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TOWARDS A PEDAGOGY OF GESTURAL RHYTHM

ROGER GRAYBILL

Let us imagine the following scenario in a freshman sight-singing class: the instructor asks a student to intone a rhythm written on the blackboard and the student responds by speaking the rhythm on “tah” with metronomically correct placement of attack points, but with virtually no dynamic inflection. The teacher then responds, “Good, the rhythm is correct. Now try it again, this time with expression; make it musical!” There are two unspoken assumptions in this scenario that merit critical consideration. First, the student’s performance is clearly based on the idea that the secret to performing a rhythm correctly is paying close attention to the attack points and durations of the individual notes within a strictly metronomic framework. Second, in requesting the student to inject musicality into the passage, the teacher implies that rhythm in itself is neutral in some sense and only gains its vitality through the addition of something external (e.g., “musicality,” or “expression”).

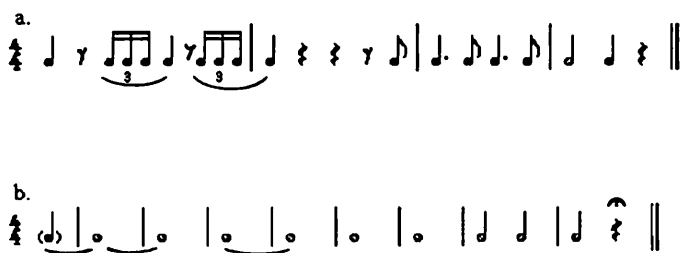
While this concept of rhythm as a neutral series of attack points and durations may be appropriate in certain contexts, it does not accord very well with our experience of rhythm in its fullest sense. When we respond to rhythm as listeners or feel a rhythm as performers, we experience something vital and dynamic—a flow of energy through time, one might say. This flow is not uniform and undifferentiated, but is rather characterized by a dynamic interplay of ebb and flow, of intensification and relaxation.¹ Since this kind of rhythm is often associated with physical movement, I will call it *gestural rhythm*; I will designate the more limited concept of our opening scenario as *attack-point rhythm*.

Attack-point rhythm is essentially a succession of durations either abstracted from, or implying the presence of *discrete* elements (most typically pitches, but also chords, phrase units, etc.). For instance, the *rhythm* of the opening to Mozart’s Jupiter Symphony (Figure 1a) refers to the abstract temporal relationships between the individual pitches of the melody. Similarly, the harmonic rhythm of the opening to Beethoven’s Op. 2, no. 1 (Figure 1b) measures the temporal distance between the initiation points of successive harmonies. Gestural rhythm, on the other hand, is broader in

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scope than attack-point rhythm, and includes the latter within its domain. It is concerned not merely with the *measurement* of discrete musical elements, but also with the continuous dynamic *flow* through these elements. The quality of this flow depends on a whole series of factors not normally regarded as directly relevant to the pedagogy of rhythm. For instance, two different melodic contours can project different gestural rhythms even with an identical durational series; similarly, two different phrasing schemes for a given melody can create two different gestural rhythms. In other words, the study of gestural rhythm ultimately involves not just durations but all musical dimensions, including pitch, dynamics, articulation, etc.

Figure 1.



I believe it is possible and desirable to teach a gestural concept of rhythm in the undergraduate sightsinging class. This paper will outline such a program, whose primary objective will be to train the student to interpret any written rhythm or melody as a rhythmically vital entity. The approach reflects the influence of two specialties not normally brought together. First, it draws its theoretical underpinnings from recent work in rhythmic theory, particularly on concepts of meter, grouping, and phenomenal accent. A second and equally important influence is a pedagogical system commonly referred to as *eurhythmics*, developed in the early part of the century by the Swiss music educator Emile Jaques-Dalcroze (1865-1950). Jaques-Dalcroze saw the human body as an indispensable tool for instruction in rhythm, and this study will follow his lead by utilizing *physical gesture* to heighten the student's sensitivity to gestural rhythm.²

At present no sightsinging or rhythm textbook clearly reflects the principles put forward here. This is not to say that all texts are completely indifferent to dynamic rhythmic principles; not infrequently one reads exhortations about the importance of phrasing and musicality—issues that

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certainly are closely associated with a dynamic concept of rhythm. And the melodies in most sightsinging texts include diacritical marks to help students achieve that desired end. A student, however, may carefully follow the performance markings in a score and still fail to convey the shape of a phrase in a rhythmically vital way; the musical impulse must arise from *within* the student and not from the diacritical marks themselves. A guiding principle will be that the student can be trained to see and perform the gestural shape of a written durational series or melody *without* the aid of performance markings.

I do not claim originality in positing this objective, nor is the idea particularly new: the pedagogical writings of Lussy (1874), Matthay (1913), and Jaques-Dalcroze (1906-17) reflect the same attitude, as do more recent sources such as Thurmond (1982) and Barra (1983). I personally have been particularly inspired in this respect by Robert Abramson, a leading authority on Jaques-Dalcroze and the pedagogy of eurhythmics.³ This pedagogical stance, however, cannot be discerned in present-day sightsinging texts, at least in any systematic form. I might add that some texts do place considerable emphasis on physical activities, and to that extent share features with the approach offered here. The types of gestures used in those texts, however, differ considerably from mine, as do the underlying pedagogical objectives.⁴

Any pedagogical approach must be supported by a solid and broad theoretical foundation as with Roman-numeral analysis; a necessary prerequisite for its present-day use in theory instruction was the work of theorists like Rameau, Weber, and others. Now, rhythm is a notoriously difficult and elusive topic for theoretical inquiry, especially if we attempt to account for its *dynamic* quality, a consideration that tends to attract difficult philosophical issues like musical motion and continuity. It is possible, nevertheless, to broadly discuss a theoretical basis for a gestural approach to rhythm without confronting and resolving all the thorny issues (especially philosophical ones). As noted above, several concepts examined and developed in recent theoretical literature, most notably grouping, phenomenal accent, and meter, will provide adequate tools for building such a foundation. After this theoretical background, the remainder of the study will introduce the pedagogical approach itself. In addition to outlining an overall program for the freshman year, I will discuss some specific activities and exercises.

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A THEORETICAL FOUNDATION

The forthcoming discussion will assume a monophonic context. Such a limitation is, of course, theoretically advantageous, but it is also appropriate for our immediate purpose, since most of the musical materials in a sightsinging class are single-line melodies or exercises. To be sure, textures of more than one part are often included (particularly duets), but the issues that arise in single-line textures also operate in multi-voice textures.

Gesture and grouping

As noted earlier, a dynamic concept of musical rhythm is fundamentally gestural. One of the most characteristic features of a physical gesture is its continuity; the image, therefore, fits well with viewing musical rhythm as a flow of energy. At the same time, however, the term *gesture* implies more tangibility than "flow of energy"; the former needs to be articulated to be recognized, while the latter suggests something more fluid. What, then, is a musical gesture? We will define it as any meaningful musical unit conceived as having continuity and dynamic shape. This definition, for the most part, accords with musicians' parlance: a phrase or subphrase, for instance, is commonly referred to as a gesture if the speaker intends to emphasize its dynamic quality.

The idea of gesture has much in common with the notion of *group*, a concept that figures prominently in the pioneering rhythmic text by Cooper and Meyer (1960), and has been explored more recently by Lerdahl and Jackendoff (1983) and Benjamin (1984). *Grouping* is essentially the segmentation of a musical surface. Lerdahl and Jackendoff express it in psychological terms: "The process of grouping is common to many areas of human cognition. If confronted with a series of elements or a sequence of events, a person spontaneously segments or 'chunks' the elements or events into groups of some kind" (13). Lerdahl and Jackendoff provide criteria for determining appropriate segmentations, invoking factors such as durational pattern, pitch contour, dynamics, and articulation. There is considerable overlap between grouping analysis and traditional formal analysis; for instance, both would view a phrase as a significant entity. Grouping analysis, however, also recognizes very brief musical units (as short as a few notes, or in rare cases, even one note) that would not be included in a traditional phrase analysis.

The boundaries of any particular gesture of two or more notes will also necessarily mark the boundaries of a group. *Group* and *gesture*, however, should not be regarded as equivalent. A group is essentially a neutral

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musical segment; in undertaking a grouping analysis, one necessarily focuses analytical attention on the boundaries of the group rather than its internal continuity or dynamic shape.⁵ A gesture, however, is more defined than just a delimited musical segment; it has by definition a dynamic shape of more intrinsic interest than the gestural boundaries per se. Our concept of gesture differs from group in another important respect. If a gesture may be “any meaningful musical unit” as stated in our definition, the term applies to single pitches just as naturally as to a group; in contrast, grouping analysis by its very nature considers single pitches to be significant only under extraordinary circumstances (Lerdahl and Jackendoff, 43). The possibility of describing individual pitches as gestural is corroborated by musical experience. For instance, often a vocal or instrumental instructor will ask a student to perform a particular tone with more “life” or “energy.” A tone of any duration, no matter how small, may be technically considered as gestural; the shorter the pitch, however, the more negligible its gestural effect.

Dynamic Shape

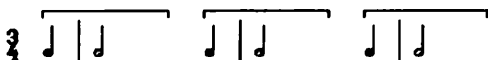
Since dynamic shape is one of the defining characteristics of a gesture, we must yet elucidate its nature. Musicians typically associate the idea of *shape* with pitch contour, a connection that arises quite naturally from our tendency to conceive pitch material in spatial terms; indeed, our notational system reflects this by indicating pitch level within a spatial frame—the staff. While pitch contour certainly has an impact on dynamic shape, however, the two concepts should not be confused; the latter is fundamentally an *intensity* profile, a notion that accords well with rhythm as a dynamic ebb and flow. Defined thus broadly, a dynamic shape can arise from any musical element (or combination of elements) that is able to produce varying degrees of intensity, such as dynamics (i.e., loud, soft); timbre; articulation; pitch contour; or durational pattern. The first three of these elements may operate for both single-note and multi-note gestures,⁶ while the last two (durational pattern and pitch contour) by definition are associated only with multi-note gestures.

It may not be immediately obvious how durational pattern and pitch contour can produce an *intensity profile* and thus affect the dynamic shape of gesture. Let us consider duration first. Earlier we saw that a durational pattern like Figure 1a or 1b is abstracted from a series of discrete elements and therefore depicts attack-point rhythm rather than gestural rhythm. But a durational series need not be interpreted only abstractly; we may view the series itself as having gestural implications. For instance, the pattern in

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Figure 2 features durational differentiation, which in turn creates groupings (shown with brackets) according to a very important and well-established principle: a relatively long note in immediate context will tend to be the last of a group.⁷ This grouping, moreover, is normally projected by the performer through a differentiation in energy flow. Thus the quarter note, which initiates the gesture, will seem to move towards the attack of the half note with momentum and intensification; the half note itself will undergo a gradual relaxation towards its end, allowing a gathering of energy for the opening surge of the next gesture.⁸ In short, the effect of durational pattern on dynamic shape is somewhat indirect: grouping arises from durational differentiation, and these groups in turn are typically expressed in performance through an ebb and flow of gestural energy.

Figure 2.



Pitch contour contributes two factors to dynamic shape: a) the direction of the line (i.e., up, down) and b) the interval between notes or group of notes (for instance, a five-note arpeggiation spanning a tenth from beginning to end). First, upward and downward motions are experienced differently. For instance, we tend to associate an ascending motion with an increase of energy or intensity and a descending motion with a decrease—an association that undoubtedly arises mainly from the experience of singing. In other words, tonal space is not a neutral vacuum but rather a dynamic field in which a motion up is qualitatively different from a motion down.⁹ (It is true that this difference cannot always be characterized as intensification and relaxation, but that does not really invalidate our qualitative conception. Later we will reconsider this objection.)

With regard to distance, if one conceives of tonal space as suggested above, an upward interval would typically be felt as an intensification of energy proportional to its size. For instance, ascending 5ths seem intuitively more intense than seconds—again, probably because we must expend more energy in singing such intervals. Similarly, an arpeggiated gesture conveys a greater surge of energy than a stepwise ascent. A similar set of observations would apply to descending intervals, if we substitute the concept of relaxation for intensification.

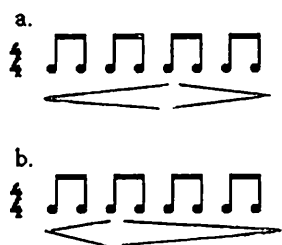
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Dynamic shape, then, is created by different musical variables in interaction. It is, moreover, inherently *rhythmic*, since any factor that contributes to a gesture's dynamic shape exerts its influence within the flow of time. Thus the melodic contours in Figures 3a and 3b progress towards and from the point of greatest intensity at different speeds. In this respect, the two passages have different rhythms, despite using the same duration series. Figures 4a and 4b demonstrate the same principles with dynamics. For clarity, both Figures 3 and 4 contain only one variable; in real musical contexts, the rhythm of a gestural shape will typically result from the complex interaction of various factors. While these factors may reinforce each other, they often do not. In such cases the rhythm of the shape as a whole could be analyzed as a composite of the various components.

Figure 3.



Figure 4.



Given the inherent rhythm of any musical dimension, it is striking that we tend to ascribe rhythmic significance to certain dimensions more than others. Thus it is commonly asserted that a succession of pitches (or series of phrases or harmonies) projects a certain rhythm; we rarely refer, however, to the rhythm of a crescendo or of a timbral change. This situation

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seems to arise from the attack-point concept of rhythm described earlier: neither a crescendo nor a gradual timbral change can be easily described by the attack-point model, since they both are continuous and therefore resist any kind of segmentation. Our natural gravitation towards quantifiable precision can in turn give rise to an unfortunate discrepancy between our *experience* of rhythm as a dynamic and fluid force, and our *conceptualization* of rhythm as something that can be described with exact numbers. For whatever reason, the latter is typically emphasized in our theory instruction at the expense of the former, but that need not be the case. The pedagogical approach proposed in this study assumes that all musical dimensions contribute to rhythm, whether measurable or not, and also assumes that a sensitivity to these various dimensions can be taught.

Gestural focal points

The dynamic shape of any gesture *leads to* and /or *comes from* a primary point of accent.¹⁰ *Accent* here corresponds closely to Lerdaahl and Jackendoff's *phenomenal accent*, which they define as "any event at the musical surface that gives emphasis or stress to the moment in musical flow" (17). Such accents may include "attack points of pitch-events, local stresses such as sforzandi, sudden changes in dynamics of timbre, long notes, leaps to relatively high or low notes, harmonic changes, and so forth" (17). By definition, then, a phenomenal accent is always produced by an audible event in the music; in this respect it differs from metrical accent (to be discussed later).

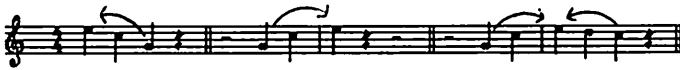
Earlier we noted that continuity is one of the characteristic attributes of gesture. What function does the primary accent of the gesture play relative to this continuity? Recently several theorists have argued that an accent should be conceived as a durationless moment in time, an attitude I share.¹¹ Since an accent has no duration, it cannot contribute to the continuity of the gesture; it is to be understood rather as a point of focus that helps to shape that continuity; or looking from the opposite direction, one might say it is created by the particular dynamic profile of the gestural unit. In any case, a point of accent is inconceivable without a contextual continuum; the two concepts go hand in hand.

The accentual focus of a gestural group may occur on any note within that gesture, whether at the beginning, middle, or end. (Strictly speaking, the accent would fall at the attack point of that note, but from a pedagogical perspective the distinction between that attack point and the note itself becomes significant only if the note is relatively long.) Figure 5 demonstrates several possibilities. The placement of the accent strongly affects

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gestural quality; the arrows in Figure 5 indicate how the gestural flow is shaped by the accent. In Figure 5a the gesture seems to move from an accentual focal point, while the gesture in 5b moves towards it; in 5c, the gesture flows both towards and from the accent. At this point, the reader may be reminded of Cooper and Meyer's grouping categories (p. 6), which are either beginning accented (trochee, dactyl), end-accented (iamb, anapest), or middle-accented (amphibrach). But the overt continuity of the gestural shapes in Figure 5 recalls even more vividly Wallace Berry's impulses, described in his *Structural Functions in Music* (1976). His initiative impulse is the moment of accent, towards which or from which the other impulses move. A reactive impulse will "carry forward . . . accent-delineated thrust (motion, energy), in a sense absorbing the force of the initiative impulse, reacting to its accentual 'energy' and predominance" (327). He also describes an anticipative impulse, which "direct[s] energy toward an initiative." Berry's use of *motion* and *energy* reflects a dynamic and gestural conception of rhythm, akin to the approach taken here.¹²

Figure 5.



In attempting to determine the accentual focal point of single-pitch gestures, we encounter a conceptual difficulty. In one sense, this accentual moment necessarily occurs at the point of attack, since there is no articulated event during the sounding of the pitch that could qualify as accentual. It is also true, however, that the dynamic profile of a pitch will often have a moment of greatest intensity during its tenure, even if that moment is difficult to fix precisely. While not technically in accordance with our definition of accent, such a point may well be the true analogue to the accentual focal point of a gestural group. The conceptual difficulty lies in determining the relative weight of an initiative accent against a moment of accent or climax *within* a gesture. Both types of emphasis are very strong but in fundamentally different ways. Fortunately, we do not need to resolve this issue; pedagogically, we would only need to demonstrate that a single-pitch gesture does indeed have both a point of attack as well as a gestural shape after that moment of attack.

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Gestural hierarchy

Thus far we have treated gestures as if they were uncomplicated and indivisible. In reality, they very frequently approach or recede from their primary accent by subgestures that constellate about secondary accent points, as shown in Figure 6.¹³ In this example slurs indicate the gestural units, with the lower-level gestures appearing at the bottom; the primary accentual point within each unit is also shown. Typically the very lowest gestural level will be those individual pitches of relatively long duration; this level is also present in Figure 6, though it is not represented by any special symbol. (The accent marks on the longer durations do not represent gestural levels per se, but rather focal points within the larger slurred gesture.) When several levels of gestures coexist, a *gestural hierarchy* results.¹⁴

Virtually any passage of music will contain gestural shapes at several levels. A convincing performance of such a passage entails the careful balancing of the various levels, so each unit, along with its focal accentual point, receives its proper emphasis within the overall hierarchy. In performing Figure 6, for instance, the singer should be careful not to inflect the individual pitches so much that they undermine the unity of the gestural shapes at the next level (shown as the lowest level in the example); similarly, if the singer makes too much of these gestural groups at the lower levels—say, through excessive separation between them, or an overemphasis on the subsidiary accents—the higher-level gestures will lack cohesion and direction. On the other hand, no inflection would be just as unsatisfactory, resulting in a lifeless and uninteresting line. A satisfying gestural whole, then, is created by striking an appropriate balance between the hierarchical levels.¹⁵

Figure 6.



We can see a danger in schematically depicting a gestural hierarchy as in Figure 6. At all levels, the slurs indicate discrete groups, each one distinct. We have just asserted, however, that the lower-level gestures should not be

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delineated *too* strongly, since that would hinder a projection of the larger gestures. The low-level slurs by themselves cannot visually convey this idea; indeed, insofar as they indicate distinct and discrete gestures, they seem to give the opposite impression. In other words, our hierarchical arrangement of slurs only crudely conveys the rhythmically subtle effect of a true gestural hierarchy. Such a structure is best thought of as single energy flow, in which the intensity level tends to ebb—sometimes dramatically, sometimes not—at the transitions between lower-level gestures. (As suggested earlier, any such subsiding of energy also allows a gathering of potential energy for an upcoming surge.) It should also be noted that many musical structures are less clear than Figure 6. Even at a single level, the connection between gestures can be so smooth we are more aware of a ripple in the musical flow than of the grouping *per se*. In addition, the gestural grouping at lower levels is often ambiguous.¹⁶ Here a schematic depiction of gestural subgroups with slurs would almost be more misleading than revealing. In short, gestural rhythm is essentially fluid—especially important to remember for pedagogy.

Gesture and meter

The preceding discussion has focused on gesture as a purely phenomenal entity (i.e., as being composed purely of tangible musical elements). The character of a gesture, however, does not derive merely from phenomenal elements. Our experience of a gesture is affected to a large extent by its specific position within a meter. We therefore need to consider briefly the concept of meter so we can evaluate its effect on gestural shape.

Much recent theoretical literature on rhythm has focused on meter. While the various sources are not in complete agreement about the attributes of meter or even its definition, general tendencies are easily discernable. The concept of beat is an absolute prerequisite for meter; most theorists also agree that meter can arise only when at least two levels of beats coexist—the primary beat level itself and a higher level that organizes the primary level (see Yeston 1976, 65–67). The resulting organization on the primary level is experienced as a regular series of strong beats in alternation with one or two weak beats.¹⁷ Additional beat levels typically coexist with the two levels already mentioned, resulting in a metrical hierarchy.

Lerdahl and Jackendoff describe how meter arises from phenomenal accentual patterns:

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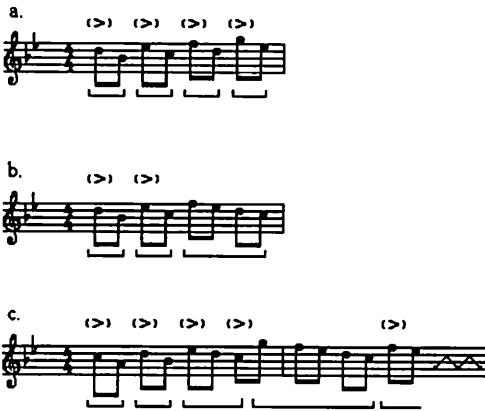
Phenomenal accent functions as a perceptual input to metrical accent—that is, the moments of musical stress in the raw signal serve as “cues” from which the listener attempts to extrapolate a regular pattern of metrical accent Metrical accent, then, is a mental construct, inferred from but not identical to the patterns of accentuation at the musical surface. (17-18)

Meter can therefore be deduced even from an irregular pattern of phenomenal accents. Just enough information must be provided for the listener to construct a metrical hierarchy whose regularly recurring accentual scheme tends to perpetuate itself even though phenomenal accents may occasionally fail to reinforce it. To a certain extent, the phenomenal accents may even contradict the meter without disturbing it. (If such contradiction becomes strong enough, however, the listener may lose the meter or even experience a switch to a new one.) So while meter is initially established through phenomenal accentual patterns, its continuation is not dependent on constant reinforcement by those accents. The world of gesture is very different from meter in this sense, being entirely dependent on phenomenal sounds for its existence. Gestures can only be generated by tangible musical material: the listener does not experience any that are not directly supported by the information actually heard. The very tangibility of phenomenal accents and of the gestural shapes for which they serve as focal points gives both a certain degree of independence from meter. That is, just as meter is free from a complete dependence on phenomenal factors, so the phenomenal gestural world is free from the need to constantly reinforce that metrical structure.

Figure 7 shows how a series of beats at a specific metrical level (here, quarter notes) may or may not be reinforced by phenomenal accents. In this example, the scheme is created purely by melodic contour, since no other type of differentiation appears (e.g., dynamics, duration, articulation). In Figure 7a, each quarter note beat is reinforced by accents in the melodic contour. Figure 7b begins similarly, but the switch to stepwise motion halfway through results in a smooth motion through beat four; thus that beat is not reinforced by a phenomenal accent. Finally, in Figure 7c, the contour not only fails to reinforce the fourth beat, but also creates an accent on a lower metrical level (i.e., on the eighth note after beat four).

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Figure 7.



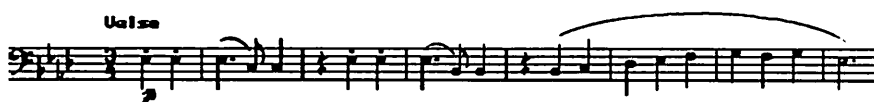
In all three passages, the phenomenal accents initiate low-level gestural units, indicated with brackets. For instance, in Figure 7b the three accents initiate three gestures, the third equal in length to the first and second combined; the longer third gesture, of course, directly relates to the lack of an accent on the fourth beat. Now how do listeners experience this third gesture? Despite the lack of accent on beat four, they certainly *feel* a fourth beat at that point; the meter continues undisturbed. One might therefore conclude that the absence of a phenomenal accent at this point has no appreciable effect on the listener, other than providing a slight sense of surprise that the previous sequential pattern has been broken. But such is not the case. At the fourth beat, listeners do not passively mark time; they experience an expansion begun at beat three and continuing *through* the fourth beat towards its goal. Since this third gesture is the first one to suppress a potential phenomenal accent (potentiality being determined on the basis of preceding events in that measure), it feels relatively expansive. Stated differently, the expansion derives from its relative length, which is double the first two. It should also be noted that performance affects how the listener experiences this expansiveness.

A potential phenomenal accent is also thwarted in Figure 7c, in which a descending three-note gesture beginning on beat three passes through beat four; here, however, a new gesture begins on the eighth note on the "and" of four. In sum, Figure 7b and 7c illustrate an important principle: any time a point of metrical emphasis is not reinforced by a phenomenal accent (except in the case of a rest), we may assume that that moment is subsumed within the continuity of a gesture that moves through it. Figure

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8 illustrates the same principle.¹⁸ Whereas the downbeats of mm. 1 and 3 are reinforced by agogic accents, the downbeat of m. 5 fails to stand out as a phenomenal accent, due to the rising stepwise motion through that point. A performer, then, would move through this D-flat as part of an extended anacrusis pointing towards the final note E-flat, which is the accentual focal point. To accent the D-flat would detract from that anacrusis and from the whole expansion.

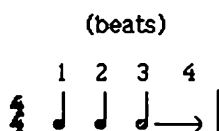
Figure 8.



Figures 7 and 8 have illustrated the interaction of meter and gestural groups (of two or more notes). The relationship between meter and single-note gestures can be described similarly. Let us consider the simple duration series quarter-quarter-half within a four-four meter, as shown in Figure 9. This rhythm exhibits a tension between meter and gesture like the passage in Figure 7b. In that example, the melodic contour created accents on beat one, two, and three, but not four. The durational pattern in Figure 9 creates exactly the same phenomenal accentual scheme by attack points. (The scheme in Figure 7b, however, is at a higher gestural level, since two or more individual pitches are contained within each gesture.) In both cases, a potential phenomenal accent on the fourth beat is suppressed, resulting in a gestural unit that lasts for two beats. The half note of Figure 9, then, does not include two parts (i.e., two beats), but rather is a single unit with a gestural envelope independent of the underlying beat pattern. The performer may *choose* to intensify at the midpoint of the note and thus reinforce the underlying beat, but any other envelope is also possible. In any case, this half note will normally feel relatively expansive like in Figure 7b. As a rule, any duration longer than the prevailing beat value will have at least some gestural significance. And if the tempo is slow enough, single-pitch gestural units will also be noticeable at the level of the beat, or lower.

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Figure 9.



We see, then, that gestural shapes, whether consisting of one or many notes, are to a certain degree free from the constraints of metrical structure. (I include the qualification “to a certain degree” since *some* reinforcement of the meter is necessary if that meter is to stay in effect.) At the same time, any shape exhibiting such freedom has a special *affect* arising precisely from its relationship to the reigning meter. Thus meter and gesture coexist semi-autonomously. This has significant ramifications for the sightsinging class, and indeed, for performance in general. One of the goals of teaching rhythm as gesture is to outgrow an overly metrical approach to rhythm—in short, to sensitize them to gestural shapes.

Another crucial aspect of the interaction between gesture and meter is that gestural groups are not necessarily congruent with metrical units (Lerdahl and Jackendoff, 29-30). We saw a clear example of this in Figure 2, where the quarter-to-half grouping spans the barline. Such across-the-barline (or across-the-beat) groupings are very common. Our notational system, however, which is visually biased toward metrical units (through barlines, beaming, etc.), is not designed to highlight such groupings; indeed, the notation is distracting. Not surprisingly, students often fail to see gestural groupings noncongruent with metrical units. For this reason, such groupings should receive special pedagogical emphasis.

In exploring the theoretical underpinnings for a pedagogy of gestural rhythm, the first portion of this study has focused on two essential theoretical concepts. First, the teaching of gestural rhythm considers gestural *grouping*. Second, a gestural approach distinguishes between phenomenal accent and metrical accent—a distinction many students do not understand, at least conceptually—and more broadly would show how the phenomenal shape of a phrase interacts with the metrical hierarchy. Neither of these topics is normally taught at the undergraduate level, at least in a systematic way. A pedagogy of gestural rhythm would thus remedy a

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serious gap in the student's theoretical education. This, of course, leaves aside the most obvious advantage of such an approach, namely its immediate relevance to practical musicianship: training in gestural rhythm is also training in basic principles of musicality and thus directly relates to the performance studio.

PEDAGOGICAL APPLICATIONS

Overview

Earlier I said a pedagogy of gestural rhythm would train the student "to interpret any given rhythm or melody as a rhythmically vital entity." A more precise formulation is now possible: the objective is to train students to recognize *gestural shapes* in notated music and to perform them appropriately. However, while this new emphasis on gesture establishes a more focused pedagogical method, one must be careful not to claim more theoretical rigor than it deserves. While a musical gesture may be defined with clear boundaries, in reality gestural groups often flow smoothly from one to another. Even when there is a relatively clear demarcation between two adjacent groups at the same gestural level, their mutual inclusion within the continuity of a higher-level gesture will tend to weaken that line. The fluidity of gestural rhythm is therefore difficult to pin down—perhaps more an inherent limitation in the act of conceptualization itself than any shortcoming in our particular theoretical apparatus.

In any case, while this theoretical limitation may be troublesome, it is not a serious barrier for this pedagogical approach. Our present aim is to provide principles for discerning and performing gestural *tendencies* in a score. There is no need to teach a fool-proof analytical system for assigning function to every single note according to some grouping theory. Such a fussy approach would be counterproductive for fluid situations.

While gestural fluidity may be difficult to define, its character can be directly *experienced* through physical gesture. The link between physical motion and musical motion is acknowledged almost universally among professional musicians and laymen alike. Indeed, the reason we are able to respond to musical rhythm at all is that we are gestural beings ourselves: every motion we make, either voluntarily or involuntarily, is a gesture of some type. It seems only appropriate, then, that a systematic approach to musical gesture in the classroom should harness the body as a learning tool. My pedagogical emphasis on physical activity, as well as many of the specific exercises, reflect the strong influence of Dalcrozian eurhythmics.¹⁹

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The Dalcroze approach is probably most widely associated with children; it has also proven, however, to be transferable to the college level. Though eurhythmics is typically taught as a separate course, one can easily incorporate eurhythmic principles within a larger pedagogical context. In doing so, one must take classroom size into account: whereas a typical eurhythmics class requires a large space for its activities (walking, skipping, swinging, etc.), a typical sightsinging class is normally conducted within a relatively small space. I will keep this limitation in mind while suggesting physical activities for classroom use.

Before looking at the pedagogical approach in depth, we must yet address a potential problem regarding its broad organization. Since virtually every musical dimension (contour, dynamics, timbre) contributes to gestural rhythm, how are we to organize the materials within a course of study? In particular, is it possible to start with purely durational exercises (i.e., without pitches, dynamics, etc.) such as those normally encountered in traditional rhythmic training? I believe the answer is yes, since any rhythmic pattern containing durational differences and /or rests will imply groupings as well as a differentiated gestural contour (see Figure 2 and the accompanying discussion); thus durational exercises provide an excellent introduction to gestural rhythm.

Pitch can then be introduced as a complicating factor to reinforce, undermine, or clarify the gestural shapes implied by the durational series itself. Performance markings that specify dynamic level, phrasing, and articulation also affect gestural shape, and they too are brought in later. Normally these other domains (particularly pitch) are considered outside the realm of rhythmic study, an attitude that naturally follows from an attack-point understanding of rhythm. Since rhythm as *gesture*, however, embraces the whole fabric of a musical passage, a pedagogy of gestural rhythm necessarily must include pitch, dynamics, and articulation; to not do so is to miss the whole thrust of the approach. In short, whereas the traditional sightsinging course normally views "rhythm" (i.e., attack-point rhythm) as a separable component, our approach takes roughly the opposite view: sightsinging is the culmination of work in gestural rhythm.

The first stage of rhythmic training: simple meter

At the start students should do some work in simple meter. Conducting is an ideal exercise at this preparatory stage, for it shows metrical structure in a *gestural* way. Specifically, a conducting pattern (two, three, or four beats) reveals an individual character or function for each beat. Abramson describes these different beat qualities:

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Jaques-Dalcroze's theory of rhythmic beat qualities goes on to classify beats as the *crusic* beat, seen as a release of energy; the *metacrusic* beat, seen as a gentle carryover or a dying away; and the *anacrusic* beat, seen as a preparation of energy for release.(41)

For instance, in three-four meter the three beats would correspond to *crusis-metacrusis-anacrusis*; in four-four, both the second and third beats are *metacrusic*.²⁰ A conducting pattern vividly conveys these different beat qualities. The arm shows the *anacrusis* with an upward thrust. Since this motion traces a trajectory against gravity, it represents a building-up of potential energy that awaits release. Such release is provided by the subsequent dropping of the arm for the *crusis*, which should feel like an inevitable consequence of the *anacrusic* preparation. Since the falling of the arm is assisted by gravity, we associate the bottom of that fall—i.e., the *ictus*—with a feeling of weight. The following *metacrusic* beat(s) feel relatively neutral in comparison to the *anacrusis* and *crusis*, though the outward thrust of beat three in four-four (or beat two in three-four) feels like a preparation for the lift of the forthcoming *anacrusis*. In this respect, the *metacrusis* is not merely a dying away as suggested in the above quote but also a gathering of energy. (Indeed, I have heard Abramson refer to the third beat of four-four time as a “growing *metacrusis*.”)

If students have trouble experiencing the different beat qualities through conducting, they may find it helpful to step the meter with alternating feet; in three-four meter, the pattern would be *left-right-left-right-left-right*, with every downbeat stepped in front of the other two beats.²¹ The step on beat three should lift with *anacrusic* energy so that the downbeat lands with weight; beat two then will be lighter and relatively neutral. (The knees should be slightly flexed throughout.) Again, the weight of the downbeat is largely a natural consequence of the *anacrusic* lift immediately preceding it, rather than a simple assertion of weight.

At this point we must confront an apparent discrepancy between the idea of downbeat *weight* and the concept of metrical downbeat in present-day rhythmic theory. While the latter views a downbeat as a durationless moment, the experience of weight would seem to require a time span, however brief. These concepts, however, are not incompatible. While it is true the body experiences weight in stepping a downbeat, the footstep itself actually occurs within a single moment (of contact with the floor), which would correspond to the durationless downbeat. The body does not merely express a downward trajectory of weight immediately after the step on beat

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one; it is also on the way to the second step and to that extent expresses a forward trajectory (in time) towards beat two.

After the basic conducting and stepping patterns, students should learn to conduct different kinds of musical character (e.g., staccato, marcato, intense legato, a more floating legato, etc.) in response to music played for them. Since musical character resides precisely in the continuum between beats, this exercise attunes the students to that temporal continuum. More broadly, it enables them to explore the *expressive* possibilities of physical gesture. They should also know how to show various dynamic levels; *fortissimo* requires them to be gesturally expansive, while the smaller gestures for *piano* demand an inner intensity if the beat pattern is not to lose its clarity.

After an introduction to meter, work in gestural grouping can begin. Many of the following ideas and exercises are drawn directly from a pilot text I have written for the freshman theory course at the University of Texas at Austin.²² This text contains material for thirteen units, each focusing on either a particular durational unit or a rhythmic topic (e.g., syncopation). These thirteen units cover a program for only the freshman year; a full-fledged program would ideally take two full years.

Each unit subdivides into three parts. (The term *unit* refers to an ideal level that now is only incompletely realized in the pilot text itself.) The first part introduces very short formulaic patterns that utilize the duration(s) or rhythmic concept featured in that unit; the students are taught to interpret these patterns as gestural groupings. During this time physical gestures are introduced to help the students experience the gestural shapes of the various patterns. The second portion of each unit contains longer durational exercises, which place the formulaic patterns within a larger context. Finally, the students work with actual melodies to investigate the effect of pitch structure, dynamic markings, and articulation on gestural shape. This three-fold division will provide the organization for the remainder of the study.

Figure 10.

DURATIONAL VALUES	SAMPLE FORMULAIC PATTERNS	MOST GESTURAL GROUPING OF SAMPLE PATTERNS
UNIT 1 quarter notes, quarter rests*		
UNIT 2 eighth notes (in pairs or some other multiple of two)		

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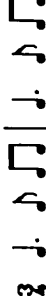
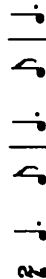
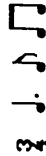
UNIT 3

half, dotted
half, and whole
notes

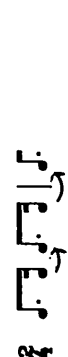
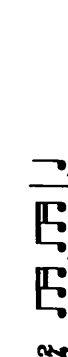
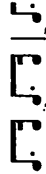
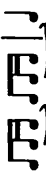


UNIT 4

dotted quarter
notes

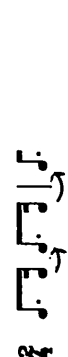
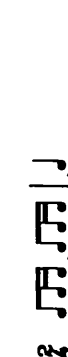
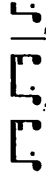
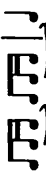


UNIT 5



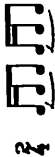
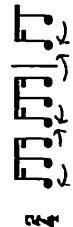
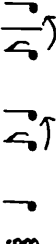
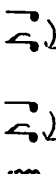
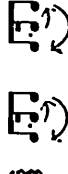
UNIT 6

sixteenth notes



*Units 1 through 8 are in simple meter (assuming quarter note as the beat)

Figure 10. (cont.)

	DURATIONAL VALUES	SAMPLE FORMULAIC PATTERNS	MOST GESTURAL GROUPING OF SAMPLE PATTERNS
UNIT 7	sixteenth notes		
UNIT 8			
UNIT 9	cells associated with compound meter**	 	 
UNIT 10		 	 

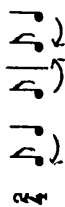
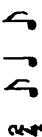
**Assume the dotted quarter as the beat (as in six-eight or nine-eight meter).

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UNIT 11

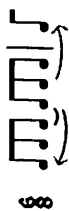
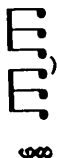


UNIT 12



syncopation in
simple meter

UNIT 13



syncopation in
compound meter

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Formulaic durational patterns

Figure 10 provides an overview of the thirteen units. The left column shows the durational values introduced in each unit. All values in this figure assume either the quarter-note (simple meter) or the dotted-quarter (compound meter) beat; the text itself utilizes three different beat values in each unit—eighth, quarter, and half in simple meter, and dotted eighth, dotted quarter, and dotted half in compound. The middle column displays sample durational patterns from each unit. All of these patterns are notated within the confines of some metrical unit, either the measure (units 1-5, 12-13) or the beats (units 6-11), reflecting the metrical bias of our notational system. (Several sightsinging texts focus on durational cells of this type—e.g., Henry and Mobberly 1986; Kazez 1989.)

But since metrical units are not necessarily congruent with gestural groups, the information in that middle column is not adequate for our gestural approach. I have therefore included a third column, in which the patterns of the middle column are interpreted as gestural groupings. The notated rhythms in that right-hand column reflect an underlying assumption that the gestural shape of any durational pattern emerges most naturally through successive repetitions of that pattern. Figure 10 does not exhaustively depict all the patterns from the thirteen units in the text; for instance, a complete list would include patterns in three-four meter for unit 1, patterns in two-four and four-four for unit 2, and so on.

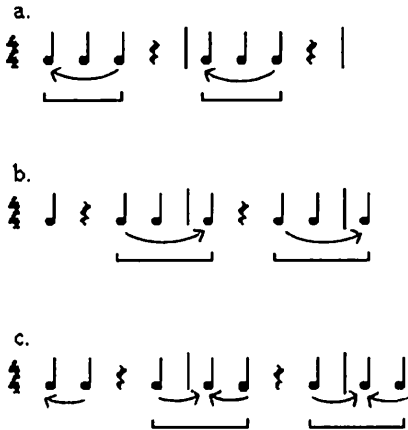
A close look at unit 1 will provide an introduction to the pedagogical role and performance mode assumed by the formulaic patterns. Three patterns are shown in the middle column of Figure 10, each consisting of three quarter notes and one variously placed quarter rest. This simple shift, however, creates a distinctly different gestural shape for each pattern, as shown in the right column.²³ The boundaries of each group are clearly delineated by the rests; the first grouping occurs within the measure, while the other two cross the barline. This distinction between groupings contained within a single metrical unit (i.e., a measure, or at a lower level, a beat span²⁴) and those that begin in one metrical unit but end in another, is a critical one in virtually every unit. The specific position of a group relative to the downbeat directly affects its dynamic shape; this shape is shown by the arrows, which indicate motion to and/or from a point of emphasis.

A single arrow may or may not correspond to a single gestural group depending on where the phenomenal focal point falls within the gesture. If the point of emphasis is either a gestural goal (forward-pointing arrow) or a starting point (backward-pointing arrow), a group is indeed defined by the length of that single arrow (Figure 11a and 11b; the brackets indicate groups). If a gestural focal point, however, has arrows pointing to it from

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both directions (corresponding to Cooper and Meyer's amphibrach grouping), the group corresponds to the composite span of both arrows (Figure 11c). The bracket notation in Figure 11 actually has an advantage over arrow notation insofar as it designates the different kinds of groupings with a single symbol, but I feel this advantage is outweighed by the resulting visual clutter. For this reason I use only arrows in Figure 10 and other examples.

Figure 11



These arrows are not analytical symbols so much as indications for performance. To aid interpretation, I provide the students with specific guidelines for vocal inflection. First, a motion *towards* a phenomenal accent should be intoned with a rise of pitch and dynamic intensification, while motion *from* an accent should be inflected with a descent of pitch and dynamic de-intensification. Second, the inflectional contour should communicate gestural continuity, so the moment of accent seems to arrive at the crest of a tonally-inflected wave. The instructor must strongly discourage punching out accents as isolated points of emphasis. Third, at the beginning stages students should use an essentially legato articulation to convey gestural continuity. Otherwise they tend to lapse into an attack-point mode. The combination of legato and pitch inflection may initially sound odd (its effect is not unlike *Sprechstimme*) but eventually becomes familiar.

As the students become more adept at expressing rhythmic flow, they should also incorporate other types of character, such as light staccato or marcato, or some combination of articulations. In so doing, however, they

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must still inflect the rhythm tonally and dynamically. Finally, the consonant "d" is ideal for the intonation of the rhythms. Its attack is clear and yet flexible, ranging from explosive (*marcato*) to very gentle (*legato*). For *legato*, "d" is preferable to "l" since the latter has a less clearly defined moment of attack.

In the three patterns of unit 1, the moment of phenomenal stress represented by the tip of the arrow coincides with a point of metrical accent. Indeed, a quick glance at the various units in Figure 10 reveals that arrows most often point either to a downbeat (when the durational pattern is a measure in length), or to a beat itself (when the pattern is only a beat span in length). In light of my earlier claim that a gestural shape is semi-independent of the metric hierarchy, this strong congruence of phenomenal and metrical accent requires some explanation.

Why should the student automatically inflect a point of metrical accent with emphasis if a phenomenal shape is presumably not constrained by the metrical hierarchy? This objection may be answered in two ways. First, there is clearly nothing inherently illogical about placing a phenomenal accent on a downbeat or some other point of secondary metrical stress; indeed, such congruence is necessary to a certain extent if a meter is to be established in the first place. In fact, that is precisely the reason for relatively rigid inflectional schemes in Figure 10: they are largely *necessary* for the projection of meter in these patterns due to the lack of melodic contour, dynamic markings, and other accentual criteria. Without the vocal inflection, the placement of the downbeat would more often than not be impossible to determine. Second, while our inflectional guidelines emphasize the metrical downbeat, they do allow a certain degree of gestural freedom *within* the measure so that points of secondary metrical accent do not always receive phenomenal stress. For instance, in the first rhythm of unit 1 the third quarter note receives the least emphasis even though it falls on the relatively accented third beat.

We shall see that the possibility of gestural freedom within the bar is explored further in the extended durational exercises from the second part of each unit. Later when pitch is introduced, the student is shown how a phenomenal design may create gestural continuity through the downbeat itself. In sum, I believe the concept of gestural autonomy from the meter should be introduced very carefully—at first only within the measure and later at higher levels. Too much gestural freedom at the outset may prevent a firm metric sense from ever developing.

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The groupings in the first unit are especially clear since they are demarcated by rests. The second unit introduces durational differentiation—a second important basis for delineating groupings. A technically rigorous explanation of how grouping arises from durational differentiation is overly complicated for pedagogical purposes (Lerdahl and Jackendoff, 44–45), but fortunately one can convey an adequate idea of this grouping principle in everyday language. To put it most simply: a relatively long duration will tend to sound like the goal of a group. Since durational differences abound in the world of real music, this particular principle is extremely powerful. We encounter it repeatedly from the second unit on.

Again, the resulting groups fall into two basic categories—some contained within a metric unit and others spanning two such units. In units 2, 4, and 5, grouping occurs within or across the boundaries of a measure; in units 6ff, we encounter a similar distinction at a lower metrical level, the beat span, with some groupings contained within a beat span and others overlapping two spans. The grouping in unit 5 moves gesturally through a moment of metric stress; specifically, an anacrusic eighth-note pattern begins between the second and third beat and passes through the third beat without any emphasis illustrating again the ability of a gesture to escape the metrical constraints.

Figure 10 does not necessarily show every gestural possibility for each durational pattern. For instance, the pattern in unit 5 could be performed with a slight stress on the eighth note on the third beat; I believe, however, that this is a less natural option since it interrupts the smooth flow implied in the succession of eighth notes. Each of the readings in the diagram, in fact, reflects my normative interpretation for that particular durational series within that particular meter. Certain patterns are more ambiguous than others; for instance, the third pattern of unit 2 could also be grouped within the measure, while such an option for the first rhythm in that unit would feel unnatural. In ambiguous cases, the instructor may wish to teach more than one normative grouping. Later the addition of complicating factors such as pitch contour, articulations, and dynamics may radically alter *any* of these normative readings.

Some of the groupings in the right column of Figure 10 are shown in two levels (e.g., see unit 2, second rhythm, and unit 4, second rhythm). In each of these cases a forward-pointing arrow at a lower level contradicts a backward-pointing arrow at a higher level. The contradiction, however, is only apparent; the backward-pointing arrow does not signify that every succeeding pitch in the measure is increasingly recessive (as in the first rhythm of unit 1, for instance) but rather that the smaller gesture *as a unit* is recessive.

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Special mention must yet be made of the third unit, in which half, dotted half, and whole notes are introduced. Here the primary focus is not on grouping, but single-note gestures. These longer values are traditionally taught from a purely metrical perspective (a half note has two beats, a dotted half, three beats, etc.) and are also normally considered the simplest to perform. When conceived as single gestural units, however, longer durations require an expansive feeling that can be elusive for some students. The difference between the metrical and gestural conception has considerable bearing on performance; a longer duration sounds very different when it is counted than when it is truly felt as a dynamic shape. Since students often have trouble with this gestural aspect of longer durations, I save those durations for the third unit. They could, however, conceivably appear earlier.

Quick reaction exercises

The student should be able to perform the gestural shapes in the right column of Figure 10 without hesitation. One means for attaining this level of mastery is the *quick reaction exercise*, a standard Dalcrozian activity.²⁵ In its simplest form, the exercise begins with the intoning of a particular rhythmic pattern by the student, who, upon a verbal or visual signal from the instructor, switches to another pattern that has been agreed upon in advance. This new pattern, in turn, is repeated continuously until another cue signals a return to the original one—and so on, back and forth between the patterns. I prefer to give the cue a beat or two ahead so students can prepare for the switch; in any case, the reaction time should be brief.

This is not merely an exercise in attack-point rhythm; the students must inflect the gestural quality as well. The goal, moreover, is to change immediately and convincingly from one gestural shape to another without the slightest fuzziness or imprecision. When the patterns are new, this switch will invariably sound shaky for a brief time until the new pattern settles in—a sure sign that more practice is necessary. The instructor may also introduce pitch by having the student sing a continuous scale up and down, changing direction at the octave without stopping. Another option is a melodic sequence, as shown in Figure 12. A change in rhythmic pattern in this case produces an apparently new sequential *melodic* unit since one pattern groups within the measure while the other crosses the barline.²⁶

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Figure 12



Physical gesture

All of the gestural shapes in the right column of Figure 10 can be expressed by some kind of physical gesture. The students should learn these gestures as the patterns are first introduced and in particular should use them while intoning the quick reaction exercises. There are three basic categories of physical gesture. The first gives to each note of the pattern its own individual subgesture, while ultimately subsuming these subgestures within a larger gestural progression. Clapping might be considered an example, at least insofar as it expresses a series of individual notes. But how can a series of claps form a larger single gesture? The secret here is to clap different notes in different ways to reveal something about their relative gestural functions. Consider, for instance, a quarter-eighth-quarter-eighth pattern in three-eighth meter. A student would typically clap with the same amount of force on all the attacks, with the rebound off the clap returning to approximately the same hand position (say, with the hands six inches apart); clapping of this type does not differentiate between the two notes in any way, but simply expresses them as a series of attack points.

But what if we notice the greater duration of the long note and attempt to show it physically? The only way to express this duration is through the rebound itself, that is, by pulling the hands apart more gradually through *space* to reflect the full duration of the note.²⁷ If the duration of the eighth note is also reflected in its rebound, a gestural difference emerges between the long and short note: the former requires more space for the rebound. The short clap, moreover, now seems to lead to the long clap, so the clapping sequence as a whole clearly expresses the grouping across the barline. To convey gestural flow, the hands should always be in motion, however slight, since the loss of motion is metaphorically equivalent to a musical rest.

Another activity from the first gestural category (especially for the relatively slow rhythms of units 1-5) is the stepping of a rhythm with alternate feet. I prefer that the student step forward on a downbeat (unless a rest appears at that point) and step the other notes of the measure in place directly under the torso; rests should not be stepped, but may be indicated

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with a snap of the fingers. For instance, the first rhythm of unit 1 would be stepped *left-right-left-(snap)-right-left-right-(snap)*, etc.; the second rhythm would be performed *left-right-(snap)-left—right-left-(snap)-right*, etc. (Since there are only three steps per measure, successive downbeats are stepped by alternating feet.)

In stepping a durational pattern, the student must be sure to express the overall dynamic shape of the pattern. For instance, in the first pattern of unit 1 the downbeat should receive the most weight, and the second and third notes should be successively lighter; in the second pattern, the quarter on the fourth beat should lift in preparation for the weight of the downbeat. Rests also require careful attention. Let us imagine stepping the first rhythm of unit 1: we step on beat one, two, and three, and then rest on beat four before stepping on beat one again. Does this mean that the feet are completely motionless through beat four to the following downbeat? The answer is no, since the foot about to step the downbeat must lift at some point *before* that downbeat. Moreover, the quality of the downbeat is influenced by the timing and character of the lift. For instance, if it occurs involuntarily at the last moment, the downbeat itself will tend to be weak and ill-defined. For this particular pattern, then, I ask students to consciously lift the foot with intention on the fourth beat. In doing so, they will discover the following downbeat gains additional emphasis and weight.²⁸ Additional lift on the rest can be provided by an upward thrust of the arms as the fingers snap. If executed correctly, this upward gesture will actually help lift the entire body.

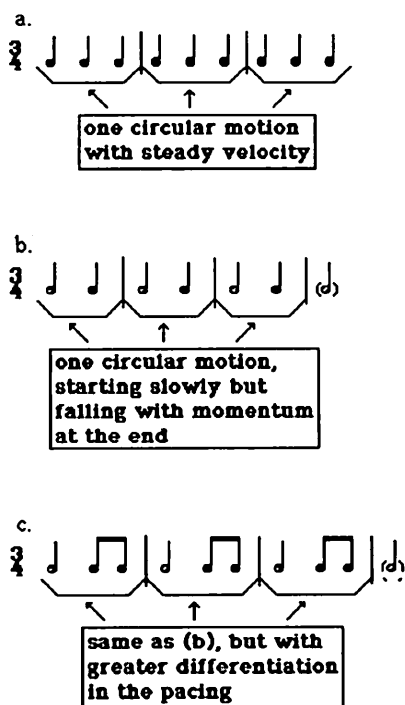
The stepping of a rhythm also dramatizes the effect of durational differentiation on grouping. In unit 2, for instance, the eighth notes create a momentum that virtually demands a longer duration as a gestural goal. As an experiment, I once asked my students to step a quarter-quarter-two eighths pattern (in three-four meter) for four measures, and then to stop. As I expected, the momentum of the eighth notes caused most of them to step involuntarily into the downbeat of the fifth measure.

The second category conveys the gestural shape of the group as a whole *without* showing the individual notes with subgestures. For instance, patterns in triple meter may be shown with a large circular motion of the arm, with a new circle beginning at the start of every new measure.²⁹ (The knees should be slightly flexed throughout so the entire body can give and take with the motion of the arm.) If the pattern creates no strong grouping, as in a succession of equal note values, the arm shows this non-grouping by moving through the circle with constant speed (Figure 13a). But when grouping arises through durational difference, one should let the arm change speed within each circular motion. In Figure 13b, the circular motion would begin slowly but then fall with momentum through the last

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part of the measure, leading without a break to the start of a new circle; Figure 13c would be moved similarly but with an even more pronounced differentiation of speed due to the greater forward momentum of the anacrusis. The sensation of falling can be elusive at first; they must simply *let* it happen. But in mastering it, they learn something fundamental about musical rhythm—i.e., that it can involve a building of energy and intensity or a relaxing and letting go.

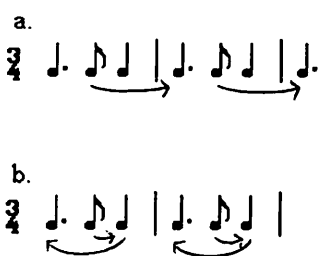
Figure 13.



The dotted rhythm of Figure 14 is more ambiguous in its grouping than either Figures 13b or 13c and could be gestured in two ways. Because the dotted quarter is the longest note suggests it will be a gestural goal resulting in a circular across-the-beat grouping (Figure 14a). Performers, however, also often inflect the quarter note as the end of a group and initiate the next group with the dotted quarter (Figure 14b). The latter possibility

arises because the quarter note itself is the goal of a mini-gesture from the preceding eighth note. I find it more satisfying to teach a noncircular gesture for this rhythm (reflecting the latter interpretation) since that helps to distinguish the pattern from Figure 13c. For example, the student could conduct a pendulum-like arc, moving the hand and arm up to the left, then back down and up to the right, and so on, with each arc representing one statement of the pattern. Unlike a circular motion, this gesture comes to a momentary stop, specifically at the highest point of the arc just before the change of direction. The gesture thus parallels the lack of strong momentum from one measure to the next.³⁰

Figure 14



We have observed that the patterns of unit 1 in Figure 10 could be shown with note-by-note gestures. Our second gestural category, however, may also be useful for these rhythms. For instance, the second grouping pattern in that unit could be shown as follows (beginning on beat four): starting with one arm slightly extended forward, pull back the hand and forearm to show the quarter-note anacrusis, then thrust forward for the downbeat and gradually relax the motion of the hand and arm to reflect the abatement of energy after the accent. Or, for the first pattern of that unit, simply thrust forward the hand on the downbeat (after a preparatory gesture) with a progressive relaxation as the gesture reaches its end. In neither pattern should one show an impulse for each note after the downbeat. Rather, the relaxation of energy should seem continuous.

Unit 3 introduces a special subcategory of the second gestural type. Here the gestural entity is not a group of notes but rather a single note of relatively long duration—specifically, any value longer than a beat, such as a half note, dotted half, and whole note in four-four meter. For these values I borrow the Dalcrozian technique of clapping the attack and then slowly pull the hands apart to show the full duration (also see the above discussion of clapping under the first gestural category). When pulling the hands apart, the student should imagine pulling against a resistant substance such

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as honey or water. Such an image helps involvement with the duration to the end and shows the gestural expansiveness of the note with intensity. In the quick reaction exercise for this unit, the student repeatedly intones and claps one durational value (say the quarter), then upon a signal switches to another value. A sudden switch from quarters to a longer note value vividly demonstrates the expansive energy of the latter.

The third type of physical gesture shows not the gestural shape itself but rather a specific level of the metrical hierarchy, for instance the beat or some subdivision of the beat. Against this recurrent motion, the actual rhythm is spoken or moved by another part of the body. One might show a metrical level through tapping, clapping, or conducting; if there is room, students may also *walk* the pulse, a favorite activity of eurhythmics instructors. This category can be particularly useful during the performance of quick rhythms. For instance, while speaking the sixteenth-note rhythms of units 6-8, the student could tap the subdivisions in the palm of the hand; or, while intoning a durational pattern in compound meter, the student might sway from side to side with bent knees to show the dotted-quarter pulse.

Durational exercises

The second portion of each unit contains longer durational exercises, which combine in various ways the formulaic patterns learned up to that point. In performing these exercises, the student should employ the same basic principles of vocal inflection introduced earlier for the short patterns. In addition, I ask the student always to conduct a few measures before actually beginning the exercise to establish a strong pulse; in determining the pulse speed, the student should scan the melody for the fastest note values as recommended in many other sight-singing texts. As a rule, I prefer the conducting to stop as soon as the rhythm starts, since it can be difficult to inflect a gestural shape convincingly while keeping time with the conducting pattern. I do let the student resort to conducting or tapping, however, for an attack-point to be described later.

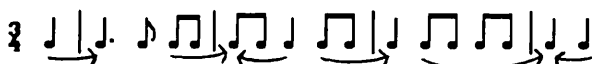
Figure 15 illustrates a few of the performance issues likely to arise in a durational exercise. The second gestural group combines patterns from two different units, with the note on the downbeat of measure 2 acting as a pivot: the anacrusis to the downbeat is a pattern from unit 5 and the motion away from it is from unit 2. When confronted with new combinations, some students lapse into crude inflections, punching out the downbeat while intoning the surrounding pitches in a low monotone. But according to our guidelines, these six notes should be projected like a single wave with a continuous ascent towards the eighth on the downbeat followed by a

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gradual descent; if performed in this way, the eighth notes before the barline will smoothly flow into the eighths of the next measure.

A second interesting feature of Figure 15 is the relatively long anacrusis beginning on the second beat of measure 3. While this particular gesture has not appeared earlier as a formulaic pattern, the students easily understand it to be an extended version of the shorter eighth-eighth-quarter anacrusic pattern (Figure 10, first pattern in unit 2). They will find, moreover, that the momentum created by the four eighth notes naturally passes through the third beat without giving it phenomenal emphasis despite its relative metrical weight (i.e., relative to the neighboring eighth-note subbeats). One encounters this kind of gestural autonomy within the measure rather frequently in the durational exercises. The relatively long anacrusic pattern of measures 3-4 also highlights the importance of seeing a gesture in its entirety *ahead of time*; a failure to do so makes it impossible to pace the inflectional contour in an appropriate and convincing way. (Indeed, this is true for any gesture, regardless of its size.) A well-known cardinal rule of sight reading is to "keep looking ahead"; one advantage of a gestural approach to a rhythm is that it trains just that. The teacher, in fact, can directly monitor whether the student is doing so simply by listening for the inflectional contour.

