our globalized world, and some of its musical implications, is in order.

Music and Globalization: Similarity, Difference, and Fusion

Sociologist Jan Nederveen Pieterse provides three basic paradigms of globalization and culture (2004:41–58), each of which is helpful to thinking about global music. The first of these, "Clash of Civilizations" (after Samuel Huntington) essentially divides the world into "West" and "non-West," and suggests that a period of dominance for the former is waning, though not without a fight. This view is extremely relevant to academic music theory in that the current system remains heavily focused on deep understanding, preservation, and dissemination of

Western European "Common Practice" repertoire originating in the seventeenth, eighteenth, and nineteenth centuries. The paradigm relies on a monolithic view of culture that Pieterse rejects, noting that "culture refers as much to commonality as to diversity," that "human experience … is fluid and open-ended," and that too keen a focus on differentiation ignores "the interplay between the local and the global" that characterizes human behavior (2004:46–7).

Pieterse colorfully names a second paradigm of globalization the "McDonaldization" of culture (2004:49). In the arts, the fear is that valuable differences between cultures are receding in favor of something universal that is too quick and easy, perhaps something like American popular music conventions and styles. One irony here is that American pop music is in fact itself a very sophisticated hybrid of European and African (and, increasingly, Asian) elements, and that it mixes further with whatever local culture to which it is exported. Consider, for example, the complex interplay between American-style and Asian contributions to the development of modern Japanese popular music, as outlined well by Yano and Shūhei (2008). Economist Tyler Cowan, writing about the "creative destruction" (after Joseph Schumpeter) that accompanies historical change in societies, asserts that in this age of globalization:

> World musics are healthier and more diverse than ever before. Rather than being swamped by output from the multinational conglomerates, musicians around the world have adapted international influences towards their own ends … Most world music styles are of more recent origin than is commonly believed, even in supposedly "traditional" genres … [T]he notable creators are active, searching artists, drawing on many sources to produce the sought-after aesthetic effect. These points do not denigrate non-Western artists or imply that they "owe it all to the West." It is the contrary emphasis on monoculture that insults, by portraying non-Western artists as unchanging and static craftworkers, unable to transcend their initial styles for synthetic improvements. (2002:8–9)

Pieterse, echoing Cowan, finally suggests that the most healthy and accurate paradigm of globalization is simply "Hybridization," in which there is an "increase in the available modes of organization: transnational, international, macroregional, national, microregional, municipal, local" (2004:65–6). Schippers helpfully characterizes the musics arising from such a milieu as each falling somewhere along a continuum that includes monocultural, multicultural, intercultural, and transcultural points (2010:31). The result is that musical possibilities are increased exponentially, and few, if any, are precluded. Cowan suggests that some local expressions do in fact die away in such a milieu, but that these are replaced by musics that are at least as robust if not more so (2002:53, 55–9).

This perspective sees all musical styles and cultures as constantly in flux, and acknowledges that the main issue is not change itself but rather the nature, subtlety, and rate of change. As noted earlier, the twentieth and twenty-first centuries have seen a much greater rate of noticeable musical change, largely because of

quantum leaps in technology. Yet even the most venerable musical traditions have been marked by inevitable change, since no culture is ever fully separated from all others. Bruno Nettl put this in perspective by suggesting that if Western musical purists could travel back in time to the Vienna of the 1780s, they might be "scandalized that Mozart, evidently a member of the eighteenth-century world music movement, claimed to be able to write Italian, French, German music, old and new, mixing in Bohemian and Hungarian and 'Turkish' styles" (2000b:24–5). But even this understates the number of world traditions that have contributed over the centuries to what is now called "Western music." Schippers, quoting Henrice Vonck, refers to another and even more venerable case quite succinctly: "Balinese music is an uninterrupted tradition, but it changes constantly" (2010:153), and this is confirmed by Tenzer's description of *gamelan gong kebyar*, one of the most popular and influential Balinese musics, as "a notable part of the past century's global cultural legacy" while noting that "Balinese music and musicians have already had considerable and prolonged contact with their counterparts from abroad" (2000:4–5).

