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The Gail Boyd de Stwolinski Prize for Lifetime Achievement in Music Theory Pedagogy and Scholarship

During the November 2004 annual meeting of the Society for Music Theory in Seattle, J. Kent Williams, Editor of the *Journal of Music Theory Pedagogy*, made the following announcement on behalf of the Board of Directors of the Gail Boyd de Stwolinski Center for Music Theory Pedagogy at the University of Oklahoma.

For the third time, the Gail Boyd de Stwolinski Center for Music Theory Pedagogy has a special announcement to make. The de Stwolinski Center was established in 1985 to provide a clearinghouse for the collection and dissemination of information concerning the teaching and learning of music theory.

Many are more familiar with the de Stwolinski Center through our publication, the *Journal of Music Theory Pedagogy*. Launched in 1987, *JMTP* has earned an international reputation for quality articles in music theory pedagogy and maintains an impressive subscription list including most major libraries of the world as well as a substantial list of distinguished individual subscribers.

Today recaptures one of the de Stwolinski Center's happiest days. It was one of Gail de Stwolinski's fondest dreams to elevate the role of classroom music theory teacher – the person who devotes a career to the many times unsung role somewhere between guru and drill sergeant.

Pursuant to Gail's wishes, today we announce the third recipient of the Gail Boyd de Stwolinski Prize for Lifetime Achievement in Music Theory Teaching and Scholarship. The de Stwolinski Prize, in the amount of $10,000, is permanently endowed by Louis de Stwolinski, Gail's husband of 45 years. The prize is awarded biennially to an outstanding music theory pedagogue, someone who has devoted a lifetime to music theory instruction and scholarship.

The selection process involves nominations from leaders in the field of music theory pedagogy, and the winner is chosen by a revolving panel of distinguished music theory pedagogues who make a recommendation to the de Stwolinski Center Board of Directors.

The text of the award reads as follows:

Whereas the Board of Directors of the Gail Boyd de Stwolinski Center for Music Theory Pedagogy have continued approval of a biennial award of Ten Thousand Dollars to be presented to a college music theory teacher who has been exemplary in classroom teaching, pedagogical research, and mentoring of colleagues and students in this field,

Be it therefore resolved, that at the annual meeting of the Society for Music Theory in Seattle WA in November 2004, the third Gail Boyd de Stwolinski Prize for Lifetime Achievement in Music Theory Teaching and Scholarship be awarded to

DOROTHY PAYNE

Honoring Her Superlative Teaching Accomplishments,
Superior Mentoring Abilities, Skilled Administrative
Endeavors, Sound Pedagogical Publications, and
Generous Service to the Field of Music Theory Pedagogy.

Dorothy Payne, Professor of Music Theory, served as Dean of the School of Music at the University of South Carolina from 1994 until 1998. Her previous position was that of Professor of Music Theory and Director of the School of Music at the University of Arizona. Prior appointments include six years as Head of the Department of Music at the University of Connecticut, Associate Professor at the University of Texas (Austin), Assistant Professor at the Eastman School of Music, and Instructor of Music at Pacific Lutheran University. Payne earned her Ph.D. in music theory, her master's in music literature in piano, and her bachelor of music in piano performance, all from the Eastman School of Music. She pursued additional piano study in Vienna and Rome as a scholarship student. Known as an exemplary teacher, Payne is active nationally in establishing and maintaining standards in schools of music. Her teaching interests lie primarily in the development of musicianship skills.

She has received three teaching excellence awards: one from the Eastman School of Music, one from the University of Texas, and the Michael J. Mungo Undergraduate Teaching Award from the University of South Carolina. She has chaired the Music AP Test Development Committee and has served as an exam reader for the

past ten years. Payne has been extremely active in the National Association of Schools of Music, both as a visiting evaluator and as a member of the National Commission on Accreditation. In 1993 she was elected to the Association's Board of Directors and subsequently was elected to the Executive Committee as its Secretary. She is active in the College Music Society, Music Educators National Conference, Society for Music Theory, and Music Teachers National Association. Payne has performed as pianist and organist and co-authored the textbook *Tonal Harmony with an Introduction to 20th Century Music*, published by McGraw-Hill and now in its fourth edition. During a one-semester sabbatical leave in the spring of 1999, she studied at the Dalcroze School of Music in New York, working intensively with internationally recognized pedagogues including Robert Abramson, Ruth Alperson, and Ann Farber.

Previous winners of the Gail Boyd de Stwolinski Prize are John Buccheri, Northwestern University, and Robert Gauldin, Eastman School of Music.

Editor's note: An earlier draft of this article containing numerous errors and omissions was inadvertently published in JMTP Volume 17 (2003). To rectify this oversight, we are reprinting the corrected final draft and extending sincere apologies to the author and our readers.

Applying Traditional and Proportional Aspects of Form to Atonal Music

Daniel J. Arthurs

Theory teachers can encounter several problems when presenting atonal (and more specifically, twelve-tone) techniques to their students for the first time. Among these problems is the need to find creative ways to motivate student interest in styles which may be unfamiliar, or with which they may be less than favorably disposed. Many students close their ears to the music of Schoenberg, Berg, and Webern when first exposed to that repertoire. One must invest a considerable amount of time to understand the complexity, wit, and aesthetic thought of composers who use twelve-tone technique.

This discussion will present two possible ways to encourage student enthusiasm for twelve-tone music. In the first approach, familiar, traditional aspects of form are related to similar formal features in a twelve-tone piece by Schoenberg.[1] For the purpose of this discussion, I will use a method of graphic representation that shows similarities between sonata form and the form of Schoenberg's Klavierstück, Opus 33a. This method may also be used with other 20th-century pieces in order to pique a novice's interest in the structure of atonal music. By relating Schoenberg's piece to sonata form, the following additional questions might also be posed:

Why does Schoenberg change rows?
What accounts for the different groupings of row subsets?
Why does Schoenberg change meter?
Why do certain passages contain irregular phrase lengths?

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[1]A paper on this approach was given October 12, 2001 at the annual Oklahoma Music Theory Roundtable hosted by The University of Tulsa. I would like to express my gratitude to Dr. Teresa Reed and Dr. Joseph Rivers for their constructive criticism and encouragement.

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The second approach will examine organic features that are common in nature and music.[2] Specifically, the same visual aid from Part I will be used to display symmetry, summation series, and the Golden Section in Part II. Finally, the diagram of sonata form from Part I will be juxtaposed with Part II to further illustrate the usefulness of proportions inherent in Op. 33a with regard to the traditional aspects of form.

The diagram to be presented is adapted from Richard Parks's *The Music of Claude Debussy*.[3] While Parks applied this type of graph to Debussy's repertoire, I have used it to show how rows relate to form, in particular, how the manipulation of rows coincides with major sectional changes. If students can see the analogy between sonata form and what happens in this piece, then they can see, by means of the graph, how well thought-out this twelve-tone composition really is. In addition, students will be enabled to hear the actual shape of the music rather than a cluster of random notes.

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[2]More specifically, I refer to the Golden Mean, which will be discussed later in the article. While this proportion is found in both nature and music, its relationship to music is coincidental in certain pieces and is not a requisite for any musical form or structure.

[3]Richard S. Parks, *The Music of Claude Debussy*, (New Haven: Yale University Press, 1989). In particular, see Chapters 9 and 10.

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Interestingly, it would appear that Schoenberg wanted this piece performed in the Romantic style.[4] He emphasized that the technique of composing with twelve tones was meant to serve the process of composition, and not the other way around.[5] Therefore, an analysis of phrase structure in this piece encompasses not only the notes and slurs, but also row units, rhythms, dynamics, tempo changes, and other aspects of the final musical product.[6]

It should be understood that this discussion, until the actual presentation of the graph, is mainly intended for the instructor's study, and that the graph itself is intended for the students. When the graph is first introduced to the students, they should be familiar with combinatoriality and other basic concepts of twelve-tone composition such as the matrix of row forms, row subsets, normal form, and prime form.[7]

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[4]For references on Schoenberg's traditional influences, see John Glofcheskie, "'Wrong' Notes in Schoenberg's Op. 33a," *Studies in Music from the University of Western Ontario* 1(1976): 91; Adrian Jack, "The Meaning of Serial," *Music and Musicians* 22 (1973): 43, 45; and George Perle, *Serial Composition and Atonality*, 6th ed., (Berkeley: University of California Press, 1991), 111. These three scholars were quick to point out that Schoenberg was deeply influenced by and aware of the past Viennese masters when conceiving the overall organization of his twelve-tone music. On page 45, Jack even compares the melodic content of mm. 14-18 to patterns "reminiscent of Brahms." When the piece is performed, based on the many specific instructions marked in the score and the several tempo fluctuations, it resembles a neo-Romantic piece.

[5]In "The Meaning of Serial," 46, Jack quotes a letter Schoenberg wrote to Rudolph Kolisch in 1932 stating, "You have dug out the series of my string quartet correctly.... That must have been a great effort, and I do not think I should have mustered the patience for it. Do you think that it is useful to know this? I cannot really imagine it. According to my conviction, to be sure, it might be stimulating to a composer who is not yet well trained in the use of series. But the aesthetic qualities do not open up from this, or at most parallel it. I cannot warn often enough against overvaluing these analyses, for they lead only to what I have always opposed: to recognition of how it is done; while I have always assisted people to recognize what it is!. . . I cannot say it often enough: my works are twelve-tone *compositions*, not *twelve-tone* compositions. In this respect I am being confused again with Hauer, for whom composition is a matter of secondary importance." More eloquently said, see Arnold Schoenberg, "Brahms the Progressive" in *Style and Idea*, ed. Leonard Stein, trans. Leo Black (New York: St. Martin's Press, 1975), 408. Schoenberg states, "... No space [in music] should be devoted to mere formal purposes."

[6]For more on these form-defining parameters, see Parks, *The Music of Claude Debussy*, 207.

[7]Joseph Straus's *Introduction to Post-Tonal Theory* 2d ed., (Upper Saddle River, New Jersey: Prentice-Hall, 2000) makes a good supplement for this analysis, especially for the undergraduate student.

Part I: Traditional Formal Features in Op. 33a

Historical References to Sonata Form and Op. 33a

Before examining the analysis, a brief discussion of prior references to sonata form as it relates to this piece should be undertaken. Several scholars have noted similarities between sonata form and Schoenberg's treatment of form in Opus 33a. Both Adrian Jack and Robert Morgan engage in a possible sonata analysis of this piece, but both refute the idea due to a lack of modulation as well as a brief development section.[8]

George Perle says everything but the word "sonata" to describe a sonata form! His brief analysis uses traditional terms like first subject, second subject, development, and recapitulation. Perle does not appear biased against applying analogous terms for this piece, but nevertheless he uses the form-labeling terms generically.[9] Eric Salzman identifies a "kind of development section" but goes no further in exploring the form with traditional terms.[10]

In one of the more interesting analyses, Joseph Straus avoids drawing a parallel to sonata form altogether, but he retains an analogy to a tonal progression with the pattern created by the transposition of row units: A_0 to A_2 to A_7 back to A_0.[11]

Quoting Straus, "In traditional terms, this is a motion up a whole-step, then up a perfect fourth, then a final descent by perfect fifth. Obviously Schoenberg has in mind some kind of analogy to the tonal motion I-II-V-I."[12]

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[8]In "The Meaning of Serial," 46, Jack initially describes the shape as being "the same as that of a text-book sonata movement," before refuting this comment based on a lack of modulation. See also Robert P. Morgan, *Anthology of Twentieth-Century Music*, (New York: Norton, 1991), 70.

[9]See Perle, *Serial Composition and Atonality*, 113.

[10]See Eric Salzman, *Twentieth-Century Music: An Introduction*, 2d ed., (Englewood Cliffs, New Jersey: Prentice-Hall, 1974), 222.

[11]For an explanation of the row units, refer to Figures 1 and 2 in the preceding section, "PC Relationships – Hexachordal Combinatoriality."

[12]See Straus, *Post-Tonal Theory*, 220.

He immediately points out that the large-scale motion (B♭-C-F) composes out the initial melodic idea of the first row. John Glofcheskie bluntly states that the piece is "a movement in sonata form, whose proportions are three-fifths weighted towards the exposition."[13]

Glofcheskie focuses much of his discussion on the question of whether this piece was formally or organically conceived to be sonata form, thus going beyond the argument of whether the analogy is appropriate for such a piece. Other authors listed in the bibliography go far beyond exploring the piece in a sonata setting, but they make interesting and complex observations nonetheless.

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[13]See Glofcheskie, "'Wrong' Notes," 88.

PC Relationships - Hexaxhordal Combinatoriality

Figure 1 shows the matrix of row forms for Schoenberg's Op. 33a. This matrix will be referenced throughout the analysis.

Figure 1 - Matrix of row forms for Schoenberg's Piano Piece, Op. 33a

Prime forms of both tetrachord and hexachord groupings are also included in Figure 1.[14] Schoenberg utilizes three basic rows which are manipulated with their combinatorial counterparts. Each row can be parsed into two hexachords which are combinatorial with those of the other row, thus three pairs of rows are used in this piano piece. The relationship of this "hexachordal combinatoriality" is shown in Figure 2a, 2b, and 2c.

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[14]Note the symmetrical relationships of prime forms between hexachords as well as the commonality of prime forms in tetrachords when comparing Prime rows to Inverse rows.

Figure 2a, 2b, and 2c - Hexachordal Combinatoriality

These examples demonstrate how the three pairs of rows are related ($P_0 - I_5$; $P_2 - I_7$; and $P_7 - I_0$). It is understood that the prime row "maps" onto its counterpart (the inverted row). These two hexachords form aggregates since all six pitch classes of the first hexachord are contained (not in order) in the second hexachord of their I_5-related rows (see Figure 2).

With this in mind, it is more appropriate to relate P_0 to RI_5 with regard to pitch class order (Figure 3, mm. 1-2[15]). The labels ('A', 'B', 'C', etc...) for each tetrachord correspond to those on the matrix in Figure 1.

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[15] All music examples used by permission of Belmont Music Publishers.

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Figure 3 - Tetrachords in Schoenberg's Op. 33a, mm. 1-2

Row Unit Relationship to Form

The transposition of these combinatorial rows creates a pattern that will be explored shortly. In order to identify this pattern, one must distinguish each change of rows, which includes the combination of a row with its combinatorial partner (i.e., P_0 is combinatorial with I_5). Thus, rather than referring to each row as a separate entity, I will label the four rows (P_0, I_5, R_0, and RI_5) A_0, based on the first pitch class of the prime: 0. This practice will hold for the other combinatorial rows based on P_2 and P_7, which will be referred to as row units, A_2 and A_7, respectively (see Figure 2).

The previously mentioned groups (A_0, A_2, and A_7) can be applied to the form:

A_0	A_2&A_7	A_7	A_0
mm. 1-27	28-29 $^1/_2$	29 $^1/_2$-31	32-40

Referring to the above diagram, the two middle groups of rows, A_2 and A_7, last very briefly – approximately four measures and the first beat of m. 32. In a traditional setting, such a formal division might seem too brief to be defensible. However, Glofcheskie and Morgan explain that the development and recapitulation exhibit traits of both subjects in a succinct manner, justifying their length.[16] They cite the parsing of rows (into tetrachords and hexachords) as well as the melodic nature of the section. The large-scale motion of the row units throughout the piece creates an interesting pattern that will be discussed shortly.

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[16]See Glofcheskie, "'Wrong' Notes," 89 and Morgan, *Anthology*, 70.

SUBSET RELATIONSHIP TO FORM

Just as row units can account for formal divisions in twelve-tone music, subsets can also account for aspects of form. In this piece, Schoenberg favors tetrachords and hexa/trichords. Referring back to mm. 1 and 2 (Figure 3), groupings of tetrachords are established in the opening measures, and while the texture becomes more linear thereafter, the groupings consistently stay in four until m. 14: the next major section. Figure 4 illustrates this sectional change.

Figure 4 - Hexachords in Op. 33a, mm. 14-18

Here the pitches are clearly grouped in hexachords. The beginning of the development section, m. 28, has clusters of three notes while still maintaining a hexachord division concurrently. In this piece, the contrast between tetrachordal and hexachordal groupings is analogous to the contrast between first and second themes in traditional sonata form. Figure 6 will illustrate the relationship between row parsing, row-unit transposition, and the phrase structure of the piece. First, however, Figure 5 provides the approximations of phrases by isolating mm. 6-9 with a closer view of the graph coinciding with the score.

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Figure 5 - Op. 33a, mm. 6-9

For the purpose of the graph as a whole, I chose to demarcate phrases to the nearest measure. However, there are two exceptions: the two elisions in mm. 16 and 23 and the use of half-measures in mm. 28-31. My reasoning for demarcating the two elisions becomes apparent when viewing the score. My decision to demarcate half-measures in mm. 28-31 was a bit more problematic because it contradicted the use of approximations. In the end, however, my decision was based on the placement of row units halfway through the measures. This aspect will become apparent from viewing the "Unit Transposition" graph in Figure 6. In addition, when this section is isolated, one can see that its phrasing is treated in a way that clearly demarcates half-measure divisions.

Figure 6 illustrates all the aspects of form discussed up to this point: the basic phrase structure, row parsing (into tetrachords or hexachords), row unit transposition, and finally, a tripartite form (labeled "suggested sonata form"), which emerges when all three graphs are shown together.

Figure 6 - Phrase Structure and Formal Divisions in Op. 33a
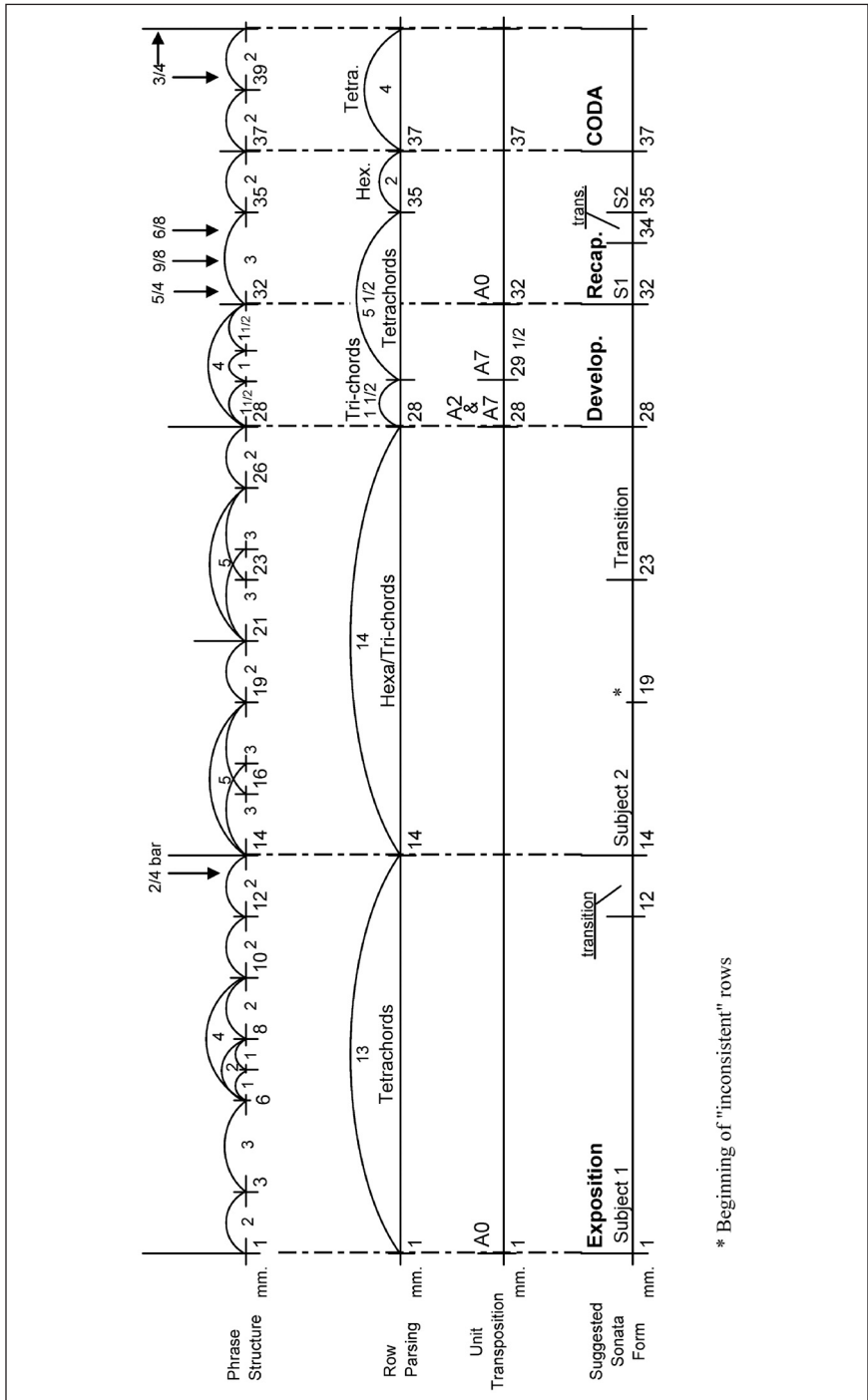
Thus far, the discussion has shown how two atonal devices – row units and row subsets – mark formal divisions which are analogous to divisions in a traditional sonata form. Referring back to Figure 6, Schoenberg's row parsing demarcates subsections within the sonata formal scheme: Tetrachords begin at m. 1 (first subject), hexa/trichords begin at m. 14 (second subject) and continue into m. 29, beat 2 of the development, and tetrachords overlap with the trichords in m. 28, beat 3, left hand; tetrachords continue into the recapitulation appropriately associated with the first subject, but are then grouped as hexachords for the second subject in m. 35; finally, they return to tetrachords for the coda in m. 37. Similarly, notice that movement from row transpositions A_0, to A_2 and A_7, and back to A_0 approximates the way a traditional sonata form would move from an exposition, to a development, and then to a recapitulation, with these demarcations occurring at mm. 1, 28, and 32, respectively.

ADDESSING LIMITATIONS TO SONATA-FORM ANALYSIS AND INCONSISTENCIES IN THE TWELVE-TONE METHOD

While the above observations help to connect the form of this piece to the major divisions of sonata form, the analogy between Schoenberg's form and traditional sonata form obviously has certain limits. For example, Jack and Morgan observe that this piece obviously exhibits no "modulation" between its first and second themes, which occur at mm. 1 and 14, respectively.[17] A looseness of the twelve-tone rules could suggest a change of major formal sections: The first occurrences of incomplete rows beginning in m. 19 could represent the first "inconsistencies" that stray from the initial row unit. In addition, the development section is filled with incomplete rows, and with the first signs occurring at m. 19, this creates continuity in the piece. As Glofcheskie points out, departure from the rules of twelve-tone composition can serve as an expressive gesture, while at the same time, provide a contrast from the sections that adhere strictly to the rules.[18]

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[17]See Jack, "The Meaning of Serial," 46 and Morgan, *Anthology*, 70.

[18]See Glofcheskie, "'Wrong' Notes," 92.

To conclude, in the case of atonal music, where the traditional concept of modulation does not apply, the transition from tetrachords to hexachords could be as dramatic as the contrast between opposing themes in different keys. While m. 23 (on Figure 6) is labeled as the beginning of the transition, the first incomplete row occurs four measures earlier. The question may arise, "Why not label the beginning of the transition in m. 19?" The melodic nature of m. 19 is still very close to the character of the second subject, and paired with its phrasing, it resembles the second theme too strongly to be labeled the beginning of a transition. In other words, other parameters (melodic contour and rhythmic consistency) must be considered to determine more specific sections in the form. Part II will reveal an interesting relationship between these two measures with regard to proportionality in Op. 33a.

Part II: Organic Aspects in Op. 33a

Proportional/Symmetrical Aspects

To heighten students' interest and convince them of the organic nature in Op. 33a, I have provided another diagram illustrating the occurrences of three summation series as well as symmetrical phenomena. First, students should be given a brief lesson on the Golden Mean (also termed Golden Ratio and Golden Section).[19] This irrational number is more commonly rounded to 0.618. Figure 7 provides a geometric illustration of the Golden Mean.[20]

Figure 7 - The Golden Mean.

$$\frac{GB}{AG} = \frac{AG}{AB} = 0.618$$

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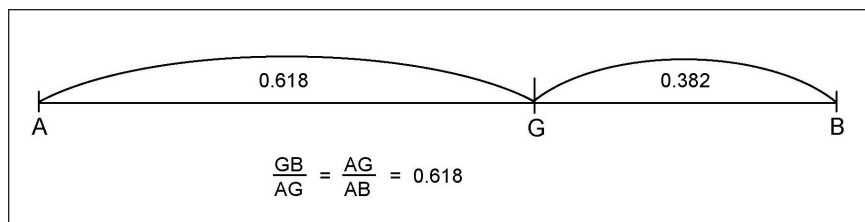
[19]See Michael Rogers, "Rehearings: Chopin, Prelude in A Minor, Op. 28, No. 2," *19th-Century Music* 4, no. 3 (1981): 246. In footnote 5, Rogers provides technical distinctions between the terms "Golden Mean," "Golden Ratio," and "Golden Section."

[20]See Ernö Lendvai's *Béla Bartók: An Analysis of His Music*, (London: Kahn & Averill, 1971), 17 and 30-34. The former page gives a definition while the latter pages cite examples found in nature. Appendix III gives more geometric examples as well as examples based on architectural structures. Also, Rogers's "Rehearings" gives a brief but thorough lesson on the Golden Section and applies it to pitch sets in addition to form.

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Summation series are patterns of numbers whose next number is the sum of the two previous numbers (i.e. 1,1,2,3,5,8,13,21,34, ...). The ratio between each successive pair of numbers approaches the Golden Mean (5/8 = 0.625, 8/13 = 0.615, 13/21 = 0.619, 21/34 = 0.618, etc...).[21] This example is the Fibonacci series, named for the 13th-century mathematician. In fact, successive pairs of all summation series approach the Golden Mean when expressed as ratios. Figure 8 illustrates three summation series that emerge from the phrase structure: Fibonacci, Lucas (1,3,4,7,11,18,29, ...) and a series found in the music of Debussy that Parks calls the 'N' Series (5,4,9,13,22,35, ...).[22]

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[21]See Parks, *The Music of Claude Debussy*, 209.

[22]Ibid., 210.

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Figure 8 - Symmetry and Proportion in Op. 33a
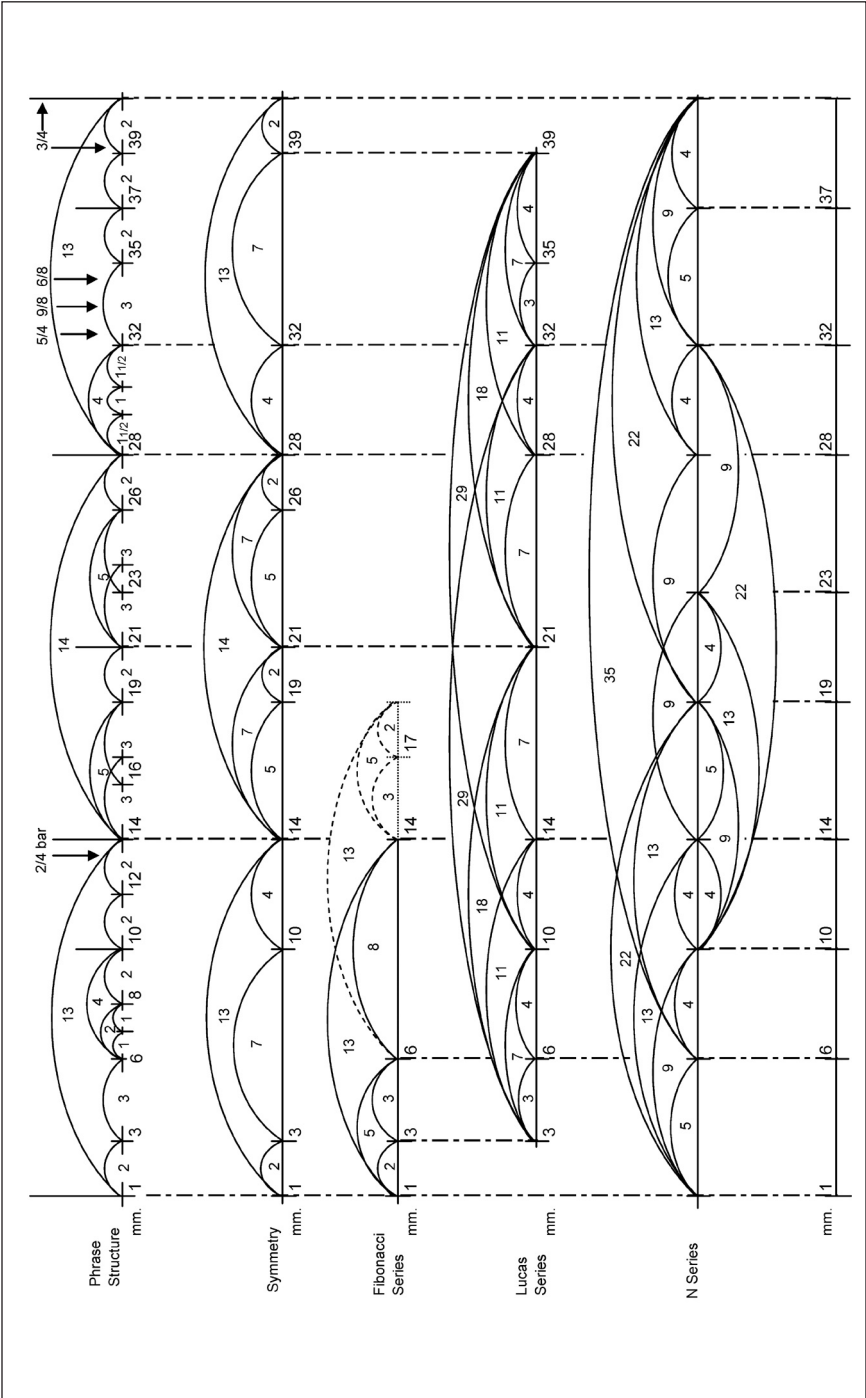
The three summation-series graphs offer several different starting points. In all three, starting points were conceived from the beginning as well as the end. All demarcations on the three summation graphs are based on phrase structure. The dotted lines in the second half of the Fibonacci graph indicate that the phrase structure is only implied due to the elision of phrases at m. 16, thus yielding a 5-measure unit consisting of two 3-measure phrases. The diagrams show the arcs weaving together as each series unfolds, a process that can be read either from left to right or from right to left. The N series also has a pattern placed beneath the two series in order to avoid confusion. This middle series will have a part in explaining the phenomena of mm. 19 and 23 shortly. Interestingly, it is easy to see symmetrical relationships from the proportion-derived graphs.

Also included in Figure 8 is a diagram of the symmetrical pattern which emerges over the whole of Op. 33a. In illustrating this symmetry, it reveals the basic archetype for the tripartite structure associated with sonata form. In this case, the proportions are heavily weighted toward the exposition: 'A' represents the first subject, 'B' represents the second subject, and the return to 'A' represents a combination of both 'A' and 'B' sections with the development, recapitulation, and brief coda. Figure 9 illustrates this tripartite archetype.