Figure 15.



The durational exercises frequently project a gestural hierarchy. Let us consider the simple durational succession in Figure 16a. The arrows indicate groupings by durational differentiation; note, however, that this grouping analysis is not entirely satisfactory since it suggests the successive gestures are equal in weight, an interpretation that seems more appropriate for two-four meter. To clarify the meter, then, we need to add a higher gestural level (Figure 16b) that subsumes the three-note groups within a single overriding motion towards the downbeat. (We will discuss Figure 16c shortly.) From unit 2 on, nearly all the exercises project gestural hierarchies; a fairly complex example from unit 6 appears in Figure 17.

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Figure 16.

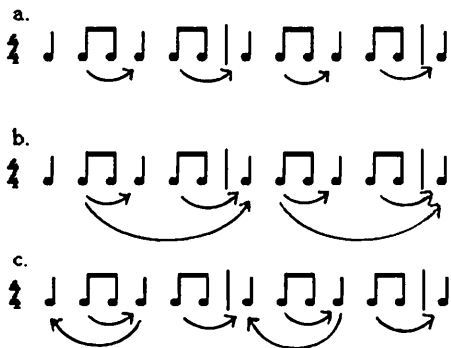


Figure 17.



The arrow notation in the preceding examples is a valuable pedagogical tool for taking in the gestural shape of a line at a glance. I believe, however, the arrows should be dropped as soon as possible after the first few exercises within each unit, since they really are just visual reminders (or extensions) of gestural principles already learned in working with the formulaic patterns. From these principles, the students should be able to inflect a durational pattern with no visual cues; an appropriate gestural impulse is implied by the durations themselves and by their position within the meter.

The absence of arrow notation will frequently leave room for gestural ambiguity at higher levels. For instance, the pattern of Figure 16a actually could support several higher-level interpretations. We have only shown one of the possibilities in Figure 16b; we could just as easily have chosen the interpretation in Figure 16c, and a third option would be to perform so neither interpretation clearly emerges. (These three possibilities, of course, represent a convenient simplification of musical reality; due to the fluid quality of gestural rhythm, a wide range of subtle interpretations are possible within the extremes shown in Figures 16b and 16c.)

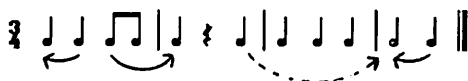
The versions in Figures 16b and 16c both show the same lower-level impulses; it is only at the next higher gestural level that the grouping

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ambiguity arises. In general, I do not view higher-level ambiguity as problematic, nor do I believe the instructor should draw much attention to it. If arrows are not specifically provided, the students should be free to inflect that level as they feel inclined, provided they strictly follow two guidelines: first, they must clearly express the lower-level gestures, and second, they must give the proper emphasis to the downbeat of the measure. (In following the latter guideline, they will automatically project some kind of gestural hierarchy, even though it may be ambiguous.)

Figure 18 introduces a new interpretive marking, the *dotted arrow*, which indicates passing through a downbeat without emphasis. Up to now, a stress on the downbeat has been the norm, both in the short patterns and in the longer exercises; thus the dotted arrow notation signifies greater gestural autonomy from the meter. Ultimately the purpose of this notation is to prepare the students for the melodies of the third part of each unit, where specific factors such as pitch contour, articulation, or dynamics may provide a concrete basis for avoiding a stress on the downbeat.

Figure 18.



Thus far I have implied that the primary difficulty in performing a durational exercise is knowing how to express its gestural shape. But what if the student is simply unable to get the rhythm right in the first place? When this happens, I believe it is best to focus on very brief subpatterns and then to build the rhythm up gradually from these short segments. Such a tactic is also consistent with our overall pedagogical approach; indeed, very often one of these subpatterns will be equivalent to a durational formulae the student has already studied. The student should repeat the troublesome pattern with inflection over a regular pulse until it is solidly learned. That pattern could then be combined with a short pattern immediately adjacent, and so on, until the original rhythmic line is reconstructed.

While I believe that working with patterns is the best way to address a rhythmic problem, the approach could be supplemented with a focus on the note-by-note attack series of the exercise as a whole. Here the issue of inflection will necessarily recede temporarily into the background. It is therefore helpful to define an attack-point performance, clearly distinguishable from gestural inflections. When performing only attack points, the

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student need not inflect the durations vocally. In fact, I prefer a pure monotone to maintain a clear distinction between this type of performance and the gestural mode. The exercise should be performed with a hard consonant so the point of attack is easily heard ("tuh" is best). Most important, some metric level should be conducted or tapped during the exercise to aid the timing; this beat or sub-beat level must be maintained in strict metronomic time. As a variation the student could intone the durations while tapping two different metric levels simultaneously—for instance, quarter notes with one hand on the thigh and eighth notes with the other hand on the chest.³¹ After mastering the timing, the student will normally be asked to return to a gestural mode of performance.

Besides its utility, the attack-point mode can be used to tighten up a sluggish rhythm—a common problem with relatively long values (especially units 1 to 3). It can also aid in learning a few of the difficult patterns at the beginnings of the units. For instance, some students have difficulty with the first pattern of unit 10, placing the sixteenth note just a bit too late. By tapping sixteenth subdivisions, the student can bring the rhythm into focus and thereby convey more successfully its peculiar lilting character.

Thus far our discussion has limited physical gesture to tapping and conducting, both from our third metrical category of gesture. One might surmise that our first two categories, which are overtly gestural rather than metrical, would also be helpful in refining the dynamic shape of these rhythmic lines. Indeed, it is not uncommon for Dalcrozian instructors to have their students move an entire rhythmic or melodic phrase. Since the lack of space, however, in the typical sightsinging classroom can make this kind of activity difficult, I tend to use the first two gestural categories only with the formulaic patterns at the beginning of each unit. The gestural principles learned at that stage are easily transferable to the exercises, even if the physical gestures themselves are not carried over.

Melodic contour and gestural shape

Rhythmic training will be of little value if it is not successfully applied to the singing of actual melodies. The pedagogical task here is not simply to graft a melodic line onto some abstract durational sequence; such an approach mistakenly presupposes that pitch and rhythm are completely separable categories. Rather, we will view pitch as a factor that contributes to gestural shape, by strengthening, qualifying, or even undermining a dynamic shape implied in the durational series alone.

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The interaction of pitch and duration is enormously complicated and merits fuller treatment than is possible here. Such an expanded treatment would need to address at least two different angles. First, we would have to consider how melodic contour itself contributes to the formation of gestural shapes. Second, we would need to consider how *tonal relationships* (expressed in scale-degree functions) influence or are influenced by gestural shape. Melodic contour has a direct effect on the profile of a gesture through leaps or change of direction (causing an accent) or through stepwise motion (creating continuity). The effect of tonal relationships on gestural shape, however, is much less clear. While scale-degree function is an important contributor to the feel of a gesture, such a succession is not phenomenal in the same sense as the other factors discussed in this study. Thus a scale-degree succession cannot in itself create a phenomenal accent—neither can a harmonic progression, at least under normal circumstances.³² Since we have been emphasizing the phenomenal aspects of musical gesture, a consideration of tonal function lies beyond our inquiry. The remainder of the study will therefore focus on melodic contour and its effect on the phenomenal shape of a gesture.³³

Our earlier guidelines for vocal inflection have provided an intuitive basis for understanding the gestural function of melodic contour. That is, by inflecting the gestural shape of a durational pattern with a tonal contour—motion towards a phenomenal accent through a rise in pitch, motion away with a descent—the students have in effect been intoning melodies of indeterminate pitch. While the introduction of written melodies with discrete (and specified) pitches obviously introduces new difficulties, the student has at least been prepared for the idea that melodic contour directly affects gestural shape.

Since a melodic contour of even moderate length can take a virtually infinite number of shapes, one clearly cannot systematically introduce every possible inflectional nuance. It is possible, however, to teach a few principles that reveal in a broad way the gestural impact of contour. Remember that contour generates a dynamic shape in two fundamental ways. The first is melodic direction, whereby we experience an upward motion qualitatively different from a downward motion. In one of his pedagogical texts, Jaques-Dalcroze presents a simple exercise that effectively sensitizes the student to this difference and the gestural implications thereof: the student sings an ascending major scale with a gradual crescendo, and then sings a descending scale with a diminuendo (Jaques-Dalcroze 1906-17, 22). Jaques-Dalcroze conceives this natural connection between contour and intensity level as a “rule of nuance” for performance; that is, the student should normally crescendo for any ascending line, or decrescendo for any descending line.

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One might counter that this rule is too crude since it cannot possibly apply to every musical situation³⁴; I do not see this, however, as a problematic issue for two reasons. First, I believe the guideline really does reflect a natural tendency in some respect; adherence to it will normally result in an intuitively appropriate inflection for any contour even if it is not the only conceivable one. Second, the exercise ultimately has a broader purpose than being a directive for performance: above all, it is a vehicle to learn to experience tonal space, not as a neutral vacuum, but as a dynamic field. The qualitative difference between up and down within that field is typically characterized as intensification and relaxation, but even in cases where that characterization seems inappropriate—say when a bass line intensifies while descending—the effect of the particular inflection is largely dependent on its relative position in tonal space. For instance, that bass line may seem to convey a sense of increasing weight precisely because of its low placement relative to the whole texture. Or, a rising line may in certain circumstances convey an ethereal lightness, a characteristic appropriate to a spatially high position. Pedagogically, our objective is not so much to teach iron-clad rules of nuance (e.g., “rising lines must always crescendo”), as to foster a heightened awareness of tonal space *per se*. For that reason, the above inflectional guideline may be somewhat loosened after the very early stages of study.

A change of direction creates a point of emphasis in the line, while motion in the same direction promotes continuity, assuming that no other factor intrudes. The accentual effect arising from a contour change is built into the line and requires no additional emphasis. It will, however, be automatically projected subtly whenever the “rule of nuance” is adhered to, since the change of direction will also change the intensity contour.

The second factor contributing to melodic profile is the correlation between the size of an interval and the intensification (or relaxation) required to traverse that distance. The instructor should provide exercises that focus on the dynamic differences between intervals both in direction and magnitude. The one shown in Figure 19 is simple but effective: each successive ascending interval is performed with a wider range of intensity. One may also sing a descending version of Figure 19 by inverting both contour and dynamics. In this exercise the interval is experienced not so much as a juxtaposition of two discrete pitches as a single shift of energy.³⁵ The crescendo markings in Figure 19 indicate the energy shift begins on the lower note and culminates on the high note thus binding the two pitches within a single process of intensification. To be sure, one could withhold the forte until reaching the high note; but one could just as easily intensify only on the lower note and then land lightly on the higher with an actual *diminuendo*. (When executed well, the latter effect can be stunning.) In

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other words, if an interval represents a single dynamic shift, the performer may place that shift anywhere during its execution. Pedagogically, however, I believe the gradual intensity contour suggested by the crescendo marks is the most effective way to convey the dynamic quality of intervals.

Figure 19.



An activity that helps to integrate this principle of intervallic differentiation with Dalcroze's rule of nuance is the contour exercise, in which a short melodic contour is repeated sequentially: for instance, the melodic pattern 1-3-6-5-4-3 would be successively transposed up by step to 2-4-7-6-5-4; 3-5-8-7-6-5; etc. The student should experiment with various contours and note their different gestural effects; other possibilities would be 1-3-5-3-1; 1-5-6-5-4-3; 1-2-3-4-5-3; and so on. To help focus on the effect of melodic contour on dynamic shape without the intrusion of other complicating factors, the exercise should be sung with even durational values at a moderately fast tempo.

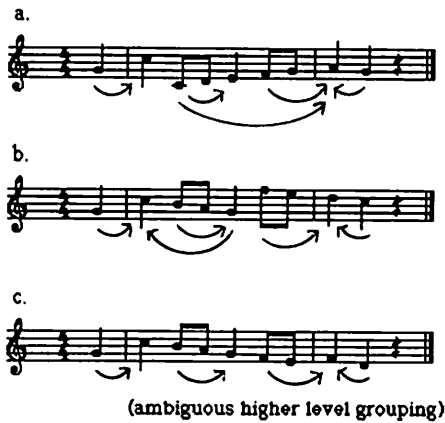
In real musical contexts, a melodic leap sometimes articulates the beginning of a new group—one may be as aware of the articulation in the line as of the dynamic quality of the leap itself. Grouping arising from contour may reinforce a durational grouping; but contour may also create a grouping where the durational series alone fails to do so (Figure 20). Figure 21 illustrates how contour can also influence grouping at higher levels by clarifying (Figures 21a, 21b) or reaffirming (Figure 21c) an ambiguity in the higher-level grouping of a duration series.

Figure 20.



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Figure 21.



By emphasizing the inherent dynamic features in melodic contour, the instructor can also prepare an understanding of the interaction between pitch and meter. For instance, the student will learn that a melodic contour does not necessarily reinforce a metric accent (Figure 22). Many students approach passages like this with a serious misconception: having been taught the third beat is stronger than the second or fourth, they have a vague notion (and sometimes a firm conviction) that they should slightly stress the third note simply by virtue of its metric position. Neither the durational pattern, however, nor the melodic contour suggests the third note should receive emphasis. A more natural performance would let the gesture grow from the opening note to the downbeat of the second measure, so it moves smoothly through the third note. Another illustration of meter/pitch interaction is seen in Figure 23a, which utilizes a durational pattern from unit five; here the melodic contour again moves through a point of metrical accent (i.e., the third beat), thus reinforcing the interpretation shown in Figure 1. In Figure 23b, however, the same durational pattern is contoured to reinforce that third beat with a phenomenal accent.

Figure 22.

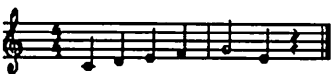
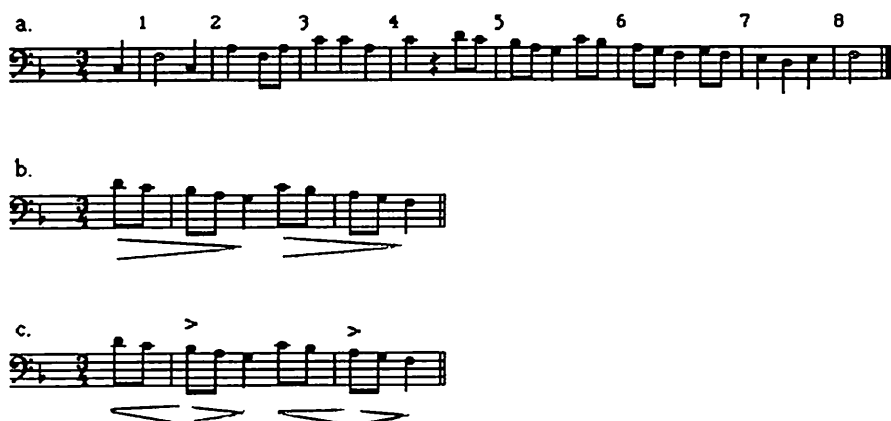


Figure 23.



In the durational exercises, we introduced dotted arrows to indicate motion through a downbeat. A melodic contour will often suggest a similar interpretation, as illustrated in Figure 24a.³⁶ Here the eighth notes in measures 4-5 and 5-6 move through the downbeats with stepwise motion (like in Figure 9). Figure 24a, however, does allow more interpretative latitude. In the latter, a strong phenomenal accent on the D-flat of measure 5 would have seriously weakened the power of the long anacrusis towards the downbeat of measure 7, which provides the clear focal point of the gesture. In contrast, one could perform the slurred gestural units in Figure 24a with strong accents on the downbeats without harming their integrity. The question is where to place the primary accentual point: should it fall on the first eighth of the gesture, as implied by the melodic design (Figure 24b), or should one impose a stress on the third eighth to reinforce the meter (Figure 24c)? Either interpretation is appropriate.

Figure 24.



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As noted earlier, a prerequisite for performing a gesture convincingly is recognizing its wholeness in advance; only by doing so can the performer give each note its appropriate weight within the complete gesture. A melody that illustrates this principle well is the D major “March” from *Clavierbüchlein* for Anna Magdalena Bach (Figure 25). The passage divides into three subgestures, of which the third is as long as the other two combined. Each gesture has a motion both towards and from an accentual point of focus; the anacrusic motion in the third gesture, however, is a full measure longer than in the first or second. (In the third gesture, the change of direction at the climax A is not of sufficient accentual strength to challenge the primacy of F-sharp at the opening of measure 4.) Therefore, before beginning the third gesture, the performer needs to mentally shift gears, as it were, so not all of the anacrusic energy is spent on the first two notes; this shift can happen only if the performer has seen (and understood) the entire gesture ahead of time.

The second and third gestures begin with exactly the same two pitches in the same metrical position, yet the gestural meaning of the second dyad is very different from the first because of the larger context. This second B-C-sharp should therefore *sound* different from the first B-C-sharp, an effect that might be achieved through any combination of factors, such as dynamics, articulation, and temporal placement. This last factor brings to mind an observation by Cooper and Meyer: that grouping can affect rhythmic timing (18-19). In the Bach “March,” the third gesture will probably begin just a bit later than would be metronomically correct since the following string of eighth notes moves towards the goal pitch with increasing momentum. Ironically, the performer cannot project this subtle shift of timing in a convincing way by consciously *thinking* about the timing; the secret is to release the flow of energy immediately before beginning the new gesture. This momentary sense of relaxation, which allows the performer to gather the energy for that forthcoming gesture, cannot be forced; one must simply let it happen. This reminds us that gestural rhythm consists of the dynamic interplay between intensification and relaxation.

Figure 25.



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As in the durational exercises, the student should be able to inflect melodies gesturally without any performance indications; thus, a sizable number of the melodies sung by the student should omit such markings. In training the student to see the durations and pitches of a tune as inherently dynamic, our pedagogical approach acknowledges a simple reality: no vital performance can ever arise merely from a slavish adherence to performance indications. The student must see gestures (to borrow an expression of Robert Abramson) in the written score without any other visual crutch. To be sure, any two students may produce somewhat different renditions of a given tune if articulation, dynamics, etc., are not provided in the score; but they should share a core of gestural vitality.

At the same time, though, it would obviously be wrong to claim that performance markings are unimportant since they enable the composer to specify a particular character, articulation, dynamic scheme, etc. from among a myriad of possible (and equally musical) possibilities. Sometimes these markings will contradict natural gestural tendencies—for instance, a diminuendo accompanying an ascending line, or a slur that contradicts a normal grouping. In singing from a marked score, the student should pay special attention to how the performance indications reinforce, contradict, or clarify the natural tendencies of the line when considered without such markings. I believe that in an ideal sightsinging text, roughly half the single-line melodies should omit performance markings and half should include them.³⁷

In sum, this pedagogical approach trains the student to look for the gestural structure of a notated durational series or melody and to convey an understanding of that structure through performance. In doing so, the student begins to learn a very important skill, namely how to integrate the processes of thinking and feeling. Very often students conceive of the two as incompatible. One rather common manifestation of this attitude is the performer who resists analyzing a favorite piece for fear of losing an intuitive connection with it. In reality, thinking and feeling are mutually supportive. The expression “seeing gestures” (referred to above) expresses perfectly this intimate relationship between the two: recognizing a gesture in the score is a cognitive act, yet that very act is also a direct link to the world of feeling. That is, in a gesture we see not a mere segment of music but a group of notes imbued with a dynamic life, and we can do so precisely because we are feeling, gestural beings. A primary advantage of a gestural approach to rhythm, then, is that it taps into the powerful resources of the human body—the very source of our rhythmic impulses.

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NOTES

¹Grosvenor Cooper's definition of rhythm (1969, 729) similarly emphasizes both its dynamic quality and the differentiation in its flow: "In its primary sense, [rhythm is] the whole feeling of movement in music, with a strong implication of both regularity and differentiation. Thus, breathing (inhalation vs. exhalation), pulse (systole vs. diastole), and tides (ebb vs. flow) all are example of rhythm."

²For an introduction to the ideas of Jaques-Dalcroze, see Abramson 1986 (27-69). Jaques-Dalcroze also wrote a series of essays on his approach, which appear together in *Rhythm, Music, and Education* (1921).

³I had contact with Robert Abramson at a Dalcroze workshop held at the Manhattan School of Music in the summer of 1987. The broad pedagogical objectives of this study, as well as some of its specific pedagogical techniques, have been very much inspired by that workshop. I would also like to thank Prof. Abramson for introducing me to the writings of Lussy, and in particular for making accessible to me his translations of important pedagogical writings by Jaques-Dalcroze.

⁴Special note should be taken of a sightsinging text by Porterfield and Stevenson (1986), which reflects a strong Dalcrozian influence, particularly in its use of physical gesture. The authors, however, do not emphasize gestural *grouping*, which will be critically important in the approach discussed in this study.

⁵Two of Lerdahl and Jackendoff's grouping preference rules (GPR 2, GPR 3, pp. 45-46) explicitly focus on the determination of group boundaries.

⁶As a contributor to shape in groups of more than one note, articulation falls into a special subcategory: it affects only the *attacks* of successive notes, while timbre and dynamics are continuously operative through the entire gesture.

⁷For a more rigorous formulation of this grouping principle, see Lerdahl and Jackendoff's Grouping Preference Rule 2 (45). Cooper and Meyer also describe a similar basis for grouping (13).

⁸Pierce (1977) uses the term *juncture* to refer to the moment between gestures. She characterizes juncture as "poignant . . . with the potential for activity" (23), and draws parallels between its manifestation in music and in the world of physical gesture.

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⁹The concept of musical space is discussed in Zuckerkandl 1956 (262-362), Budd 1983, Scruton 1983 (77-100), and Clifton 1983 (137-204). The notion of tonal space as a "dynamic field" is directly borrowed from Zuckerkandl; however, while Zuckerkandl conceives of this dynamic field as deriving only from tonal relationships (i.e., scale- degree functions), I am proposing that the relative *positions* of events (i.e., "higher," "lower") within tonal space also have dynamic implications.

¹⁰This assertion is very much influenced by Cooper and Meyer 1960.

¹¹See Lester (1986, 15) and Benjamin (1984, 379). For a dissenting view, see Kramer (1988, 89).

¹²Berry views these impulses as metrical functions, an attitude reflected in the term "initiative" for the gestural focal point (i.e., that point by definition "initiates" a metrical unit.) I prefer to think of the impulses as essentially gestural, interacting with and yet distinguishable from the world of meter (about which more later.)

¹³Example 6 is an excerpt from a melody in Berkowitz, Fontrier, and Kraft (1986, 37 [#224]). In their original version, the only diacritical marks are a *piano* and a single slur over the entire four-measure phrase.

¹⁴This hierarchical aspect of the gestural world closely parallels grouping structure; see Lerdahl and Jackendoff (13-14).

¹⁵Pierce (1977) discusses musical performance along very similar lines. In reference to Chopin's C minor Prelude, she observes that "the performer of this piece needs to be a juggler, allowing the shorter phrases to emerge and at the same time containing them within the binding, the ligature, of the longer notated groups." (27)

¹⁶Cooper and Meyer address the possibility of grouping ambiguity in a passage by providing two apparently conflicting readings (12-13). They normally regard one of the grouping schemes as primary, and the other as secondary (reflecting a latent rhythmic organization).

¹⁷However, the fact that we *experience* alternating strong and weak beats does not necessarily mean that a theoretical model of meter should include such alternation (see Graybill 1989). The issue has considerable bearing on our present investigation of meter and gesture, and in particular, their interaction.

¹⁸This tune is from Berkowitz (26 [#165]).

¹⁹I have been strongly influenced by several specialists in Dalcroze eurhythmics. As suggested earlier, this study is particularly inspired by the work of Robert Abramson; I also have benefited greatly from working with Lisa Parker and Ann

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Farber of the Longy School of Music in Cambridge, Mass., Ruth Alperson of the Manhattan School of Music, and Herbert Henke of the Oberlin Conservatory. Their influence is reflected not only in the general spirit of this approach, but also in some of its specific exercises. Finally, my initial contact with eurhythmics was as a student at the Oberlin Conservatory of Music, where I had the good fortune to study with the late Inda Howland, who was one of Jaques-Dalcroze's students in Geneva.

²⁰Observe that this Dalcrozian view attributes gestural shape to meter itself, an attitude that may seem to be at odds with my earlier claim that meter and the world of gesture are semi-independent of each other. One way of reconciling the apparent contradiction is to view a particular meter as having a *normative* dynamic shape that may be reinforced or contradicted phenomenally in an infinite number of ways; the standard conducting pattern for that meter would presumably be an expression of that normative shape.

²¹I would like to thank Lisa Parker for this idea.

²²The course consists of five class hours per week, three of which are lecture, and two of which are in lab format in sightsinging/ear training; the pilot text is used within the lab portion. I would like to thank the following teaching assistants for their ideas and input, which I have found to be extremely helpful: David Burdick, Lee Gannon, Mary Hester, Paul Murphy, Craig Nazor, Roger O'Neel, and Michelle Pippert.

²³The idea of shifting a rest from one position to another to reveal differences in grouping was suggested to me by Robert Abramson. I have also avoided placing the quarter rest on the downbeat since it is a special case; see n 28.

²⁴A "beat span" is bounded by two adjacent beats, which in themselves are durationless.

²⁵Jaques-Dalcroze 1921 (65-66) provides a description of this type of exercise.

²⁶The quarter note at the beginning of m. 3 is not included within a group, thus violating Lerdahl and Jackendoff's GPR 1 ("strongly avoid groups containing a single event"); one might therefore want to analyze the E as belonging within the following group. Even in such a reading, however, the three notes immediately following the E would form a strongly defined subgroup.

²⁷Abramson (38) explains the process of clapping in four stages: preparation, attack, prolongation (i.e., "pulling the hands apart to feel and measure kinesthetically the full length of the beat"), and return to preparation.

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²⁸I am indebted to Robert Abramson for this idea. He also argues that if a quarter rest is followed by three quarter notes in a four-four measure, the anacrusic power of the rest creates the strongest accent on the first of those quarter notes. (This obviously flies in the face of the idea that the third beat should always receive a phenomenal accent relative to beat two.)

²⁹Abramson (42) notes that compound meter, with its triple subdivisions, requires curved or circular motions; here I extend the idea to meters in which the beat pattern itself is triple.

³⁰I received the idea for this gesture from Rebecca Burkhart, a graduate student at the University of Texas.

³¹I would like to thank Lee Gannon for this idea.

³²There is at present no clear consensus on the relationship between tonal function and metrical accent. Caplin 1983 summarizes various viewpoints and also provides a historical perspective on the problem.

³³It should be emphasized that his exclusion of tonal relationships from our discussion does not mean that they are any less important in a gestural approach. For instance, the notion of dynamic scale-degree function occupies a prominent position in the Dalcrozian view of musical structure. See Abramson (51-61).

³⁴Dalcroze himself recognizes that the rule can not always be applied, and he discusses situations in which it may be overruled.

³⁵This explanation is very much influenced by Zuckerkandl 1956 (89-95).

³⁶The melody is from Berkowitz (#106, p. 18); I have omitted the diacritical marks that appear in the original.

³⁷As noted at the outset, such an ideal text does not exist at present. In our freshman course at the University of Texas, we are using Berkowitz/Fontrier/Kraft as our primary text; however, I supplement it with unmarked melodies that closely follow the ordering of material in the pilot text.

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SUGGESTIONS FOR TEACHING A COURSE IN MUSIC LISTENING

or in visual or literary arts or a combination, for that matter . . .

ROBERT TROTTER

Ways of re-thinking instruction of either general-campus students or music majors with regards to:

A FRAMEWORK FOR PLANNING INSTRUCTION

Defining and organizing 1) aims; 2) resources needed to achieve them; 3) related activities both in and out of class sessions; and 4) ways to evaluate students and the course.

Comment: Even though such a framework may perilously resemble a method with recipe-like lesson plans, I have wanted to keep it abstract enough to stay safe from that threat. It might help clarify attitudes and behaviors, and lead to a heightened sense of being prepared. At its best it might lead to imaginative instructional modes to supplement lecturing with intermittent musical examples, and otherwise help to monitor and refine instruction.

A TAXONOMY OF INSTRUCTION

Offer information; use it to develop knowledge; then use knowledge to develop intellectual skills; use those skills to generate four progressively higher states-of-being: 1) acquaintance with a source of beauty; 2) understanding it through acquaintance; 3) valuing it through understanding; and 4) as capstone, readiness to use all these states—acquaintance, understanding, valuing—as vehicles for mutually confirming I-thou dialogue with others.

Comment: Within the areas of information and knowledge, there is a vital zone where right/wrong applies. Pay close attention to that zone, while keeping it subordinate to higher zones. Information and knowledge are inert until they become intellectual abilities. And despite the tendency

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of behaviorally oriented scholars to deny inner states of being, we ignore them at our peril. "What can my students do?" is a far more useful question than "what do my students know?" My habit is to include sotto voce an additional clause: "what can my students do . . . and feel good doing when nobody's looking." I want thus to keep myself honest in reference to their motivation. Will they get a thrill out of distinguishing by ear or eye between Ockeghem and Obrecht, or is my conviction about the urgency of that activity an unexamined by-product of my own candidacy for an advanced degree?

THE IMPLICATIONS OF PLURALISM TODAY

We live in a world of staggering pluralism: many aims, topics, resources, teaching approaches seem potentially useful for different kinds of students. By refusing to back away from the complexity of that pluralism you will be pressed to find deep values. Since you can only hope to reach partial closure on any topic, seek a middle ground between being too brief and lingering too long. To pay enough attention to important matters, be ready to ignore or merely to touch on others, consciously shifting between extensive and intensive focus. Above all, do not evade the question of pace by engaging in a superficial chronological rat-race through one repertory.

Comment: Unlike European higher educational institutions with programs in music, in most comparable American institutions we not only seek to serve, under one roof, future professional composers, performers, scholars, and teachers; we also concern ourselves with democratic mediocrity as well as the choicest talent. And with all these commitments tugging at us, we then hope to do justice both to a venerable heritage and to an exciting new world that includes unparalleled availability of information.

SEATING ARRANGEMENTS

I include this item to call attention to the effect of all "para-lingual" aspects of communication: gestures, voice quality and intonation, clothing, furniture, among others. Although I can understand how someone might resent and reject suggestions for conscious refining of those aspects, it needs to be, above all, a *conscious* decision to do so! Classroom space, especially the seating, becomes a metaphor for cultural values and for professional/personal relationships derived from them. Fixed straight rows, with you in front, become a metaphor for your being both adversary and a fountain of wisdom. They also encourage the feeling of anonymity among students

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and their passive alienation from each other—each sees mainly backs of heads! If the seats are movable, re-arrange them to suit various aims; if not, look for alternatives within that limitation. For example, make small discussion groups with two people seated side by side turning around to face others seated behind them.

Comment: Some teachers and students seem to view any shift away from the traditional mode of unidirectional, authoritarian teaching as threatening, intrusive, and an abdication of responsibility. I recommend the shift toward a more hybrid image of teacher-student relationships—teacher as teacher, teacher as student, and both teacher and student as co-students of matters larger than either of them. I want to exemplify the virtues of that hybrid image, yet—rather than be prescriptive—merely urge you to consider making a conscious choice, rather than accepting *a priori* the more traditional role.

SUPPLEMENTING TRADITIONAL WRITTEN ACTIVITIES

Include a mixture of “kinetic activity” (responding with either sounds or body movements or both while listening to music), “iconic activity” (making graphic analogues somehow resembling shapes in the music), and “symbolic activity” (using spoken and written language and, if relevant to your aims, staff notation. Have students sing/hum central melodies during class time; have them move their bodies in harmony with both the time-patterning and the emotions awakened in them by the music. For some, this will be impossible, even offensively intrusive. Acknowledge the difficulty explicitly. Be ready to engage in the behaviors yourself if you’re willing and able to “quasi-perform.” Ask them to image movement with their eyes closed as if they were “dreaming the music,” focussing their aural awareness for a while by giving up visual territory. Let me simplistically call such activities “right-hemisphere” and urge that you let them happen free of evaluating the students’ involvement. Simply encourage them explicitly to get in touch with the potentially life-enhancing effects of participating.

Comment: Because education tends sometimes to be excessively abstract, focussing on verbal-cognitive and arithmetical abilities, many teachers have been displaced from a balance of “mind-body.” You can give high priority in your instructional aims and behaviors to helping students keep that balance. They will refine it by attention to the territory where intense feelings—including powerful kinesthetic responses—and imaginative, rigorous reflection mutually nourish each other. Thus, besides wanting to exemplify the usefulness of such interplay, in my instruction I include kinetic activity, related precepts, and discussion of that mind-body balance.

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By “kinetic” I mean actual movement, and by “kinesthetic” I mean the imagery of movement, whether or not made manifest. While guiding such activities, body language is important. For example, whenever I face a class, move and ask them to imitate me, I close my eyes to minimize their self-consciousness and demonstrate my freedom from evaluating them on the spot. Those who will take part, will; those who won’t, won’t. Bless and release

SUPPLEMENTING TRADITIONAL TESTS

When you want to measure student’s abilities, two unconventional kinds of tests are useful in addition to conventional ones: “anonymous tests” let you assess how the class as a whole is progressing, in the light of your evaluative process and timing. Such tests minimize fear and let each student measure personal progress. “Non-quantified tests” can measure activities beyond quantification (e.g., analytical critical statements comparing two performances of the same piece). Such statements can be honestly judged only by their cogency and evidence of genuine engagement. Unlike anonymous tests, students write their names on non-quantified tests before giving them to me. I notate in my records either the mere fact that a student took part in the test, or at most evaluate them intuitively by separating the mean from the extremes—plus, check, or minus—and let the students know that such a mark can help push a borderline final grade up or down. With both these kinds of unconventional tests, I always allow time to give my answers and encourage related discussion. I’ve often been impressed by students’ intense involvement throughout a session when I give an anonymous or non-quantified test.

“HISTORY” VS. “MERE CHRONICLE”

Dare I confess that “history” in the title of a course bothers me? It seems often to mean mere chronicle—a whirlwind tour in which nobody lives more than two pages. When planning instruction with a historical component, consider history as a verb, as “historying,” as paying attention both to diachronic relationships (environments prior to and succeeding that of the topic under consideration), and to synchronic relationships (the contemporaneous environment). Let the topic be the *comparison* of two successive major styles, and the comparison of both with recent styles. Doing so will awaken historical appetite, related abilities and fruitful attitudes in your students far better than the chronological survey grouted into place. Even

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if it doesn't eliminate instructional difficulty, at least it substitutes one that is more rewarding. Chronological succession can become merely an important topic, rather than the backbone of the course.

FLEXIBILITY IN CHOOSING REPERTORIES

When someone desires to experience a particular kind of music and to be a "qualified listener" in regard to it, view that desire as an inner—often unconscious or at least pre-rational—urgency to explore a part of the Self resonating to those sounds. Remember to consider Selfhood as a paradoxical blend of uniqueness and pan-human nature. If you want rapport with students, acknowledge: a) that a piece—whatever the repertory—may not speak to that inner urgency in a particular student; and b) that if your aims as a teacher are partly independent of the question of repertory, it's useful to remain free of the trap of debating the issue. Find pieces from a repertory, in good spirit, that evoke positive responses in you and some of your students. If you don't, that may be the end of everything but resentment, fear, and frustration between you and them.

Many gifted young adults resonate instantly to certain pieces from the classical repertory. Among those pieces are some of the most sublime—music I personally had to wait for when I was a young adult, until I was older (more experienced? more open?). Other students seem to find pieces from that repertory useless, even offensive.

Accept that life-enhancing values in the classical repertory become more vivid when presented in a broader context of global music—one reason why it is irresponsible to presume that the classical repertory is the most or only important one and therefore to pay attention only to it.

Pan-human urgencies can strike anywhere: the Himalayan peaks of classical masterpieces from Gregorian Chant through Stravinsky wipe out neither the foothills of vernacular music—from Annie Laurie to today's Top Forty, from the Bauls of Bengal to the Ba-Benzélé pygmies—nor the active volcanoes of Carter and Boulez. It is tempting to want only to introduce students to those peaks from the classical repertory. But by incorporating study of those masterpieces into a broader context you can lead them towards inner awareness of their uniqueness and pan-humanity, and to encourage them to let such awareness influence their behavior and attitudes.

Comment: Leonard Meyer's phrase "qualified listener" refers to someone who has "internalized the probabilities" of a style, thus becoming ready to predict what is likely to happen in music that embodies the style. Such predicting can intensify responses, both when music magnificently

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fulfills the prediction and when it delights with unexpectedly right deviations. Although a naive listener can respond to the numinous even in unfamiliar music, internalizing those probabilities enables remembering and anticipating, discriminating and valuing. Surprisingly enough, one can become a qualified listener, or better, an *artistic* listener, without formal instruction!

MAKING ROOM FOR OTHER REPERTORIES

It is possible to miniaturize without trivializing our rich heritage of classical music, that luxurious peninsula in the world of music. If, as I hope, you want to include a modicum of study of one or more other repertoires—post-1950 radically innovative music, popular music, jazz, world folk music, and Asian concert music—consider the following ways to begin finding space in the schedule for such study:

a. Make a list of genres in classical music that you believe will offer the most value for long-range growth in your students—for example, the sonata cycle (solo sonatas, through nonets, to symphonies); fugue; concerto; “descriptive” or “program music”; solo songs for recitals, for the theater, for worship; choral songs for worship, for concerts, for the theater; musical theater, including but not limited to opera. (In this particular item, to enhance continuity, I have placed all comments at the end.)

Comment: Nomenclature for repertoires, genres, and periods is notoriously ambiguous. By “classical” music, in this present context, I mean the repertory conventionally considered in courses in the history of music, from Gregorian Chant to Igor Stravinsky, that is, to about 1950. The term “concert music” appeals to some. I object strongly to the well-entrenched term “art music,” with its damaging connotations of innate superiority both to “folk” music and “popular” music as well as to Asian and African “concert” music. If you believe it is indeed superior, then let debate on the matter become part of your instruction, partly to demonstrate that such a belief is merely your choice. By “genre,” I mean the name for groups of pieces having sufficient family resemblance, either in form or technique or both, and in function, for us to identify the group with a common name. I do not include period style as an essential feature of a genre: for example, “concerto” is a genre; “baroque concerto” is a sub-division of the genre.

b. Choose pairs of pieces from each genre you study: one piece from the twentieth century and one from an earlier century. Be sure ultimately to include all the periods in your choices. Let your instruction emphasize

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relations between: a) the two pieces of each pair; and b) each piece and its cultural context.

Comment: A textbook by Cannon, Johnson, and Waite, *The Art of Music*, offers wonderful information. It was written for a Yale undergraduate introductory course in music and is now regrettably out of print. The authors develop each period, first of all, around its prevailing philosophical view of reality and of what it is to be human, then describe the role music has in such a context, and finally present a detailed stylistic analysis of no more than two pieces. Such historical information focuses on deeper matters than the usual mere political and economic factors, becoming more attractive for students who want to apply historical perspective to enhance the quality of their lives.

c. Require students to develop close acquaintance with a designated group of pieces from the list. Remind them that they can only develop close acquaintance by repeated listening with focussed attention—"what's that, teacher?". Encourage them to be open to qualities of feeling and empathic time-patterning. Devise ways to test for that close acquaintance. In such a clarified, broadened context a more demanding variant of "drop-the-needle" may even be useful; a sample item: "Does the following recorded excerpt from the Eroica Symphony, first movement, come from near the beginning, middle, or end?"

Comment: If, as I hope, the value of close acquaintance in itself has high priority in your aims, then be prepared to sacrifice some breadth of coverage and depth of detail elsewhere. (Throw away the image of "If it's Tuesday, it must be Wagner.") If there are two pieces from each genre you study, one from the twentieth and one from another century, perhaps pay attention in class sessions to only one and assign the other for close acquaintance; or pay attention to both in class and ignore another topic. During instructional listening, consider the following: a) delay identification of any kind at least until after the first hearing, seeking a *tabula rasa*—as neutral a cultural filter as possible; b) announce the clock-time of the experience—distinguishing that kind of time from psychologically-sociologically relative musical time; c) present some personally refined variant of: "if you feel comfortable doing so, close your eyes to give up visual territory and focus your aural awareness"—if you ask this, never monitor it!; and d) insist on silence; their environment has probably conditioned them to feel free to make random noise. They are often unaware of it.

d. As an intermittent topic of the course, like a leitmotif, include a chart laid out for the main periods of the history of music, covering vital aspects of both sonic and environmental features of each period. During class

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sessions, have the students gradually fill in the chart as you present information and lead discussion about it.

Comment: Chronology thus becomes merely an important topic rather than the basis of the course, opening up room for more important matters. You can count on surprisingly improved results if, rather than always the *exact* year of a historically significant item, you require them to remember the following or some personally acceptable variant: which century until the 15th, which half century from the 16th through 18th, which quarter century through 1950, and which decade from 1950 until the present.

e. From your list of classical genres, require students to choose additional pieces to become closely acquainted with, and to begin understanding their sonic and environmental elements. Make sure they make their own choices.

f. Let such a curricular plan, as personally refined, open up room both for attention to one or more other repertoires and for studying selected pieces intensively.

REVISED USAGE OF TRADITIONAL TERMS

a. A definition of music:

Let "sound" be a neutral term, leading to the psychologically and sociologically influenced terms "noise" and "music." Noise is undesired sound. Music is desired sound. This revised definition of music, substituting for an inherited absolute, revealed definition, ignores questions of value, of what makes *good/bad* music. It can help sidestep useless debate with students: "Mozart/Heavy-metal rock is/isn't even music." It can lead also to heightened awareness of the role of an artistic listener as "vicarious co-creator." I take seriously such a dictum as the Balinese "We have no art; we do everything the best we can" and its Cage-ian heritage. Outside our EuroAmerican-Greco-Roman-Judeo-Christian view there are alternate views of reality which don't distinguish between sacred and secular, serious and playful, work and play, so does the Balinese-Cage language offer an intriguing approach to life: all words *can be* poetry; all sound *can be* music; all movement *can be* dance.

b. A definition of musical elements:

Distinguish between "sonic" and "environmental" elements. Sonic elements are: duration, pitch, timbre, and volume, each existing in psychosociologically influenced musical time. Such terms as rhythm, melody,

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harmony, form, often called elements, refer to *complexes* of sonic elements. Environmental elements are: where, when, and why the musical sounds, the musical events occur, and who is involved in them. True connoisseurs of a style pay attention to both kinds of elements.

A DEFINITION OF MUSICAL ANALYSIS AND EVALUATION

Reflecting on one's responses to music means analyzing and evaluating them. Analyzing means: discovering and documenting relations between sonic and environmental elements as sources for (a) emotive responses, (b) time-patterning responses, and (c) clues to cultural meaning. Evaluating means: negatively or positively valuing both an experience and its agent, in the light of personal and shared preferences. Such preferences are at work whether or not they lead eventually to systematic, refined norms. Some people evaluate judgmentally—"X is good, Y is bad"; "X is better/worse than Y"—while others evaluate preferentially—"I like/dislike X"; "I prefer X to Y." Evaluations stem, consciously or not, from hypotheses about the nature of reality, specifically about human nature and the role of the arts.

A DEFINITION OF MUSICAL FORM

When listening to music one is experiencing its process, its movement and growth; afterwards, when reflecting on the experience, one is contemplating, in memory, the shape of the music. Instructionally, this two-fold distinction between *experiencing* movement/growth/process and, when the music is finished, *configuring* the shape of that experience, is more useful than the single inherited term, "form." For example, such a designator as "ABA" speaks only to recollected shape as defined by presentation, digression, and recurrence. When used alone, ABA and its variants are inadequate for instruction. The difference between listening and reflecting is analogous to the difference between standing in a river and viewing the river from a hilltop. Find ways to help students refine both kinds of experience.

A DEFINITION OF MUSIC-HISTORICAL PROCESS

Consider our EuroAmerican musical heritage as a series of stylistic cycles, each having three phases: primitive, classic, and luxuriant-decadent.

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Each primitive phase overlaps with its luxuriant-decadent predecessor. Cycles cluster with their neighbors to make a "macro-cycle." Macro-cycles cluster with their neighbors to make a "mega-cycle." For example, Medieval through late baroque is a macro-cycle; Viennese classic through about 1950, is another; and all the way from Medieval through about 1950 is a mega-cycle. We are in a "mega-overlap" unprecedentedly long in regard to music and even longer in regard to general culture.

A DEFINITION OF INSTRUMENTAL FAMILIES

The following global names are derived from the sound-generating mode of instruments. They are applicable anywhere in world music, offering ways to remember and anticipate, and minimizing fear of the unnamed:

CHORDOPHONE: stretched strings with a resonator, either plucked, struck, or bowed.

MEMBRANOPHONE: stretched membrane with a resonator.

AEROPHONE: a vibrating column of air.

IDIOPHONE: a vibrating unstretched substance.

ELECTROPHONE: vibrating electrical waves.

Comment: Recognizing and identifying instruments become more useful when one then attends to their effect on time-patterning and emotive responses, and how they become metaphors for cultural meaning.

A DEFINITION OF MELODIC TYPES

Some melodies evoke a kinesthetic image in me. The image can have strong gestic qualities, either with a sense of locomotion—for example, such dancelike motion as soaring, whirling, stomping, leaping—or without that sense—for example, facial and arm/hand motion associated with pleading, threatening, blessing, imploring. I call such melodies "gestic" because of the nature of my imagery of dancelike or strongly emotional gestures.

Other melodies evoke an image of singing in me. Such singing can include a sense of body motion, as in dancelike tunes, or evoke absolute, weightless quietude, as in Gregorian chant, Renaissance masses and motets, and certain Adagio movements in Haydn, Mozart, Beethoven and the best of their inheritors. When the lyric image has strong symmetries with considerable melodic rhyme, I call such melodies "tunes." When the image has complex interplay of long and short parts, and many different dura-

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tions, as in certain slow movements by Bach, I refer to them as “continuous-flow” melodies.

Comment: I ask myself: “how would my body move to this music if I were free of self-consciousness and physical limitations?” “How would such movement reflect and awaken emotion?” “How would such an emotion reflect personal and communal values?” Formulating these questions has been helpful in broadening and intensifying my response to music of Webern, Boulez, Varèse, and Messiaen, among others, and to that of Asia and Africa. When I listen to music in an unfamiliar style, instead of my earlier tendency to rebel and deny—“There’s no melody; there’s no rhythm!”—I now consciously seek kinesthetic resonance and often experience it. (No guarantee I’ll like it!) This different approach has intensified my critical discrimination: my *body*, trustworthy in this matter, says “Yes!” or “No!” to music, either in itself or in a particular performance or both. Most important, attending to those three questions offers me a sense that I’m closely in touch with the reason-for-being of aesthetic experience, influencing both my personal life and my instructional attitudes and behaviors.

A DEFINITION OF MUSICAL RHYTHM

Musical rhythm is a human response to sound-as-music. Since everything in the universe has rhythm, the frequently heard term “no rhythm” has no meaning. “Free rhythm” speaks to a response to complex durations, typically having fractional proportions; “pulsed rhythm” speaks to a response to durations having simpler, typically integral proportions but without short-range cyclic grouping by accent; “metric rhythm” speaks to a response to pulsed durations that also have short-range grouping by accent. Metric notation is not synonymous with a metric response in a qualified/artistic listener, since metric notation can also account for free rhythms. Proportionate durations, whether notated or heard, free, pulsed, or metric, are not yet “rhythm.” Only when a listener responds by experiencing the pattern produced by durations is rhythm born. Short-range rhythms group into mid-range and ultimately long-range rhythms.

A DEFINITION OF MUSICAL PACE

Once we experience a musical gesture, its duration can serve for comparison with that of succeeding gestures. When those gestures embody, within a continuing single tempo, durations longer or shorter than the original, the pace of the music has changed. Although changes of pace occur

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with beautiful effect in music before Haydn, they first appeared systematically in the service of dramatic aims in Viennese High Classic music, both instrumental and vocal. Frequent change of pace continues until about 1950 as one of many links with that earlier style.

Comment: It is in regard to musical pace that I recall Leibnitz's "Music is a secret exercise in arithmetic of the soul, unaware of its own act of counting." That frame helps me pay attention to the extraordinary vivid experience of, for instance, "riding eight-ness." My conscious involvement in such an image helps prolong the moment of contemplation and "famines my appetite" for re-hearing the music. Therefore, I make sure to include, for my students, related experiences along with the concept.

A DEFINITION OF MUSICAL LISTENING

There are four intermingled aspects: while listening, a) a pre-rational response to qualities of movement and sound in the music; b) a blending of the pre-rational response with conscious but pre-verbal tracking of the time-patterning responses, paying attention to the qualities and durations of imagined movement in the body in response to the music; c) paying attention to the emotional, the spiritual energy such as imagined movement both awakens and reflects; and afterwards, d) reflection on relations between the musical response and a value system, with its resulting way of life among members of a cultural group, based on their psychologically-sociologically relative definition of the nature of reality. Such reflection can lead to insights into one's own Selfhood, and to integration of those insights in support of mutually confirming I-Thou dialogue.

I offer these suggestions hopefully. Whether they are directly useful or not pales in significance for me beside the possibility that they might serve as raw material for reflection and even debate. Sir Francis Bacon hit the mark in the early seventeenth century—I paraphrase—"Read not to accept or refute, but to weigh and consider."

IDENTIFYING SUCCESSFUL DICTATION STRATEGIES

GARY POTTER

As a teacher of musical skills at various levels, I rely heavily on dictation to evaluate students' ability to correlate musical sound with its notation. I often find myself passing on hoary advice about how to take dictation efficiently. "Listen first and memorize before you write." "Get the rhythm down so you'll have something to hang pitches on." "Concentrate on structural pitches and fill in the rest later." But even as I recite these platitudes, I see some students doing quite well following none of my suggestions and, when pressed, admit that I sometime ignore my own advice when taking dictation. While I present these as suggestions and not dogma, I stress that individuals will eventually find techniques that work for themselves, and that many students *do* look to me for *a* method, particularly in the early stages of study. I question whether my advice is producing successful dictation-takers in the most efficient way.

I decided to conduct observations of skilled musicians taking dictation to try to determine which strategies were most effective. Most of the research experiments in this area have been narrowly focused to yield reliable and replicable data. I might have set up an experiment in which, say, a 3-note melody was provided for subjects who would then be asked to write down the fourth note heard and how they determined it. But I had in mind something broader and more immediately applicable to my teaching. Drawing on an ethnographic research paradigm specifically that is detailed in *Naturalistic Inquiry* by Lincoln and Guba,¹ I set in motion a research experiment to learn more about effective dictation strategies.

THE EXPERIMENT

An Indiana University research grant paid five graduate theory majors to observe 25 paid subjects taking dictation. Early on we decided to limit the study to melodic dictation and to choose subjects who were as good at dictation as we could find, avoiding those, however, with absolute pitch.² The subject listened to tapes of typical "dictation class" melodies (4 to 8 measures long, performed on piano, with key and meter established for all

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but one melody), and they responded in notation as they would in class. We observed what took place, changing the experiment somewhat when our discussions suggested we could learn more by adding a melody and reordering the three original ones. The four melodies are presented here as Figure 1.

Figure 1. Four dictation melodies.

a. "Added" melody. Barlines and bracketed portions given. Key and meter established first.



b. Barlines and bracketed portions given. Key and meter established first.



c. Barlines and bracketed portions given. Key and meter established first.



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d. Clef sign and first note only given. (No key or meter signature or barlines given.) First note only established.



We collected data in three forms:

1. Colored-pen dictation. The subjects used different-colored pens for each successive hearing of each melody. Their notations thus document their progress toward correct notation.

2. Tapes of the experiments. The experiments were done one-on-one: subject and researcher. Each subject was encouraged by the researcher to sing, tap, whistle, and comment on the process as it took place. A tape recorder ran throughout the experiment.

3. Researchers' observations. The researchers kept notes of their observations as the subjects worked, interacted with the subjects, and attempted to elicit comments about strategies used to solve particular dictation problems as they arose. Clearly, the researchers were not dispassionate data-collectors. Rather, they involved themselves in the situation, asked probing questions, trusted their intuitions, and drew conclusions based more on their musical sensitivity than on hard numerical facts.

Some aspects of the experiment did not go as we had expected:

1. Finding people without absolute pitch who also admitted to being "good at dictation" turned out to be harder than anticipated. The subjects' abilities ended up ranging from fairly good to excellent. A few subjects turned out to have at least some degree of absolute pitch, although they did not so classify themselves.

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2. Dictation, while it may be the best tool we have for evaluating ear training progress, is a unique skill, one that some excellent musicians do not maintain without frequent specific dictation practice. More than half of the subjects of this study apologized for "being rusty" at dictation. I had expected that professional musicians and music students, involved daily in active music performance and listening, would continue to improve at dictation after finishing formal skills training. I was wrong. I have come to the unsettling realization that, for some fine performers and teachers (including theory teachers!), dictation ability seems to have little relation to their successful musical lives.

3. It was difficult to get many of the subjects to talk as they worked or even to sing or tap aloud. Some had learned to internalize melodies so well that it bothered them to sing. Others were so conditioned from ear training courses to working in silence that they could not do otherwise. Of the three observation methods, the tapes of the experiments proved the least informative.

4. The colored-pen aspect of the experiment worked well, although some subjects accustomed to writing in pencil and erasing felt uncomfortable using pens.

CONCLUSIONS

Conclusions drawn from such a limited study must be tentative, and generalizing about them is risky. Having studied, however, the 25 hours of tapes, the colored-pen dictations, and the researchers' insightful observations, I have come to conclusions that, while not astounding, will certainly inform my teaching. Following are some of these conclusions and their implications for my future teaching.

1. Rhythm. Rhythmic understanding is absolutely imperative in dictation. This is nothing new, but I was struck by the extent to which subjects comfortable with rhythmic notation, those able to place notes easily in a metric framework, succeed in comparison with those who identify pitches quite easily but do not always know where to put them. One subject's comment sums up the opinions of many: "I don't like to write things down unless I know where they go."

Methods for "getting the rhythm" differed. Some tapped or conducted. Some made "metric frameworks" (slashes or dots above the staff).

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Some notated the entire rhythm first on or above the staff before dealing with pitch at all (not the most successful method). Some moved the pen across the blank measures in time with the music, jotting occasional noteheads or rests in their proper spots.

In my own teaching I plan to increase emphasis on rhythm, and stress conducting while listening, although the experiment indicated that conducting must become second-nature to be valuable; for one subject, it was an end in itself that actually hindered the dictation process. I will use a metric framework, at least for beginning skills students, and insist on the "moving pencil" at all levels. Subjects who stopped to work out a problem spot did less well than those who usually kept the pen moving in time, working on several portions of the melody simultaneously.

2. Scale degree and interval recognition. The four melodies used in the experiment were all tonal; some chromaticism was included and one melody briefly threatened to spin off into atonality. Clearly, subjects who thought in terms of scale degrees (whether numbers or movable-do solfege or scale degree names such as "supertonic" or "submediant") succeeded far better than those whose main strategy was interval recognition. Several of the most successful subjects held tonic and dominant pitches in their heads as "drones" throughout the repeated hearings and even during the time between them, as their comments and/or singing made clear. Many, however, also used intervals to check or validate a scale-degree decision, particularly at melodic leaps and in the one atonal section. Not all could switch easily from tonal to intervallic thinking; the best were fluent with both approaches.

In my teaching I will continue to push scale-degree recognition at every opportunity, but will not ignore interval work as well. The following, from one of the best subjects working on measure 1 of melody c, is typical of the most successful dictation-takers:

Researcher: Right! So you tonicized that E-flat for a second . . . yeah?

Subject: No, no, no, no! I didn't know what this note was when it jumped down to it, and I stopped the note and thought . . . I heard it going to 5 so I knew it was . . . so I knew where this was just from the pitch itself in the key rather than hearing it as a fifth down from B-flat.

3. Harmonic function. Fewer subjects reacted to implied harmonies in the melodies than I had expected. Graduate theory students were more likely than others to recognize the arpeggiated French augmented sixth in measure 3 of melody c, for example. But even some of these theory majors

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became aware of harmonic implications only after solving the dictation by other means.

In my classes I will, however, continue to encourage considering harmonic function in melodic dictation; at the least it reinforces work in harmonic dictation and other aspects of the theory program.

4. Patterns. The best dictation subjects had extensive musical backgrounds. Some had theory training at an early age, and most had lots of performing experience, sometimes on several instruments. They capitalized on their familiarity with the melodic conventions of Western music. The following quotations express what for many subjects went unsaid:

Now I'm creating a completion here, leading from here to here, in my head . . . expecting that's what it's going to do . . .

These are such cliches. You know it's just like, how many times you got melodies like this. You hear it, you just know what it is. You barely have to think about it.

[Working on melody d] . . . if that isn't Schoenberg [sings opening of *Fourth String Quartet*] it's awfully close!

How can I apply this insight in my teaching? I can not alter the musical past of my 18-year-old freshmen. But at least I can be aware that what are cliches for me may not be cliches for many of my students. I should, therefore, introduce them to common musical patterns of pitch, rhythm, and harmony, presenting them as conventions. I can point out similarities with music previously studied. I can push students to verbalize about their musical expectations by stopping the music at odd spots and asking "What comes next?" In the study of harmonic progressions in particular, I can focus on probabilities: "Given this bass line, which chords can fit, which are likely or just possible, and which are impossible in the style?"

5. Memory. While the ability to memorize a melody quickly is a tremendous asset in dictation, those subjects who "listened first to make a mental tape to be played back at will" did far less well than those who began writing during the first hearing. In my teaching, I plan to drill on extending memory, but I will not insist on the pencils-down first hearing of longer

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melodies. Instead, I will urge students to write *something*, preferably very lightly. As one subject put it, "... if I write that down, even if I'm not sure, it's something I can go on from later ... "

6. Holistic approach. Finally, the experiments show that the best dictation-takers have a whole box of tools to work with, tools that work synergistically toward the same end. One of the best subjects mentioned scale degrees (both numbers and solfege syllables), intervals, implied harmonies, leading tones, expected resolution, and parallel phrase structure all during the solution of one four-measure melody. This subject is a doctoral theory student and, while I can scarcely expect such sophistication from freshmen, I can constantly demonstrate in skills courses that written theory is not the universe apart it seems to students who get separate grades from different instructors. Dictation should be a holistic procedure in which hearing and understanding come together.

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NOTES

¹Yvonna S. Lincoln and Egon G. Guba, *Naturalistic Inquiry* (Beverly Hills: Sage Publications, 1985). Lincoln and Guba methodically present this research paradigm as an attractive alternative to rationalistic inquiry. They carefully detail the steps to include in a naturalistic research project to insure its "trustworthiness." They replace rationalistic criteria of validity, reliability, and objectivity with credibility, transferability, dependability, and confirmability; a long list of experimental techniques is given to establish trustworthiness.

My experience is far from a model of naturalistic inquiry. It borrows many of the specific techniques, and I believe that it maintains the spirit of that paradigm. The following is taken from my written presentation to the five researchers as I introduced the idea of the dictation experiment to them.

The implications of a naturalist set of beliefs for research are outlined in pages 39 through 44 (of *Naturalistic Inquiry*). Several points are summarized here; in parentheses are potential ramifications of these points for the current dictation project.

