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Takadimi: A Beat-Oriented System of Rhythm Pedagogy

Richard Hoffman, William Pelto, and John W. White

Students entering college in the 1990s are less well prepared in many areas of fundamentals than were students of previous generations. This situation is not surprising given reductions in public school music education, a shift away from music making as a leisure time activity, and changing musical values. As a result, there are increasing numbers of students with the interest and talent to study music at the college level who lack the requisite skills. Further, the teaching of these students is influenced by an emerging egalitarian approach to higher education in which it is expected that all students, regardless of background, will be given every opportunity to succeed. Students, administrators, and the circumstances themselves demand pedagogic techniques that not only evaluate and hone basic skills, but effectively teach those skills to novices as well.

These conditions present a particular challenge to music teachers in their efforts to teach rhythm skills. While most students begin college needing remediation or basic instruction, the level of rhythmic complexity at which they are expected to function continues to increase. Teachers, therefore, need pedagogic techniques that address elementary skills and complex rhythmic concepts in order to provide a strong foundation for musicians who will practice their art well into the twenty-first century.

Goals of Effective Rhythm Pedagogy

In order to address these concerns, we propose the following goals for an effective rhythm pedagogy:

1. It should lead to accuracy and musicality in performance, both studied and sight-read, including the ability to recognize and perform musical gestures.
2. It should require and reflect an understanding of rhythmic structure, recognition of metric and rhythmic interaction, and an awareness of precise contextual location of beats and attack points.
3. It should facilitate aural recognition and identification of rhythmic patterns and metric divisions.
4. It should provide a precise and consistent language for the discussion of temporal phenomena. There should be no need to create new terms or separate categories for performance, transcription, or analytical work.
5. It should address rhythmic issues presented by musics outside the realm of traditional tonal literature such as asymmetric meters, modulation of meter or tempo, complex syncopations, complex tuplet groupings, and passages that combine these in novel and challenging ways.
6. Like pitch solfège, it should be a system that is easily applied and adapts to broad applications, and it should be a tool for life-long use.

A Brief Survey of Other Systems

Many approaches to rhythm study have been devised over the years and remain in use today. A set of rhythm syllables is frequently a hallmark of such systems. At the simplest level, a system may rely entirely on a single neutral syllable, like "da" or "la." Such a system does not ascribe meaning to its syllable, but merely uses it for intoning rhythmic materials. As a result, analytic activities regarding duration, beat value, and meter are not explicitly conveyed in the vocalization. Other systems use syllables to provide labels for temporal phenomena, in a manner analogous to the use of solfege syllables to label pitch phenomena. They are designed to help students learn, remember, and quickly identify recurrent patterns, and they provide a link—a translator—between aural and visual domains.

Rhythm systems typically fall into two categories, those that emphasize counting within the measure and those that emphasize pat-

tern or beat.¹ For example, counting systems include the common “1-e-&-a, 2-e-&-a” system, which developed along with the introduction of music into American public schools,² and the more elaborate system developed by Allen McHose and Ruth Tibbs (discussed below). Kodály’s and Gordon’s systems (discussed below) rely upon pattern or beat orientation, as do other language-based systems that ascribe English words to rhythm patterns.³ Many systems, including the one we propose in this article, can be traced back to the French Time-Names system developed in the early nineteenth century. An American adaptation of the French system yielded a set of syllables summarized in Figure 1.⁴

The system of syllables devised by Hungarian composer and pedagogue Zoltán Kodály ascribes syllables to specific notational values and rhythmic patterns as shown in Figure 2. For instance, an eighth note may be called “ti” in either simple or compound meter, regardless of its placement within a beat. Primarily geared toward elementary-school curricula, the system does not extend to the level of sophistication demanded by college-level music programs. Additionally, it is restricted to notational values within the most common meters, with either the quarter note as the beat in simple meter or the dotted quarter as the beat in compound meter. Modifications to Kodály’s system have been suggested that provide further subdivision-level syllables.⁵

¹Edwin Gordon provides a comprehensive history of the use of rhythm syllables in his book *Learning Sequences in Music* (Chicago: GIA Publications, 1993), 263-287.

²Gordon, 265.

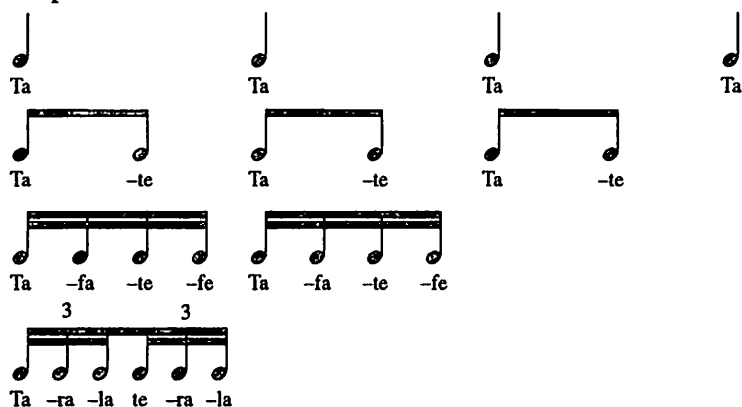
³For example, Daniel Kazez uses a speech-cue method for rhythm reading, such as te-le-phone for patterns of two sixteenth and an eighth. See *Rhythm Reading*, 2nd ed. (New York, W.W. Norton, 1997), especially xviii-xix, and 221-222.

⁴Gordon, 265. Gordon notes that of the systems developed in the nineteenth and early twentieth centuries, only Kodály’s continues to be used widely.