Admittedly, there are differences between evolution within distinct traditions and full-fledged musical fusion between disparate styles. Nevertheless, the term "fusion" is particularly helpful here in a musical sense, since it captures the dynamic meshing of elements within each music itself while at the same time acknowledging perceivable differences between musics. Though perhaps most commonly used to describe the particular welding of stylistic elements from jazz and rock, the term thus offers much broader possibilities. This in turn relates to the use of a second term, "global," which may address some of the same issues, that is, may be understood as reflecting a sense of comprehensive (though sometimes subtle) integration of any number of world musical sounds, styles, elements, or processes.[1] An important question in this context concerns the point at which fusion ceases and something new is created in which boundaries are so crossed that the origins of distinctive elements are lost. Such lines, like so many others, are often both fluid and blurred in real musical situations. Yet without some clearly identifiable differences between the stylistic elements (or references) in a piece of music, the concept of fusion seems to fade if not disappear. Musical fusion thus requires the retention of difference on one level, but also an openness to the possibilities of operational or foundational similarities among styles. A global music theory must therefore have enough flexibility to address such questions of operational balance.

But the championing of difference has too often obscured the vital role of similarity and the natural evolutionary role of fusion in the making of music. That is, any attempt to call attention to sounds, patterns, or principles that appear similar between musics is too often met with a resistance that seems borne out of a fear

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[1]   As an example, one work by Lakshminarayana Subramaniam that attempts to bring all these meanings into play is simply titled *Global Fusion*, portions of which are featured in Chapter 6 of this study.

that vital distinctions (not to mention whole products) might be lost. At the same time, this championing of difference has also too often been used to make deeply problematic and frankly parochial musical judgments that seem to stem from cultural bias. This is why music theory is perhaps best kept away from the realm of cultural comment. In that sense, a global music theory is not a search for musical "meaning," but rather for operational principles that transcend particular contexts. At the same time, a global music theory allows for meaningful dialogue about those principles within any particular context. And since discussion of musical similarity and difference leads inevitably to the thorny (and ultimately overstated) question of "musical universals," that topic becomes central to addressing the larger question of whether any kind of global music theory is possible.

Practical Theory and the World of Qualified Universals

Thus it is that boundaries must be staked out: *a practical global theory of music is one that includes analytical concepts and methods applicable to human music-making in the world in which we now live*. The notion that a musical universal must be valid in every possible human or non-human music (such as bird and insect song, patterns of wind and water, and so on) is therefore rejected here, though Rahn (1983:12–13) and a number of bio-ethnomusicologists think such inclusiveness is necessary (see Wallin et al. 2000). Such insistence is the first step down a slippery slope of paralyzing absolutism from which no recovery is possible, as it moves beyond the musics we can hear and participate in now into the realm of musics we may have never heard, past, present, or future.

But even within the realm of human activity, what is music? Though Jean-Jacques Nattiez asserts that "[by] all accounts there is no *single* and *intercultural* universal concept defining what music might be" (1990:55), Varèse's famously succinct definition of music as "organized sound" (see Goldman 1961:133–4), perhaps tempered by John Blacking's addition of "humanly" (1973:3), may do as well as any other. The larger question is one of whether anything can be "human" that is not also "cultural." Here, the implicit relationship between "humanly organized sound" and "soundly organized humanity" put forth so eloquently by Blacking (1973:89) perhaps offers reconciliatory hope. And, for example, for Nattiez it is the *meaning* that is socially constructed, rather than the sound itself or even its "compositional" organization (1990:46).

A far more useful answer to the dilemma of musical universals, therefore, is simply that a human-oriented theory should comport with both physical and psychological characteristics, concepts, and associations that seem to apply to the vast majority of human beings and their musical practices. As Lerdahl and Jackendoff put it, "[a] formal theory of musical idioms will make possible substantial hypotheses about those aspects of musical understanding that are innate; the innate aspects will reveal themselves as 'universal' principles of musical grammar" (1983:4). Such issues will be explored later in this study. In

a more general sense, the views on musical universals expressed by Bruno Nettl (2005:42–9) provide a reasonable way forward for this discussion. Nettl notes that there are four ways to conceive of musical universals, each a bit less restrictive than its predecessor: "anything present in every instant of music" (44), "anything that is present in every musical utterance" (45), "anything that is found in each musical system" (46), or "features shared not by all but by a healthy majority of musics" (48). It is this last category, which Nettl labels "statistical universals" but which may be subsumed under the even more general heading of "qualified universals," that offers hope for reasonable criteria with which to judge the value of a global music theory.

Qualified musical universals, then, are those concepts that illuminate the features of a vast array of human musics, and for which reasonable arguments can be made as to their origins in human physiology, human understanding of the physical world, the psychology of human perception, and/or the actual practice of known human musical systems.

