articles

Voice Function, Sonority, and Contrapuntal Procedure in Late Medieval Polyphony

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During recent years, scholarship in the field of late medieval music has been heavily weighted toward archival research, paleography, and contemporary theory. Such enterprises have furthered our appreciation of the cultural contexts in which music was composed and experienced, and have led to some gratifying advances in our knowledge of manuscript compilation, performance practice, theoretical texts and their traditions, institutional history, and biography. Having rightly acknowledged such achievements, one must nevertheless concede that even the most positivistic avenues of research often yield results that are decidedly inconclusive.[1] This state of affairs only reminds us that our understanding of music as a living art in this period must inevitably be founded upon the shifting sands of presumption and educated guessing. Yet there does remain one relatively neglected resource deserving of serious attention, namely, the critical evaluation of compositional techniques as inferred from actual pieces.[2] If applied judiciously, such analytical evidence is not necessarily any more conjectural than are conclusions based on study of original source documents. On the contrary, inferences of style and technique drawn from practical composition are an integral complement to results obtained from other disciplines, with each constituting no more or less than one facet of the evidence available to the modern historian of music.

An equally compelling reason for focusing attention on the works transmitted to us is that we are finally in a reasonably good position to do so: many decades of musicological endeavor have rendered a vast amount of the surviving corpus available in increasingly reliable modern editions.[3] Accordingly, the ideas developed below derive to a large extent from surviving musical texts as established in transcription, which I view as a wholly legitimate body of primary sources.[4] The aim is to advance hypotheses based on commonalities observable in the treatment of sonority, counterpoint, and musical articulation. It should be emphasized at the outset that a focus on musical texts in no way implies a devaluation of contemporaneous music theory. Rather, I hope to demonstrate that even though the surviving monuments of polyphony attest to the cultivation of procedures far more subtle than those described by medieval theorists, the descriptive

tools of the period are more adequate to the task of analysis than has often been supposed, and that modern criticism is better served by extending them, wherever possible, than by ignoring or replacing them. In view of the avowedly didactic purpose of the medieval treatises, however, it would be unreasonable to expect to gain from them a profound insight into the refined artifices of professional composers.[5] Thus, after having gleaned the basic rules of music as prescribed by period theorists, one is thrown perforce upon empirical methods when attempting to account for polyphonic composition as *artwork*. A prime goal of any such approach must therefore be to deduce normative compositional procedures in a given set of works by identifying recurring phenomena and interpreting their significance.

This study is divided into five parts. Part I establishes the range of voice archetypes found in a substantial corpus of Franco-Flemish mass settings stemming from the period of the *Ars nova* through the very early fifteenth century,[6] and shows how these generic types implement specific functions in polyphony. Part II broaches certain terminological issues of sonority, voice leading, and musical articulation that are crucial to the analysis of late medieval music. Part III identifies two basic procedures of counterpoint observable in the liturgical repertory just introduced (see note 6). Proceeding from principles underlying these techniques, part IV propounds the concept of contrapuntal referentiality, a tool I have formulated for assessing the interdependent means by which tones are referenced to each other in vertical sonorities and in voice-leading progressions;[7] subsequently this section extends the discussion chronologically by introducing a third contrapuntal technique that was developed only in the fifteenth century. Part V illustrates how referentiality can serve as a key to evaluating stylistic trends in Franco-Flemish music of the fourteenth and fifteenth centuries.

I. Categories of Voice Function Correlated with Musical Texture

In 1914, Arnold Schering made an important observation regarding the three-voice chansons of the early fifteenth century: he claimed that each of the three voice-archetypes characteristic of that repertory— superius, tenor, and contratenor—has a specific character and fulfills a distinct role in the counterpoint.[8] Other early adherents to this view were Knud Jeppesen and Rudolf von Ficker.[9] My research into liturgical polyphony substantiates that the voice functions identified by Schering originated in the fourteenth century, but it also indicates that the combinations of voice types at that time were more varied than Schering's model allows. Finally, it has become evident that the particular voice types, when considered in conjunction with specific means of treating consonance and

dissonance, constitute a firm basis for codifying compositional procedures in music from the *Ars nova* through at least 1450.
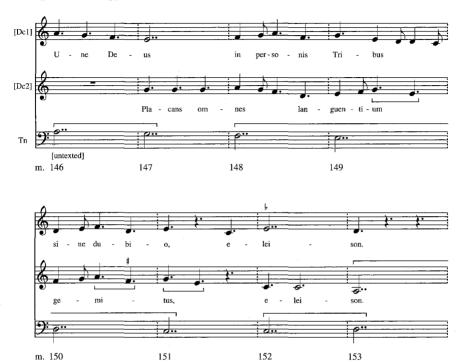
Having established the foregoing points, it must be added that voice function is not manifest solely through contrapuntal interaction. From an analytical standpoint, one can separate the process of composition into two domains, which loosely conform to "precompositional" and "compositional" phases of conception. The former, which I refer to as "musical texture," refers to a given work's regulation of ambitus, rhythmic coordination of voice parts, and text disposition. The compositional phase encompasses the actual fitting together of tones in polyphony, i.e., counterpoint. The incorporation of preexistent structural voices (cantus firmus or isorhythm) partakes in both phases of a work's realization. Because choices of musical texture tend to be anterior to the working out of the actual voice-leading, I propose to deal with this aspect of composition first, but it is important to note also that the two broad classes of texture, which I have termed "paired upper-voice" and "cantilena," respectively (both to be illustrated presently), prove to correlate significantly with certain contrapuntal techniques introduced below in part III.[10]

