

1-1-2010

## Rhythm Syllable Pedagogy- A Historical Journey to Takadimi Via the Kodály Method

Joshua Palkki

Follow this and additional works at: <https://digitalcollections.lipscomb.edu/jmtp>

---

### Recommended Citation

Palkki, Joshua (2010) "Rhythm Syllable Pedagogy- A Historical Journey to Takadimi Via the Kodály Method," *Journal of Music Theory Pedagogy*. Vol. 24, Article 5.

Available at: <https://digitalcollections.lipscomb.edu/jmtp/vol24/iss1/5>

This Article is brought to you for free and open access by Carolyn Wilson Digital Collections. It has been accepted for inclusion in Journal of Music Theory Pedagogy by an authorized editor of Carolyn Wilson Digital Collections.

## Rhythm Syllable Pedagogy: A Historical Journey to Takadimi Via the Kodály Method

BY JOSHUA PALKKI

The pedagogy of teaching rhythm, especially to beginning musicians, is a complex and fascinating yet often overlooked area of study. Said Robert Gauldin, “when listening to a piece, we frequently take for granted the regulated rhythmic foundation that underlies its melody.”<sup>1</sup> Rhythm gives music a sense of organization and must be methodically taught. Because a significant portion of the university music theory curriculum is devoted to teaching aural skills, further study in this area is appropriate and necessary. Like solmization systems and pitch solfège theories, rhythm pedagogy is an ever-evolving field of study.<sup>2</sup> This article explores the importance of a *sound before symbol* approach to rhythmic instruction, the history of rhythm syllable systems and the importance of effective rhythm syllable pedagogy. Furthermore, it shows how Takadimi, an innovative rhythm syllable system, has evolved based on principles espoused by Zoltán Kodály.

In many American universities, rhythmic instruction occurs only in conjunction with pitch—most often during the teaching of dictation. Students unable to write rhythms will utterly fail in dictation, therefore rhythmic skills are essential to that activity. Michael Rogers asserts:

Rhythm study is a topic that should certainly be mastered intellectually. Understanding the mathematical foundation of rhythm and meter...is essential for any musician. For almost no other topic, however, is it so important to translate conceptual knowledge into sound

---

<sup>1</sup> Robert Gauldin, *Harmonic Practice in Tonal Music* (New York: W. W. Norton, 1997), 17.

<sup>2</sup> Rhythmic instruction, while a pedagogical technique that is useful to music theorists, also has undeniable performance ramifications. As conductor Robert Shaw (1976) said, “...I think we would agree that our single most unifying and communicative force is rhythm—which is also at present our most urgent need.” His statement exemplifies a sad truism that many musicians (vocalists most notably) are often labeled as poor rhythm readers and that many music educators neglect music literacy instruction.

and musical effect. To make sense, rhythm must finally be felt as a physical activity and not just understood as a formation of symbols.<sup>3</sup>

While we do not teach students to begin reading music at the collegiate level, we are teaching new generations of undergraduates, who may themselves be struggling with music reading, how to teach music literacy. While pitch solmization systems have equipped teachers with vocabulary enabling them to diagnose interval and intonation issues, there seems to be no equivalent momentum on the side of rhythmic solmization. Thus this terminology is not as readily available to theory teachers. There is a growing community of instructors who view Takadimi as the common vocabulary through which rhythm can be taught.

The goal of rhythmic drill in the ear-training class is to teach students to hear durations in patterns. This application of the generally accepted pedagogical rubric, that skills are more effectively taught beginning with aural skills such as rote echoing, has been explored in numerous publications over the last 20 years.<sup>4</sup> As patterns are echoed and rehearsed, they become transferred to working memory and eventually to long-term memory. Because patterns remain in the short-term memory for a brief time (2-5 seconds according to most studies), they should initially consist of small units-- perhaps two beats-- and grow more complex over time. Barak Rosenshine et al. write, "when teaching new or difficult material, a teacher should teach only a small amount and arrange for student practice after each part. In this way, the amount of information covered at any time is manageable for working memory."<sup>5</sup> Echo, drill, and listening activities facilitate the recall and comprehension of rhythmic cells, which exist within the context of meter, a key perceptual organizer in music. Joyce Jordan-

---

<sup>3</sup>Michael R. Rogers, *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies* (Carbondale, IL: Southern Illinois University Press, 2004), 143.

<sup>4</sup>Carr (1989), Goolsby (1994), Jordan-DeCarbo (1997), Gordon (1997, 2003), DeNardo & Kantorski (1998), Jordan-DeCarbo & Nelson (2002), Sweeney (2002), Ester (2010)

<sup>5</sup>Barak Rosenshine, H. Froelich, & I. Fakhouri, "Systematic Instruction," in *The New Handbook of Research on Music Teaching and Learning*, ed. by Richard Colwell & Carol Richardson (New York: Oxford University Press, 2002), 302.

DeCarbo and Jo Ann Nelson have shown that the brain processes rhythm, pitch, and lyrics/syllables separately and that “tonality and meter serve as key perceptual organizers for music literacy content.” They also claim “the ability to gain in notational ability appears to be mediated by aural perception ability.”<sup>6</sup>

Music learning theory suggests a sound before symbol approach is most effective when teaching students to read and notate music.<sup>7</sup> While many educators advocate such a method of teaching, few have found a solid pedagogy for teaching sound in isolation from notation, at least initially. Mícheál Houlihan and Philip Tacka model this type of instruction in their texts *Kodály Today* and *From Sound to Symbol*. Such scholars acknowledge the foundational work of eighteenth-century researcher Heinrich Pestalozzi who believed sounds should be introduced before symbols.<sup>8</sup> Maureen Carr discusses the application of sound before symbol philosophies in a university aural skills setting:

Some students appear to have been ‘born’ with the type of innate musicality that allows them to ‘hear with their eyes,’ while others are still in the process of developing that ability when they enter college. Students who have yet to fulfill their potential for associating sounds with symbols tend to treat the musical score as visual phenomenon. Consequently, they are unable to arrive at a distinct aural understanding of the music that they are reading and the voice-leading exercises they are writing.<sup>9</sup>

---

<sup>6</sup>Joyce Jordan-DeCarbo & Jo Ann Nelson, “Music and Early Childhood Education,” in *The New Handbook of Research on Music Teaching and Learning*, ed. by Richard Colwell and Carol Richardson (New York: Oxford University Press, 2002), 223.

<sup>7</sup>Music learning theory is a term championed by Edwin Gordon, professor emeritus at the University of Iowa who has written many volumes on music literacy instruction. According to Gordon, “just as the audiation of tonality is the basis of tonal syntax, so the audiation of meter is the basis of rhythm syntax.”

<sup>8</sup>Charles Plummeridge, “Schools,” In *Grove Music Online*, Oxford Music Online, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/43103> (accessed November 6, 2009).

