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Reader's Response

THE AMERICANIZATION OF SOLMIZATION: A RESPONSE TO THE ARTICLE BY TIMOTHY A. SMITH, "A COMPARISON OF PEDAGOGICAL RESOURCES IN SOLMIZATION SYSTEMS."¹

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Approaches to teaching music need to be developed which emphasize process as well as product. We do not believe that concern for coverage and factual knowledge is where the construction of a curriculum should begin... We do believe that there are methods and processes, modes of access to understanding judgement, that should inform all study.²

Timothy A. Smith's article in the *Journal of Music Theory Pedagogy*, Spring 1991 covers a multitude of issues relating to ear training and sightsinging. All of these issues and concerns reflect a number of growing problems facing theory teachers. One of the most vital questions concerns the teaching of theory and the development of students' aural abilities. This is a call to question and evaluate the undergraduate theory curriculum and address the following questions:

1. Does the North American university music program have a similar responsibility to serve all of its students to the best of its ability or only to serve the elite who are able to "decode" the divergent approaches and "obscurum per obscurius" of our current theory programs?

2. Do we continue to graduate music students, a disturbingly high percentage of whom are, from the standpoint of aural skills, musically illiterate, or do we strive to prepare the largest percentage possible for the responsibilities of their musical world?³

3. How can we facilitate the simultaneous development of aural and theoretical skills in the music curriculum for all our undergraduate and graduate students in the most accessible manner?

Comprehensive solutions to such questions will not be found in discussions advocating solfege systems based on the amount of syllables needed to read music. It is not possible to discuss the inherent differences in solfege systems without discussing methodological approaches and materials.

Smith's article is a "systematic and rational comparison of the theoretical resources of solmization systems . . . (It) is an attempt to persuade and to convince; it is a flotilla of arguments for one system—'do-tonic' movable do" (Smith, *JMTP*, page 1). The author is to be commended for attempting to address this timely issue. Within any "systematic and rational comparison," we believe it would be a more accurate debate if *la* minor were presented more completely with an accurate examination of the methods, materials, and applications for teaching musical literacy. We work for the simultaneous development of aural and theoretical skills—in other words, complete musical literacy rather than the separation of theory and skill development. In our approach to music theory, we do not teach music theory first; we teach music literature. Solfege syllables, using the "*la* minor" system, are used as a means of gaining knowledge about this repertoire.

Throughout this article we will address salient points of Smith's article by isolating the direct quote with our comments following.

"Most (teachers) agree that the teaching of solmization is beneficial, but when it comes to the selection of one system, we hear little consensus and much opinion" (Smith, *JMTP*, page 1).

Randall G. Pembroke and H. Lee Riggins' article in the *Journal of Music Theory Pedagogy*, 4/2 (Fall 1990), "Send Help!: Aural Skills Instruction in U.S. Colleges and Universities," attempts to address the issues relating to teaching ear training and sight reading. Their study reveals that "among approaches to teaching sight-singing, moveable function as opposed to fixed function is preferred by an overwhelming majority of instructors. In order, scale-degree numbers, moveable-*do* where *do* is tonic in major and minor and moveable-*do* where *do* is tonic in major and *la* is tonic in minor are the systems of choice. (It is interesting to note an almost equal number of proponents of both the *la* minor and the *do* minor systems.) Their results concur with those of Irma Collins.⁴

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"From the theorist's point of view, the purpose of ear training is broader—to produce musicians who can perceive, understand, and analyze music with utmost intelligence and skill" (Smith, *JMTP*, page 2).

One of the primary goals of each theory class must also be the development of the students' musicianship. If theorists fail to develop this skill in each class, then teachers are doing a disservice to students and turning music into a "dead language." Every musical concept taught in class should be discovered by the students' own active participation in the class. Active music-making, especially through singing, should form the basis of each theory class.

"It is herein hypothesized that solmization works because it associates phonemes with various musical constructs that, with repetition, enable students to audiate sound from sight, and perceive sound to sight. Syllables give names to structures that would otherwise have no names" (Smith, *JMTP*, page 3).