Figure 9 - Tripartite Archetype
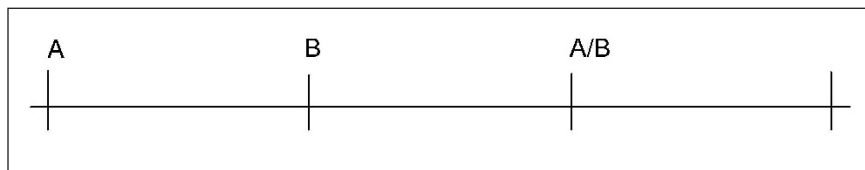
To illustrate how elements from Part I and Part II cohere, Figure 10 provides a graph of the sonata form with phrase structure, symmetry, and a few Golden Section ratios that occur amidst the phrase structure.

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Figure 10 - Sonata Form and Golden Sections in Op. 33a
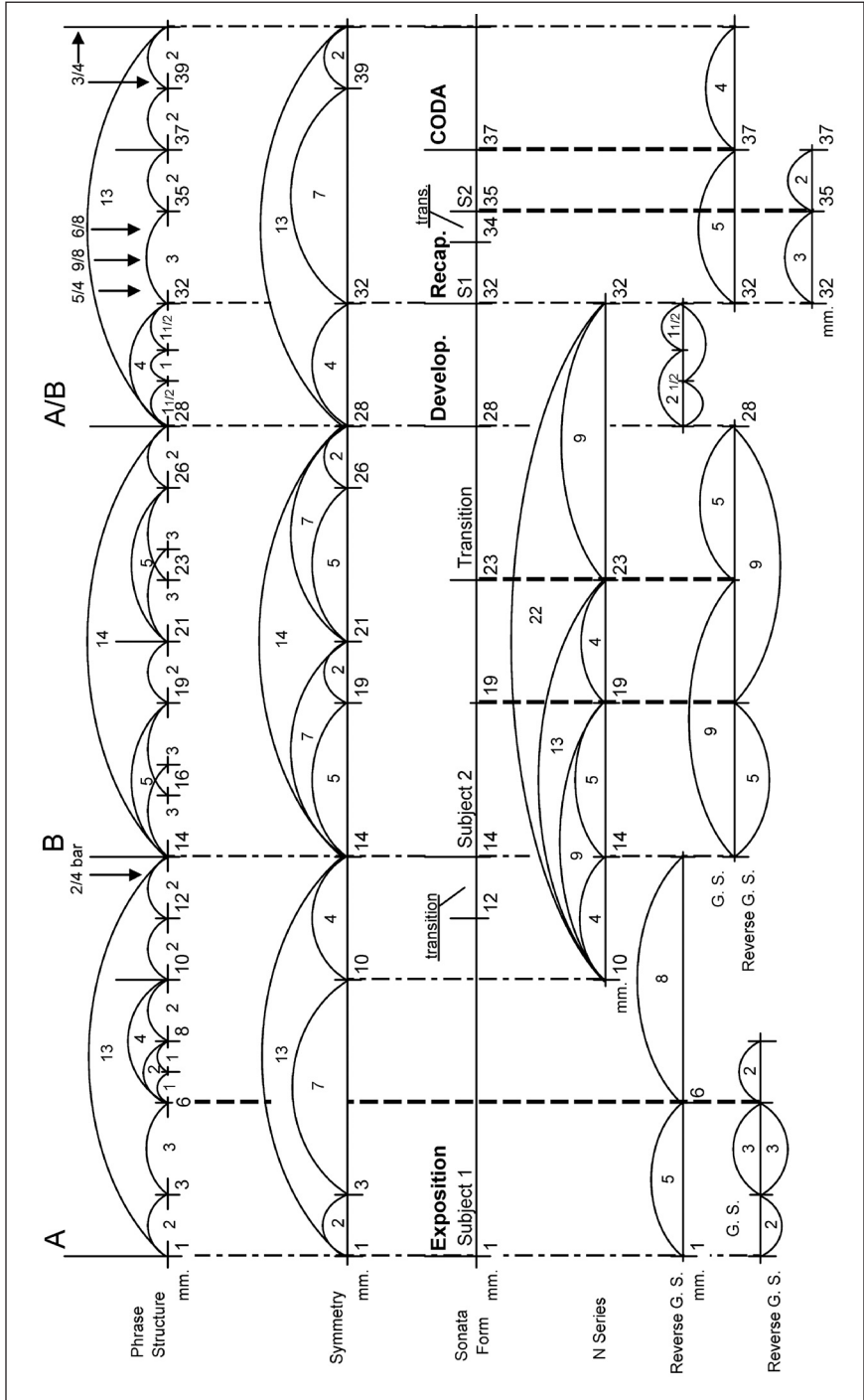
With the diagram of sonata form included, Golden Section ratios are revealed in each of the three major sections of Op. 33a. Schoenberg seems to favor the Lucas and 'N' series over the Fibonacci series. Interestingly, the middle pattern of the N series reveals demarcations over mm. 19 and 23, the two troublesome measures to which analysts have devoted much attention. In the middle section alone, the Golden Section and its retrograde fall on mm. 19 and 23. As mentioned earlier, m. 19 represents the first "inconsistencies" of incomplete rows. The actual Golden Section boundary of this middle section really occurs on m. 22, beat 3; however, the demarcation is rounded to the nearest measure (m. 23). Before overlooking this approximation on the diagram, it should be noted that the "wrong" note which has been the subject of much speculation – an A♮ which, according to the row, should be an A♭ –occurs almost exactly on the Golden Section boundary (m. 22, beat 3, second eighth note, right hand).[23] Needless to say, this "wrong" note has an aesthetic quality inherent in its natural placement in the music with regard to the occurrence of other "inconsistencies" in m. 19.

Figure 10 illustrates several instances of Golden-Section proportions. With the exception of the development section, each instance is based on whole numbers from their respective summation series. For example, in the Fibonacci series, while 21 would be the Golden Section for 34, smaller numbers like 3 would be the Golden Section of 5 (despite a 2 percent error). Similarly, for this discussion, I have taken the liberty of regarding 5 as the Golden Section of either 8 (Fibonacci-based) or 9 (N Series-based). While the error rate increases considerably with this flexibility, as Lendvai has pointed out, "Formal logic (controlled by the eye) and real experience (controlled by the ear) differ."[24] Thus, it is important to listen to the piece while following these diagrams. A rubato performance may alter the placement of these more approximate Golden Sections. Aural perception is one of the most important methods of validating Golden-Section proportions.

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[23]While Morgan regards the "wrong" notes as possible printer's errors (*Anthology*, 69), Perle suggests the A♮ serves a cadential effect over the sustained pitches F, C, and G♭ (*Serial Composition and Atonality*, 113). The most thorough treatment of these "wrong" notes is, however, found in Glofcheskie's article (as its title suggests).

[24]See Ernö Lendvai, "Remarks on Howat's 'Proportional Analysis,'" *Music Analysis* 3 (October 1984): 257.

CONCLUSION

Parks's method of diagramming offers a convenient way for teachers to show their students how Schoenberg's music is deeply grounded in the formal conventions of the earlier, traditional styles. Furthermore, this music exhibits proportional traits found in the summation series and the Golden Section.[25] In addition to the music of Schoenberg and his pupils, other 20th-century repertoire, including works of Bartók, Debussy, or Hindemith, might be illuminated by the approach presented here. Since some atonal music is not based on the method of using twelve-tones, other form-defining parameters must be considered. While I have used unit transposition and row parsing (derived from twelve-tone rules) as a basis for determining demarcations in the form of Op. 33a, similar patterns of pitch-class content commonly emerge in analyses of music by Debussy and Bartók.[26] Other chromatic-based scales, such as the octatonic scale, will reveal patterns for creating one's own diagram. In order to convey the patterns and traditional formal schemes in atonal music, the instructor's imagination should guide the process when developing diagrams. While sonata form may not emerge from every piece studied, more basic archetypes such as binary and ternary forms may be revealed.

My analysis of Op. 33a provides an example of this approach, one that may be helpful in convincing students that atonal composers were deeply influenced by past traditions. Students sometimes insist upon inventing their own systems of composing before having a well-rounded knowledge of past methods. The visual representations in this study show that innovative compositional methods are often deeply rooted in tradition. Furthermore, instructors can challenge their students to hear traditional aspects of form while following along with graphs and the score in order to better ascertain the aesthetic nature of the music. As students become aware of the connection between earlier and more recent styles, they may be encouraged to expand their own horizons in repertoire, analysis, and even composition.

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[25]This evidence supports the argument that this piece was conceived organically, that is, not composed to fit the sonata-form mold. Consequently, this ideal would be compatible with Schoenberg's sentiments (see Footnote 3).

[26]Lendvai's *Béla Bartók: An Analysis of His Music* gives a wealth of examples that strongly support the occurrence of organic traits discussed in Part II of this article.

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Taking Stock of Collections: A Strategy for Teaching The Analysis of Post-Tonal Music

Brian Alegant and Gordon Sly

I. INTRODUCTION

Analysis is difficult. Teaching analysis is even more difficult. It is especially challenging to coax students to venture beyond the identification of things—formal sections, thematic ideas—toward consideration of the distinguishing qualities of individual works. In the area of post-tonal or extended-tonal music,[1] several writings address the enterprise of analysis, including textbooks by Joel Lester, Joseph Straus, and J. Kent Williams.[2] While each book takes a different approach, their philosophical orientations and strategies are similar. Each provides a solid theoretical backdrop, which includes various tools for describing and manipulating pitch-class collections, then uses analytical examples to illustrate the theoretical constructs.

That these texts are more theoretically than analytically driven is understandable, since students must learn vocabulary and techniques, and need practice exploring the structural characteristics of pieces. But the end result this approach ought to have—namely, the incorporation of these skills into competent analyses—often never materializes. Even supplementing this preparatory work with presentations of longer analyses in class seems not to provide the skills we hope to see; students follow the examples in the chapters and nod their heads at each new discovery in our model analyses, but still struggle when trying to come to terms themselves with a new piece.

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[1]"Post-tonal" is intended to describe the body of late–19th and early-20th century works whose principal contributors include such composers as Bartók, Debussy, Messiaen, Ravel, (early and middle-period) Stravinsky, and Scriabin.

[2]Joel Lester, *Analytical Approaches to Twentieth-Century Music* (New York: W. W. Norton & Company, 1989), Joseph N. Straus, *An Introduction to Post-Tonal Music* (Englewood Cliffs: Prentice Hall, 1990), and J. Kent Williams, *Theories and Analyses of Twentieth-Century Music* (Fort Worth: Harcourt Brace College Publishers, 1997). A brief comparison of these books, and a more detailed account of the Williams text can be found in Larry Barnes's review in *Music Theory Online: The Online Journal of the Society for Music Theory* vol. 3–4 (July, 1997).

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This paper advances a pedagogical strategy for extended-tonal and post-tonal music that can help students learn the craft of analysis. The aim is to encourage a willingness to pursue the qualities that give compositions their individual character. The approach is heuristic and stresses modeling. It asks students to characterize compositional strategies; to identify and "trace the history" of prominent musical elements; to define and follow narrative plots and subplots; to rationalize a work's striking or eccentric events; and to explore the notion of musical "agency," by which we mean the capacity of a musical element to exert influence upon the course of events. We build upon the Lester, Straus, and Williams texts in two basic senses. First, we assume a familiarity with the constructs and techniques that are the subject of their instruction. Second, whereas their discussions mainly cite musical excerpts, appropriate for illustrating specific analytical tools and techniques, our interest is confined to whole pieces or movements.[3]

The point of departure for our approach is a simple assumption: changes in pitch-class collection articulate formal boundaries.[4] This strategy has three advantages: first, there is little analytical apparatus to teach; second, the process of sorting through pitch material and noting formal boundaries penetrates the psychological barrier that students often encounter when studying unfamiliar pieces; third, it acquaints students with the broad organization of a composition, an important first step in analysis that is often ignored as students become caught up in detail whose larger context remains unconsidered. An additional advantage is that students are generally familiar with this approach: one constant between tonal and post-tonal music is that changes in local pitch-class collection tend to coincide with formal boundaries. In the earlier practice, of course, this change involves modulation from one key to another, whereas in much of the music of the late-nineteenth and early-twentieth centuries diatonic collections share the stage with

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[3]An article similar in its basic orientation, though its analytical approach differs, is Craig Cummings, "Three Introductory Miniatures for an Undergraduate Twentieth-Century Analysis Course," *Journal of Music Theory Pedagogy* 8 (1994): 159–78.

[4]We recognize that this approach ignores texture, rhythm, meter, tempo, tessitura, and so forth, but these features can be considered in due course. We also recognize, of course, that this is a commonly employed analytical strategy. At the outset, we want confident students with a manageable task that will produce results. What we believe distinguishes our approach is the particular emphasis we place upon it.

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octatonic, pentatonic, hexatonic, and whole-tone sets. Still, this similarity between earlier and later repertoires provides one of the few technical points of understanding with which most students should be comfortable. All of this helps assure a successful first step, the confidence derived from which leads students to the sorts of questions we all hope they will ask.

To illustrate the approach, we explore two of Debussy's well-known Preludes, *La fille aux cheveux de lin (The Girl with the Flaxen Hair)* from book I and *Feuilles mortes (Dead Leaves)* from book II. We make no claim to presenting definitive or complete analyses of these works; rather, the aim is to set out along the analytical path we have described, to raise questions worth considering and to see where these inquiries lead. The complexity of pitch-class materials provides a logical succession for the discussion: *The Girl with the Flaxen Hair* is defined entirely by diatonic collections, whereas *Dead Leaves* combines diatonic, whole-tone, and octatonic elements.

II. *The girl with the flaxen hair*

This accessible prelude provides an ideal springboard for a collection-driven approach since its background pitch-class structure is confined to diatonic sets. At the same time, its formal looseness and abundant tonal references present several interpretive challenges.[5] The piece has inspired a host of recordings and transcriptions—including those for harp solo, clarinet and piano, cello and piano, horn quartet and wind quintet—and thus lends itself to in-class performance, to the critiquing of different performances, and even to a discussion of arranging and orchestration issues.

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[5]The extent to which this prelude is tonal is itself a compelling analytical question. On the one hand, there is little evidence of functional harmony and common-practice voice-leading, an abundance of parallels, and a virtual disregard for the structural dominant of G♭. On the other hand, there are many clear tonal allusions, including tonicizations of C♭ and E♭ that are defined by V–I bass motions, and plagal and deceptive root motions in G♭.

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We begin by identifying the work's underlying collections and outlining the formal design. Figure 1 diagrams the outer form of the prelude. At the deepest level, the piece is based on a G♭-major scale and its pentatonic subset; these are counterposed by relatively brief E♭ and C♭ pentatonic excursions.[6] Above the timeline the large-scale divisions demarcated by tempo changes are indicated: *un peu animé* (m. 19); *cédéz . . . au mouvement* (mm. 12, 24, 28); and *murmuré et en retenant peu à peu* (m. 33). Each fluctuation in tempo coincides with a change in collection. The first section (mm. 1–11) opens with an incomplete G♭-major (or E♭-minor) pentatonic collection and eventually completes the entire G♭ diatonic scale. The second section (mm. 12–23) ventures beyond the orbit of G♭: it touches briefly on C♭ (m. 15), arrives solidly on E♭ (m. 19), and climaxes on a C♭-major chord that supports E♭6, the highest pitch in the piece. The third section (mm. 24–38) returns to and remains in the opening G♭ pentatonic collection. Thus, from a collectional standpoint, the prelude exhibits a tripartite division of statement, departure, and return.

Figure 1: Formal Snapshot of "The Girl with the Flaxen Hair"

		Cédéz…//au Movement		*animé*	*Cédéz…//*	*mvt.*	*Cédéz //mvt.*		*murmuré*	*perdendo*
p	*< p*		*dim.* *p*	*< p >*	*>*	*< p > < mf > p > pp*		*pp*	*pp*	*pp*
1	10	12		19		24	28	33	36	
G♭	G♭	G♭ + C♭; C♭		E♭	E♭/G♭	G♭		(C♭ penta)	G♭	
pentatonic	diatonic	pentatonic + diatonic	pentatonic	(mix)	pentatonic	diatonic			major	
STATEMENT		DEPARTURE			climax	RETURN			*denoument*	
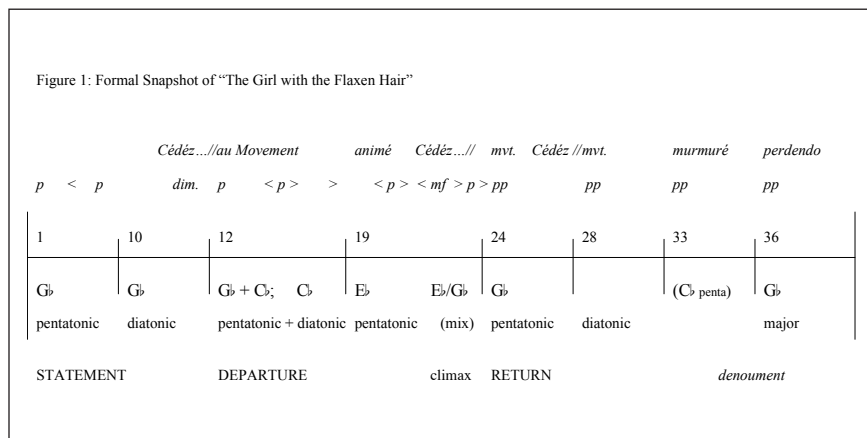
Despite this three-part division, the formal structure of the prelude is in many respects amorphous. Part of its ambiguity stems from the fact that it combines ternary and variation principles. The ternary structure is clear enough: as noted above, the first section establishes G♭; the second section departs from G♭ and moves

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[6]By "pentatonic," we refer to the "major pentatonic" scale, which includes scale-degrees 1, 2, 3, 5, and 6 of a major scale. Alternatively, the "minor pentatonic" scale comprises scale-degrees 1, 3, 4, 5, and (natural) 7 of a minor scale.

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through C♭ to E♭; the third section returns to G♭. The variational quality is also clear: virtually all of the prelude's melodic material derives from the initial four measures, whose elements are placed in ever-changing tonal, rhythmic, and textural contexts. In other words, the opening materials are "composed out" over the work.[7] The opening two-measure gesture returns three times. First, it is harmonized with parallel Mm-seventh sonorities (mm. 8–9); its "beheaded" form is harmonized with G♭ pentatonic sonorities (mm. 24–25); finally, it is displaced metrically and set above a C♭-major triad (mm. 28–30). The second gesture (beginning with the pick-up to m. 3) is developed in mm. 12–13, 15–23, 30–32 and 35–36.

Let us take a closer look at the deployment of collections within the individual sections, paying particular attention to the interaction of harmony and melody and the appearance of unusual or "quirky" surface events.[8] While this information will be familiar to most readers, we offer it to suggest a basic level of competence students should have.

SECTION I (mm. 1–11). The opening section establishes G♭ pentatonic as a subset of G♭ major and presents competing textures of monophony and homophony (there is no polyphony). Example 1 annotates the section, which divides into units of 2 + 2 + 3 + 4 measures. The un-harmonized opening can be characterized variously as a G♭ triad with an added sixth, a minor-seventh chord suggesting vi^7 in G♭ (or perhaps ii^7 in D♭), or a pentatonic fragment.[9] We prefer the latter description, which views the gesture as an incomplete G♭ or e♭ pentatonic scale whose pitches are

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[7]The ternary conception aligns the work with traditional nineteenth-century character pieces (commonly found in Schumann's cycles, Brahms' Intermezzi, or Chopin's Preludes). The variational aspect calls to mind similarities to the *Prelude to the Afternoon of a Faun* (which also begins with an un-harmonized melody from D♭5, and which places the opening tune and its fragments in a variety of tonal contexts).

[8]For a discussion of "quirky surface events" and some of the ways in which they are compositionally enlarged see Brian Alegant and Don McLean, "On the Nature of Enlargement," *Journal of Music Theory* 45/1 (2001): 31–71, especially 34–35 and 63–64.

[9]See Adele T. Katz, *Challenge to Musical Tradition: A New Concept of Tonality* (New York: Alfred A. Knopf, 1945), 255–259. Katz focuses on the overall I–IV–V–I background structure and the "ingenious use of the neighbor note [E♭] to prolong the structural motion" (255).

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symmetrically disposed about A♭4; this axial A♭4 is the "missing" pitch of the pentatonic collection. The second gesture (mm. 2–4) begins to confirm G♭ by way of a IV–I progression and the melodic motion through a G♭–D♭ tetrachord. The third gesture (mm. 5–7) projects the notes of the opening pentatonic scale into the outer voices. Fittingly, the upper line begins with A♭4 (the missing note of the previously incomplete pentatonic scale), and completes the G♭ pentatonic scale; the lower line restates the pitch classes of mm. 1–2. The series of major and minor chords give consonant support to the pentatonic tones in the outer voices; these chords seem not to carry harmonic function until the end of the phrase, which is punctuated by a V–I progression in E♭ major. The contrary motion in the outer voices here expands the registral boundaries to E♭2 and E♭5. This expansion, underlined by a crescendo and the introduction of foreign tones D♮ and G♮, signifies a departure from

Example 1: *The Girl with the Flaxen Hair* , mm.1-12

the opening collection and activates an E♭-major chord that sounds peculiarly *bright* in the context of G♭ major. The final gesture (m. 8) restates the melodic material of mm. 1–3, but with vague, shifting harmonies that add two more foreign tones, F♭ and C♮; these carry us further from the realm of G♭. The subsequent G♭4 to G♭2 scalar passage corrects these accidentals and (more importantly) frames the opening section.

Section II (mm. 12–23). The central section is annotated in Example 2. Its main features include the destabilization of G♭, the adumbration of C♭, and the expansion of E♭. Each of these new tonal centers supports a pentatonic scale and a V⁷–I progression. The first subsection (mm. 12–14) can be heard variously as a diatonic hexachord on G♭, a conflation of G♭ and C♭ pentatonic scales, or a C♭ pentatonic scale above a G♭ pedal point. The E♭4 on the downbeat of m. 12 initiates a complete C♭ pentatonic scale. The F♭ in the left hand on the downbeat of m. 15 catalyzes a (temporary) tonicization of C♭ major: in a way, F♭ acts as a foreign element that opens up the region of C♭. Debussy immediately muddies the waters, hinting at a return to G♭ in m. 17, then settling on E♭ instead. The C♮ at the end of m. 18 and the V–I bass motion cement E♭ precisely on the downbeat of m. 19 (at *un peu animé*). The E♭ pentatonic collection fuels the climax with a registral ascent from E♭4 through E♭5 to E♭6 (m. 21), which is supported by a C♭-major chord. The next two measures conflate elements of G♭, C♭, and E♭. C♭ is represented by major triads and by an incomplete pentatonic fragment in the left hand. (The sole pitch class missing from the C♭ pentatonic scale, G♭, occurs on the downbeat of m. 24.) G♭ is represented by pentatonic scales in the right hand; E♭ is suggested by C♮ in the A♭-major chords in mm. 22 and 23. This passage is marked by strident cross-relations between both C♮ and C♭, and G♮ and G♭.

Example 2: *Flaxen Hair,* section II: mm. 12-23

SECTION III (mm. 24–39). The final section stays entirely within the Gb-major collection, with allusions to Gb and Cb pentatonic sets. (See Example 3.) Here, as in the opening section, Debussy begins with Gb pentatonic and gradually completes the Gb-major scale, adding Cb and Ab in m. 25 and Fb in m. 27. Perhaps the most important aspect of this section is that it contains two returns, one *collectional*

Example 3: *Flaxen Hair*, section III: mm. 24-39

and the other *thematic*.[10] The collectional return (mm. 24–25) restates the opening tune at pitch, omitting the initial D♭5. The harmonic stasis of the return recaptures the incomplete G♭-pentatonic scale introduced in mm. 1–2; its first eight chords all contain G♭, B♭, D♭, and E♭, with the right and left hands exchanging, alternately, B♭–E♭ and D♭–G♭ dyads.

Three surface details in the last section deserve mention. Each will be developed shortly. The first is a "deceptive" harmonic progression in m. 27. We have every reason to expect the *tenuto* chords labeled "ii–V" in G♭ to resolve to the tonic. But m. 28 features instead a IV chord, upon which Debussy places the *thematic* return of the opening tune. The second detail concerns the realization of measure 35. Measures 31 and 32 are an augmentation of m. 13, and m. 33 is a literal restatement of m. 14. Measure 34, however, diverges from m. 15: its downbeat has an F♮ in the left hand rather than F♭.[11] This exception is easily explained: given that the piece is winding down, an F♭ (or any tone foreign to G♭, for that matter) would undermine G♭ and thwart a sense of closure. A comparison of these two passages suggests that the outer lines in m. 34 appear "stuck": the upper voice oscillates between E♭4 and D♭4 while the left hand's fourths wander back and forth in a parallel, non-functional manner. The last detail involves the collection in m. 35, a C♭ pentatonic scale built on E♭. Not only is the invocation of C♭ pentatonic striking here; so too is the fact that the final G♭ triad is preceded not by the dominant, D♭, but by E♭.

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[10]This divided return can lead to a variety of performance-related issues. For instance: how much time and weight should one give to the // marks in mm. 24 and 28? Should one articulate a *main* and a *subsidiary* return, or treat them more or less equally? Even a casual evaluation of performances reveals a range of interpretations from immanently satisfying to utterly unconvincing. We prefer m. 24 as *the* return, for several reasons, chief among them that m. 28 seems "too late" and has too recessive a dynamic. The Golden Mean can also be brought into the argument, since 39 measures times 0.618 = 24, which corresponds to the truncated thematic return. For applications of GM and GS proportions in Debussy see Roy Howatt, *Debussy in Proportion: a Musical Analysis* (Cambridge: Cambridge University Press, 1983). Incidentally, a twelve-tone piece that exploits both a collectional and a thematic return is Schoenberg's Fantasy. See David Lewin, "A Study of Hexachordal Levels in Schoenberg's *Violin Fantasy*," *Perspectives of New Music* 6 (1967): 18–32.

[11]The F♭2 in m. 15 recalls the same pitch in the left hand of m. 8 (a "color" association), and paves the way for the tonicization of C♭ major (adding another flat to a G♭-major collection enables C♭ major). This F♭ also forces the upper voice's E♭4 to move down. The absence of F♭ allows E♭4 to be maintained (or "prolonged") throughout m. 34.

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Beyond the surface. We now turn to questions of interpretation. Let us begin by considering the abstract properties of the pitch-class collections we have identified thus far. Three pentatonic collections operate in the work: G♭, which anchors the piece, C♭, and E♭. Each pitch class carries a complete pentatonic scale and is supported by a V–I progression. Superimposing these pentatonic scales reveals one common pitch class, E♭.

G♭ pentatonic scale:	G♭	A♭	B♭	D♭	E
C♭ pentatonic scale:	G♭	A♭	C♭	D♭	E♭
E♭ pentatonic scale:	B♭	C	E♭	F	G

This observation suggests an analytical perspective that we might ask students to pursue: "tracing the history" of E♭. The presence of this pitch class as a hinge among the three collections suggests that reviewing (and re-hearing) the prelude through an E♭ "filter" may be analytically rewarding. It also offers students a clearly defined and manageable approach. Their investigation will highlight the diverse roles assigned to E♭ in general and E♭4 in particular. In the opening, for instance, E♭4 functions as the lower boundary of the initial gesture that articulates the space between D♭5 and E♭4. The inner voices of mm. 5–8 oscillate between D♭4 and E♭4, and the brief tonicization of E♭ major (near the end of m. 6) sets E♭ in three octaves (including E♭4).[12] In the fourth phrase, the upper and inner voices in the right hand converge on E♭4 (mm. 8 and 9).[13] E♭ now gains in importance. Prominent E♭s—and especially E♭4s—initiate the second section (m. 12); trigger the tonicization of C♭ (set into motion by the downbeat of m. 15, where E♭ clashes with F♭); prepare the E♭ pentatonic scale that fuels the climax (mm. 18–21); and inform (indeed, *dominate*) the *denouement* (mm. 33–35), which focuses on E♭4 and its lower neighbor, D♭4

A similar analytical line of inquiry might issue from the observation that the three primary tonal centers of the work, G♭,

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[12]In this light, D4 in the third phrase plays a vital role: it is the first foreign tone (the first pitch class outside the collection of G♭), and it partakes in the first chromatic motion. By splitting the distance between D♭4 and E♭4, D marks E♭ as a goal.

[13]From a performer's standpoint it is an easy task to bring out these inner voices. The question arises: how much weight should (could) one give to the thumb of the right hand?

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C♭, and E♭ together form a C♭-major triad. A student would be well rewarded by tracing the history of this chord, too. Prominent examples of C♭-major triads can be found in m. 2 (the first chord, an integral component of a key-defining plagal progression), mm. 14 and 16 (the tonicization of C♭), mm. 21 and 23 (the climax and its aftermath), mm. 28–30 (the deceptive progression supporting the thematic return), and m. 33 (a replay of m. 14).

Example 4. A road map: tracing the histories of E♭ and IV

Example 4 offers a "road map" that brings together the foregoing observations about E♭- and C♭-major triads. A road map is a flow-chart that models or relates one's experience of a piece. The exercise requires a close reading of the score, and a good deal of thought into the integration of visual and aural stimuli. The map might be ill-formed or well-formed; it may focus on pitch or other striking parameters; and it may invoke verbal descriptions, icons, arrows, pictures, or other symbols as needed. The point, simply put, is not to represent every note of the piece, but to show the relationships that are internalized; thus, one should be able to follow the piece by following his or her road map. Both preludes in the present study are ideally suited for this type of assignment.[14]

The road map in Example 4 divides the score into three annotated systems. The labels above each system describe the roles played by various E♭s. The first entry, "E♭4 in G♭ pentatonic," interprets E♭4 as a member of a G♭ pentatonic collection. The first system also highlights the tonicization of an E♭ triad in m. 6 and the oscillation of E♭4s and D♭4s in the middle register. The annotations below each system track the occurrences of C♭-major (IV) triads. The first system has just one such chord; the second system shows the tonicization of C♭ major and the approach to the climax; the third system shows IV chords underlying the collectional and thematic returns. The third system discloses a significant structural aspect of the prelude, namely the *composing out* of the C♭ triad. Note that the last three measures of the third system feature a bass arpeggiation of the IV chord, in which the bass moves from C♭2 through E♭2 to G♭2. This same arpeggiation, an octave higher, structures the remainder of the prelude: the bass line from m. 28 onward is built solely upon the pitch classes of the C♭ triad. (Note also that the bass line in mm. 33–36 is a pitch palindrome.) This preoccupation with IV helps explain why the C♭ pentatonic scale in m. 35 is built upon E♭, and why the final "cadence" in the piece incorporates E♭–G♭ instead of D♭–G♭.