<sup>9</sup>Maureen A. Carr, “The Importance of Sound Before Symbol in Developing Intuitive College Musicians,” in *Readings in Music Learning Theory*, ed. by Darrel L. Walters and Cynthia Crump Taggart (Chicago:

Carr describes the aural skill curriculum of the Pennsylvania State University School of Music in the late 1980s and how it helped “students develop a background of organized meanings to enable them to audiate from notation” utilizing a Schenker-oriented undergraduate theory curriculum.<sup>10</sup> “In the fall of 1986 students did not see any patterns in notation until December 1<sup>st</sup>.”<sup>11</sup> Students were given several *months* of purely aural, pattern-oriented training. University aural skills courses could greatly benefit from rhythmic instruction that begins with the aural presentation of basic patterns. This is the first step in the Houlahan/Tacka cognitive model of instruction, which develops kinesthetic, aural and visual awareness, before proceeding to the use of rhythm syllables. This model of instruction is clearly laid out in *From Sound to Symbol*, a text currently being used in both public school and university settings. The point here is that a well thought out method of presentation and delivery is as important as the syllable system being used. Houlahan and Tacka also released a set of books entitled *Sound Thinking*, in which they introduce patterns in a sequential manner based on their frequency in the standard repertoire.<sup>12</sup>

Gary Karpinski explored memory as it relates to melodic dictation and emphasizes the concept that the brain organizes notes into “chunks.” A typical melodic dictation example may be eight measures or more in length, containing a far greater amount of rhythmic and melodic material than can be processed by the brain. In exploring the teaching of melodic dictation in the aural skills classroom, Karpinski describes four phases: hearing, memory, understanding and writing, which “are sequential; each must be performed in turn or subsequent phases will not be viable.”<sup>13</sup> When  
GIA Publications, 1989), 352.

<sup>10</sup> Carr, 357. Schenker himself acknowledged the importance of hearing before students were to compose. “Is not learning to hear the first task, during which time the student might well dispense with composition?...no music school can be released from the obligation of teaching to hear correctly.” (Schenker, 1979, as cited in Carr, p. 363).

<sup>11</sup> Carr, 361.

<sup>12</sup> Mícheál Houlahan and Philip Tacka, *Sound Thinking: Music for Sight-singing and Ear Training (Volumes I & II)* (New York: Boosey & Hawkes, 1990/1991).

<sup>13</sup> Gary Karpinski, “A Model for Music Perception and its Implications in Melodic Dictation,” *Journal of Music Theory Pedagogy* 4:2 (1990): 194-202.

teaching dictation, do we jump from hearing to writing without proper time and consideration for the vital two inner steps? If so, we are missing the opportunity to discover where students are having difficulties. Likewise, if consistent syllable pedagogy for rhythm is not employed, we may miss vital teaching opportunities.

## MUSIC COGNITION AND RHYTHM SYLLABLES

The way students learn rhythm should affect how rhythm is taught. As previously stated, music is understood in patterns. Our natural tendency towards grouping is based on Gestalt principles, which posit that the brain has tendencies toward self-organization.<sup>14</sup> David Temperley asserts that early Gestalt researchers were well aware of the impact their research on grouping would have on music.<sup>15</sup> In her new book exploring the aging brain, Barbara Strauch cites current cognitive studies:

When sensory input first comes into the brain—to put all this in its simplest form—it goes to its outermost layer, the cortex. The input then travels to the hippocampus, which consolidates information, memories, and learning. The hippocampus binds the varied sensory experiences together into a sensible chunk—and then sends that back to the cortex for long-term memory storage.

But before the information even gets to the central hippocampus, it is first filtered by the gatekeeping dentate gyrus, which is thought to perform an opposite task—it breaks sensations into even smaller pieces. It is, as Gage puts it, ‘a pattern separator.’ Brain cells in the dentate take note of subtle differences and similarities—a leaf a bit greener, tea slightly hotter. Mature brain cells in the dentate encode those minute differences and pass them on to the hippocampus.<sup>16</sup>

---

<sup>14</sup> Alf Gabrielsson, “The Complexities of Rhythm,” in *Psychology and Music: The Understanding of Melody and Rhythm*, ed. by Thomas J. Tighe and W. Jay Dowling, (Hillsdale, NJ: Lawrence Erlbaum Associates, 1993), 95.

<sup>15</sup> David Temperley, *The Cognition of Basic Musical Structures* (Cambridge: MIT Press, 2004), 55.

<sup>16</sup> Barbara Strauch, *The Secret Life of the Grown-up Brain* (New York: Viking/Penguin Group, 2010), 136.

Effective rhythm instruction using rhythm syllables reinforces this encoding process and, in turn, improves overall music reading and performance. The main point here is that the gate- and file-keeping functions of the dentate gyrus appear to fragment information into smaller chunks that are stored in different parts of the brain. If this is true, then the links that one is able to forge between these far-flung repositories are extremely important, with the more links the better. With multiple links, complex skills and information can be reconstituted with greater speed and reliability. It is one thesis of this article that Takadimi, which maps labels onto rhythmic events, provides this added layer of linkage.

Don Ester has studied sound before symbol methodology, asserting, "because sound comes before sight, both the rhythm and the tonal syllables must be sound-based rather than notation-based."<sup>17</sup> Many rhythm syllable systems fail to meet this key criterion. Rhythmic and tonal syllables serve as a main pillar of Ester's *Sound Connections* system of teaching music literacy because they are crucial in the encoding process.<sup>18</sup> Michael Dickel intimates:

When associations (either verbal or visual) can be made between the new items and information in memory, the new items become more meaningful. Words or syllables are more meaningful because we can make associations with these forms of information more easily than we can numbers.<sup>19</sup>

Ester agrees, noting that, "rhythm...syllables serve as mediators between sound and symbol. They perform the key cognitive

---

<sup>17</sup>Don P. Ester, *Sound Connections: A Comprehensive Approach to Teaching Music Literacy* (Fishers, IN: Educational exclusives, 2010), book in .pdf format. Available online at <http://www.educationalexclusives.com/products/sound-connections/> (accessed May 3, 2010), 6. The author is indebted to Dr. Ester for sparking his interest in this topic and for ongoing guidance. He is also extremely grateful for Dr. Timothy A. Smith, Dr. Mícheál Houlahan, and Dr. James Froseth and their support of his research and writing.

<sup>18</sup>The main theme of Ester's insightful text is summed up in a diagram with three pillars: sound, symbol, and syllable all connected by arrows. He believes (and I agree) that one cannot exist without the other two.