Smith correctly attributes the term audiation to Edwin Gordon, a proponent of *la* minor. Audiation is "the hearing of music in one's mind when the sound is not physically present."⁵ Teaching the rules of notation and applying the rules of how a solfege system works does not lead to audiation. In traditional theory courses, students are presented with theoretical information to provide a foundation for their aural understanding. For example, major and minor scales are explained to the students in a theoretical manner, and the students are then asked to use syllables or numbers for sightsinging and dictation. It is our experience, and the dilemma of many theory teachers, that students have no understanding of the inner relationships of solfege syllables and their application for reading music of various style periods.

One should not assign solmization syllables on a rule-based mentality "to structures that would otherwise have no names."⁶ Solmization syllables should not be discussed in terms of which system has the least number of syllables to learn. This is a rather trite argument for the rationalization of one solfege system over another.

If students are to develop the skill of audiation, the teacher must teach each of the solmization syllables within a given framework of patterns derived from the musical material in a logical and sequential manner, recognizing students' cognitive styles of learning. According to Barbe and Milone, a learner's cognitive style (or modality of learning) may be defined as the ability to process concepts and information using one of four perceptual modalities: visual, auditory, kinesthetic, or mixed (a combina-

tion of two).⁷ Apfelstadt, citing Barbe and Milone's 1981 article on modality, estimates that visual learners (students who learn best by seeing) and mixed modality learners each comprise about 30% of the population; auditory learners another 25%; and kinesthetic (physical), the remaining 15%. When planning instructional strategies, we must account for the different learning styles among our students.⁸

As Gordon states: "The mechanical ability to name and define individual notes or other music symbols does not, of itself, provide the readiness for music literacy. One does not read music names or definitions, but, on the contrary one hear [sic] groups of notes (patterns) as one reads. Only when one can audiate tonal and rhythm notation can the names and definitions of music symbols become musically relevant."⁹ The mere repetition of syllables will not enable the average music student to develop this skill of audiation or sightsinging fluently and musically. Research done by Davidson and Scripp suggests that without the intensive and comprehensive training that leads to the operationalization and internalization of musical knowledge through the various modalities—sensory-motor, verbal, and symbolic—this transformation of musical learning into aural and notational literacy will not take place.¹⁰ Petzold's study concludes that aural perception precedes visual perception and that one must be able to hear music to develop skills in music reading.¹¹ Hewson suggests that aural experience, prior to encountering notation, facilitates the development of sightsinging and ear training skills.¹²

Naming is always the final stage of learning. Attaching a solfege syllable to the name of a note will not result in the development of sight reading or ear training. Each solmization syllable must be presented in a pattern in such a way that students have a physical, aural/oral, and visual understanding of the syllable before the presentation of the solmization syllable.¹³ In this manner, the physical and aural experiences provide the necessary preparation for the teaching of all musical concepts and skills. All theoretical information is derived from an aural understanding of musical elements and concepts. The success of the curriculum is evaluated within the students' aural development and musicianship skills. It is not an isolated assessment.

"'La-minor' is the system advocated by Kodaly. In 'la-minor' the tonic of a major scale is called 'do,' but the tonic of a minor scale is called 'la.' Each mode requires a different syllable to represent the tonic. . ." (Smith, *JMTP*, page 13).

In our approach to theory, solfege syllables are always presented in patterns derived from the musical literature we want to teach. "Investiga-

tors in the field of instrumental music support the need to associate aural imagery with notation and the need to build an aural vocabulary of tonal patterns before introducing notation."¹⁴ The fundamentals of music are taught simultaneously with ear training and sightsinging using a combination of pentatonic and diatonic patterns.¹⁵ Theoretical concepts and standard notation are taught to students once they have an aural/oral understanding of solfege syllables. Students are always comparing known and unknown motifs and melodies. Emphasis is placed on aural development before moving on to music theory. Once students can identify the *la-so-mi-re-do* motifs and melodies, we begin to introduce low *la* (*la*,). Low *la* (*la*,) is presented in both *do*-centered materials and *la*-centered materials. Students practice *la*, in both *do*-centered and *la* - centered material to become aware of the two different tonal areas; relative solmization teaches the students the function of the note within a tonality. Sophisticated theoretical knowledge is not needed to solfege *la* minor at sight.¹⁶ In the following examples, it would be quite ridiculous for students to solmize the second example with *do* as the final note:

Figure 1. Micheál Houlahan and Philip Tacka, *Sound Thinking: Music for Sight-Singing and Ear Training*, 2nd edition (Boosey & Hawkes, New York 1990); Volume I, page 75 - no. 7; page 76 - no. 12.

7.



12.



The ear decides whether the melody ends on a *do* or a *la*,. Beginning singers, liberated from the constraints of notation, are free to solfege what they hear before having learned its visual cognates.¹⁷ This advantage does not apply to all moveable systems as stated by Smith. To sing the examples with *do* minor, students would need an explanation of both the major,

minor, and parallel scale formations. In the *la* minor system students discover that each melodic syllable can be the final resting tone of a melody; *do* is not reserved for the final or key note. As Dobszay states:

A more significant factor than the absolute pitch of the sounds is their function, the relationships between them. Connection and contrasts, closer and more distant interdependencies are formed between them, frequently varying from style to style, and always with the richest shading. This system of interrelationships valid for particular styles or particular pieces is what we call tonality. In this sense tonality does not simply mean a scale but also includes the behavior patterns of individual notes. (These may in a wider sense be called functions). How can we best apprehend tonality if we interpret it in this way? By the melodic progression, patterns, typical phrases and idioms characteristic of the work, the type of melody or the style.¹⁸

All musical examples are continually put into a conceptual framework. In the context of our sequence, musical elements are not abstracted from the musical examples but are rather presented in relation to the entire musical composition. In this approach, students are taught to hear and read pentatonic, major, minor, modal, chromatic, modulating musical examples and to apply these concepts to the study of harmony.

The following is an abbreviated sequence of our presentation of melodic elements.¹⁹ Each unit introduces and practices a specific tone set, and new units add additional rhythmic and melodic complications.

A. *Do* pentatonic with *la* pentatonic melodies.

Once the students have an aural understanding of *do* and *la* pentatonic scales, the students begin to sing with absolute letter names. Initially the students sing materials in letter names using C=*do*, F=*do*, and G=*do* to avoid theoretical explanations of sharps or flats.

B. *Do* and *la* pentachord and hexachord melodies.

In being led to aurally compare a transposition of *do* hexachord songs in C into G, and F *do* while using solfa syllables followed by singing with absolute letter names, the students will discover the need for the b flat when

singing in F *do*. In being led to aurally compare a transposition of a *la* hexachord song in C=*do*, into G=*do*, and F=*do*, using solfa syllables followed by singing absolute letter names, the students will discover the need for the F sharp when singing in G=*do*.

C. Major and minor Scales.

When the diatonic scale is introduced we present musical examples with a specific key sequence. Musical materials, sung in solfege and absolute letter names, are presented sequentially in the direction of the flat keys, C - F - Bb - Eb - etc. This facilitates sight reading skills for modulating music to nearly-related keys. Musical examples are sung with numbers as a preparation for harmonic hearing and teaching. The raised tones *fi* and *si* are taught as alterations of the minor scale.

D. Renaissance Music

Modes are introduced by comparing and contrasting *do, re, mi, so, la*, pentatonic melodies with ionian, dorian, phrygian, mixolydian and aeolian melodies. The altered tones *di* and *ta* are introduced.

One of the basic characteristics of the Renaissance style is a tone set that combines the eight-tone system derived from the Gregorian melodic culture—all the diatonic notes plus *ta* with the leading notes of the dorian, mixolydian, and aeolian modes: *di, fi, and si*. Since modal music does not move outside this tone set:

do - di - re - ri - mi - fa - fi - so - si - la - ta - ti

the *do* of the range of notes does not change. With the *la* minor system, modulations/mutations are easily identified both aurally and visually.