1. Naturalistic research is done in its natural setting. (Melodic dictation-taking is a rather artificial process in the first place. At least subjects can be allowed to respond in musical notation rather than at a computer terminal. And they can hear relatively long spans of melody instead of the 2- to 4-pitch fragments often studied by conventional methods.)
2. Data gathering and interpreting are done better by humans than by machines. (We will gather data with our individual biases, strengths, and shortcomings influencing what we regard as important.)
3. Intuitive knowledge is valued at least as highly as knowledge expressible in language or numbers. (We will not merely record data but will pursue hunches and encourage responses which we feel to be important or useful.)
4. Qualitative methods are at least as valuable as quantitative. (Relatively little of our data will be numerical.)
5. Sampling is not random but purposeful. (We will choose subjects carefully. We do not wish to study the average musician but rather the expert—but without perfect pitch, I believe.)

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6. Data-analysis is inductive rather than deductive, retaining the rich multiplicity of the data, exposing mutually-influencing factors. (We will not try to boil experience down to a few dictation-taking "rules.")

7. Theory arises from the data itself; the research is not conducted to prove or disprove a hypothesis. (How do experts take melodic dictation? We will observe and find out.)

8. Even the design of the research project itself emerges from the data and changes as it goes forward. (We do, however, have budget and time constraints; within these there is considerable flexibility.)

9. Human subjects have a voice in interpreting data about themselves. (We will constantly be urging them to confirm or disconfirm what we think they are doing.)

10. The research findings are often presented in a lengthy, inclusive "case study" format rather than in a summary which "averages away" some of the interesting aspects of the data. (I will prepare the case study with input from all involved.)

11. Generalization is avoided.

12. Applications to other settings are necessarily tentative.

13. Boundaries of the inquiry emerge as research progresses. Width of focus is indeterminate. (We will continue until time and money run out.)

²The 25 subjects included a professional symphony oboist and teacher, two Indiana University faculty members (a performer and a conductor), ten doctoral students (of whom five were theory majors), five masters students, six undergraduates at or near the end of the ear training course sequence, and one freshman with an exceptionally full and varied musical history. Musical backgrounds were quite diverse, ranging from the freshman with years of formal music schooling to a professional performer/teacher with vast performance experience but virtually no formal theory training. Instrumentalists, vocalists, composers, and conductors were included. Previous skills training included a variety of systems and techniques.

CRITICAL THINKING FOR COMPOSERS

PAUL PACCIONE

Compositional training gives students experience in making choices, evaluating significance, sifting out the unnecessary, and developing a convincing musical point of view. Critical thinking is a vital part of this process. It is also important not to deny the fundamental mystery of this experience—of the reciprocal relationship between the composer and the work, through which the “right process” for expression of an original idea is found. Composition teachers should foster in their students trust in intuition, cultivation of a broad aesthetic and intellectual background, the development of craft, and an expanded critical view. For students to think critically they must come to terms with conflict in ideas and with ambiguity. A student who does not think critically never has to deal with ambiguity and accepts dogma without question. Critical thinking leads to experiment and questioning—and it is not comfortable.

Through the critical apparatus the right musical context for the expression of an original idea is found. How does a composer create a context in which certain events can take place? Why does something “work” in one context and not in another? What is unnecessary, superfluous, or vital in a piece? The answers to these questions, subjective as they may be, should always be based on well-formed and well-considered practice, entirely distinct from formulas. The answers may well be different for each piece. Something of the individual, however, will remain constant—personal essence will survive. This personal essence is often found in similarities that remain when a composer consciously strives for differences—for example, the presence of “cross-cutting” in the music of Igor Stravinsky.

In practical terms, both the study of musical analysis and the study of basic compositional exercises are vital: analysis because it enables the student composer to consider larger issues and musical concepts in the context of a completed work; exercises because they focus attention on the micro-level.

By observing the musical relationships between individual parts and the whole, and by observing relationships among completed compositions, students have the chance to critically view not only their work but themselves.

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Composition provides the student with the basic tools for bringing critical attention to musical and intellectual questions. The relationship between composition and critical thinking lies in developing the ability to analyze, criticize, and advocate ideas. Integration of the critical process and the creative process involves consideration of these questions:

1. What is a working definition of critical thinking?
2. What are common obstacles to critical thinking and what are the qualities needed to think critically?
3. What is the relationship between the critical and the creative process?
4. What roles do musical analysis, compositional techniques, and aesthetic choice play in this relationship?
5. What do the foregoing contribute to the genesis and character of a work?

In my experience teaching composition to both composers and instrumentalists I find myself continually faced with these questions. This article is based on practical experience, research in critical thinking, and relevant writings of other composers. The article concludes with a discussion of methods I have found effective in encouraging a critical perspective in my students.

Critical thinking is the process of rationally deciding what to do or believe through analysis, synthesis, and evaluation. Critical thinking for composers leads to self-examination and ultimately self-definition. In his essay "The Teacher's Task" Pierre Boulez offers this definition of teaching: "Teaching means both discipline and also communication. In fact, teaching is the communication, by means of discipline, of some practical knowledge."¹ Boulez's definition of two aspects of teaching parallels two important concepts of critical thinking. Discipline implies "technical reason"; communication implies "emancipatory or dialectical reason." These concepts are identified by Richard Paul, Director of the Center for Critical

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Thinking and Moral Critique, in "Critical Thinking: Fundamental to Education for a Free Society."²

Both "technical reason" and "emancipatory/dialectical reason" play an important role in the compositional process. A common obstacle to critical thinking for composers is viewing these two lines of reason as mutually exclusive. Technical reason divorced from emancipatory/dialectical reason can lead to impoverishment of musical ideas. In composition, finding a musical solution to technical problems requires the ability to move back and forth between these two lines of reasoning.

The synthesis of these two critical views in composition is expressed in Stravinsky's *Poetics of Music*, where he states: "My freedom thus consists in moving about within the narrow frame I have assigned myself for each of my undertakings I experience a sort of terror when, at the moment of setting to work and finding myself before the infinitude of possibilities that present themselves, I have the feeling that everything is permissible."³ Stravinsky is clearly speaking of the need for self-imposed boundaries determined through the critical process, as a stimulus to original thought.

Composition requires coming to terms with limitless possibilities, with one's imagination, and with ambiguity. Each compositional question generates its own sphere of reasoning and decision-making. Compositional ideas themselves are complex, often shadowy, phenomena that may disclose only a part of their potential at any given time. A composer constantly weighs the effectiveness of various solutions to compositional problems. In the present day composers have no set of generally established principles or procedures within which to work, and they have derived an array of individual solutions to this problem.

Even if we did not lack for a common practice, however, the creative process still cannot be reduced to an operational procedure. In this sense the problems encountered in composition are very much like real-life problems—hardly ever susceptible to neat solutions. It has often been observed that a human need to make order out of personal and social disorder and confusion compels us to make art. It is through the critical apparatus that the composer can begin to come to terms with his situation and his choices. Technical reason and emancipatory reason cannot be separated. Emancipatory reasoning is dialectical—through it the composer's ideas are weighed, assessed, scrutinized, and ultimately rejected or accepted. Only through the application of a self-formed and self-reasoned technique can the musical idea be articulated with conviction. What the composer has to say and the method he chooses become one. Technical reason taken in the wrong sense is a discrete, specialized skill, extrinsic to the character of the composer or the work itself. Technique is not something to be applied impersonally. Technical precision is not exclusionary; if it is, it is not technique.

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A composer does not simply adopt a technique or a style for a particular work. It is in the critical selection of the right technique for the expression of a musical idea that technique becomes intrinsic to the character of the composer and the work. It is this netting of elements that generates the style of a composer's work—his own personal musical essence.

I recently heard the late composer Morton Feldman remark that a common shortcoming of young student composers is that they are not "close to their work."⁴ Stated another way, for these students, the process of composition is treated as a vocational skill, a set of impersonally applied technical procedures that give nothing in terms of self-discovery back to the composer. The reciprocal relationship between the composer and the work is the vital aspect of communication to which Boulez alludes and which is a part of every composer's real education. The experience of learning about oneself through one's music is in many ways the ideal critical model. Not every academic discipline provides students with such direct opportunities to express and evaluate their own ideas, but this is the very essence of training in composition. The clearest challenge to the teacher of composition is to foster this critical approach.

One of the most discussed works in education today is the *Taxonomy of Educational Objectives* developed by Benjamin Bloom and a committee of college and university examiners from 1949-1954 and published in two handbooks: *Cognitive Domain* and *Affective Domain*. The authors note that the categories of the *Taxonomy* can be "used as a framework for viewing the educational process and analyzing its workings."⁵ Richard Paul's critique of the *Taxonomy*, an article entitled, "Bloom's Taxonomy and Critical Thinking Instruction," leads Benjamin Bloom to add that, "we intend the *Taxonomy* as a method of clarifying educational objectives, educational experiences, learning processes and evaluation questions. We do not intend to provide a constraint on educational philosophy, thinking methods or curriculum development."⁶ Taken in this sense, the *Taxonomy* can be useful in helping to outline an approach to teaching critical thinking. And indeed the *Taxonomy's* identified higher level thinking skills of analysis, synthesis, and evaluation are essential to critical thinking. The danger is that the *Taxonomy's* compartment-like approach to thinking skills may be taken to imply a "one-way hierarchy."⁷ The different categories of the *Taxonomy* (knowledge, comprehension, application, analysis, synthesis, and evaluation) should not be thought of as water-tight compartments. Richard Paul has observed that the *Taxonomy* should not be interpreted as a one-way hierarchy in at least one significant sense: "For critical thinker, the achievement of any knowledge always presupposes at least minimal comprehension, application, analysis, synthesis, and evaluation."⁸ He brings attention to Paul Kneeder's observation that "knowledge is not rote memorization;

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it is dialectical learning—requiring a mind that is slow rather than quick to believe—which waits for, expects, and weighs evidence before moving to belief.”⁹

The categories of the *Taxonomy* can be usefully applied in the teaching of composition if one recognizes the interrelationship of the *Taxonomy's* organization of cognitive processes. Especially for the composer the concept of knowledge is inextricably linked to both comprehension and application. For a composer to achieve command of or knowledge of a musical vocabulary, more is required than the simple acquisition of a precise inventory of musical elements or facts. The composer must also have a comprehensive knowledge of the principles and methods by which the musical facts are organized. Finally, a musical vocabulary and its laws of internal organization can best be assimilated through application. This often takes the form of compositional exercises. All these stages are necessary for a composer to achieve command of a musical vocabulary.

From this a composer may derive inspiration to express his ideas in a more fully realized context.

Analysis, synthesis, and evaluation form the dialectic of composition. They could be stated as the critical-creative-reflective process. Analysis provides a bird's-eye view of compositional procedure within the context of a completed work. Examining how another composer formulates ideas can often generate insight into the future potential of one's own compositional ideas and procedures. Analysis is concept-generating; synthesis is concept-using. Synthesis emphasizes the production of a unique communication. A composer's methods of communication require continual evaluation both during and after the composition of a work. Time taken to stand back and observe a work's wholeness against both a changing personal and global background reveals the uniqueness of the work and the personal musical essences of the composer.

This type of self-criticism and reflection promotes renewal of one's self and one's ideas. Composition teachers and students alike must realize that on the one hand they are dealing with a technical language and on the other they are in a domain where there is nothing certain and multiple stand-points are possible. There are no universally applicable procedures. Composition involves a constant search for and weighing of alternatives.

Returning to Boulez, he states: "What really arouses my skepticism is the placid kind of teacher who believes that he can spend a quiet life teaching a number of recipes for composition and soon finds himself surrounded by a host of followers. The teacher's highest task, as I see it, does not radiate confidence and conviction. Any gratitude a pupil may in later life feel towards a teacher is for having increased his own inclination to skepticism and his dissatisfaction with himself; and by this I do not mean

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sentimental questionings and vague dissatisfaction, but radical questioning and permanent dissatisfaction. This questioning and dissatisfaction will undermine all hitherto accepted principles and will leave plenty of room for novel constructions.”¹⁰

Approximately half of my composition students are theory/composition majors; the remaining half are instrumentalists with little compositional background. I would like to discuss some of the methods I have found effective in encouraging a critical perspective in my beginning students.

EXERCISE 1: TAPE COMPOSITION

STEP 1: Using a portable cassette tape recorder compose a two-five minute tape composition. Use any single sound or combination of sounds as your sound source.

STEP 2: Make a score of your composition.

In this exercise the student composer originates a musical structure that he notates. This exercise is not concerned with the technical aspects of tape composition (for example, splicing, mixing, looping). Technical procedures are virtually unavailable to the composer. What is important is the choice of the material and the arrangement of the material. Electronic or tape techniques cannot be employed as a means of “spicing up” material. It is emphasized to the student that this composition is a piece of music and must be treated as such.

Problems the student composer encounters are some of the most basic compositional questions a composer continually faces. Since the range of possible sounds are infinite, there is a need to impose limits. The student composer must ask: How do I choose my materials? Should I use just one sound as my source and explore all the different possibilities of that single source (for example, water), or do I choose many different sounds? What types of sounds work together in creating a musical context? Sounds readily recognized are usually the least interesting since the ability to identify the sound detracts from its musical potential. Also, instrumental

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sounds usually prove to be a poor choice—sounding out of place in this context.

Then the student composer must ask: How do I organize my material? How can I make connections between the sounds? Do I begin with a plan or do I determine events as I go along?

Rhythmic flow is an important element: How do I determine the length of each sound? Is there something about the nature of the material that will determine the right length for the piece? What should the overall form of the piece be? Do I start out with a predetermined plan? This exercise is useful in making the student question his usual assumptions about form. It teaches that form is generated from the nature of the materials and is not something abstractly imposed on the materials (for example, the inappropriateness of ABA form for this exercise becomes readily apparent).

What notational system is the most appropriate for my composition? How much should or can the notation tell about the music?

The tape composition gives the student the opportunity to address fundamental compositional questions without an extensive technical background.

EXERCISE II: BARTOK MIKROKOSMOS

The music composed in this exercise is stylistically modeled after Bartok's *Mikrokosmos*, whose structural simplicity, unity of construction, rhythmic variety, and use of modal and chromatic scales present a clear model to the student composer. It is, however, more than just a stylistic exercise.

STEP 1: Choose a scale or two different scales as your source material. Compose a piece for piano approximately 16 measures. If you choose to work with a single scale, this scale can also be composed of a combination of two different scales (for example, major-minor or lydian-mixolydian). For the first eight measures confine one of the scales to the left hand, the other to the right. Half-way through the piece, have these scales change places. If you are working with a single scale, treat the respective halves of the scale in this manner.

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This part of the exercise is most often approached intuitively by the student. The beginning student often says: "I composed the right hand first, then the left."

STEP 2: Analyze the piece, along with one or two from the Bartok *Mikrokosmos*.

Often on completing the piece the student is unaware of how the piece was put together.

STEP 3: Compose another short piece consciously using elements discovered about the first piece (for example, motives, use of register, dynamic structure, phrase structure, texture, intervallic cells). Provide an analysis of your new piece.

This piece is in essence a recomposition of the first piece.

STEP 4: Write another short piece, as in #1 and #3, but this piece must be significantly different from the previous two in terms of character, melodic style, texture, or some other important aspect. Supply analysis.

STEP 5: Make a list of the differences between each piece. Finally and more importantly, make a list of the similarities that emerge.

This exercise focuses on both the critical study of a masterwork and the critical study of one's own work as a means of encouraging the growth of both musical technique and musical imagination. The similarities found between the two pieces in the final stage of the exercise reveal to students clues to their own "voice."

CRITICAL THINKING

EXERCISE III: MOTIVIC CELL

STEP 1: Choose six pitches at random.

STEP 2: Consider these pitches as source material. Analyze the interval content of this collection of pitches.

STEP 3: What are the implications of this cell, in terms of generating new material?

STEP 4: Through the use of various serial procedures (for example, permutation or rotation) this cell can be explored. Analyze the results of these procedures.

STEP 5: Write a number of different phrases (for one, two, and three instruments) that will explore through rhythmic, registral, and melodic articulation the various characteristics of your material.

STEP 6: Repeat the whole process, only now begin with a motive you have consciously created.

STEP 7: Compare your results.

This exercise takes a critical approach to the question: Is there a difference between material that is chosen at random and that which is consciously created?

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EXERCISE IV: MUSICAL FORM

STEP 1: Using phrases composed in EXERCISE III, STEP 5, overlap, juxtapose, intersect, and recombine the various phrases to form a number of different larger structures.

STEP 2: Consider transitions between the various events.

In this exercise, form is viewed as the structuring of local events that in essence determine the content of the piece. EXERCISES III and IV combined show the student how larger structures are generated from germinal material.

EXERCISE V: TEXT COMPOSITION

STEP 1: Choose a text for musical setting. Analyze the text for its meaning and musical sensibility. Are these related in any way?

STEP 2: Read the text into a cassette tape recorder the way you feel it should be read.

STEP 3: Make a contour graph of your reading on graph paper (horizontal plane = duration; vertical plane = pitch).

STEP 4: Transcribe this graph to note values.

This exercise focuses on the relationship of a text to a musical setting and the relationship between contour, pitch, and rhythm.

CRITICAL THINKING

EXERCISE VI: MUSICAL TEXTURE

STEP 1: Choose an instrumental sonority that interests you.

STEP 2: Using graph paper as in EXERCISE V (horizontal plane = duration; vertical plane = pitch) draw a series of different musical textures or events confining one to each page.

STEP 3: Combine the different textures to form larger structures. The pages can be turned any way, even upside down, to generate new textures as well.

STEP 4: Transcribe to specific pitch and rhythmic values.

In this exercise the student begins with an instrumental texture and then transcribes that sonority to pitch and rhythmic values. It shows the student the relationship between pitch, rhythm, and musical texture.

The foregoing exercises are meant as a point of departure—a springboard for stimulating the student composer's imagination. The long-range goal is for students to create their own starting points and generate their own compositional questions.

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NOTES

¹Pierre Boulez, "The Teacher's Task," *Orientations*, trans. by Martin Cooper, edited by Jean-Jacques Nattiez (Cambridge: Harvard University Press, 1986): 122.

²Richard W. Paul, "Critical Thinking: Fundamental to Education for a Free Society," *Educational Leadership* 42/1 (Sept. 1983): 5-14.

³Igor Stravinsky, *Poetics of Music*, trans. by Arthur Knodel and Ingolf Dahl (1942; Cambridge: Harvard University Press, 1979): 65.

⁴Morton Feldman, Lecture-Demonstration, American Society of University Composers Conference, Toronto, March 7, 1986.

⁵Benjamin Bloom, et al., *The Taxonomy of Educational Objectives: Cognitive and Affective Domains*, 2 volumes (New York: Longmans, Green, and Co., 1956; New York: David McKay Company, 1974): Vol. 1: 3.

⁶Richard W. Paul, "Bloom's Taxonomy and Critical Thinking Instruction," *Educational Leadership* 42/8 (May 1985): 39.

⁷Paul, "Bloom's Taxonomy," 37-38.

⁸Paul, "Bloom's Taxonomy," 38.

⁹Peter Kneeder, "Critical Thinking in History and Social Science," pamphlet (Sacramento: California State Department of Education, 1985).

¹⁰Boulez, 127.

SOUND THINKING

A Suggested Sequence for Teaching Musical Elements Based on the Philosophy of Zoltan Kodály for a College Music Theory Course

Micheál Houlahan

Philip Tacka

This is a plea for a broader and more imaginative approach to aural work and to stress what has so often been said but not always borne out in practice, that aural experience is the essence of music and without it all musical skills and joys are impossible.¹

Zoltan Kodály (1882-1967) is well known as a Hungarian composer but his achievements as a musicologist, teacher, and philosopher have only recently received recognition and attention throughout the educational world. His work in these areas led him to formulate ideas about education that today have become known as the Kodály concept of music education. This approach has resulted in vast improvements in how music is taught in Hungarian schools. The philosophies and techniques developed by Kodály and his colleagues and successors, have been widely adopted throughout Europe and North America.

Zoltan Kodály was a music psychologist and a very good one. He was one of those rare persons who is able to combine superior musicianship with wisdom in a quest for a better understanding of the pedagogical processes in music.²

Despite Kodály's acceptance into the mainstream of American music education, his method's application to higher levels of musicianship training has not been fully realized. The concept had been mistakenly understood as suitable for developing musical literacy only with elementary

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children; the authentic American adaptations have, therefore, for the most part, been limited to the elementary music curriculum.³

This paper presents a possible methodology for teaching musical elements, sight-singing, and theoretical concepts encountered in the first and second semester of a college-level music theory curriculum, based on the Kodály philosophy and current research in teaching sight-singing and ear-training skills. Part I (in this issue of the Journal) focuses on the Kodály philosophy and general principles of the methodology; Part II (to follow in the Fall 1990 issue of this Journal) will provide a more detailed presentation, with specific examples, of the sequential order. Selected musical materials have been analyzed for their pedagogical content and in turn have dictated the presentation and development of musical elements and skills.

THE KODALY CONCEPT

A deeper musical culture developed only in those places where singing was the basis. An instrument is only for the privileged few. The human voice is the most accessible to everybody, and can be the soil for general music culture.⁴

There is no good musician who does not hear what he sees and does not see what he hears.⁵

Kodály was convinced that singing is the most direct means to a musical education as it provides for rapid internalization and is a participatory approach to learning with the human voice as the major vehicle. Singing depends on the acoustically correct natural intervals and not on the tempered system.⁶

If we ourselves sing often, this provides a deep experience of happiness in music. Through our musical activities, we learn to know the pulsation, rhythm, and shape of melody.⁷

Peter Bartók gives credence to a vocal approach by discussing his father's approach to teaching:

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His teaching programme did not follow an accepted piano school technique. At first I was to sing only.⁸

Since the human voice is the most intimate of all instruments and the inner ear is more easily developed through this personal medium, singing is the most logical starting point for a musical education.⁹

The development of inner hearing is the final aim of all musical professional study.¹⁰ Our every musical manifestation must be led by an inner conception, hearing and imagination, and this is trained by singing: Free singing without any instrument is the true and profound school of musical abilities.¹¹

Kodály insisted that education should develop an individual's ability to read and write musical notation, that is, to become musically literate. Kodály maintained that folk songs should form the foundation for the development of musical literacy.

The single tunes are so many examples of high artistic perfection. In their small way they are as perfect as the grandest masterpieces of musical art.¹²

Listen attentively to all folk songs. These are mines of the most beautiful melodies and will teach you the characteristics of the different nations.¹³

Kodály believed that the folk song and suitably composed songs should form an integral part of the music curriculum. He valued folk songs for their simplicity, beauty, and heritage but emphatically stressed the importance of using only authentic folk songs, linking them to the finest art songs. The folk song is the most perfect relationship between music and language to be found.¹⁴ These melodies and texts are the mature, rarified art of centuries of development; they are the inheritance of a people. He maintained that in music, as in language and literature, a country must begin with the "musical mother tongue" of that particular nation (folk songs of each country) and through it, expand to reach an understanding of the music literature of the world. He regarded the folk song as a rich heritage in which everyone has a share.

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The music culture of a country is not created by individual musicians, but by the whole population. Everybody has a share, even to the smallest. It is vain for individuals to work if they are not accompanied by the echo of millions. The compositions of every country, if original, are based on the songs of its own people. That is why their folk songs must be constantly sung, observed and studied.¹⁵

David Klocko suggests that folk songs should form part of a college music curriculum as they show how music developed in western tradition.¹⁶

Kodály did criticize musical materials of no artistic merit that were composed for a specific pedagogical purpose.

Our purpose cannot be to plunge the schools suddenly to the opposite extreme by using one-sided folk material; indeed we have to become familiar with as large a slice of the world as possible, but we must rid ourselves of (the) shoddy little songs invading the school.¹⁷

Through their tradition of oral transmission, folk songs have long been considered ideal for developing ear training and musical memory. The Kodály approach to sight singing and ear training uses patterns and sequences of notes based on folk songs. The similarity of patterns in successive songs makes them easy to learn, memorize, and retain; therefore, this renders them well-suited to fostering musical literacy.

Heaven forbid that we should sing our folk songs only for this purpose and in a graded order calculated for the development of literacy. But the standard of musical literacy in schools is not so advanced that we can afford to treat it in a cavalier manner—and other countries have been helped by folk music in this context . . . ¹⁸

As the student's skills develop, the folk songs of other cultures are gradually introduced along with art music of the great composers. The connection between folk tradition and art music is evident in the music of each historical era. In this way, a logical sequence is developed that uses

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only the best material and simultaneously meets the developmental needs of the student. Kodály believed that all students should become musically literate—that is, they should be able to read and write music as easily as reading and writing their own language. Only in this way will students achieve true confidence and security in approaching musical materials.

Kodály inspired many accomplished musicians and teachers to work with folk materials and to analyze them from a musical point of view. Together they determined melodic intervals, rhythms, meters, and forms that were most common in Hungarian music. After careful analysis, a pedagogical sequence was established that introduced the most common musical elements first. This approach differed from the older subject-logic approach to music learning in which the material was taught logically in terms of content, but did not take into account how students learn.

TEACHING TECHNIQUES

As Kodály ideas were developed, Hungarian teachers gradually began adapting certain teaching techniques that have sometimes been mistakenly thought to be in the “Kodály Method,” but which are only aids to help the teacher to reveal the essence and style of the chosen materials to the students while simultaneously developing musical skills. These techniques include: a) the moveable “do” system of solmization; b) hand signs to indicate the melodic notes of the scale; c) rhythmic syllables; and d) musical shorthand derived from solfa and rhythmic syllables.

These devices were adapted by Kodály colleagues and were found useful in teaching music. The moveable “do” or tonic-solfa system can be traced to the eleventh century when Guido d’Arezzo used it for musical instruction. Relative solmization links sounds to tonal images in one’s hearing and may be transferred to any tonal system: major, minor, modal, or pentatonic. Singing with solfège syllables and then moving to singing with letter names is an integral part of this solmization system.¹⁹ The following is a descriptions of the solfège syllables and letter names:

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Solfège syllables

do is the major tonic and la is the minor tonic

raised scale steps	di	ri	*	fi	si	li	*
natural steps	do	re	mi	fa	so	la	ti
lowered steps	*	ra	ma	*	*	lo	ta

*=not used

The upper octave is indicated by a superscript prime placed on the syllable, e.g., d'

The lower octave is indicated by a subscript prime on the syllable, e.g., s_1 .

Letter Names

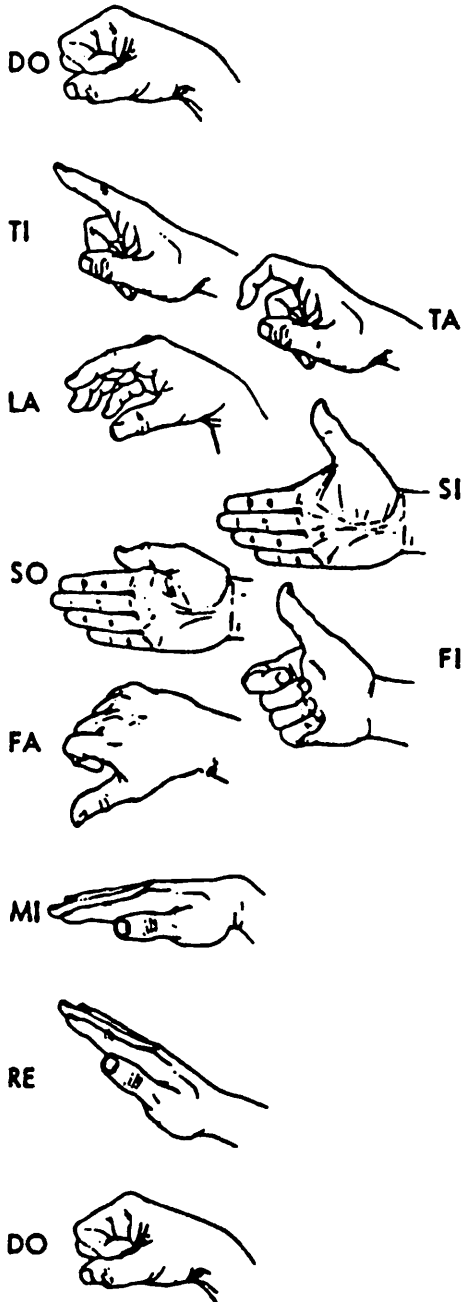
The German system of letter names is used:

sharps	ais	bis	cis	dis	eis	fis	gis
natural	a	b	c	d	e	f	g
flats	ass	bes	ces	des	ees	fes	ges

The hand signs used to represent the notes of the scale were developed by the Englishman, John Curwen, in 1862. Hand signs can help in orienting students to intervallic relationships through added visual and physical reinforcement.

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Hand Signs



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The musical shorthand or stick notation was developed in Hungary and is simply a rapid way of writing music without the use of the staff. The most frequently used rhythm name system with the corresponding stick notation is shown in the chart below.

Rhythmic element	Rhythm name	Stick notation
	ta	
	ti-ti	┌┐
	ta-ah	
	ta-ah-ah-ah	
	ti-ri-ti-ri	┌┌┌┌
	ti- ti-ri	┌┐
	ti-ri- ti	┌┐
	tim-ri	┌┐
	ri-tim	┌┐.
	ti-ta- ti	┌ ┌
	tie-ti	. ┌
	ti-tie	┌ .
	tri-o-la	

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Rhythmic names for compound meter



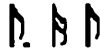
ti-ti-ti



ta-ti



tim-ri-ti



The hand signs used to represent the notes of the scale were developed by Sarah Glover and John Curwen in 1862. To fix syllables in one's mind, hand signs are employed.

Kodály decided in favor of the relative sol-fa syllables at a very early date. Besides many other didactic considerations the most important factor in this decision was the one that the pupils would gain command over their voices through systematic solfège instruction. The goal of this instruction is that the aural and visual picture of music should make an indivisible unit. The relative sol-fa method clarifies the relationship of tones between one another, the tonal relations being easily recognized and understood especially if strengthened by the use of hand signs.²⁰

Hand signs offer a visual and physical motion that develop the ability of inner hearing. "Similar to 'silent reading' in written language, mental imagery plays an increasingly important role in the establishment of musical literacy skills, such as 'inner hearing' or 'hearing with the eyes' develops."²¹ These teaching techniques in combination with the folk song and art music in a student-centered curriculum makes the Kodály concept of music education unique and serves as Kodály's great contribution to educational philosophy.

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THE METHODOLOGY

Phase 1: Preparation

The preparation phase of learning is divided into three stages:

Stage 1: Physical

Stage 2: Aural/Oral

Stage 3: Visual

Research done by Davidson and Scripp suggests that without the intensive and comprehensive training that leads to the operationalization and internalization of musical knowledge through the various modalities—sensory-motor, verbal, and symbolic—this transformation to musical learning into aural and notational literacy will not take place.²²

The goal of the preparation phrase is to prepare students to hear and sing patterns in context, while the teacher develops vocal production and musicianship skills. For each new musical element, the teacher presents a core of song materials by rote to the students in a stylistically correct manner. These materials will form the foundation for sight-singing and ear training. The correlation between the effects of rote teaching on score reading and performance skills is noted in Sperti's study.²³

The teacher may ask questions relating to the song to focus the students' attention on the text, on specific musical elements, or to analyze the song. In this way, the students strengthen their listening and analytical skills as well as their ability to memorize; both aural and analytical training are inextricably intertwined aspects of music theory. Questions that help students to focus their attention must be specific. The teacher should try to sing the song between each question. In this way, the students are able to listen to the song several times before they sing and therefore have a better idea of melodic contours and rhythmic complexities. (The development of listening skills is of paramount importance as reading skills are dependent on the students' aural perception.) It is necessary for the teacher to sing selected phrases of a song that are then repeated by the students. This helps to focus the students' attention on a difficult interval or rhythmic pattern. Critical rhythmic and melodic discrimination skills are continually developed and practiced through singing. A study by Pederson and Pederson investigated the relationship between pitch discrimination and vocal pitch production with sixth grade students. Their results indicated that there is a strong relationship between pitch discrimination and singing.²⁴

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Stage 1: Physical Preparation

In Stage One, physical motions appropriate to the text and meter of the songs should be used to help students feel the new element unconsciously. Through physical motions, students are being prepared to hear and sing patterns correctly in context while the teacher is also able to develop vocal production and musicianship. The following are physical activities for preparing rhythm and melodic activities.

Suggested physical rhythm preparation activities:

1. The students clap the rhythm of a song.
2. The students clap the rhythm while moving their hand to show the melodic contour of the song.
3. The new rhythmic pattern should be practiced in conjunction with the basic beat. The class may be divided into two groups. One group performs the rhythm pattern and the other performs the beat. This activity may be practiced in different combinations: teacher/class; class/teacher; divided class; and two individuals. Finally, one student may walk to the beat while clapping the rhythm.
4. The students conduct while singing the song.

Suggested physical melodic preparation activities:

1. The students show the direction of the melodic line of the song with arm motions. These motions must be natural and appropriate to the text and tempo of the song.
2. The students clap the rhythm of a song while showing the contour of the melodic line.

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Stage 2: Aural/Oral

Within the context of the Kodály concept the aural sound must precede the visual representation of a musical sound. Gordon states that:

To read and write music meaningfully, one must be able to hear music seen in notational form before it is performed, and to hear what one is composing. The mechanical ability to name and define individual notes or other music symbols does not, of itself, provide the readiness for music literacy. One does not read music names or definitions, but, on the contrary one hears groups of notes (patterns) as one reads. Only when one can audiate tonal and rhythm notation can the names and definitions of music symbols become musically relevant.²⁵

In Stage 1, the students are physically introduced to the new musical element. This is a preparation for Stage 2 where the students must be able to aurally identify and describe the new melodic or rhythmic element.

Petzold's study concludes that aural perception precedes visual perception and that one must be able to hear music to develop skills in music reading.²⁶ Hewson suggests that aural experience, prior to encountering notation, facilitates the development of sight-singing skills.²⁷ The following are activities for Stage 2.

Suggested aural/oral rhythm preparation activities:

1. The teacher claps a rhythmic pattern or a phrase from a well-known song and the students clap it back. This technique is called echo clapping.
2. The students identify which beat or beats contains the new rhythmic element.

Suggested aural/oral melodic preparation activities:

1. The students echo-sing melodic patterns sung or played by the teacher.

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2. The students show the melodic line of known and unknown phrases with arm motions.

Stage 3: Visual

This is the visual representation of the physical and aural stages of Preparation. Through carefully guided aural analysis, the students notate what they are hearing. A graph or visual representation can be made of the music; in this sense, music is transformed into a two-way medium: an aural art form that can be made visual. This visual representation may be made from the contour of the melodic line, the form of a composition, and the number of sounds on each beat. Brofsky and Bamberger have made extensive use of visual representations using graphs for students with no formal training in music.²⁸ This technique is also used by Cogan and Escot in a much more concise and detailed manner. "We find graphs useful as a beginning tool, as an aid in perceiving broad outlines of spatial motion and distribution."²⁹ The following are activities for Stage 3:

Suggested visual rhythm preparation activities:

1. Write the text of a song to show the number of sounds or syllables that occur on each beat.
2. Show the number of sounds within a beat by naming the known rhythmic elements.
3. Write the solfège syllables within each beat to show the number of sounds within the beat.

Suggested visual melodic preparation activities:

1. Write the words of a musical phrase spatially.
2. Write the rhythm of the song spatially.
3. Use melodic steps or spatial solfège syllables with a question mark to indicate the placement of new melodic elements.

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Phase 2: Presentation

Stage 1 : Attaching a rhythmic or melodic name to the new element ³⁰

The teacher reviews the physical, aural, and visual preparation steps and then makes the new musical element conscious to the students by giving the solfège name and hand sign or rhythmic name for the new element. The students should listen and identify the new element within the context of patterns and complete songs using known and unknown materials. Students apply and reinforce all the physical, aural, and visual skills developed in Phase One and begin to discriminate using rhythmic and melodic syllables. The visual representation becomes much more complete. Therefore the students are demonstrating and developing more sophisticated listening skills.

Stage 2 : Transferring the syllables to the staff

The teacher transfers the rhythmic or melodic syllable to staff notation giving only the placement of the melodic syllable on the staff. When transferring the melodic syllable to the staff, the teacher explains the rule of placement to the students. For example, if *do* is on the second line, *mi* is on the third line and *so* is on the fourth line, *fa* will be on the third space. In this way, students are not introduced to theoretical information. The syllables give meaning to the note. No attempt at theoretical explanations occurs until students can hear what they see and see what they hear.

This sound into notes and notes into sound transference has been aptly described by Benward as developing the "seeing ear" and the "hearing eye."³¹

Phase 3: Practice and Evaluation

In Practice Activities, the song repertoire and patterns from the Presentation and Practice Phases may still be used to reinforce the new musical concept or element. Entire songs may be used for reinforcement, but attention must first be directed to the phrase or phrases that contain the new element. The musical example should always be analyzed both aurally and visually; the ear always leading the eye.

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During this process, new musical elements are introduced and others are prepared. As the new element is made conscious in the students' repertoire of songs, old musical elements are "re-presented" within the context of each element. Thus, all phases of learning always overlap within each lesson and evaluation is an on-going process. The following activities may be used to practice rhythmic combinations:

1. Speak the rhythm patterns while tapping the beat.
2. Speak the rhythm while conducting.
3. Echo patterns clapped by someone else.
4. Identify the meter and rhythm patterns clapped or sung by another person.
5. Change the rhythm pattern. One person writes a 16-beat pattern then claps a slightly different pattern. The other person must identify where the changes occur.
6. Improvise the rhythm patterns. First, select a meter and length for the pattern, then decide what rhythmic form (for example, ABA or ABAB) to use.
7. Write one of the rhythmic selections from the book. Study the form to identify repeated patterns. Memorize and write it.
8. Perform a rhythmic canon. Practice the canon in the following ways:
 - a. Say the rhythm names while clapping the rhythm.
 - b. Think the rhythm names and clap the rhythm.
 - c. Think and clap the rhythm in canon while another person claps the second part of the canon.
 - d. Clap the rhythm in canon with someone else.
 - e. Perform the rhythmic canon by yourself. Clap one part with one hand and the other part with the other.

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The following activities may be used to practice melodic combinations:

1. Sing with syllables. Conduct while singing to keep a steady beat.
2. Sing with syllables, using hand signs.
3. Sing with rhythm names, using hand signs.
4. Sing a pattern or show it with hand signs. Ask another person to sing it back.
5. Memorize an entire exercise and notate it without referring to the book. First analyze the form by looking for repeated and similar parts. This will simplify the task.
6. Select a phrase of music from the book. One person plays the selection, deliberately making a melodic mistake. Another person follows the score and locates the error.

Lesson Planning

The following lesson outline may be used for each unit. Each new musical element taught will be reinforced throughout each section of the lesson plan. This will enable students to reinforce a new concept through practice exercises, sightsinging, memory work, dictation, and part-singing.

1. Review of selected musical materials from previous lesson. The class begins with a warm-up session that may include echo-clapping, hand-sign singing, simple vocalises, and songs for singing. The teacher should then review previously learned materials and homework.
2. Preparation and presentation of new musical elements.
3. Introduction of theoretical terms and concepts.
4. Development of musical memory.
5. Sightsinging.

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6. Dictation.
7. Part-Singing.
8. Review of musical materials covered during the class.

The Development of Musical Memory

Musical memory plays an important role in accurate singing and in the ability to recall a pattern for the purposes of dictation. The following techniques can be helpful.

Memorizing by hand signs

Once the students have experienced singing from the teacher's hand signs, the sequence of hand signs begins to evoke the memory of the melodic patterns.

1. Show typical melodic patterns and ask students to sing patterns back. Start with short patterns such as s-l-s-m or m-f-m-r-m.
2. When the melodic patterns are mastered, progress to four-bar and eight-bar melodies.
3. Show a melody in hand signs. Select pentatonic melodies or rounds. The students sing the melody in canon using solfa or absolute letter names and write down the example from memory.
4. The teacher may also give the starting pitch of a key and ask the students to sing a melody with absolute letter names while using hand signs.

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Memorizing from staff notation

1. The students look at a score and memorize a short fragment of a musical example, using hand signs.
2. The teacher sings the unknown part of the example. Students sing the memorized motifs.
3. Students then write the melody down on staff paper. At a more advanced level, students can write the example in another key using a different clef.
4. Look at an example using familiar elements. Memorize the example without singing or playing.

Memorizing by ear

Memorizing by ear is more difficult than memorizing from notation as it involves no visual aid. Melodies used for memorizing by ear should be easier than those used with notation. Extracts should be played on the piano or another instrument and sung a few times. The following procedures may be used for both rhythmic and melodic memorization.

1. Students identify the meter.
2. Students identify the ending and starting pitches.
3. Students sing the example and conduct.
4. Students sing the example with hand signs.
5. Students sing the example with absolute pitch names and hand signs.
6. Students sing the example with rhythm names.
7. Students write the exercise or play it back on the piano. Later, the example may be transposed.

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The teacher may also play a melody and ask the students to sing it back in canon at the unison while memorizing the example. Later, canons at other intervals may be used.

When students have gained experience in unison memory work, they can begin to memorize two-part extracts. Accompaniments may be drawn from a rhythmic pattern, a rhythmic or melodic ostinato, chord roots, a contrapuntal melodic line, or typical cadential idioms in modal or harmonic music. Memory work should also include three- and four-part work.

Procedures for the students to follow:

1. Sing the selected extracts in two parts.
2. Memorize one part silently using solfa.
3. Sing the part out loud while conducting.
4. Practice the other part following steps 1 through 3.
5. Sing both parts in a group and then as solos, using both solfa and note names.
6. Write down both parts of the extract.
7. Sing one part and play the other on the piano, or sing one part and show the second part with hand signs.

Sightsinging

Before each exercise the teacher should practice basic rhythmic and melodic patterns from the sight-reading exercise with the students while the students follow the staff notation. Difficult rhythms should be practiced with a suitable rhythmic ostinato or subdivision of the beat. Sing these preparatory exercises in the same key as the reading example. Exercises should be sung in solfège, letter names, and neutral syllables. The following procedure may be used for sight reading new material:

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1. Notice meter and key. Chose an appropriate tempo.
2. Discuss the form of the exercise. Look for repeated patterns.
3. Students should then think through the entire melody.
4. Students may conduct or use hand signs while thinking through the melody.
5. Students sing the exercise while conducting.

The sightsinging exercise may be memorized and notated. Students should continually practice reading melodic patterns with or without a specific rhythm. Teachers should devise a variety of ways to practice a reading exercise, for example: reading the melody backwards; reading a unison melody while clapping a rhythmic ostinato; singing a melody in canon at the fifth with only the first voice given.

Dictation

Dictation is closely linked to the development of music memory, inner hearing, and reading and writing skills. It is important to spend time developing the student's memory as this skill is essential for dictation. Initial dictations should be based on patterns that have been memorized by the students. As the student's memory develops, the teacher can begin more formal dictation practice. At first the melody should be sung by the students before notating it so the teacher may be sure the students are hearing it accurately. Initial dictation material should be based on American folk music. Later music of other styles can be added. The following procedures may be used for melodic dictation.

1. The teacher prepares the key of the dictation with hand signs and staff notation.
2. The teacher show typical melodic patterns extracted from the melody used for dictation and the students sing in solfa and letter names. At the beginning stages of formal dictation the teacher may also give the student a score with the barlines indicated and certain notes or rhythms filled in to help the students' memory.

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3. The teacher plays the melody on the piano or on another instrument.

4. The students determine the final note and the beginning note as well as some or all of the following, as appropriate: mode, melodic cadences, melodic contour, patterns, and meter.

5. Students sing the melody using solfa and absolute letter names.

6. Students sing the melody with rhythm names and hand signs.

7. Students sing the melody from memory.

8. Students write the melody down.

9. Students sing the melody from their score. This melody may be used to practice other skills such as transposing into other keys or practicing intervals in the melody.

In addition to notating the rhythms of melodies accurately, students should also practice rhythmic dictation separately from melodic dictation. The following procedures may be used.

1. The teacher plays a melody on the piano while students establish the meter and the number of bars.

2. The teacher plays and the students conduct.

3. Students conduct and sing using rhythm syllables.

4. Students write the rhythm.

5. The teacher plays once more while the students follow the score.

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Part Singing

"Those who always sing in unison never learn to sing in correct pitch. Correct unison singing can, paradoxically, be learned only by singing in two parts."³²

Singing and playing part music are important aspects in musical training. This enables the student to learn to hear several voices simultaneously. The following procedures may be used for developing two-part singing.

1. Sing folk songs or other exercises while clapping the beat or the rhythm.

2. Sing folk songs dividing the singing by phrases in call-and-response style or musical examples using the responsorial principle. This enables group I to hear what group II sings, and vice versa.

3. Add a rhythmic ostinato to folk songs. This can be done in five stages.

- a. Students sing the melody while teacher claps the rhythm.
- b. Students and the teacher exchange parts.
- c. Divide the students into two groups; one group sings and another performs the rhythm.
- d. Two students perform the work.
- e. One student sings one voice and plays the other voice on the piano.

4. Students clap a series of rhythmic patterns while singing a known song.

5. Sing in two parts from hand signs. This helps students see the intervals spatially.

6. Sing simple pentatonic folk-songs in canon.

7. Sing a well-known song and at the same time clap various rhythms the teacher points to. The students may also read a known exercise while the teacher improvises an extended rhythmic ostinato. The students must sing and listen at the same time, then try to recall the rhythmic pattern. Start with simple, familiar patterns.

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8. Sing one part and clap the second part simultaneously.

9. Two-part singing.

a. If the two-part selection is a folk song, teach the song first either by rote or from the music, then teach the second part.

b. Divide the class into two groups. Group A sings the top line while group B sings the bottom. Reverse.

c. Group A sings the bottom line and Group B claps the top. Reverse.

d. Perform the work as a group and then with soloists. Individuals may then sing any part while clapping the other or may sing one part and play the other on the piano.

[Part II of this article will be presented in the Fall 1990 issue.]

NOTES

¹Rupert Thackery, "Some Thoughts on Aural Training," *Australian Journal of Music Education* (October 1975): 30.

²Edwin E. Gordon, "The Unsung Values of Kodály Instruction," Keynote Address, Organization of American Kodály Educators Conference, *Kodály Envoy* 1 (Spring 1981): 4.

³Philip V. Tacka, "Denise Bacon, Musician-Educator: Contributions to the Adaption of the Kodály."

⁴Zoltan Kodály, *Visszatekintés*, edited by Ferenc Boris (Budapest: Zenemukiado Vallaiat, 1964): 117.

⁵Laszio Dobszay, "The Kodály Method," *Studia Musicologica* XVI (1972): 17.

⁶Zoltan Kodály, *Visszatekintés*, p. 205.

⁷*Ibid.*, 117.

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⁸Bela Bartók, *Mikrokosmos* Vols. 1-6 (New York and London: Boosey & Hawkes, 1989), Preface.

⁹For further information regarding the role of singing and the development of inner hearing see: *The Psychology of School Music Teaching* by James L. Mursell and Mabelle Glenn (New York: Silver Burdett, 1938) and chapter eleven of *Music, the Arts and Ideas* by Leonard B. Meyer (Chicago: University of Chicago Press, 1967).

¹⁰Zoltan Kodály, *Visszatekintés*, p. 291.

¹¹Zoltan Kodály, "The Popularization of Serious Music," Paper read in New York City, 1946. Archives of Kodály Center of America. Here after referred to as K.C.A.

¹²L. Vargyas, "The Folk Song as a Work of Art," *Studia Musicologica* VI (1984): 2.

¹³Robert Schumann, *On Music and Musicians* (McGraw-Hill Paperbacks, 1964): 35.

¹⁴Beth Landis, Polly Carter, *The Eclectic Curriculum in American Music Education: Contributions of Dalcroze, Kodály, and Orff* (Washington, D.C.: Music Educators National Conference, 1972): 63.

¹⁵Zoltan Kodály, *Fifteen Two-Part Singing Exercises* (London: Boosey & Hawkes, 1963), Forward.

¹⁶David G. Klocko "Multicultural Music in the College Curriculum," *Music Educators Journal* 75/5 (January 1989): 41.

¹⁷Zoltan Kodály, *Fifteen Two-Part Singing Exercises*, Forward.

¹⁸Jack Dobbs, "Folk Music in the Music Lesson," *Folk Music in School*, edited by Robert Leach and Roy Palmer (New York: Cambridge University Press, 1978): 60.

¹⁹Relative solmization is discussed in relation to other systems in Bruce E. More's "Sight Singing and Ear Training at the University Level," *The Choral Journal* 25/7 (1985): 9-11.

²⁰Egon Kraus, "Zoltan Kodály's Legacy to Music Education," *The Eclectic Curriculum in American Music Education: Contributions of Dalcroze, Kodály, and Orff*, Beth Landis and Polly Carter (Washington, D.C.: Music Educators National Conference): 126.

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²¹Lyle Davidson, Larry Scripp, "A Developmental View of SightSinging" *Journal of Music Theory Pedagogy* 2/1 (Spring 1988): 19.

²²Lyle Davidson, Larry Scripp, "Happy Birthday: Evidence for Conflicts of Perceptual Knowledge and Conceptual Understanding," *Journal for Aesthetic Education* (1988).

²³J. Sperti, "Adaptation of Certain Aspects of the Suzuki Method to the Teaching of the Clarinet: an Experimental Investigation Testing the Comparative Effectiveness of Two Different Pedagogical Methodologies" (Doctoral Dissertation, New York University, 1970).

²⁴Darhl M. Pederson and Nancy O. Pederson, "The Relationship Between Pitch Recognition and Vocal Pitch Production in Sixth Grade Students," *Journal of Research in Music Education* XVIII (Fall 1970): 265-272.

²⁵Edwin E. Gordon, *Learning Sequence and Patterns in Music* (Chicago: G.I.A. Publications, Inc., 1976): 2.

²⁶R. G. Petzold, "The Perception of Music Reading by Normal Children and by Children Gifted Musically," *Journal of Experimental Education* 28 (1960): 271-319.

²⁷A. T. Hewson, "Music Reading in the Classroom," *Journal of Research in Music Education* 14 (1966): 289-302.

²⁸Jean Bamberger and Howard Brofsky, *The Art of Listening: Developing Musical Perception* (New York; Harper and Row, 1975).

²⁹Robert Cogan and Pozzi Escot, *Sonic Design: The Nature of Sound and Music* (Englewood Cliffs: Prentice-Hall, Inc., 1976): 13.

³⁰Results of MacKnight indicate that singing with tonal syllables and chanting with rhythm syllables facilitate the development and acquisition of music reading skills. C. B. MacKnight, "Music Reading Ability of Beginning Wind Instrumentalists After Melodic Instruction," *Journal of Research in Music Education* 23 (1975): 23-24.

³¹Bruce Benward, *Music Theory in Practice*, 2nd edition, 2 vols. (W.C. Brown, 1981), XI quoted in Michael R. Rogers, *Teaching Approaches in Music Theory* (Southern Illinois University Press, 1984): 100.

³²Zoltan Kodály, *Let Us Sing Correctly* (London: Boosey & Hawkes, 1963) Forward.

"ONE STEP UP": A LESSON FROM POP MUSIC

JUSTIN LONDON

Every so often the theory teacher is blessed with a good pedagogical example from popular music. These examples are useful in many ways. They are usually simple and straightforward, and thus give a good demonstration of a particular analytic point. These examples also tend to be familiar to the student (especially if we are dealing with a theory class not just for music majors), and as such they provide a means of connecting what is taught in class with the students' "real-world" musical experiences. The only problem is that popular music is, by nature, ephemeral. Today's hot hit is next year's golden oldie. So a lesson that is *au courant* one year (and perhaps even one semester) may seem out of date the next. Thus it is with some trepidation that I present the following discussion of the song "One Step Up" from Bruce Springsteen's 1987 album "Tunnel of Love."¹

But I feel it is worthwhile for at least two reasons. One, even though this material is three years old, I believe there are still a few lessons left in "One Step Up." For one thing, many of our students will have a recording of it in their collections, so it is part of their musical experience and background. So even if not "on the charts," it is still familiar material. The other reason for considering "One Step Up" is that it provides an excellent example of the ways in which we can use popular song in the theory classroom. Lessons learned from Mr. Springsteen's ballad can be applied to other selections from the popular repertoire, both current and future.

"One Step Up" is a melancholy ballad that portrays a character (the narrator of the text) habitually out of sorts with his lover.² The text depicts a drifter, sitting in a bar ruminating over his current girl, his relationship to her, his relationship to women in general, and his own sense of self and character. The cliché "one step up and two steps back" is used as a refrain at the end of each verse to underscore the narrator's romantic aimlessness. However, in a clever turn of text, in the last verse the man dreams that he is dancing with his lover, and the cliché becomes a description of their dance step, one step up and two steps back.

Just as Mr. Springsteen plays upon a linguistic cliché, he also makes a play on a harmonic convention, namely a standard I⁶-IV-V cadential progression. The strophic text is set as a series of repeating verses, and the music is similarly repetitive. In fact, most of the text is set over an ostinato-

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like chord pattern: IV-I⁶-ii⁷-I⁶ (and then back to IV again) in F-major.³ At the end of each verse, where we have the refrain "one step up and two steps back," the harmonic rhythm slows somewhat and the chord progression moves to I⁶ to IV, and at last to V⁷ (but without a third). Under these harmonies the electric bass plays a prominent 3-4-5 ascending line, which adds to the feeling of cadential motion. Instead of resolving to tonic, however, the dominant harmony falls back to IV, and then into the ostinato for the next verse. The chord progression itself may be described as moving one step up (IV to V) and then two steps back (V to IV to I⁶, etc.). One can thus show the student how the "aimless ostinato" and the non-resolving dominant are a harmonic portrayal of the text.

Now it might well be said that popular music has its own set of harmonic conventions, and that we commit an analytic error in construing pop harmony in terms of common-practice chord grammar. After all, the V-IV retrogression is itself a cliché in popular music. Is it really fair to say that the harmonies move "backward" at the end of each verse, in light of the tendency toward V-VI motion in pop music? I think it is. The crucial point is that while V-IV motions are a harmonic option in pop chord progressions, they are not the only option. After all, V-I motion is a cadential archetype in classical music, but of course not every motion from dominant to tonic creates a cadence. In "One Step Up" the presence of a progression moving toward tonic resolution is indicated by other tonal and rhythmic cues. The electric bass part at the end of each verse plays an ascending 3-4-5 line, which sounds strongly like the bass line of a classical cadential progression. Furthermore, the rhythmic shape also leans toward an authentic cadence: the harmonic pacing picks up for the motion from I⁶ to IV, but then holds on V. In the case of most retrogressions, the harmonic motion is constant, usually one chord per bar going up and going down, as in a | I | IV | V | IV | pattern. In "One Step Up" the harmonic pacing at the end of each verse is unlike the standard retrogression. As a result of these features we may properly consider the I⁶-IV-V motion in cadential terms, and thus speak accurately of a harmonic motion "one step up and two steps back."

From the analysis of this song class discussion(s) can continue in several different ways. First, one can point out the ambiguity of the opening IV-I⁶ progression. Indeed, if used as an ear-training exercise many of the students may construe the first two chords as I-V⁶. One may also attend to the sonorities of the opening harmonies: the IV has no third, nor does the V⁷, which gives these chords a hollow sound. Furthermore, the lack of a leading tone weakens the sense of dominant function, and allows for a smoother return to the ostinato.

It is interesting to note that the choice of harmonies in this song is strongly linked to the fact that Mr. Springsteen is a guitarist, and probably

"ONE STEP UP"

composed this ballad with guitar in hand. For this song a *capo* is used, at the third fret of the guitar.⁴ The guitarist then plays a characteristic fingering pattern associated with the key of G (now up three semitones to B-flat)—the chords “feel” like a progression pattern characteristic of the sub-dominant key.⁵

In fact, many of the harmonic particulars of this song are a by-product of the way a guitarist will finger these chords. Specifically, the highest string (here sounding G4) is left open and ringing in all of the harmonies. Likewise, the third or fourth finger of the left hand is planted on F4 (played on the second string) and it never moves, but serves as a pivot for the other fingers.⁶ It is this static F4, which never resolves to a leading tone E4 (as an unresolved 4-3 suspension in conventional terms), that adds to the tension and ambiguity of the harmonic setting of this ballad—for the F4 serves as a tonic pedal, so on the one hand the tonic pitch is palpably present throughout the song. Yet on the other hand, there is never any definitive resolution to the tonic, but only an aborted cadential progression. There is a bit of harmonic irony here, what with an ever-present tonic, and a lack of dominant resolution, which again is appropriate for the text and its subject.

Once one has discussed the use of harmonic progression (ostinato and retrogression) and sonority (lack of third/leading tone) to create an appropriate setting for this text, broader musical issues may then be raised. One can introduce the notion of criticism, in terms of the questions “do these harmonic features make ‘One Step Up’ a good song?” and “how can harmonic analysis help our assessment of the musical setting of this particular text?”⁷ This can lead to a more general discussion of the relationship between theory, analysis, and criticism. One can also pursue the notion of convention(s) in popular music, such as the role of the bass guitar in marking harmonic function, and originality versus formula in writing both lyrics and music in popular song.⁸ But perhaps the most important lesson for the teacher of theory is that the settings of popular song lyrics often contain examples of harmonic, melodic, and rhythmic structures which play upon the conventions of musical syntax. As fits the nature of their texts (as well as contexts) such settings are usually simple and straightforward, which make them pedagogically valuable.

One of the most difficult tasks theory teachers face is getting students to use some of the analytical tools they have acquired through their studies. Even those students who are quite competent at harmonic analysis and species counterpoint often fail to apply what we teach to their own listening and performance. The failure of our students to connect theory to their other musical experiences is perhaps our fault, for often (*mea culpa*) our lessons consist of abstract rules for harmonic progressions, of analysis of Bach Chorales that lie outside most students’ musical life. And of course this is

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doubly true when we are teaching a course for non-majors. We must take the initiative to show our students how theory plays an important role in critical listening, and how a knowledge of music theory can enhance their musical understanding and experience.

NOTES

¹*Tunnel of Love* reached the number two spot on *Billboard* magazine's album chart during the week of November 21st, 1987.

²*Tunnel of Love* is generally regarded as a confessional work that is a response to Mr. Springsteen's separation from his wife.

³Unfortunately due to fear of expensive copyright fees I cannot provide the reader with any written musical examples. The song, however, is simple enough so that one can easily notate the music by ear. It may, in fact, provide a good example of "applied ear-training," and the students themselves may be able to discern the harmonic progression in class.

⁴The *capo* or *capotasto* is a clamp-like device that is used to shorten the string length of the guitar, and thus allow the player to use first-position fingerings (and characteristic open-string progressions) in other keys.

⁵Several guitarists, in fact, I have spoken with who play this song (but not all) have considered this song to be in B-flat, but with a "funny set of changes."

⁶Thus to be perfectly accurate the chord progression is: IV (-3, +6) to I⁶ (+9, +11) to ii⁷; the V chord is a V⁷ (+11).