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[14]A road map (such as shown in Example 4) is a useful and flexible tool that is easily worked into various kinds of (individual and group) assignments. Other post-tonal pieces that lend themselves especially well to this kind of approach include movements from Berg's op. 5 (for clarinet and piano), Schoenberg's op. 19 *Klavierstücke*, and Webern's opp. 22/1 (the first movement of the Saxophone Quartet) and 27/2 (the central movement of the Variations for piano). A student might begin a roadmap of Webern's op. 22/1, for instance, by focusing initially on the F♯4 axes that dominate the surface, and then gradually orienting other surface events around these F♯s. After repeated hearings, as more and more of the land-scape is internalized, more events can be added to the map.

SUMMARY. We conclude our remarks on this work with a summary of the analytical methodology. We began by taking an overview of the collections in the prelude, noting the various manifestations of diatonic and pentatonic scales built on G♭, E♭, and C♭. This reading suggested a ternary structure comprised of three relatively equal sections. We then looked closely at the deployment of collections within each section, noting any unusual surface *events*, such as the introduction and expansion of foreign tones, tonicizations and modulations, and thematic recurrences. What follows is an inventory of striking events.

Section I:
- a C♭-major triad (m. 2), the first chord and "low" sound
- a *tenuto* E♭-major triad (m. 6), the goal of the third gesture and the first instance of chromatic voice leading
- foreign tones D♮ and G♮ (m. 6) and, especially, F♭ (m. 8)

Section II:
- F♭ (m. 15) and the subsequent tonicization of the IV chord (m. 18)
- C♮, G♮, and the subsequent invocation of E♭ pentatonic (mm. 18–19)
- a IV chord at the climax (m. 21)

Section III:
- a collectional return to an incomplete G♭ pentatonic collection (mm. 24 ff.)
- a thematic return above IV (mm. 28–30)
- the replacement of F♭ with F♮ (m. 34)
- a complete C♭ pentatonic collection built on an E♭ (m. 35)

It remained to associate these events and place them in context. To this end, we employed a "top-down" view that compared the referential collections in the prelude and looked for common, or *invariant* pitch classes. This prompted us first to trace the history of E♭, the common pitch class (the "glue") among the G♭, C♭ and E♭ diatonic collections, then to take a similar approach to the C♭-major triad, the product of those three tones. Finally, we used a roadmap to highlight some of the important registral, melodic, harmonic, and voice-leading associations.

III. *Dead Leaves*

This complex and sophisticated work from the second book of preludes poses significant challenges to the analyst. Having taught the piece in both undergraduate and non-specialist graduate analysis courses, we have found that imposing constraints on the scope of students' analytical inquiry helps them avoid becoming mired in its surface detail. The strategy of charting the changing collections through the piece again affords an efficient way into the structure. The process here is more involved than in the earlier prelude, since Debussy not only employs diatonic, whole-tone, and octatonic sets, but also moves among the three octatonic transpositions.

Our interest in encouraging students to focus their analyses through different lenses—teleology, narrative plots, striking events, musical agency—can be well-satisfied here: a number of paths through the piece reveal fascinating relationships. We will discuss three of these in turn following an overview of Debussy's subtle "modulations" in pitch class content.

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PITCH-CLASS COLLECTIONS. Figure 2 shows the prelude's outer form and its collectional organization; Example 5 provides a score of the prelude. The broad A–B–A design is mirrored in the opening section by the a–b–a scheme of the initial eighteen measures. The first three measures can themselves be heard as ternary, since mm. 1 and 3 present a subset of the C/C♯ octatonic set (which we refer to as "X"), while m. 2 moves to a subset of the C♯/D set (henceforth "Y").[15] The chords on each downbeat of mm. 1–3 consist of five pitch classes, four of which produce a fully-diminished-7th, the "signature" chord of the octatonic set, and a fifth pc that fixes the octatonic transposition unequivocally.[16] Above the octatonic harmonies of mm. 1–3, though, is a diatonic melody. This links nicely to the central part of this opening section (mm. 6–14), which is diatonic. Four measures of A Lydian and Mixolydian (mm. 6–9) and five measures of G Mixolydian (mm. 10–14) precede the return

Figure 2. Formal Snapshot of "Dead Leaves"

A				B			A	coda
a	b	a'	transition			retransition		
	6	15	19	25	31	37	41	47
octatonic	diatonic	octatonic	even WT	octatonic----------------------		alternate		Upper voice:
x y x (wt)	A Lydian, A Mixolydian, G Mixolydian	y x		x (with G# pedal)	z	WT and z	x y x	<9865> <t865> z diatonic
Mm. 1–3: Diatonic ⇒ Octatonic ⇓								Bass voice: y: <25t8>

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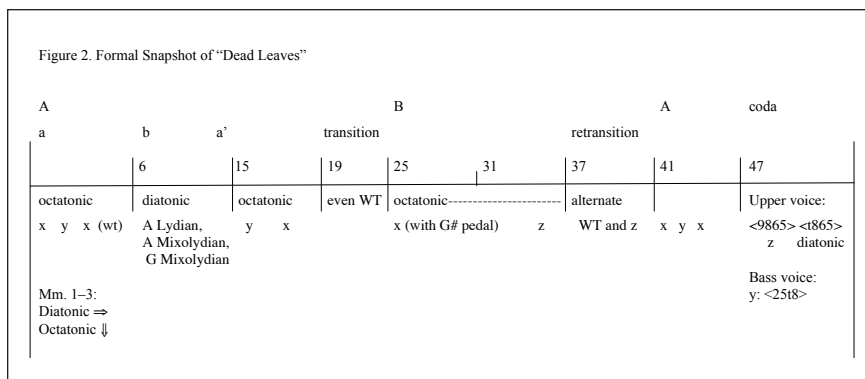
[15]Transposing by semitone, three different octatonic collections result before the (unordered) pitch class content of the first is duplicated at T3 (transposition by three semitones). The complete "X" collection, in integer notation, runs {0134679T}, where "T" = 10. "Y" is {124578TE}, where "E" is 11. The third transposition level, the c/d set, "Z," is {0235689E}.

[16]Combining any two of the three diminished-7th chords produces an octatonic set, or, put another way, a diminished-7th chord combines with each of the remaining diminished-7th chords to produce two of the three octatonic sets. It follows, then, that the addition of a single pc to any diminished-7th chord defines the octatonic transposition of which the five pcs are a subset.

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of a' (mm. 15–18, which recall mm. 2–5). As the final note in m. 18, Debussy substitutes G♯ in place of A♮ (compare with m. 5). This prepares the passage at m. 19, which is based primarily on the even-numbered whole-tone collection and functions as a transition.[17]

Example 5: Debussy, "Dead Leaves"

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[17]Whole-tone scales often function as transitions Debussy's music. See, for example, "Sunken Cathedral," the *Prélude to the Afternoon of a Faun,* and *Nuages.*

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Example 5: Debussy, "Dead Leaves" *(Continued)*

Measure 25 ushers in the central section and a new texture. A right-hand ostinato sounds major triads at transposition levels that describe a minor-third chain. This pattern generates and is confined to the X octatonic transposition. The melody, in the middle of the texture, moves within a segment of X (E–F♯–G–A–B♭). The final element of the texture is a G♯ pedal, which is not a member of X (more

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on this below). The first subdivision of the "B" section occurs at m. 31, where the G♯ pedal yields to the open 5th, F♯–C♯, and the melody and superposed ostinato give way to a new gesture that juxtaposes F♯-major, A-minor, and D-major triads. Since major or minor triads can only be constructed on the lower member of each chromatic dyad in the octatonic collection, the listener is immediately aware that the music has broken free of a single octatonic set. In fact, the F♯ and A triads belong to the X transposition that asserted itself in m. 25, while the D-major triad implicates the Z collection.[18] A D-major triad, in and of itself, does not, of course, indicate a larger octatonic source, but the context of the following measures suggests such an interpretation. Here, in mm. 37–40, the return of "A" at m. 41 is prepared; this passage, then, acts as a retransition. Pitch-class collections alternate between the even whole-tone (mm. 37 and 39) and the Z octatonic, prepared by the D-major triad of the previous passage.

The return is a truncated version of the opening with a higher register, a clearer and unopposed C♯ pedal, and an expansion, in m. 46, of the material from m. 5. This leads to the coda (m. 47), which begins with a gesture that recalls the music of mm. 31–37: D-major, F-minor and B♭-major triads recall the earlier F♯-major, A-minor, and D-major triads. Completing the work is a pair of tetrachordal descents, the first from the Y collection (A–Ab–Gb–F), supported by B♭, and the second diatonic (A♯–G♯–F♯–E♯), which rests on the open 5th, C♯–G♯. Both the bass-voice triadic root arpeggiation, D–F–B♭, and the closing fifth, C♯–G♯, belong to the Y collection.

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[18]Since neither major nor minor triads occur above the upper members of the chromatic dyads, it follows that any major or minor triad points unequivocally to a single octatonic source set. In passages where octatonic contexts are presented as major or minor triads, then, such as these beginning at m 25 and m. 31, it is a good strategy to listen for the intervals between and among triadic roots to gain one's octatonic bearings.

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THE BASS VOICE. The role of tonal process in Debussy's music is elusive.[19] Our view is that Debussy's idiosyncratic language developed as a synthesis of different ideas and elements from a number of sources, and that among these are vestiges of common-practice tonality. Perhaps the clearest such element in *Dead Leaves* is the suggestion of tonal progression carried by the bass line. An obvious example is the passage at mm. 37–40 that prepares the return of the opening material: four measures of G♯ pedal move to a C♯ pedal. Despite the octatonic and whole-tone collections that these bass tones support, it is hard to ignore the tonal reference: this is a dominant-to-tonic progression in *some* sense.

This observation raises the issue of the roles played by pedal points and bass lines throughout the prelude. How do these events interact with other aspects of the work's organization? Figure 3 completes the investigation of the bass voice and offers an interpretation. It suggests a correspondence between, respectively, the bass tones C♯, G♯, and D♯/F♯ and tonic, dominant, and predominant tonal functions. Suppose we ally each function to one particular octatonic transposition, where that tone occurs as the lower member of the chromatic dyad (i.e., C♯ with Y; G♯ with Z; D♯/F♯ with X). The following image of Debussy's tonal organization then comes into focus.

The tonic is established in m. 2 by the Y set and C♯ bass, and moves to ii as D♯ supports X in m. 3. This same progression recurs in mm. 15–16, and continues into the G♯ dominant pedal of the transition. The G♯ pedal persists into the central section, where it supports the X collection. This misalignment of functions—the dominant G♯ belongs with the Z set while X is allied with the pre–V transposition—perhaps signifies the "structural dissonance" traditionally associated with central sections of ternary forms. Correct alignment is reestablished in m. 31, as the bass F♯ supports F♯-major and A-minor triads, both members of X. The D-major

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[19]Among other things, tonal music is fundamentally diatonic; its chromatic elements are understood as elaborative at some level. Its processes depend on a clear definition of consonance and dissonance, and an adherence to established norms of dissonance treatment. This underlying diatonic structure and the resolution of dissonant elements give rise to patterns of voice-leading and harmonic progression. Though passages that conform to these norms can be found in Debussy's music, none is generally characteristic of his style. And yet certain features that pervade his music clearly derive from earlier practice.

Figure 3. "Dead Leaves": outer form and bass voice interpretation.

triad, though, is a foreign element, and by the time it is paired with an F-minor chord in m. 36, X has been displaced by Z, creating once again a misalignment of bass function and octatonic transposition. Realignment is achieved yet again in the retransition, as the dominant pedal G♯ moves in to support octatonic set Z. This collection alternates above the pedal with the even whole-tone set, recalling the alignment first presented in the transition.

The recapitulation (m. 41) is announced by the resolution of dominant-to-tonic bass tones and a restatement of the opening melodic idea. In a reference to earlier practice, this gesture, which had introduced two different bass tones and harmonic functions at its first appearance, now occurs in the "tonic," as the C♯ bass supports its full statement. The coda allows two final resolutions. The D-major and F-minor triads, recalling m. 36, reintroduce the Z collection, which is aligned with V function. Its continuation, however, does not prolong that V, as it did at m. 37. Instead, in one of the beautiful moments of the piece, it moves into the B♭-major triad at m. 48, which implicates the Y, or tonic, collection. Now that harmonic resolution has occurred, melodic resolution takes place. The Z segment A–A♭–G♭–F yields to the diatonic segment A♯–G♯–F♯–E♯, which at once resolves the dominant Z tetrachord, hearkens back to the diatonic music of mm. 6–14, and affirms C♯. Underlying these motions, the bass D–F–B♭ arpeggiation continues into the cadential C♯–G♯, all of which invoke for the final time the tonic octatonic collection.

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E4 AND THE B♭-MAJOR TRIAD AT M. 48. The remaining commentary on *Dead Leaves* addresses two eccentric, or quirky, features that students might be directed to consider. Focusing on such features and attempting to rationalize their behavior can be an attractive option for students who have developed an aversion to more traditional analytical assignments. The first detail concerns the spacing and registration of the opening chords. As Example 6a shows, the composition of these chords requires the performer to cross the right- and left-hand thumbs: observe that the lowest note in the right hand, E4, is positioned below the highest note of the left hand, F♯4. The same holds for the downbeats of mm. 2 and 3, which have, respectively, E4 above D4 and F♯4 above E4. Debussy could easily have written the chords in the opening measures "normally," of course, with triads in the right hand and diminished-seventh chords in the left. Example 6b gives this hypothetical realization. Instead, the somewhat awkward thumb crossing underscores the one pitch that is held throughout the first three chords: E4. (This note is, in effect, the glue between the adumbrated octatonic collections.) This admittedly small detail suggests that it may be profitable to follow the course of E4 through the prelude (in the same manner that we traced the history E♭4 the in *The Girl with the Flaxen Hair*).

In fact, this tone has a number of prominent occurrences. We can find prominent E4s in the top notes of the three-note chromatic gestures in mm. 5–6; on the *tenuto* downbeat of m. 15 that marks a return to the opening material; on the *tenuto* downbeat of m. 21 that heralds the transition; atop the left-hand chords throughout mm.25–30, and within the middle-voice octatonic fragment throughout these same measures, {E4, F♯4, G4, A4, A♯4}. These E4s connect the various diatonic, octatonic, and whole-tone collections. In this light, Example 7 offers a road-map that traces the histories of E♮. It is, admittedly, a somewhat myopic view of the prelude, insofar as it strips away all dynamics, articulation, slurs, expressive marks, and extraneous notes. It does, however, effectively highlight the various manifestations of pitch class E. Perhaps the most telling aspect of this road map is the *absence* of E♮ in large sections of the work, particularly in the central section and the coda.

Example 6. The opening chords.

(a) as written: thumbs overlap E4   (b) a "normalized" realization

Several points of detail distinguish the recapitulation from the initial section. The first occurs in the opening three measures of the return (mm. 41–43). Here, the right-hand chords are pure triads, and they are shifted upward to a higher register (a register that recalls the F♯-major "bell" chords of the central section). Example 8 summarizes these registral associations. The registral distance between the right- and left-hand chords in these measures makes it impossible to pass E4 between the hands' thumbs. The second detail is the arrival of a B♭-major chord on the downbeat of m. 48. This chord supports F4 (the enharmonic equivalent of E♯4) in the upper voice, a pitch that is reasserted by the final melodic tetrachords A–G♯–F♯–F♮ and A♯–G♯–F♯–E♯, which project F♮ and E♯ in three registers. In a sense, then, the prelude features a large-scale *tierce de Piccardy*,

Example 7. Road map of *Feuilles Mortes:* Tracing the history of E ♮

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as E♮ is gradually replaced and eventually "corrected" to E♯ in the final C♯-major sonority. (This helps explain why E♮ is nowhere to be found in the last eight measures of the road map in Example 7.)

The curious aspect of the B♭-major triad in m. 48 is the way in which it is, in a manner of speaking, *due*. Debussy juxtaposes major and minor triads several times in the prelude; each occurrence is marked by contrasts in texture and dynamics. The first juxtaposition occurs in the central section, with two fanfare gestures that combine A-minor, F♯-major, and D-major triads (mm. 32–33 and 34–35). Example 9a displays these triads, arranging them in terms of lowest to highest register. Several measures later Debussy alternates D-major and F-minor triads (m. 36); as we can see from Example 9b, these triads are transpositions down a major third of the first two triads in mm. 32–36. If there *were* a third triad, we would expect it to be B♭ major, a major third below D major. Debussy returns to these same chords in mm. 46–48, in a passage characterized by a thicker

Example 8. Registral associations among B♮-Major triads.

(a) the initial attack of the recapitulation   (b) "bell" chords of the B section (mm. 25-30)

m. 41

texture, a *pp* dynamic level, and a marking of *lointain*, which adds an element of mysteriousness. As Example 9c shows, this passage completes the pattern implied by Example 9b with a B♭-major triad.

Example 9. Manipulation of triads and the B♭ triad that is "due."

(a) mm. 32-35   (b) m. 36   (c) mm. 46-48

F♯   a   D   D   f   D   f   B♭

IV. Final considerations

In *The Girl with the Flaxen Hair* a collectional approach appears to amount to little more than parsing the score according to changes in surface design. This is because the changes in collection are in phase with changes in tempo and motive. This is by no means the case with all pieces, however, as we saw in *Dead Leaves*. It is important that students understand that these two aspects of compositional organization function independently, and that their interaction is a compositional resource that contributes to varying degrees of emphasis in the articulation of formal boundaries. It is not at all uncommon that a collection persists through changes in surface design, or, conversely, that a change in collection occurs without accompanying changes in surface design. Such misalignments may be employed to de-emphasize or blur a formal boundary.[20]

The advantage to pursuing a collectional approach lies not in comprehensiveness but in efficiency. This approach is manageable and gets students inside the music. It leads them to consider the behavior of foreign tones—those that lie outside the prevailing collection—which in turn can prompt questions that are the stuff of analytical inquiry. And since they have arrived at and formed these questions themselves, a greater likelihood of better (or, at the very least, more assured) answers attaches to their work. Finally, it should be noted that a collectional approach has broad analytical applicability, being a basic technique in the study of tonal, post-tonal, twelve-tone, and minimalist music. It is therefore a skill that is both familiar to students and worth honing, since it will underlie so much of their analytical study.

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[20]An analogous resource exists in the logical and rhetorical components of a cadence. Cadential strength depends upon both a specific harmonic progression and the motions of individual voices. The familiar authentic cadence of tonal music is clarified by the bass voice assuming its "harmonic" role and leaping from the root of V to the root of I. Here, logical and rhetorical aspects are aligned and the result is a strong cadence. If, however, the bass voice brings to the cadence a motion proper to its other role, as part of the melodic or contrapuntal fabric, then logical and rhetorical aspects are *misaligned* and the result is a deemphasized or weakened cadence

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APPENDIX 1: Examples of students' road-maps of *Flaxen Hair*
(These road maps were made by sophomores in a fourth-semester fundamentals course.)

PART 1

Appendix 1: Part 2

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APPENDIX 1: PART 3

APPENDIX 2: Works well-suited to a collection-driven approach

The compositions below are arranged (somewhat loosely) into easy, medium, and difficult grades. This list is hardly exhaustive; its purpose is merely to suggest other pieces that are easily modeled by a collection-driven approach. These pieces could easily comprise a module in an upper-level undergraduate course, or a graduate course in analytical techniques or 20th-century music.

<u>Easy</u>
- Bartók, *Diminished Fifth, Isle of Bali* and other pieces from the *Mikrokosmos*; *Song of the Harvest* (from 44 duos); *Bulgarian Rhythms*; selections from *Ten Easy Pieces for Piano* (such as #2)
- Berg, "Nacht" from *Sieben frühe Lieder*
- Britten, "O Waly Waly," "The Trees They Grow So High," and other folk songs
- Debussy, "Voiles," "Sunken Cathedral," and other piano preludes
- Gorecki, "Totus tuus" and "Amen" (for unaccompanied choir)
- Lutoslawski, *Bucolic* #2
- Miki, *Time* (for marimba)
- Pärt, *Fratres*
- Reich, *Eight Lines, New York City Counterpoint*

<u>Medium difficulty</u>
- Adams, *Shaker Loops*
- Bartók, the opening of *Bluebeard's Castle*; *Free Variations* (from *Mikrokosmos*)
- Bloch, Sonata for Violin and Piano (especially the first and second movements)
- Britten, Canticle #2, "Abraham and Isaac"
- Debussy, *Trois Chansons* #1, *Syrinx*, *Nuages*, *Pour le Piano* (any movement)
- Messiaen, *Poemes pour Mi*, i; Interméde from the *Quartet for the End of Time*
- Ravel, *Jeux d'eau*, Sonatine, i
- Stravinsky: *Duo Concertante*, i and iv

<u>More challenging</u>
- Bartók, *Out of Doors Suite*, Third String Quartet
- Debussy, *Images*, Book II
- Harbison, *Mirabai Songs*, especially #4
- Hindemith, Sonata for Harp (any movement)
- Scriabin, Piano Sonata #6
- Stravinsky, Petrouchka (first tableau)

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The Importance of License in the Pedagogy of Model Composition, Past and Present□

Matthew Bailey-Shea

In part three of *Le Istitutioni Harmoniche* (1558), Zarlino, after citing a wide variety of contrapuntal rules, makes the following statement:

> The observation of the above rules may so restrict a composer that he is unable to write beautiful and graceful lines or to write his parts in fugue or consequence as he would wish. He may for this reason occasionally deviate from the rules. Such license is conceded to poets, who at times depart from metric rules by using one sound for another or a long syllable in place of a short one, and vice versa. Musicians may also write certain things in exception to the rules; but the privilege must not be abused, just as the poet may not often take such licenses.[1]

The word "license" has a subtle but fascinating role in the history of music theory.[2] If you were to pick at random any compositional treatise from the Renaissance through the nineteenth century, chances are that the term license would make only rare and scattered appearances within the text. Yet if you were to scan a wide collection of treatises, especially counterpoint manuals from the seventeenth and eighteenth centuries, it would soon become clear that the term is consistently invoked with an understated but crucial rhetorical function: it loosens the bonds of musical rules and restrictions, while at the same time reinforcing the authority of tradition. The concept of "license," in other words, has a brilliant—if somewhat paradoxical—dual role. Though it recognizes the importance of freedom and creativity, its very existence depends

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[1] Gioseffo Zarlino, *The Art of Counterpoint*, trans. Guy A. Marco and Claude V. Palisca (New Haven and London: Yale University Press): 172.

[2] The concept of license appears in treatises from a variety of countries and usually appears as a cognate of the Latin term *licentia*. The Greek version of the term, *parrhesia*, is sometimes used as a rhetorical figure and some authors simply speak of "liberties" (*Freiheit*).

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upon an unshakable system of law. This corresponds, of course, to the role of various public licenses—marriage licenses, fishing licenses, etc.—which allow a certain freedom, but, because they define the limits of public action, ultimately reinforce the power of governmental authority. The role of license in artistic domains is essentially the same. Jacqueline Miller, for instance, defines the concept of poetic license in Renaissance and Medieval contexts in terms of a balance between "two systems of authority:"

> the autonomous author with license (or freedom) in the poetic domain, exempt from external control and conventional rules, and the external power that bestows the licenses and hence authorizes the poet's actions.[3]

In a similar vein, "musical" license in the pedagogy of theory and composition acknowledges the freedom of the student without undermining the basic aesthetic values of the theorist/author. The specific way that the term is used in theoretical treatises differs from one author to another and from one historical period to another, but it always serves a similar purpose, a purpose which is inherently pedagogical in nature.

The goal of this paper, then, is to provide a brief account of the role of license in the history of theory followed by a consideration of its potential utility in the contemporary theory classroom. As I will argue, introducing the concept of license can be an effective pedagogical tool, especially when placed within the context of the history of theory in general. Just as music theorists throughout the Western tradition have made allowances for musical license, so to might we allow—and even encourage—students to employ license, provided that such license is not only identified, but also explained. This has distinct benefits with regard to model composition, but might also affect analysis: if students recognize the importance of license in the consciousness of theorists and composers throughout the Western tradition, it will not only help them better understand the relationship between compositional rules and free composition, but will also provide a context for the appearance of "licenses" in the basic repertoire of common-practice music.

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[3] Jacqueline T. Miller, *Poetic License: Authority and Authorship in Medieval and Renaissance Contexts* (New York and Oxford: Oxford University Press, 1986): 23.

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The concept of license in music theory is strongly associated with two different historical trends: first, the rise of the *seconda prattica* and its corresponding association with the *Figurenlehre* of theorists such as Burmeister, Bernhard, and Herbst; and second, the developing concept of genius and its requirements for freedom and natural expression. While the former is associated with Baroque music, the latter applies more strongly to Classical and Romantic music.[4]

In terms of musical rhetorical figures, license—*licentia* in Latin, *parrhesia* in Greek—has a complex history. Dietrich Bartel defines it, in Classical rhetoric, as a figure in which "a reprehensible thought is introduced into the oration in such a fashion that it does not offend the listener."[5] This "inoffensive" aspect of license is crucial and separates it from mere faults or mistakes. License, in other words, involves a breach of compositional rules or etiquette *with good reason* and is always handled in such a way that it does not offend. The specific ways that it was defined by seventeenth-century music theorists, however, differ quite a bit. For Bernhard, the term "licentia" was essentially synonymous with musical rhetorical figures, and, hence, with the *seconda prattica* in general. This, according to Bernhard, was a common use of the term, for he refers to musical rhetorical figures as "*figurae melopoeticae* which others call *licentiae*."[6] This equation of license with the *stylus luxurians* in general is, indeed, echoed in the work of other theorists, but does not necessarily reflect more pointed uses of the term. Herbst, for instance, defines license specifically in terms of the transgression of the normal ambitus of a mode, and Burmeister, using the

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[4] A notably idiosyncratic use of the term appears in the work of Rameau. He uses license primarily to explain fundamental bass motion of a second or seventh, but his use of the term is quite complicated and changes over time. For the sake of brevity, that issue will not be addressed here. If interested, see especially Jean-Philippe Rameau, *Treatise on Harmony*, trans. Philip Gossett (New York: Dover Publications, Inc., 1971): 123-139; See also Thomas Christensen's discussion of license in "Music Theory as Scientific Propaganda: The Case of d'Alembert's *Elemens de Musique*," *Journal of the History of Ideas* 50 (1989): 425.

[5] Dietrich Bartel, *Musica Poetica: Musical Rhetorical Figures in German Baroque Music* (Lincoln and London: University of Nebraska Press, 1997): 352.

[6] Christoph Bernhard, quoted in Bartel, *Musica Poetica*, 353.

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term *parrhesia*, defines it in terms of added dissonance, especially dissonances that fall on a weak beat.[7] License, in that sense, is not a term for musical rhetorical figures in general, but rather for one figure among many.

Regardless of these differences, license retains its essential rhetorical meaning: it is a liberty in which potentially offensive material is rendered inoffensive through the skill of the orator. This sense of the term was already explicit in the work of many contrapuntal theorists as early as Zarlino, and was maintained throughout the eighteenth and nineteenth centuries, eventually becoming important not as a specific rhetorical figure, but as a general defense of genius.[8] In particular, license was deemed a privilege of "the great masters," something restricted from students until they reached a more sophisticated stage of composition. This use of the term stretches back to antiquity. In the twelfth century, John of Salisbury writes:

> License to use figures is reserved for authors and those like them, namely the very learned. Such have understood why [and how] to use certain expressions and not use others. According to Cicero, 'by their great and divine good writings they have merited this privilege,' which they still enjoy. The authority of such persons is by no means slight, and if they have said or done something, this suffices to win praise for it, or [at least] to absolve it from stigma.[9]

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[7] See Bartel, *Musica Poetica*, 355-356.

[8] In terms of contrapuntal theory, the quote from Zarlino at the opening of this paper stands in for sentiments expressed by many theorists from the Renaissance into the twentieth century. Naturally, there is a spectrum between extreme strictness, in which license is not even mentioned, and relative freedom, in which license and compositional liberties are frequently discussed, but few contrapuntal theorists add anything new to Zarlino's use of the term in 1558. Most authors tend to adopt the strategy of Fux's character, Aloys, who frequently mentions that "one may depart occasionally—if need be—from the strict rules." See Johann Joseph Fux, *The Study of Counterpoint*, a partial translation of *Gradus ad Parnassum*, trans. and ed. by Alfred Mann (New York and London: W.W. Norton & Company, 1971): 134.

[9] From *The* Metalogicon *of John of Salisbury: A Twelfth-Century Defense of the Verbal and Logical Arts of the Trivium*, trans. Daniel D. McGarry (Berkeley: University of California Press, 1955), quoted in Miller, *Poetic License*, 27.

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This sentiment resonates with a number of similar statements by theorists throughout the eighteenth century. Georg Andreas Sorge, for example, discusses the abrupt mixture of different keys in his *Vorgemach der musicalischen Composition* with a typically colorful analogy:

> When C major and C minor are mixed with one another, it is as though beside one's wife there is a concubine, which is not allowed of everyone. At the least, only the great masters should have such license.[10]

Similarly, Mattheson, in volume two of *Der vollkommene Capellmeister*, associates license only with skilled professionals. In discussing melody, he writes that "it also contributes a great deal to lightness if one . . . sets certain limits to his melody which every normal voice can reach comfortably."[11] He then continues with the following emendation:

> I do not speak here of those skilled composers who are masters of melody, who have performers at hand capable of performing their melodies, and who know how to use certain liberties at the proper place . . . one cannot set such limits for them.

Johann Philip Kirnberger, writing about the possible uses of $^6_4$ chords, expresses a similar thought in *Die Kunst des reinen Satzes*: "one could even begin with the consonant $^6_4$ chord in the middle of a composition. However, beginners are not advised to try this, only first-rate composers may take such liberties."[12]

Though in each of these cases license is reserved solely for the great masters, the spirit of such statements is not very different

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[10] Georg Andreas Sorge, *Vorgemach der musicalischen Composition*, translated in Allyn Dixon Reilly, *Georg Andreas Sorge's* Vorgemach der musicalischen Composition; *A Translation and Commentary*, vol. 2 (Ph.D.: Northwestern University, 1980): 209-210.

[11] Johann Mattheson, *Der vollkommene Capellmeister*, translated in Ernest Charles Harriss, *Johann Mattheson's* Der vollkommene Capellmeister: *A Translation and Commentary* (Ph.D.: George Peabody College for Teachers, 1969): 498-499.