<sup>19</sup>Michael J. Dickel, "Principles of Encoding Mnemonics," *Perceptual and Motor Skills* 57 (1983): 114.

function of verbal association.”<sup>20</sup> Such writings exemplify the relevance and superiority of a syllable-based system rather than a number-based system because rhythm syllables serve as more effective link between audiation and the reading/ writing of music than do numbers. Cynthia Crump Taggart concluded:

Rhythm audiation is improved when rhythm syllables are included as a part of the music learning process... because the use of rhythm syllables enables students to remember (retain in audiation) a larger vocabulary of rhythm patterns than would be possible without the use of rhythm syllables... In the same way words serve as labels to help one classify and remember things in the environment, rhythm syllables serve as a label that can help one classify and remember rhythm patterns in his audiation.<sup>21</sup>

A history of rhythm syllables provides some insight into the development of rhythm instruction.

## RHYTHM SYLLABLE HISTORY<sup>22</sup>

Rhythm syllable usage can be traced to the nineteenth-century French mathematician Pierre Galin, whose system of rhythm pedagogy had been in use since the early 1800s in France (though not published until 1844). Pierre’s wife Aimé Paris and physician Emile Chev  later adapted these syllables.<sup>23</sup>

---

<sup>20</sup> Ester, 32.

<sup>21</sup> Cynthia Crump, “Rhythm syllables: A Comparison of Systems,” in *Readings in Music Learning Theory*, ed. by Darrel L. Walters and Cynthia Crump Taggart (Chicago: GIA Publications, 1989), 55.

<sup>22</sup> While this is not an exhaustive list, it does highlight the main systems being used in the United States. Note that some syllable systems have been adapted and changed many times.

<sup>23</sup> The French Time-Names system is sometimes referred to as the Galin-Paris-Chev  system. For the sake of consistency, the former label will be used throughout this article.



This system, often referred to as French Time-Names, evolved through versions that included both sound- and symbol based traits; as a result, it serves as the seed from which most all other systems have grown over the past 200 years.<sup>24</sup>

Rhythm syllable systems can be separated into three categories: (1) systems with words used as syllables, (2) number-based systems and (3) systems employing original syllables. A chart comparing the basics of various rhythm syllable systems can be found in Appendix 1. It is necessary here to distinguish between beat- and symbol-based syllable systems. When syllables are derived from a metric hierarchy and how notes function within a measure, a system is considered *beat-based*. When syllables are assigned based on the type of note regardless of meter, such a system is *symbol-based*.

#### *Systems with words used as syllables*

Galin's original system assigned French words with an appropriate number of syllables to note values, making it usable only with very basic rhythmic patterns. "Perhaps because of this, the system eventually published by Paris and Chev  in 1844 incorporated traits related to metric function, initiating an evolutionary process that can be traced through virtually all systems to the present."<sup>25</sup> In Pierre Galin's system, quarter notes were assigned the word "noir" and eighth notes, "croche." Inspired by the work of Jean Jacques Rousseau, Galin said in 1818,

We should not recommend teaching a child to speak by means of reading, or place a book before him to show how to pronounce words. Yet this is what is done in music teaching: the child is require to perform from written notes; he is made to read before his knows how to sol-fa, that is, before he can speak.... Does anyone believe that a child can be taught to count by placing before him a set of figures to read, if he does not already know the precise significance of the names which the figures bear? No, certainly not! By such means the child will only learn

---

<sup>24</sup> Ester, 53.

<sup>25</sup> Ester, 54.

to give names to various arrangements of the symbols without knowing their value—the relationship of those symbols to external things.<sup>26</sup>

This notion reveals Galin’s belief in a rhythm syllable system and the Pestalozzian idea that names and sounds should precede the reading of notation. Luther Whiting Mason and Zoltán Kodály adapted and further modified the system, but doing so created syllable-driven rather than word-based systems as syllables like “ta” were used to denote the beat. Appendix I illustrates how both men adapted Galin’s original system.

A simple word-based approach involves chanting notes with their formal note name; for example, eighth notes are chanted as “eighth.” While this system is simple to learn, since the name directly represents the object, someone using this system is forced to focus on individual durations rather than experiencing music in patterns. Also, note names often do not correspond to the note values they represent. For example, “quar-ter” has two syllables but may represent one beat (as in 4/4). “Consequently, those syllables cannot be used as a tool to help one to recognize the meter of the music.”<sup>27</sup> In addition, the term “eighth” could represent the beat, a division of the beat, or even its subdivisions.

Carl Orff (1895-1982) considered rhythm a vital element of music that could be isolated and taught apart from melody, and that children learned from naturally occurring speech patterns. His *Schulwerk* employs words for rhythmic values depending on their syllabification (combinations of strong and weak) and their place within a meter. For example, four quarters can be represented as, “ti-ger-lil-y” or “Al-a-ba-ma,” as both words follow the strong-weak-strong-weak pattern.<sup>28</sup>

Language becomes musical when it is recited to accompanying pulse-beats. . . . Rhythm in language comes about through the interplay of longer and shorter syllables, some of which are more accented than others.<sup>29</sup>

---

<sup>26</sup> Pierre Galin, *Rationale for a New Way of Teaching Music*, trans. Bernarr Rainbow (1818; repr., Kilkenny, Ireland: Boethius Press, 1983), 54-57.

<sup>27</sup> Crump Taggart, 58.

<sup>28</sup> Bridgitte Warner, *Orff-Schulwerk: Applications for the Classroom* (Englewood Cliffs, NJ: Prentice-Hall, 1991), 20.

<sup>29</sup> Warner, 17.

To emphasize his philosophy on language-driven rhythmic patterns, time signatures are not used in Orff's method.

Swiss music education scholar Emile Jaques-Dalcroze (1865-1950) developed a system called eurhythmics, which incorporated dance and movement with rhythm instruction; the system was designed to improve musical expression and rhythmic accuracy. Dalcroze also valued a sound before sight approach:

Jaques Dalcroze...insisted that in most cases the teacher of eurhythmics (which means literally 'good rhythm') improvise the music to which the pupil was to respond and that these responses should be both free and flexible; and that such free and flexible movements should at first be stimulated by music *heard* rather than by notes *seen*.<sup>30</sup>

Although there was no formal set of rhythm syllables used, his eurhythmics system did employ mnemonics such as "run-ning" (for two eighth notes) and "gal-lop-ing" for three eighth notes in compound duple meter.<sup>31</sup>

### *Number-based systems*

An approach used by many American instrumentalists is the "1 e and a" system, wherein numbers mark the strong beats and other syllables and words are used to represent subdivisions. For example, in 4/4 meter four quarter notes would be chanted "1-2-3-4," a set of sixteenth notes in the same meter on beat one would be chanted "1-e-and-a," and six eighth notes in 6/8 would be chanted "1-2-3-4-5-6." While the system is easy to learn, it is inappropriate in terms of music learning theory, because "students must see rhythm in notation in order to associate the appropriate numbers with the macro beats."<sup>32</sup> A macro beat is the fundamental

---

<sup>30</sup>Karl Wilson Gehrkins, "Rhythm in Music," *Music Educators Journal* 49:5 (April/May 1963): 46.