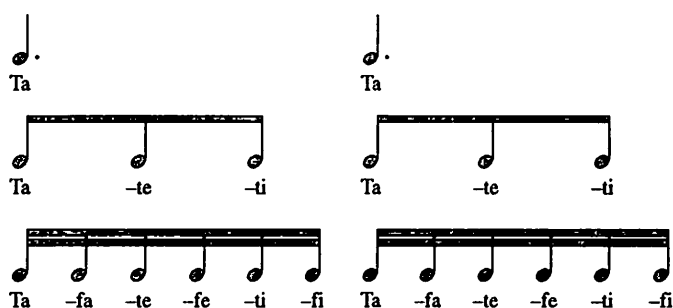
⁵Several of these are discussed by Lois Chosky in *The Kodály Context: Creating an Environment for Musical Learning* (Englewood Cliffs, NJ: Prentice-Hall, 1981), 191.

Figure 1. French time-names system (simplified American version)

simple meter



compound meter



The system of syllables advanced by Allen McHose and Ruth Tibbs accounts for more complex rhythmic and metric contexts (see Fig. 3).⁶ Unlike Kodály's it emphasizes counting within a measure; any attack occurring on the beat is articulated with that beat's ordinal number. Also, McHose and Tibbs include divisions and subdivisions within a beat-level emphasis: each beat is divided and subdivided, and syllables are ascribed according to their place within

⁶The system is introduced throughout their text *Sight-Singing Manual*, 3rd ed. (New York: Appleton-Century-Crofts, 1957).

Figure 2. Kodály system of rhythm syllables



the beat, not their notational value. At the subdivision and lower levels, some different attack points are articulated with the same syllable. For example, the syllable “ta” occurs three times within a single beat of compound meter, as in “1-ta-la-ta-li-ta 2-ta-la-ta-li-ta.” This system also extends syllables to second-level subdivisions (for example, 32nd notes in 4/4) by inserting “ta”s, yielding “1-ta-ta-ta te-ta-ta-ta.” Counting systems such as McHose/Tibbs require the presence and formal understanding of meter before the syllables can be applied, thus limiting application in aural contexts.

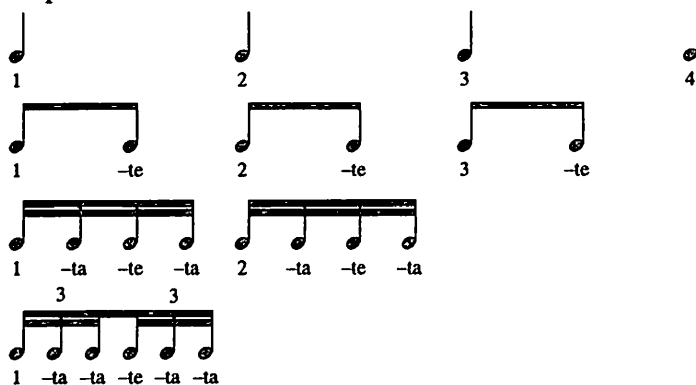
Edwin Gordon’s system, like that of McHose and Tibbs, features beat orientation. He differentiates, however, between what he calls “usual” and “unusual” meters, and ascribes different syllables to similar patterns because of their occurrence in specific types of meter. For example, a beat that includes three eighth notes in 6/8 is intoned “du-da-di,” whereas the same eighth notes in 7/8 are articulated “du-ba-bi” (see Fig. 4).⁷

In evaluating beat-oriented systems such as McHose/Tibbs and Gordon, one might consider a continuum with a single neutral syllable at one end, and a system with discrete syllables for every possible beat-level subdivision at the other. Thus, one could imagine a set of as many as sixteen different syllables occurring within a complex beat-level pattern. Clearly, neither endpoint satisfies our pedagogic goals, suggesting that a more centrist approach such as McHose/Tibbs or Gordon is more appropriate. These systems emphasize specific attack points with discrete syllables, but only at the

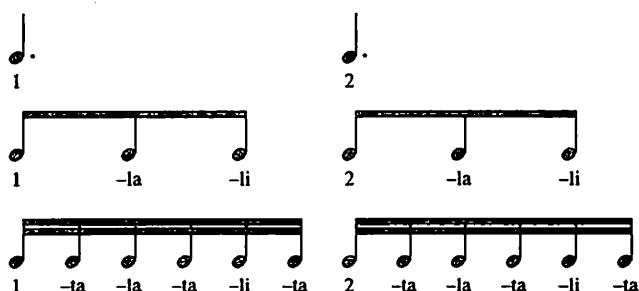
⁷Gordon, 284-285.

Figure 3. McHose/Tibbs system of rhythm syllables

simple meter



compound meter

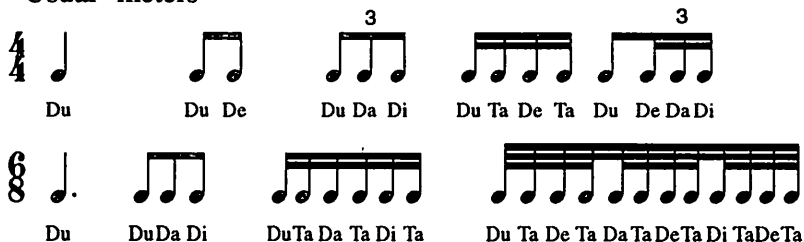


beat and division level. Subdivision-level syllables occur in more than one location within a beat, a duplication that Gordon claims "simplifies rhythm solfege,"⁸ since it results in a smaller number of syllables. (In Gordon note the recurrence of "ta" in "Du-ta-de-ta" and "Du-ta-da-ta-di-ta.") Thus, neither McHose/Tibbs nor Gordon requires students to differentiate among five different attack points, all of which are intoned as "ta."