[12] Johann Philipp Kirnberger, *The Art of Strict Musical Composition*, trans. David Beach and Jurgen Thym (New Haven and London: Yale University Press, 1982): 72.

from the ideas of earlier theorists such as Bernhard. Ultimately, these theorists argue for a strict basis of compositional rules that should be obeyed *unless* it interferes with such things as "musical expression" and "good taste." And since only the great masters can understand when and why to break the rules, license is generally deemed inappropriate for beginner composers. Thus, when Kirnberger comes across a doubled leading tone in the music of Bach, he justifies it on the grounds of musicality, but also emphasizes the skill of the composer: "this great man deviated from the rules here for the sake of obtaining a beautiful melody."[13] Similarly, in discussing the general rule that melody should conform to meter, he writes

> To be sure, there are situations where great masters neglect this precise designation of the motion in single measures; but this happens for good reasons, either because the expression demands it, or because the intention is to stir the listener with something strange or unusual.[14]

These thoughts resonate with a statement in *The Musical Dilettante* of Johann Friedrich Daube, who justifies small mistakes for the sake of good melody:

> In order to produce a good melody, small mistakes are often permitted in the inner voices, indeed, one even finds them in the outer voices of [works by] great masters, who preferred to concede a little experience and judgment, without which it is better to refrain from taking such freedom.[15]

Naturally, these ideas about license and compositional "liberties" (*Freiheit*) had a direct effect on many of the great composers of the Western tradition. Haydn, for instance, showed an explicit recognition of license, as is clear from an oft-quoted statement he made to his biographer, Dies: "several times I took the liberty of not offending the ear, of course, but breaking the usual textbook

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[13] Kirnberger, *The Art of Strict Musical Composition*, 57.

[14] Kirnberger, *The Art of Strict Musical Composition*, 211-212.

[15] Johann Friedrich Daube, *The Musical Dilettante: A Treatise on Composition*, trans. and ed. Susan P. Snook-Luther (Cambridge and New York: Cambridge University Press, 1992): 109.

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rules, and wrote beneath these places the words 'con licenza.'"[16] This, of course, conforms to the general sentiment of many of the theorists quoted above: license is invoked, but by its very nature it does not "offend the ears." Beethoven, who, of course, studied with Haydn, was also quite conscious of musical license, an issue that comes up in his counterpoint lessons with Albrechtsberger.[17] In one of these lessons, Beethoven attempts to use the stretto statement of a fugal theme twice in succession. As a consequence, he is unable to complete the theme in the alto voice because of the parallel fifths that would result. Albrechtsberger finds the same difficulty as Beethoven, and thus alters the theme in the alto voice, carefully marking it "license."[18] Such use of the term clearly left an impression on the young Beethoven, for he designated the fugal finale to the "Hammerklavier" Sonata *fuga con alcune licenze*.

This conflict between artistic freedom and strict compositional rules consistently emerged as a heated topic throughout the nineteenth century. Indeed, such conflict played a crucial role in the rising concept of genius at the end of the eighteenth century (especially in the ideas of Kant)[19] and continued to have an important effect well into the next century. As Edward Lowinsky writes:

> The opposition between conventional rule and fresh inspiration, the idea that the genius, unlike the mere craftsman, can transcend rules without committing errors and that in so doing he can make a new revelation, is a leitmotif in the history of the concept of musical genius.[20]

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[16] See Albert Christoph Dies, *Biographische Nachrichten von Joseph Haydn* (1810), quoted in Tom Beghin, "Haydn as Orator," in *Haydn and his World*, ed. Elaine Sisman (Princeton: Princeton University Press, 1997): 249, note 34.

[17] These lessons are discussed in Alfred Mann, *The Study of Fugue* (New York: Dover Publications, Inc., 1986): 213-220.

[18] See example 198 in Mann, *The Study of Fugue*, 218.

[19] In his *Critique of Judgment*, Kant specifically defines genius as "the innate mental disposition through which Nature gives the rule to art." For him, the genius is a conduit through which the rules of Nature are realized. With this idea, it becomes meaningless to apply the concept of license to any work of genius. After all, license essentially represents a "permit" from some larger authority to break the rules of nature, whereas in Kant's understanding, the work of genius actually realizes the rules of nature and, hence, authorizes itself. See *Critique of Judgment*, trans. J. H. Bernard in *Kant Selections*, ed. Theodore M. Greene (New York: Charles Scribner's Sons, 1957): 418.

[20] Edward E. Lowinsky, "Genius, Musical," in *Dictionary of the History of Ideas: Studies of Selected Pivotal Ideas*, ed. Philip P. Wiener (New York: Scribner, 1973-74): 325.

In terms of music theory pedagogy, this shift in attitude is perhaps nowhere more apparent than in Adolf Bernhard Marx's *Lehre von der musikalischen Komposition*. Ian Bent describes the general tone of Marx's work as follows:

> At no point does the theorist assume the mantle of authority. At no point is the composer deemed the subject to a higher law. He creates his own laws, he is self-dependent; he composes according to his own will. Marx's student is an artist in the image of the early German Romantics . . .[21]

With such a dramatic shift in authority, license becomes irrelevant; the composer is the ultimate authority and does not need permission to break from convention.

Nevertheless, license remained a relevant concept throughout the nineteenth century and is even dramatized, quite prominently, in Wagner's opera *Die Meistersinger*. Hans Sachs, the tragic hero of the drama, is, in a sense, the ultimate embodiment of musical license, a mediator between the unfettered freedom of the natural genius (Walther) and the dusty pedantry of the scholar (Beckmesser). Unlike Beckmesser, Sachs understands when rules can be broken for artistic effect. He respects music that appeals to the masses, even if it does not conform to the traditional rules of the guild, and even proposes a singing contest in which the audience decides the winner (quite scandalous in the days before *American Idol*). Nevertheless, he also teaches Walther a deep respect for tradition. The conflict between these two poles—tradition and originality—comes across most clearly in the dialogue between Sachs and Walther in Act III. When Walther asks Sachs for advice, Sachs teaches him to learn the rules of the guild for "guidance" *("Die Meisterregeln lernt bei Zeiten, dass sie getreulich euch geleiten")*.[22] But when Walther asks Sachs how to express his feelings about nature according to the rules (*Wie fang' ich nach der Regel an*?), Sachs encourages him to create his own rules *("Ihr stellt sie selbst, und folgt ihr dann.")*. Respect for tradition is coupled with a respect for creativity.

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[21] Ian Bent, "*Steps to Parnassus*: Contrapuntal Theory in 1725," in *The Cambridge History of Western Music Theory*, ed. Thomas Christensen (Cambridge: Cambridge University Press, 2002): 588.

[22] See Richard Wagner, *Die Meistersinger von Nürnberg*, libretto, English edition by H. and F. Corder (New York: Fred Rullman, Inc): 60-61.

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Given the changing nature of license in relation to compositional pedagogy, we might now ask: What is the role of license in the modern theory classroom? The following exchange, which I recently overheard, suggests its relevance: One student was tutoring another in music theory and the student having difficulty asked her tutor why she had to bother learning so many different rules. The tutor replied, "You need to learn the rules before you can break them." This, it seems to me, is a common misperception among undergraduate theory students. But it is also a misperception that accurately reflects much of the tradition of Western compositional pedagogy (and no doubt much non-Western pedagogy as well): license is something reserved for the experienced composer, not for the beginner. The reason I refer to the tutor's statement as a misperception, however, is that modern theory professors have very different pedagogical goals than the theorists and teachers of the Renaissance, Baroque, and Classical periods. When we teach model composition, whether chorale-style counterpoint, fugue, canon, or even sonata, rondo, or the Romantic Lied, our goal is usually not to teach students to compose with these forms in a professional capacity, but rather to help them understand the styles, conventions, and compositional logic of a particular era. We use composition to teach theory and history, not vice versa. For that reason, it is inaccurate for students to believe that we make them learn strict compositional rules simply as preparation for a time when they can make their own rules, as if, by passing a certain number of theory courses, they literally receive a license to compose as they please.

This does not mean, however, that the concept of license is irrelevant in contemporary theory pedagogy; on the contrary, license can play a considerable role in our teaching of model composition. It is, after all, part of the same tradition that set the stylistic guidelines for our compositional models in the first place. And though license is often reserved solely for the "great masters," it is also justified for the sake of "expression" and "good taste" as well. This, no doubt, has a definite relevance to any theory class that includes model composition. Even though our goals are quite different than those of the theorists reviewed above, we often observe the same conflicts that created the need for license in the first place: namely, the conflict between a student's desire for freedom and personal expression and the strict compositional rules that define a certain style. I would imagine, for instance, that every theory teacher

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has, at one time or another, encountered the following situation: after marking something "wrong" in a student's composition, the student responds by saying, "I know it's wrong, but it *sounds* good." In most cases, this is the result of a student lacking a proper understanding of the style at hand—what sounds good to them is entirely inappropriate with regard to the compositional model— but to dismiss such comments out of hand is not pedagogically effective. By doing so, we run the risk of playing Beckmesser to their Walther, or at least being perceived as such. It is at these times, then, that the concept of license arises as a useful mediator.

As established above, license has an important dual function: it respects the freedom of the composer while at the same time reinforcing the importance of stylistic rules and conventions. In my own introductory theory classes, it has been a remarkably useful concept. After introducing license early in the semester with specific quotes from theorists and composers throughout Western music history, I will grant the students license to "break" rules (not resolving sevenths by step, doubling a leading tone, placing a cadential $^6_4$ chord on a weak beat, etc.), provided that they not only mark such moments with the term "license," but also offer a musical justification for the infraction. This has had the following positive effects:

1. By introducing the concept of license in context, students get a better sense of the historical development of certain stylistic parameters; they realize that compositional "rules" were traditionally presented with a certain flexibility that does not necessarily appear in contemporary textbooks.
2. The students' model compositions improved. In many cases, students intended to invoke license at a given moment, but, while writing up a justification, discovered that there was a better, more stylistically appropriate way of handling the situation. In other words, it encouraged thoughtful consideration about their compositional choices.
3. Students never complained that the rules and stylistic guidelines were overly strict because they always knew that they could invoke license if necessary.

4. Few students actually used license in their major composition projects (and none of them abused it), but when license was invoked, it was generally done so for surprisingly thoughtful reasons, such as an important motivic transformation or for a sense of large-scale continuity.

5. When students encountered contrapuntal infractions in analysis (parallels, unresolved seventh, etc.) they no longer viewed this as evidence that the whole system was essentially bogus to begin with, but rather saw these moments in terms of license and analyzed them accordingly, asking why the composer deviated from conventions in that particular case.

Despite these benefits, there are potential dangers behind this strategy. Dishonest students, for instance, might invoke license simply out of laziness—instead of avoiding parallel fifths, they might just write "license," accompanied by a crude justification ("it just sounds better to me"). In my experience, I have not found this to be a problem. Most students, I believe, would prefer to try to fix simple mistakes (such as obvious parallels) than try to come up with a written justification. Besides, this issue could easily be dealt with by restricting licenses to a certain number of times for any given project.

What is most important, regardless of the specific strategy, is that license is introduced and understood in a historically situated manner. The account of musical license given above is, of course, far from comprehensive—license, after all, appears in some form or another in dozens of theoretical treatises and pedagogical handbooks—but it does suggest a basis for its importance for pedagogy in general. If used appropriately in modern classrooms, the concept will help facilitate the basic goals of model composition, which, as I understand them, are as follows: to develop a respect and understanding of the basic styles and conventions of a particular period/genre, while at the same time to appeal to (and enhance) the creative impulses of the students. License, in many ways, is the ultimate reflection of this goal, and although it no doubt plays an implicit role in many theory classrooms, it is best used with an explicit historical awareness.

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Popular Music as a Pedagogical Resource for Musicianship: Contextual Listening, Prolongations, Mediant Relationships, and Musical Form

Stuart Folse

Recent trends in music scholarship have emphasized the importance of popular music through in-depth analyses and historical studies.[1] Those of us who were brought up in households where this genre was the dominant musical presence have long been aware of its emotional power and pedagogical usefulness. Indeed, given the amount of time our students spend engaged with this music, it should be brought into the classroom and accorded the serious consideration it deserves. Popular music can provide teachers of undergraduate musicianship courses with an endless supply of pedagogically relevant examples that make lasting impressions on our students.

Popular music often presents difficult harmonic concepts in a concise and clear fashion. "Lead sheet" notation encourages comprehensible score study, allowing students to quickly correlate chord symbols to harmonic functions.[2] The clear and transparent

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[1] This article was made possible with funding from Roosevelt University's Research and Professional Improvement Committee.

[2] It is important to note that the usefulness of popular music in the classroom often depends on the published editions one chooses. One must be careful to use scores that are accurate, especially if an example is to be accompanied by a commercial recording. It is not uncommon to find "easy editions" of published popular songs that are hardly representative of the recordings. These editions are not appropriate for the college musicianship classroom. However, there is an abundance of meticulously printed editions. Additionally, I have been able to find excellent examples that cover a large array of harmonic concepts from simple diatonic triads to enharmonic reinterpretations. However, especially where advanced chromatic harmonies are concerned, many chords will not be labeled with traditional, "functional," harmonic symbols even though the pitch classes represented by the lead sheet symbol are accurate (i.e., one would not find "Fr+6" written in lead sheet notation but could find the symbol "F7-5," where the chord functions as a French augmented sixth by resolving to an E-major triad). The labeling does not change the function of these chords any more than an enharmonic spelling does in "art" music. (For example, the enharmonic spelling of Ger+6 using scale degree $\sharp\hat{2}$ rather than $\flat\hat{3}$ when resolving to a cadential $\substack{6\\4}$ in a major key.) It is the ear, after all, which apprehends a chord's function, not the eye. Using accurate publications and teaching lead-sheet notation in terms of sound will produce positive and rewarding results.

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texture found in many popular tunes promotes unencumbered aural cognition of harmonic rhythm and harmonic function facilitating a more fluid connection between written and aural work. Additionally, popular music provides an accessible frame of reference for standard harmonic progressions and melodic patterns; students find it easy to recall musical patterns that aurally resemble other works familiar to them. Finally, popular music invigorates classroom presentation: since students are exploring a familiar genre, they are able to perceive and discuss musical concepts unencumbered by details of musical styles that are often distant (historically and sometimes, aesthetically) from their personal experience.[3] If the ultimate objective of the classroom is to improve students' abilities to analyze and understand music, highlighting requisite materials in popular contexts can provide a fresh and enduring perspective toward this end. Since our students participate in and "consume" diverse styles of music, including jazz, rock, musical theater, country and world musics, our musicianship curricula should change accordingly, using this diversity to an advantage. While most music schools require students to complete one or more basic classical literature courses, popular music already familiar to these same students is seldom used or often completely ignored. The purpose of this article is to illustrate how popular music can be advantageously applied toward one pedagogical problem: the aural recognition of basic tonal prolongations.

Musicianship at the Chicago College of Performing Arts

The musicianship sequence at Roosevelt University's Chicago College of Performing Arts is a four-semester program integrating

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[3]There was a time when the typical music major was more familiar with "classical" music than with popular idioms. However, my teaching experience has shown that this is no longer the case. This is due, in part, to the diverse backgrounds of our students as well as the types of degrees offered by our institutions. In addition to the traditional "performance" degrees, music schools offer degrees in Music Education, Instrumental Jazz Performance, Vocal Jazz Performance, Composition (electronic and acoustic), Jazz Composition, and Music Theater as well as the amorphous "Bachelor of Arts in Music." The students enrolled in these degree plans are often more familiar, or at least equally familiar, with popular music (in one form or another) than with "art" music. These students, because of curricular dictates, must often enroll in the same musicianship courses as students with a "traditional" background. The challenge we all face is making the musicianship core a meaningful and viable experience for all of these students.

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written, aural and keyboard skills; material introduced in one area is simultaneously reinforced by the others. Tonal music is covered in the first three semesters of the sequence while the fourth semester deals with music from 1900 to 1945. We currently use *Tonal Harmony with an Introduction to Twentieth-Century Music* by Stefan Kostka and Dorothy Payne.[4] The aural portion of the class parallels the written and employs sight singing, rhythm reading and dictation, melodic dictation, and harmonic dictation (outer voices and harmonic functions).

While some students find the entire ear-training portion of the class difficult, harmonic dictation usually causes the greatest amount of anxiety. In our exercises, the student is responsible for identifying harmonic function and notating the pitches of the soprano and bass lines of examples resembling a four-part chorale. The goal here is to impart comprehension of Tonic/Pre-dominant/Dominant (T/P/D) function through common harmonic progressions and melodic patterns. However, this approach does contain some drawbacks. First, the examples are unrealistic in that they do not represent a conventional musical texture.[5] Second, since we provide the overall rhythm in our exercises, the student often neglects all other rhythmic concerns; thus, the underlying harmonic rhythm and T/P/D functions are often disregarded. Third, students struggle to notate scale degrees in various keys (especially in the first semester of musicianship). Even though they may "hear" pre-dominant function, they do not fluently represent it in every key. Also, since students are required to notate the outer voices they try harder to hear those pitches. This leads to a fourth problem. Rather than determining the outer voices based on T/P/D functions (which is what harmonic dictation *should* accomplish), many students use their notated outer-voice patterns to determine the harmonic function through visual logic rather than aural perception. ("If the soprano is singing scale degree three, this must be a tonic triad.") Although students may recreate the "correct answer," this process is contrary to building an aural conception of harmonic function—*they depend on their eyes rather than their ears*. Of course this method is contingent on students notating a perfect rendition of the outer voices. While

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[4] Stefan Kostka and Dorothy Payne, *Tonal Harmony with an Introduction to Twentieth-Century Music*, 5th ed. (Boston, MA: McGraw-Hill, 2004).

[5] While chorale texture is often found in music, the rapid harmonic rhythm normally associated with this texture is not as commonly encountered as other more active textures that support a prolonged harmonic rhythm.

the process can "work" rather efficiently with a restricted harmonic vocabulary, students' efforts become progressively unwieldy and error-prone as dictation examples become more complex. In an effort to confront these inherent problems, I use contextual listening dictations.

Contextual listening exercises introduce real pieces in context (either at the keyboard or by playing a CD) and concentrate the students' attention on harmonic function, since they are required to notate only the Roman numeral of the harmony being heard. It is in these exercises that I find popular music most beneficial. I often use examples selected from the local "classic rock" or "easy rock" radio station playlists. Since these stations broadcast songs which are already popular, there is a better chance that the students will have prior knowledge of these works. However, I do not limit my examples to these "older" songs but use more current examples as well when appropriate. Using these works engages students in the analytical process by making classroom exercises relevant to music (or musical styles) that most of them encounter on a daily basis. During contextual listening exercises, they are given the lyrics of the song and asked to provide the harmonic "changes" over the text. With this approach, the previously mentioned notation problems associated with harmonic dictation exercises are alleviated and the students focus their attention on the desired harmonic function aspect of the exercise. Additionally, I am able to examine a student's understanding of the harmonic rhythm as well as the harmonic functions presented in the exercise.

In the eleventh week of the first semester, we introduce supertonic harmony into our dictation exercises and explain the chord's traditional "P" function. An excellent contextual listening example for this lesson is *You're Still the One* by the country / pop singer Shania Twain.[6] The song's simple texture and harmonic rhythm are not overwhelming, its diatonic environment uses mostly primary triads, and its ample harmonic repetition helps the student to focus on the T/P/D pattern of harmonic functions. In addition to reinforcing the aural recognition of the newly introduced supertonic triad, the song highlights two other pedagogical problems: the prolongation of a single harmony through inversion and the prolongation of a single T/P/D function through a change of harmony. It is to the issue of prolongation that I now turn.

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[6] Shania Twain, *Come on Over: You're Still the One,* CD 314-536 003-2, Mercury Records, 1997.

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Prolongations of Tonic and Pre-dominant Functions

Although we introduce chord inversions in week seven of the semester, by week eleven some students still equate a movement in the bass line with a change in harmonic function. These students understand that the bass line shifts, but since they focus on the melodic aspects of the exercise they misinterpret the meaning of this movement. Consequently, the progression I – I⁶ is heard as two harmonies rather than as a prolongation of "T" harmony. Using popular music examples can alleviate this problem because the melodies are already familiar to the student. Thus, they can focus their attention on the bass/harmonic aspects of the exercise. However, to many students, the idea that one harmonic function can be prolonged by employing two *different chords*, i.e., IV – ii as a prolongation of "P" harmony, can be a daunting challenge to hear. *You're Still the One* can be used to address both of these issues in a pedagogically clear and concise way.

Example 1: *You're Still the One*, mm. 9 – 11.[7]

The verse of the song (Example 1) is a repeated two-measure phrase employing a I – ⁶ – IV – V harmonic pattern. Most students readily hear that each phrase begins on T and ends on D. Likewise, most students hear and understand that the pre-dominant harmony carries the passage to the half cadence on the dominant. As stated previously, the problem encountered in this passage, if any, is hearing the function of the I⁶ chord. Since the example represents a clear projection of the T/P/D functions, the student is free to concentrate on the accelerating harmonic rhythm into the cadence. In this way the tonic prolongation becomes clear (see Example 2).

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[7] Measure numbers used in connection with *You're Still the One* are consistent with the printed version found in *Ten Years of Pop Music History: 1990 – 2000 Remembering the '90s, The Blue Book* (Miami, FL: Warner Brothers Publications. 2000), 391 - 393. The song is also available in other sources.

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Example 2: *You're Still the One*, Harmonic Rhythm, mm. 9 – 11.

Even though the bass line moves in half notes, the clarity of the P function in the phrase's second measure facilitates the determination that I⁶ is used to bridge the gap between the T and P functions in one of three ways:

    a. by actually hearing T prolongation in real time,

    b. by hearing T prolongation in retrospective time (i.e., "the second chord prolongs something, and it is not P because the movement to P is clear, so it must be T"), or less often,

    c. by using only logic (i.e., "scale degree $\hat{3}$ is in the bass when the chord moves so it must be T").

As noted previously, solution C is not the thought process we are trying to foster; however, since students comprehend the bass motion to $\hat{3}$ (even though they are not required to notate this), they are at least using their ears (rather than their eyes) to reach a correct conclusion.

In a similar way, the song's chorus, first four measures of which are shown in Example 3, introduces a conspicuous example of pre-dominant prolongation using different chords. The chorus continues the two-measure phrase structure found in the verse as well as the half-note motion in the bass. The pre-dominant prolongation occurs in the first phrase (mm. 19-20) and is immediately followed by another harmonically equivalent phrase (mm. 21-22).

Example 3: *You're Still the One*, mm. 19 – 22.

Pedagogically significant here is the representation of two different versions of a clear T/P/D movement in close proximity. Each phrase begins on tonic and ends with a half cadence. Students usually have no problem hearing this. Also, the surface harmonic rhythm (as well as the bass line) moves consistently in half notes. Furthermore, the P functions in both phrases begin at the same point (beat 3), while the cadences of each phrase occur in a different place. The weak metric position of the first phrase's half cadence facilitates understanding that its harmonic T/P/D cycle takes more time than the second phrase's T/P/D cycle. Since the harmonic rhythm is steady, and both phrases begin and end similarly, and the two are successive, students are able to realize that the difference between them is the prolongation of pre-dominant harmony in the first phrase. The change in quality between the major IV chord and the minor ii chord reveals that P is being prolonged through the addition of supertonic harmony. Also significant is that the second phrase's straight I – IV – V progression serves as a truncated harmonic summary of the first phrase's I – IV – ii –V progression. Repetition of material in mm. 15 – 18 allows for a second hearing of the entire harmonic event.

Further Pedagogy of *You're Still the One*

In addition to the two prolongations discussed above, *You're Still the One* offers further points for aural examination and discussion. The use of pre-dominant prolongation is tied to the form of the entire song and is, in fact, the chief difference between the chorus and the other sections of the work. The verse emphasizes tonic harmony through inversional prolongation while the bridge highlights dominant harmony by means of durational prolongation (i.e., by changing the harmonic rhythm from two beats of T and P to four beats of D at the end of each phrase). These sections are, however, similar in that both use only three chords: I, IV, and V. The chorus, in contrast, stresses pre-dominant function. The introduction of a new harmony (ii) and the IV-ii prolongation are critical distinctions between the chorus and the remainder of the work. These differences contribute to the chorus's role as a new section in the piece. Moreover, the pre-dominant prolongation can be used to stimulate discussion on the comparative strength between ii and IV with regard to our perception of harmonic progression (i.e., "Which is stronger to your ear, ii or IV? Why?"). Lastly, the song provides an opportunity to address the concept of cadential extension.

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One possible aural obstacle exhibited in *You're Still the One* (Example 4) is the use of a plagal extension prior to the repeated phrases in the chorus (m. 22). Some students may find the IV chord difficult to recognize since it *follows* a half cadence rather than moving to D function or prolonging T function, its more traditional role.

Example 4: *You're Still the One*, mm. 21 – 23.

Movement from V to IV is common in popular music since this music often places more (or at least equal) importance on plagal rather than authentic cadences. Having its roots in blues and folk traditions (as well as other non-common-practice styles of music), popular music often draws on relevant and distinguishing components of these other musical genres. Both blues music (based on the "blues scale") and folk music (which is often modal) make extensive use of plagal progressions and cadences rather than the authentic progressions/cadences that govern common practice tonality. The fact that this music has roots outside of common practice should not prevent its use in the classroom. Students who have problems recognizing this V-IV progression are often the victims of our own pedagogical prejudices. It is customary to teach that V does not move to IV, or, to devalue any music that does not follow certain "rules." Yet we all experience such music on a daily basis. As teachers we should embrace various musical styles, enthusiastically addressing stylistic, harmonic, and aesthetic differences between them. Not only does this approach more realistically reflect the multiple musical styles we all experience, it also expands the usefulness of musicianship and pedagogy by couching our instruction in broader and more meaningful contexts. With this said, it is still possible to explain this harmonic movement in terms of common-practice harmony. In this instance, the function of the IV chord is clear: it postpones the half cadence's resolution to tonic. The IV chord delays the resolution of V through harmonic embellishment or possibly through a cadential extension. Although

some students may find this passage confusing, it has been my experience that once the excerpt is isolated (outside of real time) the students have no difficulty identifying the function.

Prolongations Using Non-dominant Secondary Functions and Transient Tonicization

Another type of prolongation that students can find both aurally and cognitively difficult is the use of non-dominant secondary functions such as the one shown below.

Example 5: Mozart, Piano Sonata in C Major, K. 545, II, mm. 68 – 72.[8]

Here the P area is prolonged through the use of its own IV–V–I progression. While students eventually comprehend this type of prolongation "intellectually," they rarely recognize what is happening either aurally or visually when they encounter such transient tonicization on their own. To help them confront this type of harmonic prolongation, and hopefully identify it in literature, I use the Eagles' *New Kid in Town*.[9] The A section of this song works well as a contextual listening example in Musicianship II, since it features clear diatonic functions as well as secondary dominant and non-dominant functions. The simple texture, clear-cut bass line, and

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[8] As shown in Kostka and Payne, *Tonal Harmony,* p. 279

[9] Eagles, *Hotel California: New Kid in Town,* CD B000002GVO, Elektra/Asylum Records, 1976. *New Kid in Town* can also be found on: *Eagles, Greatest Hits Volume 2,* CD 60205-2, Elektra/Asylum Records, 1982.

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unmistakable harmonic rhythm give rise to coherent contextual listening. Additionally, *New Kid in Town* reinforces the student's retrospective hearing.

The passage featuring the non-dominant secondary function occurs in measures 15 – 24 at the end of the song's A section (see Example 6). It displays a clear motion toward the dominant utilizing a ii/V – V/V progression. Yet before B major can be established as the new tonic, its V (F♯) chord, rather than resolving, is transformed into a diatonic ii⁷ (F♯m⁷) chord. This alteration encourages the cadential B major triad to be heard as the dominant of E major.

Example 6: *New Kid in Town*, mm. 15 - 24.[10]

On first hearing, the C♯m triad, which is preceded by its dominant (G♯), sounds like the submediant of E. However, when the C♯m chord progresses to F♯ (major), rather than F♯m, the tonal implication becomes that of B major. Because the C♯m – F♯ progression is repeated three times, the ear retrospectively understands the function of C♯m as ii/V rather than vi even though the C♯m chord is diatonic. The G♯ major triad heard prior to the first C♯m (in measure 16) retrospectively becomes V of the new supertonic function.

It is the repetition of the ii/V – V/V progression that proves so aurally helpful in this example. Since the students hear the

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[10] Measure numbers used in connection with *New Kid in Town* are consistent with the printed version found in *Classic Rock Fake Book* (Milwaukee, WI: Hal Leonard Corporation), 170 – 171. The work is also available in other sources.

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progression on multiple occasions in a short span of time, they are better able to process the tonal shift, and thus, to distinguish this crucial aural event. The repetition facilitates comprehension of the tonal shift as well as the non-dominant secondary function. When the passage concludes with the diatonic version of the same progression (ii^7 – V in mm. 23 – 24), the return to E as the tonic sounds familiar and expected. The students grasp that the passage is functioning as a large-scale prolongation of the dominant in E major even though there is only one chromatic chord (V/V). Thus the example proves useful in two ways: it aids comprehension and recognition of the non-dominant secondary function process, and it develops a sense of retrospective understanding.

Further Pedagogy of *New Kid in Town*

The example has proven pedagogically useful not only for ear training in Musicianship II, but also for harmonic and formal analysis in Musicianship III, as it contains a number of substantial mediant relationships (diatonic mediants, chromatic mediants and double-chromatic mediants). Given that most of these mediant relationships mark important points in the song's compound ternary form (material covered in Musicianship II) a discussion/ review of the overall form is beneficial.

Example 7: *New Kid in Town*, Form.

A	B	A′	Coda
Mm. 1 - 28	29 - 38	39 - 62	63 - End

Subsections					
a	b		a′	b′	
(1 - 15)	(16 - 27)		(39 - 53)	(54 - 63)	

Keys:								
E		E	(→	G)	G			E
[I	(V)	(I)	(V/ ♮III)		♭III	(V/ ♮III)	(V)	I]

Once we have reviewed the song's form as outlined in Example 7, the student's attention is directed to the key relationships between the A section and its return in measure 39. The movement from E major at the work's beginning to G major in the reprise

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creates a fresh return of A material as well as a sense of harmonic incompleteness. The chromatic mediant relationship between these two large sections provides on opportunity to address numerous mediant relationships that occur throughout the entire work. Mediant relationships are discovered at various points in the work's foreground, middleground and background. The chromatic mediant relationship between the beginning and the reprise, mentioned above, represents the broadest level. Moreover, since the reprise begins in a transient mediant key, responsibility for tonal closure falls to the coda. This makes the coda an indispensable part of the overall form.

Conspicuous chromatic mediant relationships are found at other significant formal junctures. A middleground chromatic mediant relationship is exposed in the retransition to the reprise (see Example 8).

Example 8: *New Kid in Town*, mm. 29 – 39.

With the tonicization of V (B) at the end of the B section, the piece includes a local movement from B major to G major in addition to the large-scale tonal movement from E to G. Thus, the reprise's modulation to G is heightened by the simultaneous use of two of its chromatic mediants, one from above and another from below (Example 9).

Example 9: *New Kid in Town*, Chromatic Mediant Relationships, mm. 29 - 39.