⁷One can point out some problems with this text setting as well. Since there is little harmonic shape, and it is a strophic text/strophic setting, the only way Mr. Springsteen can (and does) give the song a sense of rising drama and climax is to simply get louder (and sing in higher registers) with each verse. This is, of course, the classic difficulty with a strophic song, and this piece may even be compared to strophic (and non-strophic) songs from the art-song repertoire.

⁸I had one student ask, after noting the ambiguous use of IV at the beginning of "One Step Up" to what extent Mr. Springsteen was conscious of his choice of harmonies. This provocative question sparked a good discussion. Some skeptics maintained that Mr. Springsteen composed the harmonic setting wholly by instinct (which does not, however, preclude choice in some sense), while others thought the V-IV retrogression (i.e., not ever resolving to tonic) was very likely a deliberate compositional choice on the part of Mr. Springsteen.

"WHY DOESN'T ANYONE PLAY BARS 1-11 OF *TRISTAN* IN TEMPO?

IRA BRAUS

Only an ear blessed with the mathematical finesse of a Benoit Mandelbrot would be able to track Wagner's six-to-the-bar in most recorded performances of the *Tristan* Prelude, measures 1-15. Quarters and eighths are interchangeable, rests arbitrary, and bar lengths variable. In these performances, the languishing pulse here foreshadows, with embarrassing literalness, *Tristan's* at the start of the third act.

Some will argue that these distortions are justified by tradition, by nineteenth-century *Aufführungspraxis*. But this view is easily countered by Toscanini's squib that tradition is merely "a collection of bad habits." (A more diversified catalogue of bad habits crammed into so few measures is hard to find!) To justify these distortions by invoking Wagner's *schmach tend* is equally unconvincing, since this order of literalness easily degenerates, *pace* Wagner, into musical theatrics. I believe there is a deeper cause for the problem: a cognitive dissonance perpetuated in the collective aural imagination of the Prelude's performers. By cognitive dissonance I mean the conflict that occurs when performers hear (ergo play) non-integrally in two radically different ways. The cognitive dissonance here arises from a non-integral cognition of harmonic and contrapuntal temporal articulation.

Those familiar with the Prelude's exegetical history will have noted a gradual shift in analytical focus from the late nineteenth century to the present. To condense a lengthy story, exegesis has evolved from a chordal conception of the pitch structure to a horizontal or intervallic one; Jadassohn represents the first extreme, Boretz, the second. I am especially drawn to Milton Babbitt's analysis, for it brings both extremes into confrontation. Moreover, his remarks unintentionally (I'm quite sure) provide insight into why performers have distorted this music for the last hundred years. Babbitt says:

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What makes it the Tristan chord? Do you notice any characteristic about it as a chord worth noticing? Wagner sets it up so that there's a unique interval between any two notes, so that you have a packet of unique intervals which he uses to define spaces in the piece. The Tristan chord is layed out so you have the intervals 6, 10, 3, 4, 9, 5. The layout is crucial to the way this chord is used in the piece, and, of course, it has the same intervals in all its repetitions. You can also view it as a fourth with a tritone a major third away What is this next chord (end of measure 3)? Well, everybody said, "Anybody can tell what it is—that's a good old dominant seventh." Well, what's the good old dominant seventh? The good old dominant seventh is intervallically the same as the first one—it's the Tristan chord! So you see, you don't have to think of this as being a functional dominant seventh chord unless you insist that whenever you hear a dominant seventh (as you do in measure 2 of Schoenberg's *Opus 33a*), it necessarily functions as a dominant seventh.¹

Taking these remarks a step further, I propose that a cognitive dissonance arises when we traverse, in measures 1-3, an apparent continuum between linear- and root-generated verticals. Performers respond to this textural progression with two different types of temporal articulation: the pitches preceding the "good old fashioned dominant seventh" are played fluidly and ametrically; the "good old fashioned dominant seventh-chord" is played as a micro structural downbeat. When these conflicting modes of articulation—horizontal and vertical—are replicated in the ensuing phrases, the net result is the metric disorientation felt by players and listeners alike.

I believe it is possible to retrain musicians to hear and play the opening of the Prelude metrically, so they can convey a real sense of motion by way of the intervallic transformations alone. This presupposes—to use literary jargon—"defamiliarization" of the dominant seventh chord, so its intervallic properties audibly supersede any harmonic-cadential associations. How can we teach this to musicians?

The procedure is quite simple. The musicians must practice the opening of the Prelude with the two chords reversed:

TRISTAN IN TEMPO?

Figure 1.



This “inversion” of the passage will no doubt shock the performers, but this is in fact the point of the exercise. The dominant seventh (and its A-sharp “appoggiatura”) will pass, just as the Tristan chord (and its intervening A) does. Thus, after the players hear that the “good old-fashioned dominant-seventh” is itself linearly derived, they will expect (and demand) that the music *continue* rather than hover ametrically after each “unresolved dominant.” This suggests, incidentally, a further experiment in music cognition. How would an orchestra perform the Prelude if it (and the conductor) were given barless parts?² At the very least, the task of deciphering the meter and preserving the ensemble would necessitate fastidious counting!

One can neither argue nor impose taste, so I shall not decree that performances of the Prelude henceforth be executed metrically. I do hope, nonetheless, that some future conductor will at least entertain the possibility that Wagner’s unique tonal language in *Tristan* is better projected by measured performance, and that the Prelude “languishes” quite convincingly *in tempo*.

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NOTES

¹Stephen Dembski and Joseph N. Straus, eds. *Words about Music*. Madison: University of Wisconsin Press, 1987.

²Ideally, the performers would be unfamiliar with the Prelude. This situation is improbable (except if we are speaking of quite inexperienced players); still, it would be enlightening to observe the degree to which seasoned players would change their perception and performance of the music.

CORRECTIONS

The following correction should be made in the Fall, 1989 issue of *JMTP*:

On page 155, what is labeled "Core Curriculum around 1950" should be "Core Curriculum around 1964."

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Ira Braus received the Ph.D. in Musicology from Harvard in 1988. His dissertation was entitled, "Textural Rhetoric and Harmonic Anomaly in Selected Lieder of Johannes Brahms." Pre-JMTP contributions have appeared in *19th Century Music*, *Theory and Practice*, and *Journal of Music Theory*. In November 1990, he will give a poster session at SMT on the mechanics of metrical ambiguity in Debussy's Nuages. Braus presently works at MIT as Administrator of the Undergraduate Cognitive Sciences Program. He also does freelance coaching and accompanying in the Boston area.

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Robert Trotter

Robert Trotter is Professor Emeritus in the School of Music, University of Oregon where he served as Dean from 1963-75. More recently (1989-90) he was Interim Vice-Chancellor at the North Carolina School of the Arts. In addition he is Past President of the College Music Society (1962-64) and has been Director of the Northwest Regional Institute for Music in Contemporary Education, member of the Policy Committee for the Contemporary Music Project, and author of *Scalelab* (fifteen self-testing and tutorial programs for the Apple II series relating musical names, notation, and sound; Temporal Acuity Products, 1989).

MUSICIANSHIP AT NORTHWESTERN

JOHN BUCCHERI

BACKGROUND

Do the fundamentals of music equal the rudiments of notation? Does learning the history of music consist of accumulating and memorizing the great names, dates, and themes of Western art music? Does instruction in basic music theory mean largely instruction in harmony and voice leading? Are there less fragmented curricular structures and methodologies that can better train and educate our young musicians? Readers will remember that a generation ago, such questions were being asked by musicians involved in Comprehensive Musicianship (CM), a way of thinking about music education that emanated from the Ford Foundation-funded Contemporary Music Project.

Northwestern University figured importantly in the initial thrusts of the CM movement. George Howerton, Dean of the School of Music and a member of the Project's Policy Committee, convened a Seminar on Comprehensive Musicianship in 1965 that established the CM agenda. A year later, the Institutes for Music in Contemporary Education (IMCE) were established nationally to initiate experimental courses at pre-college, undergraduate, and higher levels, with an emphasis on the basic training of undergraduate music majors. Arrand Parsons, then chair of the Theory and Composition Department, played a significant role in the thinking and planning for the Northwestern Seminar, and served as director of the IMCE midwestern region. Composer Alan Stout,¹ as program head, designed and taught an experimental class at NU from 1967-1969, assisted at the time by a candidate for the doctorate in composition, Joseph Schwantner.

These were heady times. Amid the political turbulence of the 60s, questions were being raised challenging all phases of musical training and the preparation of teachers at all levels. There were strong convictions emerging: every musician should experience the perspective that composition brings to the understanding of music—the elementary school teacher should share some of the same experiences with the Machaut Mass as the musicologist training as a Medievalist—the performer needs some of the same analytical tools as the budding music theorist. All young musicians,

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it was asserted, must engage the music of the day to integrate contemporary practice and thought with the past. And finally, the earth as global village (remember McLuhan?) made imperative the study of "musics" of other cultures.

The CM idea transformed and energized the outlooks of men and women at departments and schools of music throughout the country.² At Northwestern, it prepared the way for major curricular change in the early 70s. Arrand Parsons deserves credit both for his contribution at the regional and national level, and for his guidance and inspiration locally, where his persuasiveness and conviction supported area pre-college programs as well as the experimental course in the School of Music. At the time, Northwestern offered a traditional palette of two years of music theory (writing and analysis), two years of ear training (separate from theory), and one year of music history taken during the sophomore year. Alan Stout's experimental class of 22 students was chosen randomly from those who had completed freshman theory and ear training. The class comprised players in all standard orchestral instruments, piano, organ, and voice. A little less than half were music education majors (reflecting the distribution of majors at NU during this period), with a smattering of history, theory and composition majors as well.

The class met 9 hours per week and focused on music literature viewed from both historical and theoretical perspectives. Students were immersed in questions of performance practice, primary and secondary source materials, and editions. They undertook small-scale research projects and used analytical techniques appropriate to the style and period of the music. Score analysis was complemented by aural style analysis. Traditional writing skills formed the basis for compositions imitating a variety of styles. Students performed and discussed these compositions in class. The list of recorded examples used for the Spring term final indicates the breadth of music literature the students engaged: Bach, Cantata 65, first movement; Bartok, Cantata Profana, beginning; Beethoven, Piano Sonata No. 29, 4th movement; Dufay, *Missa se la face ay pale*, Kyrie; Mahler, *Ich bin der Welt*; Monteverdi, Magnificat à 6; Mozart, Piano Concerto, K.595, third movement; Stravinsky, Symphony in C; Tschaikovsky, *Manfred*, first movement; Xenakis, *Metastasis*.³

Those of us still engaged in teaching within the standard curriculum could not help but be affected by the new currents of thought. It was not until 1972, however, with the arrival of Dean Thomas Miller, that the structure for the present-day Musicianship program was created as part of a major revision of the School of Music curriculum.

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INITIAL STRUCTURE AND SCOPE OF MUSICIANSHIP

The new curriculum was formally approved and implemented by our faculty in the spring of 1972. From that time to the present, the School enrollment has been held at about 500 students—350 undergraduates and 150 graduates. Full time faculty now number 56, with about 40 part-time faculty (depending on the year), 14 of whom are present or former members of the Chicago Symphony Orchestra. A full range of graduate degrees are offered, as well as undergraduate degree programs in performance, music education, theory and composition, and church music and organ. Music theory and composition faculty comprise a single department, offering the Ph.D. in Music Theory and the Doctor of Music in Composition, as well as the M.M. in Theory, M.M. in Composition, and M.M. in Computer Music.

The new curriculum was divided into two years of Basic Studies and two years of Specialization. Basic Studies consisted of four concurrent components: applied instruction, performance (ensemble, aural and keyboard skills), general education, and musicianship. The influence of CM is evident in the set of recommendations passed on to the faculties in Theory, Composition, and Music History. As we planned to implement the Musicianship program, we were specifically enjoined to take into account the following:

1. Primary emphasis should be focused on those processes (e.g., analytical, evaluative, conceptual) that lead to an understanding of music literature.
2. The works selected to illustrate these processes should represent music of Western and Non-Western cultures and, collectively, should be the vehicle through which the student is made aware of the environment in which music was and is created and performed.
3. Performing should be at the core of the Musicianship course, and the interrelationship of performance with every other musical aspect should be demonstrated not only by using resources within the class, but also by exploiting the greater variety of resources throughout, and even outside the School.
4. The student should be acquainted with basic reference and research tools . . . (fr. "A New Curriculum: The Recommendations," School of Music, Northwestern U., 1972)

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With these ideas in mind, and after consideration of the resources, faculty expertise, and the restraints imposed by the time and credit allotted in the overall curricular design, we settled upon the following structure for the two years of Musicianship:

The class will meet for five one-hour sessions each week; 2 hours in lecture and 3 hours in smaller sections of 15-25 students (over the years, the number of sections has varied typically from 4 to 6; at present there are only 3 sections of sophomore Musicianship). Each term lasts approximately 10 weeks (Northwestern is on a quarter system—three quarters make up the regular academic year, with the summer session serving as the fourth quarter). Thus students would receive six quarters of Musicianship study totaling about 300 contact hours. Given the specialized training of the faculty, we decided to correlate theoretical and historical perspectives by having a member of the Music History & Literature Department give the lectures and members of the Theory & Composition Department be responsible for the smaller sections, rather than rely on individual faculty members to integrate these areas, as had been done in the experimental class. The faculty had decided also to maintain separate Aural Skills and Keyboard Skills classes (described briefly below) resulting in the following weekly time commitment for the typical freshman and sophomore:

Musicianship	5 hours	2 hours, history lecture 3 hours, theory class
Aural Skills	3 hours	1 hour lecture 2 hours lab section
Keyboard Skills	2 hours	both hours in Piano Lab class

The six quarters of Musicianship cover the traditional periods of Western music history, with one quarter of study devoted to music of non-Western cultures, another to music of the 20th century. After some debate, we agreed on the following sequence:

First Year:

- 1st quarter: World Music
- 2nd quarter: Baroque Music
- 3rd quarter: Classic Music

Second Year:

- 1st quarter: Romantic Music
- 2nd quarter: 20th-Century Music
- 3rd quarter: Medieval and Renaissance Music

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Several ideas formed the basis for this particular chronology. First, the introduction to world music was intended to provide the broadest possible context for the music studied in later quarters. Second, the wide divergence in entering students' mastery of the notational rudiments of music—key signatures, scales, intervals, triads and the like—suggested holding off the study of conventional harmonic and tonal practice until those less experienced had gained some fluency. A rudiments course meeting once a week during the first quarter was established for that purpose. Third, the desire to begin the study of harmony as early as possible after the first quarter and correlate it with appropriate music literature, suggested holding off Medieval and Renaissance music (which at the time, some thought, was even more remote from our students' experience than, say, Indian music) until the sixth and final quarter, when the enriched background acquired through the five previous quarters could be brought to bear on the earlier styles.

CONTENT OF MUSICIANSHIP: FIRST QUARTER

The commitment to begin the Musicianship sequence with an introduction to World Music presented some significant challenges. Not entirely by coincidence, we were fortunate to have on our faculty at this time the ethnomusicologist Klaus Wachsmann, a willing guide and invaluable resource in planning the two weekly lectures. But for those of us who had taught freshman theory as a harmony course primarily, the question of "what to do on Monday" was not easily answered. No one on the theory faculty had sufficient experience with non-Western music to feel confident treating it in any authoritative way. It was also clear to us that as our students were becoming familiar with music based on organizing principles other than conventional tonality and meter, we could not convincingly claim that the truly significant music "fundamentals" were those of scales, intervals, triads, and time signatures. We learned a great deal in the first two years or so by attending the lectures ourselves. But establishing the content of this quarter was by no means easy, nor did it all get settled at once.

By 1978 it was possible for us to provide the School's Curriculum Committee with a progress report on Musicianship including a content for the first quarter that had stabilized over the preceding three or four years. Paul Berliner, who had replaced Klaus Wachsmann by this time and was himself responsible for the Musicianship lectures, began with a review of major world music systems. To spark thinking, students listened to pieces grouped by geographical areas. Each area was represented by indigenous music and by music of a more international stamp that was somehow associated or derived from it. For instance, folk music of Ghana was

grouped with Drumming by Steve Reich, *Kulu Sè Mama* by John Coltrane, and music of the Paul Winter Consort. Music of the Peruvian Indians was juxtaposed with Simon and Garfunkel's *Bridge Over Troubled Waters*. Music from the Morning of the World (Balinese gamelan) was heard with Cage's *Sonatas and Interludes for Prepared Piano* and the introduction to the *Turangalila* Symphony of Messiaen. Besides Africa, South America, and Indonesia, the music of India, the Middle East, Europe, North America, and the Orient was represented. Units of study on Indian classical music, African music (with concentration on the mbira music of Zimbabwe), and jazz followed. Students were encouraged to overcome the tendency to judge music solely by the values and expectations derived from their own culture. Ethnocentrism was replaced by an appreciation of music for its diverse religious and social functions (including ways in which music is taught and transmitted). Students were introduced to a variety of improvisation methods, and were expected to become familiar with specific pieces from a diverse repertory and to apply descriptive terminology appropriate to each piece. Instrument classification projects, assigned listening, and readings from a number of sources got students using the music library from their first days at Northwestern.

What could we theory teachers do to provide a compatible content? Three units of study evolved, based on concepts broad enough to encompass a wide variety of musical organizations. Briefly, the first unit dealt with the nature and expressive potentials of sound—the properties and manipulation of pitch, duration, dynamics and timbre. The second unit introduced musical rhythm as a temporal hierarchic structure, starting with the idea of form as rhythm—how “chunks” of time acquire an identity and character, and how they may be related and articulated as they are assimilated by the listener. The third unit treated concepts of structural and decorative pitch, including limited pitch collections, octave equivalence and registral space, and simpler forms of prolongation. We drew from the entire chronology of Western music, referring to pieces being studied in the world music lectures when the opportunity arose.

We decided to be less concerned with the transmission of information and more concerned with involving students in different sorts of musical activities. We tried some pedagogical experiments inspired by R. Murray Schafer's thinking,⁴ and allowed the ideas of John Cage to bump against more traditional notions of musical structure and function. Experimental composition was used extensively to help students explore the expressive potentials of sounds apart from traditional tonal implications. Many of us assigned a one-note composition initially (a favorite model was the seventh Etude from Elliott Carter's *Eight Etudes and a Fantasy for Woodwind Quartet*). Trombonists and cellists demonstrated ways in which their instruments

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used the harmonic series to produce sound. Singers experimented with non-pitched vocalizations and created choirs of buzzes, hisses, and clicks. Any object was viewed as a potential sound source—yes, there were a number of Rhapsodies for balloon, or water glass, or squeaking chalk. The compositions /improvisations were performed in class and generated wide ranging discussions about formal strategies (unity, contrast, variation), tension/release profiles, pattern and accent, affect, association, and social context, as well as nuts-and-bolts issues of the manipulation of pitch, timbre, duration, and dynamics.

The discussions were often quite diffuse, to say the least. But we had come to a very important conclusion about how we wished to treat our students, many of whom were already fairly accomplished musicians with extensive performing experience. We wanted to build on those foundations in some way, and try to minimize the anxiety some students experience when they begin theoretical study (the “All of a sudden, it seems like I know nothing about music” condition). The composing projects and other in-class listening offered an opportunity to share reactions and demonstrate the variety of responses available from the same sound stimulus. There was always a good mix of conventional and radical thinkers in each class. The teacher, no longer the source for musical truth, had to demonstrate tolerance for a wide spectrum of opinion, and be able to pull together, paraphrase, and sometimes make cogent newly-formed (and consequently not always well-formed) ideas.

This was teaching “at risk.” The pedagogical challenge was to provide a context that allowed students to verbalize their responses, confront new ideas, refine listening skills, and begin to build a descriptive vocabulary to communicate what they heard and thought—and at the same time, maintain some orderly progression of topics.

Instructors continued the composition projects throughout the quarter, but the focus during the unit of study on rhythm turned to analytical skills. Initially, students listened to a number of examples for their qualities of “measuredness”—how easy was it to hear consistent regular pulses in Debussy’s *La mer*, Ligeti’s *Continuum*, a minuet by Mozart or a blues by Oscar Peterson? Excerpts were tested for their rates and ratios of pulsation using the basic conducting patterns. We listened for and sorted out patterns and accents that contributed to or conflicted with metric structure, defined as the set of tappable pulses related by simple factors of 2 or 3. Rhythmic structures of Indian music (tala), music of the gamelan, and certain performance practices on the mbira fit nicely into the conceptual approach being used in the theory class. Students became familiar with basic notions of tempo and rubato, syncopation, and pace (defined as degree of activity within a fixed tempo). The regular metric hierarchy was compared to

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simultaneously occurring but not always coinciding phrase structures. These ideas were then applied to score analysis. Students were asked to consider how the variety of pulse rates implicit in the written metric structure were expressed by the heard musical gesture. The score excerpts chosen for study ranged from chant to Webern, with a concentration on aspects of Baroque and Classical rhythm that would confront students in immediately succeeding quarters.

Preparation for the study of harmony and tonality in the Winter quarter was an important component of the final unit on structural and decorative pitch. Although composing projects might now involve motivic constructions using synthetic, modal, major or minor scales and experiments with chords built in fourths or major and minor seconds, efforts were concentrated more on conventional melodic, harmonic, and tonal structures. This meant integrating some of the material and drills from the notational fundamentals class into the Musicianship sections. In addition, analytical study dealt with ways in which harmonic connections might be enlivened and individualized in specific contexts. For instance, given the excerpt from Mozart's C Minor Fantasy below, students would be expected to recognize (not necessarily in the order given):

Fig. 1. Mozart: Fantasy In C Minor, K. 475, mm.42-48.



the scale of A harmonic minor

the 5 to 1 motion in the bass, and with it other strong "tonicizing" melodic moves, 4-3 and 2-1, across the final bar line in the right hand part

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the E7 prolongation with eventual resolution to A minor

the reiterated neighbor motion in the bass

the arpeggiations in the right hand part (which expand the range to nearly four octaves by the end of measure 46)

the repositioning of the harmonic third b/d up an octave in measure 46, followed by a passing motion (m.47) to the resolution a/c (m.48).

Also, a more subjective comment or two might be expected concerning the “dramatization” of the V7-i resolution as a result of Mozart’s handling of pitch space, harmony, and rhythm (hoping they would remember from the previous unit that the agogic and contour accents in measure 46 cause syncopations that help sustain the tension of the dominant seventh).

The applicability of concepts to music studied in succeeding terms was a significant determinant for inclusion in the initial quarter of Musicianship. For the most part, the concepts described above proved to be quite durable in later quarters. This spiral approach, using and refining the concepts with the specific literature of each period, made us aware of perhaps the most important difference between what we were doing now and what we had done in the past. While we were still using pieces of music to teach the facts and principles of music theory, we were, much sooner, able to use music theory to teach pieces of music. Students were motivated by the realization that music theory offered them tools (aural and visual, analytical and conceptual) to learn any piece of music, in much the same way that fingering, pedalling, and interpretive skills were necessary to learn a Beethoven piano sonata.

CONTENT: SECOND THROUGH SIXTH QUARTER

The individuals from the Music History & Literature Department responsible for the history component of the remaining five quarters each brought unique pedagogical and scholarly talents to bear in contributing to the content of Musicianship, and the brief description of their efforts here will not do justice to their dedication and imagination. In the most general terms, the goals were to acquaint the student with the representative genres and styles, the critical thought and cultural context, and the basic sources for independent research for each period.

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From the beginning, students developed critical thinking skills through writing projects that involved familiarity with critical editions of music, standard reference works, and the literature on performance and interpretation. Some projects required concert attendance and performance critiques, some asked students to become familiar with and react to the views of composers or other musicians of the time, or to examine different editions of music and consider interpretive problems in pieces they themselves were preparing to perform. Many of these projects required applying analytical skills being developed in the theory classes.

Appendix 1 contains sample listings of the weekly lecture topics for each quarter. There were attempts to study the same pieces simultaneously in both the history and theory sections. However, presentation by obvious and effective methods of organization (genre, national origin, or composer), was often incompatible with the sequence of material most desirable in the theory class. So correlation was achieved largely through the music itself—the fewer pieces analyzed in depth in the theory sections were included in the broader literature survey in the history lectures. The score anthologies and taped listening assignments thus became primary vehicles for correlation.

The goals for the theory sections were to equip students with the various analytical (aural and visual) and writing techniques necessary for understanding specific representative works. A summary description of the remaining five terms will convey the scope of the theory sections:

Second Quarter, Baroque music. The interpretation of figured bass; basic principles of voice leading and chord connection; diatonic and altered harmony through secondary dominant functions; analysis of contrapuntal and imitative forms (canon to fugue), binary and ternary forms (dance suite and da capo aria), and ground bass (variation techniques).

Third Quarter, Classic music. Completion of the harmonic vocabulary through Neapolitan and augmented sixth chords; concentration on forms (compound forms [Minuet & Trio], sectional variations, sonata, rondo, concerto); analysis of whole movements from piano works, string quartets, and symphonies.

Fourth Quarter, Romantic music. Chromatic harmony and the expansion of tonality; chords of the 9th, 11th, and 13th; concepts of motivic generation and permutation; analysis of lieder, character pieces, symphonic and instrumental chamber music.

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Fifth Quarter, 20th-Century music. Features of the music of Debussy, Stravinsky, and Bartok; serial techniques of Schoenberg and Webern; extensions of serialism, (recently, basic set theory operations), indeterminacy, graphic notation, minimalism.

Sixth Quarter, Medieval and Renaissance music. Chant, the mass, origins of polyphony, forms based on borrowed materials, concepts of consonance and dissonance, cadence, counterpoint, and the evolution of harmony.

Composing. Writing "in the style" was carried through all five remaining quarters of Musicianship. The time spent preparing students for each project, the expected level of emulative skill, and the number of pieces performed in class varied considerably with the theory section instructor. For the Baroque period, there was a predominance of figured-bass realization in keyboard style. More traditional SATB textures were also studied at this time. Some brief encounter with imitative writing, in the form of a two-part contrapuntal exposition, a sequential progression, or a simple canon was also common. During the Classic period of study, students might compose short pieces involving variation techniques and period forms using Alberti bass accompaniments. The elements of text setting were considered while examining Schubert lieder, and near the end of that quarter, character pieces using chromatic progressions might be assigned. Chant was written on a four-line staff using models from the *Liber Usualis*, and one student, when required to employ a certain popular 14th-century technique, handed in a piece entitled "I Got Isorhythm." The basic forms of the 12-tone row were used with Schoenberg's concept of the *Grundgestalt* to create solo instrumental pieces. One of the most popular projects involved groups of 4 or 5 students who created their own "happenings," using ideas of concept art, minimalism, and graphic notations modeled after those seen in *Source*.⁵

Aural Skills. Even before the 1972 revision, keyboard and aural skills were taught in separate classes, as they are today. There has been no strong sentiment for combining training in these skills with the study of music theory or history. The Musicianship classes do incorporate critical or analytical listening, and singing in class is used as a means of understanding the literature being discussed or analyzed, while the actual skills of sight-singing and transcription are developed in the separate Aural Skills class.

The equivalent of six levels (2 years) of aural training are undertaken by each student. As a result of tests given during orientation week, students may place ahead one or more levels. Initially, all six levels were offered each

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quarter. Now, a trailer section is offered each quarter after the first: e.g., during the Winter quarter, several sections of Levels II (freshmen) and V (sophomores) are offered, along with single sections of Level I and IV.

The program may be characterized by goals that have been sustained more or less over the entire span of the Musicianship program: to foster the student's ability to transfer aural skills into all areas of musical activity, and to develop knowledge of a broadly based repertory of specific pieces of music. One way this has been achieved is by using literature corresponding to the period being studied in the Musicianship class. For example, a syllabus from the late seventies indicates that, during study of 20th-century music in Musicianship, half of the quarter's work in aural skills was taken from "La Transfiguration de Notre Seigneur Jésus-Christ" (Section VII) by Olivier Messiaen, and the Concerto for Orchestra (Movement I) by Béla Bartók. The classes (1 hour of lecture, and 2 hours of lab each week, with little variation over the years) also have maintained traditional methods of singing and dictation to develop musicianship skills. The goals for the most recent Level II syllabus indicate the kinds of activities and orientation of the present program: "Familiarity with major styles and genres of the Baroque period. Ability to sing, accurately and musically, diatonic music in common meters, using treble and bass clefs, in one, two, and four parts. Continued development of musical memory and inner hearing through performance, transcription, selective listening, and improvisation. Ability to transcribe rhythmic, pitch, and harmonic aspects of appropriate music of the Baroque period. Ability to perform simple play-and-sing exercises, using voice and keyboard."

Keyboard Skills. Like Aural Skills, the two years of Keyboard Skills is divided into six levels of competence. The program is the responsibility of faculty in the Piano Department, with teaching assistants drawn from the doctoral program in Piano Performance and Pedagogy. While one of the avowed objectives is to reinforce students' experiences in Musicianship and Aural Skills, the Keyboard Skills curriculum concentrates on the development of a practical keyboard facility that includes score reading, transposition, harmonization, and accompanying, along with drills necessary to develop technical facility. Hence, the degree of coordination possible is limited. For instance, Neapolitan and augmented sixth chords are introduced in the third quarter of Musicianship (Classic period), but are not dealt with in Keyboard Skills until Level 5, when 20th-century music is being studied in Musicianship. In the initial planning stages of the curriculum, the lack of coordination was anticipated, and the virtues of re-engaging material studied earlier won out over the perceived disadvantages.

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OTHER FEATURES OF THE PROGRAM

Texts and Materials. If the Music Library's book and recording reserve shelves are taken into account, the list of sources made available to students is a very long one. The Grout history and the Burkhart score anthology have been the most consistently chosen required materials over the years. We have on occasion required students to purchase a theory text (both "comprehensive" or more strictly "harmonic" in scope); it is, however, more accurate to characterize the theoretical study in Musicianship as arising directly from scores and recordings. The kinds of information and exercises found in most harmony texts have been put together by the instructors and distributed in handout form to students.

The Study of Voice Leading through Writing. With study of twentieth-century and pre-Baroque music comprising two of the six quarters, and with integration of material normally taken up in separate courses called Form & Analysis, it is apparent that the correlated theory/history approach does not allow as much time for the study of voice leading as the typical two-year harmony course. This will be perceived as a serious flaw in the design of the program by those who believe mastery of principles of voice-leading, through writing, is *the* significant prerequisite to understanding . . . everything else. This issue can spark hot debate among theory teachers, no less at Northwestern than across the land. The considerations mentioned below are not meant to represent unanimity of thought at NU, but rather to account somehow for the program's endurance as one of the relatively few so structured.

First, it is important to point out the aspects of harmony and voice leading that Musicianship students have been expected to assimilate:

(by the end of the first quarter) the resolutions of dominant seventh and leading tone sevenths through singing, score analysis, and writing, presented as the prime generating element for the sensing of tonal motion;

(during the study of Baroque music) the interpretation of figured bass not as a set of inversion symbols, but as a means of indicating both the goals and processes of voice leading;

a number of specific cadential formulas, presented as combinations of variable linear motions, and built up from dominant resolutions, preceded by several pre-dominant functions including, eventually, the Neapolitan and augmented sixth chords;

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the chromatic resolution potentials of (especially unstable) chords, using common tones and chromatic or diatonic half-step motion to effect progressions that expand the tonal (modulatory) field.

Second, there has been general agreement that, of all the ways of knowing music encountered in undergraduate theory, the one students will eventually use and need the most is analytical skill, defined broadly as the ability to sort, relate, and evaluate musical structures and processes both aurally and visually. This conviction has affected our teaching in several ways—perhaps most importantly by making us feel uncomfortable if we stray too far for too long from listening to or studying the score of a specific piece of music. Also, when it is necessary to abstract and generalize, we feel compelled to show rather quickly how such conceptualization can assist the intimate and thorough learning of a specific piece.

One of the most vexing problems facing all undergraduate theory teachers is the rapid atrophy of theoretical skills that is revealed so often in the testing of entering graduate students. Our attempt to ensure that students are equipped with skills that will endure through practical application outside the theory class is another reason for our focus on analytical processes and techniques. In recent years, our concern has caused us to reconsider the amount of time given to all writing activities—composing-in-the-style as well as harmonization and voice-leading exercises, and to search for other, perhaps more efficient, means of communicating the special insights, which it is assumed, can only come through writing. While it would be wrong to conclude that writing has been eliminated from the Musicianship program, there has been a definite shift in focus to analytical listening and score analysis activities. Beginning in the first quarter, we now incorporate drill techniques that focus on analytical score reading skills (recognition of chord types, fleeting and longer-term tonicizations and the like). In later quarters we ask students to learn complete pieces of music analytically—by amassing a wealth of analytical observation as a means of building up an internal model of the whole. To the extent that we have de-emphasized writing, we depend on those students who are interested to take upper division courses in counterpoint and style composition. This may reflect the emerging conviction that knowledge of a style through writing and composing is best taken up after students have already learned a selected repertory of music using a varied, more inclusive set of approaches.

The Use of Computers in Musicianship. From 1986 to 1989, a grant from the Fund for the Improvement of Post-Secondary Education generated thinking about several new approaches to music learning, all of which

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involved computers.⁶ The result was the development of new methodologies in the areas of analytic listening and analytic (score) reading that have been incorporated in the Musicianship and Aural Skills classes. Students are currently using the EarWorks program (created by Richard Ashley) to develop a variety of strategies to comprehend musical structures aurally. The ScoreScan and Imager programs (designed by John Bucchieri and written by Roland Telfeyan) focus on score analysis techniques for the rapid recognition of harmonic and tonal operations. These two programs are currently in use by students in an upper division class, but the techniques this software supports have been used in the Musicianship classes for the past three or four years. We expect computers to play an increasingly meaningful part in the program.

Performance. All students registered in Musicianship meet together for the history lectures, and the larger space required (typically a small recital hall) also makes it practical to use the lecture hour for performances. These may include instrumental chamber works, opera scenes, as well as solos and duets. In the early days of the program, student performance of appropriate literature was common even in the smaller theory sections. As time passed, the proliferation of ensembles and the abundance of recitals and concerts in the School itself relieved the pressure to arrange in-class performances. Still, it is usual for two or three to be scheduled during a given quarter.

Personnel. While supervised teaching assistants have been used consistently in the Aural and Keyboard Skills programs, full-time faculty have been heavily involved in Musicianship throughout its existence. Originally, one faculty member from Theory & Composition was assigned a Musicianship section for at least one full year. As the department expanded the number and variety of its upper-division courses, as new faculty have come on board, and as we have competed successfully for grants that offer release time, the continuity in staffing has not been maintained—a situation with both pros and cons. In hiring part-time faculty to teach grant-released hours, we have been able to offer our best graduate students additional teaching experience. To refresh our thinking or to satisfy an individual's predilections, one of us may shift out of a Musicianship sequence to teach an upper division or graduate class, or jump from teaching first-quarter freshmen (world music) to second-quarter sophomores (20th-c. music). Unfortunately, some of our pupils find it unsettling to have had three or four different teachers by the end of their sophomore year. Certainly, one solution is to use supervised teaching assistants in the Musicianship sections as well. For a research institution,

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the University's commitment of faculty to undergraduate teaching is strong, and several other elements would have to fall into place before such a solution was feasible.

Grading. A single grade is given for each term of Musicianship, for which one unit of credit is granted (4 units are taken each quarter). In the first years of the program, when enthusiasm was at its peak, both the midterm and final examinations were designed by the committee of faculty teaching each Musicianship course. In addition to discussing meatier musical issues, we spent considerable time at the weekly staff meetings choosing pieces and formulating the language for the questions. Since the theory faculty attended most of the history lectures, this was not as daunting as it may seem. The theory teachers themselves stayed in close touch, but there was no attempt to enforce the same daily routine in all sections, and each of us was able to schedule assignments and quizzes independently. Lest the description of the curriculum here seem too pat and the decisions concerning content too easily agreed upon, let it be said that occasionally strong convictions won out over the desire for uniformity and consistency—actually, tolerance for a variety of perspectives and their pedagogical ramifications was, and remains, quite high. Consequently there was a great deal more freedom of choice in the day-to-day content than can be communicated here in any detail.

Ultimately, the theory teacher contributed the same percentage to the grade as the history teacher—say 40%—and the midterm and final were scored by both and counted the remaining 20%. These percentages varied from quarter to quarter depending on the collective will. In more recent times, the history and theory teachers have drawn up all their own exams, and each simply contributes 50% to the grade at the end of the quarter. This is due in part to the more volatile composition of faculty from quarter to quarter, and the pressures especially on younger faculty to be concerned less with teaching and more with research. The more complete separation of theory from history is viewed by some as slippage from the ideal that historical and theoretical approaches are indispensable, mutually enhancing components of the serious study of music and thus warrant some degree of synthesis in the curriculum.

THE FUTURE

The confluence of so many young, capable, and talented faculty, a new School of Music Dean (Bernard Dobroski assumed this position at the start of the academic year 1990-91), and a renewed collegiality and concern

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among faculty, re-invigorates the spirit for the reexamination of our mission. As we anticipate change we face a polarity of challenges. On the one hand, the case for an even more rigorous engagement with conventional tonal operations is argued persuasively at our theory conferences and in our journals (*JMTP* assuming a leading role here) and a new, enhanced Graduate Record Examination requires, for the first time, demonstration of proficiency in traditional written harmonization, counterpoint, and aural skills.

On the other hand, equally compelling argument for “the need for a more comprehensive perspective” appears in a recent College Music Society-sponsored report.⁷ Among its recommendations: “The curriculum needs to expand to include 1) musics other than those of the Western tradition, both folk and art; 2) Western folk musics and the vernacular tradition; and 3) the experimental directions of the expanding Western art music repertory.”⁸ The dangers of fostering a monocultural education, the impact of technology not only on what we teach but—before they get to us—on the attitudes of those we teach, the ramifications of the often heard but no less disquieting observation that “much of the current population in America does not spiritually identify with art music of the Western European tradition”⁹—these are issues that must be addressed in any curricular restructuring. They also engender some of the same questions raised at the top of this piece.

The itch to intone adages of change will be resisted; the reader may conjure up an appropriate cyclic saw. It is good to ask these questions.

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NOTES

¹Professor Stout is among several individuals to whom I owe thanks for their assistance, including Richard Ashley, Paul Berliner, Marcia Bosits-Norrman, Richard Green, Dean Justmann, William Porter, and Judith Schwartz. Others who figured significantly in the development and/or evolution of the Musicianship curriculum are Lynden DeYoung and Arrand Parsons (both now retired), Sue DeVale Carter, Donald Fisher, Peter Gena, Gary Greenberg, Carol Moore, David Noon, Phillip Peter (all no longer in the NU School of Music), Bill Karlins, Theodore Karp, Gary Kendall, Don Roberts (Head, Music Library), Stephen Syverud, and Thomas Willis. Relatively new members of the faculty who have taught Musicianship are Candace Brower, Michael Pisaro, Faun Tannenbaum, Amnon Wolman, and Jay Alan Yim. Finally, credit is due to several part-time faculty who have assisted in recent years.

²The tenor of the times and the scope of the program can be grasped by examining two of several documents published about this time: *Comprehensive Musicianship: An Anthology of Evolving Thought* (Washington: Contemporary Music Project, Music Educators National Conference, 1971) and David Willoughby, *Comprehensive Musicianship and the Undergraduate Curriculum* (Washington: Contemporary Music Project, Music Educators National Conference, 1971). Both items were consulted as sources for this background.

³Willoughby, pp. 64-5.

⁴R. Murray Schafer, *The Composer in the Classroom* (1965), *Ear Cleaning* (1967), *The New Soundscape* (1969), and . . . *When Words Sing* (1970). Toronto: Clark and Cruickshank/ Berandol Music Ltd.

⁵Source: *Music of the Avant Garde*. Composer/Performer Edition, 2101 22nd Street, Sacramento, CA.

⁶Richard D. Ashley, *Redesigning the Content and Sequence of Instruction in Music Theory*. Final Report to the Fund for the Improvement of Post-Secondary Education. (Evanston: Northwestern University, 1989).

⁷*Music in the Undergraduate Curriculum: A Reassessment*. Report of the Study Group on the Content of the Undergraduate Music Curriculum. CMS Report No. 7 (Boulder, CO: The College Music Society, 1989).

⁸*Music in the Undergraduate Curriculum: A Reassessment*, p. 15.

⁹*Music in the Undergraduate Curriculum: A Reassessment*, p. 7.

MUSICIANSHIP AT NORTHWESTERN

Appendix. List of Topics in Music History Lectures

Each quarter consists of approximately 10 weeks of two 1-hour lectures, minus time taken for examinations, review sessions, and the like. Unless otherwise indicated, after each numbered week the two lecture titles are given, separated by a dot.

Medieval and Renaissance Music

Week:

- 1 Introduction/Liturgy and Notation • Gregorian Chant/ Form and Style
- 2 Chant Theory/Later Developments • Secular Monophony/ Instruments
- 3 Early Polyphony/Rhythmic Modes • Clausula and Early Motet
- 4 Ars Nova/ Isorhythm • Guillaume de Machaut
- 5 Trecento in Italy • midterm
- 6 Transition to the Renaissance • Guillaume Dufay
- 7 Johannes Ockeghem • Frottola/ Josquin des Prez
- 8 Josquin and company • After Josquin/ National Styles
- 9 Instrumental Music • The Renaissance Madrigal
- 10 Reformation and Counter Reformation • Contemporaries of Palestrina

Baroque Music

Week:

- 1-2 Introduction. Sources and Editions of Baroque Music; Performance Practice (4 lectures)
- 3 Late Renaissance/Baroque Instruments (2 lectures)
- 4 Theater Music. Italy: Early Baroque; Peri, Monteverdi (*Orfeo*) • Middle Baroque; Monteverdi (*Poppea*), Cavalli, Cesti
- 5 Italy: Late Baroque; A. Scarlatti, Italian Opera in England, Handel • France: Lully, Rameau; England: Purcell
- 6 Chamber/Concert Music. Songs, secular cantatas • Instrumental ensemble music, early and middle Baroque
- 7 Instrumental ensemble music, late Baroque • Solo music for strings
- 8 Solo music for keyboard • Church/Religious Music. Catholic: liturgical music, oratorios, devotional music (2 lectures)
- 9 Lutheran: Motets, sacred concertos, cantatas, passions; organ music (2 lectures)
- 10 Anglican: Services, anthems; Handel's oratorios

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Classic Music

Week:

- 1 The 18th century: background. Dance • Rhetorical topics and characteristic styles
- 2 Galant keyboard sonata: Scarlatti, Galuppi • Empfindsamkeit: C.P.E. Bach, fantasy and sonata
- 3 Keyboard sonata: Mozart, Haydn. Performance practice • Opera buffa: Pergolesi
- 4 Opera seria: Graun, Hasse. Vocal performance • Opera reform: Gluck
- 5 Classic opera: Mozart, *Don Giovanni* • midterm
- 6 Lives of Haydn, Mozart, Beethoven • Sacred music: Pergolesi, Mozart, Haydn
- 7 Symphony and overture: Sammartini, Stamitz • Symphony: Mozart, K.551, Haydn, No.101
- 8 Concerto: Mozart, K.467 and K.488 • Chamber music: Mozart, K.388, Haydn, Op.74/3
- 9 Beethoven, String Quartet, Op.18/1 • Piano Sonatas, Opp.13 and 53
- 10 Beethoven, Symphony No.5 • review

Romantic Music

Week:

- 1 Introduction to the 19th century; Beethoven, String quartet, Op.59/1 • Middle period Beethoven, Symphonies No. 6 and No. 7
- 2 Late Beethoven, Symphony No. 9, String Quartet, Op.131 • Chamber music: Brahms, Clarinet Quintet, Op. 115
- 3 Lieder: Schubert, selected songs • Schumann, Dichterliebe, Op. 48
- 4 Brahms, *Vier ernste Gesänge*, op.121; Wolf, *Spanisches Liederbuch* (selections) • Keyboard music, the character piece; Schubert, *Moment Musical*, No. 6; Schumann, *Carnaval*
- 5 Chopin, Mazurka, Polonaise, Preludes • Liszt, *Années de pèlerinage*, Bk.II, *Il penseroso*
- 6 midterm • Orchestral music; Schumann, Symphony No. 4
- 7 Program music, symphonic poem; Berlioz, *Symphonie fantastique* • Brahms, Symphony No. 3, Bruckner
- 8 Italian Opera. Rossini, Bellini, Donizetti • Verdi, cavatina, cabaletta; *La traviata*, Act I, *Otello*, Act I

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- 9 German Opera. Weber, *Der Freischütz*, Act II • Wagner, *Tristan und Isolde*, Act I
- 10 Wagner, *Die Walküre*, Act I • Nationalism: Mussorgsky, *Songs and Dances of Death*
- 11 fin de siècle. Strauss; Mahler, *Kindertotenlieder*

Twentieth-Century Music

Week:

- 1 Introduction • Impressionism; Debussy, *Prélude à l'après-midi d'un faune*, *La cathédrale engloutie*
- 2 Debussy, *Jeux* • Les Six; Ravel, *Ma mère l'oye*, Milhaud, *La création du monde*
- 3 Neo-classicism; Stravinsky, *Le sacre du printemps* • Stravinsky, *Symphony of Psalms*
- 4 Gebrauchsmusik; Hindemith, Piano Sonata No. 2, Fuga prima in C (*Ludus Tonalis*) • Nationalism; Bartók, *Music for Strings, Percussion, and Celesta*
- 5 Bartók, Concerto for Orchestra • Cowell, Copland, Rodeo, Ives, *Three Places in New England*
- 6 midterm • Expressionism; Schoenberg, *Five Pieces for Orchestra*,
- 7 Schoenberg, *Klavierstück*, Op. 33a • Berg, *Wozzeck*, Act III, scenes iv and v, Webern, *Pieces for Orchestra*, Op. 10
- 8 Total serialism; Boulez, Babbitt, Messiaen, *Quatuor pour la fin du temps* • Post-serialism; Boulez, *Le marteau sans maître*
- 9 Electronic and computer music; Stockhausen, *Gesang der Junglinge*, • Electronic and computer music: Davidovsky, *Synchronisms No. 1 for Flute*
- 10 Indeterminacy, Chance music, Cage, Penderecki, *Threnody* • Minimalism, New Performed Music; Crumb, *Ancient Voices of Children*, *Glass, Floe*, from *Glassworks*

and, the last half of this year's syllabus:

- 6 American Pioneers: Varèse, Ives, Copland
- 7 New York—Uptown, Downtown: Carter, Cage, Feldman, Reich, Glass
- 8 Post-Modernism (?) [sic]: Adams, Subotnick, Ruders • Recent British Music: Birtwistle, Harvey, Fernyhough, Knussen
- 9 Sui Generis—The New Pluralism: Scelsi, Nancarrow, Kim, Donatoni, Takemitsu, Part, Hassell, Saariaho
- 10 Electronic Music—a new genre?: Lansky, Machover

HARMONIC FUNCTION AND THE MOTION OF THE BASSLINE

REED J. HOYT

It is clear to almost everyone in the undergraduate theory-teaching enterprise that the emphasis in our analytical courses falls on harmony. Whether or not the curriculum separates or integrates the three main areas of aural skills, analysis, and construction, classes tend to focus on the harmonic detail at the expense of attending to overall structural factors or of adequately treating contrapuntal structure. Fortunately, with the increased influence of Schenkerian linear techniques, the overemphasis on harmonic structure is beginning to wane. Unfortunately, critical problems with the harmonic terminology remain unsolved and are likely to remain in that state as more and more theorists apply Schenkerian methods to their teaching, because Schenkerians, by and large, are not interested in these problems. Thus, on one hand, we have traditionalists clinging to their hidebound ways and, on the other, Schenkerians who do not consider the matter sufficiently important to merit attention.

All this aside, many would agree that considerable deficiencies exist within the system we all use to describe harmonic structures, particularly in analyzing complex chromatic harmony. I would go further in saying that crucial problems arise even before the student-analyst confronts such music. Indeed, in my view, the whole method needs to be carefully scrutinized at its core.

Furthermore, from the pedagogical standpoint, theorists and teachers of theory need to adopt a system for describing harmony in a sensible way that can be more or less universally accepted and taught. Of course, complete agreement among music analysts is not a realistic possibility. As it now stands, however, variations in terminology are sufficiently numerous so as to cause great and well-founded confusion among students, teachers, and analysts alike. A terminological agreement should have been reached long ago, suggesting that the lack of terminological standardization might stem from important defects in the system as it now stands, insofar as we can determine where it stands. Terminology is, after all, the product of a method of thinking.

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The diatonic designations for chords are, in fact, quite consistently applied, with the exception of the I6/4 and ii6/5 chords, for which Schenker suggested the labels V6/4 and IV6/5, the latter certainly agreeing with Rameau's concept of *double emploi*.¹ With these seemingly minor refinements, general agreement appears to exist that chords are best described by root and inversion symbols, to which may be added a further distinction of upper-case roman numerals for major and augmented triads (if we agree that augmented triads are structural harmonies) and lower-case roman numerals for minor and diminished triads.

A reasonably obvious question arises almost immediately—one that everyone involved with beginning theory classes must face—why do the roman numerals refer to roots, whereas the Arabic numerals refer to the intervals above the bass? We can supply at least three different types of answers: historical, analytical, and philosophical. Of course, the roman numerals are the descendants of Rameau's *Basse fondamentale*. Rameau was motivated to create his theory to a great extent by the need to construct a taxonomy for the numerous types of vertical structures he observed. His system and the roman numerals that resulted from it are summary systems: all forms of C-E-G, for example, are summarized into the category I in C-major, III in A-minor, IV in G-Major, and so on.

To provide the label, we must be able to determine the root and the tonality as well as the type of triad in the most refined version of the theory. Because it can be a very difficult and complex question, we must leave aside the issue of tonality and how it is determined and consider the problem of finding the root. The concept of root is plainly an abstract one if it does not appear in the bass, and this analytical consideration leads to the philosophical question: is the root the structural generator of the chord? In the case of the (traditional) I6/4 and ii6/5 chords, Schenker's re-labeling suggests otherwise; indeed, it is very difficult to maintain convincingly that the root of a 6/4 chord is its generator. The mixture of roots and thoroughbass symbols is philosophically questionable for a related reason: the thoroughbass numbers can easily be measured as intervals above the bass, whereas the roman numerals of inverted chords must be determined by a more convoluted method. The combination results in a rather uncomfortable mixture of viewpoints: concrete and empirical on one hand as opposed to abstract and rationalistic on the other.

A second problem raised more directly by Schenker's re-labeling lies in the assumption suggested by the traditional labels that all chords carrying the same roman numeral have equal structural importance. For instance, a tonic label at the beginning of a recapitulation is not symbolically differentiated from a tonic label that might be applied in the middle of the opening phrase of a work, which seems fundamentally contrary to the

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way we would hear those two harmonies. In other words, neither levels nor long-range function are considered. By using the labels within a graphic format, Schenkerian analysis solves the problem of levels to a great extent.

Similarly, the labeling appears to assume that chords grouped under one roman numeral have the same function. As before, 6/4 chords cannot justifiably be regarded in that way. Moreover, such an assumption fails to take into account voice-leading considerations. To take a simple example, most would agree that V chords are followed by I chords. Yet, if we examine each possible V-I combination, we must conclude that this statement is subject to further qualifications as shown in Figure 1, where we see that 33% of V-I and 50% of V⁷-I progressions are either questionable or not used. In all cases, at least one reason for not using a certain combination stems from problematical voice leading: not resolving the leading tone in an outer voice, not resolving a dissonance, hidden octaves resolving a dissonance, and disjunct motion to and/or from the bass of a 6/4 chord. Certainly, one has to wonder if harmonic laws might not be better expressed by voice-leading than by summary harmonic means like "I follows V." If a rule like "I follows V," which is virtually a musical axiom (particularly for beginning students), cannot survive the scrutiny of the simple test shown in Figure 1, then the aptness of our labeling system for harmony is called into serious question.

A second question of functionality arises, that of the functional equivalence of chords that have different roots. For example, it is commonly thought that V and viio chords have a pre-tonic function, that ii (iio in minor) and IV (iv) chords have a pre-dominant function (or dominant preparation), that vi (VI) chords normally lead either to pre-dominant or pre-tonic chords, and that iii (III) chords lead to vi (VI) or IV (iv) chords. Although the discussion of individual chordal functions will be ordered in this way, I shall deal directly with this issue later.

For the present, let us consider more specifically the differences in function among the 5/3, the 6/3, and the 6/4 positions. One could argue that 6/4 chords, as dissonances, obviously differ functionally from 5/3 and 6/3 arrangements of the same pitch classes; therefore, it should not be surprising that 6/4 chords would act differently from the consonant positions because a dissonant chord cannot have exactly the same function (closure, for instance) as a consonant chord in tonal music. Further, the conventions for approaching and/or leaving the 6/4 by step (except in bass arpeggiations) certainly single out the 6/4 as a special chord, one that is treated differently from the other positions through voice leading in the bass. Although most would agree that the treatment of 6/4 chords in context differs from 5/3 and 6/3 chords, more will need to be said about them after we examine the functionality of the 6/3 chords.

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Figure 1. Dominant Tonic Progressions

Figure 1 displays two musical staves illustrating Dominant Tonic Progressions. The first staff shows a sequence of chords with labels above and below. The second staff shows a similar sequence with additional annotations like 'X', 'NB', and '?'. The labels below the staves are: V, I, V, I⁶, V, I⁶₄, V⁶, I, V⁶, I⁶, V⁶, I⁶₄, V⁶₄, I, V⁶₄, I⁶, V⁶₄, I⁶₄. The second staff labels are: V⁷, I, V⁷, I⁶, V⁷, I⁶₄, V⁶₅, I, V⁶₅, I⁶, V⁶₅, I⁶₄, V⁶₅, I, V⁶₅, I⁶, V⁶₅, I, V⁶₅, I⁶, V⁶₅, I⁶₄. Annotations above the first staff: '?', 'X', 'X'. Annotations above the second staff: 'X', 'X', 'X', 'NB', 'X', 'X', '?'. Inside the staves, some chords are labeled 'LT' (leading tone in outer voice unresolved) or 'D' (unorthodox doubling).

? = questionable, rare, exceptional

X = virtually never used

LT = leading tone in outer voice unresolved

* = dissonance unresolved

= = hidden octaves resolving a dissonance

D = unorthodox doubling

$\left(\frac{6}{4}\right)$ = 6/4 approached or left by leap

NB = See Figure 5b, noting movement of F upward to G.

Hence, the real question is this: is it appropriate to label 6/3 chords according to their roots? To my knowledge, this assumption has not been thoroughly and directly questioned since the early days of Rameau's theory.² Yet, there are clear differences in function between root-position and first-inversion chords on every diatonic scale degree. For instance, I and I⁶ may have an opposite effect. In Figure 2, we see that I⁶ acts to *avoid* the strong cadence that a I chord would have provided. In m. 14 of Figure 2, the I⁶ chord on the first beat evades the cadence that would have taken effect had the bassline sounded a G, as occurs later in m. 18. Also, the melodic motion in m. 14 leads from the potential but unrealized stability of the G on the first beat to the slightly less stable B on the third beat. At that point, G appears simultaneously in the bass, producing the harmonic closure, now coming too late, that would have produced strong overall closure had it occurred on the first beat of m. 18 supporting a root-position tonic chord. In m. 14, therefore, closure is avoided by the I⁶ chord, by the

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imperfection of the potential authentic cadence on the second and third beats of m. 14, and by the placement of the root-position tonic chord on the third beat.

By contrast, in m. 18, harmonic closure is very strong; continued forward thrust is produced by the sudden textural change, by the ongoing drive of the repeated eighth notes, and by the upward D-G movement of the bassline in mm. 17-18, which is slightly less conclusive than a downward V-I would have been. None of these changes has anything to do with harmony. With these and other minor exceptions, such as the continued addition of the seventh, C above D on the fourth beat of m. 17 (cf. m. 13, fourth beat, where the seventh drops out after the third beat—recalling from Figure 1 that I^6 rarely follows V^7), mm. 13 and 17, which prepare for the potential and then actualized cadence, are essentially identical. In this context, I and I^6 have opposite functions with respect to closure, a fundamental difference.

Figure 2. Mozart, *Eine kleine Nachtmusik*, first movement.

Allegro

The musical score shows measures 11 through 18. Measure 11 starts with a treble clef and a bass clef. The bass line has a whole note chord (F major) marked with a 'p' (piano). Measure 12 has a treble clef and a bass clef. The bass line has a whole note chord (F major). Measure 13 has a treble clef and a bass clef. The bass line has a whole note chord (F major). Measure 14 has a treble clef and a bass clef. The bass line has a whole note chord (F major). Measure 15 has a treble clef and a bass clef. The bass line has a whole note chord (F major). Measure 16 has a treble clef and a bass clef. The bass line has a whole note chord (F major). Measure 17 has a treble clef and a bass clef. The bass line has a whole note chord (F major). Measure 18 has a treble clef and a bass clef. The bass line has a whole note chord (F major). The score ends with a double bar line and a '1' below the bass line.

A second function of I^6 is so common, particularly in Baroque and Classic music, that it need not be exemplified. This type acts to initiate a stepwise ascent in the bass through the subdominant (IV or ii^6) to the dominant (E-F-G bass movement in C-major). In a fuller context, the motion is often C-E-F-G. Or, the bass of I^6 may act as an arpeggiation between the tonic and the dominant. In both cases, the function of I^6 is medial or transitory—again, clearly opposed to the closural power of I.

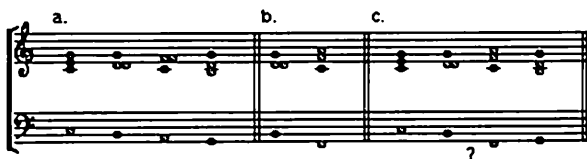
Further, V and V^6 do not produce the same cadential effect: very few

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final cadences move from V^6 (or $V6/5$) to I^3 . Or, in a diatonic chaconne bass (C-B-A-G) in C-major, the harmonies often form $I-V^6-IV^6-V$, as in Figure 3a. One could not simply substitute V for V^6 because such a replacement would break up the contour of the bassline's descent.

As is also demonstrated by the diatonic chaconne bass, the IV^6 chord may follow the V^6 . By contrast, one would be hard pressed to find many examples of V^6-IV motion, perhaps due to the tritone that would result between the two tones in the bass, but also because of the strong voice-leading proclivity of the bassline's leading tone to move back to the tonic, as in Figure 3b. Even if we precede the V^6-IV motion with a tonic chord and follow it with a dominant chord, as in Figure 3c, we would wonder why the F in the bass is not an A, which would have resulted in a more direct voice-leading connection. In general, if leaps are not parts of arpeggiations, they tend to be filled in by a subsequent pitch that lies between the two notes of the leap. In this case, however, B melodically tends to go to C, and F melodically tends to go to E—producing two puzzling and awkward contradictions of melodic tendency. If we reverse the direction of the B-F leap, the melodic motion would almost certainly generate a subsequent E, meaning that the dominant chord would be virtually unattainable directly from either B-F leap. In sum, it is clear that V^6 may move to IV^6 but that V^6-IV is not a musically usable progression, and that we cannot simply substitute a IV for a IV^6 in a chaconne bass. From this, we may conclude that IV and IV^6 are not functionally equivalent in an important way.