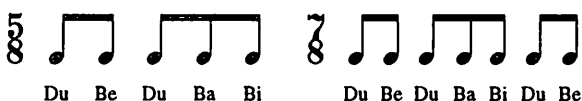
⁸Gordon, 285.

Figure 4. Gordon system of rhythm syllables

"Usual" meters



"Unusual" meters



All systems value the recognition and labeling of rhythmic patterns but choose to emphasize or facilitate one aspect of the rhythm learning process at the expense of another. All are strong when used to teach the concepts for which they were designed, and all have weaknesses when applied across the broad spectrum of rhythmic study.

Basics of the Takadimi System

During the last several years, we have developed a program of rhythm pedagogy that we believe addresses the goals stated above.⁹ At the center of our method is a set of rhythm syllables for use in sightsinging and theory classes at all levels of instruction. Our system shares many of the same goals and is similar in design to those already mentioned, but differs from them in several significant re-

⁹We wish to thank our colleagues John Benoit (Simpson College, IA), Craig Cummings, and Timothy Nord for using Takadimi in their classes and for providing encouragement and valuable suggestions.

spects. As with all systems, ours is selective in what it emphasizes and requires trade-offs in some areas, but we believe it avoids or minimizes many of the shortcomings of earlier systems and is well suited to teaching rhythm at the college level. It is simple enough for the prenotational stages of first-year courses but comprehensive enough to address the complexities of recent musical styles including polyrhythm, polymeter, and asymmetric divisions.

We call our system Takadimi. It features two related sets of syllables, one for simple beat division and one for compound. Figure 5 displays these syllables at the beat, division, and subdivision levels. Note that the syllables are assigned to location within a beat, not the notational value. In simple meter, any attack on the beat, regardless of notation, is called "Ta," and any attack on the second half of the beat is called "di." Further subdivisions are called "ka" and "mi." At the subdivision level, then, the syllables yield the pattern "Ta-ka-di-mi," the name we have given the system.¹⁰ In compound meter, "Ta" again represents an attack on the beat, and the syllables "ki" and "da" serve to articulate the divisions of the beat. Further subdivisions are "va," "di," and "ma," yielding the composite pattern "Ta-va-ki-di-da-ma." (Note that unlike the other systems examined Takadimi specifies a unique syllable for each subdivision.)

In order to accommodate complex beat-level combinations of five and seven divisions, the system adds the syllable "ti" to produce "Ta-ka-di-mi-ti" for a quintuplet and "Ta-va-ki-di-da-ma-ti" for a septuplet. Figure 6 illustrates these complex patterns along with other irregular divisions within the two types of meter.

¹⁰The reader may recognize these syllables as being similar to those used in North Indian tabla playing to vocalize divisions of a pulse. A brief introduction to the Indian system and an adaptation for musicians is provided in Robert Chappell, "Understanding Rhythm—A World Music Approach," *Percussive Notes*, 28/3 (1990): 8-10. Don Ellis was among the first to recognize the potential for using the Indian system for teaching complex rhythms to Western performers. See Ellis, *The New Rhythm Book* (North Hollywood, CA: Ellis Music Enterprises, 1972), especially chapters 1 and 4. John Craig Cooper proposed a similar adaptation in a series of workshops. See George Lohring, "The Takadimi Rhythm Method: An Interview with John C. Cooper," *Piano Guild Notes*, 39/4 (1990): 6-8. Each of these adaptations was influenced by the authors' extensive study of Indian music. None is entirely systematic, nor does any account for the variety of Western rhythmic practice.

Figure 5. The Takadimi System: regular divisions

Simple meter:



syllables: Ta Ta -di Ta -ka -di -mi

Compound meter:



syllables: Ta Ta -ki -da Ta -va -ki -di -da -ma

Figure 6. The Takadimi System: irregular divisions

Simple meter (quarter note = beat)



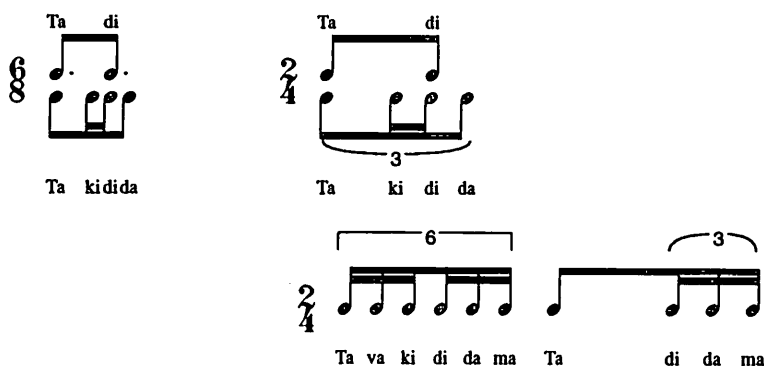
Ta di Ta ki da Takadimi Takadimi ti Ta va ki di da ma Ta va ki di da ma ti

Compound meter (dotted quarter note = beat)



Ta di Ta ki da Takadimi Takadimi ti Tava ki di dama Ta va ki di da ma ti

Figure 7. The Takadimi System: synchrony of compound and simple meters



The system also provides for coordination between simple and compound divisions where attack points coincide. "Ta" begins the beat and "di" marks the middle. Figure 7 illustrates this synchronization.