<sup>31</sup>Emile Jacques Dalcroze, *Rhythm, Music, and Education*, trans. Harold F. Rubenstein (London: Riverside Press, 1967), 12-13.

<sup>32</sup>Crump Taggart, 61.

pulse of music that stays mostly constant.<sup>33</sup> Micro beats are the subdivisions within macro beats. For example, in 6/8 meter, macro beats could occur on the first and fourth notes with micro beats occurring on all six eighth notes. The “1 e and a” system—inextricably tied to notation—was designed for use in simple meter.

The “1 e and a” system was modified by Eastman School professors Allen McHose and Ruth Tibbs in the mid-1940s to assist with the feeling of strong beats within the context of counting.<sup>34</sup> What is now referred to as the McHose/Tibbs System or the Eastman System has a different set of syllables for simple and compound meter. Eighth notes are chanted “1-te, 2-te” and four sixteenths are chanted “1-ta-te-ta.” Triplets and groupings of three eighth notes in compound duple meter are chanted as “1-la-lee.” In their *Sight-Singing Manual*, the authors suggest the following: “(A) Make the conductor’s beat with the right hand, (B) Tap the background of the beat with the left hand, two equal time values for a simple beat, (C) Recite the time values of the notes, using the rhythmic syllables.”<sup>35</sup> Edwin Gordon promoted a similar system (sometimes called Tometics) in the 1970s. Four eighth notes in 2/4 were chanted as “1-ne 2-ne” and six eighth notes in 6/8 as “1-na-ni 2-na-ni.”<sup>36</sup> Gordon later abandoned this system in favor of the Froseth/Blaser phonetic rhythm syllables (discussed below).

---

<sup>33</sup>James Froseth offers another way to think of a macro beat: “determine how the conductor’s ictus would indicate the beat (sometimes referred to as the big beat...)” (James Froseth, e-mail message to author, July 24, 2010). For example, 6/8 could be conducted with two or six ictuses to a measure.

<sup>34</sup>Allen Irvine Mc Hose & Ruth Northup Tibbs, *Sight-Singing Manual* (New York: Appleton-Century-Crofts, 1957), 6-7.

<sup>35</sup>McHose & Tibbs, 7.

<sup>36</sup>Paul Varley, “An Analysis of Rhythm Systems in the United States: Their Development and Frequency of Use by Students, and Authors; and Relation to Perceived Learning Preferences” (PhD dissertation, University of Missouri-Saint Louis, 2005), 81.

*Systems employing original syllables*

Recall that Englishman John Curwen adapted the French Time-Names system for use in Great Britain. He said,

We have long wanted a language of *Time* which should correspond in simplicity and directness with the Tonic syllables which form our language of *Tune*. We want it for Time Analysis or Time spelling. . . . We want it also as a mnemonic, a help to the memory of Time. Just as the constant use of the Tonic syllables helps our early pupils to remember and produce intervals of *tune*, so may the frequent use of these Time syllables help them to remember and produce intervals of *time*. . . . The following scheme of Time names is copied, with slight alterations, from M. Paris's invention. . . . Notice that the vowel sound *ah* is always used for the first half of a pulse, and *ay* for the second.<sup>37</sup>

His system "incorporated a combination of letters to signify pitch (D for Do, R for Re, etc.) and punctuation marks to signify rhythm and stress of the beats. For example, a colon before a letter would indicate a weak accent."<sup>38</sup> Chev  employed a similar system of punctuation placed above tonal staves to enable simultaneous rhythmic and melodic reading.<sup>39</sup>

Luther Whiting Mason subscribed to Pestalozzian ideas espoused by Lowell Mason, with whom Luther studied. He adapted the French Time-Names system several times for use in the United States and Japan.

Mason learned of the Chev  method through the work of Meylan, Professor of Music at the College of Geneva, and Mason's library includes several books by Meylan. In Meylan's *Cours de musique chiffre*, Mason explains in marginal annotations how his system differs from the

---

<sup>37</sup> John Curwen, *The Teacher's Manual of the Tonic Sol-Fa Method* (1875; repr., Clarabricken, Co Kilkenny, Ireland, 1986), 156.

<sup>38</sup> Varley, 20.

<sup>39</sup> Edwin E. Gordon, *Learning Sequences in Music: Skill, Content, and Patterns* (Chicago: GIA Publications, 1997), 74.

French system. In the French system, the unit is a pulse or beat; in Mason's system, the unit is the measure.<sup>40</sup>

Experimentation with several variations occurred throughout the late nineteenth century, some of which were published in subsequent editions of Mason's *New Music Reader*. The 1886 version employed original syllables, which are included in the appendix. Vowel changes in the second half of the measure (or a group of subdivisions in compound meter) were employed to make downbeats feel stronger, in keeping with his 'measure as unit' philosophy.<sup>41</sup> In 4/4, four quarter notes were chanted "ta-ta-te-te," four eighth notes on beats one and two were chanted "ta-fa-ta-fa," while four eighth notes on beats three and four were represented with "te-fe-te-fe." Figure 1 is a page from Luther Mason's *New First Music Reader of 1886* (published in 1889).

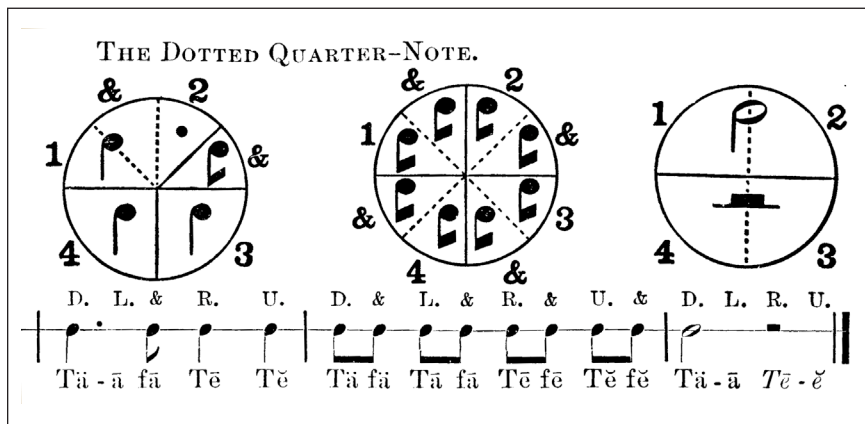


Figure 1: Example from Mason's *New First Music Reader*<sup>42</sup>

Notice that in addition to his rhythm syllables, he uses pie-shaped graphics to represent different note values as well as instructions for conducting (D = down, L = left, R = right, U = up). Mason believed students should kinesthetically feel the beat when practicing rhythm, noting: "The children must have been drilled in

<sup>40</sup> Sondra Wieland Howe, "Luther Whiting Mason: Contributions to Music Education in Nineteenth-century America and Japan" (PhD dissertation, University of Minnesota, 1988), 59-60.

<sup>41</sup> The exception to this rule is 2/4, where the beat remained constant as "ta."