Figure 3. Chaconne Bass and Attempted Alterations.



Perhaps one could object to the progression from V^6 to IV on the grounds that it is essentially faulty, since IV as a pre-dominant chord tends to go directly to V . The V^6-IV chaconne possibility, however, would seem to be a rather significant and troubling exception to that harmonic rule because the chaconne bass is not an anomalous pattern but rather an important archetypal structure common to all periods of tonal music and to much pre-tonal music as well. In other words, to argue that the chaconne bass is exceptional in some way is to present an invalid view.

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A second "exception" could be cited, the V-IV⁶ succession. Figure 4a shows a structure that could be described as a retrograded chaconne pattern, G-A-B-C in C-major (on downbeats in mm. 10, 11, 12, and 13 with a G-A-B diminution version in mm. 11-12 and G-A-B-C in mm 12-13). The first two harmonies generated by this bass are V and IV⁶ in mm. 10 and 11. Figures 4b and 4c show a deceptive motion from the dominant to the submediant. Figure 4d demonstrates that even in minor keys where the submediant is likely to lie only a half-step above the dominant, an upward linear movement is possible. Figure 4d is also interesting because it shows that the initial V may not reach its implied tonic and that the iv⁶ chord may actually lead to a modulation toward the relative major, with the iv⁶ acting as a pivot chord (becoming ii⁶ in A-major in this case) in traditional parlance. All told, it is difficult to object to either V-IV⁶ (major keys) or V-iv⁶ (minor keys) on the grounds that these successions are fundamentally incorrect from a harmonic standpoint when the voice leading is not problematical and when they may generate a coherent melodic process of some degree of flexibility in the bassline. One cannot object to V-IV⁶ for reasons of voice leading. More important, Figures 3-4 indicate that IV and IV⁶ are not interchangeable, that they may have slightly different functions, and that common practice (not modal) examples can serve to illustrate the differences in functionality between them.

Figure 4a. Beethoven, *Triple Concerto*, first movement.

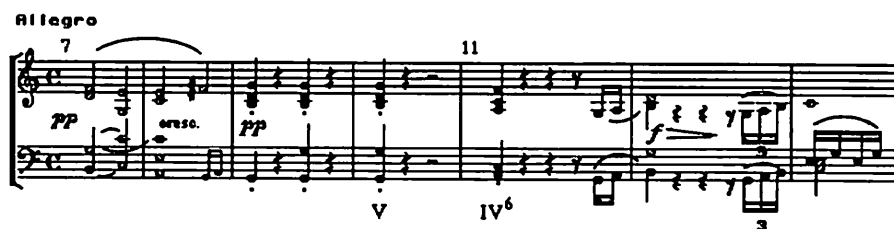


Figure 4b. Brahms, *Intermezzo*, op 76, no. 4.

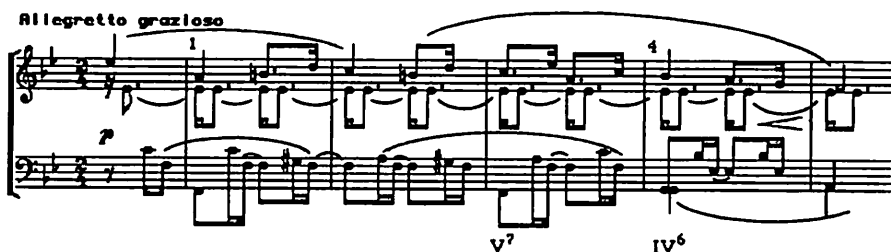
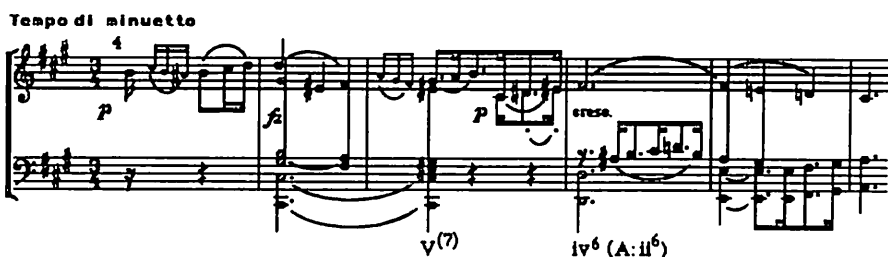


Figure 4c. Beethoven, *Missa solennis*, *Agnus dei*.



Figure 4d. Haydn, *Trio*, H. XV/26, third movement.



Hence, the so-called primary triads (I, IV, and V) exhibit significant differences in their usages in root position compared with their behavior in first inversion. These kinds of differences do not even speak to the problem of the *v* chord (as a minor triad) in minor keys, an issue Schenker and others have discussed.⁴ Minor *v* cannot be considered a primary triad; its lack of leading tone prevents it from proceeding directly to the tonic as effectively as major V. In terms of the minor tonic, minor *v* is a rather remote region. If the original tonic is to be re-established, a modulation or tonicization of the dominant as minor *v* must then be followed by raising the minor third of the triad, thereby returning the leading tone to the dominant chord. This is a typical move in Baroque binary forms at the end of the first repeated section, and it seems unnecessary to quote from the many examples that have this characteristic. In sum, there should be no controversy that *v* and V have quite different functions and that they should thus be differentiated by their symbols.

A related issue of the chaconne bass in minor is an interesting problem. Only if the descent is chromatic would the leading tone appear in the bass. In minor keys, then, *i-v*⁶ would probably signal a further descent—whereas *i-V*⁶ could indicate a return to the tonic. So, in either major or minor keys,

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it is clear that V^6 , when preceded by the tonic, may and sometimes does occasion a further descent in the bassline. The melodic process of the bassline in such instances dominates the voice-leading tendency of the leading tone to return to the tonic in an outer voice. (By contrast, it would appear that $V6/5$ would differ in that the bassline's leading tone would ascend in virtually every case, while the second between the 6 and 5 would tend to resolve to a third when the 5 falls by step.) Again, chaconne basses, as archetypal patterns, cannot be regarded as anomalies; passages supported by chaconne basses demonstrate that the melodic implications of the bassline may generate perfectly reasonable and cohesive progressions that go against the so-called norms of harmony.

Another widely accepted principle of harmony and one that involves the question of $5/3$ versus $6/3$ is the case of the only dissonant triad in the major key, vii° . The traditional view that vii° is an incomplete V^7 is highly problematical. First of all, vii° is usually found in first inversion, vii° (which produces problems in textbooks that insist in first presenting exclusively root-position triads). In the motion from vii° to I , the tone a third above the bass of the vii° , the fifth of the chord, often ascends by step to the fifth of the next chord.

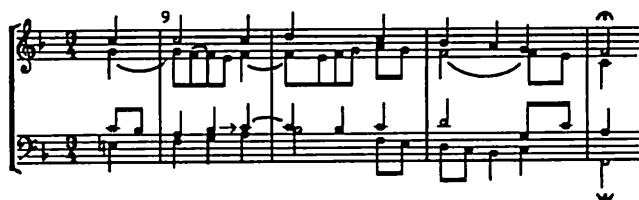
In V^7 , however, that tone would become the seventh of the chord, which normally resolves downward. Figure 5a shows a chorale that demonstrates both principles and the voice-leading contrast between a first-inversion diminished triad and a dominant seventh chord. In m. 3, where the tenor-line ascends C-D, the chord with the C is a first-inversion diminished triad. By contrast, in mm. 13-14, the F-natural in the alto-line as the seventh of a dominant seventh chord descends to E. When the chord following the first-inversion diminished chord is also a $6/3$, then the tendency of that tone to ascend is even stronger, as in mm. 5-6 of Figure 5a. (We know from Figure 1 that V^7-I^6 is rare.) The connection between these measures also illustrates that the so-called implied seventh can be doubled because it may resolve in both directions. A real dominant-seventh chord would almost never double its seventh because the seventh has only one normal resolution, leading to parallel octaves. Most interestingly, the rising tendency forms a significant exception to the rule about the seventh of the V^7 chord descending, as shown in Figure 5b (cf. Figure 1 at the NB). Thus, it would appear that the bassline motion, 2-3 by scale degrees, would tend to support parallel 4-5 motion in an upper voice, irrespective of the exact makeup of the chord above the supertonic. In summary, vii° is not really similar in function to V^7 but acts more like $V4/3$. As Figure 5 demonstrates, this is rather subtle; the progressions from vii° , V^7 , and $V4/3$ to I or I^6 such as these probably gave rise to the theory that vii° is an incomplete V^7 .

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Figure 5a. J. S. Bach, *Aus meines Herzens Grunde*, B.W.V. 269.



Figure 5b. J. S. Bach, *Hilf, Gott, dass mir's gelinge*, B.W.V. 343.



In Figure 6, we see a less subtle difference between $\text{vii}^{\circ 6}$ and V^7 . The vii° and $\text{vii}^{\circ 6}$ chords in Figure 6a could be analyzed as pivot chords, becoming ii° and $\text{ii}^{\circ 6}$ in the temporary tonic of E-minor. As Figure 6b shows, $\text{V}^4/3$

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could serve a similar function but would be less likely because of the D-D# cross relationship that would arise. Of course, the vii° in root position leading to iii , as in the circle of fifths sequence of Figure 6c, illustrates a stronger distinction between vii° and V^7 since a $\text{V}^7\text{-iii}$ progression would probably be regarded either as aberrant or modal by most analysts. The most striking difference between vii° and V^7 occurs when the vii° assumes a pre-dominant function, as in the $\text{vii}^4/2$ chord in Figure 6d. Or, to take the train of thought one step further, $\text{vii}^4/3$ may lead directly to V , as in Figure 6e, where F in mm. 17-18 supports the diminished chord that leads to a dominant chord on the second half of the first beat of m. 19 and eventually to a fairly strong cadence on V in m. 20, second beat. (Note also V-iv^6 in m. 19.)

By contrast, the $\text{vii}^4/3$ chord may also lead to I^6 , in which case it acts like a $\text{V}4/2$ chord, as in Figure 6f, which is more orthodox in that it equates the function of $\text{vii}^4/3$ with that of $\text{V}4/2$. The $\text{V}4/2$ chord, however, would almost never assume the role of a pre-dominant chord, as in the $\text{vii}^4/3$ chord of Figure 6e. That the bass of the $\text{vii}^4/3$ may simultaneously act like a subdominant and like a dissonant upper neighbor tone to the mediant is indicated by Figure 6g, where the cello and bass parts move D-G-D while the second bassoon part moves the G to F. The bass motion, 1-4-1, goes with a $\text{i-vii}^\circ\text{-i}$ harmonic motion, thus co-ordinating the tendency of the bass and the harmony to lead to the tonic—but, in different ways: plagal in the second bassoon part, leading tone in the harmony of the upper parts. Thus, $\text{vii}^4/3$ may have both a pre-tonic and a subdominant (dominant preparation) function. So, when vii° or vii° moves in the fashion of a V^7 chord, the bass tones match in function: vii° and $\text{V}4/3$, $\text{vii}^4/3$ and $\text{V}4/2$. Here, we see again that the inversions of a triad or seventh chord do not have the same function as the root-position chord and that identical tones in the bass often function in similar ways, regardless of the content of the upper voices.

Figure 6a. J. S. Bach, "Goldberg" Variations, Var.4.

Figure 6b. Attempted alteration with cross relationship.

$\text{vii}^\circ \text{ vii}^\circ 6$
 $\text{e:ii}^\circ \text{ ii}^\circ 6$

V^7

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Figure 6c. Circle of fifths progression with unlikely alteration.



Figure 6d. Schumann, *Carnaval*, *Valse noble*.

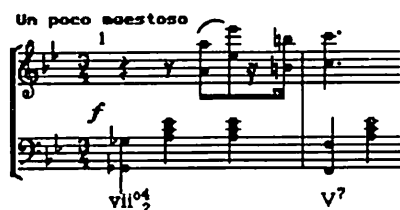


Figure 6e. Brahms, *Academic Festival Overture*.

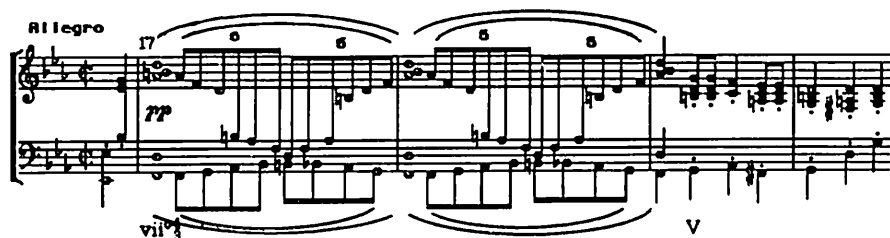
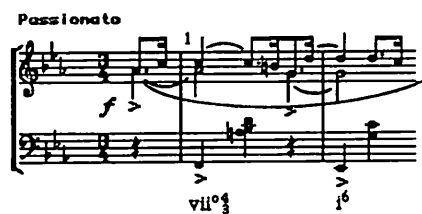
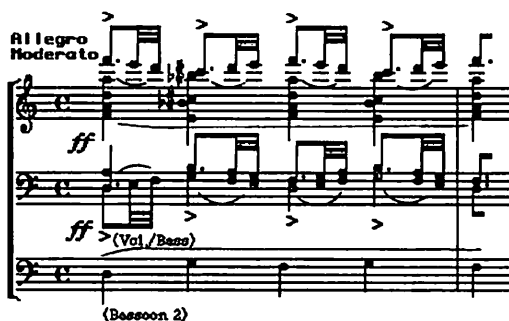


Figure 6f. Schumann, *Carnaval*, *Chiarina*.



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Figure 6g. Weber, *Der Freischütz*, Act II, Scene 4, #10 (Finale)
24 m.m. after poco più moto.



To continue in a functional direction away from the tonic in traditional thought, even in the case of ii and ii^6 (ii° and $ii^{\circ 6}$), which most would consider to be virtually identical in function, the two positions have slightly different voice-leading functions. First of all, a root-position supertonic triad almost never directly follows a root-position tonic triad. (See Figure 7a.) This is rather strikingly, though only peripherally, demonstrated by several studies of an archetypal pattern, one by Leonard B. Meyer and two by Robert O. Gjerdingen.⁵ In all of these studies, initial motion from tonic to supertonic almost never goes with a root-position progression from tonic to supertonic; rather, the supertonic in the bass supports $6/4$, $4/3$, or $6/3$ in most cases.⁶ The outcome of the movement in the bassline from tonic through the supertonic and dominant back to the tonic has also been studied. In brief, such motions tend to support soprano-line motion to the third degree above the final tonic. By contrast, the use of either IV or ii^6 before the dominant ($I-IV-V-I$ patterns in the bass) may generate any member of the tonic triad above the final tonic in the bass.⁷ We must conclude that significant differences between the functions of ii and ii^6 exist.

Hence, it is the ii^6 chord and not the ii chord that more closely resembles IV in terms of function. As in the case of vi and IV^6 , as well as $V6/4$, $V4/3$, and $vii^{\circ 6}$, the function of the chord, its tendency in approach and departure context, seems to be governed by the propensities of the bass tone rather than the root. Further, the whole issue of the root of $ii6/5$, a matter that in Rameau's theories can fairly be regarded as confused and inconsistent, relates directly to the problem of root theory. Rameau realized that the $ii6/5$ had, in effect, two potential sources, the supertonic and the subdominant, as noted also by Schenker (see Note 1). When the $ii6/5$ was followed

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by V, the root was the supertonic; when it was followed by I, the root was the subdominant. This kind of inconsistency plagues the root-inversion theory.

We may now continue in the harmonic path that in traditional thought leads to regions ever further away from the tonic, namely to the submediant triad. The contrast in function between vi and vi⁶ is more pronounced than that between ii and ii⁶. The root-position submediant triad is often used in the deceptive cadence, of course, whereas vi⁶ usually acts as a pivot chord—most often becoming ii⁶ in the dominant key (Figure 7a, m. 11) or occasionally as iv⁶ in the mediant key (Figure 7b). (M. 1 of Figure 7a also shows vi⁶ as a mitigating chord placed between I and ii, thereby demonstrating the point made just before: that root-position ii rarely immediately succeeds root-position I.) In minor keys, as Figure 7c illustrates, VI⁶ may become IV⁶ in the relative major key (quite analogous to Figure 7b). An interesting variant of this motion occurs in Figure 7d, where the first-inversion subdominant chord in the relative major is changed to a minor triad. Only late in the nineteenth century, by which time the root-inversion theory had permeated composers' thinking, do we find such progressions as V-vi⁶ (V-VI⁶ in minor keys) as possible variants of deceptive cadences, as seen in Figures 7e-f.

Figure 7a. Mozart, *Sonata*, K. 333, first movement.

The image displays a musical score for the first movement of Mozart's Sonata, K. 333. It consists of two systems of music, each with a treble and bass staff. The first system is marked 'Allegro' and '(p)'. The second system shows measures 11 and 14, with a label 'vi⁶ (F: ii⁶)' below measure 11. The score illustrates the harmonic progression discussed in the text, specifically the use of the submediant triad in first inversion.

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Figure 7b. Beethoven, *Sonata*, op. 53, first movement.

Allegro con brio

14

pp

18

cresc.

p

vi^6 (E: iv⁶)

E: V

Figure 7c. Beethoven, *Quartet*, op. 18, no. 1, second movement.

Adagio affettuoso ed appassionato

14

pp

cresc.

p

vi^6 (F: IV⁶)

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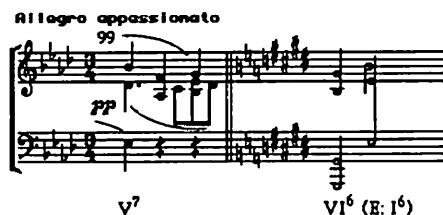
Figure 7d. Chopin, *Mazurka*, op. 33, no. 1.



Figure 7e. Franck, *Violin Sonata*, third movement.



Figure 7f. Brahms, *Clarinet Sonata*, no. 1, first movement.



The last root whose function needs to be discussed is the mediant. The root-position mediant triad leads either by fifth to the submediant or upward by step in the bass to the subdominant. Many familiar circle-of-fifths patterns contain iii-vi (III-VI) progressions, and it would serve little purpose to quote such passages here—though we shall find some interesting conclusions regarding these progressions when inversions are considered. The iii (III) of the iii-IV (III-iv) progression acts much like I⁶ or i⁶ in its tendency to rise to the subdominant in the bass, which, as mentioned, may

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generate IV (iv), ii⁶ (ii^{o6}), or ii⁶/5 (ii^{o6}/5). The iii-IV (III-iv) progression is common within melodies that move from 7 to 6. The use of iii below 7 seems to negate, at least partially, the tendency of 7 to rise to 8. The iii-IV (III-iv) progression appears in all tonal styles, as Figure 8 shows.

In Figure 8a, Bach uses the same chords below 7-6 as in the original harmonization.⁸ Figures 8c and d(m. 3) show the progression as part of a sequential treatment: C-G-A^b-E^b in Example 8c and E^b-B^b-C-G in Figure 8d. Figure 8e, which also has a sequential bassline of sorts (C-G[#]-A-E-F), illustrates the possibility of the major triad with minor seventh above the mediant in the major key leading, in effect, deceptively to the subdominant. Figure 8, then, demonstrates the stylistic universality of the iii-IV (III-iv) progression and introduces the possibility of chromaticism (Figure 8e) within that progression.

Figure 8a. J. S. Bach, *Nun lob', mein' Seel', den Herren*, B.W.V. 17.



Figure 8b. J. S. Bach, *O wie selig seid ihr doch, ihr Frommen*, B.W.V. 406.

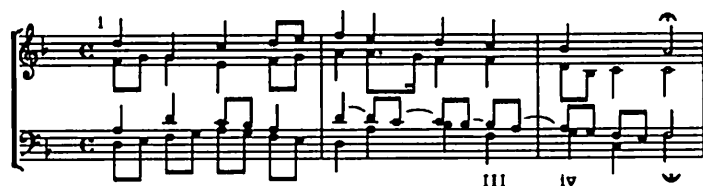
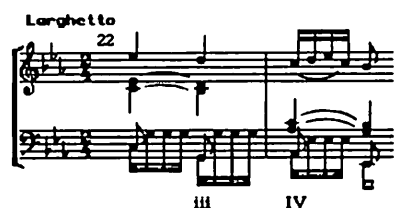


Figure 8c. Mozart, *Le Nozze di Figaro*, Act II, Scence 1, #10 (*Cavatina*)



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Figure 8d. Mozart, *Requiem, Offertorium*, #1.

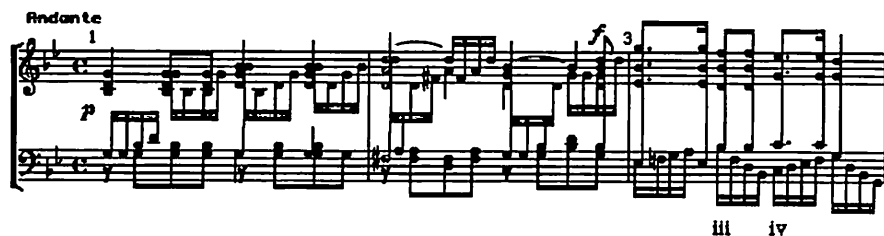
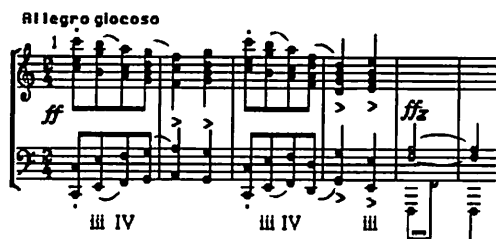


Figure 8e. Beethoven, *Sonata*, op. 53, first movement.



Figure 8f. Brahms, *Symphony no. 4*, third movement.



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Figure 8g. Brahms, *Rhapsody*, op. 119, no. 4.



By contrast, the iii^6 chord may have a totally different function. Often, the first inversion mediant triad directly precedes the tonic. The motion in the bass, then, moves from dominant to tonic. In Figures 9a-c, the progression is shown in major and minor. The augmented mediant triad is generally used in this way in minor keys. By contrast, in Figure 8, all of the root-position mediant triads in minor keys (Figures 8b, d, and g) were major. Further, one cannot justifiably analyze away the augmented triad in such cases as Figure 9c by maintaining that it is purely the product of voice-leading. It is true that in each case in Figures 9a-c, the top voice above the iii^6 or III^6 chord might be explained as an escape tone. Nonetheless, in Figure 9a, the penultimate F-sharp in the melody forms the end of the linear ascent, C#-D-E-F#; in Figure 9b, the A in the melody at the end of m. 8 terminates the F-G-A ascent; and, in Figure 9c, the F in the top voice on the second beat of m. 24 closes the D-E-F rising process. In other words, the melodic motion to the third scale degree, which is the tone that differentiates this chord from an ordinary dominant chord, occurs as the result of a well-motivated structural melodic process with melodic closure on scale degree 3 and not from a simple ornament like an escape tone. Thus, the melodic tone cannot be validly analyzed away as an ornament to, or substitution for, some sort of "understood" 2. Most important, we see once again the tone in the bass and its movement as the primary factors in determining the function of the chord, irrespective of root motion.

The most problematical and interesting issue concerning the iii^6 -I (III^6 -i) progression arises when the inverted mediant chord appears to be combined with a dominant seventh chord. (See Figures 9d-f.) In these cases, the determination of a root is difficult. If one argues for the mediant as the root, then the chord would be an incomplete inverted ninth chord. On the other hand, if the dominant is labeled as the root, then both 7 and 6 would be necessary as thorough-bass symbols.

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In Figures 9d-f, the third degree in the melody above the dominant in the bass is not treated as an escape tone, meaning again that the third degree in the melody cannot be considered as a mere ornament. The A's in Figure 9d are, in effect, disjunct neighbor tones to the F's, the A's being auxiliary to the main note, F, which precedes and follows the A's. In m. 46, the A becomes the melodic tone of the F-major tonic triad. (Probably, the alternation of F with A can be considered a microcosm of the overall tonal motion from F-major to A-minor.) In m. 131 of Figure 9e, the high-level motion from C to F in the melody of mm. 131-132 moves through the A over the harmony in question. The third degree, E in Figure 9f, is approached from F-sharp and reaches C-sharp as an anticipation of the final C-sharp over the tonic harmony. Certainly, this chord, however one chooses to label it, has a dominant (pre-tonic) function and not a mediant (pre-submediant or pre-subdominant) function—that is, the chords act according to the function of the bass, not the root.

Figures 9g and h have other additions above the dominant. M. 196 of Figure 9g has a ninth, a seventh, a sixth, and a third above the dominant. In m. 32 of Figure 9h, both the sixth (F) and the fifth (E-flat) appear over the A-flat on the third beat; furthermore, the G-flat passing tone at the end of m. 32 (and 31) suggests a seventh as well. In both cases, elements of both the mediant triad and the dominant seventh chord are combined to make harmonies that are unusual but nonetheless have clearly dominant functions.

Some clarifying discussion is necessary regarding Figures 9i-k. The F-sharp on the third beat of m. 1 of Figure 9i is not a nonharmonic tone since the melodic motion does not move away from the F-sharp by step; nor is the F-sharp an escape tone. In Figure 9j, the eighth-note chords in m. 67 indicate that the F in m. 66 is the harmonic tone, not the succeeding E on the second sixteenth note of the fourth beat. Figures 9i and j point up an interesting ambiguity: are $\text{iii}^6\text{-vi}$ in Figure 9i and $\text{III}^{*6}\text{-VI}$ in Figure 9j deceptive progressions or circle of fifths root progressions? Such progressions appear to contain both types of functional movement but are primarily deceptive because of the motion of the bassline. Figure 9k, the most interesting of all, begins with a series of mostly parallel 6/5 and 6/3 chords ($\text{i}^6\text{-ii}^{*6}/5\text{-III}^{*6}\text{-iv}^6$), and also contains a deceptive move in the bass, B-C in m. 50, where B supports 6/3—in effect substituting III^{*6} for V and iv^6 for VI! The augmented triad here cannot be ignored but must be considered an important structural harmony, though most would probably hear the G in the melody of m. 50 prospectively as an escape tone that leads very surprisingly upward by step until the B is reached on the fourth beat. The D-sharp in the alto on the second beat of m. 50, of course, resolves the preceding E suspension. These voice-leading movements produce the truly unusual passage shown

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in Figure 9k. In all cases in Figure 9, the chord above the dominant acts like a root-position dominant chord, not like a mediant triad.

Figure 9a. Haydn, *Symphony no. 101*, fourth movement.

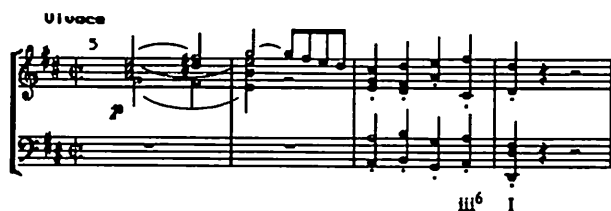
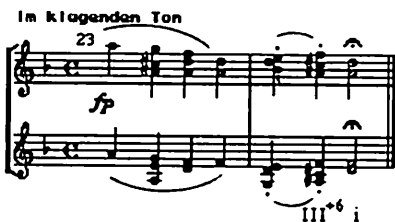


Figure 9b. Brahms, "Geistliches Wiegenlied," op. 91, no. 2.



Figure 9c. Schumann, "Volkslied-chen," op. 68, no. 9.



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Figure 9d. Chopin, *Ballade no. 2*.

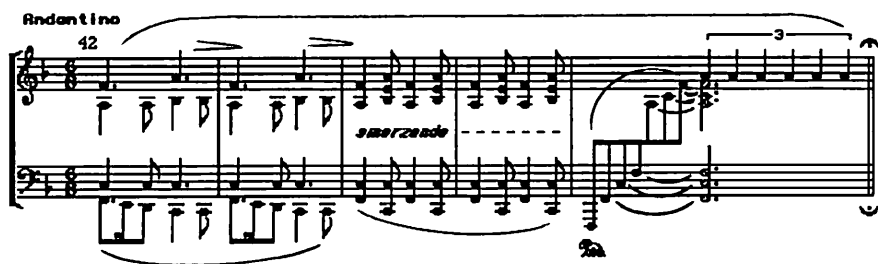


Figure 9e. Franck, *Symphony*, first movement.

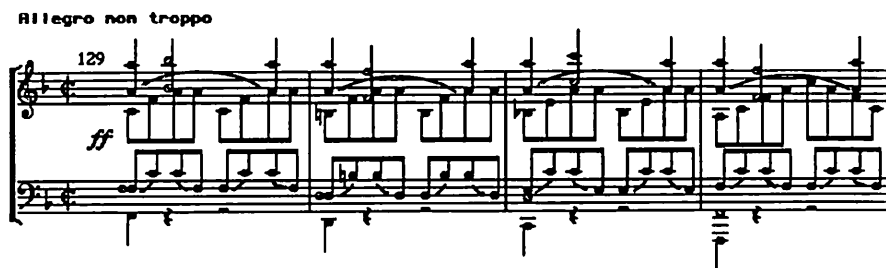
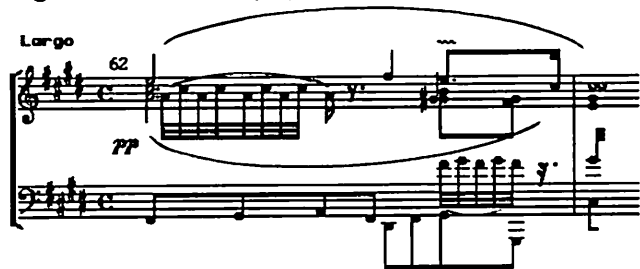


Figure 9f. Dvorak, *Symphony no. 9*, second movement.



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Figure 9g. Grieg, "Valse mélancolique," op. 68, no. 6.

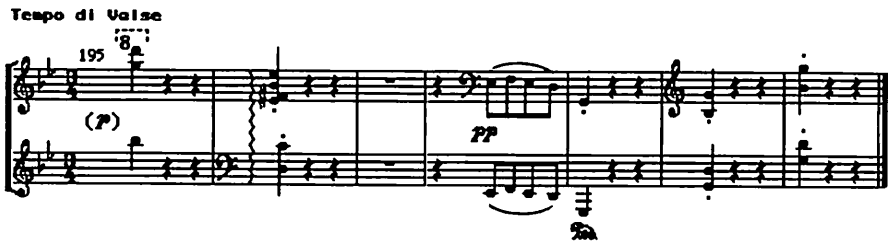


Figure 9h. Bruckner, *Symphony no. 5*, third movement.

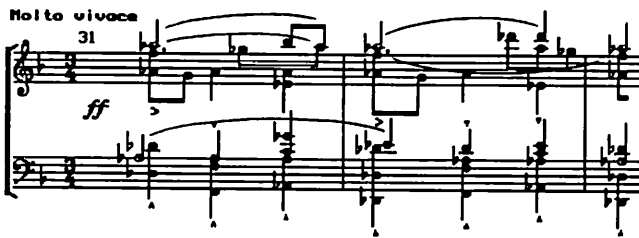
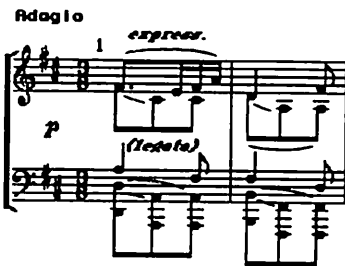


Figure 9i. Brahms, *Violin Sonata no. 3*, second movement.



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Figure 9j. Mendelssohn, *Elijah*, Overture.



Figure 9k. J. S. Bach, *Cantata*, B.W.V. 4 ("Christ lag in Todesbanden"), Versus II.



And so labeling 6/3 chords according to their roots appears to be misleading in a fundamental way. In every case, the function of the root-position triad differs significantly from that of the first-inversion triad. Rather, we have found a great deal of functional equivalence between root-position and first-inversion chords that have the same scale degree in the bass. First, we discovered that V-IV^6 could be used deceptively as a variant of V-vi . Of course, no sense of cadence on the IV^6 chord would arise because a 6/3 chord does not have the closural capability of a 5/3 chord. Nevertheless, the V-IV^6 progression can still be a deceptive move if not a deceptive cadence; in that way, IV^6 may exhibit a certain measure of functional similarity to vi . A more convincing and generally accepted principle is that of the equivalence of IV and ii^6 (iv and ii^{o6}). Also, it is clear that iii^6 and V (III^{+6} and V) share the same pre-tonic function and could even be interchanged in deceptive progressions to a certain extent. Furthermore, one could build a case for the functional equivalence of I^6 and iii as pre-subdominant (either IV or ii^6), since either I^6 or iii may directly precede the subdominant in the

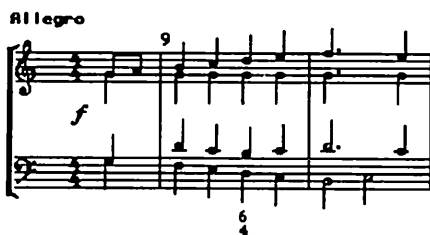
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bass. Thus, in 5/3 and 6/3 positions, ample evidence shows that criteria for functional equivalence are not convincingly established by theories of root motion but rather would be better expressed in terms of the motion of the bassline.

We may now treat in more detail the easier question raised earlier: can we find a significant functional equivalence between root-position triads and second-inversion triads? Because of the dissonant fourth above the bass in the second-inversion triad, it is unlikely that a potentially closural harmony can have much functional similarity to a 6/4 chord. The possibility of the bass leaping to or away from a 6/4 chord is virtually eliminated (except in a *Stimmtausch* or arpeggiation) because the fourth must resolve. For instance, I6/4 (Schenker's V6/4) actually functions as a direct contextual predecessor of the 5/3 above the same bass tone. Thus, we can say that 5/3 and 6/4 above the same bass tone are too far apart on the stability (consonance-dissonance) spectrum to have any important degree of functional similarity; indeed, the 6/4 often resolves to the 5/3.

On the other hand, first- and second-inversion chords, as nonclosural harmonies, are for that reason not so far apart in relative stability. Furthermore, if the only dissonance in the 6/4, namely the fourth, were to resolve, then the result would be a 6/3 with the same tone in the bass. Therefore, we might expect to find similarities in function between 6/3 and 6/4 chords that have a common bass tone. Here are some instances of this functional similarity. In Figure 5a, m. 3, we see 2-3 motion in the soprano with the 2 supported by a 6/3. In Figure 10 the same 2-3 soprano motion generates a 6/4 below the 2. Because both of these chords are dissonant, it is perhaps not surprising to find some functional similarities between them. Both chords also contain the leading tone, with its proclivity to move upward above the supertonic in the bass. As before, this is the sort of tendency that probably led theorists to regard vii° as an incomplete V⁷ chord. Nevertheless, as we have seen, it is clear that the tone in the bass is mainly responsible for such similarities in function.

Figure 10. Haydn, *The Creation*, no. 14.



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When the leading tone is in the bass, it may support a root-position seventh chord, a 6/3, or a 6/5, all of which tend to resolve to a tonic chord. On those infrequent occasions when the leading-tone generates a 6/4, the aftermath may also be a tonic chord, as shown in Example 11. The preceding measures (236-238) suggest a tonicization of F# minor, so there is no sense of the F-sharps in the chord being nonharmonic. Further, the fact that the chord in m. 239 is heard in prospect as i6/4 (Schenker's V6/4) in F# minor indicates that a 6/4 chord on the leading tone may lead directly to a tonic chord even when there is some ambiguity as to the prospective function of the 6/4 chord.

Figure 11. Beethoven, *Missa solemnis*, *Credo* (key signature altered)



The presence of the leading tone would also seem to make a crucial difference in the comparison of the 6/4 and 6/3 chords above the dominant (I6/4 and iii⁶ in traditional terms) where only the latter chord has the leading tone. As we have seen in Figure 9, the 6/3 chord often leads directly to the tonic chord. The 6/4 above the dominant, except in simple arpeggiations, rarely leads directly to the root-position tonic chord (with the famous and notable exception of Beethoven's *Fourth Symphony*, mm. 305-333, striking because it is so unusual). It is also true, however, that iii⁶, like I6/4, may precede an actual dominant chord or dominant seventh chord, as shown in Figure 12. In Figure 12a, m. 4, the F in the alto on the first beat is suspended from m. 3. (One can compare this procedure to that of the tenor on the second beat of m. 1 and the alto on the first beat of m. 9 of the same chorale.) The E in the alto on the second half of the first beat of m. 5 results in a iii⁶ chord. After the subsequent D, a neighbor tone, a real dominant chord follows on the third beat. In the third measure of Figure 12b, the 6-5 motion emerges over the dominant with 7/3 above the bass. These examples indicate that iii⁶ seems to be a kind of incipient dominant chord, which becomes fully formed when the sixth moves to a fifth above the dominant. In other words, even though iii⁶ may function as a dominant because it contains the leading tone, iii⁶ may also act like I6/4 (which has no leading

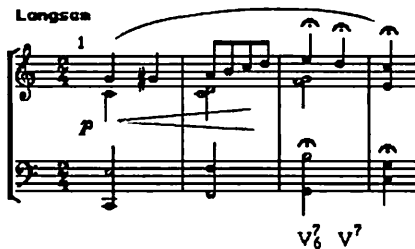
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tone) as a pre-dominant function because iii^6 has one tone that can move to form a true dominant chord.

Figure 12a. J. S. Bach, "O Lamm Gottes, unschuldig," B.W.V. 401.



Figure 12b. Schumann, *Fantasiestücke*, no. 6 ("Fabel")



It would then follow that a bass tone that normally leads to the dominant could support almost any harmonic configuration and still generate a pre-dominant function. In Figure 6e, the subdominant ascends to the dominant in the bass despite very little actual motion in the voice-leading. To compare Figures 6e and f is to discover two of the functions of the subdominant in the bass, whether the chord above is dissonant or consonant, whether the leading tone is present or not. In addition to the stepwise motion from the subdominant in either direction, we can also see the plagal motion directly to the tonic even when a diminished chord lies above the subdominant, as in Figure 6g. In these cases the motion of the bassline clearly dominates any tendency that the chord above the subdominant might have as long as the dissonant tones resolve.⁹

When the leading tone appears as the bass of a dissonant chord, such

as $\text{iii}^6/4$, $\text{V}^6/5$, or $\text{vii}^{\circ 7}$, then the resolution of the dissonant tones will go with the ascending motion of the leading tone to the tonic. This is a pre-tonic but not a dominant function because only dominant-tonic motion produces an authentic cadence. As noted in Figure 3, when the chord above the leading tone is not dissonant, then the succeeding tone in the bass may not necessarily be the tonic. Thus, typical dissonant chords above the leading tone have equivalent pre-tonic functions.

The sixth degree as the bass of a chord generates many possible harmonies, some of which also have a pre-dominant function. The picture here is complicated by the existence of two different submediant scale degrees in the minor scale; moreover, the lowered submediant is often borrowed for use in the parallel major mode. Frequently, as in the chromatic chaconne bass (the chromatic or mainly chromatic descent from tonic to dominant), the raised submediant may lead through the lowered submediant to the dominant. When the submediant has been chromatically lowered (in the major scale), then the exact chord generated above has little bearing on the function of the chord: $\text{vii}^{\circ 4}/2$ (Figure 6a), $\text{V}^4/2$ of $\flat\text{III}$ (Figure 13a), $\text{ii}^{\circ 4}/3$ (Figure 13b), or iv^6 (Figure 13c) all lead directly to the dominant, provided the lowered submediant has not been directly preceded by the dominant (as in Figure 4d, for instance). The four examples mentioned above show four different chords above the lowered submediant by the same composer and do not include an obvious solution to this bassline motion frequently used by Schumann and many others: augmented sixth chord to dominant (see below).

Figure 13a. Schumann, *Davidsbündlertänze*, no. 9.

Lebhaft

$\text{V}^2/\flat\text{III}$ V^7

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Figure 13b. Schumann, *Liederkreis*, op. 24, no. 9 ("Mit Myrthen und Rosen")

Innig, nicht rasch
22 *ritard.*

sel - ber im Grab, wenn ich sel - ber im Grab.

ritard. $11^{\#4}_3 V^7$ *f*

Figure 13c. Schumann, *Piano Quartet*, first movement.

Sostenuto assai
10

$11^{\#4}_3 V^7$

Yet, a subtle difference in intensity seems to occur when the lowered submediant generates an augmented sixth above even where the previous chord is also dissonant. As shown in Figure 14, the augmented sixth interval results from the use of two chromatic inflections moving in contrary motion leading to the dominant. When both predominant chords are dissonant, as in Figure 15, the apparent increase in instability is both melodic and harmonic. Hence, the second chord (above C natural) is more unstable than the first because of the additional dissonance caused by the augmented sixth and by the C natural-F# tritone, which is unarguably more dissonant than the C#-F# perfect fourth in the first chord. Although chords on the lowered submediant that follow chords on the raised submediant clearly have pre-dominant functions, the addition of the augmented sixth above the lowered submediant has an even stronger tendency to proceed directly to the dominant—as contrasted to chords above the lowered submediant triad that are not further inflected, which are somewhat more flexible in

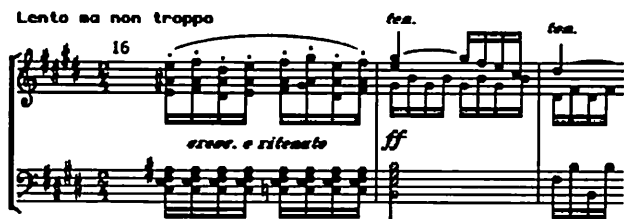
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their implications (as in Figure 4d, albeit here, the dominant, C#, precedes the submediant, D).

Figure 14. Chromatic inflections moving in contrary motion toward the dominant.



Figure 15. Chopin, *Etude*, op. 10, no. 3.



Submediant chords have a second important function, that of a pre-subdominant. In terms of the bassline, the diatonic submediant and subdominant (or, occasionally, raised subdominant) act to focus on the dominant by creating a melodic gap that the dominant acts to fill. A very interesting question, one often posed by beginning undergraduates, concerns the reason that vi (VI) goes to IV (iv) whereas IV does not generally precede the vi. Of course, one can invoke some kind of table of tendencies for root motion; as should be clear, however, we should attempt to find a more convincing explanation that does not rely on such rules whose validity is highly questionable.

Here is a possible explanation for vi-IV rather than IV-vi as a normal progression. In many cases, submediant-subdominant-dominant bassline motion is preceded by the tonic, as shown in Figure 16. The raised subdominant is shown in Figure 16b, first beat of m. 12. In no case does the subdominant precede the submediant. Were the subdominant to intervene between the tonic and the submediant as in the first part of Figure 17a, a 6/4 chord would be outlined. As the second part of Figure 17a demonstrates, even if the tonic is placed above the succeeding subdominant, the submediant is still not the implied root of the outlined chord; and the pattern ends with the implied third instead of the implied root.

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By contrast, Figure 17b first shows the pattern found in Figures 16a and c, which outlines a root-position triad. It is likely that we hear the subdominant as the more stable tone, relative to the submediant, in these progressions for that reason—even if the initial tonic were to be placed below the submediant, as in the second part of Figure 17b. In other words, it may be we sense that the submediant should lead to the subdominant and not vice versa. Admittedly, this is rather speculative reasoning, but the rationale is suggested by the evidence of Figure 16 (as well as many similar passages).¹⁰ Further, the argument summarized in Figures 16-17 is not based on any preconceived harmonic thinking other than the accepted fact, undisputed here, that the root of a chord is more stable than the third.

Figure 16a. J. S. Bach, "Zeuch ein zu deinen Thoren," B.M.V. 28.

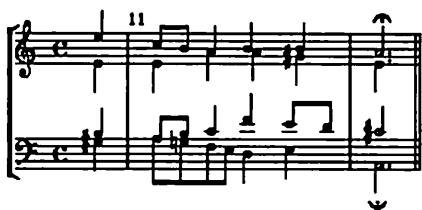


Figure 16b. J. S. Bach, "Vater unser im Himmelreich," B.W.V. 245.

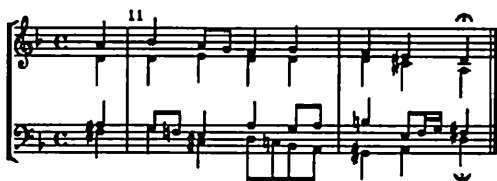


Figure 16c. Schumann, *Davidsbündlertänze*, no. 8.



Figure 17. Melodic structures in the bassline using tonic, submediant, and subdominant.



Indeed, the question of preconception is the most fundamental issue in the entire discussion. Since the acceptance of the root-inversion theory, music theorists have assumed that, with the exception of I (V)6/4 and ii (IV)6/5 in some theories, the root position triad is the progenitor of the two rearrangements of the same three notes such that all arrangements are believed, at least by the implication of the symbology, to have the same function in an actual context. In this study, we have examined many short musical examples associated with this line of thinking. Before drawing any sweeping conclusions, let us consider one larger example where it might seem obvious that the inversion of the chord is substituting for another by analogy—namely, in a set of variations. For the sake of concision, only the basslines of the first section of the theme as well as those of the first and fifth variations of the third movement of Mozart's Sonata, K. 284 will be discussed, since these two variations contain the most contrast with the theme with respect to the bassline. In the forthcoming discussion of Figure 18, the focus will be placed on these differentiations. Because the bassline and the harmonies generated above it determine the harmonic labels, only the bassline and the thoroughbass symbols will be shown.

In general, the meaning of the symbols in the graph is easily comprehended. In this type of analysis, closure on a tone on lower levels leads to transfer of that tone to the next level. So, for instance, the closure of the triadic process D-B-G at the beginning (Level 1) results in D-G on Level 2. Levels 3 and 4 of the theme indicate two movements from D downward to A in mm. 1-2 and 3-4. The latter D-A motion (d¹-a) also leads further downward to D (d) in m. 5. The 6/3 above the lower D (see Level 1) goes with its ongoing melodic function that results in the E in m. 6, an E that becomes a dominant of A at the two cadences in mm. 6-7 and 7-8, which are most clearly seen on Level 2 (a typical example of vi⁶ as a pivot, becoming ii⁶ in the dominant key). Level 3, then, shows the most important harmonic moves: D-A twice, the second of which leads to a tonicization of A in m. 8. Level 4 shows how the initial D becomes temporarily the subdominant of A in the most general sense.

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In Variation I, Level 1, we see that the initial D-A move ascends rather than descends in mm. 1-2. For this reason, an F-sharp is needed to begin the ascending tendency, hence the F-sharp in m. 1 of Variation I in lieu of the B of the D-B-G descent in the theme. The D-F# leap then forms a gap filled by E on the first beat of m. 2 in Variation I. The E avoids the parallel octaves between the outer voices that would have resulted had the G from the theme at this point been preserved. The E, therefore, is necessitated by the voice leading and does not derive from a substitution of ii for the ii⁶ of the theme.

The initial A on level 1 in Variation I (m. 2) disappears in Level 2 because of the E-A-F# gap process in mm. 2-3, which weakens the A. The subsuming of the A into the gap process, however, is in effect compensated for by the subsequent prolongation of A in mm. 2-4 by another gap process on Level 1, A-F#-G-A. To create the prolongation, F# in m. 3, rather than the D of the theme at that point, is necessary in the context of the variation. Again, this is no arbitrary replacement of one chordal position by another but rather a fundamental change in the melodic structure of the bassline. It makes little difference in this context that the G in m. 3 of the variation supports a 5/3 chord whereas the G in m. 3 of the theme carries a 6/3 chord. On Level 2 of Variation I, then, we see only one move in the bassline from D to A, an ascent; and the contrast of direction with the overall D-A descent in the bassline of the theme necessitates changes in the melodic structure of the bassline that produce the harmonic alterations indicated in the example.

In mm. 5-8 of Variation I, the upward leap in the bassline from the cadence on A in m. 4 to the F-sharp in m. 5 contrasts with the downward movement of the bassline of the theme. In moving the bass to the A in m. 7, a series of descending thirds is created, F#-D-B-G# in mm. 5-7, the last of which (B-G#) forms a gap that surrounds the A in m. 7. As a result, the B on the first beat of m. 6 supports a new chord, which is inevitable given the change in the bassline. Also, the G# in m. 6 now carries a 6/5 chord, which has the same function as the root position diminished chord from the second half of m. 6 of the theme. Here, there is no analogous move to E, the dominant of A, until the penultimate measure, making the tonicization of A slightly weaker than was the case in the theme. On Level 3, B, the result of the filling of the triadic gap on Level 1 (A-F#-D-B) is shown as a neighbor tone to A. Thus, two leaps in the bassline in the variation, D-F# in m. 1 and A-F# in mm. 4-5, generate the harmonic differences from the theme in mm. 1 and 6.¹¹

Because of the complexity of the note-to-note level of the bassline in Variation V, Level 2 of Figure 18b will be the principal level to be compared with Level 1 of the theme. Level 3 must also be considered in the analysis because the constantly moving bassline creates different harmonies as more pitches accumulate. On Level 2, the G from the first beat of m. 2 carries a

root-position rather than a first-inversion triad, which does not affect the voice leading at all—as shown on Level 3, which is identical to mm. 1-2 of the theme. Indeed, even on Level 3, the pitches add up to a dissonance, 6/5 above the G; nonetheless, the melodic structure of the bass is unaffected. To return to Level 2, the 6/3 above B on the second beat of m. 3 is completely different from the G's of the theme and of Variation I (as well as the G's in this place in all of the previous and most of the following variations as well).

On Level 1 of both the theme and Variation I, mm. 1-4, A is emphasized by two downward gap structures: D-G-A in mm. 3-4 of the theme and A-F#-G-A in mm. 2-4 of Variation I. In Variation V, the direction of the gap structure is reversed, becoming A-D-B-A in mm. 2-4 (Level 2 of Figure 18b). More importantly, Level 2 of Example 18b indicates a subsequent triadic rise, A-D-F# in mm. 4-5, meaning that the D on the first beat of m. 5 differs from the F-sharps in both the theme and the first variation. In this case, the D, in its ascent to F-sharp on the third eighth note of m. 5, precedes a descent in thirds on Level 2, which, in comparison to a similar process on Level 1 of Variation I, reaches G-sharp on the first beat of m. 6. Here, the D acts to link the A with the high F-sharp, a goal which another F-sharp, as in m. 5 of the theme, obviously could not accomplish.

In Variation V, Level 2, G-sharp and E simply occur in opposite order to that of the theme's bassline so that the descent in thirds, which was not present in the bassline of the theme, can continue downward to E. On Level 3, in contrast to the diminished chord of the theme, the G-sharps in Variation V appear to support 6/5 harmonies. Nonetheless, there is no difference in function between the 5/3 and 6/5 above the G-sharp, only one of level in this instance. As for the E, it appears as a disjunct neighbor tone to the main G-sharp of m. 6, despite its traditional role as the "root" of the V/V harmony. Because the G-sharp is so much more important metrically and durationally in this bar, it is elevated to Levels 4 and 5; it seems utterly misleading to regard E as anything but a tone that acts to prolong G-sharp. The E does not generate the chord in this context.

In all cases in Figure 18, the modifications in the voice-leading of the bassline can readily explain the changes in harmony without the necessity of referring to the root-inversion system, as shown by the x's in the graphs. The tones with asterisks show that changes of inversion also can be explained in terms of voice leading. The "equals" signs demonstrate the point made earlier, that the same tone in the bass in the same voice-leading context produces a predictable voice-leading result, almost irrespective of the exact chordal contents. Hence, even in a larger example, we can easily explain equivalence and non-equivalence of harmonic function without having to rely on the traditional system with all its previously noted deficiencies.

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Figure 18a. Mozart, *Sonata*, K. 284, third movement: basslines and analysis thereof in the theme and first variation.

Thema Andante

6 3 6 3 6 5 6 7 6 6 5

3 4 3 3 3 3

Bass Line

1.

2.

3.

4.

Var. I

x * = 6 5 6 6 x = 6 6 7

3 3 3 4 3 3 3 3 5 3 [4] 3

Bass Line

1.

2.

3.

= melodic process

= gap process

= nonimplicative process

x = change of bass tone in variation

* = change of inversion in variation

= = same bass tone, different chord in variation

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Figure 18b. Comparison of the bassline of the theme with that of the fifth variation.

Thema Andante

6 3 6 3 4 3 3 6 3 7 6 6 5

Bass Line

1. 2. 3. 4.

Ver. V.

3 3 6 3 4 3 6 3 3 6 5 6 6 5

1 5

Bass Line

1. 2. 3. 4. 5.

The contention here is not that the principle of inversion is invalid but that inversions are not necessarily generated by a root-position basis. Rather, inversions should be regarded in the way many early harmonic theorists considered them: as rearrangements, permutations (*Verwechslungen*) of the same pitches with *Stimmtausch* in the bassline (and possibly in the upper parts). The *Verwechslung* is subtly contrasted to the

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term *Umkehrung*, the more modern term, which implies a single chord as the basis in all instances for the rearrangements.¹²

Nevertheless, it is necessary to have some kind of summary system for describing harmonic structures without always resorting to analysis wherein each chord is related only to a process. In harmonic process analysis, simultaneities are described by thoroughbass symbols and displayed according to harmonic implications and realizations. Such a procedure is probably essential in passages where the tonality cannot clearly be established but is needlessly complex, in my view, when the tonality can be easily identified. (Harmonic process analysis, however, generally yields worthwhile insights even in analyzing harmonically simple passages.) The modifications in the older method to be proposed presently should solve most of the problems posed earlier but will not address the question of when the summary system should be abandoned in favor of harmonic process analysis, an inquiry that would require a long and complex study in itself.

Here are the suggested modifications, which are summarized in the Appendix. First, the roman numerals should stand for tones in the bass, as Schenker began to suggest in *Harmony*. To have symbolological differentiation, upper-case roman numerals would be used for scale degrees in major keys, lower case for minor keys. As it now stands, iv, for instance, may be either a diatonic chord in minor or a chromatic chord in major, the latter of which exemplifies Schenker's idea of mixture, but which creates an undesirable symbolological ambiguity. (It is unlikely that any array of summarizing symbols can adequately describe cases of genuine major-minor ambiguity, as in Schubert's *Moment musicale*, D. 780, no.6.) In diatonic chords, °, ♯, and + will be used to indicate diminished, half-diminished, and augmented chords and intervals where applicable, including diatonic intervals within a key and root-position seventh chords—not, however, for chromatic accidentals, which will have different symbols. That is, in minor keys, there are accidentals that are diatonic, namely the raised sixth and seventh degrees. Where these need to be specified, the appropriate symbol or accidental, #, ♯, or x (indicating the raising of the third above the bass), would be used in the label.

In chromatic chords, # and ♭ preceding the roman numerals would indicate raising and lowering the bass irrespective of key signature, similar to current practice. The symbols associated with thoroughbass designations, however, would consist of ^b or ^{bb} as well as older thoroughbass signs represented as follows: 6 for raised sixth above the bass, 4+ for raised fourth, and 2+ for raised second. To distinguish between diatonic and chromatic accidentals, raised thirds above the bass in diatonic (minor key) situations would be indicated simply with the appropriate accidentals; whereas the raising of a third above the bass in a chromatic chord would be symbolized

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by 3#, 3^b, or 3x, as the case may be. In this way, the confusion of a second- or third-inversion secondary chord leading to an inverted chord is eliminated: symbolological inconsistency arises when, say, V4/2 of ii leads to ii⁶, not to ii; whereas V4+/2 would quite clearly imply the resolution of the augmented fourth and the second such that a 6/3 chord would follow above the succeeding subdominant in the bass.

In cases where the tendency of the bass is not to move by step, the older secondary system should be preserved to reflect that tendency, e.g., V/V moving to V and not to III or I. (This differs from Schenker's practice.) Here, the proposed symbology could differentiate between stepwise and circle of fifths tendencies on the part of the bassline. Hence, harmonic movement like V/V going to V⁶ would be notated as V/V going to VII⁶, thereby showing more concretely the unexpected motion of the bassline. In so-called inverted secondary chords, the implied motion of the bassline supersedes the more abstract motion of roots: a progression consisting of V⁶/V-V is more similar to that of vii^o7/V-V than to V/V-V because only the last is a potential authentic cadence and thus a potential modulation. There is no need to use secondary leading-tone symbols because #I, #V, and the like already imply ascending stepwise motion to the succeeding tone in the bassline. By contrast, the proposed system does not proscribe occasionally useful symbols such as IV/IV, vi/IV, etc. to indicate transposed plagal and deceptive cadences. Indeed, the symbols for such cadences would become more consistent: for ii⁶6/5 of IV-IV looks less like a plagal cadence than the Schenker-influenced IV6/5/3^b of IV to IV; V/VI-ii⁶ does not look like a deceptive cadence at all, but V/VI-VI6/VI would clearly symbolize a deceptive cadence because of the V-VI (of VI) pattern shown by the roman numerals. Such progressions, of course, could also be symbolized by means of a bracket, (see example) as in: $\left[\begin{array}{c} V \\ \text{VI} \end{array} \right]$.

In any case, only root-position secondary dominant and dominant seventh chords need to be labeled as such.

"Borrowed" chords could be indicated by means of thoroughbass symbols, as in IV^b, IV6/5/3^b, and the like. Secondary chords of borrowed chords would follow the symbology proposed for secondary chords.

A great advantage in the suggested system would accrue in labeling augmented sixth chords, which have no true roots in most harmonic theories. As it now stands, even if the analyst attempts to sidestep the problem of identifying the root with a label such as +6/5/3 for a so-called German sixth chord, an appearance of the chord in another position requires a change in figures, strictly speaking—for instance, 7^b/5/3^b. The proposed system does not necessarily label the root and would avoid labels like +6inv. (which inversion?), and the like. Moreover, suppose the German

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sixth, for example, occurs on the lowered third degree; should we use +6/5/3 of V or +6/5/3 of V of V? What if the augmented sixth is built on the fourth or lowered second degree (+6/5/3 of I⁶ or of iii or of V/vi?; +6/5/3 of I or of V/IV?)? These labels are very confusing and at present unstandardized. In symbolizing augmented sixth chords by using roman numerals for the tones in the bass, the whole problem of transposing and "inverting" these chords is eliminated.

The real question, of course, is whether or not these reforms are worth making, particularly in this age of linear analysis.¹³ It seems to me that as long as harmonic details so characteristic of Western music are there to be discussed, we need a better methodology and symbology, a way of thinking about harmony that does not depend on the root-inversion system. It may seem rather unpalatable to consider the effects of the overhaul outlined here, but should we continue to perpetuate a system so fraught with fundamental problems and inconsistencies? Perhaps serious music theorists would take more interest in the details of harmony if the analytical methodology and symbols were more concretely descriptive.

The suggested terminology could be used as a part of a Schenkerian or other linear approach and is, in fact, ideally suited to linear analysis because its basis is linear and in my view is adumbrated by some of Schenker's own work. In addition to his V6/4 and IV6/5 labels mentioned before, Schenker compares basslines according to their actual melodic processes near the beginning of his examples in *Free Composition*; for instance, C-E-F-G-C middleground patterns are grouped together regardless of the harmonies generated above the E and F.¹⁴ This kind of grouping procedure constitutes another step forward, away from the root-inversion theory and toward a theory of harmony based on linear considerations. The present study extends these changes back to lower levels as well.