Perhaps the most objective contemporary indicator of how voice functions in late medieval polyphony were conceived is the presence of part designations in the manuscripts. In the sources of 78 complete three-voice mass settings from the corpus introduced above (see note 6), such labels are almost without exception limited to two—*tenor* and *contratenor*.[11] Voices underlaid with text are rarely labeled, and typically are allocated a considerable share of the upper melodic profile of a given piece. In accordance with contemporaneous theoretical usage, I refer to any such undesignated upper line as a *discantus*.[12] Thus, in works characterized by two voices of like register moving over a tenor and sharing the melodic profile ("paired upper-voice" texture, illustrated in example 1), both are almost invariably texted, although not necessarily with different words, as is the case in the excerpt shown.[13]

In the larger group of works where a single upper voice dominates as a melody ("cantilena" texture, shown in example 2), this top part is most often the only one that is fully texted in the source.[14] In both classes of texture any lower voices that are untexted tend to function, at least in places, as a sonorous foundation, although recent research has convincingly shown that one cannot infer from their untexted state that they were necessarily intended as instrumental parts, as many scholars have assumed.[15]

Voice functions in fourteenth-century music prove to be analogous to those Schering had claimed exist in fifteenth-century chansons, except that in the earlier period they apply in a looser sense, such that the issue becomes one of *categories* of function, where the respective roles of the

Example 1: Paired upper-voice texture.

Kyrie *Rex angelorum* / *Clemens pater* (Apt no. 1, with trope texts in upper parts; concordance
as Ivrea no. 68)

three (or four) parts are not necessarily mutually exclusive (hence the
eventuality of having two different discantus parts). In all vocal polyphony
through at least 1500, each voice type acts in a specific capacity, but this
role can differ according to the number of parts involved, as well as ac-
cording to which contrapuntal technique (explained below in parts III
and IV) underlies a given piece.

Medieval theorists customarily explained counterpoint as beginning
with a tenor *cantus prius factus,* but it is a long way from these instructional
two-voice examples to the multi-voice free counterpoint so often encoun-
tered in the practical sources. Nevertheless, apart from its usual melodic
cogency, the voice normally labelled *tenor* in the sources does hold compo-
sitional primacy in two ways: first, it typically directs cadential progressions
by its descending stepwise motion;[16] second, it generally inhabits the bot-
tom stratum of the aggregate pitch space, so that the intervallic integrity
of individual sonorities is, as a rule, dependent upon it.[17] The contratenor,

Example 2: Cantilena texture.

Kyrie *O sacra virgo beata,* Apt no. 9 (mm. 15–30; end of the first of three trope strophes of the
 Kyrie I)

when present, tends to move more leapwise and typically takes the middle
position at cadences. It does at times, however, function as the low voice,
and in some pieces it acts predominantly in that role.[18] Occasionally, even
a texted upper voice takes the low note in a given sonority, but this is a
distinctly irregular occurrence in all of the contrapuntal techniques illus-
trated below.

II. Analytical Premises of Sonority, Voice-Leading, and Articulation

 Before treating issues of counterpoint in depth, and in order to intro-
duce certain terms that will be employed below, it is necessary to consider
more generally the purposes served by the coordinated motion of tones
in polyphony. On the broadest level, Sarah Fuller has identified three
components of "syntax" that can be deduced from a reduction of the con-
trapuntal surface of a given work: 1) prolongation, 2) progression, and
3) cadence (or "terminal punctuation"). These terms, reminiscent of

Schenkerian theory, are advanced by the author to account for tonal motion or stability within a given passage of music.[19] Fuller defines "prolongation" as a "continuation of a sonority or integral constellation of pitches." This concept is useful in identifying areas of closed tonality, governed by one pitch as a sonorous foundation. On the other hand, "progression" according to Fuller entails movement "from one sonority to another," the manifold representatives of which can be grouped generally according to "a distinction between progressions that are neutral in character and those that are inclined toward a specific goal."[20] Regarding the former cases, she notes that the term "succession" might better describe the phenomenon, whereas the latter are cases of "directed" progression.[21]