<sup>42</sup> Luther Whiting Mason, *The New First Music Reader: Preparatory to Sight-Reading* (Boston: Ginn & Company, 1889), 17.

beating time, so as to be able to do it with precision. This exercise should then be copied upon the blackboard, and the class required to beat the time, first naming the beats, and afterward speaking (not singing) the Time-names."<sup>43</sup>

Luther's mentor Lowell Mason also modified Curwen's system of syllables in the mid-1800s. "While Mason's system was extremely complex, continued modifications eventually resulted in the Simplified French Time-Names system – an approach currently used by a small percentage of teachers in the United States."<sup>44</sup> Unlike the syllables adapted by Mason, the Simplified French Time-Names system is fundamentally beat-based as the beat remains chanted as "ta" regardless of meter. Figure 2 illustrates this via a comparison of the Kodály syllables to the Simplified French Time-Names syllables. Because the syllable assigned to the beat stays constant as "ta," the Simplified French Time-Names system is a beat-based system, and that Kodály's adaptations created a symbol-based system.

Figure 2: Comparison of Simplified French Time-Names and Kodály syllables

James Froseth and Albert Blaser devised their system of phonetic rhythmic syllables in the 1970s.<sup>45</sup> Theirs is a beat-based

<sup>43</sup>Mason, 43.

<sup>44</sup>Ester, 54.

<sup>45</sup> According to a workshop handout from Dr. Froseth entitled *The Evolution and Origin of the Froseth/Blaser Phonetic Rhythmic Syllables*, "the initial inquiry... was to develop a phonetic set of duple and triple rhythmic syllables that could facilitate the teaching of instrumental jazz articulations." They were first published in 1979. Many scholars incorrectly attribute Froseth and Blaser's set of syllables to Edwin Gordon. Regrettably, I was one of these educators enlightened only in 2009, when I met Dr. Froseth. Gordon's duple and triple syllables are identical, but the idea for the original set of syllables belongs to Froseth and Blaser. Dr. Froseth further pointed out via personal communication that in the original publication of the "Gordon" syllables, Froseth is credited with the research behind said syllables. Subsequent publications omitted the credit.

system because syllables chanted on the beat (“du”) stay constant regardless of the subdivision of the beat. Different syllables represent subdivisions of the beat. Four eighth notes in 2/4 (two beats to the measure) are sung “du-de, du-de.” Eight sixteenth notes in 2/4 are chanted “du-ta-de-ta, du-ta-de-ta,” and six eighth notes in 6/8 (two beats to the bar), are chanted “du-da-di, du-da-di.” Twelve sixteenth notes in 6/8 are chanted “du-ta-da-ta-di-ta, du-ta-da-ta-di-ta.” Edwin Gordon adopted the duple meter “du-de” and triple meter “du-da-di” system in the 1980s, making a distinction between macro beats and micro beats, and between “usual” (e.g. 2/4) and “unusual” (e.g. 5/8) meters.

In the early 1960s Zoltán Kodály created a national music education model in his native Hungary and published many volumes on music literacy. He believed in several basic tenets, including:

- music education is the right of every human being;
- music education must begin with the voice;
- music training must begin very early in life;
- music should be taught through a child’s mother tongue; and that
- quality music (folk and composed) should be used with children.<sup>46</sup>

Kodály viewed rhythm as an outgrowth of movement/dance and flow of spoken language as well.<sup>47</sup> He considered rhythm a vital part of his philosophy, stating: “...one of the most important tasks of rhythmic education is the systematic preparation of children for comprehensive music reading.”<sup>48</sup> He believed that “bad reading is mainly caused by rhythmic clumsiness and hesitation. Thus rhythm is always of the greatest importance.”<sup>49</sup>

Kodály’s writings indicate that he endorsed a sound before symbol approach, given his belief that musical experience should

---

<sup>46</sup> Lois Choksy, *The Kodály Context: Creating an Environment for Musical Learning* (Englewood Cliffs, NJ: Prentice-Hall, 1981), 6-8.

<sup>47</sup> Zoltán Kodály, “Folk Music and Art Music in Hungary,” *Tempo* 63 (Winter 1962-1963): 33.

<sup>48</sup> Paul Weiss, *Kodály -- Questions of Adaptation and the Pedagogy of Rhythm* (Willowdale, Ontario: The Avondale Press, 1977), 30.

<sup>49</sup> Weiss, 30-31.



precede symbolization.<sup>50</sup> Ironically, the Kodály rhythm syllable system is fundamentally *symbol-based*. That is, syllables do not reflect metric function and are assigned to note types regardless of meter. Consider the following example:



Here a student is required to recognize that an undivided beat is chanted as “ta” and that a divided beat is chanted as “ti.” This is a clear indication that students are simply assigning syllables to memorized symbols (note types) rather than learning about metric function. In this system, the symbol comes before the sound, and therefore contrary to Kodály’s ideals. The musical examples in Figures 3 and 4 illustrate my point. Kodály syllables provide no context for reading within a measure because they merely identify the rhythmic symbol and not its function. They also become impractical when students encounter repertoire that is difficult or impossible to chant using Kodály syllables. They are difficult to use in music with changing meters, and are particularly confusing in compound meter as illustrated here.



Figure 3: Kodály syllables in compound meter

The repeated “ti” provides no context of location within the measure, and the “ta-ee” syllable representing the dotted quarter note was designed to teach the dotted quarter, eighth note pattern (ta-ee ti). “Ta-ee” is chanted for dotted quarter notes in both simple and compound meter. The “ee” in the “ta-ee” pattern is designed to illustrate the length of the dot.<sup>51</sup> Figure 4 shows more pitfalls of the Kodály symbols that occur in all but simple meters that employ only simple divisions of the beats. In compound meters with multiple

<sup>50</sup> Choksy, *The Kodály Context*, 10.

<sup>51</sup> Some educators have taken to using “tum” rather than “ta-ee.”

levels of subdivisions within each macro beat (such as 12/8). Again, Kodály's repeated "ti's" provide no assistance in discerning the macro beat. In measure three, one can see the confusion involving repetition of the counter-intuitive syllable "tim" (pronounced "team"). Here the R of "tim-ri" is also problematic-- it requires the tongue to bend backward directly before an initial T is to be chanted.

The image shows a musical staff with three measures. The first measure is in 12/8 time, the second in 5/8 time, and the third in 6/8 time. Below the staff, the corresponding Kodály syllables are written: "Ti Ti Ti Ti Ta Ti Ti Ti" for 12/8, "Ti Ti Ka Ti Ti Ka" for 5/8, and "Tim-Ri Ti Tim Tim Tim Tim" for 6/8.