Objections to this line of examination are, however, rather strenuous and come from well-respected quarters. Theorist Leonard Meyer, for example, labels the search for musical universals as one of the three errors that have "plagued music theory," reserving special vitriol for "the time-honored search for a physical, quasi-acoustical explanation of musical experience—the attempt, that is, to account for musical communication in terms of vibrations, ratios of intervals, and the like," and singling out for criticism music psychologists who hold "the belief that the responses obtained by experiment or otherwise are universal, natural and necessary" (1956:5). Meanwhile, Nettl asserts that the "demands of human physiology and anatomy do not provide a very convincing argument" (2005:48) for why some characteristics seem applicable to many or most musics.

Such attitudes are puzzling, since, for example, Meyer grounds his implicitly universalist theory of musical meaning entirely on psychological theory and experimental results (which cannot, by his definition, be universally reliable), and does so in an explicitly multicultural context. Both Meyer and Nettl insist that any musical discoveries must be carefully contextualized (in Gestalt theory for Meyer, and culturally for Nettl), but at the same time they embrace selective acceptance of parameters that suit their aims. In fact, Meyer's critique above is not relevant to the aims of this study, since a theory of music that "explains" musical "communication" or "meaning" is not being suggested herein. Nettl offers no explanation for why anatomy does not provide any "convincing" support, even as he acknowledges that musical universals are likely (2005:49; 2000a:472). Meanwhile, François-Bernard Mâche sums up the biases of both ethnomusicology and theory by noting that:

> Extreme cultural relativism, through its excessive focus on the specificity of every musical culture, tends to present the common aspects as pure misunderstanding. It claims that no culture has any right to superimpose its categories on any other. Doing so, it tends to favor a kind of reverse racism by isolating every culture

from all others, while the ubiquitous blending of musical practice becomes
unintelligible. (2000:474)

This study affirms, then, that there are universal human physical characteristics,
and, since music-making is a physical process, that these are relevant to human
musicianship. To be sure, the relationship of human beings to the physical universe
extends far beyond organic embodiment, to a conceptual world in which we
attempt to understand and even explain that which we experience. This conceptual
world, however, is still largely "physical" in the sense that it ultimately deals with
real things that we can (or could) see, hear, and touch. Thus, this study will at
various points return to the notion of "physicality" and it relationship to qualified
musical universals in a global theory.

Fundamental Elements and Concepts

The question of which symbolic and conceptual language might be most
appropriate for presenting a global music theory is a complex one, and will not
be examined at length here. Yet some means must be utilized to efficiently and
effectively convey concepts and methods, and this presents a challenge that leads
ultimately to some practical compromises. It should be noted, for example, that
this study assumes that the reader can understand Western musical notation. This
is not meant to be presumptuous, but rather merely convenient. It seems quite
plausible that the examples given herein could be translated into other notational
conventions, or even understood in non-notational contexts, since many of them
were not originally conceived notationally. However, to omit notation would reduce
the clarity of method by which these theories are applied to musical examples.
On the other hand, some musics do seem better suited to freer adaptations of
Western notation, and when that is the case an attempt at such adjustments is made
herein. One might also envision useful further manifestations of these theories
that are exclusively aural/oral in nature, but working out the details of such a
manifestation is beyond the scope of this project. Moreover, this study builds on a
great deal of very useful previous work in acoustics, psycho-acoustics, and other
related disciplines. Reference will therefore be made consistently to a number
of traditional Western conventions of music scholarship, while at the same time
attention will be devoted when possible to moving toward less stylistically-bound
terms and explanations. That is, this book contains a good bit of reimagining, but
also attempts to assist the reader by relating ideas to established expressions when
these seem convenient. In this way, it is hoped that this study may serve to some
extent as a transitional, rather than a revolutionary, move towards a global music
theory.

As a conceptual framework upon which to build a pedagogy of global
musicianship, Jan LaRue's *Guidelines for Style Analysis* (1970) may serve well.
Proceeding from the very useful observation that music is a process of synthesis

("growth," as he would call it), LaRue rightly notes that rhythm, melody, harmony, and what he calls "sound" (primarily timbre, dynamics, and texture) are the essential, overlapping, interactive elements that contribute to the syntheses that constitute musical processes and products. Though his specific examples and orientations are all Western (and most from the Common Practice era), LaRue nevertheless supplies not only a practical method for approaching any music, but also a pedagogical framework on which to construct a more comprehensive and flexible theory curriculum.