Through application of the system, rhythm emerges as specific syllabified patterns that can be spoken consistently and accurately within the span of a beat, regardless of prevailing metric divisions. Figure 8 charts idiomatic patterns in simple and compound division. The patterns shown in different meters yield the same syllables, even though notation differs. As these exercises illustrate, application of the system satisfies our first pedagogic goal by emphasizing patterns and musical gestures. Vocal facility increases rapidly because of the discrete one-to-one mapping onto metric attack points. Additionally, facility is aided by the easily articulated variety of initial consonants and the duplication of vowel sounds within individual beat divisions ("Ta-ka-di-mi" and "Ta-va-ki-di-da-ma.").

Addressing the second pedagogical goal, the Takadimi system requires students to recognize the position of any articulation rela-

Figure 8. Rhythm exercises in simple and compound division

a. simple meter



b. compound meter



tive to the predominant beat (in contrast to systems that emphasize notated rhythmic values). Figure 9 shows a syncopated rhythm pattern. Unlike a neutral approach (da-da-da-da), Takadimi enables students to understand the syncopation in terms of precise contextual locations of beats and attack points. Compared to systems previously mentioned, Takadimi encourages more specific understanding of metric position, and allows students to convey explicitly their understanding to the instructor, thereby facilitating accurate diagnosis of many common errors.

Figure 9. Syncopated exercise with a comparison to other systems

Kodály:	Tri - ri - ri - m - ri - ti	Tri - o - la	ri - ti - ri - m - ri	-ti - ri	-o - la	-ti
McHose/Tibbs:	1 - ta - ta - ta - te	1 - la - li	-ta - te - ta - ta	-te - ta	-la - li	-te
Gordon:	Du - ta - ta - ta - de	Du - da - di	-ta - de - ta - ta	-de - ta	-da - di	-de