Additionally, two other chromatic mediants occur in the foreground of the piece at significant formal positions. The first can be seen in measures 15 – 16 of Example 6 connecting the two subsections of the work's A section. Here, the harmonic movement of the cadential tonic (E major) triad to V / vi (G♯) positions a chromatic mediant progression in the foreground as the work moves into the second (b) subsection of the A part. This progression hints at the harmonic relationship found later in the work between the larger formal components, that is, the E major and G major sections discussed earlier.

A similar event appears in Example 8. This illustration represents the transition between the B and A′ sections of the piece. In measures 35 – 36 the V / V (F♯) is left unresolved as it progresses, by means of a direct modulation, to ii⁷ (Am⁷) in the new key of G major. The movement from F♯ to Am⁷ creates a double-chromatic-mediant progression.[11] Here, the most abrupt harmonic progression found in the work signals the modulation to the second key area as well as the reprise of the initial material. This double-chromatic mediant, residing in the foreground, occurs in the midst of the simultaneous middleground and background chromatic mediants discussed in conjunction with Example 9.

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[11] Kostka and Payne, *Tonal Harmony*, p. 435.

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The prominence of mediant relationships is further confirmed in the coda (seen below in Example 10). As previously stated, the work's coda provides tonal closure that is not initially found in the reprise (which begins in G major). Its mediant progressions support the return of original key. Once T function is heard in measure 53, it is prolonged by a iii[7] chord (in measure 54) before continuing the movement through P and finally to the D that ends the phrase. This is the only instance of this kind of tonic prolongation in the piece. Additionally, this is the only place iii[7] is found in the entire work and the first time that a harmonic progression moves unambiguously by diatonic mediants.[12]

Example 10: *New Kid in Town*, Coda, mm. 63 – 66.

The work's final phrase then closes with another diatonic mediant progression, I – vi, as it repeats and fades at the end. The coda thus, not only closes the work tonally, it provides a diatonic summary of the important chromatic movements of the piece (see Example 11).

Example 11: *New Kid in Town,* Coda, mm. 75 - 78

As demonstrated above, popular music styles have much to offer. This music is an indispensable resource for helping our students understand most of the pertinent harmonic issues presented in our musicianship courses. Its clarity of texture and notation, as well as its familiarity, make popular music an underdeveloped pedagogical

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[12]Although there is a motion from I – vi in measures 15 – 17, this motion is accomplished through the use of V/vi. As stated previously, the function of this passage is somewhat ambiguous since the progression can be heard as V of the ii/V – V/V progression that follows. See Example 6.

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tool. Although the issue is beyond the scope of the present paper, I also find that popular music provides a superb forum for approaching other non-musical issues, such as multiculturalism or gender equity, that traditional "classical" analysis often fails to address. Additionally, by using popular music in the classroom, teachers validate the music to which most of their students listen. This practice helps to build rapport between student and teacher. But most important, using popular music in the classroom reflects the value of active listening. By utilizing examples not associated with the "normal" theory textbook, students are guided to encounter all music, regardless of genre, as *musicians*, energetically participating in the process of understanding what they experience. Isn't this the desired goal of musicianship?

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Thinking In Sound: A Qualitative Study of Metaphors for Pitch Perfection□

Kathy A. Thompson

ABSTRACT

The mission for aural skills instruction is to enable students to think in sound. Each fall college teachers meet freshmen with varying levels of experience and ability in music reading and listening. Selecting appropriate strategies for teaching students to auralize, to "hear" how notated music sounds in the absence of physical sound, is difficult not only because of students' different skill levels but also because research in aural skills pedagogy has not indicated an ideal sequence of instruction. Most textbooks present a good variety of exercises but little conceptual framework, leaving that to the teacher's discretion. This qualitative study was initiated to help an aural skills teacher with absolute pitch understand how relative pitch skills develops. Participants were 23 undergraduate students enrolled in aural skills classes at a liberal arts university. Based on students' previous experiences, their responses to auralization tasks, and evaluation of their sight-singing, metaphors were suggested to characterize strategies to internalize pitch from musical notation. Students assessed their own strategies and then evaluated the effectiveness of the metaphors for discussing their process for internalizing pitch. Findings provided observations about the development of relative pitch and raised issues about the use of solmization.

INTRODUCTION

"Tonal imagery is a condition for learning, for retention, for recall, for recognition, and for the anticipation of musical facts. Take out the image from the musical mind and you take out its very essence."[1] Carl Seashore's words aptly describe the mission statement for aural skills instruction: to teach students to think in sound. A great frustration in teaching music theory is finding that students do not always connect sound with their analysis of musical notation. Bruce

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[1] Carl Seashore, *Psychology of Music* (New York: McGraw Hill, 1938), 6.

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Benward called this necessary reciprocal relationship "the hearing eye."[2] Various other terms have been suggested, including inner hearing, aural imagery, pitch internalization, and audiation. Gary Karpinski suggested the term *auralization*, "the process of hearing music mentally in the absence of physical sound,"[3] because of its analogy with visualization. Though auralization is a multi-faceted concept, including pitch, rhythm, instrumentation, articulation, texture, form, etc., the focus for this study was the auralization of pitch from musical notation.

Musicians use either absolute pitch (AP) or relative pitch (RP) strategies to auralize pitch from musical notation. Those with AP, sometimes called "perfect pitch," easily auralize individual pitches from an internal standard, while others auralize pitches in contextual relationships. The starting point for auralization is fundamentally opposite for the two types of perception; one typically auralizes before analyzing, while the other must analyze before auralizing. Because the analysis of musical relationships is vital for understanding music, aural skills instruction is necessarily concerned with RP processes for all students. However, the teachers' own perception, whether AP or RP, can make it difficult to know first-hand how to teach students with the opposite strategy for auralization. My desire to understand how RP skills develop without AP perception was the basis for studying the auralization strategies of my undergraduate students.

My prior teaching experience had indicated various levels of skill in music reading and listening among college freshmen. A few already knew how to auralize from previous music lesson and ensemble experiences, while those with AP auralized individual pitches easily.[4] Some, usually vocalists, learned to use tonal syllables or numbers, perhaps reinforced with hand signs or body movements. Others, especially pianists, recognized intervals between pitches. Yet quite a few knew how a melody sounded only after playing

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[2] Bruce Benward, and Maureen Carr, *Sight Singing Complete*, 6th Ed. (Boston: McGraw Hill, 1999), xii.

[3] Gary Karpinski, *Aural Skills Acquisition* (New York: Oxford University Press, 2000), 49.

[4] Peter K. Gregersen, Elena Kowalski, Nina Kohn, and Elizabeth West Marvin, "Absolute Pitch: Prevalence, Ethnic Variation, and Estimation of the Genetic Component," *American Journal of Human Genetics* 65 (1999): 911-913. This study estimated the prevalence of college music students with absolute pitch to range from 4.5% in liberal arts colleges to 24.6% in conservatories.

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it on an instrument or hearing it performed. Most aural skills textbooks contain a great variety of exercises but little conceptual framework, leaving the construction of such a framework to the teacher's discretion. My search for how to teach RP skills more effectively began with trying to understand the strategies freshmen already knew how to use.

Literature Review

Designing an aural skills curriculum is difficult not only because of the diversity in students' skills, but also because of the complexity of the cognitive process. Michael Rogers stated that the goal of music theory training is the "interdependence of thinking and listening."[5] For music teachers whose thinking and listening have become inseparable and intuitive, it is difficult to recall the way we learned, even if we assume that our approach might be a good sequence for instruction. One popular approach is to integrate aural skills instruction with the music theory curriculum. Edward Klonoski recently challenged this approach: "There is a tacit assumption here that needs to be examined more explicitly; namely, that the sequence of topics typically found in tonal theory texts, normally a highly refined and logical conceptual ordering, also represents the optimal perceptual ordering."[6]

Klonoski also called for teachers to address vocal production in connection with pitch internalization.[7] Karpinski likewise discussed many early skills, including matching and remembering pitches, hearing melodic contour, discriminating stepwise motion from leaps, inferring tonic function, and identifying scale degrees. He argued for teachers to choose solmization systems based on how musicians learn and what we want them to learn, rather than rationalizing, "I was trained that way."[8] Rogers also thoroughly discussed solmization options and admitted that all have various strengths and limitations for musical mind training.[9] Though many

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[5] Michael R. Rogers, *Teaching Approaches in Music Theory* (Carbondale, IL: Southern Illinois University Press, 1984), 8.

[6] Edward Klonoski, "A Perceptual Learning Hierarchy: An Imperative for Aural Skills Pedagogy," *College Music Symposium* 40 (2000): page?.

[7] Edward Klonoski, "Teaching Pitch Internalization Processes," *Journal of Music Theory Pedagogy* 12 (1998): 91-96.

[8] Karpinski, 168.

[9] Rogers, *Teaching Approaches*, 132-6

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opinions and issues about solmization have been raised previously in this journal,[10] research has not yet proven one solmization method superior to another, or indicated how several systems might be used in combination or in sequence. Both Rogers and Karpinski warned against teaching students to read by intervals before they have acquired a sense of tonal function. Rogers argued that putting too much emphasis on intervals "reduces the hearing process to a chain of localized hops from point-to point—all somehow equivalent,"[11] rather than contributing to understanding tonality or performing with good intonation. These pedagogical concerns provided direction for this study.

Gary Potter's qualitative study of melodic dictation among several experts stimulated my interest in studying the development of auralization.[12] Potter studied his subjects' actions and explanations during dictation sessions, following Lincoln and Guba's guidelines for naturalistic inquiry.[13] Their description of the researcher-teacher as the data-gathering instrument involved observing students in a natural setting and using inductive data analysis. Bogdan and Biklen's model for effective practitioner research likewise included listening well, questioning closely, and observing details: "The symbolic interactionist emphasis on understanding how many people make sense out of what is happening to them encourages an empathetic understanding of different people's points of view."[14] Schank and Abelson proposed script theory as a way of understanding how humans use past experience to interpret new situations,[15] and Nelson discussed using students' scripts for analytic purposes.[16] These resources have influenced my qualitative research design.

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[10] Tim Smith debated various issues concerning solmization with Michael Houlahan and Philip Tacka in the *Journal of Music Theory Pedagogy*, Vols. 4-8 (1990-94).

[11] Rogers, *Teaching Approaches*, 131

[12] Gary Potter, "Identifying Successful Dictation Strategies," *Journal of Music Theory Pedagogy* 4:1 (1990): 63-71.

[13] Yvonne Lincoln and Egan Guba, *Naturalistic Inquiry* (Beverly Hills, CA: Sage Publications, 1985), 216-217.

[14] Robert C. Bogdan and Sari Knopp Biklen, *Qualitative Research for Education (*Boston: Allyn and Bacon, 1998), 233-238.

[15] R.C. Shank and R. P. Abelson, *Scripts, Plans, Goals and Understanding: An Inquiry into Human Knowledge Structures* (Hillsdale, N.J.: Lawrence Erlbaum Associates, 1977).

[16] Katherine Nelson, *Event Knowledge: Structure and Function in Development* (Hillsdale, N. J.: Lawrence Erlbaum Associates, 1986), 2.

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Purpose

The purpose of my study was to listen through my students' ears, examine their reflections, and characterize their strategies for insights into developing a more effective aural skills curriculum. Three questions guided my research:

1. What can I learn from my students about relative pitch strategies?
2. What perceptual patterns had students' previous musical experiences provided?
3. Are these perceptions hierarchical stages of development along one path, or are they different paths to relative pitch auralization?

Design

The research design included a brief test for absolute pitch,[17] interviews to document previous musical experience, discussions about sight-singing, and multiple-choice tasks to identify which of several notated tonal patterns was played. For sight-singing I selected four diatonic melodies from a sight-singing textbook.[18] Participants were allowed to choose any preparation and process they wished, i.e., to sing tonal syllables (with or without hand signs), numbers, or neutral syllables like *doo* or *la*, and to play a starting pitch on the piano or begin singing on any pitch in their vocal range. After singing they described their strategies for hearing and evaluated their performance.

Participants and Setting

Participants were 23 undergraduate students between the ages of 18 and 22 enrolled in music theory classes at a liberal arts university in a South Central state. I share the aural skills

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[17] To check for absolute pitch and to see if participants recognized even common tuning pitches, I chose the pitches F, B♭', C¹, F♯, and A¹, for students to identify by letter name. If students recognized these I checked further to see if students related other tones to any of these fixed anchors.

[18] Earl Henry, *Sight Singing* (Upper Saddle River, NJ: Prentice-Hall, 1997), 23, 24, 55, 73.

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instruction at this university with one colleague, who contributed insights and allowed some class time for the study. The research evolved through four stages over two semesters. (See Tables A1 and A2 in the Appendix for participants' major instrument, pre-college experience, and various evaluations.) Participants received no special consideration for grading purposes in any course. They agreed to have their interviews audio-taped and were assured confidentiality; the names used in this report are pseudonyms. One particular commonality among these participants was that all but two had attended church regularly, so they had repeated exposure to congregational singing. In fact, all but four participants had attended congregations that traditionally sing in four-part harmony without instrumental accompaniment. These participants had more experience with unaccompanied singing and vocal harmonizing than might be expected for the majority of freshman music students at most universities.

Several techniques ensured the trustworthiness of the data. I encouraged participants to share both insights and frustrations, and we continually discussed my interpretations of their responses. The privacy of the interviews enabled us to talk freely about their strategies; they seemed generally at ease and responded favorably to my clear intention to learn from them. I verified what they thought about during their preparation, and allowed them to repeat part or all of each sight-singing task as we focused on their cognitive process. To provide multiple measures of assessment I considered participants' sight-singing and auralization tasks, scripts of strategies, and evaluation of suggested metaphors for their strategies. Though the sample was small, the three different groups of participants provided some breadth in the research, and each of the four stages helped to refine my conclusions. My colleague also participated by evaluating participants' scripts, describing her own pitch processing strategies, and discussing both in the light of the proposed metaphors.

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Procedures

In the initial stage all ten students enrolled in Music Reading agreed to participate.[19] I administered the AP test and first auralization task (AT1) during the first class session. I then conducted four individual interviews with each student, approximately four weeks apart. In the first interview, students described previous music experiences and also demonstrated rudimentary knowledge by identifying pitch names, key signatures, and chord names. At each interview I asked students to sight-sing a short tonal melody, discuss their approach in singing the melody, and evaluate their own performance. I also asked probing questions based on accuracy or problems in singing the melody and usually suggested a strategy to correct mistakes, or asked them to suggest one. The final exam included a second auralization task (AT2), slightly more difficult than AT1, with additional instructions to "write what you heard that made you decide your answer." Examples of these tasks may be found in Appendix C.

The second stage evolved because of my desire to compare the strategies of the Music Reading students with those of more advanced students. Toward the end of the semester, I interviewed eight students enrolled in their third-semester aural skills class to document their pre-college experience and discuss one sight-singing task. On their final exam, these students indicated which of two notated tonal melodies was played, or notated what they heard if the melody was different from either, and described what they heard that made them choose their answers. Though this auralization/dictation task (AT3) was more difficult than the tasks for the freshmen, the scripts provided similar process information.

Participants in the third stage were five freshman music students enrolled in Music Theory I in the spring term who had been exempt from Music Reading in the fall. I interviewed each one for background information, administered the AP test and AT2, and discussed one sight-singing task. Including this group of participants allowed observation of the entire class of freshman music majors for the year.

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[19] This class was required for students whose placement exams indicated that their music reading skills had not met the level of competency required for admission into the first harmony/aural skills course at this university. All but one of these ten students were required to enroll concurrently in Rudiments of Music, which met for two fifty-minute periods each week and was taught by my colleague.

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Data Analysis

I analyzed five strategies through coding participants' oral and written scripts from the sight-singing interviews and auralization tasks. From this analysis, along with insights from personal experience and literature review, I proposed six metaphors to characterize strategies for pitch perception. (See Appendix B.)[20] The following discussion illustrates the thinking and behaviors among the participants which led to the metaphorical characterizations.

The Follower

Several students admitted following other singers or instruments when they were not required to sight-sing independently; previously they had learned songs only by rote or with instrumental accompaniment. Sally was a typical Follower: "Usually I have something, even if it's like an accompaniment tape or something, and I can hear it in the piano. I don't do a lot of singing just in my head because it's hard for me, and I just choose not to." Though insecure in her sight-singing, Sally had considerable vocal ensemble experience that had developed her musical intuition. "I have to learn songs quick and all they have to do is sing in my ear and I can get it really fast, but I think I just have a pretty good ear at hearing."

When asked if he could look at music and know how it sounds, Jim missed the point and said, "With instrument yes, without it, no." He also expressed typical frustration with his sight-singing: "I did it right at first when I was thinking about it, but now when I try to do it, I can't." Kate, a pianist, was convinced that she could sight-read vocal music, but her comment illustrated her Follower behavior. "I can sight read some, like if I'm in a group and there's one other person with my part so that it keeps me kind of on tune, but I've never been able to do it by myself." Though Followers tended to attribute their mistakes primarily to insecure vocal production, the auralization task responses showed at least part of the difficulty was in auralization for Sally, Jim, and Kate.

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[20] The definitions offered here include slight modifications described in subsequent research: Kathy A. Thompson, "Pitch Internalization Strategies of Professional Musicians," (Ph.D. diss., University of Oklahoma, 2003). An additional metaphor, "The Chunker," was evaluated in that research but is not included here.

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THE BUTTON-PUSHER

Instrumentalists were considerably beyond Followers in their ability to understand notation for instrumental sight-reading, but not necessarily for sight-singing. The Button-pusher metaphor characterizes the skill to go from notation to fingering, but does not imply anticipation of the sound before a tone is played. Button-pushing is often a Pavlovian response to notation. Notation stimulates the behavior to play rather than to imagine sound. Sam was the quintessential Button-pusher. Though his saxophone reading skills were quite good, he had little vocal control, leading me to wonder if that were the issue rather than his aural image. Sam's stepwise pitches were not in tune, though they roughly matched the contour. He readily sensed inaccurate scale steps after he heard himself sing. Eager to improve his sight-singing skills, Sam brought in a flute one morning to see if he could sing more in tune if he pretended to finger a flute. Another time he claimed, "When I sing from bass clef, I think of slide trombone position." These kinesthetic crutches did not seem to help appreciably. Sam's auralization test indicated that vocal production was not the only issue.

THE CONTOUR-SINGER

Though all participants could follow rises and falls in notation as they sang, the real melody was out-of-focus for Contour-singers, as described in Sam's case above. Nell also entered college as a Contour-singer with good intuition for what sounded correct. On the first sight-singing task she sang three measures of steps and easy tonal skips accurately until she missed the last two notes of the phrase. She sensed that her melody was wrong and stopped. When she tried to sing it again, she maintained the contour, but missed notes she had previously sung correctly. When asked how she was thinking, she replied, "Just thinking of the notes going up and down."

THE TONAL-THINKER

Showing more accuracy than their Contour-singer classmates, Barry, Anna, Vince, and Vivian were already on the path to

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understanding tonal function from pre-college experience with syllables. Vince claimed that tonal syllables were "the root of everything in choir. It helped a ton!" Vivian was less confident and sang very slowly, but her thought process was evident. Often I began class with a mystery tune to coax students to auralize. Students were to sing the tune "in their head," and then write the name of the tune. One morning Vivian claimed she had never heard the song, but after correcting her solmization, she easily sang and recognized the first phrase of the "Star Spangled Banner." Incorrect location of the tonic pitch caused her initial confusion, but she was able to use her tonal-thinking to solve the mystery.

Tonal-thinkers usually demonstrated the importance of the tonic triad by humming a triad or scale in preparation to sight-sing. Most said they looked for *do-mi-sol* patterns in the notation. Anna had learned to sing shaped-notes from the hymnal: "It's much easier to look at the shapes than to remember where the *do-mi-sol* is located." Though shaped-notes were a crutch, they had launched her RP skills. Barry credited his effective Tonal-thinker strategy to his high school experience with "Scalesthenics,"[21] a system of body movement along with numbers and imagery to reinforce tonal function. Tonal-thinkers could generally assess where uncertainty began; they instinctively knew if they lost the tonal center, and even if they recovered, most readily indicated where they had made a mistake. However, students were much less likely to detect an error if it sounded correct to their musical intuition. For example, one melody had a descending leap: *sol-ti,-do*. Several students sang the tones *sol-sol,-do,* but with the syllables *sol-ti,-do.* Nell repeated the incorrect leap when asked to sing the phrase a second time. She did not recognize her mistake until we actually sang *sol-sol,-do.* Both patterns have dominant-to-tonic cadential sounds, so that did not offend her musical intuition.

THE BUILDER

The Builder metaphor came from the idea of measuring distance from one note to the next, as if choosing interval sizes from a tool box. Heeding the warnings about reliance on intervals for sight-singing, I was on the alert for scripts that referred to intervals. Though Ben

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[21] M. J. Milford, *Scalesthenics: A New Adventure in Sight-Singing*, (Santa Fe, Texas: Panorama Publishing and Production, 1992).

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mentioned the tonic pitch in preparation for sight-singing, his strategy signaled concern: "I hum a *do* sound, and then off of that I just use intervals to hum or imagine the melody." His sight-singing showed contour, but inaccurate scale steps. He stopped and started several times because what he sang did not sound correct, though he always returned to the tonic pitch. That Ben perfectly identified each auralization question indicated that he could discriminate among similar patterns, i.e., internalize the pitch accurately, but the Builder strategy was ineffective for accurate sight-singing. Ben had already recognized his difficulty in vocal production:

> I have this problem where, like when I wrote a piece for band in my senior year, I could hear the chords or the line of music but I couldn't sing it. But I could hear it in my mind, but it took me…going up the scale chromatically until I got it, but then after that I could sing it no problem, but I had to hear it from some instruments other than my mind first, but I could hear it consistently.

Combinations of strategies

Several freshmen demonstrated the Builder strategy along with other strategies. Vince's responses showed interval and tonal-thinking. "For the skips I just think I look at how big the skip is. I do go back to *do* an awful lot, but I also go note-to-note." His first auralization task response was that of a Builder: "I heard a third and then just a second." His next comment indicated a Tonal-thinker, "I heard *do* and the third note was *re*." Jane's responses demonstrated four strategies. Her comment about reading saxophone music revealed classic Button-pusher behavior, "I just think of the fingerings for the different notes. I don't do the listening for what sounds right at all." When I asked if she could look at her saxophone music and know what it would sound like, she responded in Contour-singer fashion, "I can tell the shapes of the phrases, if they're going up and down, and if they're going to skip around a lot, but I can't look at it and really sing it that well." Jane explained that her preparation for sight-singing involved interval thinking: "Really I just try to look at the exercise beforehand and see if I can pick out intervals because I can sing the intervals, but I'd have to count it all out and do things like, (sings) 'Here Comes the Bride,' and that's the fourth and stuff like that." She described

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the Builder strategy to think every interval, but when she prepared to sight-sing, she turned Tonal-thinker and quickly hummed a major pentachord and tonic triad, then sang perfectly in syllables. Obviously Jane's strategies had begun to merge.

Etta also mixed strategies effectively, and she provided a harmonic dimension to Tonal-thinker and Builder perceptions. When asked at what point she could hear in her head how notation would sound, Etta answered, "When I started singing alto... and I think I realized how it fit into the chord as well. Having the alto line with the soprano—it's like seeing the interval. If it's a third, I know where the third sounds below it…it's not so much independent of it." However, her thoughts about the way she was taught intervals seemed an extreme case to fuel Karpinski's and Rogers' concerns about acontextual intervals, and also exemplified Klonoski's dilemma for perceptual vs. conceptual ordering in the music curriculum:

> I didn't learn intervals in the key signature even to begin with, like that's a relatively new thing for me to learn. I did it with using steps. I learned that in a perfect fifth there are seven steps, and a major sixth has nine steps. I learned it all very 'this is this, and this is this,' and now it all fits together, and I hated it at the beginning because it didn't fit together.

THE TONE-BUILDER

In the midst of working with these metaphors, I discussed them with a senior student whose comment suggested a "mixed metaphor," the Tone-Builder:

> Student: "I'm trying to figure out where I am right now."
> KT: "I think you are a Tonal-thinker because you sight-sing so well with syllables."
> Student: "But I think I'm changing to a Builder because of my repertoire this semester. I'm singing some Bernstein and Ives pieces that the syllables don't work for. I have to think intervals.
> KT: "Do you think the intervals from a tonal reference or purely from interval names?"
> Student: "Oh, I definitely learned them from intervals within the scale."

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That conversation provided the impetus to study students in my third-semester aural skills class for blended strategies, and also to address the hierarchical-path or different-paths question. The older students completed their auralization tasks (AT3) with few mistakes. They used multiple strategies, in some cases blended and quite refined. Most used syllables in their sight-singing, and preparation usually involved the Tonal-thinker script that Mandy described: "I look to see where *do-mi-sol*, where those three notes are, and they're kind of my anchor points and then I go off of those." Connections between scale-steps and intervals also appeared in Mandy's auralization script: "I could hear the third between *do* and *mi* and I knew the second note was a step higher than *mi*." Often students were not even aware of the merger. Cindy, for example, claimed she thought intervals rather than syllables, but when asked if she kept tonic in mind, she betrayed her own thinking, "Yes, that helps me find weird <u>intervals</u> like <u>*ti*</u>." Angel's Builder responses were, "The third note didn't go down a fourth, only a third," and another, "It only goes up a fifth," but then a Tonal-thinker response, "The last note was part of the tonic triad."

Builder strategies were mentioned more with auralization tasks than in sight-singing scripts. Judy's mostly correct AT3 responses showed both Tonal-thinker and Builder strategies: "Step motion and then I heard a sixth," and "I heard a fourth and *sol-do*." Judy indicated that she also sang more from intervals than from scale-steps. Her sight-singing showed good contour but some inaccurate pitches, indicating the need for tonal anchoring. Bill, on the other hand, seemed to use several strategies equally well on his perfect auralization task. First was a typical Builder response, "I counted the intervals," and then, "In my head sang the scale," with dots drawn between the notes to indicate the scale steps of a Tonal-thinker. Finally was his Button-pusher, or kinesthetic, perception: "I pretended I had a trumpet and played it out." His experienced musical intuition associated a sound with the way he knew to produce tone.

The Pitcher metaphor was not challenged by students in this study, for no one claimed to have AP or demonstrated AP thinking. My definition came from personal and teaching experience, discussions with my colleague, and study of relevant literature. My colleague indicated an interesting blend of AP and RP. She used Pitcher strategy for auralizing and identifying tones on the piano, but Tonal-thinker strategies for singing. Like Etta, she had learned to sing the alto line in church as a child through intervallic and

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tonal thinking. She did not know about AP until college instruction began, when it was clear by comparison with other students that her thought process was different. We speculated that her life-long congregational *a cappella* singing, often in out-of-key contexts, likely resulted in Tonal-thinker perception for vocal music, while her piano playing reinforced her AP in instrumental contexts.

Validation of the metaphors

The final stage of this study involved the 20 students who had participated in one of the previous stages and were still enrolled in music theory classes in the spring semester. Halfway through the semester, we discussed the proposed metaphors for pitch perception during a regular class period. To focus attention on their cognitive strategies, I asked them to auralize a phrase of a diatonic melody and then to write down what they were thinking. After writing their scripts the class attempted to sing the melody, and then I played it correctly on the piano. They responded with how the correct melody compared to their initial auralization. After reading the descriptions of the six metaphors, they were asked to decide which pattern or combination of patterns most accurately described their own thought process, or to suggest a different process or metaphor if they could think of a better way to describe their thinking. Finally, they indicated how their strategies had changed since college instruction began.

Students suggested no additional metaphors, and all could see their strategies in one or more of the metaphors. (Refer to Tables A1 and A2 for their self-assessments.) Except for the Pitcher, one or more of the metaphors characterized the perceptual patterns of all students in this study. They readily adopted the metaphors in subsequent discussion. Ben even quantified his own mixture of strategies: "70% Button-pusher, 10% Contour-singer, 10% Tonal-thinker, and 10% Builder." (He saw the need to develop the Tonal-thinker strategy, and increased that percentage by the end of the semester.)

Conclusions

Data indicated that each of the metaphors except the Pitcher played some role in RP development. Following an external sound had served the auralization process by informing students' musical intuition. The infusion of rudiments of notation had helped some students to perceive relationships between tones but had only led

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others to "push the right buttons" on their instruments. Noticing the contour of a melody was the introduction to auralizing for all before college, but to focus their aural image they learned to relate tones through intervals, scale-steps, or both. Most indicated a change in the direction of tonal-thinking since they had come to college. In this small-scale study the freshmen who had more accurate auralization responses used either tonal-thinking or a combination of strategies. Second-year students indicated more combinations of strategies and also identified more metaphors to describe their strategies.

The Tone-Builder combination, which recognizes intervals within a tonal framework, provided the most secure anchors in this study. Assuming this combination to be at the top of an auralization hierarchy, entry points and paths to the Tone-Builder goal appeared somewhat different for instrumentalists and vocalists. The progression for vocalists appeared to be straightforward: Follower—Contour-singer—Tonal-thinker—Tone-Builder. However, data indicated no simple linear model for instrumentalists who had learned to push buttons without learning to auralize. At some point a strong dose of tonal-thinking was necessary to move the Button-pusher from an unfocused Contour-singer strategy toward the more effective Tone-Builder combination. Solmization was the catalyst for some, but not all. That the Builder strategy alone was less accurate than the Tonal-thinker was consistent with the concern in the literature about isolated interval identification.

The small number of instrumentalists without much vocal experience in this sample provided only a limited glimpse of purely instrumental perception. Instrumentalists Sam, Molly, and Kate had learned to read primarily from visual clues (letter names or fingerings) without making effective aural connections, while Vince, Barry, Jane and Etta, all instrumentalists with choral experience as well, had successfully merged visual, kinesthetic, and aural connections. These students with both instrumental and vocal experience were ahead of those with only one type of pre-college experience. Jane's considerable early vocal experience along with her instrumental experience had established strong reading and aural connections, even without all the rudimentary labels. About computer interval assignments she stated confidently:

> I've already done all the [interval] levels for the semester. I can pick out all of that stuff. My ears have been trained for a long time but I haven't really known it. I've heard things, but I haven't known, 'that's a tritone.' I just knew what it sounded like, so when I started learning what those were, it just kind of made sense because they all had names, not just sounds.

This description of her skill development echoed the three-step, "preparation, presentation, and practice" approach to tonal patterns in Kodály methodology.[22] The sound came before the label. Her tonal memory from earlier instrumental and vocal experiences had prepared her to label the sound once it was made conscious. Then she was able to apply it to new situations. Similarly, Anna mentioned struggling to sing a song with several *do-la* (descending minor third) intervals, which were initially hard to hear, but easy to identify and sing since then in other songs.