It occurs that in the musical material of certain sections the altered note 'ta' exists for a longer time pushing out the diatonic note 't.' In such a case the modes coloured by 'ta' sound as the modes of the one fifth lower system . . . As the keynotes of the 'ta' coloured modes remain the members of the given eleven-note tone set further on as well, the sounds of new type do not change the functions of the single notes within the system, but only change the modes' character belonging to them. For example, the dorian becomes of aeolian in character, the aeolian of phrygian character.²⁰

E. Classical and Romantic Music.

Students reading music of the Classical style will use all the informa-

tion from the previous units but they will also begin to read music with additional altered tones (the flatted third and the flatted sixth) as well as modulating music examples.

F. Atonal melodies.

In movable *do* with a *la* based minor, *do* is the keynote or tonic in major; *la* is the tonic in minor; *re* in dorian; *mi* in phrygian; *fa* in lydian, and *so* in mixolydian. In the *do* system with a *do* based minor, solfege syllables do not indicate the tonality or the keyality of the music.²¹ The *la* minor system, efficient for developing the skill of audiation as given melodic pattern, is associated with the same syllables in every keyality. Laslo Dobszay, Professor of Musicology at the Liszt Academy, advocates the use of the *la* minor system:

... we are no longer slaves to intervals ... every interval, so to speak, is at once at our service among the notes fixed by the already introduced solmization, though naturally only within the framework of typical phrases. Solmization (*la* minor system) opens the finest and most appropriate way towards music culture, for the average pupil: hearing, clear musical thinking which cannot be adequately replaced by reading or lectures about music and other accepted ways and means of musical popularization otherwise frequently considered misleading by Kodaly ... It is clear that the careful selection of the musical material, the succession of phrases displaying similar tonal thinking, melodic patterns, stylistic areas, each strengthening the other, give us the greatest help.²²

"First, sophisticated theoretical knowledge is not needed to Solfege "*la*" minor at sight, explaining why the system is advocated by teachers of young students. Beginning singers, liberated from the constraints of notation, are free to solfege what they hear before having learned its visual cognates" (Smith, *JMTP*, page 13).

"Unlike '*la*-minor,' '*do*-tonic' requires that reading students be able to interpret set-up information to correctly identify the pitch that is tonic, in order to call it '*do*,' in all modes. This requires theoretical acumen beyond the level of beginning students" (Smith, *JMTP*, page 14).

There is a tendency for music theorists to disassociate themselves from the music education profession. It is time for theorists to look closely at successful models of music reading and writing in the elementary and secondary schools. Could it be possible that some music theorists do not fully understand the implications of how a *la* minor system works? Are we to presume that a system of solmization success is to be judged on the amount of sophisticated theoretical knowledge needed before its application? We must challenge a system that creates untold difficulties for average music students.

"From the theorist's perspective, 'la-minor' insinuates a dependence on the major to define the minor, as if to suggest that minor cannot exist independently of its relative" (Smith, *JMTP*, page 13).

If the *la* system is taught correctly, it will not insinuate a dependence on the major scale to define the minor. If any possible insinuation of dependence is implied it should be with the teaching of the parallel minor scale as a modification of the major scale. Major, relative minor, and parallel minor scales are always compared. Students in advanced solfege classes should be able to sing the parallel minor with *do* in order to practice altered solfege syllables and make an analytical comparison between the two separate scale systems.

"According to 'la-minor,' half-steps in all modes are defined and named by their relationship to the relative Ionian mode . . . By inference, they tend to portray all modes as infratypes of Ionian, diminishing the significance of modal variation to the degree that other scale degrees are implied to behave as tonic" (Smith, *JMTP*, page 13).

This statement is incorrect. The *la* minor system does not neglect the aural and notational differences in modes.