The musical notation is written on a single staff with a key signature of one flat (Bb) and a 2/4 time signature. It consists of three systems, each corresponding to a composer's version. The first system (Kodály) has a melody starting on G4, moving to A4, Bb4, A4, G4, F4, E4, D4, C4, Bb3, A3, G3, F3, E3, D3, C3, Bb2, A2, G2, F2, E2, D2, C2, Bb1, A1, G1, F1, E1, D1, C1, Bb0, A0, G0, F0, E0, D0, C0, Bb-1, A-1, G-1, F-1, E-1, D-1, C-1, Bb-2, A-2, G-2, F-2, E-2, D-2, C-2, Bb-3, A-3, G-3, F-3, E-3, D-3, C-3, Bb-4, A-4, G-4, F-4, E-4, D-4, C-4, Bb-5, A-5, G-5, F-5, E-5, D-5, C-5, Bb-6, A-6, G-6, F-6, E-6, D-6, C-6, Bb-7, A-7, G-7, F-7, E-7, D-7, C-7, Bb-8, A-8, G-8, F-8, E-8, D-8, C-8, Bb-9, A-9, G-9, F-9, E-9, D-9, C-9, Bb-10, A-10, G-10, F-10, E-10, D-10, C-10, Bb-11, A-11, G-11, F-11, E-11, D-11, C-11, Bb-12, A-12, G-12, F-12, E-12, D-12, C-12, Bb-13, A-13, G-13, F-13, E-13, D-13, C-13, Bb-14, A-14, G-14, F-14, E-14, D-14, C-14, Bb-15, A-15, G-15, F-15, E-15, D-15, C-15, Bb-16, A-16, G-16, F-16, E-16, D-16, C-16, Bb-17, A-17, G-17, F-17, E-17, D-17, C-17, Bb-18, A-18, G-18, F-18, E-18, D-18, C-18, Bb-19, A-19, G-19, F-19, E-19, D-19, C-19, Bb-20, A-20, G-20, F-20, E-20, D-20, C-20, Bb-21, A-21, G-21, F-21, E-21, D-21, C-21, Bb-22, A-22, G-22, F-22, E-22, D-22, C-22, Bb-23, A-23, G-23, F-23, E-23, D-23, C-23, Bb-24, A-24, G-24, F-24, E-24, D-24, C-24, Bb-25, A-25, G-25, F-25, E-25, D-25, C-25, Bb-26, A-26, G-26, F-26, E-26, D-26, C-26, Bb-27, A-27, G-27, F-27, E-27, D-27, C-27, Bb-28, A-28, G-28, F-28, E-28, D-28, C-28, Bb-29, A-29, G-29, F-29, E-29, D-29, C-29, Bb-30, A-30, G-30, F-30, E-30, D-30, C-30, Bb-31, A-31, G-31, F-31, E-31, D-31, C-31, Bb-32, A-32, G-32, F-32, E-32, D-32, C-32, Bb-33, A-33, G-33, F-33, E-33, D-33, C-33, Bb-34, A-34, G-34, F-34, E-34, D-34, C-34, Bb-35, A-35, G-35, F-35, E-35, D-35, C-35, Bb-36, A-36, G-36, F-36, E-36, D-36, C-36, Bb-37, A-37, G-37, F-37, E-37, D-37, C-37, Bb-38, A-38, G-38, F-38, E-38, D-38, C-38, Bb-39, A-39, G-39, F-39, E-39, D-39, C-39, Bb-40, A-40, G-40, F-40, E-40, D-40, C-40, Bb-41, A-41, G-41, F-41, E-41, D-41, C-41, Bb-42, A-42, G-42, F-42, E-42, D-42, C-42, Bb-43, A-43, G-43, F-43, E-43, D-43, C-43, Bb-44, A-44, G-44, F-44, E-44, D-44, C-44, Bb-45, A-45, G-45, F-45, E-45, D-45, C-45, Bb-46, A-46, G-46, F-46, E-46, D-46, C-46, Bb-47, A-47, G-47, F-47, E-47, D-47, C-47, Bb-48, A-48, G-48, F-48, E-48, D-48, C-48, Bb-49, A-49, G-49, F-49, E-49, D-49, C-49, Bb-50, A-50, G-50, F-50, E-50, D-50, C-50, Bb-51, A-51, G-51, F-51, E-51, D-51, C-51, Bb-52, A-52, G-52, F-52, E-52, D-52, C-52, Bb-53, A-53, G-53, F-53, E-53, D-53, C-53, Bb-54, A-54, G-54, F-54, E-54, D-54, C-54, Bb-55, A-55, G-55, F-55, E-55, D-55, C-55, Bb-56, A-56, G-56, F-56, E-56, D-56, C-56, Bb-57, A-57, G-57, F-57, E-57, D-57, C-57, Bb-58, A-58, G-58, F-58, E-58, D-58, C-58, Bb-59, A-59, G-59, F-59, E-59, D-59, C-59, Bb-60, A-60, G-60, F-60, E-60, D-60, C-60, Bb-61, A-61, G-61, F-61, E-61, D-61, C-61, Bb-62, A-62, G-62, F-62, E-62, D-62, C-62, Bb-63, A-63, G-63, F-63, E-63, D-63, C-63, Bb-64, A-64, G-64, F-64, E-64, D-64, C-64, Bb-65, A-65, G-65, F-65, E-65, D-65, C-65, Bb-66, A-66, G-66, F-66, E-66, D-66, C-66, Bb-67, A-67, G-67, F-67, E-67, D-67, C-67, Bb-68, A-68, G-68, F-68, E-68, D-68, C-68, Bb-69, A-69, G-69, F-69, E-69, D-69, C-69, Bb-70, A-70, G-70, F-70, E-70, D-70, C-70, Bb-71, A-71, G-71, F-71, E-71, D-71, C-71, Bb-72, A-72, G-72, F-72, E-72, D-72, C-72, Bb-73, A-73, G-73, F-73, E-73, D-73, C-73, Bb-74, A-74, G-74, F-74, E-74, D-74, C-74, Bb-75, A-75, G-75, F-75, E-75, D-75, C-75, Bb-76, A-76, G-76, F-76, E-76, D-76, C-76, Bb-77, A-77, G-77, F-77, E-77, D-77, C-77, Bb-78, A-78, G-78, F-78, E-78, D-78, C-78, Bb-79, A-79, G-79, F-79, E-79, D-79, C-79, Bb-80, A-80, G-80, F-80, E-80, D-80, C-80, Bb-81, A-81, G-81, F-81, E-81, D-81, C-81, Bb-82, A-82, G-82, F-82, E-82, D-82, C-82, Bb-83, A-83, G-83, F-83, E-83, D-83, C-83, Bb-84, A-84, G-84, F-84, E-84, D-84, C-84, Bb-85, A-85, G-85, F-85, E-85, D-85, C-85, Bb-86, A-86, G-86, F-86, E-86, D-86, C-86, Bb-87, A-87, G-87, F-87, E-87, D-87, C-87, Bb-88, A-88, G-88, F-88, E-88, D-88, C-88, Bb-89, A-89, G-89, F-89, E-89, D-89, C-89, Bb-90, A-90, G-90, F-90, E-90, D-90, C-90, Bb-91, A-91, G-91, F-91, E-91, D-91, C-91, Bb-92, A-92, G-92, F-92, E-92, D-92, C-92, Bb-93, A-93, G-93, F-93, E-93, D-93, C-93, Bb-94, A-94, G-94, F-94, E-94, D-94, C-94, Bb-95, A-95, G-95, F-95, E-95, D-95, C-95, Bb-96, A-96, G-96, F-96, E-96, D-96, C-96, Bb-97, A-97, G-97, F-97, E-97, D-97, C-97, Bb-98, A-98, G-98, F-98, E-98, D-98, C-98, Bb-99, A-99, G-99, F-99, E-99, D-99, C-99, Bb-100, A-100, G-100, F-100, E-100, D-100, C-100, Bb-101, A-101, G-101, F-101, E-101, D-101, C-101, Bb-102, A-102, G-102, F-102, E-102, D-102, C-102, Bb-103, A-103, G-1

Use of the system encourages aural recognition and identification through its emphasis on verbally identifiable patterns (without differentiating among specific notational values), thus satisfying our third goal. If an instructor uses the pattern in Figure 9 for a dictation exercise, students could learn and intone the rhythm on syllables before notating the pattern or even knowing the actual meter. Once students can translate the rhythm to vocalized syllables, they can write it in a number of meters, paralleling the way in which many instructors use pitch solfège.

The fourth goal is satisfied by the system's provision of a consistent, usable language for discussing temporal phenomena. The syllables may be used for identifying and reproducing patterns aurally and orally, then ascribing notation to sound, rather than a more traditional approach that begins with the complexities of notation.

Complex Applications

The following examples and applications relate to our fifth goal, illustrating the ability of the Takadimi system to address issues presented by rhythm found in music outside the realm of traditional tonal literature. Three sample applications are given.

Application 1. Figure 10 presents challenges typical of late medieval as well as contemporary music. This exercise contains complex rhythms similar to those found in Elliott Carter's "Canaries" from *Eight Pieces for Four Timpani*. The performer is required to execute irregular groupings and complex syncopations within a context of changing meters and division types. Application of Takadimi helps demystify the complex notation of the passage by providing familiar syllables for every beat-level pattern. Accuracy in performing the complex syncopations is aided by muting the nonarticulated syllables (shown in parentheses). Switching from one division type to another requires a change from "Ta-ki-da" to "Ta-di" or vice versa, as well as altering syllable lengths when the beat value remains constant (as in Figure 10). The synchronous relationship among patterns such as the second beat of m. 2, the second beat of m. 3, and the first beat of m. 4 is reinforced by the recurrence of the syllables "Ta-di" in each case.