To accept the concepts behind the terminology, one must agree that harmony is regulated by the bassline and that harmonic process is generated by the motion of the bassline in conjunction with the upper parts. In this way, we can reject the notion that harmony generates its laws independent from contrapuntal motion. Rather, harmonic motion can be seen as a product of counterpoint, eventually producing harmonic conventions, but also retaining its basis in the interaction of melodic voices.

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APPENDIX: Proposed New Labels in the Text

Diatonic Triads in C-major.



Diatonic Triads in C-minor.

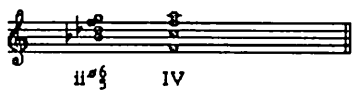
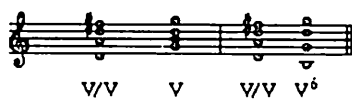


* or # or x depending upon the key signature

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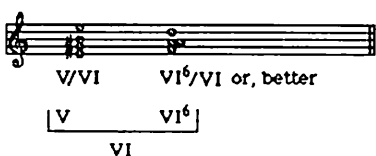
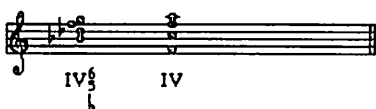
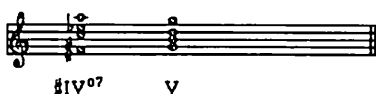
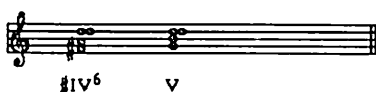
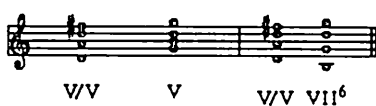
Traditional Symbols

(C-major unless
otherwise indicated)

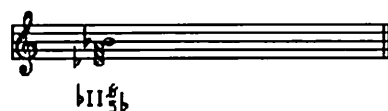
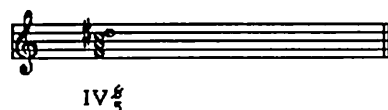
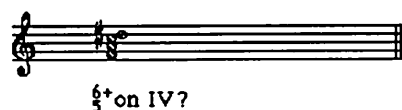
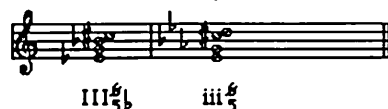
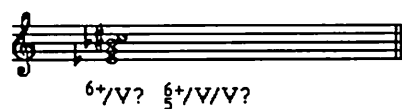


Proposed Symbols

(C-major unless
otherwise indicated)



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NOTES

¹Heinrich Schenker, *Harmony*, edited by Oswald Jonas, trans. by Elisabeth Mann Borgese (Chicago: University of Chicago Press, 1954), p. 34, ex. 25.

²William J. Mitchell, "Chord and Context in 18th-Century Theory," *Journal of the American Musicological Society* 16(1963):221-239. C. P. E. Bach's well-known letter to Kirnberger expresses his and his father's antipathy for Rameau's theories in general. See, for instance, David Beach's introduction to Johann Philipp Kirnberger, *The Art of Strict Musical Composition*, trans. by David Beach and Jürgen Thym (New Haven and London: Yale University Press, 1982), p. xv.

³For two exceptions, see the choral prelude settings of "Allein Gott in der Höh' sei Ehr'," B.W.V. 664, mm. 90-96 (V6/5-I) and B.W.V. 716, mm. 87-89 (VI-I), the second of which may not be by J. S. Bach. In these cases, the motion from leading tone to tonic at the end of the tune appears in the bass as the ending of the prelude, eliminating the possibility of a V-I ending.

⁴Schenker, *Free Composition*, trans. and edited by Ernst Oster (New York: Longman, 1979), vol. 1, p. 37.

⁵Leonard B. Meyer, "Exploiting Limits: Creation, Archetypes, and Style Change," *Daedalus* 109, no. 2 (1980): 177-205; Robert O. Gjerdingen, "A Musical Schema: Structure and Style Change, 1720-1900," (Ph.D. dissertation, University of Pennsylvania, 1984) and "The Formation and Deformation of Classic/Romantic Phrase Schemata," *Music Theory Spectrum* 8 (1986): 35-43.

⁶Reed J. Hoyt, "The Bassline in Tonal Music: Its Relationship to Melodic and Harmonic Structure" (Ph.D. dissertation, University of Pennsylvania, 1979), pp. 352-360.

⁷*Ibid.*, pp. 360-404.

⁸The original harmonization is attributed to Loys Bourgeois. Bach uses the mediant triad at this point in three other chorale settings of this melody: B.M.V. 29, 389, and 390.

⁹See Walter Piston, *Harmony*, 4th ed. revised and expanded by Mark DeVoto (New York: W.W. Norton, 1978), p. 314, Ex. 20-24, though it lacks the inclusion of the move from subdominant in the bass as a possibility.

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¹⁰The double-neighbor motion surrounding the dominant in the bass is an important cadential structure and almost always precedes the subdominant with the submediant. See Hoyt, "Bassline," pp. 108-116 and also "The Axial Prolongation of the Dominant in the Bassline: Its Archetypal Pairings and Its Relationship to Cadential Structure," Paper presented at the Meeting of the Southern Chapters of the American Musicological Society and the College Music Society, Baton Rouge, LA, March 27, 1981.

Note also the D-B-G-A motion at the beginning of the theme in Figure 18.

¹¹In m.7, the seventh above the E is not considered to be a significant change because the E at this point clearly functions as the dominant of A. Were we to consider an analysis of harmonic process, a difference would be shown by the symbols.

¹²See, for instance, Mitchell, "Chord and Context," pp. 222-229.

¹³The struggle between linear and harmonic theories is epitomized by the recent exchange between Charles J. Smith and David Beach: Smith, "The Functional Extravagance of Chromatic Chords," *Music Theory Spectrum* 8 (1986): 94-139; Beach, "On Analysis, Beethoven, and Extravagance: A Response to Charles J. Smith," *Music Theory Spectrum* 9 (1987): 173-185; Smith, "A Rejoinder to David Beach," *Music Theory Spectrum* 9 (1987): 186-194.

¹⁴Schenker, *Free Composition*, vol. 1, p. 30, Section 57 and pp. 32-34; vol. 2, Figs. 15, 16, and 18, part 3 of each figure.

A MODEL FOR MUSIC PERCEPTION AND ITS IMPLICATIONS IN MELODIC DICTATION¹

GARY S. KARPINSKI

JUSTIFICATIONS FOR DICTATION IN THE CURRICULUM?

Why do we teach dictation? What do we hope to develop in our students by playing music for them and asking them to write it down? The practice is certainly well-ensconced in college and university music curricula across the country, but very little has been written concerning the reasons for teaching dictation.² Most of what we can learn about the justifications for aural-skills training can only be gleaned from the pages of textbooks designed to teach the subject. In two recent articles,³ I looked at eight aural-skills texts and among the features I discussed were the purposes they convey to their readers—to teachers and students—for teaching aural skills. Among the justifications for teaching dictation found in these books are broad ones, such as “The skills and understandings called ‘ear-training’ consist primarily of the establishment of mental relationships between sounds and symbols,”⁴ and performance-oriented ones, such as “Intelligent listening is the most important thing a musician does. No matter what high level of dexterity and accuracy is achieved with an instrument or voice, success is inevitably limited and regulated by the ability of the ear to discriminate and guide the musical performance.”⁵

While the above descriptions are correct, they fail to recognize all of the cognitive skills that dictation can develop. To justify a place for dictation in the curriculum, we must be sure of those skills we are trying to develop through teaching. Certainly, dictation does not address the kinds of broad-scaled listening skills often taught in music history, literature, analysis, and appreciation classes. While those classes develop a sensitivity to form, texture, style, and compositional devices, ear-training classes are geared towards a kind of fine, detailed listening with attention to the smallest items of pitch and rhythm. Indeed, the typical goal of most melodic dictations is for students to write down a precise notation of the rhythms and pitches in a short melody.

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I contend that the skills necessary to achieve that goal are important musical skills. I further contend that melodic dictation—when properly taught—can be the best means of developing those skills as a preliminary to applying them to a variety of listening situations at more advanced levels.

This article will address the question of why we teach dictation by examining the process of tonal melodic dictation as it is typically practiced in American colleges and universities, and by comparing this to the process of music cognition as it is (or should be) practiced by the developing musical mind.

CASE STUDIES: PARALLELS TO CLINICAL SCIENCE (and student stories)

In disciplines such as clinical psychology and medicine, technical discourse is rarely carried on in the abstract. The body of knowledge in such disciplines is based in part upon case studies—narratives that detail information about subjects who exhibit features pertinent to a given study. In contrast, the body of knowledge in aural skills training is mostly based on comparatively vague aphorisms about mental relationships and intelligent listening. I do not mean to denigrate such ideas; developing intelligent listening and mental relationships between sound and symbols is a goal to which we should aspire, but what kind of intelligent listening? Listening to which features of music? Precisely which mental relationships? At the risk of becoming obtuse, let me continue the parallel with medical science a bit further. The prescription of penicillin for an infection is not based on some armchair pronouncement like "... the idea of taking drugs for an illness is an important one." Instead, it is based upon case studies of sick patients, and the experimental and clinical examination of various treatments and success ratios. In aural-skills training, a few researchers have presented data that demonstrate the relative success or failure of a few techniques,⁶ but even these few studies have been done in the near complete absence of case studies regarding various difficulties in music perception and the appropriateness of various methods of diagnosis and remediation.

Since our goal is to develop the aural skills of students who are deficient in some way, I feel that I should first present brief case studies of a few students who exhibit representative deficiencies. I have chosen four who produced errors on a prevalent measurement of aural perception—melodic dictation. Adopting a technique used in some psychoanalytical literature, I will—for ethical reasons—use only a single initial to refer to each student.

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Ms. W

The first case is not typical; indeed, her problems are rare among music students. Ms. W was a college sophomore who scored poorly on dictation tests, so I asked her to perform a few listening and singing activities (selected from those described later under "Diagnosis and Remediation"). Her achievement was negligible; she even had trouble matching pitches. When I questioned her about her poor performance on these tasks, she confessed that she experienced a constant ringing in her ears that prevented her from hearing accurately. I suggested she seek medical help—that she consult an audiologist—to improve her condition. She eventually stopped attending school; we thus have no follow-up record of her condition and possible treatment.

Mr. D

Mr. D—a college freshman—also scored poorly on dictation tests. He came to me for remedial help and I asked him to sing back some short melodies immediately after I played them. For most melodies of more than a few notes he would sing most pitches incorrectly, although his responses were musical and often followed the shape and rhythm of the original. I then asked him to sing any tune he knew by heart but had not seen in notation; he chose "Twinkle, Twinkle Little Star" and sang it without error. When I asked him to tell me about the rhythms and the scale degrees of the notes in "Twinkle, Twinkle" and various other folk tunes, he was quite accurate. When I asked him to notate several of these tunes, he did quite well—work which would have earned him an "A" on a dictation test.

Ms. J

Ms. J was a college senior who had been struggling with aural-skills courses for years. When I arrived at the institution where she had been a student, I tested her to find out what had been holding her back. She did poorly with dictation, but she was able to sing back novel melodies upon first hearing with great accuracy. In contrast to Mr. D, she could recall dictation-length melodies with impressive precision. However, when asked to supply information about the scale degrees or rhythms of those melodies, she balked. She was unable to identify even the simplest tonal functions or rhythmic proportions. Nevertheless, when given a series of

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scale degrees and rhythmic proportions, she was able to notate them properly in various clefs, keys, and meters.

Ms. F

Ms. F—a folksinger—had never worked with music notation before deciding to study aural skills. She expressed a desire to write down the tunes she sang—especially those she composed—and thus embarked on the study of melodic dictation. She was, at first, quite unsuccessful. But when I asked her to sing back some novel melodies, she was up to the task. She even understood the ideas of scale degree and rhythmic proportion, and was able to accurately identify such in those melodies. When called upon to notate what she had identified, however, she was unable to do so.

In all four of the above cases, the final results were similar: unsatisfactory answers to melodic dictations. Yet for each of these cases, the cause of the problem was different. For Ms. W, an inability to hear properly prevented any further processing of the sounds. For Mr. D, an inability to remember even short musical passages left him with nothing to do during dictations; no amount of work on solmization or notation could offer him hope of improvement. For Ms. J, a weakness in discriminatory skills—in this instance, the inability to discern scale-degree function—prevented her from succeeding, despite her knowledge of notation. For Ms. F, the ability to hear, remember, and understand what was heard, was negated by an inability to write the correct answer due to a lack of training in the principles of music notation.

A MODEL FOR MUSIC PERCEPTION: EMPIRICAL AND PHILOSOPHICAL EVIDENCE

These case studies point out there are at least several phases in the process of music perception that need to be carried out while taking melodic dictation. That the practice of taking dictation involves separate phases is not a new idea—Michael Rogers refers to two stages⁷ and Ronald Thomas has alluded to more than fifteen⁸—but what follows here is a much more rigorous model for the process based not only on clinical observations of student subjects but also on empirical and philosophical studies of perception performed by scholars in the fields of music theory, music education, and cognitive psychology.

At its broadest, the model is divided into four phases, represented by

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the four case studies discussed above: hearing, memory, understanding, and notation. The phases are sequential; each must be performed in turn or subsequent phases will not be viable. Let us first broadly examine those phases in the order students must use them.

A. Hearing

The first phase is hearing. Students must hear the melody before any other activities may be carried out. This should be obvious, yet—as we shall see later—difficulties do arise during this phase.

B. Memory

Once it is certain the students have heard the melody, they must remember it in order to do anything with it. Whatever musical material is not remembered correctly will be notated incorrectly no matter how accurately the subsequent phases are carried out. Fortunately—as we shall shortly see—only a portion of the melody needs to be processed after any given playing.

C. Understanding

Once students have extracted such a portion and placed it in their memories, it is time to move on to the next phase in the process of taking dictation. No matter how small or large a portion has been remembered, it is important to *understand* that portion before notating it. Since the goal of most dictations is to notate rhythms and pitches, it is those two elements that must be understood. I will discuss this phase in detail below, but to differentiate it from notation consider the following short example. Students who hear the first measure of the third movement of J. S. Bach's Violin Concerto in E, BWV 1042 (shown in Figure 1) respond "do, re, mi, sol, do; half beat, half beat, half beat, half beat, one beat". We know they have clearly understood the excerpt; we don't yet know whether they can notate it.

Figure 1.



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D. Notation

The final phase in taking melodic dictation is notation. It is a relatively straightforward task to translate one's understanding of a melody into traditional notation. Upon being told to use a treble clef, a tonic of E, and the eighth note as a beat unit, every musician should be able to translate the solmization syllables and beat lengths listed above into the notation shown in Figure 1. Of course, a strong knowledge of notational principles is necessary to execute this task. This, too, is an aspect of aural skills as well as written theory training.

THE PROCESS: INVESTIGATION AND CRITIQUE OF CURRENT PRACTICES

Of the four phases, the first and last are improved only indirectly by training in aural skills. This training can merely point to problems in the area of hearing, and only serves as drill and practice in the craft of notation (the essence of which is traditionally taught in the written theory classroom). It is the middle two phases—memory and understanding—that aural training can truly develop. Each of these phases is comprised of smaller steps that must now be examined.

A. Hearing

In my clinical experience I have encountered at least two students who had physical or neural hearing deficiencies. Somehow, they had managed to muddle through pre-college musical activities before entering upon aural-skills training. My diagnosis of their problems at least pointed them in the direction of an audiologist who is equipped to deal with them. In addition, there are students with attention problems; any student who does not pay attention to a dictation *will* find it difficult. This may be a matter of concentration and not medicine, but here too the process of dictation can help at least to make a diagnosis. Attention may also be diverted by nervousness. This is a real problem for many students who take tests in various disciplines; it is a particularly common problem for students of music. I will address nervousness later in this article; other causes of hearing difficulties are mercifully rare in music students.

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B. Memory

Memory is an extremely important phase in the process of taking melodic dictation. Indeed, it is extremely important in many musical processes. In the words of one cognitive psychologist,

The way one hears music is crucially dependent upon what one can remember of past events in the music. A modulation to a new key is heard only if one remembers the previous key. A theme is heard as transformed only if one can remember the original version of which it is a transformation. And so on. A note or chord has no *musical* significance other than in relation to preceding or following events. To perceive an event musically (that is, to recognize at least part of its musical function) is to relate it to past events. It is, therefore, important for us to know how good we are at remembering past musical events, and to know what factors assist our memory.⁹

Despite how important it is, memory as a stage in the process of melodic dictation is often overlooked. One reason is a common misunderstanding of short-term musical memory. Many teachers of melodic dictation forget that short-term musical memory is subject to limitations similar to those that constrain all short-term memory. For instance, consider Bruce Benward's advice to students in his book *Ear Training: A Technique for Listening*: "Only after you have the entire melody memorized should you attempt to write anything on paper!"¹⁰ and "After hearing each melody try immediately to sing it in its entirety in your mind."¹¹ These sentences precede melodic dictations, including the one shown in Figure 2a and the one shown in Figure 2b.

Figure 2a.¹²



Figure 2b.¹³

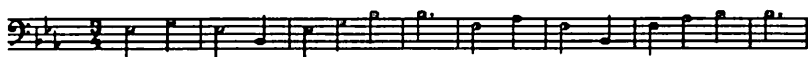


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There is a fundamental difference between those two melodies in relation to short-term memory. The first one falls within the short-term limit of "seven plus or minus two bits" described by George Miller in his classic study on perception and memory.¹⁴ The second one is much longer; it far exceeds the length of something easily committed to short-term memory.

In practice, the notion of "seven plus or minus two bits" applied to musical information is dependent upon the aural and theoretical training of the listener, as well as their experience with the repertoire. This is due to the fact that listeners can group notes into meaningful units or "chunks."¹⁵ As an example, consider the melody shown in Figure 3.

Figure 3.



The most naive of listeners would perceive this as at least sixteen bits of information (perhaps even thirty-two, if one considers rhythmic information to be processed separately from pitch). In contrast, a listener with a developed sense of harmonic listening might perceive it as two parallel statements of eight bits unfolded over two chords. A listener schooled in music literature would perceive this as one bit, the one named "Beethoven's Third Symphony, first movement, main theme."

Even if teachers write original melodies, similarities between those melodies and familiar literature will contribute to the ease with which the melodies are separated into chunks.¹⁶ Even in the absence of any connections to a repertoire, it should be apparent that there are many factors that contribute to the chunking of melodic material, such as rhythmic repetition, sequential patterns, harmonic function, and so on. We must be cognizant of the chunking abilities of our students when we construct materials for melodic dictation; many of us will find our freshmen surprisingly closer to the naive listener described above than to anyone more sophisticated.¹⁷ In the words of one cognition researcher, "in melodic dictation, for example, consideration should be given to the amount of musical information that a student can be expected to encode, store, and report."¹⁸

So, what are we trying to accomplish by giving dictations like Benward's second melody (shown in Figure 2b) to our students? It is indeed to misunderstand short-term memory to ask them to sing this melody in its entirety after hearing it. Nonetheless, it is precisely such melodies that

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develop an important listening skill: the ability to extract and examine successive *portions* of a composition upon repeated hearings. A mature listener does this all of the time; how else does one answer such questions as "Does the antecedent end on the tonic or dominant?" or "Is this a tonal or real answer?" or "What motive are the violas playing at the beginning of the development?" Dictation melodies that are too long to memorize in the short-term require students to extract portions and work on them individually. This is the primary reason for giving such long melodies and for playing them several times.¹⁹

Let me also caution that those portions should be extracted as melodic units, with pitch and rhythm remembered as a whole. It is unmusical to remember and process the rhythms of an entire passage over the first several playings, and then return to try to remember and process the pitches after still more playings. Not only does this practice unnaturally divide the rhythms and pitches of the melodic gestalt (which should only—and often must—be separated during the understanding phase which comes next), it also burdens the short-term memory by creating two sets of information to remember instead of a single (if admittedly larger) one.²⁰

At this point, I must also warn against suggesting that students write while listening.²¹ In a recent article, Gary Potter used ethnographic techniques to examine skilled musicians taking dictation.²² Among the conclusions of this fascinating study is the following: "While the ability to memorize a melody quickly is a tremendous asset in dictation, those subjects who 'listened first to make a mental tape to be played back at will' did far less well than those who began writing during the first hearing."²³ This conclusion demands scrutiny on two grounds, the first philosophical and the second empirical. Philosophically, we must ask what is the goal of training in dictation—to get the correct answer or to develop a broad slate of skills including hearing, memory, understanding, and notation? If we train students to write while they listen we will develop fleets of musical shorthand-takers, perhaps adept at getting the right thing on paper but lacking in skills such as focussed attention, selective memory, and increased memory capacity. Michael Rogers is critical of such a narrow orientation on similar grounds, noting that "the purpose of dictation, for example, is not to produce correct written transcriptions but to produce a certain kind of listener who can hear sound as meaningful patterns."²⁴

On empirical grounds, I suspect that Potter's subjects had not been trained in the proper use of selective and accurate memory. Experimental studies have shown it is helpful for students to correctly repeat—either vocally or mentally—what has been heard before they begin to process it. Indeed, the act of rehearsing a melody has been shown to reinforce one's memory of it. One study compared subjects' memories for melodic details

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after immediate recall and after a ten-second rehearsal period. "The rehearsal condition caused rather striking differences in performance For the tonal patterns we can see the heightened primacy performance with no difference in the recency position [i.e. those who rehearsed remembered the last notes as well as and the first notes better than those who did not rehearse]. The serial curve has essentially disappeared with performance having reached an 80 percent ceiling. Here is where we would expect the best performance. With free-rehearsal and tonality as an organizer, we should have optimal memory for melody."²⁵ Another study went further to compare those who rehearsed well with those who rehearsed poorly. Subjects who did not sing a melody correctly after hearing it actually did less well on subsequent same/different responses than those who performed no rehearsal at all. However, for subjects who *did* sing correctly, "91% of their *written* same/different discriminations were correct."²⁶ Not surprisingly, memory is enhanced by correct rehearsal but degraded by incorrect rehearsal. Perhaps Potter's subjects who made a mental tape were playing it back incorrectly.²⁷

I would now like to address the specific procedures through which dictations are presented. These procedures affect how students' short-term memory can handle the music they hear. One aspect involves whether dictations are played in fragments or only in their entirety. Whereas some instructors offer only repeated playings of entire dictations, others follow a procedure similar to that prescribed in Levin and Martin's *Sight Singing and Ear Training Through Literature*:

Play the dictation in its entirety . . . Perform the dictation in two-measure fragments. . . . Play each fragment three times . . . Play the entire dictation without interruption.²⁸

Such procedures minimize any training in selective memory. Students must learn to extract a portion of a musical passage and retain it in short-term memory, but breaking a dictation into short fragments and repeating those fragments several times will not help them learn that skill.²⁹ The only applications for breaking a dictation into fragments would be: (1) if selective listening is not a goal, or (2) to diagnose those students who have difficulties with selective listening, by testing students' performance with full-length dictations and with fragmentary ones—those who have difficulties with the full-length ones but succeed with the fragments obviously need remedial help with selective listening.³⁰ To develop students' abilities to listen

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selectively, dictations *must* exceed Miller's limit of 5 – 9 bits and be played more than once.

How many times *should* each dictation be played? A typical number of playings is three, but I have seen this range from a single playing to "as many as it takes to get it right." Theoretically, the proper number of playings should be a product of the total number of bits in the melody divided by Miller's limit of 5 – 9 bits (a bit being dependent upon the training and experience of the listener, as described above). Let us assume, for the sake of discussion, that our students' chunking abilities are at present minimal—that one note would equal one bit in their short-term memories. It would follow that a dictation of 5 – 9 notes requires one playing, a dictation of 10 – 18 notes requires two playings, and so on. In practice, when extending beyond a single playing of 5 – 9 notes, an extra playing is usually necessary to account for the task of discerning the relationships between separate remembered portions of the melody. Thus, three playings are appropriate for melodies of 10 – 18 notes. Obviously ten-note melodies are—in general—considerably easier than eighteen-note ones. However, students whose short-term musical memories achieve at the lower end of Miller's limits will be challenged by the ten-note ones; students whose memories meet or exceed Miller's upper limit will breeze through eighteen-note ones. In addition, students whose chunking abilities allow them to group notes into larger meaningful bits will require even longer melodies.

C. Understanding

It is important to keep in mind that the stages of understanding and notation will almost always be carried out on extracted portions of music after each playing, not on an entire dictation melody. Thus, if I refer to a "first pitch" or "all of the notes," I mean of that extracted portion, not the entire melody.

The purpose of separating the end of the process into two phases is to isolate the task of understanding from the complexities of notation. It is extremely important to know that a student hears the functions of the pitches in a melody without regard to their appearance in a particular key. Likewise, it is just as important to know that a student hears that a melody is in, say, triple meter and that the student hears the durations (in terms of beats) of the rhythms in that melody without regard to a particular meter, such as 3/2 or 3/4. To this end, specialized forms of communicating musical understanding must be employed that do not rely on traditional notation. In terms of pitch, we have been using such systems—e.g.,

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solmization and scale degree numbers—for years. There are similar, although somewhat less familiar, systems of rhythmic designation as well.

1. Rhythm

I will start by examining rhythm because—once a passage has been remembered—the rhythms and not the pitches should be figured out first. Any suggestion to focus on the pitches first and rhythms later³¹ works backwards: once a passage has been remembered, figuring out the rhythms provides a framework in which to place the pitches. Without any metric and rhythmic information, how much good does it do to know that “fa” occurred somewhere in the middle of a passage? In contrast, laying out a temporal framework before figuring out the pitches gives the listener the precise metric location for each pitch. Thus, unlike the memory phase during which rhythms and pitches should be processed together, rhythms should be processed before pitches during the understanding phase.

The most fundamental aspect of understanding rhythm is perception of the pulse. Students should be able to perceive the pulse of a melody without extramusical cues. Perception of the pulse should be quickly followed by grouping those pulses into meter. Students should be able to determine whether the meter of a melody is duple or triple simply by listening. Since we seek to know whether students understand metric groupings without regard to a particular meter sign, we might ask them to simply write “duple” or “triple.” But since this is one step in a multi-step process, it is wise to lay the groundwork for subsequent steps at this point. Thus, a metric framework such as Figure 4, with large vertical lines representing primary pulses and smaller vertical lines representing secondary pulses, might be used as a grid within which rhythms can be laid (here representing four measures of triple meter).

Figure 4.



It should be clear by this point that perception of both pulse and meter are fundamental and important aspects of music listening. Why, then, do many of us give out this information instead of testing for it? In revealing

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the meter of a melody before playing it we are opting out of developing ability to perceive this most basic of temporal features. This is often done by verbally stating the meter, or by counting the pulses before playing. In textbooks, the ubiquitous method is to print an answer blank comprised of a musical staff with various information including a meter sign and barlines printed on it. As an example, consider Figure 5, taken from Henry and Mobberley's *Musicianship*:

Figure 5.³² **Instructions:** Observe the given information and notate the pitch and rhythm of the melody played.



This answer blank provides the meter sign, the rhythm of the first note, and the fact that the music begins on an anacrusis. The pulse is also provided: "Small notes preceding each frame tell the student how many metronome taps will [be] heard on the tape. These cues are included in the instructor's manual and should be used for class dictation as well."³³ Henry and Mobberley are not to be singled out here; these practices are typical of most aural-skills texts.

Cues about pulse and meter are sometimes given *during* the performance of a dictation as well. These cues include emphasizing the pulse by foot tapping or by merely accenting certain notes, and revealing the meter by counting on those pulses.

In practice, it is possible to give a dictation without presenting much extra-musical information. We should only reveal those facts that are not audible. Thus, the beat unit or bottom number of the meter sign should be given in all cases (since, for example, 2/4 is audibly indistinguishable from 2/2). In addition, duple and quadruple meters usually sound alike; if it is vital that one or the other be notated, perhaps that information should be given only after the final playing or indicated as a preference only if the meter is discovered not to be triple. Finally, the distinction between compound meters and a "faster" triple meter is not audible. Again, the requirement to notate a melody in compound meter might be given later in the process, or as a stipulation in some cases only if the melody is triple at

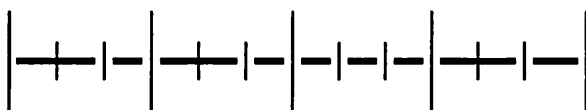
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some level. In these cases, one might even reveal that a melody should be notated in compound meter but ask the students to determine which one.

Even under these procedures, it is possible that not all correct answers will be identical. By not tapping or counting the pulse before or during the dictation, one risks receiving rhythmic augmentations and diminutions of the "correct" answer. Perhaps surprisingly, this occurs rather infrequently. In any case, it is a small risk to withstand to be sure that students are truly perceiving the pulse and meter and not merely taking their teacher's word for it.

Once the pulse and meter have been determined, it is crucial for the student to understand the rhythmic durations of a passage (in terms of beats) before notating them. To this end, some form of rhythmic syllables or graphic notation is useful. While rhythmic syllables have their uses, they are problematic in written use in that they exclude the opportunity to graphically represent the temporal relationships of rhythm as a framework for the pitches. For this reason, I prefer a form of graphic representation. For example, the opening notes of the first theme from Brahms' Second Symphony may be represented in the manner shown in Figure 6.

Figure 6.



This type of graphic representation is simple and efficient, and it serves the goal of separating rhythmic understanding from notation. In suggesting the use of graphic notation, I do not mean to complicate the process of taking dictation, nor do I intend that students should use it as a form of shorthand. Rather than complicate the process, using graphic notation makes the understanding phase explicit and offers an opportunity for teachers to examine each student's proficiency in that area. And if the use of short-term memory has been properly encouraged and developed, no student should find the need to scribble anything in shorthand while listening intelligently. A student who produces the graph shown in Figure 6 displays an understanding of the meter and rhythms of the Brahms excerpt. What remains is to translate that understanding into traditional rhythmic notation.

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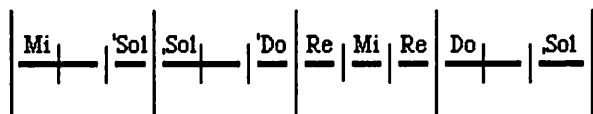
2. Pitch

Pitch must be handled similarly. It is crucial for a student to understand the functions of the pitches in a tonal melody before notating them. However, just as perception of pulse and meter is necessary to understand the rhythms of a melody, so is perception of the tonic necessary to understand the functions of the other pitches.³⁴ This is one of the most basic skills a listener should have; we should encourage its development from the first day of training.

One practice that prevents students from developing the skill of tonic identification is playing the tonic pitch or chord before performing a dictation. No one plays the tonic chord before an actual performance, so why do it in the aural-skills classroom? If the reason is to “make sure” the students know what the tonic is, then it’s time to work on that skill and not dictation. Another practice masking the problem of tonic identification is providing the name of the starting pitch or writing it on a staff before playing a dictation (see, once again, the typical answer blank shown in Figure 5). Students who have a poor sense of tonic but who are given a starting pitch will follow their noses in stepwise passages and make educated guesses about the size of leaps without perceiving the functions of the pitches. Such students may even resort to an intervallic strategy, measuring the distances between successive notes. The problem here—even if students get the right answer—is that the tonal system, the functional relationships between all pitches and the tonic, has not been internalized. Several studies have shown that tonal context plays a more important role in music perception than does interval recognition.³⁵

To express those contextual relationships, scale-degree numbers or moveable *do* solfège syllables are useful.³⁶ For example, syllables may be added to the Brahms theme as shown in Figure 7 (also note the use of small marks to indicate ascending or descending skips).

Figure 7.



The suggestion of numbers or moveable *do* is not an offhand one. The choice of a solmization system is unequivocally dependent upon the particular musical features one wishes to express. Whereas fixed *do*

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expresses absolute pitch names, scale degree numbers and moveable *do* express scale degree.³⁷ Thus, fixed *do* (or its American equivalent—singing on letter names) is useful during the next phase when translating into notation, but since our current task is functional tonal understanding in the absence of notation—and that takes place without regard to key—it is necessary at this stage to use numbers or moveable *do*.³⁸

In any case, the following discussion assumes that students have developed proficiency in the use of moveable *do*. In fact, it is very important that students become fluent with some system of functional solmization since it can serve as a tool for exploring and developing their musical understanding and expressing that understanding to others. This is one way training in sightsinging complements listening skills.

To move from identifying tonic to supplying syllables is a big leap. In practice, the process involves a number of steps. Remember that, since only a portion or passage of music has been remembered, the following steps operate only on that passage. First, after the tonic has been inferred, a starting pitch must be reckoned. Working from any point except the beginning of the remembered passage is relatively unmusical (although I don't wish to discourage the practice entirely) and, in any case, is probably unnecessary since the passage is in memory and reproducible from the beginning. Once the starting syllable has been determined, it is a simple matter to apply successive syllables to the stepwise passages and to determine a new starting syllable each time the melody leaps. In this fashion, from starting pitch and leap and through stepwise patterns, the scale degree of each pitch can be determined.

D. Notation

What remains is to take what has been heard, remembered, and understood and to notate the pitches in a particular clef and key, combined with the rhythms in a particular meter. To continue with the Brahms example, given a treble clef, tonic of D, and 3/4 meter, students should be able to take the graphic representation found in Figure 7 and notate it as shown in Figure 8.³⁹

Figure 8.



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The knowledge and skills necessary to execute this task are typically taught under a rubric such as “written theory,” either in a separate course or in separate lectures within a comprehensive musicianship curriculum. Nonetheless, they are integral to the dictation process.

Eventually, all of this—hearing, memory, understanding, and notation—must be integrated so the entire process becomes essentially instantaneous. This results in the ability to hear music and immediately form a mental image of the notation. Perhaps this is why Potter found that the best dictation-takers “began writing during the first hearing”⁴⁰—they had already mastered the individual stages and were combining them into one process. This is an ultimate goal of aural-skills training. When students are ready, challenging and rewarding drills can help them integrate the four phases. These range from calling out scale degrees, pitches, or rhythmic syllables to actually performing *while the music is sounding*.⁴¹ Students, however, who have not mastered the four phases—especially the subtleties of understanding and notation—are not ready to begin this type of mental imagery.

We may, however, move them gradually in that direction by controlling the time between playings and after the final playing. The amount of time allowed for these pauses is important. These durations can range from a fraction of a minute to many minutes, but the proper time to be allotted here is dependent upon the speed with which students can accomplish the tasks involved in memory, understanding, and notation. As students improve with these tasks, the durations between and after playings can be shortened.

It is interesting that the act of performance may be substituted for notation as the final phase in the process, even at the earliest stages of training. Thus, individual students might be asked to perform a melody rather than notate it after hearing it. This practice is valuable: relating hearing, memory, and understanding to performance is perhaps as important as relating them to notation. However, three caveats apply. The first applies to extractive listening: when performance is used as the last phase in aural exercises, human memory must play the role normally served by paper and pencil for storing information while listening. If a phrase is too long to be kept in short-term memory, a performer must find some way—upon repeated hearings—to commit successive portions of music to longer-term memory so as not to lose them while processing new material.⁴² The second caveat applies to vocalists: asking them to perform a melody by singing does not involve the understanding phase since no knowledge of pitches or rhythms is necessary to mimic a musical phrase vocally. One solution to this problem is to ask vocalists to sing on functional syllables (making the understanding of scale degrees explicit), letter names (a proc-

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ess akin to pitch notation), or rhythmic syllables (making the understanding of rhythmic proportions explicit). The third caveat applies to instrumentalists—for them, performance requires hearing, memory, and understanding of pitches but only hearing and memory of rhythms. In other words, although instrumentalists must understand the absolute pitches they reproduce they do not need any rhythmic understanding to mimic rhythms. Instructors should keep these caveats in mind lest the skills involved in extractive listening, understanding, and notation remain undeveloped.

DIAGNOSIS AND REMEDIATION

Were dictation the only activity foisted on aural-skills students, those who show initial difficulties might never improve. They would most likely produce a string of unsatisfactory papers, perhaps buoyed at some point by an increased ability to guess. But if we view dictation not only as an end in itself but also as an indicator—a sensitive canary in an aural-skills coal mine, ready to curl up and die at the slightest whiff of trouble—then we can identify those students with unsatisfactory papers and lead them to private sessions of diagnosis and remediation.

A. Hearing

Fortunately for the teacher of aural skills, few music students experience difficulties in hearing. As mentioned above, an obstacle in this area can be due to physical problems in the ear or in auditory processing. These problems should be referred to an audiologist, but such a referral should be made only after eliminating hearing problems that are behavioral and not physical. Behavioral difficulties in hearing involve the diversion of attention—as discussed above—usually through a lack of concentration or an overabundance of nervousness. The only tests for this are: 1) an interview with the student in which questions are asked about mindfulness and nerves (an unpredictable exercise, as any ethnographer will confirm), and 2) reproducing the listening experience in as relaxing and encouraging an environment as possible. This second test may be facilitated by eliminating the variables involved in understanding and notation: the student can be asked to sing back portions of a dictation-length melody without concern for syllables, rhythms, pitches, and the like. Unfortunately, the results from such hearing tests will be polluted by any memory difficulties the student might have. This is lamentable, but not prohibitive. At worst, negative results on such tests could lead to remediation for memory skills, which

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would be unproductive for a student with attention problems thus leading the teacher to work on attention instead.

A student's difficulties in paying attention can be caused by a host of problems that are well beyond the scope of this article. However, one such problem—nervousness—is so common in a performed art such as ours that it bears addressing upon discovery. I have found that nervousness in the aural-skills classroom frequently correlates with nervousness in other musical activities, especially performance. An early diagnosis of this behavior affords an opportunity to direct students towards various mental and physical relaxation techniques, possibly heading off more serious consequences in other activities in the future.

B. Memory

Before I begin to discuss the diagnosis of memory problems, let me make a few preliminary comments about using the voice as a diagnostic tool. It would be ideal if we could know just what students hear in their minds, but we can't. Thus, singing is necessary for diagnosis.⁴³ For example, students must sing to repeat a passage if we are to discover whether they can remember it at all. But we must also encourage, no, require our students to internalize this process. They must be able to hear an entire passage in their minds.⁴⁴ Indeed, this type of internalization is an essential kind of musical thinking. Well-trained musicians can hear music mentally in the total absence of audible sound,⁴⁵ and aural training can develop this ability. However, the importance of internalization notwithstanding, the necessities of diagnosis demand that students sing certain responses.⁴⁶

The most basic form of pitch memory is the recall of single pitches. The simplest test for this skill is to play various pitches and ask students to sing each one after they hear it.⁴⁷ This is such a fundamental musical skill, yet a few young musicians have some difficulty with it. A scant few can not recall any pitch, but—of those with problems in this area—most seem to have trouble only in registers other than their own vocal range. Thus, a few women have trouble with pitches in the bass register whereas a few men have trouble with pitches in the treble register. For these students, drills in making the necessary octave adjustments usually cure their problems.

In general, the best test for melodic memory is to ask students to sing back what they have heard. Initial testing should be done with short groups of 5–9 pitches. Upon encountering a student who can repeat single pitches but can not repeat longer groups, one must find the number of pitches that challenges that student. Be it two, three, or four, the student must work on

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repeating groups of that length while gradually building up to a level within Miller's limits of 5 – 9.

Subsequent testing must be done to determine if students can perform the kind of extractive listening wherein successive portions of a dictation are remembered upon repeated hearings. Students must be asked to sing back what they can remember correctly from the beginning of a dictation-length melody after one playing, then asked to sing back further portions after more listenings. Some students will show immediate difficulties remembering even the first few pitches of such melodies, even if they were quite able to remember all the pitches of shorter ones. Some have particular trouble remembering even just the starting pitch of such longer melodies.⁴⁸ Students who have these problems in the absence of other grave deficiencies often display an ability to recall the shape (and sometimes even general harmonic function) of a melody within a diatonic context without proper placement within the scale. Indeed, research has shown that the mind exhibits "a trend toward differential retention of contour and interval information with contour information more easily encoded and recognized at short [one second] delays."⁴⁹ For instance, Figure 9a shows the beginning of a melody presented to Mr. D and Figure 9b shows his sung response. This student had a clear memory of the shape of the melody, but started on the wrong scale degree.

Figure 9a.



Figure 9b.



This is often remediable through drills aimed specifically at retention of the starting pitch. Some students may even need to hum the starting pitch immediately upon hearing it to get accustomed to remembering it. Through progressively internalizing this process, such students can eventually become competent at retaining the first note of a dictation while expanding their memories to include a reasonably long first portion of the melody.

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Nonetheless, some students will learn to retain the starting pitch of a longer melody yet still be unable to recall an adequately long group of notes following that. These students must learn to focus their attention on the opening passage immediately after it has sounded, even while the rest of the melody is sounding. They should become accustomed to this skill initially by beginning to sing the first portion of the melody out loud before the rest is done. For some, this will seem awkward at first—singing one part of a melody while another is being sounded—but through progressive internalization this type of drill can lead to mastery of extractive listening skills. In this fashion, dictations longer than 5 – 9 notes act as a laboratory for developing the processes used by intelligent listeners pondering one passage while the rest of the piece continues to sound.

Related to this skill is the ability to put earlier passages of a dictation out of mind once they have been written on the page. If—after a playing or two—students have correctly notated the beginning of a melody, then keeping that beginning in short-term memory will only reduce their capacity to remember more music. Thus, students who don't stop thinking about what they have already notated find that subsequent portions of dictations become arithmetically more difficult: those who understand, and notate (for instance) the first eight notes of a melody would have to remember a total of sixteen notes to process the next eight, and twenty-four to get the next eight, and so on—unless they learn to let go of what they have already notated. This skill can be tested and drilled easily by asking students to sing back successive portions of a melody upon repeated hearings.

In general, however, students who have difficulty with short-term musical memory fall into two broad categories: 1) those who have trouble with short melodies (within Miller's limits or even shorter), and 2) those who have trouble extracting short portions from longer melodies. Remedial activities designed to increase the capabilities of each type of student differ between these two categories. As discussed above, students who can not remember short melodies must begin with patterns only as long as they can remember and gradually build up to longer ones. The best way to deliver this type of drill is from a tutor who can create melodic fragments and adjust their length as a student becomes more adept. Some students may also find that listening to prepared recordings of many of such fragments and singing them back can also help; two precautions, however, apply here. First, recordings cannot respond to a student's achievement level; they will continue to present fragments of whatever length they contain. Second, some students have an accurate sense of when their short-term memory has failed, but there are others who unwittingly sing incorrect versions of what they have heard. This latter type of student should never be left without an intelligent tutor⁵⁰ while doing memory drills lest they develop a false sense

of security. Only after experiencing the feeling of correctly repeating a large number of melodies and showing the ability to discriminate between accurate and inaccurate recall should such students be left to work on their own.

Students who cannot extract portions of longer melodies must begin with drills designed to apply their memory skills to selective listening. These, too, can be provided by a tutor who can play dictation-length melodies and ask students to sing back selected portions. Once again, prepared recordings may be used, with the same reservations. One additional type of exercise can be practiced by students who are able to sense when their short-term memories are working accurately. These students may use recordings of musical works (Haydn symphonies, for instance) as fodder for memory drills, listening for thematic passages and stopping the recording to sing back a portion of what they have heard. Some students benefit from both increased memory skills and greater familiarity with the literature through such exercises.

Research has shown that various features of a melody contribute to variations in pitch memory, including "melody length, tonal structure, melodic contour, and music perception ability."⁵¹ That all of these factors affect the results of dictation tests should be no surprise to aural-skills teachers; that they affect musical *memory* should be instructive. We must take into account all such factors when constructing melodies for dictation and we must realize that difficulty in remembering a musical passage must be remedied through memory drills, not through more dictation.

Research has also shown that factors beyond the features of a melody itself can affect memory. In various experiments, interfering tones have been presented between the time a melody is heard and the time subjects are to respond. One researcher calls the effects of such interfering tones "devastating" since subjects who were presented with such tones "performed for the most part below chance."⁵² In general, cognitive psychologists recognize the effects of interference on memory: that any new stimulus received after an initial stimulus will have a detrimental effect upon memory for that initial stimulus.⁵³ This has several important consequences. Aural-skills students encounter one consequence when music from other classrooms or practice rooms wafts in between playings of a dictation. Another consequence (discussed above) occurs when students must remember the beginning of a dictation that is too long to remember completely; they must concentrate on an initial stimulus (the beginning of the dictation) while a second stimulus (the rest of the dictation) interferes. In both cases, students find the interference of subsequent music a hindrance; in both cases, students must learn to develop their powers of focussed listening—that ability to extract and examine a portion of a

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musical experience in the face of interference from more incoming information.

Another consequence of interference occurs when students move between the two stages of memory and understanding. Because a task can interfere with memory in the same way an additional stimulus does, the mental activities necessary during the understanding stage can cause the initial memory of a musical passage to fade. Students who have problems with this typically are able to repeat a passage after hearing it, but at some point during their attempts to find the tonic, calculate the starting pitch, and determine the pulse and meter, they lose some or all memory of the passage itself. Fortunately, there is a simple cure for this problem: be certain to keep the passage in mind by simply repeating the entire item before each new task of the understanding stage is attempted. In this way—cycling between the two stages of memory and understanding—students can counter the interfering effects of intervening tasks on short-term memory.

One final note concerning the relationship between the stages of memory and understanding: while singing back a melody or while mentally repeating it, the ability to change the tempo—especially to slow it down greatly—is an important tool while trying to understand what has been remembered. A new melodic figure or some new rhythm can be figured out only through careful contemplative examination, and such examination is aided by slowing down the tempo.

C. Understanding

1. Rhythm

A teacher must first know if a student having rhythmic difficulties can perceive the pulse. But how to determine this? One might be able to glean some evidence of this skill from the results of a dictation test, but the outcome would be clouded by the vagaries of memory and notation. One might also devise some other written test that asks the student to compare the pulses in various melodies, or to determine the speed of the pulse, or otherwise furnish some written response. My opinion is that any such test would be inadequate. Perception of the pulse is not a paper-and-pencil skill; it should not be tested with paper and pencil.⁵⁴ Instead, asking the student to clap or tap or march or somehow keep time with the music is highly effective. Assuming that our goal is to determine perception of the pulse without regard to perception of the meter, marching is somewhat problematic in that it is inherently duple (“left-right-left-right . . .”).⁵⁵ Other means of expression such as conducting or counting are clearly meter-oriented and

should not be used to isolate this skill. Clapping and tapping are metrically neutral if done evenly, and are perhaps the best tools for the job. Tapping a desk top has the added advantage of providing for a smooth transition into conducting.

Remedying shortcomings in pulse perception can be challenging. Individual attention from a specialist in eurhythmics may be warranted, but this skill is so fundamental that students having trouble with it should seriously consider their suitability for a music degree.

A sense of meter can be tested verbally by asking individual students to count out loud while the music is sounding, in the classic manner with "one" referring to each primary pulse and so on. It might be tested physically through clapping or tapping (with variations of loudness, placement, etc. to represent the differences between primary and secondary pulses), but the most useful and musical application is conducting. One must be certain, however, that students have completely memorized the basic conducting patterns before they can be used as tools.⁵⁶ Once learned, the conducting patterns offer a traditional and universal means of expressing musical meter.

Conducting can be applied to metric perception in at least two ways: 1) concurrently—that is, while listening to music; and 2) retrospectively—that is, while remembering music. In the first instance, students can be asked to conduct while they listen to pieces in various meters; in the second, they must sing while conducting (so that instructors may see and hear whether they are matching both pulse and meter to the music).

Like pulse identification, metric perception is difficult to remedy. If students can identify the pulse but not the meter, they must be asked to find a "slower" pulse (i.e., downbeats). If they can switch back and forth between these two levels of stress—pulses on the one hand and downbeats on the other—then the simple act of counting the number of pulses per downbeat will reveal the metric structure. Once mastered, this technique may be abandoned rather quickly as students internalize the feeling of meter.

If students can identify the meters of various melodies, then we must move on to perceiving rhythmic proportions without regard to any specific beat unit (see the discussion of this important distinction under "THE PROCESS"). Students who are unable to graphically represent the rhythms they hear in terms of beats (as shown above in Figure 6) need remedial help. One suggestion is to tap a pencil on each vertical line (representing beats) while repeating the melody, observing the number of notes per beat. Once students have mastered this technique with simple rhythms, more complicated ones usually pose few problems.

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2. Pitch

In guiding a student through melodic dictation, one should not proceed to scale degrees, absolute pitches, or notation until certain that the student can infer the tonic in each of various melodies. There is no paper-and-pencil test for this; the most accurate measurement is a student's ability to sing the tonic after listening. Unless identified and remedied, a deficiency in this area will remain and haunt a student during other listening activities.

One might think that every music student at the college level would have no trouble audibly identifying the tonic of a musical passage. For most students this is true; for them it is merely the act of making this step explicit that is valuable. But there are students who do find it difficult; for them there are procedures to recommend. One must first determine whether they can reproduce the pitches of the diatonic collection used in a melody.⁵⁷ This can be done by asking them to sing any pitch from what they have heard (perhaps the first or last, primacy and recency exhibiting such strong recall) and to sing up or down through the other pitches.⁵⁸ If they are capable of singing those pitches, we know they have retained the diatonic collection but we do not yet know whether they can infer the tonic from the specific passage they have heard.⁵⁹ Students who do not correctly sing the tonic pitch can often be helped by a suggestion to sing up or down through the scale, stopping when they reach the tonic.⁶⁰ Students who fail at this—in the absence of vocal problems—probably either don't understand the concept of tonic or lack a sufficient amount of acculturation to infer it intuitively.

For some students, discerning the proper scale degree of a starting pitch is at first a difficult task. They may have heard and remembered a passage of music, and they may be able to sing the tonic pitch of a melody, but some students will initially balk at putting a syllable to the first note and other students will merely guess. The task here is to calculate the syllable of an unknown pitch, given the sound of that pitch and the tonic. This is a task for which interval identification seems appropriate: sing the tonic, sing the unknown pitch, and calculate the scale degree based on the distance between the two. If students are well-trained in interval identification, this approach works. However, this asks students to step outside of the tonal system for a moment to measure the absolute distance between the two pitches. For that reason, even though it might seem more awkward, I prefer that students connect the two pitches in a stepwise or triadic fashion using the pitches of the diatonic collection presented in the melody. This keeps them within the pitches of the tonal system and helps to develop their sense of syllable. As that sense develops, they can abandon the stepwise and triadic connections and move directly to naming the scale degree of the unknown pitch.

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In connecting an unknown pitch to tonic, it is important for students to move in the proper direction. It seems that many students instinctively try to sing a scale from tonic to the unknown pitch. This often leads to problems because the unknown pitch is usually more unstable in a student's memory. Thus, some students will sing the unknown pitch, sing tonic, then sing a scale and proceed right past the unknown pitch since it is merely one of many in the scale. A much more successful strategy is to sing the unknown pitch and then sing up or down through the scale until the tonic is reached, remembering the number of scale degrees covered.⁶¹ It would be better if the technique of moving from tonic to unknown pitch were more successful since students would be singing the proper syllable for each pitch along the way rather than almost blindly moving through the scale, but in my clinical experience the former process is much less effective because of the instability of the unknown pitch in a student's memory.⁶²

Students who have trouble applying syllables to subsequent pitches must first be tested on their ability to ascertain melodic contour. This can be tested by asking individuals to sing the melody while following its shape with their hand in the air or drawing it on a piece of paper.⁶³

After it is certain that students understand melodic contour, one must be sure they can distinguish between steps and leaps. Various methods of testing this might be used. I prefer to ask them to continue to trace the shape of the melody with a hand in the air while indicating steps with small motions and leaps with large ones; this method is rather coarse, but effective.

If students understand melodic contour and can distinguish between steps and leaps, then it is a simple matter of treating each leap as a move to a new starting syllable and applying successive ascending or descending syllables to the stepwise materials which might follow them. Upon encountering a leap, students must decide whether to calculate the next syllable from the tonic or from the preceding pitch. In general, it is better to calculate from the tonic: it reinforces a sense of scale-degree function within the tonal system and prevents any earlier errors from affecting syllables after the leap.⁶⁴

Of course, our goal here is for students to develop an automatic sense for the syllable of each pitch. That will come through constantly calculating the syllables of pitches, through frequent sight-singing, and other drills,⁶⁵ for now, the process of figuring these syllables will keep students traveling across, pondering, and learning the territory of the diatonic collection.⁶⁶

Eventually, there develops a gestalt process: hearing patterns such as triads, scale patterns, and sequences as units in and of themselves, so that, for instance, students hearing C, E, G wouldn't have to hear a starting pitch and two skips, each of which must be figured as a new starting pitch. This

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gestalt process comes later, after students have assimilated and processed enough such figures. There are those who feel that students must assimilate all patterns before perceiving them,⁶⁷ but the process of taking apart an unfamiliar pattern and figuring it out is one of the most valuable skills imparted in the aural-skills classroom. Armed with that skill, students leave the classroom ready to tackle any new listening experience rather than waiting to see if it matches one in a taxonomy of many patterns they have already heard.

D. Notation

The very act of writing down what has been properly remembered and understood offers room for mistakes. In the findings of one researcher, "notating was, in fact, a task that seemed to increase dictation errors."⁶⁸ Students who are weak in the process of notating a dictation melody usually suffer from one or both of two types of deficiencies: 1) a lack of understanding of some or all of the symbols and theoretical principles involved in notation, and 2) a slowness or inefficiency in translating their understanding of a passage into notation. The first type of problem requires more conceptual training, which should be administered immediately, even if this is under the purview of a separate course in written theory taught by another teacher. The second type requires drill and practice in the skill of quickly and efficiently rendering the music symbols that represent the rhythmic durations and scale degrees ascertained during the understanding phase. Remedial drills in this area can be isolated from the other aspects of dictation by providing students with rhythm and pitch information to be translated into actual music notation. For example, pages of graphic representations like the one found in Figure 7 can be offered, perhaps under timed control, to be written in proper notation. Such drills make efficient use of a student's time, since work is not wasted on hearing, memory, and understanding.

THE DIAGNOSTIC SESSION

One of the problems encountered in diagnosing students' aural skills stems from the major piece of evidence used to evaluate those skills: written notation as a response to dictation. It is often impossible to tell—merely from that written notation—whether errors occur in memory, understanding, or notation. For instance, consider the dictation melody shown in Figure 10a. If a student were to respond with the notation shown in Figure

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10b, we would have no way of knowing whether the mistake (albeit a small one!) in measure 6 appeared because the student remembered it that way, remembered it correctly but incorrectly calculated the scale degree of the next-to-last note, or remembered and understood it properly but wrote down the wrong absolute pitch on the staff. All three types of mistakes could result in such a single wrong answer.

Figure 10a.

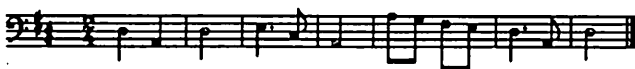
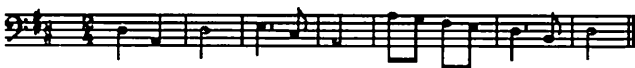


Figure. 10b.



If notation as a response to dictation is so impoverished as to produce evidence only that a problem exists—but not which one—then two questions arise: 1) why are we using written dictation at all; and 2) what should we do in addition to (or instead of) written dictation to get more evidence?

In answer to the first question, dictation serves at least two important roles that cannot be left unfilled. First, it is the only activity that combines all four phases of perception into a single operation. This is no small accomplishment. In many respects, it remains our best stepping stone towards that ideal goal of integrating listening with understanding and notation. Second, since dictation combines all four phases into one activity, it provides a means of drilling and testing large groups of students (by “large” I mean “greater than one”) on all the cognitive skills involved in those four phases. In this manner it can serve as a kind of pedagogical triage, separating those who have no difficulty from those who do.

Once we have identified students with difficulties, the second question still remains: what can we do next? The answer is to apply all of the techniques discussed above under the heading “DIAGNOSIS AND REMEDIATION.” I schedule individual meetings with students who do not perform well on dictation tests. At those meetings, I ask them to perform the following tasks (distilled from all the methods of diagnosis discussed above):

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Memory of Pitch and Rhythm

Repeat pitches after one listening.

Repeat short pitch patterns (3 – 5 notes) after one listening.

Repeat short melodies (5 – 9 notes) after one listening.

Repeat short sections (5 – 9 notes) of longer melodies (10 – 18 notes)—the first part after one listening, and later part(s) after subsequent listenings.

Understanding of Pitch

Find the tonic from each of various short melodies (5 – 9 notes).

Identify the scale degrees (solfège syllables) of starting pitches from various short melodies (5 – 9 notes).

Identify the scale degrees of all pitches in short melodies (5 – 9 notes).

Notation of Pitch.

Notate the pitches of short melodies (5 – 9 notes) in various keys and clefs.

Understanding of Rhythm

Tap the pulse on a desk top while repeating short melodies (5 – 9 notes).

Conduct the meter while repeating short melodies (5 – 9 notes).

Indicate the rhythmic proportions of short melodies (5 – 9 notes) using the proportional notation shown in Figure 6.

Notation of Rhythm

Notate the rhythms of short melodies (5 – 9 notes) in various meters.

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Notation of Rhythm & Pitch

Notate the rhythms and pitches of longer melodies (10–18 notes) upon successive listenings in various keys, clefs, and meters.

Students must perform each of these tasks in order; I stop them when they cannot consistently perform one of the tasks. When that occurs, it is clear that they have yet to develop that particular skill and thus remediation is in order—specific, goal-oriented remediation that will develop that skill. I have discussed at least one type (and in some cases several types) of remedial activity for each of the tasks/skills listed above. Readers may wish to invent others. Regardless of which particular activity is chosen, it must improve the skill needing development.⁴⁹ Simply prescribing more practice dictation will leave the skill buried in a complex series of processes; in addition, students can perform many more task-oriented drills in the time it takes to work out one practice dictation. Remedying individual skills is both effective and efficient.

PROPOSALS FOR MORE EFFECTIVE AURAL-SKILLS PEDAGOGY

I suspect that many of the typical dictation practices criticized in this article have been passed on for generations without a great deal of reconsideration on the part of their practitioners. But now that we have a better understanding of at least some of the skills that dictation can develop, a summary of how those findings should affect our teaching seems in order. We should:

Excerpt or compose dictation melodies with attention to the following factors: the restrictions of short-term memory, chunking, the number of playings, and the time between and after playings.

Know the pedagogical goal of a particular dictation. If the dictation won't achieve that goal, find a technique that will.

Break the process into component stages; when a student makes a mistake, be able to tell whether that mistake was due to an error of memory, understanding, or notation.

Perform diagnosis on students who aren't doing as well as they ought to.

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Start with the basics, but know what the basics are when it comes to aural perception of tonal music (e.g., the tonic, pulse, and meter rather than intervals and quarter notes).

Remedy only those areas that need remediation; use reliable and profitable remediation techniques.