Figure 4: 12/8, 5/8, and 6/8 comparison

## CONTEMPORARY VIEWS OF RHYTHM SYLLABLES IN THE KODÁLY COMMUNITY

Over time, the writings of several leading Kodály specialists reveal an evolving philosophy about rhythm pedagogy. Hungarian Kodály expert László Eöszé's book *Kodály's Principles in Practice* (1973) discusses practical application of the methodology, including a sample teaching sequence in which students walk and/or clap a steady beat in preparation for reading rhythm with "stick notation." Eöszé's text contains no mention of echoing or aural preparation for notation reading.<sup>52</sup> Lois Choksy clarified North American application of Kodály practices in *The Kodály Method* (1999) stating that, "because of the differences between the North American setting and the Hungarian model, different teaching techniques must be employed."<sup>53</sup> Kodály's model is tied to Hungarian folk songs, many of which are in duple meter; this is not consistently applicable in the United States because American Kodály educators base their lessons on American folk music, which is more commonly in compound meter (often 6/8). As discussed, Kodály syllables are difficult to apply in compound meter. To address such shortcomings, current Kodály scholars Mícheál Houlahan and Philip Tacka, authors of *Kodály Today: A Cognitive Approach to Elementary Music*

<sup>52</sup>László Eöszé, *Kodály's Principles in Practice: An Approach to Music Education Through the Kodály Method* (London: Boosey & Hawkes, 1973), 23-25.

<sup>53</sup>Lois Choksy, *The Kodály Method I* (Englewood Cliffs, NJ: Prentice Hall, 1999), 26-27.

*Education* (2008), model Kodály teaching sequences using Takadimi syllables.<sup>54</sup> Though their *Sound Thinking* texts from the early 1990s employ Kodály syllables, Philip Tacka has stated,

The Takadimi rhythm system solves the problems associated with the Kodály rhythm syllables. We believe that were Kodály alive today, he would certainly encourage his students and colleagues to use the Takadimi system.<sup>55</sup>

Mícheál Houlahan elaborates:

[We use] the Takadimi system to label sounds, without any recourse to notation, only after students have had very specific kinesthetic, aural and visual experiences. This was the missing link in Kodály and Gordon!<sup>56</sup>

While one might assume that the preceding argument applies only to the K-12 teachers, it should become quickly apparent that Houlahan and Tacka's new approach to the Kodály system widens the audience to include college-level students.

## THE TAKADIMI SYSTEM

Richard Hoffman, William Pelto, and John White devised the Takadimi system after noticing the shortcomings of other available rhythm syllable systems. They note, "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."<sup>57</sup> They suggest that successful rhythm

---

<sup>54</sup>Mícheál Houlahan and Philip Tacka, *Kodály Today: A Cognitive Approach to Elementary Music Education* (New York: Oxford University Press, 2008), 119-142.

<sup>55</sup>Don P. Ester, John W. Scheib and Kimberly J. Inks, "Takadimi: A Rhythm System for All Ages," *Music Educators Journal* 93:2 (November 2006): 62.

<sup>56</sup>Mícheál Houlahan, e-mail message to author, June 12, 2010.

<sup>57</sup>Richard Hoffman, William Pelto, and John W. White, "Takadimi: A Beat-Oriented System of Rhythm Pedagogy," *Journal of Music Theory Pedagogy* 10 (1996): 13.

syllable systems should:

- lead to accuracy and musicality in performance;
- provide understanding of rhythmic structure;
- facilitate aural identification of rhythmic patterns;
- use precise and consistent language;
- address non-traditional issues such as multi-meter, modulation of meter/tempo, complex syncopation, and complex tuplet beat groupings.<sup>58</sup>

Notice in Figure 5 that Takadimi syllables employ varied initial consonants to represent the micro beat, helping students to feel the difference between each subdivision. Unlike the Kodály syllables, Takadimi syllables are beat-based, because the strong beat is chanted with the invariant “ta” with vital syllabic variation occurring in divisions and subdivisions. The inventive system of syllables supports previous research on music learning because it “features two related sets of syllables, one for simple beat division and one for compound,” and “the syllables are assigned to location within a beat, not the notational value.”<sup>59</sup> By naming the dotted quarter “ta” in 6/8, students are able to feel the macro-beat rather than getting mired in subdivision (as in Kodály’s “ta-ee”). It is also important to note that Takadimi syllables offer a definitive indication of place within the beat and Kodály syllables do not.

Kodály: Ti Ti Ti Ti Ti Ti Tae e Tae e

Takadimi: Ta Ki Da Ta Ki Da Ta Ta

Figure 5: Kodály /Takadimi compound meter comparison

Figure 6 further shows how Takadimi aids in teaching advanced rhythms.

Takadimi: Ta Ki Da Ta Ki Ta Ki Da Da Ta Ki Di Da Ta Di Mi Ta Di Da Ta Ka Di Mi

Kodály: Ti Ti Ti Ta Ti Ti Da Ta Ta Ka Ti Ti Ka Tim Ti Tim Tim Tim

Figure 6: Kodály /Takadimi comparison in various meters

<sup>58</sup> Hoffman et al., 7-8.

<sup>59</sup> Hoffman et al., 14.

With Takadimi, the pattern at the end of measure two is felt as a complete grouping rather than as three equally important rhythms. In the end of measure three, Takadimi utilizes the same syllables (“ta-ka-di-mi”) for the dotted sixteenth in 6/8 as for un-dotted sixteenth notes in 4/4. This provides ease of performance and accuracy; the two patterns sound the same, so it stands to reason that they are chanted with the same syllables. Such inconsistencies are causing many Kodály experts to seek out a new system of rhythm syllables. Takadimi can surely remedy these shortcomings. Due to their metrically hierarchical design, I believe Takadimi syllables provide a more effective heuristic for teaching rhythm than do the Kodály syllables. Figure 7 shows application of Takadimi syllables in various meters.

The figure displays four musical staves, each with a different time signature and corresponding Takadimi rhythm syllables. The first staff is in 2/4 time, the second in 4/4, the third in 6/8, and the fourth in 5/8. Each staff shows a sequence of notes with stems and beams, and the syllables are written below the notes. Some notes have accents or markings above them, such as a '3' over a triplet in the first and second staves, and a '2' over a pair of notes in the third staff.

Figure 7: Takadimi rhythm syllables<sup>60</sup>

Justin London corroborates the importance of the Takadimi system in his discussion of music cognition, saying, “Takadimi is psychologically proper in the primacy it gives to the beat level of the metric hierarchy.”<sup>61</sup> Likewise, Gary Karpinski (2000) maintains:

<sup>60</sup> Don P. Ester, John W. Scheib, and Kimberly J. Inks, *Music Educators Journal* (93:2)

\* pp. 60-65, copyright © 2006 by SAGE Publications.

\* Reprinted by Permission of SAGE Publications.

<sup>61</sup> Justin M. London, “A Psychological Addendum to Takadimi: A Beat-Oriented System of Rhythm Pedagogy,” *Journal of Music Theory Pedagogy* 10 (1996): 33.