". . . but when it comes to aural perception of functional harmony, a more useful comparison is found in the relationships between a major scale and its parallel minor. With so many aural structures belonging both to major and to minor, it is instructive to bring shared features together, calling them by the same names. As for the differences, we know that when functional harmonies become more complex homogeneous major and minor tonalities tend to banish, while androgynous tonalities, having characteristics of both major and minor, tend to appear. (Smith, *JMTP*, page 14).

We have made a survey of commonly-used harmony and sight reading textbooks. These texts stress the acquisition of theoretical concepts over aural concepts with very little information about the perception of functional harmony. No sequential methodology is provided for integrating aural training and theoretical information into popular harmony textbooks beyond a few token suggestions. Gauldin and Wennerstrom maintain that while many of the new theory books offer good teaching materials and suggestions, the format of these books (even in updated CAI software) is still generally traditional.²³ These texts tend to emphasize theoretical information and rules but fail to incorporate current research regarding the process through which students learn. (The work of Lave, 1988²⁴ and Dreyfus, 1988²⁵ among others challenge many assumptions about learning including the notion that cognition is governed by rules). Schon's research indicates that teaching which focuses only on cognitive and abstractable content will be ineffective for imparting expertise.²⁶

Of course "a more useful comparison is found in the relationships between a major scale and its parallel minor" if students are presented music theory only in a theoretical manner. Students presented with a methodological approach that is based on an aural analysis of music using *la* minor scale system have in their possession a useful analytical tool for analyzing the subtleties of music.

Solfège syllables such as *lah* and *doh* indicate both character and function. Notes with the same character and function should be called by the same solmization syllable, and in particular that all keynotes should be called *doh* if these keynotes, major and minor are identical in mental effect. They are not . . . The dynamic tensions among the scale steps are different in major and minor and there is no one-to-one correspondence of character between similarly numbered steps of the two scales. There is no over-riding reason to use the same syllable for a particular scale-step in both modes. The *doh*-minorist's claim that he uses one name to describe identical phenomena falls to the ground because the effects of keynotes in major and minor, though overlapping considerably, are not identical.²⁷

When students have an aural mastery of altered tones such as *ma* and *law*, useful comparisons should be made with the parallel minor. It is our experience, however, that average students will not be able to audiate patterns that include singing such syllables as *ma - - ta* or *re - - lo*, especially

in basic and intermediate sight-singing and ear training classes. Indeed it is instructive "to bring shared features together, calling them by the same name"—theoretically that is. Naming alone will not be instructive for students' long-term musical development.

"It is in this context of secondary chromatics relationships and modal borrowings, that the deficiencies of 'la' minor manifest themselves most clearly" (Smith, *JMTP*, page 14).

One has only to read the analysis made by such fine musicologists as Lendvai and Bardos to appreciate the *la* minor system for analyzing chromatic, modal, and twentieth-century music.²⁸ If deficiencies of *la* minor manifest themselves, it will undoubtedly be a result of the user's lack of comprehension of this system for musical analysis.

"The only way to identify musical structures consistently, from one mode to the next and from one key to the next, is to name the tonic 'do' regardless of the mode or key" (Smith, *JMTP*, page 14).

This is not the only way to identify musical structures. The merits of any solfege system should be evaluated by how easy aural identification of systems can be made, not only on how notes are named.

"In contrast, with 'la' minor . . . the 'do-tonic' system . . . is therefore better suited to teach the aural particulars of major and minor" (Smith, *JMTP*, page 15).

Discussing the merits of solfege systems without any reference to musical material and methods of teaching solmization will only result in fallacious arguments such as the above. A more detailed presentation of *la* minor will need to be developed to facilitate a more productive dialogue.

"It is for this reason that the "do-tonic" system is superior to other systems for the promotion of writing ability while the 'la-minor' system may excel in the promotion of reading ability (at least for younger students)" (Smith, *JMTP*, page 16).