LaRue builds his model around these five categories of musical elements in a particular order that he feels is appropriate to the nature of Western music: Sound (an intriguing collection of items that are sometimes ignored or treated peripherally in traditional Western analysis), Harmony, Melody, Rhythm, and Growth. Each of these will be considered in due course (most in separate chapters), though in an interactive model that is more conducive to a global music theory. Moreover, the order will be reconsidered based on the level of importance and ubiquity of each element in the global musical milieu. Because of this reconsideration, and because a number of interrelated concepts are built upon sequentially from the start, the order in which the chapters of this book are presented is very important.

The first and most elemental of the analytical categories is Rhythm, which seems essential to a practical working definition of music since music flows out over time (unlike, for example, visual art). Clearly, music can exist without pitch, and even without timbral or dynamic distinctions, but it cannot exist without rhythm. However, as LaRue makes clear, any analytical treatment of rhythm requires careful consideration of other musical elements that may accompany it. Indeed, many of the main issues associated with a global music theory quickly come to the fore when attempting a discussion of rhythm precisely because rhythmic grouping so often relies on pitch, timbral, textural, and other characteristics.

It is therefore useful as a starting point to attempt to define just what is meant by "rhythm" per se. Among the multitude of answers spawned by this question (see, for example, Creston 1961:iv–v), three concepts deserve special attention in the context of this study. The first of these is that rhythm relates in some complex fashion to broader conceptions of time. Lewis Rowell points out, for example, that cultures with a circular view of time tend to conceive of musical rhythm very differently from those with a linear view, and further suggests that "musical time" attempts to reconcile conceptions of time as "being" versus time as "becoming" (1979:98). At the same time, needed balance is offered by a second important concept, articulated in different ways by Jay Rahn (1983:29), Meki Nzewi (1997:32–42), Cooper and Meyer (1960:1) and others: that "rhythm" should not be about "time" or "duration" *only*, divorced from other musical elements, especially pitch. However, to realize Rahn's analytical goal of "establishing the greatest number of similarities among the values and relationships by which the observables are interpreted [while employing] the smallest number of primitive concepts" (1983:51), that is, showing similarities of organization in pitch, rhythm, and form at various hierarchical levels, one must in fact be able to examine pitch,

rhythm, and form with some degree of separation first; otherwise, one would have nothing to compare.[2] Moreover, other theorists (Lester 1986:5; London 2001:278) have suggested that the study of "duration" as a valid musical element in its own right is appropriate. Finally, the enormous question of what constitutes "music" has significant implications for any definition of musical rhythm. This has much to do with the "qualified universals" that will be considered further in due course, but for now it is important to assert that a practical definition of music will ultimately focus on the music-making of human beings. For the purposes of this study, then, a working definition of "rhythm" may therefore be reasonably and substantially informed and limited by the element of human intentionality (see Arom 2000:27).

Taking into account these three ideas, rhythm may be appropriately defined as *the management of time in human musical processes*. A practical approach to rhythm, then, will seek to illuminate how such management is accomplished, in ways that elucidate relationships between time, organization, and perception, and it will be applicable to a very wide range of musics in the "qualified universal" sense explored above. Chapter 2 will explore the details of a system for understanding rhythm within such a set of contexts, while the idea of time management in music will also play a role in examining larger musical processes in Chapter 5.

After the management of time (that is, rhythm), the management of pitch seems to play the next most critical role in what human beings generally think of as music. Pitch may here be usefully defined as *the human perception of audible fundamental frequencies and their relationships*, the details of which will be discussed in Chapter 3. The related concepts of tuning and timbre (part of what LaRue would call "Sound") also play a complex and critical role in the operation of pitch in music, and thus will be considered in those discussions.

Meanwhile, LaRue helpfully distinguishes Melody (sequential pitch) from Harmony (simultaneous pitch). Indeed, after rhythm, melody is the most ubiquitous element in human music-making; far more musical cultures seem melodically focused than harmonically focused. In some cases, harmony is present, but appears to be more incidentally than intentionally so. Moreover, the whole concept of pitch in music can be successfully conceived of as primarily linear, a notion that a number of theorists have embraced.[3] Chapter 4 of this study attempts to address not only harmonic simultaneities and functions, but also the effect of how individual chord pitches flow from one to the next. Not surprisingly, these arise largely from the same principles devoted to melody in Chapter 3.