That several students found it difficult to sight-sing the mostly stepwise melodies in tune confirmed Klonoski's admonition that aural skills instruction should address vocal production along with pitch internalization. Freshmen Jim, Molly, and Kate had to be coaxed to sing with tone strong enough for me to evaluate. They tried to judge whether their quiet singing sounded right to their intuition before they committed to singing aloud. Ben's comment about his singing only with instruments before college was interesting in this context: "As a result I really didn't have to listen all that much, and when I came here I realized how far off I was in my singing. Vocal control wasn't that good." Klonoski cited internalization of pitch as one of the most significant determinants of future success with aural skills.[23] This study also underscored the important goal for young children to "find their singing voices" and to learn to sing independently of instruments in elementary music instruction.[24] It should also stimulate instrumental teachers to incorporate singing along with rudiments of notation and to encourage auralization as they teach students to read music.

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[22] Rita Klinger, *A Guide to Lesson Planning in a Kodály Setting* (Cleveland State University, 1990), 2.

[23] Klonoski, "Teaching Pitch Internalization Processes," 95

[24] *National Standards for Arts Education and The School Music Program: A New Vision*. Music Educators National Conference. Available http://www.menc.org/publication/books/standards.htm.

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Applications for aural skills pedagogy

This effort was a valuable step in my search for effective aural skills instruction. The design of this study allowed me to analyze my students' strategies in a more structured way than in previous semesters. To other teachers I would recommend taking time for individual interviews and having students discuss or write their strategies. These are practices I plan to continue. Studying my students provided several understandings which bear on aural skills pedagogy.

The first understanding is that most students have not been expected to auralize in previous instruction. Teachers at all levels should create opportunities for students to think about the sound of notation before hearing it performed. Allowing silence for internalizing pitch before sight-singing is recommended, as is alternating the singing of one measure or phrase and auralizing the next. Mystery tunes, described previously in this article, stimulate silent hearing (and serve as a handy attendance-taking activity). Sight-singing with others may reinforce tonal patterns, but it often encourages Follower behavior, especially if the teacher sings along. Opportunity for individual singing is necessary to help students move beyond the Follower for sight-singing and beyond the unfocused Contour-singer for auralization.

A second observation is that students need encouragement to focus on specific strategies for aural tasks and sight-singing. That many music students fear ear-training is common knowledge. Intelligent students with fine performance skills far too often change degree programs because they become discouraged in music theory courses. Troubling observations in this study have been students' negative evaluations of their sight-singing. Students' initial judgments often were, "Poor," "Bad!" or "Not very good," even if they made a small mistake or tripped over a syllable. Though at first they found it hard to keep their focus on strategies and away from negative judgments, several mentioned that writing scripts nudged them to think rather than guess. Scripts can also help teachers identify students who need remediation.

A third observation involves the ineffectiveness of the Builder strategy alone in comparison with the effectiveness of the Tone-Builder merger. Intervals could be grounded in tonal function before students are expected to identify isolated intervals out of context. Because the perception of intervals (and even the intonation away

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from equal temperament) is different depending on their function in the scale, identifying intervals and tonal patterns within a given scale should precede interval-identification exercises where consecutive intervals require constant reinterpretation of tonality.

Even with the limited number of students in this study it is apparent that an effective curriculum at the college level must address students with diverse ways of knowing. Assessing the metaphors helped both my students and myself to understand RP tools. The metaphors provided a way of seeing paths to higher levels of understanding. Discussing the limitations of Button-pushing and Builder strategies provided direction and motivation to grow toward the Tone-Builder goal, which the most accurate students demonstrated in this study.

Following Klonoski's suggestion for a curriculum based on perception, teachers should plan exercises that are challenging but not developmentally inappropriate for inexperienced ears and minds. Successful students like Judy and Etta in this study had already internalized sound patterns which they were easily able to recognize and label. Other students had not defined such a storehouse of tonal patterns in their memory, though they had an intuitive sense of what sounded right or wrong. In the past I have been too quick to apply syllables to notation before students had connected them with sound apart from notation. The perceptual way to make this connection would be to hear sound patterns with tonal relationships, label them with *solfège* or numbers by ear, and then discover how the patterns are notated. Figuring *solfège* or numbers for familiar tunes by ear is one way to promote dependence on sound, rather than notation, for determining function. In essence this is the process for melodic dictation, that most dreaded of all activities for students. If the teacher plays or sings melodic fragments with neutral syllables for students to echo with syllables or numbers, students will begin to hear function away from the complexities of staff notation. To exercise auralization in a similar way, the teacher can "sign" the pitches with Curwen hand signs or *Scalesthenics* body motions for students to sing. These signs for sound can then be transferred easily to the staff. At the college level, the process can be taught quickly and efficiently, giving students the vital sound-to-symbol connection that even experienced Button-pushers and Pitchers might not have grasped in previous instruction.

Several issues surfaced concerning solmization, leaving me with more questions than answers about its role. Certainly it has great

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value in introducing tonal function, but for sight-singing, students in this study resisted using tonal syllables for a variety of reasons. Eight of the fifteen freshman participants had sung tonal syllables before college, yet several chose not to use them for their sight-singing here. Sally lazily preferred staying at the Follower stage because she liked singing "by ear:" "It's just easier for me just to do a *doo doo*… and if I don't know a song, I *doo doo* it, and I can find things easy like that." Aside from laziness, several students blamed insecurity in using the syllables. When I asked Judy to try again with syllables after an inaccurate sight-singing attempt, she was surprised at how readily she could stay within the key: "It does help me a lot. I'm just always afraid to do it because I can't think the syllables fast enough when I'm going down or when I have to skip." I also found it common for students to sing the wrong syllable on the right pitch. Sometimes they did not even realize it, but other times the wrong syllables subsequently made them stumble even though pitches were correct. In that respect Barry liked using numbers more than syllables: "Maybe that's because of all the math I had. It's easier to think in numbers, especially when the notes go down."

Other solmization questions need to be studied more seriously. What is its appropriate developmental role in relation to the rudiments of notation? I expressed astonishment at Jane's correct tonal syllables after she had no more than a quick introduction to them. She responded: "Well I'm not [good with syllables], but when I can look at it and say the G is *do* and stay in the five-to-six note range, B is *mi*, and I can just memorize that every C is going to be *fa*, … I just kind of memorized it real quick." Since she had already internalized the pitch through letter names, she was not using tonal syllables as a tool to auralize. When does solmization become overly cumbersome or unnecessary for those who learn to auralize with syllables? Other questions would be interesting to pursue as well. Do we really need the syllables other than for the tonic triad, since all other pitches fall only a step or half-step away? In that regard, Rogers has promoted the Jersild approach for sight-

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[25] Michael Rogers, "The Jersild approach: A Sightsinging Method from Denmark," *College Music Symposium* 36 (1996): 149-169.

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singing, which suggested tendency and resolution patterns based on the tonic triad, because they "reinforce tonal bearings."[25] When can syllables or numbers eventually fade into the background for musicians with good RP skills, allowing them simply to think in sound?

IMPLICATIONS FOR FUTURE RESEARCH

More research is definitely warranted to understand best practices for solmization systems. Additional research with more subjects is also encouraged to validate these metaphors and possibly to probe for other strategies. More difficult aural tasks and perspectives from more experienced musicians might provide additional metaphors for higher levels of cognition. One student's high school experience with *Scalesthenics* led me to look for information on this method.[26] My students and I have found its tonal imagery compelling. The kinesthetic references to tonal tension have been helpful for internalizing pitch. I would like to experiment further with this approach as an introduction to tonal-thinking. Finally, I recommend that teachers study their students' ways of knowing, especially those with different experiences and perceptions from our own. I have indeed learned from my students' perspectives about thinking in sound and anticipate continuing this kind of qualitative analysis.

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[26] Milford's "Scalesthenics" method is described on-line (http://www.scalesthenics.com).

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APPENDIX A1

Table A1. Freshman participants

Major instrument	Pre-college experience		Solmization	Aural task scores	Self-assessed metaphor(s)	
voice	P, V	B, C	movable-*do*	yes	Tt	Tt
bassoon	—	B, C	numbers	yes	F/Cs	Cs
voice	V	B, C	movable-*do*	yes	Tt	Tt
voice	V	C	movable-*do*	no	**	**
cello	—	O	none	no *	**	**
voice	—	C	none	yes	F	Cs
voice	P	C	movable-*do*	yes	**	**

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APPENDIX A2

Table A2. Participants from third-semester aural skills class

	Major instrument	Pre-college experience		Solmization	Aural task score AT3	Self-assessed metaphor(s)	
Bill	voice	P, V	C	movable-*do*	yes	10/11	Tt F↑	Tt
	trumpet/trombone	I	B, C	movable-*do*	yes	11/11	Bp/B	Cs/B
	bone	P	B	none mov.-*do*,	yes	8/11	F/Bp	Tt/B
	voice	P, V	C	num.	yes	11/11	Bp/Tt	Tt/B

Appendix B

Metaphors for Pitch Perception

The Follower

Followers usually follow another singer or an instrument to sing unfamiliar music accurately; they do not fully depend on the music notation even while looking at it. Followers are quite adept at making instinctive split-second adjustments to match a stronger singer or an instrumental accompaniment.

The Button-pusher

Button-pushers readily recognize pitch names or associate pitches with fingerings as they play melodies on an instrument, but may have difficulty imagining how the notes will sound *before* they play. From musical experience Button-pushers usually can tell intuitively if they play or sing a wrong note *after* it sounds. Button-pushers may visualize a keyboard or pretend to use their fingers to play a melody on an instrument to help them internalize pitch.

The Contour-singer

Contour-singers know to move their voices up or down with the notes on the staff, but scale steps and skips range from approximate to inconsistently accurate and sometimes do not stay within the key. Contour-singers may sense that their tones do not match the notes after they sing them, but may or may not have a good sense of where the tonic pitch is, either aurally or visually. Some may try to anchor their singing by comparison with a reference pitch that is prominent in the melody.

The Tonal-thinker

Tonal-thinkers usually prepare to sight-sing by thinking through the scale or the tonic triad. They recognize the tones of the tonic triad while they are singing and relate other pitches to these tonal anchors. Tonal-thinkers hear larger intervals by thinking of tendencies and tonal function rather than thinking about the size of an interval. Most Tonal-thinkers learned to internalize pitch with

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movable-do syllables or numbers, or they know how to spell scales so well that they are able to think through the letter names within a key.

The Builder

Builders measure intervals from one pitch to the next, or to another pitch in close proximity. They recognize isolated intervals and note names, i.e., in the key of A, they might see A to E, and think, "perfect 5th" rather than "do-so." They sight sing primarily by thinking about the size of the interval, not about how the next tone functions in the scale. Builders may have a good sense of tonic but may not always use it to guide them. If they miss one interval in singing or dictation, they will likely miss several pitches because they are relating to a previous pitch, rather than to an overall sense of key.

The Pitcher

Pitchers have absolute pitch recall. Their target is a sound associated with the letter name in their memory. Pitchers do not need to use tonal syllables, functional relationships, or intervals to sight-sing or internalize pitch in the key in which it is written, but find it difficult to read and sing music in a key other than the notation indicates. They also find it difficult to play an instrument tuned as much as one half-step sharp or flat. In coping with out-of-key contexts they must learn to transpose through intervallic reasoning or tonal thinking.

Appendix C

Examples from AT1 and AT2: For each four-measure set, circle the measure that is played. (Additional instructions for AT2: Write what you heard that made you decide the answer.)

Examples from AT 3: For each three-measure set, circle which of the two examples is played, or if neither is correct, notate what you heard in the third measure. (The given note is notated correctly.) Below each example, write what you heard that made you decide the answer.

Sight-singing task: Prepare to sing the melody below.

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Read the descriptions of the metaphors for music reading strategies.

a) Do any of the metaphors describe the way you usually **sight-read** music on an instrument?

b) Do any of the metaphors describe the way you approach **sight-singing** or **auralizing**?

c) Is there a different or better way you might describe you thought process?

d) How have your strategies changed since you began college instruction?

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Music Theory and the Liberal Arts□

Theodore K. Matthews

Music theory, as an academic discipline, exists in distinctly different environments at liberal arts institutions and schools of music. This study attempts to profile both kinds of institutions in order to compare how their different environments may affect the teaching of music theory. The study focuses primarily on music theory programs in small private liberal arts colleges insofar as the study began, partly, as an attempt to explore the readiness of their graduates to compete with graduates of conservatories either in graduate programs or in other professional pursuits. While music theory programs remain the primary topic, the study also examines briefly music history offerings and general requirements as a way to explore the respective environments more comprehensively.

Web searches provided information concerning conservatories for this study. Both web searches and an e-mail survey provided data concerning liberal arts institutions insofar as they remain the primary focus of the study. The survey, which asked questions about general requirements as well as theory programs, was submitted to fifty-five small, private liberal arts colleges during the summer of 2003. Thirteen colleges responded and data provided by them supplemented information acquired by means of web searches.

Before proceeding to the results of these searches, however, some general observations of how liberal arts institutions compare with conservatories may prove to be instructive. Most observations are the author's, and it was also, to a certain extent, his contemplation of them that led to this study. Hopefully, they provide some insight into the alternative environments. In general, the information gathered by the various searches supports the observations.

The first observation has to do with the kind of student who applies for admission to either kind of institution. Students who apply to a school of music generally aspire to a professional career in music. Conservatories exist to prepare students for such an eventuality, and their curriculum is so designed. Fewer students applying to small, private liberal arts colleges enter with the assumption that they will become professionals in music. Many students entering liberal arts institutions do not have a clear sense of

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what they want their future professional life to be, and they proceed on the assumption that they will find their path as they study. Other students change their professional aspirations once exposed to the variety of academic pursuits that liberal arts institutions require of them. Many students know, and accept, that their chosen major will have little, if anything, to do with their future professional life. Liberal arts institutions may recognize their responsibility to prepare students for life and a professional future, but they do not consider their programs to be vocational. Their music curricula do not presume that all music majors aspire to a professional career in music. Many students elect music as a major program of study out of academic interest only, and any liberal arts institution must respect the interests of these students as well as those who may choose to pursue music professionally.

Some students at liberal arts institutions declare music as a major in their first year, but, typically, they do not need to declare a major until their junior year, and many students wait that long. The music programs must, therefore, be flexible enough to accommodate students who choose to begin their music studies in their first year as well as students who choose not to begin their music studies in their first year. The programs must also be able to accommodate students who may begin their music studies in their first year but choose to experiment with other disciplines before returning later to music as a major course of study. Flexibility of this sort is not typical of conservatories.

Music programs at liberal arts institutions also recognize that they exist as only one of the humanities under the broader umbrella of the liberal arts. Many music courses, especially at the beginning level, serve as electives for non-majors as well as aspiring majors. Whereas prerequisite courses are common, barrier exams are not all that common, and students who will not major in music may also elect upper-level courses. Music professors, theory professors included, have, therefore, an obligation to maintain a perspective on the subject matter that recognizes its context within liberal studies, and they certainly need to recognize that the academic interests of their students are diverse and that only some of them may have professional aspirations in music. No matter how the institution chooses to accommodate this diversity, however, the instruction must be solid enough to serve the needs of those students who may aspire to music professions.

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Schools of music generally offer a varied menu of music degrees. They may offer incidentally an AB degree with a concentration in music, but their focus remains clearly on the professional degree, and all students take the same theory courses. Liberal arts institutions, in general, do not offer any music degrees. They offer only the Bachelor of Arts degree which may allow for a major concentration in music. The balance of music courses as opposed to non-music courses, consequently, differs for each type of institution. All conservatories require studies outside of music, although they generally do not refer to these studies as the "liberal arts" component of their curriculum. They usually refer to them either as their General Education or their Core Curriculum requirement. This requirement, for music school students, is, on average, about half of that required of liberal arts students. Conversely, therefore, the number of semester hours devoted to music studies in liberal arts institutions can be half of those available to music school students. In other words, music courses comprise most of the curriculum in conservatories whereas non-music courses comprise most of the curriculum in liberal arts institutions where music majors are concerned. Since liberal arts institutions offer fewer courses within their major disciplines, the theory programs within music major programs must generally accommodate satisfactory amounts of material over shorter periods of time.

It is clear also that the balance of academic courses, as opposed to applied courses, differs for each kind of institution. For the purposes of this study, the adjective "academic" refers to courses where students acquire their learning primarily through reading or writing or a combination of both. The adjective "applied" refers to courses where instruction focuses primarily on skill development. This study recognizes all music theory courses as academic courses. However, for the beginning theory sequence that all schools require, this study explored also the relative balance of academic and applied theory (i.e., the part devoted to aural and keyboard skills).

Schools of music, in general, require fewer academic courses than do liberal arts institutions. Students within the conservatory will, on average, take three academic courses per semester including both music and non-music courses with most of the rest of their work devoted to applied instruction. Liberal arts students, on the other hand, typically take four and, sometimes, five academic courses including both music and non-music courses. Applied instruction

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at liberal arts institutions often adds hours beyond what would be a normal academic load for students who do not major in music. It is not unusual for some applied activities to be offered without credit, and all of this is consistent with the academic emphasis of liberal arts programs.

Liberal arts institutions tend also to approach applied theory differently than do schools of music. Aural and keyboard skills have an important place within the introductory theory sequence, normally referred to as Theory 1, 2, 3, etc., of both kinds of institutions. Instructors at liberal arts institutions, however, most often integrate applied theory into the courses of the introductory academic theory sequence. They partition class time devoted to skill development as they see fit. Music schools more commonly parcel out aural and keyboard skills into separate courses thus regulating more precisely the amount of time devoted to them. Also, class time devoted to applied theory tends to be higher in professional schools than in liberal arts institutions.

The balance of historical as opposed to theoretical courses within programs of music also varies depending on the kind of institution a student attends. Liberal arts institutions, in general, tend to value a balanced approach to historical as opposed to theoretical studies. Music schools, on the other hand, appear to place a higher value on theoretical studies when one compares the number of hours required in each discipline. The number of credit hours required in historical studies tends to be much lower than those required in theoretical studies.

EXAMPLE 1

The general observations above provide a context for the information gathered for this study. Example 1 contains information gathered by means of a web search of ten randomly selected schools of music. For reasons of consistency, the example represents all academic credit as semester hours for all institutions even if they function with quarter or unit credits. Performance degree programs provided the models for comparison, but the core theory requirements, in most cases, were the same for all degree programs at each institution.

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Example 1: Music School Statistics

1. **Boston University School of Music:**
   General Ed. Req.: 30 hrs (23% of 132 required for graduation)
   Theory Req.: 6 semesters for 22 hrs. (6 hrs. are in applied theory courses
   for 50% of first four semesters)
   Music History Req.: 12 hrs. (55% of theory req.)
2. **University of Cincinnati College-Conservatory of Music:**
   General Ed. Req.: 18 sem. hrs. (13.4% of 134 required for graduation)
   Theory Req.: 2 yr. intro. for 16 semester hrs. (4 hrs. are in applied theory
   courses for 25% of the total) plus Form and Orchestration for additional
   6.6 sem. hrs. - Music History Req.: 8 sem. hrs. (35% of theory req.)
3. **University of Colorado School of Music:**
   General Ed. Req.: 30 hrs. (24% of 123 required for graduation)Theory
   Req.: 4 semesters for 16 hrs. (8 hrs. are in applied theory courses for
   50% of the total) plus two electives for an additional 6 hrs. - Music
   History Req.: 12 hrs. (54% of theory req.)
4. **University of Georgia School of Music:**
   General Ed. Req.: 42 hrs. (35% of 120 required for graduation)
   Theory Req.: 4 semesters for 16 hrs (4 hrs. are in applied theory courses
   for 25% of the total) plus two electives for an additional 6 hrs. - Music
   History Req.: 9 hrs. (41% of theory req.)
5. **University of Illinois School of Music:**
   General Ed. Req.: 43 hrs. (33% of 130 required for graduation)
   65% of total) plus two courses for an additional 6 hrs. Theory Req.:
   4 semesters for 23 hrs. (15 hrs. are in applied music courses for -
   Music History Req.: 12 hrs (40% of theory req.)
6. **Indiana University School of Music:**
   General Ed. Req.: 24 hrs. (20% of 120 required for graduation)
   Theory Req.: 5 semesters for 19 hrs (4 hrs. are in applied theory courses
   for 25% of first four semesters) plus one elective for an additional 3 hrs.-
   Music History Req.: 8 hrs. (40% of theory req.)
7. **University of Louisville School of Music:**
   General Ed. Req.: 34 hrs. (26% of 133 required for graduation)
   Theory Req.: 4 semesters for 16 hrs. (no separate applied courses) plus 2
   electives for an additional 8 hrs. - Music History Req.: 12 hrs (50% if
   theory req.)
8. **University of Michigan School of Music:**
   General Ed. Req.: 30 hrs. (25% of 120 required for graduation)
   Theory Req.: 4 semesters for 16 hrs. (4 hrs. are in applied music courses
   for 25% of the total) plus one elective for an additional 3 hrs. - Music
   History Req.: 12 hrs. (63% of theory req.)

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9. **Northwestern University School of Music:**
   General Ed. Req.: 48 sem. hrs. (36% of 132 required for graduation)
   Theory Req.: 4 semesters for 20 hrs. (12 hrs. are in applied theory
   courses for 60% of the total) - Music History Req.: 16 sem. hrs. (80%
   of theory req.)
10. **Wheaton Conservatory:**
   General Ed. Req.: 34 hrs (27% of 125 required for graduation)
   Theory Req. 5 semesters for 15 hrs. (5 hrs. are in applied theory
   courses for 33% of the total) History Req.: 17-18 hrs. (20% more than
   theory req.)

The programs of these institutions were searched primarily for the answers to three questions: 1) What are the General Education requirements of each institution and what percentage does that requirement represent of the hours required for graduation? 2) How much music theory does each school require of all students and, of that requirement, how much is applied theory? 3) How much music history do the programs require and how does that compare to the measure of theory requirements.

Northwestern and Cincinnati represent two extremes where general education requirements are concerned. Northwestern requires that 36% of the hours it requires for graduation be in general education. No other institution in this study required as high a percentage. Cincinnati, by contrast, requires that only 13.4% of the hours required for graduation be devoted to general education. That proved to be the smallest proportion of all of the institutions in this study. On average, the institutions explored here require that 29.9% of their academic credit be devoted to general education coursework.

The numbers clearly indicate that conservatories, in general, require fewer academic hours in music history than they do in music theory. Only Wheaton Conservatory, in this study, requires more hours in music history (i.e. 20% more) than music theory. Northwestern also was high in its music history requirement insofar as the number of hours required there represent 80% of those required in music theory. The average number of hours required in music history at these ten music schools represents 58% of those required in music theory. The percentage of hours required in music history as compared to those required in music theory reduces to 40% if Wheaton and Northwestern are not part of the calculation. Most conservatories, therefore, require students to devote less than half the number of hours they require in music theory to music

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history.

All of the conservatories in this study required a least a four-semester introductory sequence in music theory. Most of these institutions listed applied theory as separate courses taken as co-requisites with the required introductory sequence. Only The University of Louisville School of Music did not. The academic credit for the applied courses represented from 25% to 66% of the total academic credit allotted to the introductory courses. Four of these institutions (Northwestern, University of Illinois, University of Colorado and Boston University) required that 50% or more of the academic credit during the introductory sequence be devoted to applied theory. The average number of semester hours devoted to applied theory for the ten institutions in this study represent 40% of the average total for the introductory sequences in music theory.

All but one of these institutions require one or two additional semesters of theory instruction beyond the initial four. Only Northwestern did not. Most programs require an additional two for a total of six semesters required of all students pursuing a music degree. The additional courses may be prescribed, or they may be elected from required options such as Form and Analysis, Orchestration, Counterpoint and Composition. The average number of semesters required in music theory at these institutions is 5.8.

Example 2

Example 2 contains information about liberal arts institutions that was gathered by web searches and a survey. Again, for reasons of consistency, the example presents all academic credit for all institutions as semester hours even if they function with quarter or unit credits. The thirteen institutions represented here are small having undergraduate enrollments ranging from 800 (Hollins College) to 2200 (Colgate and Middlebury). All offer a Bachelor of Arts degree with a major in music. None offers a music degree.

1. Agnes Scott College (1000 undergraduates)
Min. and max. sem. hrs in a major: 32 and 52 (25%-40% of 130 req. for graduation) Theory Req.: 3 semesters for 12 hrs. (40% of class time devoted to applied theory) - Music History Req.: 4 semesters for 16 hrs. (133% of theory requirement)

2. Centre College (1000 undergraduates)
Min and max. sem. hrs. in a major: 41 and 42 (37%-38% of 111 req. for graduation) - Theory Req.: 3 semesters for 12 hrs. (25% of class time devoted to applied theory) - Music History Req.: 1 semester for 4 hrs. (33% of theory requirement)

3. Colgate (2200 undergraduates)
Min. and max. sem. hrs. in a major: 36 and 72 (28%-56% of 128 req. for graduation) - Theory Req.: 2 semesters for 8 hrs (25% of class time devoted to applied theory) - Music History Req.: 2 semesters for 8 hrs. (100% of theory requirement)

4. Connecticut College (1800 undergraduates)
Min. and max. sem. hrs. in a major: 32 and 64 (25%-50% of 128 req, for graduation) - Theory Req.: 5 semesters for 20 hrs. (40% of class time devoted to applied theory) - Music History Req.: 4 semesters for 16 hrs (80% of theory requirement)

5. Davidson College (1600 undergraduates)
Min. and max. sem. hrs. in a major: 30 and 60 (23%-47% of 128 req. for graduation) - Theory Req.: 3 semesters for 9 hrs. (0% of class time devoted to applied theory) - Music History Req.: 4 semesters for 12 hrs. (133% of theory requirement)

6. Earlham College (1200 undergraduates)
Min. and max. sem. hrs. in a major: 34 and 58 (28%-48% of 122 req. for graduation) - Theory Req.: 3 semesters for 9 hrs. (10% of class time devoted to applied theory) - Music History Req.: 4 semesters for 12 hrs (133% of theory requirement)

7. Franklin and Marshall (1860 undergraduates)
Min. and max. sem. hrs. in a major: 40 and 56 (31%-44% of 128 req. for graduation) - Theory Req.: 4 semesters for 20 hrs. (4 hrs. in applied theory courses during first two semesters for 33% of class time) - Music History Req.: 3 semesters for 12 hrs. (60% of theory requirement)

8. Grinnell College (1400 undergraduates)
Min. and max. sem. hrs. in a major: 32 and 48 (26%-39% of 124 req. for graduation) - Theory Req.: 2 semesters for 10 hrs. (2 hrs. in applied theory for 20% of the total) - Music History Req.: 3 semesters for 12 hrs. (120% of theory requirement)

9. Hollins College (800 undergraduates)
Min. and max. sem. hrs. in a major: 32 and 52 (25%-41% of 128 req. for graduation) - Theory Req.: 4 semesters for 16 hrs. (15% of class time devoted to applied theory) - Music History Req.: 2 semesters for 8 hrs. (50% of theory requirement)

10. Macalester College (1800 undergraduates)
Min. and max. sem. hrs. in a major: 44 and 60 (34%-47% of 128 req. for graduation) - Theory Req.: 4 semesters for 16 hrs. (25% of class time devoted to applied theory) - Music History Req.: 4 semesters for 16 hrs. (100% of theory requirement)

11. Middlebury College (2200 undergraduates)
Min and max. sem. hrs. in a major: 40 and 72 (28%-50% of 144 req. for graduation) - Theory Req.: 4 semesters for 16 hrs. (30% of class time devoted to applied theory) - Music History Req.: 3 semesters for 12 hrs. (75% of theory requirement)

12. Mount Holyoke College (2100 undergraduates)
Min. and max. sem. hrs. in a major: 32 and 68 (25%-53% of 128 req. for graduation) - Theory Req.: 4 semesters for 16 hrs. (25% of class time devoted to applied theory) - Music History Req.: 3 semesters for 12 hrs. (75% of theory requirement)

13. Swarthmore (1350 undergraduates)
Min. and max. sem. hrs in a major: 40 and 48 (31%-38% of 128 req. for graduation) - Theory Req.: 5 semesters for 20 hrs. (33% of class time devoted to applied theory for first four semesters) - Music History Req.: 4 semesters for 16 hrs. (80% of theory requirement)

The average number of semester hours required for graduation at these thirteen institutions is 127.3 which is not significantly different than the average 126.5 hours required at the ten conservatories listed in Example 1. However, the average minimum number of hours students must take in a major discipline represents 28.1% of the average number of hours required to graduate, and the average maximum number of hours that students can take in a major discipline represents 44.8% of the average number of hours required for graduation. Students may, therefore, spend anywhere between 71.9% and 55.2% of their semester hours in coursework outside of their major as compared to conservatory students who must take, on average, only 29.9% of their semester hours in coursework outside of their major. The curricula for music majors at liberal arts institutions generally require that students take more than the minimum hours required. Even if the students take the maximum number of hours available in their major, the average (44.8% of their academic hours) that that would represent is significantly less than the average (70.1%) that students of music schools may take in courses within their major discipline of music.

The number of semesters required in music theory at these thirteen liberal arts institutions ranges from two (Colgate and Grinnell) to five (Connecticut and Swarthmore). Students at Grinnell, however, may, in lieu of a second semester of harmonic theory, elect Form

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and Analysis, Composition or Electronic Music as their second semester of required theory. Presumably, therefore, some students could have only a one-semester introduction to the basic principles of harmonic theory. Five of the remaining institutions require four semesters of music theory and four require only three. The average number of semesters required at these institutions is, therefore, 3.5, which represents only 60% of the average 5.8 semesters required at schools of music.

The average number of semester hours required in music theory at these thirteen liberal arts institutions was 14.2. The average number of semester hours required in music theory at the ten conservatories in this study was 21.8. Liberal arts institutions, therefore, require, on average, only 65% of the average number of hours required at schools of music. Whether computed by semesters or by semester hours, therefore, liberal arts students spend less than two-thirds of their time studying music theory when compared to their conservatory counterparts.

Only Franklin and Marshall and Swarthmore offer applied theory in courses that are listed separately from their academic theory courses. All others teach applied theory as an integral part of their academic theory courses, although most isolate the time devoted to aural and keyboard skills as laboratory time. The amount of class time devoted to applied theory skills, according to the survey responses, ranges from 0% (Davidson) and 40% (Agnes Scott and Connecticut College). The average percentage of class time devoted to applied theory is 24.7%. The average improves to 26.8% if the calculation does not include the response from Davidson. (The survey response from Davidson of 0% of class time devoted to aural skills was interesting insofar as its web site lists two semesters of aural skills for no credit.) Either way, the percentage of class time devoted to applied skills represents less than that of music schools which devote an average 40% of academic credit for their introductory sequence to applied theory. The class time devoted to aural and keyboard skills at liberal arts institutions would represent an average of approximately three semester hours (24.7% of the average twelve hours of required theory). The average number of hours at music schools devoted to aural and keyboard skills, by contrast, appears to be approximately 8.7 (40% of the average 21.8 hours of required theory). Overall, therefore, students in liberal arts institutions spend, on average, less than half the amount of time that conservatory students spend on applied theory skills.