The *la* minor system is a solfege system that truly develops the "seeing" ear and the "hearing" eye. This system does not advocate the promotion of sight reading over writing skills. The two are developed simultaneously. Theoretical information is always practiced and drilled, but always as the final stage of learning. In our experience, university students of varying

abilities have learned, therefore the *la* minor system is appropriate for all age groups.

"If one takes the view that the purpose of syllables is to teach a student to read a modulation passage quickly, then movable 'do' may be inferior in the short run. To sing a modulating melody, the student must first analyze the melody to determine what syllables to apply in each key. The analyzing takes time, therefore the reading is slower. If one takes the view, however, that the purpose of syllables is to help students to analyze, then moveable 'do' is superior in the long run" (Smith, *JMTP*, page 16).

This statement again reveals the author's bias towards teaching theory to the exclusion of the students' aural development. The *la* minor system always advocates a pivot note when listening, reading, or writing modulating passages. Students are always encouraged to find the most natural and musical solfege interpretation. Students will have to discover the most suitable pivot note. Both analyzing and singing are developed simultaneously.

"Whereas the 'la' minor system is unaware of modulations when they are between relatives, fixed 'do' begs the question altogether. The practitioner of 'do-tonic' solmization, in wrestling with the difficulties of naming modulations, is in fact learning how modulations work" (Smith, *JMTP*, page 16).

If the students of the *la* minor system are unaware of modulations that occur between relative keys, the teacher must accept the blame for not training the students to sing and analyze music correctly.

CONCLUSION

Our commitment to the *la* minor system for teaching music theory incorporates the Bartok and Kodaly philosophies of music teaching, current research in the area of learning styles and research, CMS Report Number 7, and our teaching experience. Musical elements and skills are presented and developed within a format dictated by musical materials that have been analyzed for their pedagogical content. Musical concepts and elements are derived from pentatonic, major, minor, and modal folk songs and art music examples. Beginning with musical examples derived from pentatonic folk songs and diatonic music and advancing to art music allows each rhythmic

and melodic element to be introduced in a sequential and historical manner. Theoretical explanations are always the final stage of musical learning. After careful practice, the students develop a strong association in which the symbol evokes the sound experience and the sound experience evokes the symbol. This is of prime importance in the development of musical memory, sightsinging, ear training, and dictation skills. As Rumelhart states, "all knowledge is in the connections."²⁹ The *la* minor solfege system, when taught correctly, provides a pedagogy that is both faithful to musical structure and effective in challenging students to deepen and integrate their musical skills.³⁰

Some American theorists have turned solmization into a streamlined technology—very much in the American spirit—in which fixed rules lead to readily predictable results. In the Americanization of solmization pedagogy, theory is king. What matters to these theorists is how well a given solmization system conforms to a predetermined theory. Theory wins and music students lose.³¹

NOTES

¹Timothy A. Smith, "A Comparison of Pedagogical Resources in Solmization Systems," *Journal of Music Theory Pedagogy* 5/1 (Spring 1991): 1-23. Steve Larson presented a discussion of the different solfege systems and how they explicitly model various aspects of pitch structure in "Solfege Systems and Integrated Music Learning," a paper presented to the twelfth annual meeting of the Society for Music Theory, Austin, Texas, October, 1989.

²*Music in the Undergraduate Curriculum: A Reassessment*. CMS Report Number 7 (The College Music Society, 1990), p. 5.

³Bruce E. More, "Sight Singing and Ear Training at the University Level," *Choral Journal* 25 (March 1985): 21.

⁴Irma Collins, "Current Attitudes and Trends in the Teaching of Sight Singing in Higher Education" (D.M.A. in Mus. Ed. Dissertation., Temple University, 1979).

⁵Edwin E. Gordon, "Research Studies in Audiation," *Bulletin of the Council For Research in Music Education* (1984): 34.

⁶The connectionist revolution aims to overthrow a notion that has been with us since ancient times—the notion that cognition is governed by rules. See Carl Bereither, "Implications of Connectionist Thinking about Rules," *Educational Researcher* 20: 10-16.