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[2]   Rahn attempts to solve this problem by suggesting concepts that can be applied analogously to pitch, rhythm, form, and other musical elements, aiding direct comparison. However, he does so at a level of abstraction that proves very difficult to reconcile with the practicalities of important and very real musical distinctions.

[3]   For a good short summary of this topic in the context of Western music, and an interesting take on its possibilities, see Morris (1998). Meanwhile, Stock (1993) contemplates the possibilities of structural linearity for non-Western musics as well.

One large issue inherent in any discussion of music is that of tension and release. In the context of pitch (and, in this study, of rhythm as well), the terms "dissonance" and "consonance" have historically been fraught with difficulty. The use of these terms in music theory, as proxies for "tension" and "release" respectively, ought not to refer to anything intrinsically positive or negative, but rather to the necessary and desirable dynamic interaction without which there is no music. Sadly, such terms have too often been used to serve the agenda of some who would make value judgments about musical styles (see, for example, Tenney 1988:1–5). Nevertheless, to avoid too much descriptive ambiguity, this study utilizes all four of them freely, with the explicit understanding that they are meant to work in tandem as a way of (imperfectly) describing musical *expression*. That is, the building of musical tension (dissonance) is just as positive as its release (consonance), and both are necessary for expression, though the balance between them may be quite subtle and may vary widely. One of the difficulties of making such references, however, stems from lack of clear definitions. In one sense, consonance and dissonance are relative rather than absolute descriptors, since each musical style tends to include a "floor" of the former and a "ceiling" of the latter; that is, a range (wide or subtle) within which that particular music operates. At the same time, this study will explore definitions that may be understood to extend from clearer acoustic and/or psycho-acoustic principles. These are also, in some respects, related to the level of process complexity that listeners might perceive in any given musical moment.

In a very real sense, understanding the management of time (rhythm) and pitch constitutes the bulk of what a music theory seeks to accomplish. However, as LaRue is careful to point out, there are a number of other considerations that contribute to musical style (and therefore to musical effect). Among these aspects that LaRue considers to be in a broader category labeled "Sound," two that are very closely related—timbre and tuning—and another one that is especially elemental—texture—will receive closer attention in this study, the former in the context of pitch (as noted above) and the latter as an important subcategory of "process" in music (Chapter 5). Some of the other elements that LaRue places in the Sound category are here dealt with in the context of other, larger concerns. For example, though LaRue spends a fair amount of effort on the related subcategories of "accent" and "dynamics," much of the discussion of their musical effect may be conveniently subsumed in an examination of musical grouping, a concept that is in turn key to understanding process at various levels.

As William Sethares shows (2005, especially 25–32), tuning and timbre are intertwined, since the balance between the specific frequencies (that determine the perceived pitch) and amplitudes (that affect perceived loudness) of individual partials within the composite sound wave determines much of the distinguishing character of its aural effect. Sethares approaches this issue from the perspective of how "consonant" a musical sound is, defined as the extent to which the timbre-determining spectra (frequencies and amplitudes) of the individual partials within the sound match the frequency relationships in the tuning system being used

(2005:2–3). Sethares is also very interested in the difference between "harmonic" sounds (defined as those in which the overtones or partials appear exclusively at integer multiples of the base or fundamental frequency; 2005:3) and "inharmonic" sounds, or aspects of both sometimes combined, since pitch seems much harder to determine in the latter, an issue that will be considered again later in this study. The larger point, however, is that pitch collections and tuning systems seem to arise as much from the design of the instruments and singing techniques as from anything else. That is, pitch material cannot be divorced from the instruments and/ or voices (and thus the timbres) used to perform the music. The question, then, is whether a reasonably limited "master set" of pitches within a world of qualified musical universals can be identified that sufficiently encompasses these concerns for the practical purposes of analysis, and the extent to which such a collection can be shown to be grounded in established perceptual and conceptual realities. This study, however, stops short of attempting to classify sounds timbrally, and instead asserts that some combination of pitch and timbral distinctions is sufficient for comparative analytical purposes. Useful for such purposes are four broad, traditional, and culturally neutral categories of instrumental design: aerophones (sounds produced by a vibrating column of air), chordophones (sound produced by the vibration of a stretched string), idiophones (sound produced by the vibration of the body of the instrument), and membranophones (sound produced by the vibration of a stretched skin), though the timbral varieties within each of these is vast. Sethares also provides a helpful reminder that the modification of vocal vowel sounds has timbral effect, and further notes that contemporary technology now allows musicians to create sounds in any timbral/tuning combination (2005:30).