Figure 10. Exercise with irregular and complex patterns

Figure 10 displays three staves of musical notation, each with a corresponding line of lyrics below it. The notation includes various rhythmic patterns, including duplets, triplets, and quadruplets, as indicated by brackets above the notes.

Staff 1 (5/8 and 6/8 time):
 Ta ki di da Ta di mi Ta di da Ta ka di mi

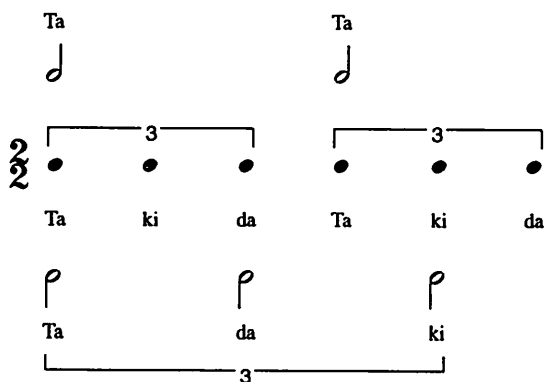
Staff 2 (4/4 time):
 Ta kidi ma(Ta) di Ta di Ta ki da (Ta)ka di mi ti (Ta)ka mi

Staff 3 (4/4 time):
 Ta da (Ta) ki (Ta) di mi Ta ki da

Application 2. Patterns involving duplets, triplets, and quadruplets of types spanning more than one beat are not uncommon in contemporary literature and present particular challenges for many students. Appearance of these patterns in multiple-voice textures complicates the problem still further. An intellectual understanding and an accurate performance of such patterns are goals of rhythm training. Application of the system can facilitate execution of these patterns in two ways: by helping students identify precise attack points, and by providing consistent syllables for representing and reproducing the aural phenomena.

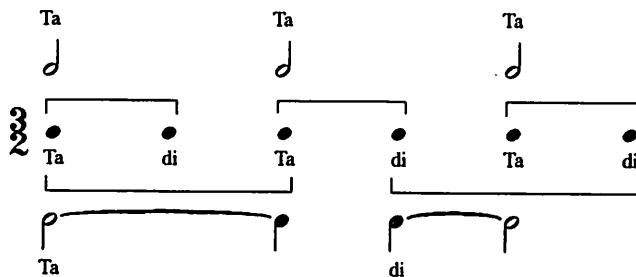
A triplet over two beats, sometimes called a supertriplet, can be vocalized based on attack points corresponding to the division of the underlying beat into three. Such a supertriplet becomes "Ta-da-ki" spanning two beats as shown in Figure 11. The similarity with the spoken triple division of the beat, "Ta-ki-da," helps the student perform the pattern accurately as a triplet while at the same time emphasizing the differences between the two-beat and one-beat triplet.

Figure 11. Three-within-Two



In a similar way the vocalization for the superduplet derives its syllables from attack points corresponding to the division of the underlying beat in two, yielding "Ta-di" spanning three beats as shown in Figure 12.

Figure 12. Two-within-Three



A similar procedure applied to patterns of four-within-three and three-within-four results in the following vocalizations: "Ta-mi-di-ka" spanning three beats and "Ta-ki-da" spanning four beats as shown in Figure 13. Application of syllables requires an understanding of the relationship of the superrhythm to the underlying beat and at the same time provides a measure of performance accuracy by demanding precise coordination with the beat. The decision whether to suspend the perception of the prevailing beat in favor of the irregular division or to coordinate the prevailing beat with the irregular division is left to the discretion of the performer or instructor. The system accommodates and encourages either approach.

Figure 13. Four-within-Three and Three-within-Four

The figure illustrates two rhythmic patterns: "Four-within-Three" and "Three-within-Four".

Four-within-Three (3/4 time):

- Three measures are shown, each containing four eighth notes.
- The syllables are: Ta, ka, di, mi, Ta, ka, di, mi, Ta, ka, di, mi.
- The musical notation shows a sequence of eighth notes with stems, grouped by brackets to indicate the four-note pattern within each three-beat measure.

Three-within-Four (4/4 time):

- Four measures are shown, each containing three eighth notes.
- The syllables are: Ta, ki, da, Ta, ki, da, Ta, ki, da, Ta, ki, da.
- The musical notation shows a sequence of eighth notes with stems, grouped by brackets to indicate the three-note pattern within each four-beat measure.

Occurrence of these patterns in multi-voice textures, the so-called “three-against-two” and “four-against-three,” presents challenges to traditional rhythm pedagogy. Often these complex interactions are presented in terms of the resulting composite pattern. Too often, however, the experience stops with the experience of the composite. Many times performing 4:3 rhythmic ratios involves reciting a saying such as, “Pass the bright red catsup.”¹¹ This approach is problematic because, much like using familiar songs for interval learning, it can encourage perception of the pattern in a single rhythmic and metric guise. Any sense of contextual flexibility and independent line is lost to expediency.