7W. Barbe and M. Milone, "What We Know About Modality Strengths," *Educational Leadership* 38/5 (1981): 378-380.

⁸Hilary Apfelstadt, "Reaching Your Students Through Perceptual Learning Modalities," *General Music Journal* 5/2 (Winter 1987): 7.

⁹Edwin E. Gordon, *Learning Sequence and Patterns in Music* (Chicago: G.I.A. Publications, Inc., 1976), p. 2.

¹⁰Lyle Davidson and Larry Scripp, "Happy Birthday: Evidence for Conflicts of Perceptual Knowledge and Conceptual Understanding," *Journal for Aesthetic Education* (1988).

¹¹R.G. Petzold, "The Perception of Music Reading by Normal Children and by Children Gifted Musically," *Journal of Experimental Education* 28 (1960): 271-319.

¹²A.T. Hewson, "Music Reading in the Classroom," *Journal of Research in Music Education* 14 (1966): 289-302.

¹³Micheal Houlahan and Philip Tacka, "Sound Thinking: A Suggested Sequence for Teaching Musical Elements Based on the Philosophy of Zoltan Kodaly for a College Music Course," *Journal of Music Theory Pedagogy* 4/1 (Spring 1990): 85-109.

¹⁴Patricia Ann Grutzmacher, "The Effect of Tonal Pattern Training on the Aural Perception, Reading Recognition, and Melodic Sight-reading Achievement of First-Year Instrumental Music Students," *Journal of Research and Music Education* 35/3: 172.

¹⁵Micheal Houlahan and Philip Tacka, *Sound Thinking: Music for Ear-Training and Sight-Singing* (London: Boosey & Hawkes, 1991).

Jarjisian found that a combination of diatonic and pentatonic pattern instruction benefitted students' rote-singing abilities at all tonal aptitude levels: Catherine S. Jarjisian, "The Effects of Pentatonic and or Diatonic Pitch Pattern Instruction on the Rote Singing Achievement of Young Children" (D.M.A. Dissertation, Temple University, 1981).

¹⁶Smith, 13.

¹⁷*Ibid.*

¹⁸Laszlo Dobszay, "The Kodaly Method and its Musical Basis," *Studia Musicologica Academiae Scientiarum Hungaricae* 14 (1972): 18.

¹⁹Houlahan and Tacka, *Sound Thinking*.

²⁰Erzsebet Hegyi, "Stilismeret," *Kodaly Pedagogiai Művelő Alapján* (Zoltan Kodaly Pedagogical Institute of Music, 1987), pp. 60-61.

²¹According to Edwin Gordon, if a piece of music is in D major, it is in a major tonality and in a D keyality.

²²Dobszay, "The Kodaly Method," pp. 19-21.

²³Robert Gauldin and Mary Wennerstrom, "Pedagogy," *Music Theory Spectrum* 11/1 (1989): 68.

²⁴J. Lave, *The Culture of Acquisition and the Practice of Understanding* (IRL report 88-0007). Palo Alto, CA.

²⁵H.L. Dreyfus, "The Socratic and Platonic Basis of Cognitivism," *AI and Society* 2: 99-112.

²⁶D. Schon, *Educating the Reflective Practitioner* (San Francisco: Boosey-Bass, 1987).

²⁷Kenneth Simpson, ed., *Some Great Music Educators* (Novello & Company Limited, 1976), pp. 118-119.

²⁸Erno Lendvai, "The Workshop of Bartok and Kodaly," *Editio Musica Budapest* (1983).

²⁹D.E. Rummelhart, "The Architecture of Mind: A Connectionist Approach," in M.I. Posner, ed., *Foundations of Cognitive Science* (Cambridge, MA: MIT Press), pp. 133-159.

³⁰Gauldin and Wennerstrom, p. 69.

³¹This is a paraphrase of a paragraph written by William Rothstein on Schenker pedagogy [see *Journal of Music Theory Pedagogy* 4/2 (Fall 1990): 295-299].