A second major subcategory, texture, includes timbre among its components. As will be discussed in Chapter 5, it is the independence of simultaneous rhythmic, pitch, and timbral "streams" that helps distinguish textures and, by extension, perceived musical complexity, all of which contributes further to the sense of musical tension and release. In this study, an attempt is made to move beyond the basic traditional categories of music texture (monophony, homophony, polyphony, and heterophony) into a realm of textural consideration that has many more combinatorial possibilities.

How these foundational elements and concepts related to rhythm, pitch, timbre/tuning, and texture ultimately work together is the subject of the next and final introductory section.

Musical Synthesis and Synergy

It should be clear by this point that the notion of dynamic interactivity of elements is essential to understanding music analytically. Again, this is the real genius of LaRue's original study. However, in broadening this concept into something useful for a global music theory, a rearrangement of priorities and relationships is in order. To reiterate, rhythm is the most ubiquitous and necessary component of

music, since music must flow through time. When pitch is present, the evidence from a wide swatch of world musics indicates that melodic (linear) pitch is a more common focus than harmonic (simultaneous) pitch, though the latter is obviously central to many styles. Intertwined with these, or in dialogue with them, are a number of broader "sound" elements, the most important and distinctive of which are tuning, timbre, and texture,[4] the latter of which actually rises beyond the category of "element" into the realm of "process."

Process, or the interactive unfolding of the musical materials within and between these elemental categories, can in some ways be thought of as synonymous with the notion of "synthesis" with which this chapter began. Synthetic musical process tends to be synergistic (greater than the sum of the parts), and also leads to an identifiable musical "product." This product may be intentionally and/or actually either momentary or lasting. It may be large or small, simple or complex, subtle or overt. It may stay within or freely cross boundaries between the categories of "composition," "improvisation," and "performance." Thus it is that synthesis, synergy, process, and product are all intertwined in music. Moreover, as will be explored in Chapters 5 and 6, the concepts of exposition, repetition, variation, and contrast, and their contributions to the process of musical perception and balance in and across musics, are essential. LaRue, as noted earlier, uses the term "growth" (1970:115) in an attempt to capture these dynamics, and it is a term far preferable to the more traditional label "form," which implies a fixedness that is rather alien to the nature of music; even the many established "forms" in the musics of the world display a degree of openness to varying processes at both micro and macro levels.

LaRue thus arrives at the anagram "SHMeRG," (1970:7) which, as also noted above, belies a distinct orientation toward Western music in its order of elements: Sound, Harmony, Melody, Rhythm, and Growth. Even if one were to reorder these so as to more accurately reflect the importance placed on each in the global composite—Sound, Rhythm, Melody, Harmony, and Growth, perhaps—the critical sense of interdependent dynamism would not be captured. Thus a more graphically complex model is useful:
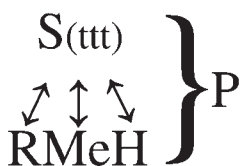

Figure 1.1   A dynamic model of musical process

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[4]   The definition of "texture" is too complex to state succinctly here, but will be explored more fully in Chapter 5.

Here, rhythm, melody, and harmony (in that order) all interact with the other elements that make up the broad "Sound" category, especially with regard to the musical grouping that in turn helps articulate process relationships. As noted earlier, tuning, timbre, and texture (the three "ts" in parentheses) are among the most prominent of these other elements. Finally, the totality of these dynamic interactions constitute the growth of the music as it flows out over time. However, since even the term "growth" implies certain biases, the respective operative term used throughout this study will instead be "process," represented graphically as "P" above, which also serves as a further reminder that music is both a process and a "product."

This study ends, in Chapter 7, with further consideration of some of the implications for composition, improvisation, performance, and music education inherent in the theories put forward. In the end, a global music theory should be useful for understanding the things associated with real music-making by real human beings in the actual musical world in which we live. It ought to consist of a few simple concepts, rooted in fundamental human perceptual and conceptual experience, that can at the same time allow for expanded exploration of implications at a variety of deeper levels and in a variety of cultural contexts. And it must of course be applicable to a wide range of musics, both in and out of the Western tradition, especially musics that reflect the global hybridity now at the forefront of cultural development. In short, for the sake of the global musicianship imperative, a twenty-first-century music theory needs to move towards being both more conceptually accessible and more globally and experientially relevant. This book aims to take a clear, firm step in that direction.