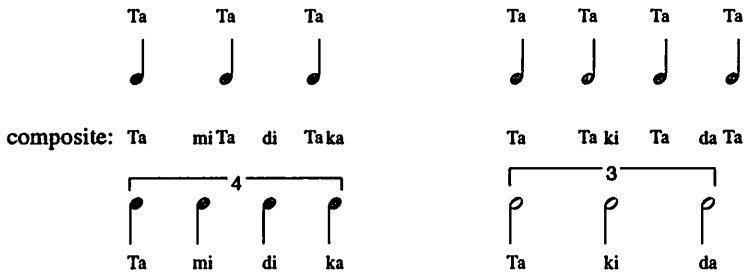
These poetic aids also tend to treat four within three beats and three within four beats as identical phenomena.¹² While the resulting composites are, in a purely temporal sense, identical, the patterns are vastly different musically and metrically. The particular 4:3 composite associated with the familiar “catsup” saying has three strong beats and is a valid abstraction only for four within three beats. Transforming it to serve a context with three attack points spanning four primary beats can be accomplished only with considerable difficulty.

Takadimi syllables provide a different vocalization for each relationship as shown in Figure 14. Both combinations produce easily learned and experienced composites, while accurately reflecting and retaining the essential beat and metric structures. Maintaining “Ta” as the underlying beat value provides a strong foundation for the crucial next step—moving from performing the composite to performing both parts of the rhythm, either alone or in ensemble. One person demonstrating both parts simultaneously could, for example, clap on “Ta” and speak the other line. With practice “Ta-mi-di-ka” and “Ta-ki-da” are learned as the correct vocalization of the contrasting rhythm to the prevailing beat. The syllables provide a vocalization for each pattern that is free of any preexisting language-

¹¹ Anne C. Hall uses this rhythmic device in her text *Studying Rhythm* (Englewood Cliffs, NJ: Prentice Hall, 1989), 94.

¹² Hall avoids this common pitfall by supplying a separate phrase for speaking a pattern with four beats grouped into three, “When will he come again” (94).

Figure 14. Performing polyrhythms with a composite

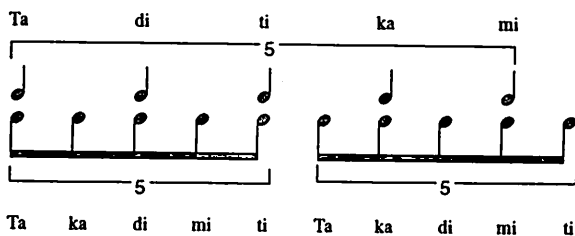


based accents or durations and is adaptable to the metric or rhythmic context. It remains internally consistent with the rest of the system, reinforces previous learning, and requires no new jargon. The result is an aurally based introduction to the two 4:3 phenomena, rooted in the interaction of the parts heard as a composite yet allowing for either three or four underlying beats.

One less common pattern, the quintuplet over two beats, the superquintuplet, illustrates application of the system to one additional complex pattern. By dividing each beat into a quintuplet, the superquintuplet can be vocalized as shown in Figure 15. Certainly not all possible combinations can be addressed following this approach. Relationships such as 5:4 and 6:5 must be learned in ways different from a composite. Nevertheless, Takadimi provides a very powerful tool for the understanding and performance of many of the most common cross-rhythms above the beat level and virtually all patterns typically included in the undergraduate curriculum.

Application 3. Figure 16 presents a two-voice exercise constructed from patterns abstracted from several well-known works in the con-

Figure 15. Five-within-Two



temporary repertoire.¹³ It includes challenging individual lines made more difficult by the required coordination between parts. Selected issues will be discussed.

Measures 1 through 3 illustrate difficulties posed by varied division types. The performer of part 1 in m. 1 is required to enter on the last division of the quintuplet. Coordinating the entrance with "ti" in part 2 ensures accuracy. Both parts are required to use both simple and compound division types within the first two measures. Shifting between the two is facilitated by learning "Ta-ka-di-mi" and "Ta-ki-da" as two options for dividing a beat equally and applying the correct division at the appropriate time. Synchronization of "di" at midbeat ensures coordination between parts. The metric modulation between mm. 2 and 3 in part 2 is facilitated by

¹³Patterns for this example are modeled on excerpts from the following works: mm. 1-2 on Joseph Schwanter, ". . . and the mountains rising nowhere" (mm. 64-65); m. 3 on Warren Benson, *The Leaves are Falling* (mm. 127-128); m. 4 on Darius Milhaud, *Alissa* (melodic excerpt found in Robert Ottman's *More Music for Sight Singing*, 1981, 287); m. 6 on Luigi Dallapiccola, *Goethe-Lieder*, No. 1 (m. 15); m. 7 on Edgard Varèse, *Hyperprism* (mm. 21 and 41).

Figure 16. Complex two-part exercise

part 1: 1 ti di ki da di mi Ta ki ma va ki ma

composite: Takadimi ti di ka di mi Ta ki da Ta ki di mi Ta ki di ma Tava ki di ma

part 2: Takadimi ti ka di mi Ta Ta ki di di Ta di

3 Ta ki Ta ki da ki Ta da ki Ta Ta

Ta ki di Ta ki di da Ta ki di Ta di da Ta ki Ta di Ta di ti Taka mi

Ta di di Ta di di Ta Ta di Ta di ti ka mi

5 Ta va di ma ka mi Ta di da Ta ma Ta da ki

Ta vaki di dama Ta ka mi Ta ka di mi Ta di da Ta ki da ma Ta da Ta ki da

Ta ki da Ta ka mi Ta di di Ta ki da ma Ta ki da

7 Ta ki di di Ta mi di ka Ta

Ta di dama Ta ki Ta ka di mi di dama Ta mi Ta di mi ka di mi Ta

Ta di dama Ta Ta ka mi dama Ta Ta mi di mi Ta

the consistent use of "Ta-di" for both the two dotted eighth notes in m. 2 and the eighth notes in m. 3.