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The number of semester hours required in music history at these thirteen liberal arts colleges ranges from four (Centre College) to sixteen (Agnes Scott, Connecticut, Macalester and Swarthmore) which represents from 33% to 133% of the hours required in music theory. Only three institutions (Centre, Franklin and Marshall, and Hollins) required in music history less than 75% of what they required in music theory. The average number of hours required in music history for the other nine is 14.7 as compared to an average 15.1 hours in music theory (97.4% of the hours required in music theory—roughly equal). The average number of hours required in music history for all thirteen institutions was twelve, which compares favorably with the number of hours required at music schools where the average was 11.8 hours. At the liberal arts institutions, those twelve hours represent 85% of the overall average of 14.2 hours required in music theory. The average of 11.8 hours at the conservatory, however, represents only 54% of the average of 21.8 hours required in music theory. While the amount of time devoted to music history may equate roughly at both kinds of institutions, it does appear that music schools require approximately half in music history what they require in music theory, and liberal arts institutions appear to favor, generally, a somewhat more balanced approach to the two disciplines.

Responses to the questions in the e-mail survey that inquired about the respective theory programs support the observations and conclusions above. Many of the survey questions, however, addressed issues other than those mentioned above. What follows are brief analysis of responses to some of those questions.

EXAMPLE 3

Questions one and two in Example 3 were asked in an attempt to probe somewhat the academic content in the courses that are a part of the required theory sequences. The responses to question one indicate that instructors spend slightly more time overall teaching part-writing skills than they do analytical skills. It is probable that the same balance exists in conservatories. All respondents indicated that they believed themselves to be primarily traditional in their approach to the subject matter as defined in question two. However, six of the thirteen institutions indicated that they believed that composition exercises not based on traditional principles of part-writing fell outside of the definition, and they entered composition

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in the "other" column of question one as an important component of their program. Two institutions, Earlham and Centre, indicated that world music and popular music topics stood outside tradition as important components of their theory program. In spite of the overwhelming assertion on the part of the respondents that they consider themselves to be traditionalists, it appears as if some experimentation does take place, especially in the arena of "free" composition.

Example 3: Content within the Required Sequence

1. On average, what percentage of instruction time does your department devote to the development of analytical or part-writing skills in your required theory sequence?
   > Analytical skills:
   > Part-writing skills:
   > Other:
2. Do you consider the instruction in your required theory sequence to be primarily "traditional" (i.e. primarily devoted to tonal theory emphasizing part-writing, aural and analysis skills with some post-tonal theory introduced mostly near the end)?
3. Does your department introduce elements of reductive analysis in its required theory sequence? If so, do you consider it to be:
   a. Fundamental to the subject matter?
   b. Incidental to the subject matter?
4. Does your department introduce set theory into its required theory sequence? If so, do you consider it to be:
   a. Fundamental to the subject matter?
   b. Incidental to the subject matter?

Questions three and four of Example 3 represent an attempt to probe more deeply into the collective perception of traditional instruction. All but one of the thirteen respondents (91%) indicated that they introduced principles of reductive analysis into the subject matter of their beginning theory courses, and all but two of those believed them to be fundamental to their teaching of tonal theory. Nine of the respondents (69%) indicated, in question four, that they introduced set theory into their required theory sequence, and two of those indicated that it was fundamental to their theory program. The others believed it to be fundamental only to the teaching of some post-tonal music. In all probability, these statistics would have been dramatically lower just thirty years ago. Despite the prevailing sentiment of traditionalism, therefore, it appears as if the collective notion as to what constitutes tradition is evolving.

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Example 4: Courses Outside of the Required Sequence

1. Does your department offer for undergraduates a semester-long course (or more) in post-tonal theory that is independent of the required sequence? If so, is it an elective only or do you require it of some majors? How many hours of academic credit does it offer?
2. Does your department offer for undergraduates a semester-long course (or more) in formal analysis that is independent of your required sequence? If so, is it an elective only or do you require it of some majors? How many hours of academic credit does it offer?
3. Does your department offer for undergraduates a semester-long course (or more) in orchestration that is independent of the required sequence? If so, is it an elective only or do you require it of some majors? How many hours of academic credit does it offer?
4. Please itemize any other upper-level theory electives that your department offers:

The questions in Example 4 ask about departmental offerings outside of a required introductory sequence. The survey asked specifically about upper-level courses in Post-Tonal Theory, Form, and Orchestration in questions one, two and three. Only three (Grinnell, Franklin and Marshall, and Mt. Holyoke) of the respondents (23%) indicated that they have an upper-level course in post-tonal theory, and only one of those (Mt. Holyoke) indicated that it was required of all music majors. Similarly, only three of the respondents (Agnes Scott, Colgate, and Grinnell) indicated that they offer an upper-level course in the analysis of form. None of those require it, but all indicated that it was a required option for some music majors. Most respondents indicated that they believe that topics related to post-tonal theory and form were covered adequately in their required introductory sequence. Nine of the institutions (69%) offer Orchestration, but only Agnes Scott considered it to be a required option for some majors. In response to item four of Example 4, five institutions (38%) indicated that they offer Composition as an upper level elective. Only three respondents (Davidson, Grinnell, and Franklin and Marshall) indicated that they offer Counterpoint, and, similarly, only three (Grinnell, Earlham, and Agnes Scott) indicated that they offer Electronic Music as an elective. Only one institution, Grinnell, offers all of these options. Overall, opportunities for upper-level instruction in theoretical topics appear to be more limited than at most schools of music where the topics mentioned here are not only more likely to be available but also more likely, especially in the case of form and

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orchestration, to be required.

Example 5: Environment and Potential

1. Approximately, how many liberal arts undergraduates studying within your department have declared music as their major discipline?

    Approximately, what percentage of the students taking classes within your department does that represent?

2. Within the past five years, how many of your graduates do you know of that have chosen to:
    a) Pursue graduate studies in music?
    b) Pursue professional careers in music?

The questions in Example 5 represent an attempt to gain insight into the instructional environment for music in liberal arts institutions and into the potential of their graduates. The responses to question one indicate that these institutions may have anywhere between eight (Swarthmore) and thirty-five (Connecticut) declared music majors at any one time. The average was nineteen music majors. Seven of the respondents (54%) indicated that they believe that music majors represented less than 10% of the students they teach. The rest indicated that they believe music majors represented 10% to 20% of the students they teach. In stark contrast with conservatories, it is clear, therefore, that the vast majority of students matriculating in the music departments of liberal arts institutions are non-music majors. Nevertheless, five of the respondents (38%) submitted numbers indicating that some 20% to 30% of their music major graduates do proceed on to graduate programs or to other professional careers in music. The other institutions offered smaller statistics, but, whatever the number, it appears, based on these responses, that the programs are, as they exist, capable of producing successful professionals.

A clear and consistent image did not emerge from this study concerning the relative preparedness of liberal arts graduates and their potential to compete equally with their music school counterparts in graduate studies or other professional pursuits. The data suggest clearly that music school students have an advantage in applied disciplines, including applied theory, insofar as they spend more time with those disciplines. The advantage may diminish somewhat where academic theory is concerned. Preliminary data suggest that liberal arts students may spend, on average, more class

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time during the course of a semester addressing issues of academic theory than their professional school counterparts during the introductory sequence. However, they also spend, on average, fewer semesters with it. Liberal arts students may have an advantage when it comes to historical studies insofar as they spend, on average, an equal or greater amount of time in them in an atmosphere that is more comprehensively academic. Liberal arts students, in general, may not have as many opportunities to experience instruction in upper-level theory courses, but, presumably, those students who are serious about pursuing graduate studies do take whatever is available to them, and they should be competently prepared to access whatever they may need. It appears, from the survey responses, that significant numbers of students trained in liberal arts institutions do succeed in graduate school as well as in other professional pursuits.

This study is, admittedly, incomplete. Web searches of institutions that did not respond to the survey suggest that the percentages emerging in the responses from those that did are representative. However, a pool of hard data from more than thirteen institutions will be needed to confirm that assertion. Questions addressing the content of liberal arts theory programs were not submitted to conservatories as well, and valid assessments of the relative degree of preparation of liberal arts students would require that those questions be asked. Syllabi need to be compared, and class time devoted to various topics ought to be contrasted. Alternative pedagogical approaches may compensate for the smaller amount of time required in the study of music theory at liberal arts institutions. It is not clear from this study whether that is, or is not, the case. Also, case studies of the graduates of both kinds of institutions and their success, or lack of same, in graduate programs or other professional pursuits would shed much light on student preparation. Researchers should, of course, continue to assess the contribution that the study of music theory makes to the success, or lack of it, encountered by students from all kinds of institutions. This study was limited to inquiries of small private liberal arts institutions and conservatories, but it could be instructive as well to examine theory programs as they exist in large liberal arts institutions.

One observation emerges, however, that may require some attention by liberal arts institutions collectively. The variation in the introductory theory requirements revealed in this study of liberal

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arts programs was surprising and somewhat disconcerting. A degree of variation should probably exist between the programs of all institution. All conservatories, however, seem to agree that it takes a minimum of four semesters to introduce their students adequately to the discipline of music theory, and most of them require upper-level courses in addition to the introductory sequence. The variation of one to five semesters for an introductory sequence without additional requirements, such as this study revealed in liberal arts programs, leads to a mixed image as to the relative preparedness of liberal arts graduates in music theory. Perhaps conversations ought to take place within the liberal arts community concerning a basic minimum standard where music theory is concerned. As far as this author is concerned, let the studies and the conversations proceed.

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The New Music Theory Curriculum in Texas Public Colleges and Universities: Causes, Components, and Challenges

Teresa Davidian

Over the last decade an increasing amount of attention has been paid to transfer procedures for students in higher education.[1] According to a report issued by the U.S. Education Commission in 2001, 40 states now have cooperative agreements between different colleges and universities, and 30 states have legislation aiming to provide a streamlined transfer of courses.[2] Statewide agreements vary considerably, but they are commonly formulated on a course-by-course, department-to-department, or institution-to-institution basis. All, however, have the same overarching goal: to help students transfer as smoothly as possible, not only from a community college to a four-year institution, but also between four-year institutions. Such statewide articulation policies are important, since they affect a large portion of the student population. Recent statistics suggest that students tend to move about in higher education. Nationally, more than 50% of postsecondary students are enrolled in two-year community colleges.[3] Furthermore, approximately 60% of all students have attended multiple institutions.[4] Without articulation policies in place, many transfer students would fall through the cracks. Some might end up repeating courses, thereby spending more time and money to obtain a baccalaureate degree. Other transfer students would never complete their undergraduate education.

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[1] A version of this paper was presented at the Twenty-Sixth Annual Meeting of the Society of Music Theory (Madison, 2003).

[2] Education Commission of the United States, "Transfer and Articulation Policies," 2 February 2001, <http://www.ecs.org/ecsmain.asp?page=/html/IssuesPS.asp> (6 March 2004). In the present paper, the term *college* refers to a two-year institution of higher education, while the term *university* is defined as a four-year institution of higher education. Both terms are invoked in state documents and are retained here for the sake of consistency. See, for example, Texas Coordinating Board of Higher Education, "Transfer Issues Advisory Committee Report: Identifying and Closing the Gaps," June 2001, <http://www.thecb.state.tx.us/ctc/ip/core11_00/index.htm> (6 March 2004), 5-6.

[3] Ibid., 13.

[4] Ibid., 11.

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The need for an established articulation policy is particularly compelling in Texas. Public community colleges constitute over half of the total undergraduate enrollment in the state, public four-year institutions account for around 38%, and private four-year institutions about 10%. In short, Texas is primarily a state for public higher education since about 90% of all college students attend public institutions.[5] Partly for this reason, and partly due to considerable concern about low retention rates, the Texas legislature implemented in 1997 a statute regarding course transfer and equivalence that goes further than transfer policies in other states.[6] Whereas reciprocity among public institutions of higher education is "recommended," "encouraged," "assumed," or "expected" in other states, it is required by law in Texas.[7] Under statutory directive, whole blocks of courses automatically transfer and substitute for course requirements at every public institution. Senate Bill (SB) 148 extends not just to the academic core curriculum, but to 37 different content areas known as field of study curricula (FOSCs), one of which is music.[8] Like other FOSCs, the field of study curriculum (FOSC) for music fulfills all lower division requirements for the baccalaureate degree; receiving institutions cannot require incoming transfer students to repeat courses with the same content. Practically speaking, transfer students who major in music no longer have to repeat lower-division courses in theory and aural skills and other required music classes, even if they do poorly on diagnostic exams.[9] Failure to comply with the transfer laws results in a penalty: the state will cut funding for the repeated course."[10]

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[5] Jane V. Wellman, "State Policy and Community College-Baccalaureate Transfer," National Center for Public Policy and Higher Education and the Institute for Education Policy 02-6, August 2002, <http://www.highereducation. org/reports/transfer/transfer.shtml> (6 March 2004), 14.

[6] Ibid. See also Texas Higher Education Coordinating Board, "Developing Field of Study Curricula," December 2002, <http://www.thecb.state.tx.us/ctc/ ip/core11_00/index.htm> (6 March 2004), 1.

[7] Education Commission of the United States, "Transfer and Articulation Policies."

[8] Texas Higher Education Coordinating Board, "Developing Field of Study Curricula," 1-6.

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In this paper, I shall focus on the impact the FOSCs have made on Texas higher education. In addition, I examine some of the educational research used in the processing of the FOSC for music, including two surveys conducted by a state organization, the Texas Association of Music Schools (hereafter abbreviated as TAMS). My own interest in transfer issues stems from my decade-long participation in TAMS, which is comprised of music department heads and deans from all segments of higher education. This organization played a role in the design of the new music curriculum and was a champion of SB 148.[11] I also participated in the Texas Council of Faculty Senates, an organization much more critical of the new law. Both groups gave direct input to the Texas Higher Education Coordinating Board, which implemented the statute.

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[9] "If a student successfully completes a field of study curriculum developed by the Board, that block of courses may be transferred to a general academic teaching institution and must be substituted for that institution's lower-division requirements for the degree program for the field of study into which the student transfers, and the student shall receive full academic credit toward the degree program for the block of courses transferred." Texas Higher Education Coordinating Board, "CB Rules and Regulations," 27 May 2003, <http://www.thecb.state.tx.us/CBRules/tac3.cfm?Chapter_ID=4&Subchapter=B> (27 March 2004), Chapter 4: Rules Applying to All Public Institutions of Higher Education in Texas, Subchapter B: Transfer of Credit, Core Curriculum and Field of Study Curricula, §4.32 Field of Study Curricula (b).

[10] "If it is determined by the Coordinating Board that an institution inappropriately or unnecessarily required a student to retake a course that is substantially equivalent to a course already taken at another institution, in violations of the provisions of section 5.391 (relating to Requirements and Limitations), formula funding for credit hours in the repeated course will be deducted from the institution's appropriations." Ibid., §4.26 Penalty for Noncompliance with Transfer Rules.

[11] It is no surprise that this organization played a role in the development of the new transfer policy since one of its primary purposes is to foster cooperation between institutions of higher learning in Texas. See Texas Association of Music Schools, "Our Mission," (n.d.), <http://www.tmea.org/085_Tams/tams_mission/tams_mission.htm> (27 March 2004).

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The FOSC for music, shown in Example 1, is designed to apply to the Bachelor of Music degree but is applicable to other baccalaureate-level degrees as well. In terms of content, it is similar to music curricula found in many schools across the country. It consists of a total of 13 lower-division courses, divided among the areas of ensemble, applied study, theory and aural skills, and music literature. Included in this number is a four-semester sequence in music theory and aural skills.

Example 1. Music Field of Study Courses

Course	Number of Semesters	Semester Credit Hours
Ensemble	4	4
Applied Study	4	8
Theory/Aural Skills	4	12-16
Music Literature	1	3

In the years leading up to the official FOSC for music,[12] some TAMS members took concrete steps to facilitate the transfer of music courses between institutions. With respect to theory and aural skills, they tracked what was being taught in each of the four semesters. First, they collected course syllabi and music placement exams from as many schools as possible and formed a library accessible to all members of the organization. They also conducted statewide surveys of course content, textbooks, software, and other

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[12] The Texas Higher Education Coordinating Board adopted the FOSC for music on 25-26 October 2000. The following December, the Commissioner of Higher Education ordered chancellors and presidents of Texas colleges and universities to adopt the new curriculum. "As you know, public universities must accept Coordinating Board approved field of study courses in fulfillment of lower-division requirements for the baccalaureate degree, and receiving institutions may not require incoming transfer students to repeat courses with the same content as field of study courses." Don W. Brown to Chancellors and Presidents, memorandum, 4 December 2000.

topics. Though never explicitly stated, both the library and surveys would provide aid for the many non-specialist theory instructors.

A summary of the data collected from the 1998 theory survey is shown in Example 2.[13] Fifty-five schools participated in this survey (24 two-year colleges and 31 universities). In many cases, questions were left unanswered, and possible components of the theory curriculum, such as counterpoint and keyboard harmony, were not specifically asked. Despite these flaws in the construction of the survey, the data suggest that there is more consensus than disagreement between the two groups of institutions. For both, Kostka and Payne's *Tonal Harmony* is the most popular textbook, followed by Benward and White's *Music in Theory & Practice* and Ottman's *Elementary Harmony and Advanced Harmony*.[14] Both groups require two semesters of diatonic harmony and one semester of chromatic harmony; form is usually is covered during the third and fourth semesters. Most of the reporting schools include twentieth-century music; however, it is not clear from the survey whether this topic is ever taught separately as an upper-level course at four-year institutions. Finally, few schools require students to take a barrier exam at the conclusion of the theory sequence.

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[13] Texas Association of Music Schools, "Aural/Ear-Training Survey, Music Theory Survey," 30 March 2000. The theory survey was conducted by the TAMS Commission on Cooperation in Higher Education in April and May, 1998.

[14] Bruce Benward and Gary White, *Music in Theory and Practice*, 6th ed. (Madison, WI: WCB Brown & Benchmark, 1997); Stefan Kostka and Dorothy Payne, *Tonal Harmony, with an Introduction to Twentieth-Century Music*, 3rd ed. (Boston: McGraw-Hill, 1995); Robert W. Ottman, *Elementary Harmony* and *Advanced Harmony*, 4th ed. (Englewood Cliffs: Prentice Hall, 1989).

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Example 2:

Texas Association of Music Schools (TAMS) Music Theory Survey, 1998

Item	2-Year Coll.	4-Year Univ.	Total	2000 CMS Survey
Number of Respondents	24 (100%)	31 (100%)	55 (100%)	248 (100%)
Author(s) of Textbooks				
Kostka/Payne	8 (33%)	14 (45%)	22 (40%)	55 (22%)
Benward/White	6 (25%)	6 (19%)	12 (22%)	45 (18%)
Ottman	6 (25%)	4 (13%)	10 (18%)	20 (8%)
Turek	2 (8%)	2 (6%)	4 (7%)	12 (5%)
Benjamin/Horvit/Nelson	2 (8%)	2 (6%)	4 (7%)	6 (2%)
Other	0 (0%)	3 (10%)	3 (5%)	43 (17%)
Requirements				
Diatonic Harmony (Semesters 1 & 2)	24 (100%)	31 (100%)	55 (100%)	97 (39%)
Chromatic Harmony (Semester 3)	24 (100%)	31 (100%)	55 (100%)	70 (28%)
Form (Semesters 3 & 4)	24 (100%)	31 (100%)	55 (100%)	N/A (N/A)
Twentieth Century	20 (83%)	29 (94%)	49 (89%)	172 (69%)
Barrier Exam	2 (8%)	3 (10%)	5 (10%)	N/A (N/A)
Theory Taught Separately from Aural Skills	24 (100%)	19 (61%)	43 (78%)	161 (65%)
Separate Fundamentals Course	22 (92%)	18 (58%)	40 (73%)	136 (55%)
Software Used in Written Theory	15 (63%)	17 (31%)	32 (58%)	N/A (N/A)
Practica Musica	2 (8%)	10 (32%)	12 (22%)	
Finale	5 (21%)	1 (3%)	6 (12%)	
MacGamut	1 (4%)	3 (10%)	4 (8%)	
Music Lessons/MiBac	2 (8%)	2 (6%)	4 (8%)	
Encore	3 (13%)	0 (0%)	3 (6%)	

The differences that do emerge are more a matter of degree, rather than basic content. Written theory is combined more frequently with aural skills at four-year universities than at two-year colleges. A separate fundamentals course is offered at most two-year schools, less frequently at four-year institutions. And music theory software was used more often than not by both groups. Of the variety of programs mentioned, *Practica Musica* was the most popular product at four-year schools.[15]

It should be noted that the Texas Music Theory Survey anticipated the CMS Music Theory Survey conducted in 2000.[16] This was a

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[15] *Practica Musica* [Macintosh] 2.6. (Kirkland, WA: Ars Nova, 1987).

[16] Richard B. Nelson, "The College Music Society Music Theory Undergraduate Core Curriculum Survey - 2000," *College Music Symposium* 42 (2002): 60-75.

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national survey that involved a total sample of 248 instructors, representing not only two- and four-year institutions, but also those offering master's and doctoral degrees. What emerges from a comparison of the two surveys is that, at least in some categories, the responses from the four-year universities in the TAMS survey more closely resembled the national percentages. Still, the TAMS survey conveys an overall view of no substantial difference among institutions of higher education in Texas, leading one to conclude that the transfer of lower-division music theory courses would not be especially problematic. Presumably, if the theory curriculum at a given school happened to be significantly out of line with the institutional consensus, then with the information provided by the TAMS survey in hand the instructor could make necessary adjustments. Of course, what the surveys did not factor in are such crucial factors as the caliber of student, the teacher's qualifications, and the unique aspects of a particular theory curriculum. These matters were never the main points of concern; rather, the goal was to demonstrate consistency.

TAMS administered another survey in January 2000, this time to compare aural skills curricula among three groups of schools: two-year community colleges, four-year private institutions, and four-year state institutions.[17] A total of 50 schools answered hundreds of questions pertaining to course materials and course content. The focus was on four skill areas: melodic dictation, harmonic dictation, rhythm dictation, and sight singing. For most questions, respondents were asked to indicate in which of the four semesters a particular concept was taught as well as the expected "proficiency level."[18] With the data collected in this survey, TAMS could then determine the course objectives and student outcomes in the aural skills component of the music transfer curriculum. Once again, the main thrust behind the survey was to measure the degree of consistency among the three groups of institutions.

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[17] Texas Association of Music Schools, "Aural/Ear-Training Survey, Music Theory Survey." The aural/ear-training research survey was conducted by the TAMS Commission in January and February, 2000.

[18] Once again, TAMS did not consider issues pertaining to the quality of student performance (e.g., the number of hearings of a musical example needed for a student to transcribe it). Also problematic are ambiguous terms, such as *proficiency level*. Does it refer to the percentage of students who master the concept, or to the average score on quizzes or exams? Such flaws are serious as the combination of a built-in bias and ambiguous wording in a given survey will likely produce skewed results.

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The TAMS commission claimed to have found the consistency they were looking for. In March 2000 they distributed the results of the survey, which included an array of statistics (a sample page is shown in Appendix A). They also included the following five-statement summary:

1. On each concept of each area of dictation (melodic, harmonic, and rhythmic), each type of institution teaches the same concepts during the same semester over the four semesters.

2. While a 70% proficiency level is required at most institutions for each semester of ear training, most schools require a higher level of proficiency on all concepts listed in the survey.

3. In sight singing 88% of all institutions teach solfege, while 44% of all institutions teach "la" as the minor tonic.

4. [A majority of all institutions] are using some type of computer technology to enhance aural training, including sight singing.

5. Benward's *Ear-Training: A Technique for Listening* and Ottman's *Music for Sight Singing* are the most used textbooks at all types of institutions.

Closer analysis of the report, however, shows that the TAMS commission may have overstated at least a few of their results. Consider the statistics for the first semester of melodic dictation in Example 3, which shows the breakdown of this skill area into 17 concepts that roughly follow the order of chapters in Benward's textbook. A great deal of information can be found here, including the notion that the three groups of institutions do not always cover the same concepts. The inconsistency can perhaps be seen more clearly by extrapolating the concepts taught by the majority of respondents in each school group (Example 4); also shown in this example are the predominant proficiency levels for these particular concepts. Thus, during the first semester of aural skills the majority of two-year colleges cover six concepts at an average proficiency level of 90%, as opposed to five concepts at an 88% level at four-year private schools, and seven concepts at a level of 70% at public universities. The differences may seem slight, but when combined with similar discrepancies in the other semesters (see Appendix B),[19] the inconsistencies among the three groups of institutions are more substantial.

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[19] Statistics for the second, third and fourth semesters of melodic dictation are given in the appendix.

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Example 3.   TAMS Aural/Ear-Training Research Survey, 2000
Melodic Dictation Concepts Taught during Semester 1

Concept	2-Year College	4-Year Private	4-Year State
1. Conjunct diatonic melodies	20 (100%)	14 (100%)	16 (100%)
2. Melodies using m2, M2, m3, M3	20 (100%)	13 (93%)	15 (94%)
3. Melodies using P4, P5, m7, M7	12 (60%)	6 (43%)	7 (44%)
4. Melodies with arpeggiations of I & V	15 (75%)	11 (79%)	13 (81%)
5. Melodies outlining the I, IV, V, & vii° triads	9 (45%)	3 (21%)	7 (44%)
6. Two-phrase melodies	9 (45%)	1 (7%)	9 (56%)
7. Identification of major and three forms of minor scales	15 (75%)	12 (86%)	13 (81%)
8. Identification of all diatonic intervals including the tritone	12 (60%)	8 (57%)	12 (75%)
9. Melodic figure Identification: sequence, etc.	9 (45%)	1 (7%)	9 (56%)
10. Two-part melodies	2 (10%)	2 (14%)	2 (13%)
11. Melodies that modulate to closely related keys	1 (5%)	0 (0%)	1 (6%)
12. Phrase relationships and cadences	2 (10%)	1 (7%)	4 (25%)
13. Identification of binary, rounded binary and three-part form	1 (5%)	0 (0%)	0 (0%)
14. Mode identification: Dorian, Phrygian, Lydian, & Mixolydian	2 (10%)	0 (0%)	1 (6%)
15. Melodies containing nondiatonic tones	0 (0%)	1 (7%)	1 (6%)
16. Melodies containing typical blues figures	1 (5%)	0 (0%)	1 (6%)
17. Melodies based on 20th-century characteristics	0 (0%)	0 (0%)	0 (0%)

Example 4.   TAMS Aural/Ear-Training Research Survey, 2000
Melodic Dictation: Concepts and Proficiency Levels, Semester 1

Concept	2-Year College	4-Year Private	4-Year State
		Proficiency Levels	
1. Conjunct melodies	90%	90%	70%
2. Melodies using m2, M2, m3, M3	90%	80%	70%
3. Melodies using P4, P5, m7, M7	90%		
4. Melodies with arpeggiations of I & V	90%	90%	70%
6. Two-phrase melodies			70%
7. ID of major, 3 forms of min. scale	90%	90%	70%
8. ID of all diatonic intervals, TT	90%	90%	70%
9. Melodic figure ID (seq., etc.)			70%
	(6) 90%	(5) 88%	(7) 70%

My interpretation of the survey is thus different from the results reached by the TAMS Commission. In terms of course content, the three groups of schools correspond only generally, since some concepts, such as larger melodic leaps and two-phrase melodies, are more often taught during different semesters. As for proficiency levels, only the two-year and four-year private schools conform; four-year public schools appear to have much lower expectations.

My conclusions raise more questions than answers. Why do four-year state schools have such low proficiency levels? Could class size, which tends to be larger at these schools, be a factor? And given the combination of the high proficiency levels and the large number of concepts covered more frequently by the two-year colleges in the first semester, are these schools doing a better job? Or, are they pushing too much too soon? My own opinion, based on nearly ten years of experience teaching aural skills at a mid-size state university in Texas, is that a 90% proficiency level is unrealistic, and that moving at a relatively slower pace at the beginning of the learning curve for aural skills is more effective in the long run. No doubt other conclusions, both negative and positive, can be drawn from the TAMS Survey. At the very least, it considered specific components of individual courses. Another good thing: it has added to our knowledge of how aural skills curricula are taught in different segments of higher education.

My views, of course, are typical of faculty at four-year universities. We tend to seek innovations and distinctions, not only in the courses we teach and the programs we design, but also in our individual research. Conversely, we tend to shun standardized formats and practices. My remarks here are prompted by the many heated discussions I heard at various Texas conferences in the late 1990s, when the FOSCs first became known. In general, the initial reaction was negative, and many instructors at four-year schools were alarmed. They complained that they were losing control of their programs since they were not the impetus behind the senate bill. The two-year colleges were the ones pushing the state legislature in this direction; they were so mobilized that they had hired a professional lobbyist to see the bill through passage. I have yet to verify this claim, but money—rather than the community colleges—may have been the real reason behind SB 148. According to one colleague, the "legislature wanted to avoid subsidizing a given credit hour twice."[20]

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[20] To respect the anonymity of survey respondents, I will not provide any names.

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Other faculty protested that four-year schools were under-represented on the state's transfer committees, and that mostly administrators served on them. Still others complained that the FOSCs threatened the very quality of higher education. After all, many teachers at four-year schools are specialists in their fields; now they would have to accept transfer credits for courses taught by non-specialists at community colleges. A well-articulated summation of all the complaints can be seen in the "Position Statement on the Field of Study" taken by the University of North Texas Faculty Senate in 1998: "Implementation of SB 148 . . . affects the quality of higher education in Texas; degree programs at each institution serve different purposes; and the content of these programs should be determined by the faculty at each institution."[21]

Four-year schools did more than just grumble amongst themselves. First of all, they sent their concerns about under representation to the Texas Council of Faculty Senates, which, in turn, forwarded a position statement to the Coordinating Board.[22] Apparently, the Board listened. In 2000 the earlier statute regarding the FOSCs was amended to stipulate that at least a majority of the members of a field of study curriculum advisory committee must be faculty members—and not just administrators, deans, or department chairs.[23] In addition, during TAMS breakout sessions for four-year schools, faculty shared strategies to ensure that

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[21] University of North Texas, "Minutes of the Faculty Senate Meeting," 9 December 1998, <http://www.unt.edu/facsenate/Minutes/1998-99/fsmin1298.html> (27 March 2004), New Business.

[22] Texas A & M University, for example, submitted a "Two-Pronged Response to Field of Study Committee Legislation," to the Texas Council of Faculty Senates: "Our first response to the field of study curriculum legislation is to work with the Higher Education Coordinating Board to ensure the broad representation of four-year universities on the statewide field of study committees being formed, to ensure early communication between the Coordinating Board and the affected universities with regard to the composition of these committees, and to ensure ample opportunity for the affected baccalaureate universities to influence the creation of these field of study curricula. At the same time we are attempting to work with other universities to attempt to educate state leaders on the poorly conceived nature of this legislation and its likely deleterious effects on degree program." Texas A & M University Faculty Senate, "Roundup Report to Texas Council of Faculty Senates," 23-24 October 1998, <http://www.tamu.edu/faculty_senate/RoundupReportFall1998.html> (27 March 2004).