Functional systems, chief among them Takadimi, model the metric positions of attack points. They require the readers to understand the proportional metric values of notes and rests as they read. Functional systems are particularly attractive since they use uniform labels for specific rhythmic patterns (and thus for identically performed music) regardless of their different notational incarnations within various meter signatures.<sup>62</sup>

Although many of the preceding rhythmic solmization systems aspire to represent rhythmic function, in Takadimi we have a functional system of rhythmic solmization that most closely models the aural understanding listeners engage in when they apprehend rhythms in relation to pulse and meter.<sup>63</sup>

Using Takadimi, the beat is always chanted as “ta”; thus students who struggle with rhythm can chant at least the steady beat in early stages of aural skills instruction. The system features a different syllable for each subdivision of the beat, providing context within a measure. The use of “di” as the mid-point of the beat in simple meter allows for precise understanding and performance of duplets and triplets. In compound meter, the vowels are grouped together (tA-kA-dI-vI-dA-mA), reducing tongue movement and making the pattern easier to speak (see Figure 8a for the hierarchy of subdivision in simple and compound meters).

One criticism of the Takadimi system is that it does not clearly indicate specific beats within a measure. One solution is to have students conduct the pattern for the meter being chanted (engaging them kinesthetically), or to have students on occasion replace “ta” with the number of the beat (see Figure 8b below).

---

<sup>62</sup>Gary Karpinski, *Aural Skills Acquisition: The Development of Listening, Reading, and Performing Skills in College-Level Musicians* (New York: Oxford University Press, 2000), 169.

<sup>63</sup>Karpinski, *Aural Skills Acquisition*, 82.

<b>Simple Meter</b>					
<b>Beat</b>	Ta				
<b>Division</b>	Ta		di		
<b>Subdivision</b>	Ta	ka	di		mi

<b>Compound Meter</b>						
<b>Beat</b>	Ta					
<b>Division</b>	Ta		ki		da	
<b>Subdivision</b>	Ta	va	ki	di	da	ma

Figure 8a: Syllable subdivision in the Takadimi system<sup>64</sup>

Figure 8b: Example of beat replacement for “ta”<sup>65</sup>

Takadimi is both a pattern and a metrically contextual approach. “Reading rhythm syllables with Takadimi helps you to recognize rhythmic patterns and see groupings of notes, not simply read note to note.”<sup>66</sup> Consider the following example:

<sup>64</sup>Don P. Ester, John W. Scheib, and Kimberly J. Inks, *Music Educators Journal* (93:2)

\* pp. 60-65, copyright © 2006 by SAGE Publications.

\* Reprinted by Permission of SAGE Publications.

<sup>65</sup>Don P. Ester, John W. Scheib, and Kimberly J. Inks, *Music Educators Journal* (93:2)

\* pp. 60-65, copyright © 2006 by SAGE Publications.

\* Reprinted by Permission of SAGE Publications.

<sup>66</sup>Richard Hoffman, *The Rhythm Book*, 2nd ed. (Franklin, TN: Harpeth River Publishing, 2009), vi.

Rhythm A (dotted eighth-sixteenth) is often confused with rhythm B (sixteenth-dotted eighth). In pattern B, students may want to place the dotted eighth on the downbeat, feeling the sixteenth note as a pick-up rather than a downbeat. Using Takadimi, students can clearly hear and feel the difference between the groupings above (Ta---Mi vs. Ta-Ka---) as well as the strength of the downbeat (“ta”). The reason they are able to feel this is because they have a vocabulary to clearly identify such patterns. Here the sound before symbol paradigm is clearly demonstrated; in correctly naming a rhythmic structure, we enable the student to form an aural image of that sound. Hoffman *et al.* write, “[students] come to regard rhythm as identifiable and interrelated units of sound rather than a simple stream of attack points.”<sup>67</sup>

Because Takadimi is a fairly new system (and solely concerned with rhythm pedagogy with no pitch component), it is not used as widely used as other rhythm syllable systems. Nevertheless it has powerful implications for the university aural skills curriculum, as the system is as effective with young students as with university-level music majors. Ester *et al.* expound upon Takadimi’s pragmatic elements: “because patterns in 2/4 and 2/2 sound exactly the same, the syllables associated with these patterns are exactly the same, as they should be.”<sup>68</sup> Furthermore, Takadimi provides an “unintentional advantage” in aiding brass and flute players with multiple tonguing, a technique employing nearly identical syllables.<sup>69</sup> As stated above, the most effective teaching method is to introduce something in terms of what students already know. Since tonguing is something brass and woodwind students are very familiar with, Takadimi would be much easier for these students to learn.

---

<sup>67</sup> Hoffman et al., 29.

<sup>68</sup> Ester et al., 60.

<sup>69</sup> Ester et al., 63-64.



## TAKADIMI AND COGNITIVE CONNECTIONS

In my view, Takadimi syllables help make connections between disparate parts of the brain involved in rhythm learning and performing. Barbara Strauch writes,

It now appears that new neurons may actually act to tie disparate information together—and place that information in a specific time frame. Gage now believes that new neurons help us make associations. If we hear a Beach Boys song and smell the salt from the beach, those two impressions—Beach Boys song and salt smell—will be forever tied together in time and place.<sup>70</sup>

Strauch cites research by Fred Gage:

Researchers have shown that cells destined to become neurons travel from the ventricles to the olfactory bulbs, a pair of structures that receives input from odor-sensing cells in the nose. Although no one is sure why the olfactory bulb requires so many new neurons, we can more easily speculate why the hippocampus needs them: this structure is crucial for learning new information, so adding neurons there would presumably spur the formation of connections between new and existing neurons, increasing the brain's capacity to process and store novel information.<sup>71</sup>

Such connections are crucial, given that the more links we have to the same information, the more it becomes readily available. Takadimi, as a name for something, is apparently stored in a different place than the sound itself. This is an area for future research that could have a profound impact on rhythmic instruction.

Rhythmic skills are vital to quality musical performances and thus should become a higher priority in collegiate aural skills instruction. Building on ideas of Zoltán Kodály, Takadimi seems to be gathering momentum and gaining credibility in the music community. Because rhythm is one of the most important unifying factors in music, in some styles no doubt the very foundation, it must be taught with care, ingenuity and precision.

---

<sup>70</sup> Strauch, 136.

<sup>71</sup> Fred H. Gage, "Brain, Repair Yourself," *Scientific American* 289:3 (September 2003): 50.