Some readers might be put off by the elementary level of some of this, but teachers are encountering problems in aural training even at leading music schools in the country. One writer has noted that, “unlike the English major, who enters college with many years of technical study of language behind him, the freshman who enrolls in a theory class quite possibly has had no exposure to even the descriptive vocabulary of music.”⁷⁰ Certainly, most freshmen have had even less explicit training in aural skills. If all students were competent at taking dictation when they began their studies, then this article—and at least some of the research on which it is based—would never have been undertaken. But since we must deal with aspiring professionals who have yet to develop many of the skills discussed here, starting with the fundamentals and remedying when necessary offer the best means of developing those skills.

RENEWED JUSTIFICATIONS FOR DICTATION IN THE CURRICULUM

At the beginning of this article, I contended that the skills necessary to take melodic dictation are important musical skills. I further contended that melodic dictation—when properly taught—can be the best means of developing those skills as a preliminary to applying them to a variety of listening situations at more advanced levels.

The first of those skills—an ability to hear attentively—is obviously crucial to all musicians. The second skill—actually a group of skills involving musical memory—is equally important. The third skill—an even more complex group loosely labeled “understanding”—is necessary for any intelligent listener. And the last skill—notation—is fundamental to Western musical communication. Each of these skills is necessary for survival not only in the aural-skills classroom but in the musical world at large. Each skill must be tested, developed, and tested again to be sure of its cultivation.

We now see that dictation helps to develop attentive hearing, short-

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term musical memory, focussed concentration on specific passages, and an understanding of the fundamentals of pulse, meter, and tonality, as well as traditional notions of rhythm and pitch discrimination and notation. By bringing the presentation of dictation melodies closer to realistic musical experiences—by not providing a starting pitch or sounding the tonic before playing, by not counting the meter while playing, by not breaking the dictation down into short sections—we offer the opportunity for our students to develop listening skills they may use in their lives beyond the doors of the aural-skills classroom.

NOTES

¹This article is based in part on a paper entitled "Melodic Dictation and Music Cognition" delivered to the annual meeting of the Society for Music Theory, Austin, 1989.

²The most comprehensive discussion appears in Michael Rogers, *Teaching Approaches in Music Theory* (Carbondale, IL: Southern Illinois University Press, 1984), 100-126.

³Gary S. Karpinski, "Five Recent Sight Singing Texts," *Journal of Music Theory Pedagogy* 2 (1988): 275-96; and "Ear Training and Integrated Aural Skills: Three Recent Texts," *Journal of Music Theory Pedagogy* 3 (1989): 127-49.

⁴Leo Horacek and Gerald Lefkoff, *Programmed Ear Training*, 2nd edition (San Diego: Harcourt Brace Jovanovich, 1989), vol. I, p. 1.

⁵Bruce Benward, *Ear Training: A Technique for Listening* (Dubuque, IA: Wm. C. Brown, 1987), *Instructor's Manual*, p. xiii.

⁶See, for example, Gary Potter, "Identifying Successful Dictation Strategies," *Journal of Music Theory Pedagogy* 4 (1990): 63-71; and Rosemary N. Killam, "An Effective Computer-Assisted Learning Environment for Aural Skill Development," *Music Theory Spectrum* 6 (1984): 52-62.

⁷Rogers, *Teaching Approaches*, 116-17.

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⁸Ronald Thomas, "CAI—Its Current Status and Uses," Paper presented at the MENC Northwest Division conference, 1989.

⁹John A. Sloboda, *The Musical Mind: The Cognitive Psychology of Music* (Oxford: The Clarendon Press, 1985), 174-75.

¹⁰Benward, *Ear Training*, 2.

¹¹Benward, *Ear Training*, 65.

¹²Benward, *Ear Training, Instructor's Manual*, 49, no. 6.

¹³Benward, *Ear Training, Instructor's Manual*, 82, no. 15.

¹⁴George Miller, "The Magical Number Seven plus or minus two. Some Limits On Our Capacity For Processing Information," *Psychological Review* 63 (1956): 81-97. One experimental study that tested Miller's limit in a musical context is reported by Hugo D. Marple in "Short Term Memory and Musical Stimuli," in *Psychology and Acoustics of Music: A Collection of Papers*, ed. Edward P. Asmus, Jr. (Lawrence, Kansas: Division of Continuing Education, University of Kansas, n.d.): 74-93. Marple found that "the retention of new musical materials for most children and adults falls within the expected limits for short term memory as defined by Miller" (p. 78).

¹⁵Miller, "The Magical Number Seven," postulates the idea of chunking. Peggy A. Long discusses the musical implications of chunking in "Relationships Between Pitch Memory in Short Melodies and Selected Factors," *Journal of Research in Music Education* 25 (1977): 272-82. See especially p. 273.

¹⁶For some instructive examples of chunking in connection to the repertoire see Potter, "Dictation Strategies," 68.

¹⁷Marple, "Short Term Memory and Musical Stimuli," reports that "a relatively small percentage of persons are capable of chunking melodic materials at first hearing in order to exceed Miller's limits" (p. 80).

¹⁸David B. Williams, "Short-Term Retention of Pitch Sequence," *Journal of Research in Music Education* 23 (1975): 64.

¹⁹The discussion below concerning the number of times a dictation is played addresses the specific relationship between melody length and number of playings.

²⁰Marple reports in "Short Term Memory" that "it would appear that rhythm added to a musical phrase enables a person to retain one additional melodic bit in short term memory" (p. 78). Thus, it is *easier* to remember both pitches and rhythms than to remember pitches alone.

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²¹A typical suggestion of this type can be found in Robert D. Levin and Louis Martin, *Sight Singing and Ear Training Through Literature* (Englewood Cliffs, NJ: Prentice-Hall, 1988), 17: "Develop the habit of writing while each fragment is played."

²²Potter, "Dictation Strategies."

²³*Ibid.*, 68.

²⁴Rogers, *Teaching Approaches*, 100.

²⁵David B. Williams, "Auditory Cognition: A Study of the Similarities in Memory Processing for Music Tones and Spoken Words," *Council for Research in Music Education Bulletin* 71 (Summer, 1982):40.

²⁶Randall G. Pembroke, "The Effect of Vocalization on Melodic Memory Conservation" (Tallahassee, FL: Center for Music Research, Florida State University, n.d.), typewritten.

²⁷In spite of my criticisms of this single conclusion, I highly recommend Potter's informative article to any interested reader.

²⁸Levin and Martin, *Sight Singing and Ear Training*, Teacher's Manual, 16-17.

²⁹Also see my comments regarding Levin and Martin's procedures in Karpinski, "Ear Training and Integrated Aural Skills," 139-41.

³⁰Also see the discussion under "Diagnosis and Remediation" below.

³¹For example: "The student concentrates on the pitches the first time and the rhythm on the second," Levin and Martin, *Sight Singing and Ear Training*, Teacher's Manual, 17.

³²Earl Henry and James Mobberley, *Musicianship: Ear Training, Rhythmic Reading, and Sight Singing*, 2 volumes (Englewood Cliffs, NJ: Prentice-Hall, 1986), 104 [No. 2].

³³Henry and Mobberley, *Musicianship*, Instructor's Manual, 16.

³⁴Those who possess absolute pitch can, of course, immediately label pitches without understanding their functions. I would nonetheless argue that even they gain an invaluable, richer understanding of tonal music through the kind of functional listening described here.

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³⁵Merton Shatzkin—after surveying a dozen experimental studies of contextual and intervallic perception—reports that “because these studies, with the exception of Johnson, found significant context effects, it is surprising that both research and ear-training methods still concentrate on interval perception outside, rather than inside, a context.” See “Interval and Pitch Recognition in and out of Immediate Context,” *Journal of Research in Music Education* 29 (1981): 111-12. In “Context Effects on Melody Recognition: Scale-Step versus Interval Representations,” *Music Perception* 3 (1986), W. Jay Dowling found that “the scale steps of melodic pitches are inseparable from their tonal functions, which in the diatonic tonal system carry their musical meanings. Thus, it seems reasonable to suppose that the moderately experienced listeners have access via scale-step representation to deeper levels of musical meaning than inexperienced listeners using surface-level interval representations.” (p. 294) In *Advanced Music Reading* (Tucson, AZ: Sonora Music, 1975), William Thomson concludes that “attempting to imagine the two pitches of an interval exclusive of any context beyond themselves is like trying to imagine two points in vision without spatial reference. Rigorous attempts at either seem equally fruitless; both must occupy positions in some form of auditory or visual background of space-time.” (p. x) For more on the subject of intervallic versus functional listening, see Rogers, *Teaching Approaches*, 110, 112, 114-15; and Michael Rogers, “Beyond Intervals: The Teaching of Tonal Hearing,” *Indiana Theory Review* (Spring 1983): 18-34. Also see the brief discussion of calculating starting notes under “Diagnosis and Remediation” below. Of course, intervallic strategies play a much more important role in atonal music, but this entire article assumes the tonal system as a primary goal of teaching.

³⁶Although the two systems are functionally equivalent, for the purpose of discussion I will use moveable *do*.

³⁷Steve Larson presented an exhaustive investigation of the various solfège systems and how they explicitly model various aspects of pitch structure in “Solfège Systems and Integrated Music Learning,” a paper presented to the twelfth annual meeting of the Society for Music Theory, Austin, Texas, October, 1989.

³⁸It is not impossible to employ both types of systems—one for understanding and another for notation—but one must be careful about precisely which form of each type is taught. Using both fixed and moveable *do* courts disaster since they use the same labels for different purposes. Using letter names and either numbers or moveable *do* applies distinct labels in separate circumstances, and is therefore preferable. Letter names are also preferable to fixed *do* in English-speaking countries since letter names are the labels English speakers normally use. Indeed, the fixed-*do* labels of Romance languages literally translate from “do, re, mi” to “C, D, E.” In other words, when a native speaker of a Romance language says “do,” that label is inextricably tied up with a particular absolute pitch, the one we call “C” in English. Therefore, unless fluent communication with speakers of Romance languages is a primary goal, English-speaking students should learn letter names for absolute pitches.

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³⁹The reader should recall that this entire process has been applied to a remembered chunk of music. While taking dictation, the process may now restart with a new chunk after another playing.

⁴⁰Potter, "Dictation Strategies," 68.

⁴¹This is a process called "shadowing" (nearly simultaneous repetition) by cognitive psychologists, distinguished from "echoing" (imitation after the fact). See J.M. Pickett, "Shadows, Echoes, and Auditory Analysis of Speech," *Speech Communication* 4 (1985): 19-30. William D. Marslen-Wilson, "Speech Shadowing and Speech Comprehension," *Speech Communication* 4 (1985): 55-77 concludes that "mapping from sound onto meaning is rapid, efficient, and apparently continuous; that, in effect, we can understand speech word by word as we hear it" (p. 72). Shadowing is also used in training simultaneous translators. At the beginning of their studies, they practice repeating what speakers say in the same language at the same time. Translation instructors recognize the dangers of this exercise, however: Wilhelm K. Weber, *Training Translators and Conference Interpreters* (Orlando: Harcourt Brace Jovanovich, 1984), notes that it "must not be carried on for too long, as it consists of a word-for-word repetition, which is precisely what we expect the accomplished interpreter to avoid" (p. 41). When working with notation, students taking dictation are similar to language translators—in this case they are translating sound into symbol. Thus, when taking dictation, students must—like simultaneous translators—lag somewhat behind as they make sense of what they hear. They should avoid writing while listening as the translator avoids word-for-word repetition.

⁴²John A. Sloboda and David H. H. Parker, found that—on successive repetitions of long melodies (the example central to their report contains twenty-nine notes)—"subjects do not show an improvement in performance over the six trials on any of our measures. Some recalls get longer, but they do not get any better," in "Immediate Recall of Melodies," in *Musical Structure and Cognition*, ed. Peter Howell, Ian Cross, and Robert West (London: Academic Press, 1985), 160.

⁴³With this requirement, we run the risk of letting vocal limitations interfere with the process. However, once students adjust to the fact that no one in the aural-skills classroom must sound like a professional singer, and once those with small vocal problems (like difficulties making register adjustments) overcome those obstacles, the mechanism of the voice rarely gets in the way of diagnosis. In any case, the singing voice is an important tool for all musicians; music students must therefore learn to use it well.

⁴⁴Internalization applies to other processes as well, such as remembering single pitches and finding the tonic.

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⁴⁵Cf. the notion of "audiation" in Edwin Gordon, *Learning Sequences in Music: Skill, Content, and Patterns*, 1989 edition (Chicago: GIA Publications), 7-18.

⁴⁶Using the voice as a diagnostic tool for *harmonic* listening is much more problematic. Although beyond the scope of this article, let me mention that even while teaching harmonic dictation one can use the voice as a means of checking at least some of what students have heard and remembered.

⁴⁷This is slightly different from the skill of matching pitches, which involves simultaneous feedback and correction. Repeating pitches also requires a small amount of pitch memory. If necessary, students should be tested for pitch matching as well pitch memory.

⁴⁸On the basis of his research presented in "Short-Term Retention of Pitch," David B. Williams concludes that "A musician's accuracy of recall for the first pitch (primacy) in a melody . . . is dependent not as much on the time as on the item decay. . . . The amount of information loss due to time is small compared to the amount of loss due to an increase in melody length" (p. 63).

⁴⁹Lucinda A. DeWitt and Robert G. Crowder, "Recognition of Novel Melodies after Brief Delays," *Music Perception* 3 (1986): 271. See also W. J. Dowling and J. C. Bartlett, "The Importance of Interval Information in Long-Term Memory for Melodies," *Psychomusicology* 1 (1981): 30-49.

⁵⁰To date, with regard to such memory drills, the term "intelligent tutor" refers only to human beings. It is my express hope that pitch-tracking devices controlled by artificially intelligent computer software will soon be able to evaluate the sung responses of students and react accordingly. I presented a paper on this topic entitled "The Pedagogical Uses of Pitch-Tracking Hardware in Computer-Assisted Instruction in Music" at the thirty-second annual meeting of the College Music Society, St. Louis, 1989.

⁵¹Long, "Relationships Between Selected Factors," 272.

⁵²Williams, "Auditory Cognition," 41.

⁵³Indeed, research has shown that interference and not merely the passage of time causes forgetting. See Judith Spencer Reitman, "Mechanisms of Forgetting in Short-Term Memory," *Cognitive Psychology* 2 (1971): 185-95.

⁵⁴In fact, paper-and-pencil tests would be inadequate for many of the skills discussed here. This critical view of written tests in relation to musical skills is derived from Howard Gardner, *Frames of Mind: The Theory of Multiple Intelligences* (New York: Basic Books, 1985). See especially pp. 3-4.

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⁵⁵Roger Graybill offers one solution (after Lisa Parker) which may give marching a triple feel in "Towards a Pedagogy of Gestural Rhythm," *Journal of Music Theory Pedagogy* 4 (1990): 18. Nonetheless, our goal at this point is to test perception of the pulse without perception of meter; neither duple nor triple marching can do that.

⁵⁶Potter, "Dictation Strategies," 67.

⁵⁷Because much of the diagnosis concerning matters of pitch uses the voice as a tool, the following discussions assume that students have been tested for basic pitch-matching and sight-singing abilities.

⁵⁸This can be asked in a number of ways. The findings of ethnographers—and my clinical experience—suggest something neutral such as "Sing up or down from there."

⁵⁹For a summary of research into just *how* a listener infers the tonic of a passage, see David Butler, "Describing the Perception of Tonality in Music: A Critique of the Tonal Hierarchy Theory and a Proposal for a Theory of Intervallic Rivalry," *Music Perception* 6 (1989): 219-41. Regardless of whether the reader agrees with Butler's proposed theory, this article offers an excellent review of the literature on the topic. A recent study by Robert J. West and Roz Fryer, "Ratings of Suitability of Probe Tones As Tonics after Random Orderings of Notes of the Diatonic Scale," *Music Perception* 7 (1990): 253-58, concludes that "the diatonic set does not reliably lead to recognition of the tonic regardless of the order of the notes" (p. 258). Thus it seems that the order—and presumably metric placement and other structural relations—of the notes in a melody creates tonal function. Once again the onus falls on aural-skills teachers to create or excerpt melodies carefully, with special attention to tonal clarity or ambiguity in relation to the achievement level of their students.

⁶⁰Although either up or down will work, singing down to the tonic is often less problematic. Perhaps this has to do with the fact that many students think of a scale as beginning (i.e., moving away from the tonic) while ascending, and ending (i.e., approaching the tonic) while descending.

⁶¹As noted above in the discussion on inferring the tonic, proceeding either up or down to the tonic will work but descending seems to work better.

⁶²Once students are comfortable with finding the tonic and determining the scale degree of the starting pitch, these two steps may be combined. Students can sing the starting pitch and connect it to the tonic in one pass—thereby finding the tonic and measuring the distance to it from the starting pitch.

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⁶³I have encountered only a few students who made frequent mistakes of direction (not due to memory) while taking dictation. Of those students, only one sought to correct her problems in a concerted way. It turned out—upon diagnosis by moving her hand to follow the melodic shape—that she was what might be called dyslexic with respect to pitch. She overcame her problem through drills during which she paid careful attention to the physical changes in her larynx in relation to the direction of her hand motions. She was able to continue her success even after abandoning her vocalizations and hand motions, internalizing the entire process.

⁶⁴During diagnosis, it is often more preferable for students to sing while applying solfège syllables to a melody than to have them rattle off a spoken or written list of those syllables. Not only is it more musical, but—if they are careful and correct—it will reinforce the connections between sound and syllable.

⁶⁵See the suggestions in Rogers, *Teaching Approaches*, 114-15.

⁶⁶For students who need work on understanding but not on memory, see the drill called "familiar-tune dictation" in Rogers, *Teaching Approaches*, 117.

⁶⁷The main proponent of this idea is Edwin Gordon. See, for example, Gordon, *Learning Sequences*.

⁶⁸Jack A. Taylor and Randall G. Pembroke, "Strategies in Memory for Short Melodies: An Extension of Otto Ortmann's 1933 Study," *Psychomusicology* 3 (1984): 33.

⁶⁹More experimental and clinical research is needed with regard to particular methods of remediation. Perhaps the pages of this and other journals will see such studies in the future.

⁷⁰Bruce B. Campbell, review of *Guidelines for College Teaching*, by John D. White, in *Journal of Music Theory* 26 (1982): 356.

"SEND HELP!": AURAL SKILLS INSTRUCTION IN U.S. COLLEGES AND UNIVERSITIES

RANDALL G. PEMBROOK

H. LEE RIGGINS

The two most critical issues in teaching aural skills are methods and materials. The primary purpose for this study was to provide ear-training teachers with basic information about current methods and materials for teaching aural skills in colleges and universities in this country. The collection and dissemination of this kind of data is a necessary first step toward future experimental studies comparing the efficacy of different teaching methods (e.g., fixed-*do* versus movable-*do*). Such initial descriptive work will also reveal the uniformity or diversity of philosophies held by college faculty regarding aural-skills instruction. A secondary purpose for the study was to compare results with earlier studies to identify changes in aural-skills instruction in the last decade.

Related studies were conducted by Irma Collins in 1979 and Rosemary Killam in 1987. Collins sent surveys to 346 colleges and universities whose music departments held full membership in the National Association of Schools of Music.¹ (233 schools responded.) In addition to analyzing pedagogical attitudes and curricular trends, her study revealed that movable-*do*, scale-degree numbers, and the neutral syllables "loo" and "lah" were used most often to teach sight-singing.² Music of the common-practice period was cited as the staple of the sight-singing repertory and *Music for Sight Singing* by Robert Ottman³ was the textbook of choice among sight-singing instructors.⁴ Comprehensive Musicianship and "integrated theory classes" were the curricular norms in 1979.⁵

In 1987, Rosemary Killam mailed surveys to 127 U.S. colleges and universities listed in *The College Music Society Directory of Music Faculties in Colleges and Universities, U.S. and Canada, 1984-86* as offering graduate degrees in either theory or composition.⁶ (67 institutions responded.) The purpose of Killam's study was to determine the most-used theory and

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aural-skills textbooks in U.S. colleges and universities. Like Collins, Killam found that Ottman's *Music for Sight Singing* was the most-used sightsinging textbook. *A New Approach to Sight Singing* by Sol Berkowitz, Gabriel Frontrier and Leo Kraft was the second most-used sightsinging textbook (21 institutions vs. 22 for Ottman).⁷ *Ear Training: A Technique for Listening* by Bruce Benward was cited as the most-used textbook for ear training by instructors who did not use their own materials for dictation practice.⁸ Unlike Collins' survey, Killam's revealed that most aural-skills instructors used materials they had developed rather than a commercially published textbook. All but four of the institutions that participated in Killam's survey requested copies of the results "confirming [her] hypothesis that there is a nationwide need for [this] information"⁹

During this study, several research questions were formulated including:

1. What types of organizational approaches are used to administer the logistics of aural-skills classes (are there separate classes for aural skills? How often do they meet?, etc.)?
2. What materials are being used to teach sightsinging, how are they selected, and what do teachers think of them?
3. What methods (e.g., scale-degree numbers, movable *do*, etc.) are being used to teach sightsinging and how are they selected?
4. What materials are being used to teach dictation?
5. What materials are being used to teach error detection? (Error detection was defined as the ability to recognize discrepancies between notation and performance.)
6. Is class time divided evenly between sightsinging, dictation, error detection, and recognition/identification?
7. To what extent are computers being used to develop aural skills?
8. What computer materials are being used to develop aural skills and what do teachers think of them?

"SEND HELP"

To collect data, a survey instrument was designed according to guidelines outlined by Dillman.¹⁰ To guarantee the validity and clarity of proposed survey questions, a copy was sent to fifteen colleagues who were either teaching or supervising aural-skills instruction at colleges and universities in various parts of the United States. Once the content had been validated by this group, a copy was sent to all coordinators of music theory at colleges and universities in the country that offer any type of baccalaureate degree in music. According to the College Music Society's *Directory of Music Faculties in Colleges and Universities, U.S. and Canada* (1988-90), this group included 908 schools.

Approximately two weeks after the survey had been mailed, a follow-up postcard was sent reminding them of the survey and outlining procedures to follow if they had not received it. From the original list of 908 schools, 336 institutions representing 45 different states responded (37%). Of these 336, 30 contained single or multiple blanks leaving 306 useable returns that translated into a margin of error of + 4%.

The first research question, which dealt with approaches for organizing aural-skills classes, included several subtopics. The first one addressed separate classes for aural-skills instruction. 60% of those schools responding schedule separate classes for aural-skills training while 39% incorporate aural skills into another class such as "written theory." The remainder (1%) did not teach aural skills, *per se*, in any class but did not report evaluating it as part of another class. Separate freshmen aural-skills classes typically included 100 minutes per week of instruction (61%) while 16% meet for 150 minutes per week. (The range was from 50 to 250 minutes per week.) Overall responses averaged 177 minutes of instruction per week. Sophomore aural-skills classes were similar: 57% reported 100 minutes of instruction per week and, again, 16% reported 150 minutes. (The mean average was 111 minutes; the range was 50-250 minutes per week.) Typical institutional degree requirements (75% of those reporting) included four semesters. Only 4% of the separate classes were further subdivided into specific classes for one aural skill (e.g., sightsinging). Including graduate teaching assistants, the average number teaching aural-skills at a given institution ranged from slightly under two at schools below 50 music majors to nearly seven at institutions above 200 majors.

The second research question addressed what materials are being used for sightsinging. Table 1 indicates there are three principal texts: *Music for Sight Singing* by Ottman; *A New Approach to Sight Singing* by Berkowitz, Frontrier, and Kraft; and *Sight Singing Complete* by Bruce Benward.¹¹ Respondents were asked to rate each text on a 1-5 scale with 1 representing

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"strong" and 5 representing "weak." All averaged a rating of approximately 2. Not surprisingly, at most schools where more than one instructor teaches sightsinging and ear training, the same text is used across multiple sections. Only 31% use different texts for multiple sections.

Table 1. Sightsinging Textbooks

TEXT	AUTHOR(S)	<i>n</i>	RATING*
1. <i>Music for Sight Singing</i>	Ottman	97	1.97
2. <i>A New Approach to Sight Singing</i>	Berkowitz et al.	70	1.82
3. <i>Sight Singing Complete</i>	Benward	67	2.38
4. <i>Music for Sight Singing</i>	Benjamin et al.	15	1.87
5. <i>Ear Training and Sight Singing</i>	Lieberman	11	2.18
6. <i>Rhythmic Training</i>	Starer	10	1.90
7. <i>Elementary Training for Musicians</i>	Hindemith	10	1.70
8. <i>Fundamentals of Sight Singing and Ear Training</i>	Fish	10	2.10

*1-5 scale w/1=strong

The third question attempted to determine what systems or methodologies are being used to teach sightsinging. Table 2 shows that, overall, the use of scale-degree numbers where 1 is tonic in major and minor was the most frequent response. Because respondents were allowed to check *all* of the systems they were using, it was decided to calculate percentages with the number of respondents (Column 2) and the number of total responses (Column 3) as the denominator. Therefore, Column 2, which totals more than 100%, shows the percentage of people who use each system but not necessarily that system alone. Column 3 lists the percentages of all responses for a given system.

"SEND HELP"

Table 2.

FRESHMAN

<i>n</i>	% of 279 respondents	% of 518 responses
122	44	24 Scale-degree numbers (1=tonic in major and minor)
98	35	19 Movable- <i>do</i> (<i>do</i> =tonic in both major and minor)
96	34	19 Neutral syllable such as "lah"
89	32	17 Moveable- <i>do</i> (<i>do</i> =tonic in major; <i>la</i> =tonic in minor)
33	12	6 Inflected letter names (e.g., "G-sharp")
27	19	5 Fixed- <i>do</i> with chromatic inflections (<i>do</i> =C, <i>di</i> =C# etc.)
18	6	3 Non-inflected letter names (e.g., "G" for G and G#)
15	5	3 Fixed- <i>do</i> without chromatic inflections (<i>do</i> =C and C#)
14	5	3 Scale-degree numbers (1=tonic in major; 6=tonic in minor)
6	2	1 Another system (e.g., C=1, C#=2, D=3, etc.)

SOPHOMORES

<i>n</i>	% of 279 respondents	% of 518 responses
125	45	23 Scale-degree numbers (1=tonic in major and minor)
111	40	21 Neutral syllable such as "lah"
95	35	18 Movable- <i>do</i> (<i>do</i> =tonic in major and minor)
78	28	15 Moveable- <i>do</i> (<i>do</i> =tonic in major; <i>la</i> =tonic in minor)
36	13	7 Inflected letter names (e.g., "G-sharp")
28	10	5 Fixed- <i>do</i> with chromatic inflections (<i>do</i> =C, <i>di</i> =C# etc.)
21	7	4 Non-inflected letter names (e.g., "G" for G and G#)
19	7	4 Fixed- <i>do</i> without chromatic inflections (<i>do</i> =C and C#)
14	5	3 Scale-degree numbers (1=tonic in major; 6=tonic in minor)
8	3	1 Another system (e.g., C=1, C#=2, D=3, etc.)

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COMBINED

<i>n</i>	% of 279 respondents	% of 518 responses
247	45	23 Scale-degree numbers (1=tonic in major and minor)
207	37	20 Neutral syllable such as "lah"
193	35	18 Movable- <i>do</i> (<i>do</i> =tonic in major and minor)
167	30	16 Moveable- <i>do</i> (<i>do</i> =tonic in major; <i>la</i> =tonic in minor)
69	12	7 Inflected letter names (e.g., "G-sharp")
55	10	5 Fixed- <i>do</i> with chromatic inflections (<i>do</i> =C, <i>di</i> =C# etc.)
39	7	4 Non-inflected letter names (e.g., "G" for G and G#)
34	6	3 Fixed- <i>do</i> without chromatic inflections (<i>do</i> =C and C#)
28	5	3 Scale-degree numbers (1=tonic in major; 6=tonic in minor)
14	3	1 Another system (e.g., C=1, C#=2, D=3, etc.)

Among the 306 respondents, 258 teach sightsinging to both freshmen and sophomores. Of these, only 38 use a different system or combination of systems for the two groups. One hundred sixteen (116) use only one system with both groups and of those, movable *do* with *do* as tonic in major and *la* as tonic in minor occurred most often (34). Thirty-one (31) use movable *do* with *do* as tonic in both major and minor. There is less internal departmental consistency regarding systems than texts. Of the respondents, 42% indicated that individual teachers select the system in their own class while 45% of the respondents use a system arrived at by group consensus and 11% reported using a system designated by a coordinator.

Materials used for dictation and error detection (research questions 4 and 5) are indicated in Table 3. From these tables, it is evident that among commercially available material, Benward's *Ear Training: A Technique for Listening* dominates the market. Material developed by the instructor was second among responses for both dictation and error detection practice.

"SEND HELP"

Table 3. Error Detection and Dictation Materials.

DICTATION Texts/Materials	AUTHOR(S)	<i>n</i>
1. <i>Ear Training: A Technique for Listening</i>	Benward	84*
2. Developed by instructor	_____	62
3. No text used	- - - - -	23
4. <i>Music for Sight Singing</i>	Ottman	11
5. <i>Programmed Ear Training</i>	Horacek	11
6. CAI Software	- - - - -	11
7. <i>A New Approach to Sight Singing</i>	Berkowitz et al.	8
ERROR DETECTION Texts/Materials		
1. <i>Sight Singing Complete</i>	Benward	82
2. Developed by instructor	- - - - -	53
3. No text used	- - - - -	29
4. CAI software	- - - - -	10

Respondents were then asked to compare the amount of class time in each area, ordering them from most to least. Because the pilot study had indicated that respondents spent a great deal of time on a fourth area, the category "recognize and identify" (e.g., chord qualities, scale types, intervals, inversions, etc.) was added. Results indicated that for freshmen, sightsinging was clearly the activity teachers emphasized most. Dictation and recognition/identification were nearly identical in reported time. Error detection was clearly the least practiced activity. Of those responding, 84% indicated it was the least practiced skill during freshman aural-skills classes. Responses regarding sophomores indicated that dictation and sightsinging were emphasized almost equally. Recognition/identification and error detection received the least amount of instructional time.

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The final area of investigation addressed computer-assisted instruction (CAI). Of those responding, 37% reported optional use of computers to augment in-class instruction, 34% require computers, and 26% do not use computers. Only 4% use computers to substitute for in-class instruction. Table 4 shows that the Apple II(+ /e) is the most-used piece of hardware for CAI.

Table 4. Computer-Based Aural-Skills Materials

TITLE	PUBLISHER	n	COMPUTER	RATING*
1. Harmonic Dictator	TAP**	29	Apple II+/e	2.16
2. Ear Training	W.C. Brown	27	Apple II+/e	2.36
3. Interval Mania	TAP	22	Apple II+/e	2.20
4. Melodious Dictator	TAP	22	Apple II+/e	2.40
5. Chord Mania	TAP	16	Apple II+/e	2.40
6. Guido	U. of Del.	14	IBM	1.78
7. DoReMi	TAP	14	Apple II+/e	2.17
8. Sir Wm. Wrongnote	TAP	13	Apple II+/e	2.09
9. MacGamut	Mayfield	12	MacIntosh	2.42
10. Basic Music Theory	MECC***	12	Apple II+/e	1.90
11. Arnold	TAP	11	Apple II+/e	2.00
12. Practica Musica	Ars Nova	11	MacIntosh	2.00
13. Listen	Resonate	11	MacIntosh	2.00

*1-5 scale w/1=strong

**Temporal Acuity Products, Bellevue, Washington

***Minnesota Educational Computing Consortium

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The final question called for open-ended responses. Although the percentage of people making specific comments about any particular given topic was relatively low and probably should be treated as anecdotal material rather than data-based truth, some of the comments summarized the feelings of many of the aural-skills instructors surveyed.

First, several respondents emphasized the problems associated with teaching aural skills. Perhaps this was best characterized by the plea of one respondent to "Send Help!" Other teachers stated that aural-skills instruction is not fully appreciated by many students, teachers, and administrators. This particular frustration was also evident in Collins' study.¹² Finally, it was interesting to note the number of instructors who currently teach in an integrated program but prefer separate classes, and vice versa. Perhaps the difficulty of teaching something as elusive as aural skills makes another approach inviting.

Several trends in teaching aural skills are evident based on this study. First, most institutions require two years of instruction in ear training for music majors with two to three fifty-minute periods per week as the norm. With respect to organizational approaches, 60% of the schools surveyed schedule separate classes for aural-skills instruction. The pendulum has swung away from the integrated approach favored a decade ago.

Three sight-singing textbooks—*Music for Sight Singing* by Ottman; *A New Approach to Sight Singing* by Berkowitz, Frontrier, and Kraft; and *Sight Singing Complete* by Benward—continue to dominate the market. Overall, respondents indicated that they generally are satisfied with the quality of these texts.

Among approaches to teaching sight-singing, movable function as opposed to fixed function is preferred by an overwhelming majority of instructors. In order, scale-degree numbers, movable-*do* where *do* is tonic in major and minor and "lah" are the systems of choice.

Among those instructors who use a commercially published text to teach dictation and error detection, Benward's *Ear Training: A Technique for Listening* is the dominant text almost to the exclusion of all others. Many instructors still choose to develop their own materials for dictation and error detection practice. Given this degree of creative activity among instructors, a mechanism for distributing this material comparable to the public domain distribution of software would significantly benefit instructors.

Also, error detection is the least practiced activity in aural-skills classes. Considering the frequency that students will use this skill (e.g., as conductors, classroom and studio instructors, adjudicators, etc.), it is rea-

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sonable to suggest that more time should be devoted to developing this vital skill.¹³

Finally, we discovered that 71% of the respondents either require students to use computers to supplement in-class instruction or at least make them available. Although it is not surprising to find that most students use Apple II's because of that machine's large installed base, it is interesting to speculate about hardware and software choices of the future. If the hardware and software employed at the recent College Music Society's Institute for Electronic Technology and Music Instruction is any indication of trends, future computer-assisted instruction will take place on MacIntosh and IBM personal computers.

Ear-training teachers indeed are grappling with vexing pedagogical questions. These questions can begin to be addressed through data-based research and future experimental studies that compare the efficacy of specific teaching methods. Perhaps then we truly will be able to "Send help!"

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"SEND HELP"

NOTES

¹See Irma Collins, "Current Attitudes and Trends in the Teaching of Sight Singing in Higher Education," D.M.A. in Mus. Ed. dissertation, Temple University, 1979.

²Collins, p. 52.

³Robert W. Ottman, *Music for Sightsinging*, 2nd ed. (Prentice-Hall, Inc., 1967).

⁴Collins, pp. 193-196.

⁵Ibid. For a recent discussion of the advantages and disadvantages of CMP, see Michael R. Rogers, *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies* (Southern Illinois University Press, 1984): 19-24.

⁶See Rosemary Killam and others, "Survey and Results: Most-Used Theory Texts in U. S. Colleges and Universities," The University of North Texas, 1987. (Mimeographed.)

⁷Sol Berkowitz, Gabriel Frontrier, and Leo Kraft, *A New Approach to Sight Singing*, rev. ed. (W.W. Norton and Company, 1976).

⁸Bruce Benward, *Ear Training: A Technique for Listening*, 2nd ed. (Wm. C. Brown, 1983).

⁹Killam, p. 11.

¹⁰See Don A. Dillman, *Mail and Telephone Surveys: The Total Design Method* (New York: John Wiley & Sons, 1978).

¹¹Bruce Benward, *Sight Singing Complete*, 4th ed. (Wm. C. Brown, 1986). Because respondents did not specify which edition of the text they were using, the latest edition is assumed here. Often, just the name of a textbook author (e.g., Ottman or Benward was listed).

¹²Collins, pp. 193-196.

¹³For a list of creative error-detection techniques, see Rupert Thackray, "Some Thoughts on Aural Training," *Australian Journal of Music Education* (October 1975).

SEQUENTIAL ORDER FOR THE PREPARATION, PRESENTATION, PRACTICE AND EVALUATION OF RHYTHMIC AND MELODIC CONCEPTS

MICHEÁL HOULAHAN

PHILIP TACKA

The authentic Kodály concept begins with the collection and presentation of the finest musical materials appropriate to the age and experience level of the students. Once a body of materials is selected, it should be analyzed for pedagogical content. The frequency with which the musical elements occur within a pattern in these materials is one of the factors that determines the sequence.

The principle of organization is followed in the sequence of concepts presented in this paper and based on *150 American Folk Songs*¹ and *Sail Away*² (New York: Boosey & Hawkes), two scholarly collections of folk music. The system of analysis developed by Hope Bliss at the University of Pennsylvania will be employed in analyzing the above collection of folk songs.³ As a result of this analysis, fundamental patterns emerge that become the basis for the sequence. We have listed the principle reductions of the patterns that occur in the folk songs. Each melodic pattern should be practiced with each succeeding rhythmic element or pattern. *In this manner, the sequence is not based on isolated musical elements, but rather on patterns that link musical elements together into musical phrases and songs that reveal the structure, foundation, and musical style of the song.* This procedure is in agreement with current thinking on the presentation of elements through melodic and rhythmic patterns.⁴ The learning sequence begins with the fundamentals of music because "thorough knowledge of fundamentals can almost never be assumed; it must be taught as any other subject. A superficial grounding in the basic elements of pitch will cause more problems later on than almost any other form of negligence."⁵

There are twenty-two units arranged in a sequential manner. Units dealing with melody begin with patterns based on the minor third and progress through pentatonic, diatonic, and modal scales, modulation, and

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chromaticism. Rhythmic units are presented in a similarly structured fashion, beginning with simple groupings of eighth and quarter notes and progressing through compound meter and patterns including sixteenth notes and syncopation. Each rhythmic element is practiced separately before being integrated with melodic elements. New musical elements are not introduced until ample practice has been provided. The structure of these units promotes greater confidence in the student and provide a more solid basis for skill development than do sight-reading methods that begin with the entire diatonic scale.

Each unit will be divided as follows:

1. Musical element
2. Terms and concepts associated with each element

Unit 1

Concept: Musical Pulse as related to tempo

Unit 2

Concept: 

Terms and Concepts: Beat/Pulse
Long and Short
Rhythm
Duration
Fast and Slow
Tempo
Loud and Soft
Timbre
Note
Note Head
Stem

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Flag
Rhythm Name
Quarter Note
Eighth Note
Quarter Note Rest
Subdivision on the beat unit

Unit 3

Concept: 2/4, 3/4, and 4/4

According to the folk song analysis, 3/4 time is mostly associated with diatonic materials that have up beats and dotted notes.

Terms and Concepts: Bar Line
Double Bar Line
Measure
Meter
Accented and Unaccented Beat
Time Signature
Simple Meter
2/4
Repeat Sign
Metronome Marking
Form
Ostinato

Unit 4

Concept: *so-mi*

Terms and Concepts: Stick Notation
Staff
Lines and Spaces
Musical Sounds
Pitch Names
High and Low
Treble Clef

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Bass Clef
s-m
4/4 meter
Melody
Musical Phrase

Unit 5

Concept: *la-so-mi*

Terms and Concepts: repeat signs
ledger lines

Unit 6

Concept: *do, re* Melodic Patterns

Terms and Concepts: *do*
re
pentatonic scale
half note
whole note
half-note rest
whole-note rest
2/2, 4/2
Simple Duple, and Quadruple Meter
Absolute Letter Names
Treble clef or G clef
Bass clef or F clef
Ledger Lines
Tie
First and Second Endings
D.C. al fine
D.S.
Pause Mark

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Unit 7

Concept: Pentatonic scale, half note, whole note, breve and simple meter where the half note is the unit beat - 2/2, 3/2, 4/2.

The music materials written in 2/4, 3/4, and 4/4 can be re-written changing the unit beat to a half note. In this way, students may practice relative position of notes learned, and also apply their melodic knowledge to more advanced rhythmic concepts.

Unit 8

Concept: Changing meter

This concept should be practiced as an exercise at this point in the sequence. The teacher may begin to practice changing meter by using simple duple, triple, and quadruple time signatures.

Unit 9

Concept: Frequently used rhythm patterns incorporating sixteenth and eighth notes.



Terms and Concepts: dot placed after a note (augmented dot)

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Unit 10

Concept:

low *la*./,

Patterns that begin with known rhythmic and melodic elements are best for preparing this concept rather than phrases that begin on low *la*.

Low *la* and low *so* are common in material that contains sixteenth notes.

It is important to practice this element in both *do* centered (major) and *la* centered (minor) material to make the students aware of the two different tonal areas; relative solmization teaches the students the function of the note within a tonality.

The students have been introduced to *l-s-m-r-d*. With the introduction of low *la*, the students must aurally discern whether a composition containing the elements *l-s-m-r-d-l*, is *do* centered or *la* centered; major or minor. This presupposes no theoretical understanding of major or minor scales but is dependent on aural analysis.

Low *la* is more common in connection with low *so* than by itself; therefore, low *so* can be taught shortly after low *la*. Low *la* should first be presented in *do* centered material.

Terms and Concepts:

low *la*
octave
do pentatonic scale
la pentatonic scale
extended pentatonic scale

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Unit 11

Concept: *so* Melodic Patterns

Terms and Concepts: *low so*
so pentatonic scale

Unit 12

Concept: *do* Melodic Patterns

Absolute letter names may now be introduced if they are not already known. The students may also begin to sing with absolute letter names in both treble and bass clefs. Initially they should sing materials in letter names using C=*do*, F=*do* and G=*do* to avoid theoretical explanations of sharps or flats at this point in the sequence.

Terms and Concepts: *high do*

Unit 13

Concept: Frequently used patterns incorporating sixteenth, eighth, quarter, upbeats, and dotted notes.

Terms and Concepts: Internal and external upbeats
syncopation
dotted quarter and eighth note combinations
eighth-note rest
 $\frac{3}{4}$, $\frac{3}{8}$, $\frac{3}{2}$, and $\frac{3}{16}$ meter

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Unit 14

Concept:

fa - *do* pentachord and *do* hexachord

When teaching *fa*, it is important to remember that the students must be fluent with the pentatonic and extended pentatonic scale.

The students must know the pentatonic scale structure, transpositions involving C, F, and G *do* and absolute letter names. By leading students to aurally compare hexachord songs in C, G, and F *do* while using solfa syllables followed by singing absolute letter names, the students will discover the need for the b flat when singing in F *do*. The relationship of whole steps and half steps can logically be presented.

Terms and Concepts:

fa
half step or semi tone
pentachord
hexachord
key signature
flat

Unit 15

Concept:

ti - *la* pentachord and *la* hexachord

In analyzing musical material containing the element *ti*, much of the material is in 3/4 and in 6/8 and also has the rhythm pattern: | . | . The function of *ti* is different in major and minor scales. In the minor scale, *ti* is not a leading tone as it is in the major scale. In American folk song

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materials, *ti* is more prevalent in major. *Ti* must be presented in both *do* and *la* centered material.

Once students sing *la* pentachord and hexachord composition in G *do* with absolute letter names, they will aurally and theoretically understand the concept of sharp.

Students should begin to compare and contrast songs in both major and natural minor.

With the introduction of the diatonic scale we have found that singing sequentially through the circle of fifths with absolute letter names is a useful step to help the students gain fluency with letter names. The teacher may concentrate on the C, G, *do* positions for a few lessons and then move sequentially through the other *do* positions.

Terms and Concepts:

ti
whole step
half step
passing note
auxiliary notes
all absolute letter names
enharmonic note names
scale
major scale
key signature
major key signatures
circle of fifths
transposition

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Unit 16

Concept:

6/8, 9/8, 12/8, triplets and duplets

Once the students have a thorough understanding of simple, duple, triple, and quadruple time, and the difference between simple and compound time signatures, they may be introduced to other compound time signatures such as 9/8 and 12/8. The teacher may build on the level of difficulty by teaching the concept of changing compound meter. Other simple, triple, and quadruple compound meters where the dotted eighth note and the dotted half note are the beat units should also be practiced. The students should also be led to discover that melodies written in a fast tempo with a numerator of three in the time signature have the effect of a compound meter.

At this point, the teacher may begin to practice changing meter between simple and compound meter with the division of the beat remaining constant (1 in 6/8 = to 1 in 2/4). Students should practice meter changes from both simple to compound and compound to simple. The students should practice changing between simple and compound meter where the beat remains constant. This change is the same as that between duplet and triplet eighths in simple time or between eighths and dotted eighths in compound time.

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Unit 17

Concept:

si and *fi*

With the introduction of these two notes, the students can be introduced to harmonic and melodic minor scales. A significant number of works in *150 American Folk Songs* and *Sail Away*, which are in major and minor tonalities, can successfully be used to introduce students to stylistic elements of classical style. Most of these songs are in period structure, melodically outline tonic, subdominant, and dominant triads and some modulate to closely related keys.

Terms and Concepts:

natural minor scale
harmonic minor scale
melodic minor scale
minor key signatures
relative keys
parallel keys
accidentals
natural sign
double sharp
double flat

Unit 18

Concept:

Altered tones

Terms and Concepts:

altered tones
numerical identification of interval quality
identification of intervals
inversions of intervals
consonance
dissonance

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Unit 19

Concept:	Harmonic functions
Terms and Concepts:	tonic function dominant function subdominant function canon major triad minor triad augmented triad diminished triad inversions primary chords secondary chords cadences

Unit 20

Concept:	Modulation to closely related keys
Terms and Concepts:	modulation nearly related keys dominant modulation relative minor modulation relative major modulation pivot chord pivot note

Unit 21

Concept:	Modes
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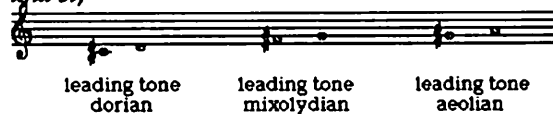
Medieval music is based on church modes, which are also encountered in Renaissance music, Bach chorales, folk songs, and twentieth-century works. The modes were the tonal basis of the Renaissance style, represented by Palestrina, one of its outstanding composers. One of the basic character-

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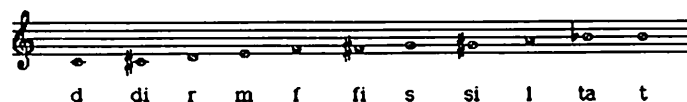
by Palestrina, one of its outstanding composers. One of the basic characteristics of the Renaissance style is a tone set that combines the eight-tone system derived from the Gregorian melodic culture—all the diatonic note plus “ta.”



with the leading notes of the dorian, mixolydian, and aeolian modes, *di*, *fi*, and *si*;



this is referred to as the eleven-note tone set:



These alterations were brought about because the polyphonic style demanded the minor second be heard at cadential points. Therefore, since modal music does not move outside this tone set, the do of the range of notes does not change.

Once the students have been introduced to *f* and *t*, the teacher can practice singing scales beginning on any of the seven degrees.

For example:

a *do* scale: *d-r-m-f-s-l-t-d* (ionian mode)

a *re* scale: *r-m-f-s-l-t-d-r* (dorian mode)

a *mi* scale: *m-f-s-l-t-d-r-m* (phrygian mode)

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a *fa* scale: *f-s-l-t-d-r-m-f* (lydian mode)

a *so* scale: *s-l-t-d-r-m-f-s* (mixolydian mode)

a *la* scale: *l-t-d-r-m-f-s-l* (aeolian mode)

The following are directions the teacher may use in preparing, presenting, and practicing the modes.

1. The students sing a dorian, ionian, aeolian, mixolydian, lydian scale from the same note. Classify these scales as either major or minor; this is dependent on the interval between the root and the third of the scale.
2. The students sing the major scales. The *fa* scale may be sung with the *do* scale with the alteration *fa* instead of the *f*; and the *so* scale may be sung with the *d* scale with the alteration *ta* instead of the *ti*.

Modes and their Comparative scale names:

Lydian scale:

f-s-l-t-r-m-f

or

d-r-m-f-s-l-t-d



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Mixolydian scale:

s-l-t-d-r-m-f-s

OR

d-r-m-f-s-l-ta-d



3. The students sing the minor scales. The dorian scale may be sung with the *la* scale with the altered note *fi* replacing *fa*. The phrygian scale may be sung with the *la* scale with the altered note *ta* replacing the note *ti*.

Dorian scale:

r-m-f-s-l-t-d-r

OR

l-t-d-r-m-fi s l



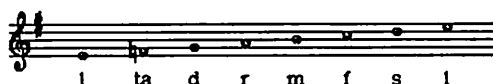
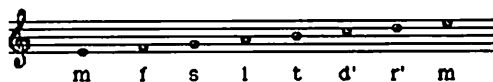
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Phrygian:

m-f-s-l-t-d-r-m

or

l-ta-d-r-m-f-s-l



4. The students show the hand sign for each of these alterations and practice them with solfa and absolute letter names.

Lesson Planning

The following lesson outline may be used for each unit. Each new musical element taught will be reinforced throughout each section of the lesson plan. This will enable students to reinforce a new concept through practice exercises, sightsinging, memory work, dictation, and part singing.

1. Review of selected musical materials from previous lesson. The class begins with a warm-up session that may include echo-clapping, hand-sign singing, simple vocalises, and songs for singing. The teacher should then review previously learned materials and homework.
2. Preparation and presentation of new musical elements.
3. Introduction of theoretical terms and concepts.
4. Development of musical memory.
5. Sightsinging.
6. Dictation.

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7. Part Singing
8. Review of musical materials covered during the class.

THE DEVELOPMENT OF MUSICAL MEMORY

Musical memory plays an important role in accurate singing and in the ability to recall a pattern for dictation. The following techniques can be helpful:

1. Memorizing by hand signs
2. Memorizing from rhythmic and staff notation.
3. Memorizing by ear.

Memorizing by Hand Signs

Once the students have experience singing from the teacher's hand signs, the sequence of hand signs begins to evoke the memory of the melodic patterns.

1. Show typical melodic patterns and ask the students to sing patterns back. Start with short patterns such as s-l-s-m or m-f-m-r-m.
2. When the melodic patterns are mastered, progress to four-bar and eight-bar melodies.
3. Show a melody in hand signs. Select pentatonic melodies or rounds. The students sing the melody in canon using solfa or absolute letter names and write down the example from memory.
4. The teacher may also give the starting pitch of a key and ask the students to sing a melody with absolute letter names while using hand signs.

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Memorizing from Staff Notation

1. The students look at a score and memorize a short fragment of a musical example, using hand signs.
2. The teacher sings the unknown part of the example. Students sing the memorized motifs.
3. Students then write the melody down on staff paper. At a more advanced level, the students can write the example in another key using a different clef.
4. Look at an example using familiar elements. Memorize the example without singing or playing.

Memorizing by Ear

Memorizing by ear is more difficult than memorizing from notation as it involves no visual aid. Melodies used for memorizing by ear should be easier than those used with notation. Extracts should be played on the piano or another instrument and sung a few times. The following procedures may be used for both rhythmic and melodic memorization.

1. Students identify the meter.
2. Students identify the ending and starting pitches.
3. Students sing the example and conduct.
4. Students sing the example with hand signs.
5. Students sing the example with absolute pitch names and hand signs.
6. Students sing the example with rhythm names.
7. Students write the exercise or play it back on the piano. Later, the example may be transposed.

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The teacher may also play a melody and ask the students to sing it back in canon at the unison while memorizing the example. Later, canons at other intervals may be used. When students have gained experience in unison memory work, they can begin to memorize two-part extracts. Accompaniments may be drawn from a rhythmic pattern, a rhythmic or melodic ostinato, chord roots, a contrapuntal melodic line, or typical cadential idioms in modal or harmonic music. Memory work should also include three- and four-part work.

Procedures for the students to follow:

1. Sing the selected extracts in two parts.
2. Memorize one part silently using solfa.
3. Sing the part out loud while conducting.
4. Practice the other part following steps 1 through 3.
5. Sing both parts in a group and then as solos, using both solfa and note names.
6. Write down both parts of the extract.
7. Sing one part and play the other on the piano, or sing one part and show the second part with hand signs.

Sightsinging

Before each exercise the teacher should practice basic rhythmic and melodic patterns from the sight-reading exercise with the students while the students follow the staff notation. Difficult rhythms should be practiced with a suitable rhythmic ostinato or subdivision of the beat. Sing these preparatory exercises in the same key as the reading example. Exercises should be sung in solfège, letter names and neutral syllables. The following procedure may be used for sight reading new material:

1. Make the students aware of the meter and key. Chose an appropriate tempo.

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2. Discuss the form of the exercise. Look for repeated patterns.
3. Students should then think through the entire melody.
4. Students should conduct or use hand signs while thinking through the melody.
5. Students sing the exercise while conducting.

The sightsinging exercise may be memorized and notated. Students should continually practice reading melodic patterns with or without a specific rhythm. Teachers should devise a variety of ways to practice a reading exercise. For example: reading the melody backwards; reading a unison melody while clapping a rhythmic ostinato; singing a melody in canon at the fifth with only the first voice given.

Dictation

Dictation is closely linked to the development of musical memory, inner hearing, and reading and writing skills. It is important to spend time developing the student's memory as this skill is essential for dictation. Initial dictations should be based on patterns that have been memorized by the students. As the student's memory develops, the teacher can begin more formal dictation practice. At first, the melody should be sung by the students before notating it so the teacher may be sure the students are hearing it accurately. Initial dictation material should be based on American folk music. Later, music of other styles can be added.

The following procedures may be used for melodic dictation:

1. The teacher prepares the key of the dictation with hand signs and staff notation.
2. The teacher shows typical melodic patterns extracted from the melody used for dictation and the students sing in solfa and letter names. At the beginning stages of formal dictation the teacher may also give the student a score with the barlines indicated and certain notes or rhythms filled in to help the student's memory.

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3. The teacher plays the melody on the piano, or on another instrument.
4. The students determine the final note and the beginning note as well as some or all of the following, as appropriate: mode, melodic cadences, melodic contour, patterns, and meter.
5. Students sing the melody using solfa and absolute letter names.
6. The students sing the melody with rhythm names and hand signs.
7. Students sing the melody from memory.
8. Students write the melody down.
9. Students sing the melody from their score. This melody may be used to practice other skills such as transposing it into other keys of practicing the intervals in the melody.

In addition to notating the rhythms of melodies accurately, students should also practice rhythmic dictation separately from melodic dictation. The following procedures may be used:

1. The teacher plays a melody on the piano while students establish the meter and the number of bars.
2. The teacher plays and the students conduct.
3. Students conduct and sing using rhythm syllables.
4. The students write the rhythm.
5. The teacher plays once more while the students follow the score.

Part Singing

Those who always sing in unison never learn to sing in correct pitch. Correct unison singing can, paradoxically, be learned only by singing in two parts.⁶

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Singing and playing part music are important aspects in musical training. This enables the student to learn to hear several voices simultaneously. The following procedures may be used for developing two-part singing:

1. Sing folk songs or other exercises while clapping the beat or the rhythm.
2. Sing folk songs dividing the singing by phrases in call-and-response style, or musical examples using the responsorial principle. This enables group I to hear what group II sings, and vice versa.
3. Add a rhythmic ostinato to folk songs. This can be done in five stages:
 - a. Students sing the melody while the teacher claps the rhythm.
 - b. Students and the teacher exchange parts.
 - c. Divide the students into two groups, one sing and another performs the rhythm.
 - d. Two students perform the work.
 - e. One student sings one voice and plays the other voice on the piano.
4. Students clap a series of rhythmic patterns while singing a known song.
5. Sing in two parts from hand signs. This helps students see the intervals spatially.
6. Sing simple pentatonic folk-songs in canon.
7. Sing a well-known song and at the same time clap various rhythms the teacher points to. The students may also read a known exercise while the teacher improvises an extended rhythmic ostinato. The students must sing and listen at the same time. Then try to recall the rhythmic pattern. Start with simple, familiar patterns.
8. Sing one part and clap the second part simultaneously.

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9. Two-part singing:

- a. If the two-part selection is a folk song, teach the song first either by rote or from the music, then teach the second part.
- b. Divide the class into two groups. Group A sings the top line while Group B sings the bottom. Reverse.
- c. Group A sings the bottom line and Group B claps the top. Reverse.
- d. Perform the work as a group and then with soloists. Individuals may then sing any part while clapping the other or may sing one part and play the other part on the piano.

CONCLUSIONS

The sequence is a combination of both rhythmic and melodic elements, derived from actual music, carefully unfolding in a coherent fashion. Theoretical explanations are always the final stage of musical learning. Musical concepts and elements are derived from singing games, pentatonic, major, minor, and modal folk songs.

The pentatonic scale 'is easier to sing in tune . . . , the musical thinking and the ability to sound the notes (internally) can develop better [sic] using tunes which employ leaps rather than stepwise tunes.'

Beginning with motifs derived from children's games, and advancing to pentatonic and diatonic music, allows each melodic element to be introduced sequentially using the three phases of learning outlined in this paper. As a result, the students will develop a strong association between the symbol and the sound. After careful practice, the symbol will evoke the sound experience and the sound experience will evoke the symbol. This is of prime importance in the development of musical memory, sight singing, ear training, and dictation skills. All patterns are continually put into a conceptual framework. Aural tasks are concerned with perceptual and structural tasks. Within the context of this sequence, musical elements are not abstracted from the musical example but are rather presented in relation to the entire composition.

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Kodály musical training always involves active music making. Musical learning evolves from musical experience such as singing games and dances, folk songs, and art songs, songs sung in unison, rounds, canons, part songs, themes from great instrumental music. All these are the cornucopia from which musical concepts are drawn and through which musical skills are practiced. These musical concepts and skills are then applied to more complex music, and more involved concepts evolve and further musical skills are developed. It is a spiral curriculum process in the truest sense of the word; a spiral aimed at the fullest development of the musicianship inherent in all people.⁸

NOTES

¹Peter Erdei and Katalin Komlos, eds., *150 American Folk Songs* (New York: Boosey & Hawkes, 1974).

²Eleanor G. Locke, ed., *Sail Away* (New York: Boosey & Hawkes, 1981).

³Hope Cynthia Bliss, "The Development of a Classification and Retrieval System to Aid Researchers in Organizing Folk Songs for Integration into a School Curriculum." (Ph.D. diss., University of Pennsylvania, 1981).

⁴Carol B. MacKnight, "The Effects of Tonal Pattern Training on the Performance Achievement of Beginning Wind Instrumentalists," *Experimental Research in the Psychology of Music: Studies in the Psychology of Music* 10 (1975): 53-76.

John D. White, *Guidelines for College Teaching of Music Theory* (Metuchen, N.H.: Scarecrow Press, 1981): 38-39.

Michael R. Rogers, *Teaching Approaches in Music Theory* (Southern Illinois University Press, 1984): 19, 145.

Patricia Ann Grutzmacher, "The Effect of Tonal Pattern Training on the Aural Perception, Reading Recognition, and Melodic Sight-reading Achievement of First-Year Instrumental Music Students" *Journal of Research in Music Education* 35/3 (1987): 171-181

SEQUENTIAL ORDER

⁵Michael R. Rogers, *Teaching Approaches in Music Theory* (Southern Illinois University Press, 1984): 34.

⁶Zoltan Kodály, *Let Us Sing Correctly* (London: Boosey & Hawkes, 1963) Forward.

⁷Zoltan Kodály, *The Selected Writings of Zoltan Kodály*, 46.

⁸Lois Choksy and others, *Teaching Music in the Twentieth Century*, (N. J.: Prentice-Hall. 1986): 91.