[23] Texas Higher Education Coordinating Board, "Developing Field of Study Curricula," 4.

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transfer students in music meet standards set by the receiving institutions. Such safeguards could be easily implemented, and at many four-year schools they were already in practice. These include proficiency exams or barriers in the areas of sight singing, piano skills and applied music. Most students are expected to pass the three exams by the end of the sophomore year. If they fail to do so, they cannot move on to upper-level degree requirements, such as the junior or senior recital. But if we do require transfer students to pass these exams, then we have to ensure that our "native" students also take them. Otherwise, we would be treating transfer students differently—that is, with discrimination—and be on shaky legal ground.

Another effective strategy, some music faculty report, is careful advising. Specifically, if transfer students pass courses at another institution but are placed at a lower level at the receiving school, we should inform them that it would be in their best interest to retake additional courses. They run the risk of not passing upper-level music courses, which are sometimes only offered every other year. In other words, their weaknesses will eventually catch up with them and further delay their progress. In the event that a transfer student in a teacher education program ignores our advice and refuses to take remedial courses, we do have a final recourse: we are not obliged to endorse the student's application for state certification and are not held accountable for the student's test performance.

Because the music FOSC has only been in effect for three years, its effect has yet to be studied and assessed. Initial reports suggest that there is no broad, systematic problem, but certain aspects could be improved. According to a staff member of the Coordinating Board, a continuing point of contention has been the inclusion of the music literature course at the lower-division level.[24] This problem was also cited by a participant in the informal survey I conducted in June 2003, which sought feedback on the theory/aural skills components of the FOSC. Although I sent my questionnaire to theory faculty in three sectors of higher education, nearly all respondents were from two-year colleges. Two main concerns surfaced that community

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[24] Julie Leidig, "Question Re: Field of Study in Music," 2 June 2003, personal email. According to Leidig, the only other major problem had to do with inconsistent school credit hours (SCH); that is, courses worth three SCH at many universities were worth four SCH at many community colleges. This problem was resolved by allowing each school to continue their respective practices.

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college instructors felt needed to be addressed. One had to do with uncooperative four-year schools. As one respondent complained:

> We still have four-year schools in our area that tell students they must retake courses covered by the [FOSC for music]. They also place students in the sophomore year of their private lessons instead of placing them in junior year. These schools do NOT have a "junior standing" exam. They just want to hold the transfer students back.

Another wrote:

> In some cases, four-year institutions have not yet incorporated the [FOSC for music] into their transfer plans, leaving those on the community college end to do a significant [amount] of work in educating and bringing these institutions into the fold.

The other concern was more specific, yet related to the first: not enough four-year schools are sharing their theory syllabi and exams with two-year schools. For one theory instructor:

> . . . four-year schools have not provided two-year schools with specifics about student performance in [the area of aural skills]. As a two-year school faculty member, I would like specific examples from final exams of melodic dictation, harmonic dictation, and rhythmic dictation. Piano proficiency requirements are clearly written by each four-year school. . . . Once students decide where they are matriculating, they obtain a copy of this proficiency and we tailor their work in class piano to their prospective school. It would be helpful if each four-year school could do something similar for aural skills.

Of the three four-year faculty members who did answer my questionnaire, only one responded positively to the music FOSC. This person taught theory and aural skills at a private institution, where 40% of all music majors enter as transfer students. She reported that she was "generally satisfied" with the FOSC and that transfer students compare favorably with non-transfer students. In this regard, her remarks are in keeping with a major study by the Coordinating Board, which examined the effectiveness of the Texas

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transfer policies in 2001. The Board found that transfer students perform just as well as non-transfer students.[25]

The other two faculty members taught theory and aural skills at public universities. Both strongly opposed the new curriculum, but for different reasons. For one theorist, the FOSC for music has quashed curricular development and improvement at his school:

> We are contemplating a modest revision of our curriculum (in order to serve all of our majors better and more equitably), but, even though the changes are not radical, dealing with the FOSC and transfer issues that will be associated with it have become nightmarish. . . .

> We want to accelerate the common-practice theory slightly, to finish in three semesters (rather than 3.5), put the 20th century in the fourth semester, and put large forms in the fifth semester. . . . Most of our transfer students, however, come from curricula that spend four semesters on common-practice theory. The law, as it has been explained to me, would allow them to go into the fifth semester, AND SKIP 20th CENTURY MATERIALS ENTIRELY.

As for the other theorist, he asserted that the FOSC was watering down the college curriculum to a high school level:

> FOSC sounds like a high school program that has been transferred to the college level. The problem lies in the fact that there are standardized credentials and tests at the high school level, whereas none exist at the college level. The road to Perdition is paved with good intentions. FOSC is one stone along that path.

> . . . . I don't wish to sound elitist . . . two-year teachers, however, must resist the strong temptation to view two-year colleges as an extension of high school rather than the first two years of college.

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[25] "There is no significant difference in the quality of student performance at the receiving institutions (as measured by grade point averages earned at the receiving universities) among college and university students who transfer to universities after completing at least 30 semester credit hours (SCH) at their prior institutions and students with at least 30 SCH who began and remained at their initial universities." Texas Coordinating Board of Higher Education, "Transfer Issues Advisory Committee Report: Identifying and Closing the Gaps," 7.

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Both public university professors concur, however, that transfer students are weaker than non-transfer students:

> I waited to respond to your survey until I administered our placement test and saw how the transfer students fared in the first few weeks of classes. My response reflects this year, and this year is fairly consistent with past years. [Community college] transfers tend not to fare as well as students transferring from four-year schools or students already matriculated.

> Transfer students are frequently diagnosed as deficient on placement exams; further, transfer students who choose to disregard placement exam recommendations cause difficulty disproportionate to their numbers. The observations indicate that the FOSC is seriously out of touch with reality, and runs counter to maintaining standards.

The above comments are at odds with the 2001 Coordinating Board report cited earlier, which found no difference in performance between transfer and non-transfer students. A possible explanation for the inconsistency may be that Coordinating Board relied on data that were not comprehensive. Another explanation is that the Board, like the TAMS Commission, may have overstated the case for consistency between the two groups of students.

Obviously, we cannot get a clear picture of how the FOSC for music is working in Texas without more extensive evaluation and faculty feedback. It appears that the new curriculum has much to offer since the transfer criteria are so clear, but it has yet to really take hold because many four-year schools refuse to recognize it. Their refusal is understandable, especially since the institutions benefiting the most from the new policy are two-year colleges. Put another way, it is our work in the form of syllabi and tests that is elevating the quality of instruction at two-year schools. But since the larger point is to close the so-called "performance gap" between two- and four-year schools, I for one gladly share my syllabi with community college teachers, but I am uncomfortable sharing detailed course outlines and tests.

If there is a lesson to be learned from this Texas tale, it is that we theorists should be actively involved with political issues that affect the shape and content of the courses we teach. True, not all states have transfer policies written into legislation; but given the high percentage of transfer students nationwide, more and more states

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are in the process of articulating agreements. There are several paths we can take in order to make our voices heard. We could join university curriculum committees and faculty senates. We could participate in state and regional organizations. Whatever avenue or avenues we choose, it is essential to act sooner rather than later so that we become the leaders of policy and not mere suppliers of information.

APPENDIX A

Sample Page of 2000 TAMS Survey Results

Two Year Institutions
Melodic Dictation

Semester 1	2	3	4	Concepts Taught	60%	70%	80%	90%	100%
20				1. Scalewise (conjunct diatonic) melodies		4	3	10	2
20				2. Melodies using m2, M2, m3, M3 intervals		5	4	8	2
12	11			3. Melodies using P4, P5, m7, M7 intervals		5	5	15	2
15	5			4. Melodies with arpeggiations of I and V		4	5	7	2
9	11	2		5. Melodies outlining the I, IV, V, vii triads		6	4	5	2
9	5	5	1	6. Two-phrase melodies		5	6	5	2
15	5			7. Identification of major and three forms of minor scales		5	1	8	3
12	6	3		8. Identification of all diatonic intervals including the tritone.		5	1	10	2
9	10	5		9. Melodic figure identification: sequence, false sequence, rhythmic repetition		6	5	4	2
2	9	7	2	10. Two-part melodies		6	6	3	2
1		15	5	11. Melodies that modulate to closely related keys		6	6	4	2
2	11	8	1	12. Phrase relationships and cadences		5	4	6	2
1	5	11	5	13. Identification of binary, rounded binary, and three-part forms		5	5	6	2
2	1	10	9	14. Mode identification: Dorian, Phrygian, Lydian, and Mixolydian		6	5	4	3
	4	10	9	15. Melodies containing non-diatonic tones		6	3	5	2
1		6	9	16. Melodies containing typical blues figures		5	3	3	2
			15	17. Melodies based on 20th-century characteristics		6	3	3	2

APPENDIX B

TAMS Aural/Ear-Training Research Survey, 2000
Melodic Dictation Concepts Taught during Semester 2

Concept	2-Year College		4-Year Private		4-Year State	
1. Conjunct diatonic melodies	0	(0%)	3	(21%)	0	(0%)
2. Melodies using m2, M2, m3, M3	0	(0%)	4	(29%)	2	(13%)
3. Melodies using P4, P5, m7, M7	11	(55%)	10	(71%)	8	(50%)
4. Melodies with arpeggiations of I and V	5	(25%)	6	(43%)	4	(25%)
5. Melodies outlining the I, IV, V, and vii° triads	11	(55%)	10	(71%)	8	(50%)
6. Two-phrase melodies	5	(25%)	10	(71%)	6	(38%)
7. Identification of major and three forms of minor scales	5	(25%)	6	(43%)	4	(25%)
8. Identification of all diatonic intervals including the tritone	6	(30%)	7	(50%)	6	(38%)
9. Melodic figure Identification: sequence, etc.	10	(50%)	10	(71%)	3	(19%)
10. Two-part melodies	9	(45%)	3	(21%)	4	(25%)
11. Melodies that modulate to closely related keys	0	(0%)	3	(21%)	4	(25%)
12. Phrase relationships and cadences	11	(55%)	9	(64%)	9	(56%)
13. Identification of binary, rounded binary and three-part form	5	(25%)	1	(7%)	2	(13%)
14. Mode identification: Dorian, Phrygian, Lydian, and Mixolydian	1	(5%)	2	(14%)	0	(0%)
15. Melodies containing nondiatonic tones	4	(20%)	4	(29%)	0	(0%)
16. Melodies containing typical blues figures	0	(0%)	0	(0%)	0	(0%)
17. Melodies based on 20th-century characteristics	0	(0%)	0	(0%)	0	(0%)

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APPENDIX B *continued*

TAMS Aural/Ear-Training Research Survey, 2000
Melodic Dictation Concepts Taught during Semester 3

Concept	2-Year College		4-Year Private		4-Year State	
1. Conjunct diatonic melodies	0	(0%)	2	(14%)	0	(0%)
2. Melodies using m2, M2, m3, M3	0	(0%)	2	(14%)	0	(0%)
3. Melodies using P4, P5, m7, M7	0	(0%)	4	(29%)	1	(6%)
4. Melodies with appeggiations of I and V	0	(0%)	2	(14%)	0	(0%)
5. Melodies outlining the I, IV, V, and vii° triads	2	(10%)	4	(29%)	2	(13%)
6. Two-phrase melodies	5	(2%)	6	(43%)	2	(13%)
7. Identification of major and three forms of minor scales	0	(0%)	2	(14%)	0	(0%)
8. Identification of all diatonic intervals including the tritone	3	(15%)	2	(14%)	0	(0%)
9. Melodic figure Identification: sequence, etc.	5	(25%)	4	(29%)	2	(13%)
10. Two-part melodies	7	(20%)	9	(64%)	9	(56%)
11. Melodies that modulate to closely related keys	15	(75%)	12	(86%)	9	(56%)
12. Phrase relationships and cadences	8	(40%)	6	(43%)	2	(13%)
13. Identification of binary, rounded binary and three-part form	11	(55%)	7	(50%)	5	(31%)
14. Mode identification: Dorian, Phrygian, Lydian, and Mixolydian	10	(50%)	4	(29%)	5	(31%)
15. Melodies containing nondiatonic tones	10	(50%)	10	(71%)	11	(69%)
16. Melodies containing typical blues figures	6	(30%)	2	(14%)	2	(13%)
17. Melodies based on 20th-century characteristics	0	(0%)	0	(0%)	0	(0%)

APPENDIX B *continued*

TAMS Aural/Ear-Training Research Survey, 2000
Melodic Dictation Concepts Taught during Semester 4

Concept	2-Year College	4-Year Private	4-Year State
1. Conjunct diatonic melodies	0 (0%)	1 (7%)	0 (0%)
2. Melodies using m2, M2, m3, M3	0 (0%)	1 (7%)	0 (0%)
3. Melodies using P4, P5, m7, M7	0 (0%)	2 (14%)	1 (6%)
4. Melodies with arpeggiations of I and V	0 (0%)	1 (7%)	0 (0%)
5. Melodies outlining the I, IV, V, and vii° triads	0 (0%)	1 (7%)	1 (6%)
6. Two-phrase melodies	1 (5%)	3 (21%)	0 (0%)
7. Identification of major and three forms of minor scales	0 (0%)	0 (0%)	0 (0%)
8. Identification of all diatonic intervals including the tritone	0 (0%)	0 (0%)	0 (0%)
9. Melodic figure Identification: sequence, etc.	0 (0%)	2 (14%)	2 (13%)
10. Two-part melodies	2 (10%)	3 (21%)	2 (13%)
11. Melodies that modulate to closely related keys	5 (25%)	3 (21%)	4 (25%)
12. Phrase relationships and cadences	1 (5%)	1 (7%)	2 (13%)
13. Identification of binary, rounded binary and three-part form	5 (25%)	5 (36%)	7 (44%)
14. Mode identification: Dorian, Phrygian, Lydian, and Mixolydian	9 (45%)	10 (71%)	7 (44%)
15. Melodies containing nondiatonic tones	9 (45%)	3 (21%)	6 (38%)
16. Melodies containing typical blues figures	8 (40%)	8 (57%)	8 (50%)
17. Melodies based on 20th-century characteristics	15 (75%)	9 (64%)	10 (63%)

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JOURNAL OF MUSIC THEORY PEDAGOGY

Conference Report:
Eighth International Conference
on Music Perception and Cognition

Reviewed by Nancy Rogers

The eighth International Conference on Music Perception and Cognition (ICMPC8) was held August 3-7, 2004 on the campus of Northwestern University in Evanston, Illinois. The conference attracted more than 300 scholars from 29 countries and represented seven participating societies: the Australian Music & Psychology Society, the Asia-Pacific Society for the Cognitive Sciences of Music, the European Society for the Cognitive Sciences of Music, the Japanese Society for Music Perception and Cognition, the Korean Society for Music Perception and Cognition, the Argentine Society for the Cognitive Sciences of Music, and the Society for Music Perception and Cognition. Papers addressed a broad range of music, including Western classical music, jazz and popular music, traditional music of various African, Asian, and European countries, and even "biomusic" (sounds of animals and inanimate nature). The real source of diversity in a conference like this, however, is not the particular music studied but rather the variety of research perspectives. Topics ranged from neuroscience and psychophysics to development and education to emotion and identity to computational models to music/language relationships, but also included subjects that are more familiar to traditional music theorists (e.g., grouping, structure, and expectation). Four sessions ran concurrently throughout most of the five-day conference, so clearly it was impossible to attend all presentations, but I hope to convey some of the research that might be of particular interest to music theory teachers.

One of the conference highlights was keynote speaker Mari Riess Jones (Ohio State University), whose plenary session was entitled "Looking Ahead: Some Speculations on the Future of Research in Music Cognition." Readers of this journal might be intrigued by her comments about the relationship between "parent disciplines" like psychology or music theory and "offspring disciplines" like music cognition. Parent disciplines provide a certain intellectual background, establishing expectations for scholarship and

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publication and essentially defining what constitutes mainstream thought. Researchers in offspring disciplines are, of course, guided by the parent disciplines, but sometimes they become aware of potentially significant questions that the parent disciplines aren't asking. As an example, Jones pointed out that the notion of an implicit pattern of beats underlying the presentation of an aural stimulus is an obvious concern to musicians, and hence is a consideration in music cognition experiments. The issue of beats might be foreign to the non-musical psychologist, but Jones's own research indicates that our attention spans tend to fall into rhythmic units. It is, therefore, reasonable to wonder whether the question of underlying beat patterns *should* be a concern to the broad field of psychology. In this case, the parent discipline might benefit from the feedback of the offspring discipline. Ideally, parent and offspring disciplines engage in interactive feedback that strengthens both fields. We, as music theorists, would be wise to consider both what we can learn from the results of existing music cognition research as well as how we in return can offer constructive criticism that will improve future music cognition research.

John Kratus (Michigan State University) addressed some important practical concerns in his provocative paper "Development of a Measure of Creative Music Listening," which took aim at the traditional means of testing aural skills. As Kratus described, music scholars tend to treat music listening as a process of decoding or identifying features in an aural stream. Whether students take dictation, identify a metrical type, or name a form, they typically are rewarded for correctly determining some relevant feature of the music. Kratus, however, does not believe that such practices reflect "authentic" music listening, which, he contends, is a more creative experience. When we listen, we decide which features to follow, and our attention is likely to shift as the music progresses. Contrary to this, teachers generally foster a convergent listening process by emphasizing questions that have a right answer. If we want to reflect the divergent process of natural listening, how do we evaluate our students?

Kratus proposed and demonstrated a means for identifying and measuring creative listening by rewarding fluency, flexibility, elaboration, and originality. He described *fluency* as the ability to generate many ideas; the sheer number of observations that a student made about a musical passage was considered a measure of fluency. *Flexibility* referred to the ability to generate a variety of

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ideas; statements involving a large proportion of Kratus's twelve chosen musical parameters (pitch, rhythm, harmony / texture, timbre, dynamics, form, articulation, process, emotion, image, style, and personal judgment) were felt to reflect a high degree of flexibility. *Elaboration* involved combining ideas in more complex ways; the combination of two or more flexibility parameters in one statement (e.g., "loud staccato notes in the brass section") was considered elaboration. *Originality* was defined as the ability to generate unique ideas; a listener's unique descriptive words (that is, words that were not used by other listeners in the same group) were interpreted as a sign of originality.

In my opinion, there are some practical problems with Kratus's approach. First and foremost, his emphasis on originality might inadvertently reward objectively incorrect answers. (For instance, if I listen to a string quartet playing in a major key and I write "brass ensemble — minor key," my answer may be unique, but does that make it inherently superior?) Also, this approach may not lead students to communicate effectively with one another because common and consistent language apparently is not a high priority. However, Kratus's larger points—that people have unique listening experiences, that music is greater than the sum of its parts, and that skills emphasized in aural skills classes may not adequately reflect real-life listening—are reasonable concerns.

William Bauer and Ruth Silverberg (College of Staten Island / City University of New York) also discussed a non-traditional means of assessing musical development, focusing on Dalcroze Eurhythmics in "Turning Music Inside-out: The System of Emile Jaques-Dalcroze and its Implications for Outcomes Assessment." In the Dalcroze system, students experience and express musical rhythm through physical movements that a teacher interprets as evolving signs of musical understanding, constantly adjusting the activities of the lesson in response to the students' movements. The question for Bauer and Silverberg was the extent to which a student's actions in a Dalcroze Eurhythmics class could serve as a reliable indicator of learning. A series of well-chosen video clips illustrated their points: the audience was able to follow the progress of a young woman with apparent weaknesses in rhythm as she gradually learned to bounce and catch a ball in a way that appropriately reflected triple meter in a wide range of tempos. It was very interesting to see how changes in the music required students to adjust the motion of their preparation, the energy exerted in throwing the ball, their

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reaction to the ball's rebound, and, of course, their timing as they expressed the meter through the deceptively simple act of bouncing and catching a ball.

Stacey Davis (University of Texas at San Antonio) addressed a number of questions that arise in the aural skills classroom in her paper "Investigating the Relationship Between Melodic Complexity, Vocalization, and Memory." Although the relationship between singing and musical memory has not yet been thoroughly examined, there seems to be an important connection between the ability to sing back an unfamiliar melody and the ability to notate it correctly: listeners who tend to sing back melodies incorrectly also have considerable difficulty writing them down, whereas listeners who sing back melodies correctly also tend to write them accurately. With this correlation in mind, Davis suggested that improving a student's ability to reproduce an unfamiliar melody after hearing it could lead to an improvement in dictation accuracy. In order to test this hypothesis, she first proposed a model of melodic complexity that considered not just interval size (which some sight-singing books emphasize as the primary determinant of a melody's difficulty) but the number of contour changes and whether they occurred on metrically strong beats, the frequency and direction of any melodic leaps, the number of chromatic pitches and their types, and the meter. Davis first presented listeners with a recall task in which they sang back melodies (representing various levels of difficulty, according to the model) upon hearing them; then she asked listeners to look at a printed version of each melody and locate pitch and contour errors.

Davis reported that listeners needed to hear each melody an average of eight times in order to memorize it completely—far more than existing memory models would anticipate.[1] More surprisingly, the average number of repetitions needed did not reliably correlate with the predicted degree of melodic complexity. Davis noted informally that her complexity model seemed to predict the difficulty of most melodies, but these results were offset by a small number of aberrant melodies. When she displayed two apparently "misplaced" melodies, there was some consensus that the "difficult" melody was made easier by a clear compound melody and a relatively predictable pattern, whereas the "easy"

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[1] Each melody contained 20-22 notes, so Miller's familiar "7 ± 2" model, for instance, would suggest the need for only three repetitions.

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melody didn't seem to adhere to any familiar patterns. (Davis plans to refine her model to account for these factors.) As hypothesized, correct vocalization did, indeed, result in superior error detection, particularly for errors involving a change of contour.

William Benjamin (University of British Columbia) addressed a rather different role that musical memory may play in "Ordinary Musical Memory as a Determinant of Musical Value." First, he raised a question that is largely unanswered in musical aesthetics: what do listeners get out of listening to music that they already know—indeed, know so well that repeated listenings do not contribute significantly to their understanding of the music's structure or its expressive meaning? The answer, as Benjamin speculated, may be the pleasure that we derive from completing our imperfect memories of musical works as we perceive them aurally. The effect, Benjamin explained, is essentially the opposite of listening to a damaged recording of a familiar work. When we listen to an imperfect recording, we use our mental image of the music to fill in any inaudible or distorted sections. When we listen to live performances (or high quality recordings), on the other hand, we may simultaneously recreate the music in our minds as we listen, using the aural input of the music itself to fill in the gaps. Perhaps it is precisely the complementary relationship between these two components (i.e., perception and "ordinary musical memory" — the feeling of hearing music in one's head) that creates a rich musical experience.

As supporting evidence, Benjamin pointed out that people typically enjoy music more after hearing it a few times—that is, after presumably constructing a basic mental image that can be subsequently completed through the listening process. At the other end of the spectrum, we tend to lose interest in the music that we can remember perfectly. He also noted that listeners typically claim to "get more" out of listening to a piece of music multiple times, although the same reaction to a movie or play is comparatively rare. Benjamin suggested that this phenomenon might reflect our desire to memorize music, whereas we can satisfactorily paraphrase language. Alternatively, an audience member speculated that this difference may reflect the typical time constraints of each medium (e.g., a two-hour movie vs. a three-minute pop song). If Benjamin's theory is correct, then listening to a performance is in some way a collaborative process. Furthermore, activities addressing musical memory in aural skills classes acquire a new and profound

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significance: facility in capturing a composition's basic musical framework could actually enhance the aesthetic experience of listening to music.

David Huron (Ohio State University) presented a characteristically entertaining paper entitled "Music-Engendered Laughter: An Analysis of Humor Devices in PDQ Bach." Some of the humor in a PDQ Bach performance relies on Peter Schickele's use of language or visual gags, but Huron focused only on the purely musical devices. He suggested that musical humor falls into nine categories: incongruous sounds (such as a kazoo in the context of a classical orchestra), mixed genres (often juxtaposing "high art" and "low art"), drifting tonality, metric disruptions, implausible delays (e.g., a non-harmonic tone that is held too long), excessive repetition (the familiar "broken record" effect), incompetence cues (e.g., bad intonation or crude timbre), incongruous quotation (likely juxtaposing different musical styles), and misquotation of well-known tunes.

Each of these sources of humor, of course, reflects some violation of learned musical expectations, and this makes them potentially excellent classroom examples. Although the focus of Huron's lecture was not pedagogical, it was clear that discussing musical humor would be a very effective and engaging way of addressing stylistic norms. Consider, for example, an excerpt Huron chose from the second movement of Peter Schickele's *Concerto for Horn and Hardart*. Written in the style of a Classical minuet, the melody steadily descends by step from $\hat{1}$ on the downbeat of measure 1 to $\sharp\hat{2}$ on the downbeat of measure 2. Our expectation, of course, is that $\sharp\hat{2}$ will resolve up to $\hat{3}$ on beat 2 of that measure. When the dissonant note is sustained beyond beat 2, we revise our expectations to the less likely but still stylistic possibility that the resolution will occur on the downbeat of the next measure. Schickele, however, extends $\sharp\hat{2}$ for four full measures — a clear violation of all musical norms. As Huron pointed out, the audience on the live recording bursts into laughter less than a second after the downbeat of measure 3 (that is, immediately after the last possible opportunity for $\sharp\hat{2}$ to resolve appropriately). Asking students to explain the humor of this passage (as well as the timing of the laughter) would productively address issues of harmony and resolution and their relationship to meter.

Another one of Huron's examples was drawn from the Adagio movement of Schickele's *Quodlibet for Small Orchestra*, in which

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the well-known opening theme from the second movement of Beethoven's fifth symphony is quoted. No change occurs until the downbeat of the fourth measure, where Schickele simply resolves the third measure's dominant seventh chord to the tonic, leading the melody from $\hat{2}$ to $\hat{1}$ (whereas Beethoven bypasses $\hat{1}$, instead tonicizing vi with $\sharp\hat{5}$). As Huron explained, this melody is a marvelous illustration of veridical expectation vs. schematic expectation. Veridical expectation is based on our specific knowledge of how a particular quotation *should* continue (e.g., "Fourscore and seven years ago…"), whereas schematic expectation is based on our more general knowledge of a genre and how something *might* continue (e.g., "Once upon a time…"). Schickele's misquotation violates our veridical expectations of Beethoven's famous melody, yet it precisely follows our schematic expectations, producing a four-measure phrase that ends with a perfect authentic cadence. Our knowledge that the "incorrect" melody is actually more normative than its model renders this example particularly funny (and, again, fruitful for classroom discussion).[2]

Throughout the conference, numerous papers addressed either absolute pitch or child development, but Maria Teresa Moreno Sala (University of Quebec at Montreal) and Eugenia Costa-Giomi (University of Texas at Austin) combined both topics in their particularly interesting presentation "The Influence of Perceptual Shift on Young Children's Development of Absolute and Relative Pitch Perception."[3] In order to determine whether a shift from absolute pitch perception to relative pitch perception occurs during early childhood, as has been hypothesized, Moreno Sala and Costa-Giomi gave 88 young children a variety of pitch perceptual tasks before and after two months of focused instruction on absolute and relative pitch. The children attempted to identify four pitches by pressing computer keys (the pitches were heard both in isolation and preceded by arpeggios containing the four pitches), to identify pitches by matching a target tone on a xylophone, to sing a song in its original key, to identify intervals in a familiar key and in transposition, and to arrange five bells in order of pitch. Older children consistently outperformed young children on relative

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[2] As Huron observed, this example produces exactly the opposite psychological reaction that a deceptive cadence would produce.

[3] In the program, this paper was titled "The Effects of Instruction on Young Childrens' Development of Absolute and Relative Pitch Perception."

pitch tasks, whereas young children showed superior abilities on absolute pitch tasks. Furthermore, older children benefited more from relative pitch instruction, while younger children benefited more from absolute pitch instruction. These striking results strongly suggest that a perceptual shift from absolute pitch to relative pitch occurs during childhood some time between 5-7 years of age.

The final afternoon of the conference offered a symposium organized by Wilfried Gruhn (University of Music Freiburg) entitled "Neuroscience in Music Pedagogy." As Gruhn explained, music teachers—often pressured to defend the value of their work—have been eager to embrace research demonstrating the beneficial effects of musical activities on cognitive development. In Germany, the emerging field of "neurodidactics" seeks the practical connections between brain research and education, with the goal of adapting the curriculum to the learner's brain rather than the other way around. One of the participants on this symposium was Frances Rauscher (University of Wisconsin at Oshkosh), whom readers may recognize as a leading investigator of the phenomenon that has been dubbed the "Mozart Effect." Given the way that Rauscher's research has been exaggerated and misrepresented in the popular press (as well as by various commercial enterprises), it is not surprising that her tone was largely cautionary. Although music may serve as a kind of catalyst for cognitive abilities in other areas (especially spatial-temporal reasoning), we do not know which specific aspects of music instruction contribute to these effects, nor do we know how long they last. Rauscher expressed concern that extra-musical goals could supersede appropriate music instruction, and stated unequivocally that music educators should focus on the development of musical abilities and not be distracted by the possibility of fostering abilities in other academic areas. Other panelists echoed these concerns, indicating that while extensive musical experience (especially at an early age) does seem to affect brain structure, we do not know enough at this point to reach any specific conclusions about particularly beneficial practices in music education. In short, the stated goals of neurodidactics currently seem to be as distant as they may be worthy.

Several of the conference's evening events are worth mentioning. A well-populated special session entitled "Social responsibility and the political context of research" provided a forum within which attendees were invited to discuss the role of scholars in the current international context.[4] On a lighter note, another evening featured sight singing of selected choral works (singers and non-singers alike were warmly welcomed). The final evening of the conference offered an opportunity to socialize on a dinner cruise through downtown Chicago.

I would like to commend the numerous individuals who envisioned and then realized such a successful conference, particularly Scott Lipscomb (Northwestern University), the conference organizer. The faculty, staff, and students of Northwestern University were unfailingly gracious and hospitable, making the entire conference remarkably pleasant as well as intellectually stimulating. The next International Conference on Music Perception and Cognition will meet in Bologna, Italy during the summer of 2006. Given the remarkable breadth of topics addressed at this conference, I am confident that any musician will find papers of interest.

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[4] Interested readers may wish to visit websites maintained by Scholars and Artists for International Democracy <http://www.lecafeamericain.net/SAID/> or Scholars for Social Responsibility

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GUIDELINES FOR CONTRIBUTORS

1. Articles on any aspect of teaching or learning music theory will be welcome. Contribution will be judged on originality, relevance, interest to a diverse audience, and clarity of writing.

2. Manuscripts should be typed double-spaced (including footnotes, references, and quotations) on 8-1/2" x 11" paper with at least one-inch margins. Please submit five clear copies. All footnotes, tables, figures, musical examples, and other material should be placed at the end on separate sheets with an indication of where they fit in the text. Long musical examples and complex diagrams or charts should be avoided when possible. Please also avoid musical symbols (i.e. notation) within the running text.

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