## BIBLIOGRAPHY

- Carr, Maureen A. "The Importance of Sound Before Symbol in Developing Intuitive College Musicians." In *Readings in Music Learning Theory*, edited by Darrel L. Walters and Cynthia Crump Taggart, 352-363. Chicago: GIA Publications, 1989.
- Choksy, Lois. *The Kodály Context: Creating an Environment for Musical Learning*. Englewood Cliffs, NJ: Prentice-Hall, 1981.
- \_\_\_\_\_. *The Kodály Method I*. Englewood Cliffs, NJ: Prentice-Hall, 1999.
- Curwen, John. *The Teacher's Manual of the Tonic Sol-Fa Method*. 1875. Reprint, Clarabricken, Co Kilkenny, Ireland, 1986.
- Dalcroze, Emile Jacques. *Rhythm, Music, and Education*. Translated by Harold F. Rubenstein. London: Riverside Press, 1967.
- Dickel, Michael J. "Principles of Encoding Mnemonics." *Perceptual and Motor Skills* 57 (1983): 111-118.
- Eősz, László. *Kodály's Principles in Practice: An Approach to Music Education Through the Kodály Method*. London: Boosey & Hawkes, 1973.
- Eősz, László, et al. "Kodály, Zoltán." In *Grove Music Online*. Oxford Music Online, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/15246> (accessed September 2, 2009).
- Ester, Don P. *Sound Connections: A Comprehensive Approach to Teaching Music Literacy* (Fishers, IN: Educational exclusives, 2010), book in .pdf format. Available online at <http://www.educationalexclusives.com/products/sound-connections/> (accessed May 3, 2010).
- Ester, Don P., John W. Scheib, and Kimberly J. Inks. "Takadimi: A Rhythm System for All Ages." *Music Educators Journal* 93:2 (November 2006): 60-65.
- Fust, Tammy Renee. "Syllable Systems: Four Students' Experiences in Learning Rhythm." MME thesis, University of Louisville, 2006.
- Gage, Fred H. "Brain, Repair Yourself." *Scientific American* 289:3 (September 2003): 46-53.
- Galin, Pierre. *Rationale for a New Way of Teaching Music*. Translated by Bernarr Rainbow. 1818. Reprint, Kilkenny, Ireland: Boethius Press, 1983.

- Gabrielsson, Alf. "The Complexities of Rhythm." In *Psychology and Music: The Understanding of Melody and Rhythm*, edited by Thomas J. Tighe and W. Jay Dowling, 94-120. Hillsdale, NJ: Lawrence Erlbaum Associates, 1993.
- Gauldin, Robert. *Harmonic Practice in Tonal Music*. New York: W. W. Norton, 1997.
- Gehrckens, Karl Wilson. "Rhythm in Music." *Music Educators Journal* 49:5 (April/May 1963): 45-46.
- Gordon, Edwin E. *Learning Sequences in Music: Skill, Content, and Patterns*. Chicago: GIA Publications, 1997.
- Hoffman, Richard. *The Rhythm Book* (2nd ed). Franklin, TN: Harpeth River Publishing, 2009.
- Hoffman, Richard, William Pelto, and John W. White. "Takadimi: A Beat-Oriented System of Rhythm Pedagogy." *Journal of Music Theory Pedagogy* 10 (1996): 7-30.
- Houlahan, Mícheál and Philip Tacka. *From Sound to Symbol: Fundamentals of Music*. New York: Oxford University Press, 2009.
- \_\_\_\_\_. *Kodály Today: A Cognitive Approach to Elementary Music Education*. New York: Oxford University Press, 2008.
- \_\_\_\_\_. *Sound Thinking: Music for Sight-Singing and Ear Training* (Volumes I & II). New York: Boosey & Hawkes, 1990/1991.
- Howe, Sondra Wieland. "Luther Whiting Mason: Contributions to Music Education in Nineteenth-Century America and Japan." PhD diss., University of Minnesota, 1988.
- \_\_\_\_\_. "Music Teaching in the Boston Public Schools, 1864-1879." *Journal of Research in Music Education* 40:4 (Winter 1992): 316-328.
- Jordan-DeCarbo, Joyce & Jo Ann Nelson. "Music and Early Childhood Education." In *The New Handbook of Research on Music Teaching and Learning*, edited by Richard Colwell and Carol Richardson, 210-242. New York: Oxford University Press, 2002.
- Karpinski, Gary S. "A Model for Music Perception and its Implications in Melodic Dictation." *Journal of Music Theory Pedagogy* 4:2 (1990): 191-229.
- \_\_\_\_\_. *Aural Skills Acquisition: The Development of Listening, Reading, and Performing Skills in College-Level Musicians*. New York: Oxford University Press, 2000.

- Kodály, Zoltán. "Folk Music and Art Music in Hungary." *Tempo* 63 (Winter 1962-1963): 28-36.
- London, Justin M. "A Psychological Addendum to Takadimi: A Beat-Oriented System of Rhythm Pedagogy." *Journal of Music Theory Pedagogy* 10 (1996): 31-36.
- Mason, Luther Whiting. *The New First Music Reader: Preparatory to Sight-Reading*. Boston: Ginn & Company, 1889.
- McHose, Allen Irvine & Ruth Northup Tibbs. *Sight-Singing Manual*. New York: Appleton-Century-Crofts, 1957.
- Plummeridge, Charles. "Schools." In *Grove Music Online*. Oxford Music Online, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/43103> (accessed November 6, 2009).
- Rainbow, Bernarr. "Chevé, Emile Joseph Maurice." In *Grove Music Online*. Oxford Music Online, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/05550> (accessed November 3, 2009).
- Rogers, Michael R. *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies*. Carbondale, IL: Southern Illinois University Press, 2004.
- Rosenshine, Barak, H. Froelich, & I. Fakhouri. "Systematic Instruction." In *The New Handbook of Research on Music Teaching and Learning*, edited by Richard Colwell & Carol Richardson, 299-314. New York: Oxford University Press, 2002.
- Shaw, Robert. *The Robert Shaw Reader*. Edited by Robert Blocker. New Haven, CT and London: Yale University Press, 2004.
- Strauch, Barbara. *The Secret Life of the Grown-Up Brain*. New York: Viking/Penguin Group, 2010.
- Taggart, Cynthia Crump. "Rhythm syllables: A Comparison of Systems." In *Readings in Music Learning Theory*, edited by Darrel L. Walters and Cynthia Crump Taggart, 55-65. Chicago: GIA Publications, 1989.
- Temperley, David. *The Cognition of Basic Musical Structures*. Cambridge: MIT Press, 2004.
- Varley, Paul. "An Analysis of Rhythm Systems in the United States: Their Development and Frequency of Use by Students, and Authors; and Relation to Perceived Learning Preferences." PhD diss., University of Missouri-Saint Louis, 2005.

Palkki: Rhythm Syllable Pedagogy- A Historical Journey to Takadimi Via th  
*A HISTORICAL JOURNEY TO TAKADIMI VIA THE KODÁLY METHOD*

Warner, Bridgitte. *Orff-Schulwerk: Applications for the Classroom*.  
Englewood Cliffs, NJ: Prentice-Hall, 1991.

Weiss, Paul. *Kodály -- Questions of Adaptation and the Pedagogy  
of Rhythm*. Willowdale, Ontario: The Avondale Press, 1977.