LISTENING TO MOZART: PERCEPTUAL DIFFERENCES AMONG MUSICIANS

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ABSTRACT

An exploratory study examining musicians' perceptual styles was conducted. Musicians described the musical elements they heard while listening to a movement of a symphony by W. A. Mozart. Hierarchical clustering was used to analyze the data. The descriptions revealed individual differences in perceiving the richness and complexity of the music. Different perceptual styles emerged. Some musicians listen to music holistically, reporting on entire phrases and sections, while others listen analytically, giving detailed descriptions as the music unfolds. Some of the major features of the classical musical style (i.e., tonality, rhythm, chords) show little variability among individuals, thus serving as landmarks in the perception of this movement. Individual listening strategies were found to be independent of the musicians' major performance instrument and training in composition. The differences among musicians for listening to a musical performance are compared to the differences reported in the literature for story recall and language process.

To understand how individuals process information we must understand how they perceive complex stimuli. For example, in the domain of language processing, it has been shown that subjects tend to report a story according to how they processed text information (Pollard-Gott, McCloskey, & Todres, 1979). In the same context, Thorndyke (1979) proposed that readers have a set of schemata for text organization, and that the application

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of a particular schema depends in part on the perspective the reader has adopted in approaching the story.

It might be hypothesized that the same kinds of structural organization applied in text comprehension might also relate to the perceptual processes of listening to music. Experience in music teaching led one of us to notice that there are marked differences in the way musically knowledgeable individuals perceive music. Music listening and instruction in the development of listening skills are central concerns of music pedagogy and music theory pedagogy (Carlsen, 1981; Hedden, 1980; Rogers, 1984; White, 1981; Zimmerman, 1971).

Music can be described as a multidimensional stimulus consisting of a "horizontal" dimension (e.g., melody, rhythm), a "vertical" dimension (e.g., harmony), and a "depth" dimension created by the composer in the score and by the musician in the performance. But how do musicians organize the perceptual aspects of music? Do the analytic features of music mirror the perceptual processes of music? Are there important idiosyncratic approaches or styles that are invoked in listening to music? Furthermore, do individuals' primary performance instrument influence how they listen to a musical performance? In this study music perception is defined as the spontaneous descriptions of musical elements given by subjects.

More research experiments have investigated the perceptual capacities of listeners with various levels of musical backgrounds (Flowers, 1984; Pollard-Gott, 1983; Rosner & Meyer, 1982, 1986; Shepard, 1981) than the abilities of those individuals who have reached a very advanced, professional level of musicianship. In one of the earliest studies evaluating subjects' responses to music, Myers (1922) noted that listeners' musical sophistication can influence their mode of listening to music. Comparing how graduate and undergraduate music majors described music excerpts, Flowers (1985) found that graduate music majors used musical terms more frequently than undergraduates. Killam and Baczewski (1985) asked music theorists to write down the soprano line, the bass line, and the harmonic analysis of J.S. Bach's Chorale No. 117 while they were listening to the piece. The results showed that the soprano line was analyzed more accurately than the bass line. The harmonic analysis received the lowest rate of accuracy.

Examining the perceptual capacities of advanced music students can lead us to understand better how they have internalized the musical language. Just as psycholinguists addressed the perceptual capacities developed by native speakers, and cognitive psychologists (Chase & Simon, 1973) investigated the processes of experts in specific domains where processes may become "automatized" (e.g., Logan, 1985), so we may benefit from focusing on the abilities of those individuals who have undergone

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prolonged and intensive musical training because they have "acquired the language" of music at a level beyond cultural influence or general education.

This investigation addresses how musicians perceive the musical elements of a classical symphony. Aaron Copland (1957) in his book *What to listen for in Music* explains:

... The whole listening process may become clearer if we break it up into its component parts, so to speak. In a certain sense we all listen to music on three separate planes. For lack of a better terminology, one might name these: (1) the sensuous plane, (2) the expressive plane, (3) the sheerly musical plane. The only advantage to be gained from mechanically splitting up the listening process into these hypothetical planes is the clearer view to be had of the way in which we listen. (p. 18)

Specifically, then, this study considers how graduate conservatory students perceive the first movement of W.A. Mozart's *Symphony in G Minor, K.550*, concentrating on "the sheerly musical plane," and addresses three questions: 1) are there differences among musicians in the perception of music; 2) which musical elements do musicians focus on; and 3) what accounts for the selection processes at different times?

METHOD

Subjects

Eighteen graduate music students of the Juilliard School volunteered to participate in the investigation. They were enrolled in a seminar on the perception of music. None had prior experience in studies of this type. This experiment was run in the early part of the semester. The instructor of the course was careful to see that neither the reading assignments nor the class discussions dealt with the paradigm of this experiment or of potentially similar experiments. Research in individual differences and cognitive styles was not discussed until after the completion of this experiment. The group of subjects included: three violinists, one violist, one cellist, three bassists, one singer, one harpist, one trumpeter, four pianists, two composers, and one composer-pianist (double major). These musicians had a background of at least sixteen years of training. Subjects with such a high

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level of musical education were chosen because their advanced, professional training assured that they were capable of selecting, naming, and discussing any musical element they heard.

The music selected was the first movement of Mozart's Symphony in G Minor, K. 550. This symphony, given its stature in the literature, was known to all the subjects, thus avoiding potential response bias based on differential familiarity. The recording was a London disc (record number CS6479), Carlo Maria Giulini conducting The New Philharmonia Orchestra and using the second version of the symphony with two clarinets and changes in the oboe part. The tempo of the movement, *allegro molto*, presents the music at a comfortable rate of presentation. The duration of this movement was eight minutes.

Our aim was to see whether there were differences in how musicians reported listening to the musical elements as they occurred in the presentation of a complex piece. A pilot investigation (Aiello, 1988) found that asking musicians to write down open-ended responses to Beethoven's Violin Concerto elicited a combination of analytical, personal, and inferential responses. Therefore, the present instructions given to the subjects were aimed at eliciting only analytical responses to the music. They aimed to direct the subjects' attention specifically to the musical elements that occur in this movement. The instructions did not ask for the subjects' emotional reactions to the music, nor for their previous emotional associations with this movement. Listening was presented as a perceptual/cognitive task.

The instructions were:

"We will listen to the first movement of Mozart's Symphony No. 40 in G Minor, K. 550 twice. During the first hearing, listen very attentively but do not write on your response sheets. During the second hearing, as you listen to the music describe what you are hearing in musical terms on the response sheets. For example, you may refer to: cadences, chordal structure, development of motives, dynamics, embellishing tones, form, harmonic rhythm, harmonic sequences, harmony, instrumentation, interpretation, melody, melodic motives, melodic rhythm, modulations, motives, motive variations, orchestration, registers, rhythm, rhythmic motives, rhythmic variations, style, tempi, themes, timbre, tonality, variations, etc. These items are listed alphabetically and not in any potential order of importance or appearance in the music. You may also describe other musical elements that are not included in this list. At the conclusion of the second hearing, you will have five minutes to go over your descriptions and to write any concluding statements that you wish to make. This is not a music theory exam nor a dictation exam. Your descriptions of what you are

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hearing will help us to understand better how people perceive music. Thank you for your participation."

While these instructions led subjects to focus on the musical elements of the movement, within this domain subjects were free to give any response they felt appropriate. After the directions were handed to the subjects, questions on the procedure were answered. Subjects wrote the description of what they heard on notebook paper. The music was played at a comfortable listening level over a high fidelity stereo system in a classroom. There was a pause of approximately one minute between the first and the second presentation.

ANALYSIS

To examine whether individual differences could be observed across both musicians and musical elements, hierarchical clustering of the musicians' free responses was employed. This method pairs the responses according to their similarities. As the focus of this study is on comparisons among subjects and not inference to a population, the large sample sizes necessary to accurately make such an inference are less critical here.

While the technical details of clustering methods are more fully described elsewhere (e.g., Dillon & Goldstein, 1983), we can outline some conceptual bases for these analyses. For example, if all subjects had completely unique perceptions of the presented music, no clusters would be obtained because each subject would be dissimilar in all ways to any other subject. On the other hand, if musical training had served to make subjects' responses to the music more uniform, then one general cluster describing the complete similarity among subjects would be obtained. The actual pattern of responses might be expected to fall somewhere in between these two extreme types.

By using this method of analysis, we are able to examine both quantitative and qualitative differences among the responses of the individual musicians. For example, two musicians who mentioned the same musical element with the same frequency would be maximally similar. Differences between two individuals would occur if they named different musical elements, if they named the same musical elements with different frequency, or both. In examining these clustering results, we can observe the degree to which homogeneity/heterogeneity exists among these musicians. At least two pieces of information can be abstracted from these clustering results. First, the global similarity across the musicians' responses can be determined—namely, is there much variability across

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individuals in the sample? Second, the pairwise similarities between musicians can be examined—namely, are there clusters of individuals who perceive the movement in the same way?

RESULTS

An initial look at these data revealed a breadth of answers in reporting the musical variables across subjects. In other words, despite similarities in background and musical training, the data seem to reflect diverse strategies in listening to music because the subjects used different perceptual strategies in their listening. Across all subjects, a total of 94 musical elements was reported. The number of musical elements used by the musicians in their descriptions ranged from 14 to 63 with a mean of 40.6. 11 of the 18 subjects mentioned less than 40 variables in their descriptions; the remaining seven subjects mentioned more than 40 variables. Each musical element was uniquely coded into one of eight categories: tonality, rhythm, chords, harmonic structure, form, themes, instrumentation, and miscellaneous elements.

Our aim was to see, in broad terms, whether there was uniformity in the subjects' responses. We examined this by looking both at the content of the subjects' responses as well as performing a centroid hierarchical clustering analysis on responses within each category. Recall that, if subjects demonstrated complete uniformity of response within any musical category, we would expect graphs that were flat indicating no differentiation. On the other hand, with complete dissimilar responses across subjects, we would predict a "skyline" pattern with no two subjects' responses being identical.

In each graph, the subjects' initials and their musical specialization are indicated along the x-axis. Greater similarity between two subjects is indicated by their adjacency along the x-axis. The y-axis provides a metric for assessing similarity with zero representing maximum similarity. For example: two subjects who gave the identical set of responses will form a cluster and therefore be next to each other along the x-axis. Their identical responses would be denoted by a zero along the y-axis.

CONTENT OF SUBJECTS' RESPONSES

The subjects' data showed a wide range of descriptions. What follows are the beginnings of two prototypical descriptions given by CS, a composer, and by VE, a composer-pianist. These examples illustrate the wide

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differences with which musicians described what they heard. CS wrote: "minor mode; repeated rhythmic pattern of main motive; sequence; bass movement; winds; cadence; repetition of opening motive; modulation; forte; sequence; large cadence; pause; second theme; contrast to first; winds used more; etc. . . ." CS described isolated events, focusing on relatively brief details. His description seems linear. On the other hand, VE reported: "phrase structure (phrase expansion); motivic connection between themes; rich contrapuntal figuration; cell-structure motives; additive instrumentation; sonata form; development section; highly contrapuntal (imitation) taken from what was hinted at in the exposition; etc. . . ." VE's description reflects a gestalt organization of the listening experience. His comments seem global, cyclical, and based on a longer period of time.

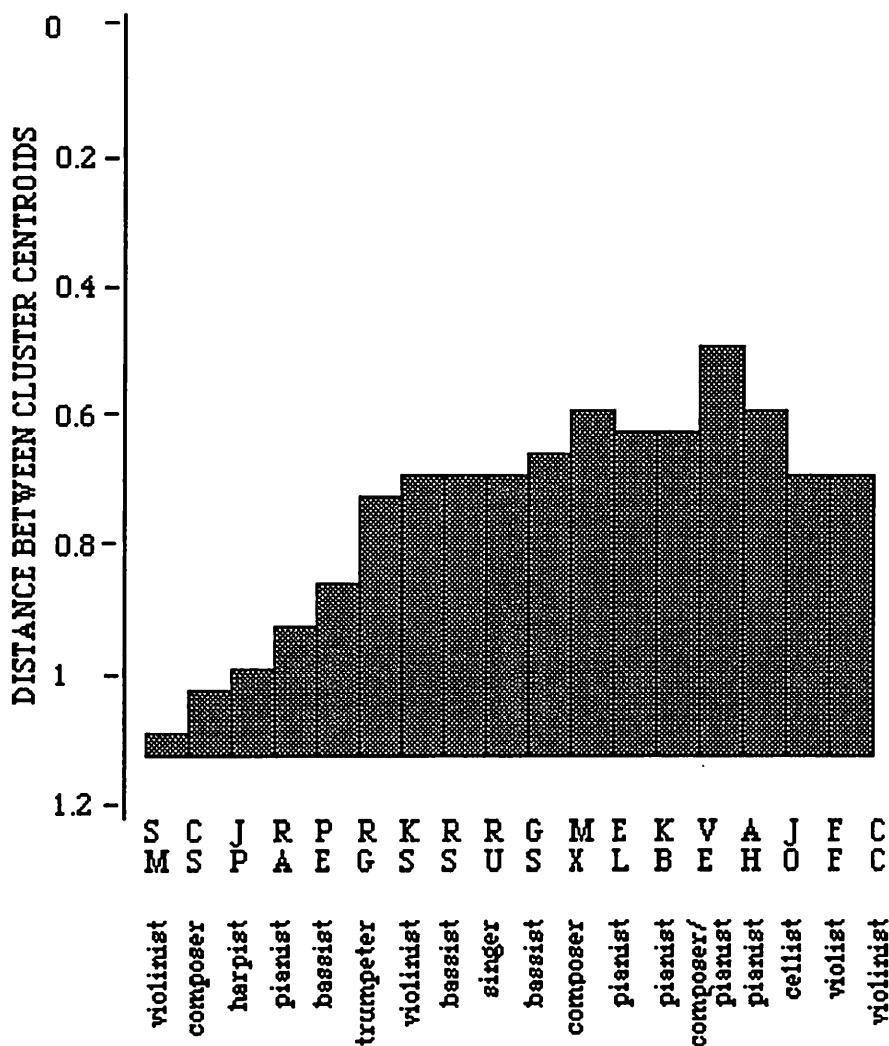
The first musician, CS, wrote down musical elements as he heard them, analyzing the music in minute detail. His mode of listening is very analytic or fragmented. VE's description, on the other hand, shows that he waited longer before describing what he heard reflecting a holistic, gestalt mode of listening. These two musicians, both composers, differ in how they abstract from the complexity of the music, and in their organization of the time experience.

HIERARCHICAL CLUSTERING ANALYSIS

If the content analysis of the subjects' responses is correct, we might expect these two types to be represented at opposite poles of a clustering analysis. In other words, the dissimilarity in the content might be represented by dissimilarity in the cluster solution. These categories were employed to provide a more fine-grained analysis of musical elements than would be allowed from a simultaneous analysis across the full set of response patterns for subjects. Figure 1 shows the profile of the musicians based on all their responses. As expected, the data of CS, the composer who gave an analytic listening description, and the data of VE, the composer-pianist who provided a gestalt description are toward the two extremes of the graph. The subjects' major performance instrument and training in composition did not seem to influence whether they listened analytically or holistically.

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Figure 1. Centroid hierarchical clustering graph based on all subjects' responses. Subjects' initials and musical specialization are indicated.



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As previously mentioned, the listeners reported a total of 94 musical elements. For the purpose of analysis, each musical element was assigned to one of the following eight categories based on the responses of the subjects: form, harmonic structure, chords, tonality, rhythm, themes, instrumentation, and miscellaneous elements.

FORM

The data categorized as form included the following elements: section, development of section, exposition, repeat of exposition, closing section, recapitulation, coda sequence, transition, repeat, structure, phrase structure, question/answer, sonata form, balance of form, architecture. The centroid hierarchical clustering graph representing these data is shown in Figure 2.

HARMONIC STRUCTURE

Figure 3 illustrates the centroid hierarchical clustering graph for the responses categorized as harmonic structure. This category included the following elements: harmonic structure, harmonic pattern, harmonic progression, cadence, pedal point, accompaniment, bass line, deceptive cadence.

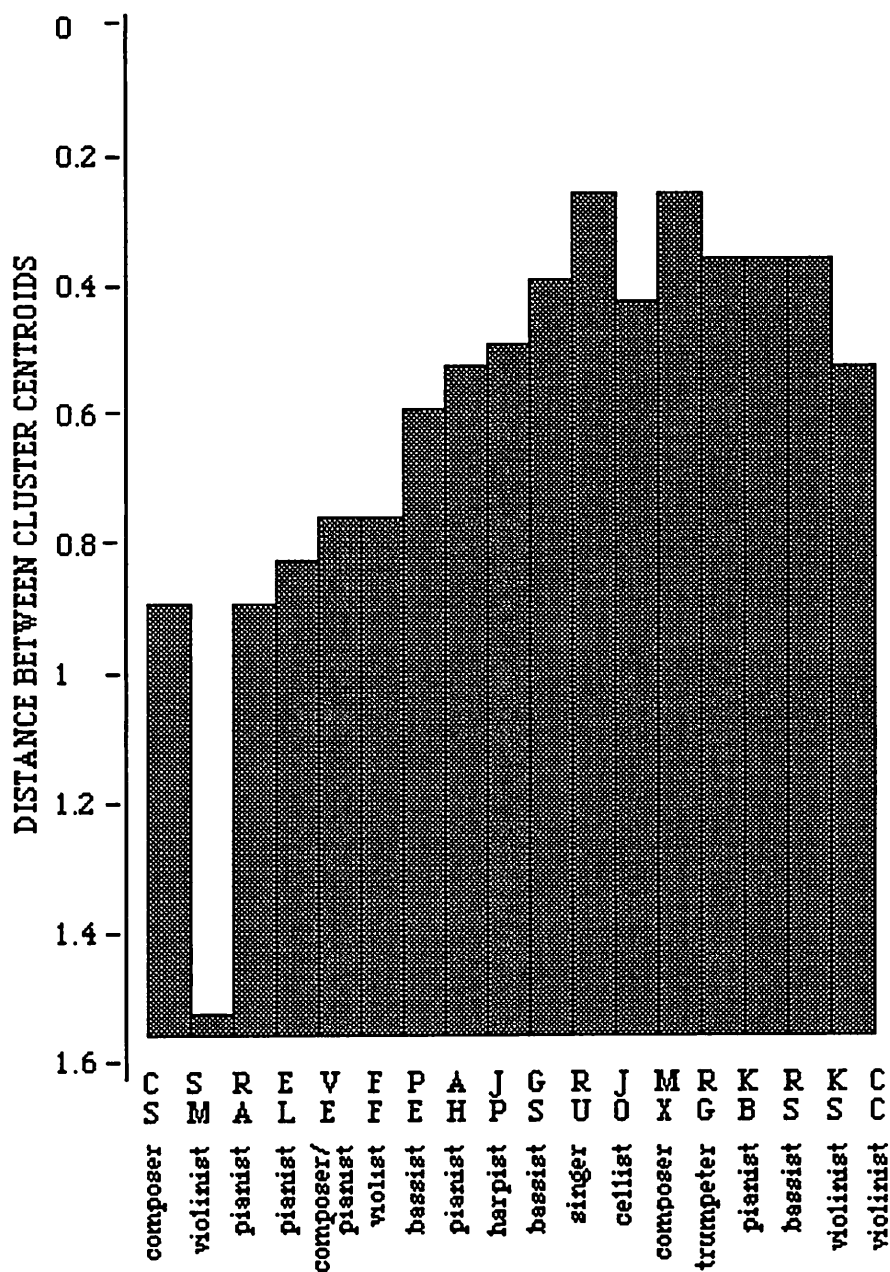
SPECIFIC CHORDS

Figure 4 illustrates the centroid hierarchical clustering graph for the responses categorized as specific chords. This category included the following elements: chord; arpeggio; inversion; chords: I, VII, V, I; chord: V; chord: VII.

TONALITY

Figure 5 illustrates the centroid hierarchical clustering graph for the responses categorized as tonality. This category included the following elements: key of g minor, key of E-flat major, key of B-flat major, key of D major, key of d minor, key of F major, relative major, major/minor, modulation, circle of fifths.

Figure 2. Responses to overall form.



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Figure 3. Responses to harmonic structure.

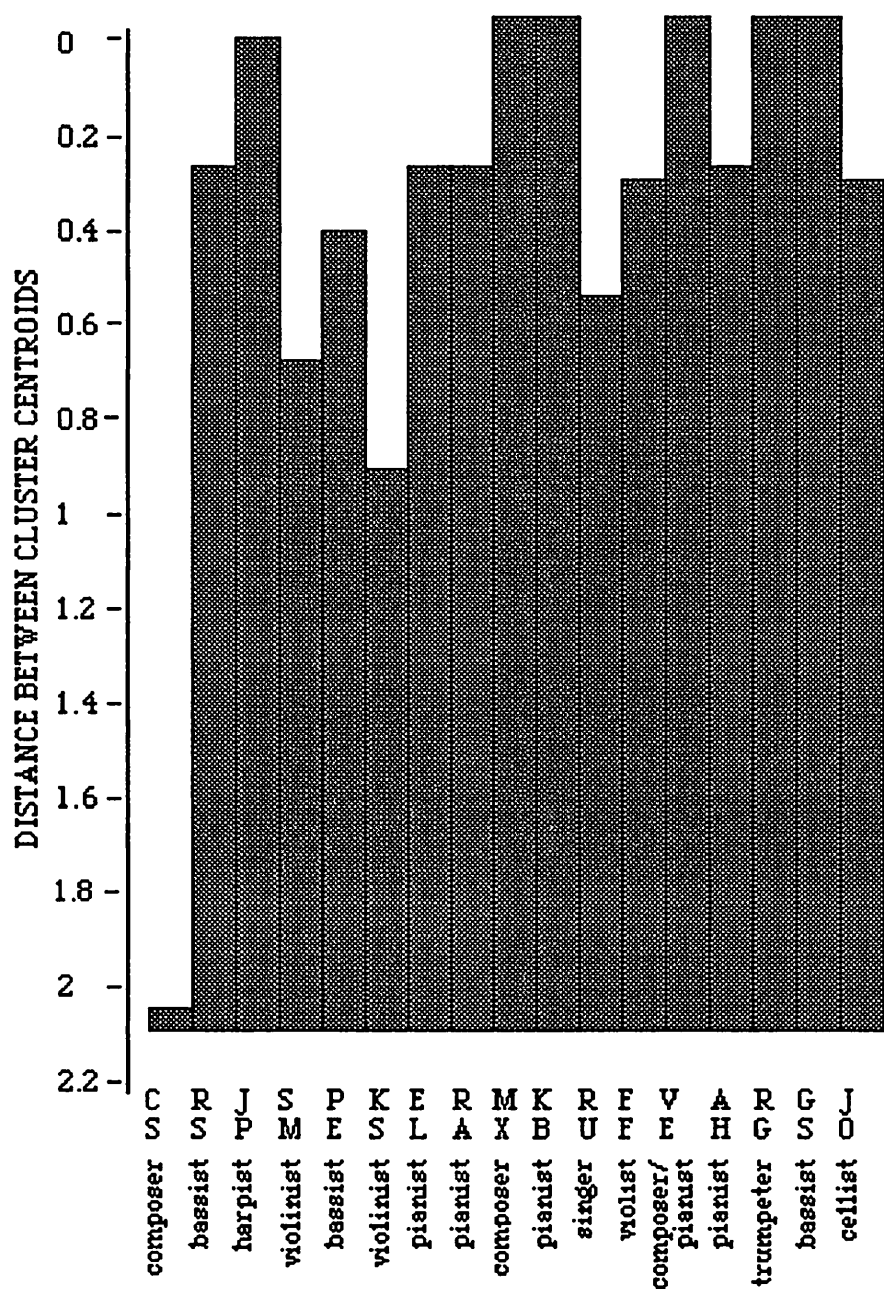
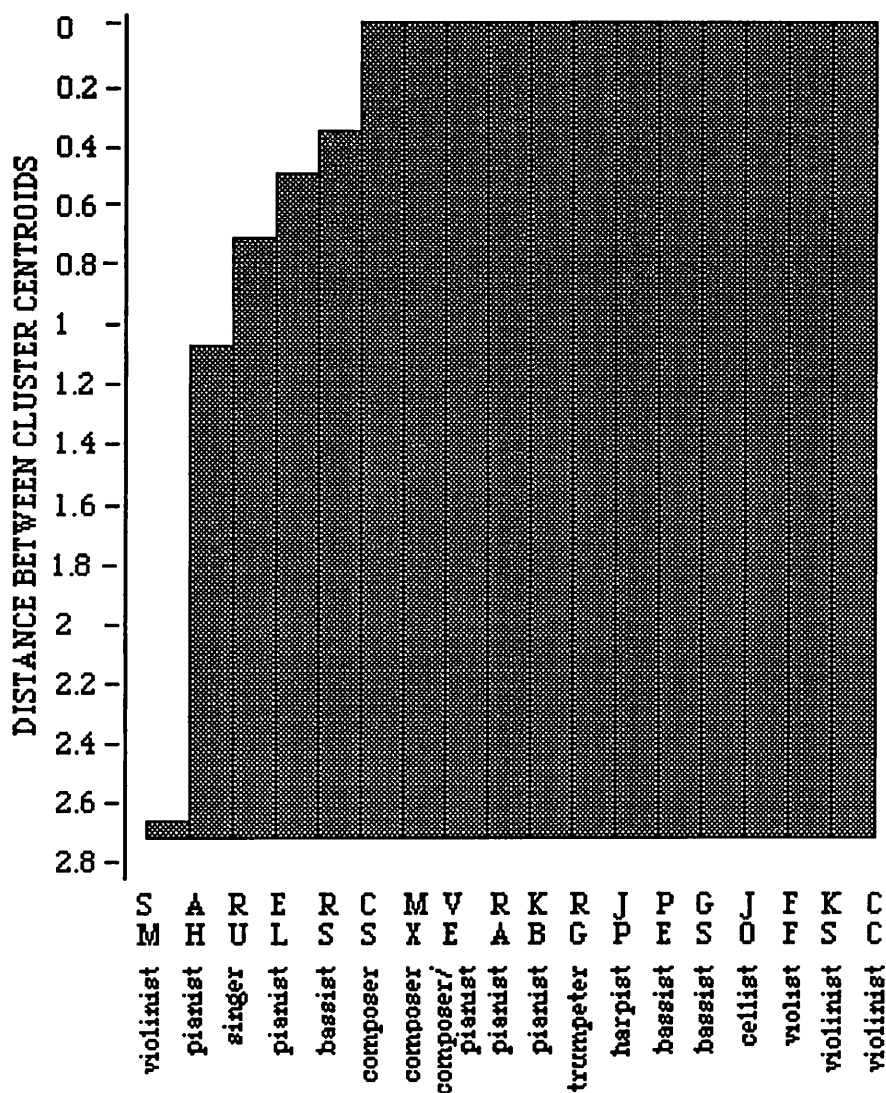
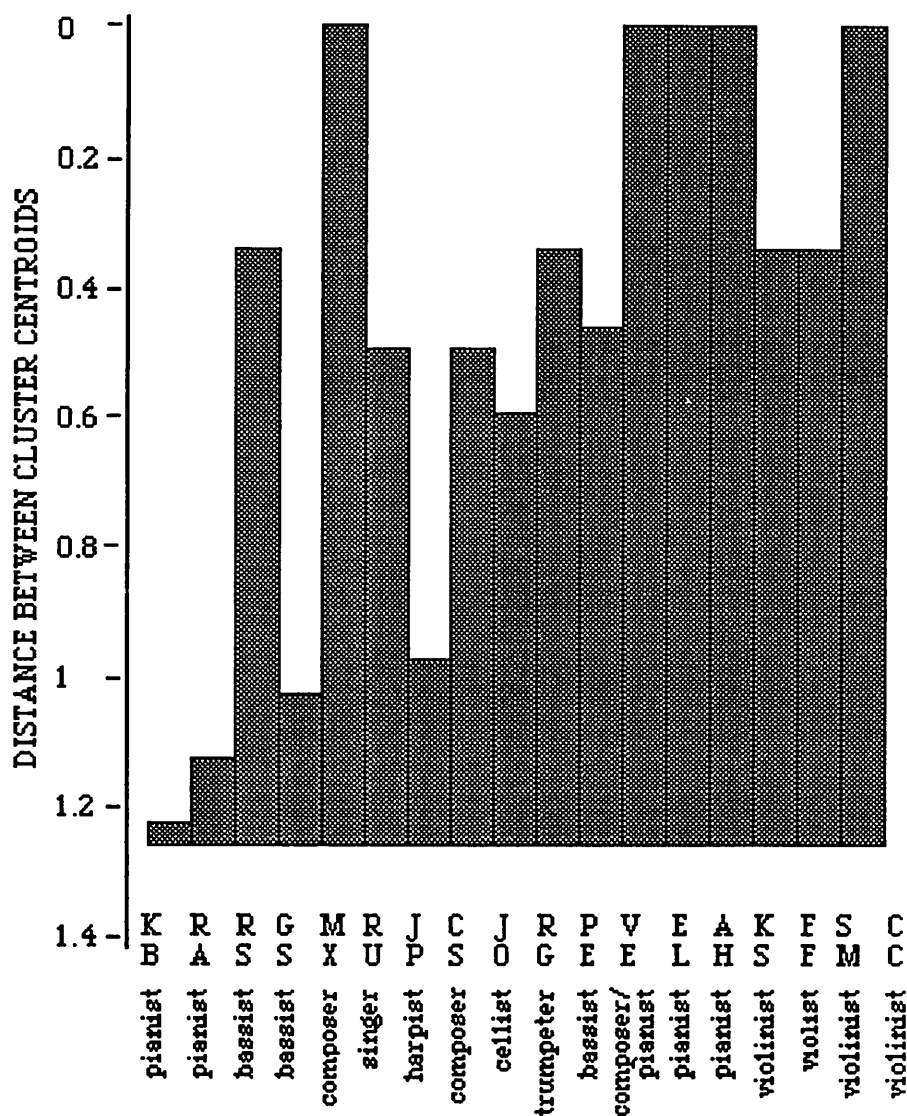


Figure 4. Responses to chords.



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Figure 5. Responses to tonality.



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RHYTHM

Figure 6 illustrates the centroid hierarchical clustering graph for the responses categorized as rhythm. This category included the following elements: rhythm, rhythmic motion, rhythmic similarity, rhythmic pattern, harmonic rhythm, up-beat.

MUSICAL THEMES

Figure 7 illustrates the centroid hierarchical clustering graph for the responses categorized as musical themes. This category included the following elements: themes, development of themes, first theme, second theme, third theme, motive figure, cell- structure motives, melody.

INSTRUMENTATION

Figure 8 illustrates the centroid hierarchical clustering graph for the responses categorized as instrumentation. This category included the following elements: instrumentation, open sound, horns, strings, violins, violas, celli, bass, winds, bassoon, oboe, clarinet, flute. The subjects did not report hearing their major performance instrument with a greater frequency than other instruments.

MISCELLANEOUS MUSICAL ELEMENTS

Figure 9 illustrates the centroid hierarchical clustering graph for the responses categorized as miscellaneous. This category included the following elements: emotional quality of the music; phrasing; performance quality; dynamics; texture; feeling/balance; dialogue; rest/silence; length of note; length of phrase; canon; canon entrance; altered material; number of measures; counterpoint; chromaticism; ascending scale; descending scale; minor second interval; tempo; contrast. Although "emotional quality" was not included in the list of musical terms given in the directions, ten musicians mentioned it in describing what they heard.

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Figure 6. Responses to rhythm.

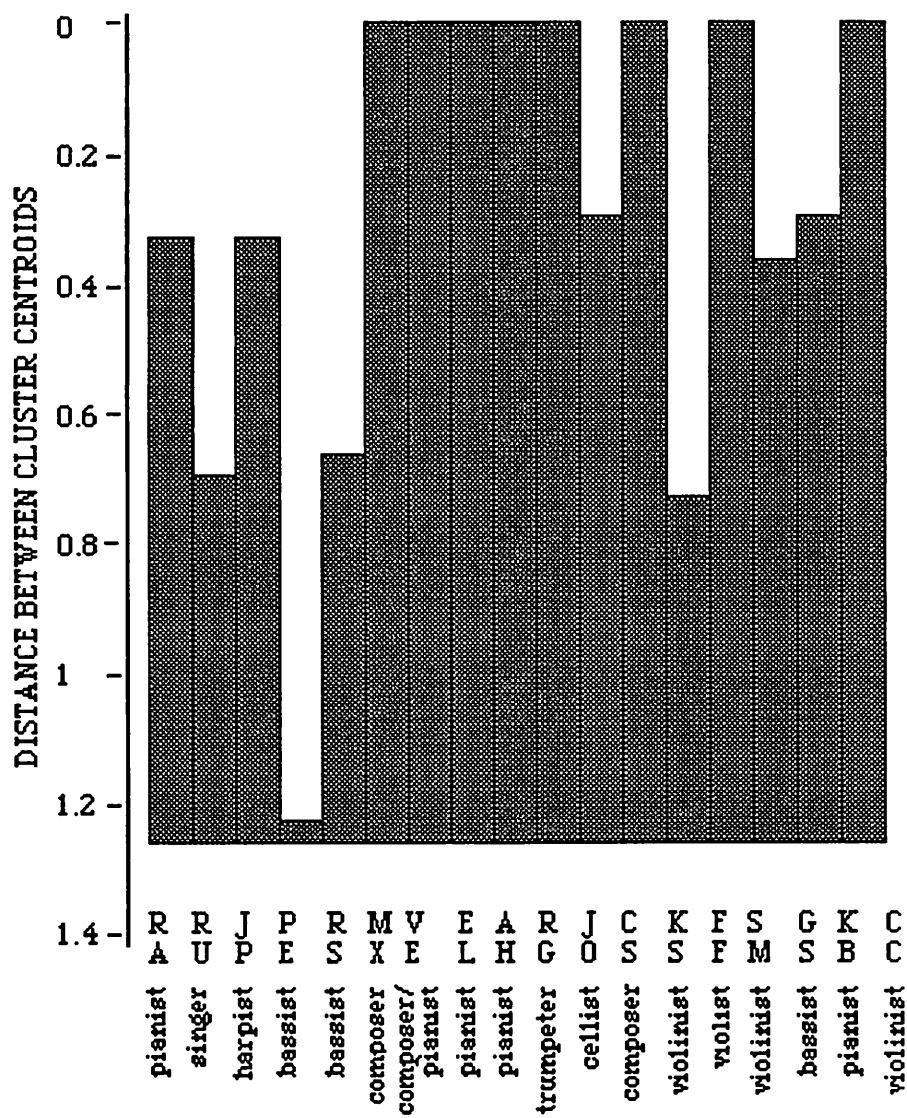
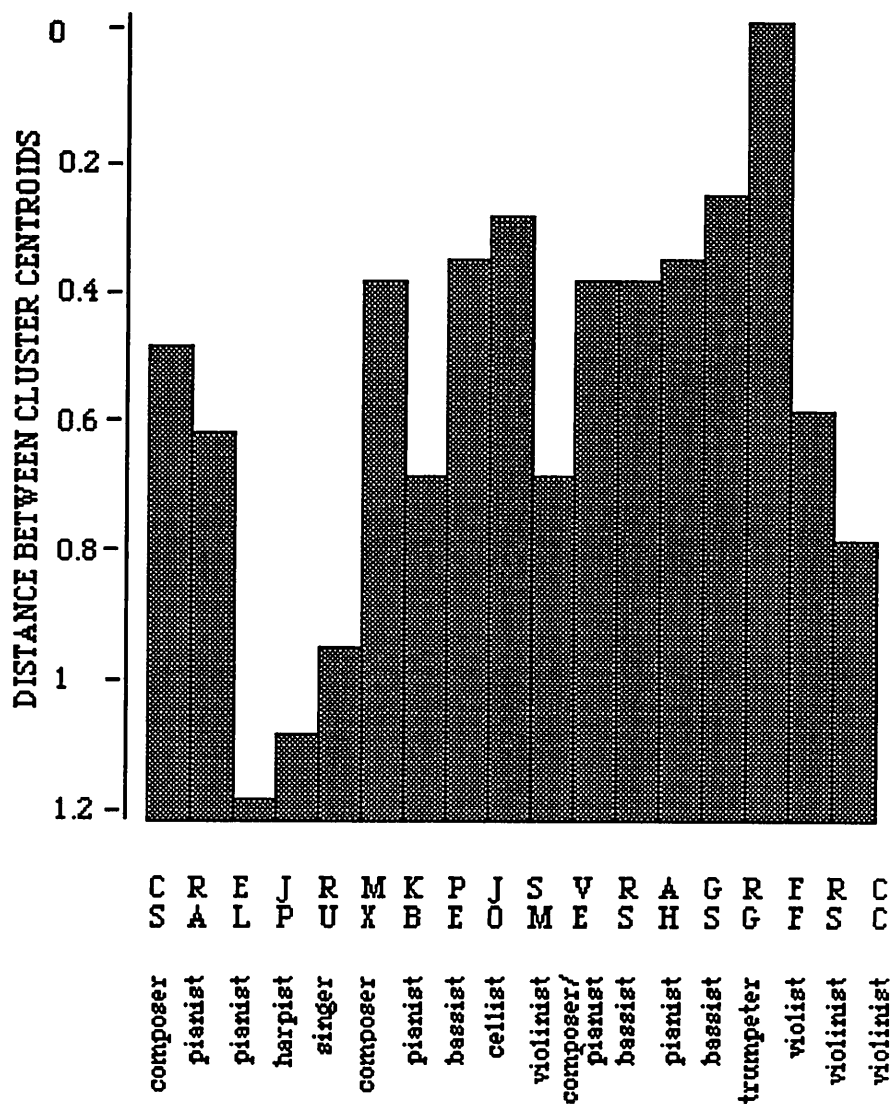
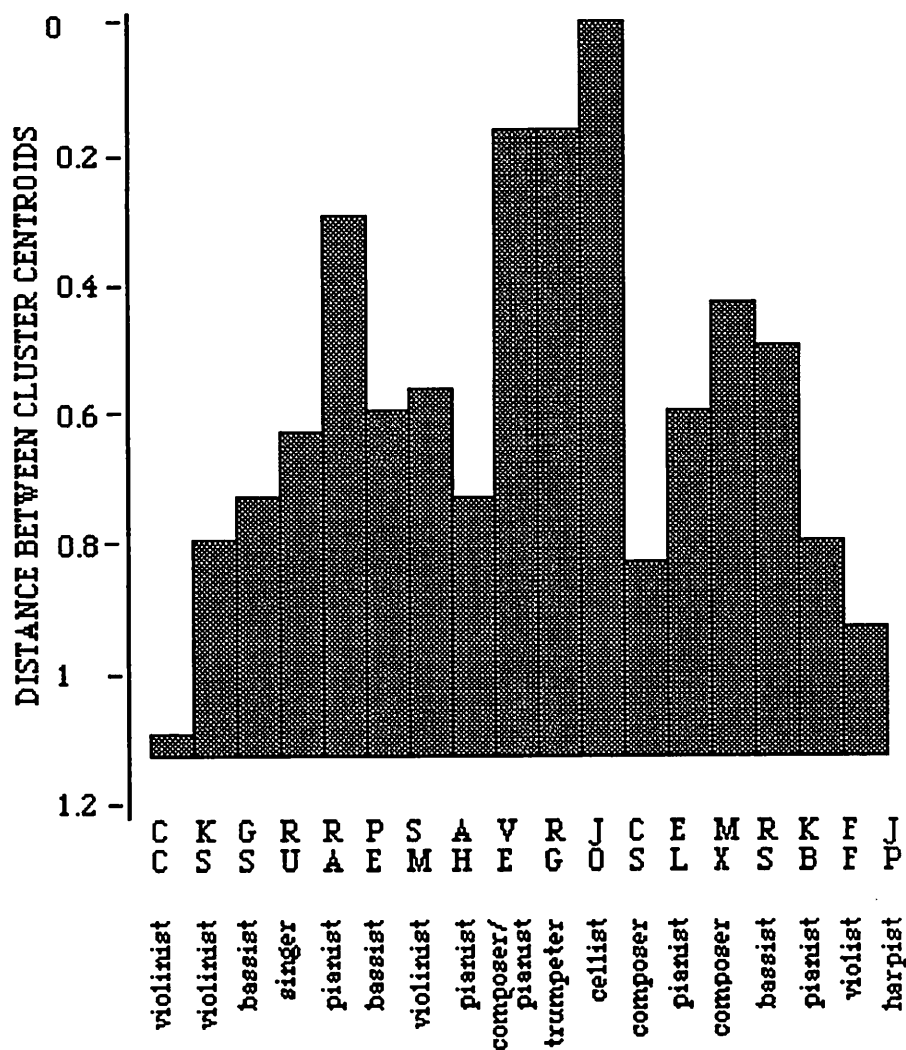


Figure 7. Responses to musical themes.



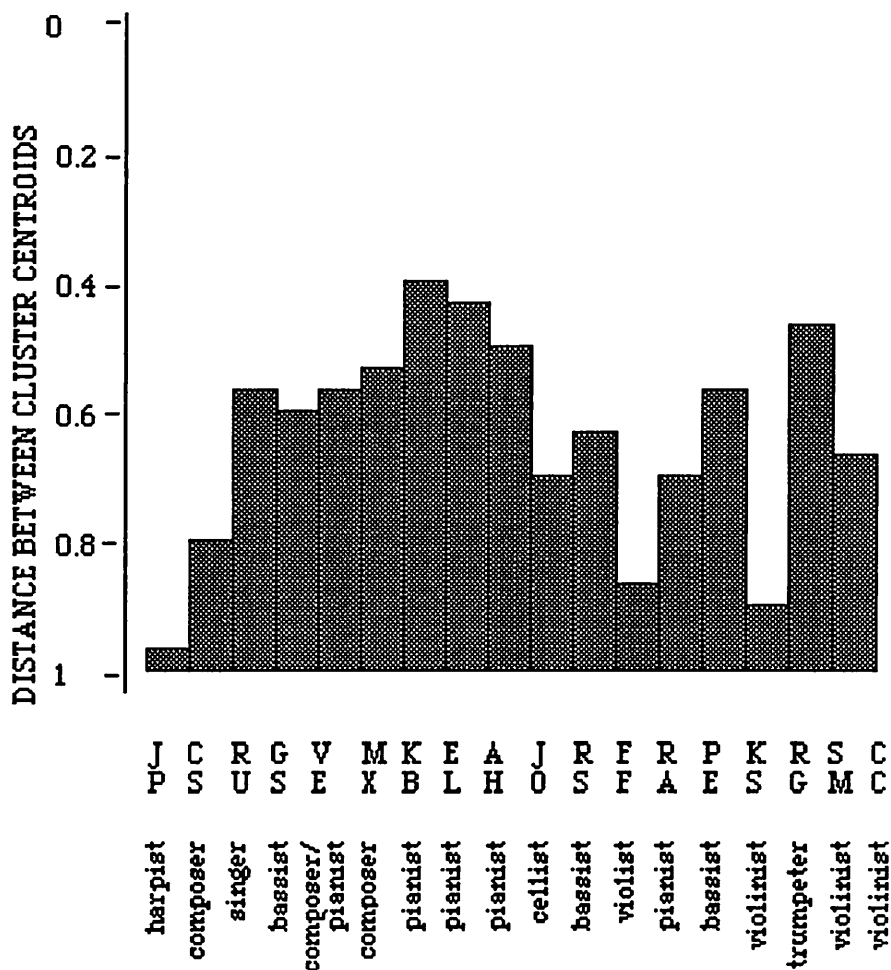
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Figure 8. Responses to instrumentation.



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Figure 9. Responses to miscellaneous elements.



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To get another perspective on the relative homogeneity or heterogeneity of the subjects across the eight major categories, Table 1 presents both the standard deviations of the observations and the root mean square distance between the observations. These quantities give numerical indices of the extent to which subjects are relatively homogeneous or heterogeneous along a given dimension, with larger numbers indicating greater heterogeneity. As can be seen from Table 1, the root mean square distance is smallest for "primary" musical elements in the classical music style (e.g., tonality, rhythm, chords) and grows more heterogeneous for other elements (e.g., instrumentation and miscellaneous elements).

Table 1. Root Mean Square Distances.

Musical Category	S.D.	Root Mean Square Distance Between Observations
Tonality	0.62	2.78
Rhythm	0.91	2.88
Chords	0.85	2.95
Harmonic Structure	1.05	3.65
Form	0.69	4.01
Themes	1.13	4.55
Instrumentation	1.19	5.81
Miscellaneous elements	1.01	6.69

Table 1 seems to suggest that subjects perceived with greater homogeneity the elements of the classical musical style that are the most stable, such as tonality, rhythm, and chords.

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DISCUSSION

There are marked individual differences among conservatory students in the way they listen to music. These differences are both quantitative and qualitative: there are both differences in how much information the musicians abstract from the music and in the way they process the information. Since the subjects were free to describe any musical elements they heard, their selections and descriptions reflected their individual listening strategies. The directions asked the listeners to focus exclusively on the musical elements. At any given moment in the music, many different musical elements and combinations of elements occur simultaneously.

Let us say, for example, that at the very same moment you could focus on the melody played by the violins, on the repetition of a rhythmic figure played by the bassoon, on the entrance of the brass, etc. As people listen, their attention is selective. It shifts from one element to another. What the subjects report reflects which musical elements they choose to focus on. Their answers reflect their individual choice of focusing on the melody, for example, rather than the repetition of the rhythmic figure played by the bassoon, or the entrance of the brass.

Therefore, although the directions clearly asked them to focus on the musical elements as they occur in the music, which elements they reported and how they reported them was a matter of selective attention. Consequently, selective attention was strictly based on the individual's choice among the musical variables in the music and the full amount of information available in this example. It is relevant that this attention mechanism appears to be unrelated to factors such as the musicians' primary performance instrument.

The centroid hierarchical clustering graphs in Figures 1-9 based on both the qualitative and quantitative responses of the subjects' reflect a wide diversity of responses. Further, root mean square distances, another measure of response variation across individuals, show that tonality, rhythm, and chords are the elements musicians perceived in the most homogeneous manner in this performance. To what can we attribute these results? Possibly to the fact that, in this movement, the listeners perceived that tonality, rhythmic patterns, and chords offered more meaningful landmarks than the other musical elements.

This result is consistent with the importance that music theory of the Classical period places upon a well defined tonality, clear rhythmic patterns, and clear chordal functions. Although we theorize that other styles of music (e.g., twelve-tone) would show a different ranking order in how musicians perceive musical elements, at this point we should interpret the

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present results as being relevant only to the performance of this movement. Future research might consider the generalization of this finding to other kinds of music where these landmarks may not be as relevant.

Content analyses of the descriptions provided by CS and VE, both composers, support the hypothesis that trained musicians differ in their approaches to music listening. Some heard isolated features of the musical patterns, while others were sensitive to a holistic, gestalt interpretation of the music. Some musicians listened analytically, reporting single musical elements as they heard them, and by jotting down individual terms. Others listened to complete units, "chunking" the music, describing what they heard over an entire phrase, or over a section. It seems almost as if the latter subjects looked back and reflected on a whole, a complete unit. These differences may be due to differences in their perceptual strategies. The listening experience reported by the analytic listener and gestalt listener are remarkably different.

These findings can be related to observations made by other music researchers. Bamberger (1978) reported that two adults of moderate musical background who were asked to compose a simple piece of music at a computer showed different strategies in performing the task. One subject composed the piece almost motive by motive, phrase by phrase; the other, instead, sketched first a beginning and a finale, and then filled in the middle part. In addition, Bamberger (1977) observed that children asked to line up Montessori bells so they could play a simple nursery tune did so using various internal strategies of representation. Schmidt (1984), using freshman level students enrolled in music theory classes, investigated the relationship among aspects of cognitive style and the perception of melodic interval identification, chord type identification, and melodic dictation. His findings suggest that some cognitive style tests may help predict student performance in listening exams. With reference to language processes, Shannon (1984) found that, in studying room descriptions, subjects tended to give focal or global evaluations. Kintsch and van Dijk (1978) have proposed a model of text comprehension and production that can be described at the local micro-level, and at a more global macro-level.

PEDAGOGICAL IMPLICATIONS

Listening to music is at the core of music theory teaching. To most effectively teach students how to listen, it is important to know what they are hearing. Their listening responses give us a valid beginning. The results of this investigation show that there is wide diversity in how advanced music students report listening to music. The diversity of their responses

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shows that musical elements and musical form can be perceived in different ways.

Robert Gauldin and Mary Wennerstrom (1989) have recently pointed out that experimental findings in music perception and theories of music cognition may influence music pedagogy. As teachers we can benefit from observing the perceptual diversities among our students. Being aware that music can be perceived according to a variety of listening styles can help us develop new ways of presenting, discussing, and teaching musical elements and form in music theory, music appreciation classes and in applied instrumental instruction as well. Appreciating individual responses in listening to music can help us teach a piece from different perspectives.

Using a shorter and less difficult musical work, the basic paradigm of our experiment could be duplicated with students who are not as advanced as the musicians in this study. It would be sufficient that subjects had a vocabulary adequate to name events in the piece they were listening to. The results could be discussed as part of a lesson or unit in aural skills. For instance, the same composition could be played twice and students could be asked to focus on and report different musical elements each time. While discussing the results with the students, we could further expand their horizons of what the musical elements in the piece are, what the form of the composition is, and what can be extracted from the music.

The musical elements that students report and how they report them show us what is important to them. What might they have missed in their listening that we should point out to them? How can we help them to listen with greater awareness? As students see that there is no uniform way of listening to music, they may become more ready to explore listening to other musical elements or other combinations. Illustrating various ways music can be reported may offer students possibilities of grouping elements differently, listening at differing levels, and with differing emphases.

We agree with Prince (1972) that listening is a dynamic process with many variables in a constant state of change. Aaron Copland (1957) writes: "We all listen to music according to our separate capacities." (p.18). "The intelligent listener must be prepared to increase his awareness of the musical material and what happens to it. He must hear the melodies, the rhythm, the harmonies, the tone colors in a more conscious fashion" (p.22).

In summary, this inquiry into the listening strategies of musicians shows that a high level of musical training does not lead to a uniform way of perceiving music. Music education and training broaden students' base of musical knowledge and provide them with the "language" for describing what they hear, but musicians can utilize this knowledge selectively, according to the particular musical elements they choose to attend to. In listening to music, musicians focus on different musical elements and

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perceive the complexity of music according to individual cognitive strategies. These results suggest that further research in the individual differences shown by musicians will help us not only to understand music perception better but also to broaden our understanding of cognitive processes at large.

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Reader's Response

THE AMERICANIZATION OF SCHENKER PEDAGOGY?

Dear Editor:

It is always nice to be cited, and so I was pleased to see my essay "The Americanization of Heinrich Schenker" cited in the recent *JMTP* article by Gregory Proctor and H. Lee Riggins ("A Schenker Pedagogy," Spring 1989). If, in my essay, I had set out to satirize an analysis course of which I strongly disapproved, I might have written something very like the Proctor-Riggins article. I would only have left out their sensible remarks on undergraduate pedagogy: good sense makes bad satire. Much of the rest of their article, however, reads like a brave new world of Americanized Schenker.

To Americanize Schenker, in my view, means to focus purely on the rationalist side of Schenker's thought while jettisoning all ambiguities, all internal inconsistencies, all that arises from analysis rather than from theory, and all that is not narrowly technical; this is just what Proctor and Riggins have done. They would turn Schenkerian analysis into a streamlined technology—very much in the American spirit—in which fixed rules lead to readily predictable results, and in which subtler questions of judgment are irrelevant. In the interests of honesty, they should call theirs a Proctor-Riggins pedagogy and leave the name of Schenker out of it.

In Proctor-Riggins pedagogy, theory is king; musical sensibility is banished as "metaphysical" and as having no place in the academy. What matters to these authors is how well a given analysis conforms to a predetermined theory, not whether it does justice to a piece of music. The latter consideration, in fact, is dismissed as "the least interesting aspect of analysis altogether" and as pedagogically irrelevant. Further more, it is demonstrated that Mr. Schenker himself was a woefully poor student of "Schenkerian analysis"; we might give him an A for effort, but his analyses reveal one confusion after another.

It is true that Schenker's graphic analyses contain inconsistencies, even internal inconsistencies, and that they do not always obey the letter of *Free Composition*. In such cases it is by no means always to be assumed that the

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analysis should be corrected in light of the theory; in some instances the theory should bend in order to accommodate the analysis. One of the most fortunate of Schenker's inconsistencies is that, in analyzing a composition, he was willing to override his own theoretical prescriptions if the music seemed to demand it. (The best-known situation of this sort is probably Schenker's prohibition on the prolongation of sevenths, which is contradicted by several of his most outstanding analyses.) It can be, and has been, argued that he should have gone further than he did in making such exceptions; the point is that he made them.

Many gifted Schenkerian analysts feel that certain analyses by Schenker are incorrect in some way. When their disagreement with Schenker rests on theoretical grounds, that is interesting. But what is even more interesting is when one feels that Schenker is wrong on *musical* grounds—that his analysis fails to do justice to the composition itself. But that is exactly the sort of thing that is ruled out of order by Proctor and Riggins—which is a good thing for them, because it protects their own analyses from question. And the one original analysis they present, of the first part of Bach's figured-bass chorale N. 47, is very questionable indeed (see their Figure 1a, reproduced below).

The image shows a musical score for a chorale in G major, 4/4 time. The score consists of a vocal line (soprano) and a figured bass line. Above the vocal line, there are notes and rests: a, (r o d) c b a g r o. The vocal line has a fermata in bar 8. The figured bass line has figures: 6, 6, 6 4 3, I V, 6 5, 6 4 7. Below the figured bass line, there is a Schenkerian analysis: I — — (II v —) I V E: I (II — v — I) II v — I. The analysis uses Roman numerals and symbols like 'v' for voice and 'E' for the E major chord.

Although I have not analyzed the entire chorale in depth, it is clear to me that the authors' theoretical expectations have led them to misread the first part of it. They state that, because of the repeat sign and the cadence in bar 8, they expect to find "a first-level middleground descent from scale degree 2 over V." It comes as no surprise, given this assumption, that they find the middleground they are looking for. What is surprising is that they make the most elementary mistake in reading the foreground. Their "2 over V" is the E major chord immediately following the first fermata. But this chord is passing, not stable; it is so by virtue of 1) its weak metric position,

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and (2) its position within the melodic unfolding from C#5 (at the fermata) down to A4 and back to C#5. The 10-5-10, strong-weak-strong pattern of bars 4-5 is typical, and it virtually defines the middle event as passing. The foreground harmonic progression, therefore, is not from I to V in A major but from I to VI. The pivot of the modulation to the dominant is the F# minor harmony of m. 5 (VI of A = II of E), not the passing chord preceding it.

Consequently, the authors' reading of a linear descent from C#5 to B4 and thence down a fifth (B4-E4) is wrong, since the B4 in m.4 belongs merely to the foreground. One line descends from A4 (mm.2 and 5) to E4 (m.8); another leads from C#5 (mm.4-5) to G#4 (m.8); the two lines together form a series of unfolded thirds. If one is to read 2 over V, that tone can only be represented by the B4 of m. 6, not that of m.4, and it is a third-progression, not a fifth-progression, that descends from the 2. Which of the two lines is primary—and thus whether G#4 or E4 rules at the cadence—can only be determined by the subsequent course of the chorale. As can be seen, even the authors' statement that m.8 is a perfect authentic cadence is open to question.

My point in rehearsing this analytical disagreement is this: the authors' preconceived idea of what they will find easily blinds them to what *actually* occurs in the music. Theory wins, music loses. It is obvious, and depressing, that the same error will be transmitted to students of their pedagogy.

But ah, they say, there is no "right" analysis anyway! Any analysis which follows their rules is equally correct! Well, then, their analysis is one of an indeterminate number of "correct" analyses, all of them equally unconcerned with the music and hence equally uninteresting.

My own view of Schenkerian pedagogy is quite different. First—following the philosophy of my own teacher, Ernst Oster—I avoid stressing theoretical abstractions in the early stages of study. At the beginning of my Schenker course, "theory" consists of conventional disciplines that the student should already know: figured bass, harmony, species counterpoint, and some simple notions of embellishment. In my opinion, study of *Free Composition*, though important, is for advanced students only—students who have already studied Schenkerian analysis for at least one year. First analysis, then theory: the theory should be motivated by analysis, by music itself, as it was for Schenker. Schenker, after all, reached *Free Composition* only by studying music for a lifetime; understanding that book requires an understanding of Schenker's earlier writings, which aren't easy either. To begin with the end is, to say, the least, a questionable way to proceed.

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When my approach works as intended—it does for some students and not for others—the student is led to *discover* the theory through hearing and reflecting upon music. In this way the analytical approach and the ear keep pace with each other, while both improve. Only after a good deal of analytical practice are theoretical generalizations stated in abstract form. Once the level of theoretical abstraction is reached, the student has a much deeper understanding of those abstractions than could have been gained by having him or her read *Free Composition* or memorize a set of “rules.” After that comes more analysis, and more, and more. It’s not nearly so tidy as the Proctor-Riggins method, but it’s exhilarating; many students find that what they’re learning corresponds to what they’ve dimly perceived in music; the gulf between the concepts “theory” and “music” disappears.

My approach (which is adapted from Oster’s) is practically opposite to that of Proctor and Riggins; they present an abstract theory into which pieces are subsequently “plugged in.” Why should the student be interested in doing that? What is its value? For me, and I hope for my students, the object of studying and doing analysis is to understand masterpieces better; the theory does not exist for its own sake. What I miss in their article is any hint of *why* a student should make the effort to master this complex theoretical apparatus—especially when he or she is told not to care whether any particular analysis is more illuminating (and not just theoretically better-formed) than any other! Musicians properly demand an aesthetic “payoff” from analysis, not just the satisfaction of solving a puzzle in musical notation. Analysis should lead to better hearing, better performing, and better thinking about music, not just to “correct” answers.

A side note. Like Oster’s teaching, mine is not graph-centered. My students do no graphing for about the first half-semester; nor do I present them with formal graphs during that time. When graphing begins, it is presented as *merely* a means of communicating relationships already intuited by the analyst (whether that is the student or me). I very much dislike making a fetish of graphs. And I spend lots of class time—as much as possible—debating the merits of alternate readings: not primarily their conformance with the theory, though that is discussed where appropriate, but their relative plausibility as models of the composition being analyzed.

I believe—and this is really the point of my “Americanization”—that my kind of Schenkerian pedagogy is in conflict with the American university system as it is currently structured; the “objective” type of approach represented by Proctor and Riggins is precisely the sort of thing the current system tends to encourage. This situation is more than unfortunate; students, professors, and ultimately the academy all lose by it. As has been

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pointed out by some literary critics, theory was the ticket by which criticism entered the academy, but excessive reliance on theory has perverted criticism. The same thing has happened to music analysis. The university demands theory and disdains "metaphysical sensibilities"; Proctor and Riggins are by no means alone in their prejudices. But to acquiesce in the perversion of music for the sake of theory is shameful.

Sincerely yours,

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

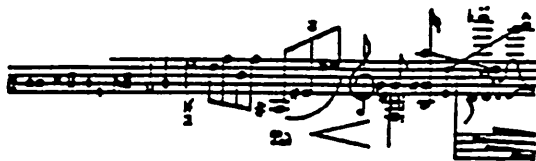
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