Performance of the polymeter in m. 3 is aided by the presence of "di" in both division types. In learning and rehearsing this rhythm, performers could vocalize the composite then extract individual parts from it. Also, one group could vocalize the composite while others performed the separate parts. In either case syllables help the performers and the instructor judge the accuracy of the performance and diagnose any shortcomings.

Measure 4 requires the performer of part 2 to execute a superquintuplet spanning two beats and coordinate the line with part 1. The Takadimi system suggests at least two possible approaches to this measure. As one solution, the performer of part 2 might coordinate the attack points with the imagined division of the quarter notes into five. This was the method suggested in relation to Figure 15. A different approach would involve executing the entire measure in cut time, as though there were two beats. The result would be "Ta-di-mi" for the quarter and two eighth notes on the first beat followed by "Ta-ka-di-mi-ti" for the quintuplet on the second beat. This solution has the advantage of asking the performer to vocalize only familiar patterns, promoting even divisions and accuracy. It does not, however, produce a helpful composite.

Performing m. 5 requires both performers to change division types facilely several times within a short temporal span and execute complex patterns constructed from the basic divisions. Coordination with the other part complicates matters further. The synchronization of syllables reflected by the composite helps align the sextuplets with the eighth notes and simple triplet in part 2. The familiar "Ta-va-ki-di-da-ma" composite produced by the interaction of parts on the first beat of m. 5 helps unravel the complex notation and facilitates accurate performance of this pattern as well.

Measures 6 and 7 present the challenges of asymmetric meter and triplets at three different beat levels. The syllables shown on the example indicate an approach to performing each line. The composite suggests points of coordination between the lines.

Measure 8 illustrates the four-within-three superquadruplet occurring over three beats of a four-beat measure. The familiar relationship of the pattern to the composite will help guide place-

ment of the attack points and coordinate the irregular grouping with part 2.

The application of syllables in this example highlights several guiding principles underlying the pedagogy of Takadimi: 1) Careful application of syllables can aid greatly the understanding of seemingly impenetrable notational complexities. 2) Division types are associated with specific syllables and can be drilled apart from notated exercises. 3) Composites are useful in aligning parts and provide a valuable diagnostic tool and teaching aid. 4) The beat may be felt on higher or lower levels as necessary to accommodate the particular rhythmic complexity.

Nothing except years of practice and training could make contemporary rhythm or passages such as this easy or readable at sight. The Takadimi system, however, provides tools for unraveling and simplifying the complexities of the notation and promotes the execution of the rhythm in a highly accurate and musical fashion. In a class or rehearsal setting, instructions and suggestions can be given in precise terms and drills devised to rehearse troublesome passages.

Conclusions

Our experience with this rhythm pedagogy has demonstrated that the system is quickly learned and easily applied to a wide variety of styles in a consistent and accurate manner. In summary we believe its strengths are as follows:

1. It is based fundamentally on the aural phenomenon of beat division, and as such moves from the perceived sound through a process of translation and verbal description, before addressing issues of graphic description. In other words, identification and labeling occur before notation. With the Takadimi system, rhythm teaching can begin prenotationally in both written theory and aural skills classes. This approach can speed the learning process and allow students to comprehend and experience complex rhythmic events (such as syncopation and cross-rhythm) long before they are expected to read the notation.

2. The system reinforces the fact that much of the rhythm we encounter is based on a relatively small number of patterns, which can be notated in different ways. By learning and thinking in terms of patterns, students are taught strategies for chunking and learn to practice higher-level listening skills. They come to regard rhythm as identifiable and interrelated units of sound rather than a simple stream of attack points.
3. One of the most useful features of the system is the coordination of "di" marking the mid-point of the beat in both simple and compound meters. This synchronization allows for precise understanding and performance of duplets and triplets along with various elaborations (see Figure 7). Viewing meter with this internal consistency suggests that the two types of meter as traditionally understood are much more similar than different. Indeed, in contemporary theory and practice the distinction between metric types continues to be blurred. Learning rhythm with a built-in appreciation for the synchrony of "di" in the two common meter types lessens the artificial barriers encouraged by the familiar dichotomous approach.
4. The system provides a useful set of tools for teaching and evaluating rhythm in the classroom and ensemble. When all the students in a class routinely speak rhythm exercises using the same syllables and become accustomed to new rhythmic patterns or issues being taught in these terms, classroom or rehearsal efficiency is increased tremendously. Student participation in peer evaluation is aided by the common language the system provides. When students perform a rhythmic example, all those listening know both what the students actually performed as well as what they intended to perform. The differences between misreading a pattern and misperforming it are immediately clear to the students and the instructor.
5. Anecdotal evidence suggests that the system has proven useful to students of varying skill levels in both the classroom and the concert hall. Less skilled students are given a concrete method that helps them develop accurate and useful rhythm skills. Students with stronger backgrounds are given

a practical tool for unraveling rhythm in the most challenging literature. Furthermore, students have begun using "Takadimi" in lessons and coachings, eliciting interest and positive feedback from studio teachers. Others have successfully introduced the system to younger children in private lessons and classroom instruction.

In the dynamic world of music and music education where students often come to college ill prepared for their encounter with increasingly complex literature, rhythm pedagogy must keep pace with the challenge. It is no longer enough to leave rhythm to chance or to assume students learn it in lessons or ensembles. Rhythm must now be taught. Systems based on syllables are not new, either in Western or non-Western music education. We have found a system that addresses many of the needs of contemporary higher education and presents a healthy challenge to many traditionally held views on rhythm pedagogy. It is consistent with other significant trends in theory pedagogy and could be a successful part of many theory programs.