Progression and succession of sonorities, understood according to Fuller's terminology, are an elementary resource of multi-part music. Indeed, hundreds of such instances of coordinated motion can occur in the course of a single piece. This very ubiquity means that the concept of progression by itself has little necessary implication for overall musical structure. Fuller addresses this problem by identifying a particular manifestation of the phenomenon, one that is "not accomplished by quality or structure of the progression alone"; rather, it is the product of a confluence of factors working to produce "what is grasped syntactically as 'the cadence.'"[22] In other words, when a given voice-leading progression is placed in relief by coordinating it with other conventional resources of composition, its status as a musical articulation is heightened. The archetypal instances of contrapuntal progressions being brought into prominence are those we refer to as cadences, which by definition are points of musical closure.[23] Hence, cadences should reflect the large-scale organization of a composition if adequate criteria for their recognition are at hand. As it happens, the many discant treatises discussed in depth by Klaus-Jürgen Sachs and Ernst Apfel do indeed afford us insight into contemporary conceptions of what constitutes musical closure,[24] and an examination of a large number of works shows that this sense of arrest can be effected or mitigated in a variety of ways.[25] Once one acknowledges the normative means by which cadences are established, the concept of cadential emphasis can be extended to other applications as well.[26]

In order to be of structural significance to the listener, a cadence must be recognizable as a point of arrival, but in practice there is no single means of delineating this. Rather, the various cadential types can best be conceived as a spectrum of possibilities balancing a number of contributory elements.[27] The presence of each of these elements tends to confirm —as, conversely, its absence tends to deny—the finality of any given cadence. These attributes (presented in an order approximating diminishing importance, but not intended as absolute) are shown in table 1:

Table 1
Defining Elements of Cadences in French Mass Settings
of the Fourteenth Century

1) concurrence with an integral grammatical unit of text in one or
    more voices
2) coincidence with the end of a coherent melodic period in one or
    more parts
3) general pause, vertical strokes, change of mensuration, or melisma
    following
4) rhythmic placement consistent with the prevailing pulse
5) extended cadential note in each voice, with no voices continuing
    without repose
6) directed contrapuntal motion (as defined below) among the voice
    parts
7) presence of stereotyped melodic cadential figures
8) only perfect consonances sounding at point of resolution
9) all voices sounding at point of resolution
10) presence of hocket, melisma, or rhythmic diminution in preceding
    measures

The relative strength of any given cadence is signalled by the number
of above factors that are present. The presence of a majority of them typi-
cally denotes a prominent close (final cadences typically manifest all or
nearly all of them). It is perhaps surprising that contrapuntal motion
should be listed as low as no. 6, but the preceding elements all correlate
more highly with points of musical closure.[28] While the possible permuta-
tions are too extensive to tabulate, the elements listed above provide a
suitable context within which to evaluate various cadence types, structural
periodicity, and overall tonal coherence.[29]

In his 1975 study on sonority in Machaut's motets, Ramón Pelinski ex-
plains how "sonorities of repose" (*Ruheklänge*) act as tonal anchors in the
compositions he analyzes.[30] In this article Pelinski does not distinguish be-
tween various states of "repose," whereas in my view it is crucial to recog-
nize that not every cadence is a sustained sonority, and conversely, that
not every sustained sonority is a cadence. As I intimated above, Fuller does
make such a distinction between "prepared arrivals," resulting from a "di-
rected" progression and producing "local closure and at least temporary
tonal focus," and "holds," resulting from a "neutral" progression to a
sonority which is "by no means an anticipated goal."[31] Due to space con-
straints, the discussion below will deal with cadences per se; not with the
more general class of sustained sonorities.[32]

Of all the cadential elements listed above in table 1, the contrapuntal one (no. 6) is among the most susceptible of alteration. In general, the other factors are either present or absent, but the voice-leading is greatly variable, particularly at interior points of articulation. Fuller explains how theorists of the period fairly consistently describe "norms of interval succession," usually incorporating contrary motion, which "point toward a syntactic practice based on directional tendencies of imperfect intervals."[33] A typical example, from Johannes Boen's manual of discant (fourteenth century), reads as follows:

> When we strive toward the lower component [tone] of [the ratio of] double proportion [i.e., octave], we use that third which stands at a lesser distance from that tone, that is, the semiditonal [interval], [i.e., m3→1]; and so, when we want to close to the upper [octave] tone, we use the sixth which lies at an equal distance from the upper tone, that is, the semiditonal [interval], which comprises a whole tone above the fifth [i.e., M6→8]; on the other hand, when we strive toward the fifth, we extend from the lower third using the ditonal third [i.e., M3→5]; thus we measure exactly the same distance [minor third] when we strive toward the fifth, as between the octave and the sixth.[34]

From these and many similar remarks can be distilled the general concept of two voices proceeding in contrary motion to a perfect consonance from the nearest available imperfect consonance. I propose to refer to this phenomenon as *directed motion.* Apfel gives many examples of the precept as stated by contemporary theorists, although it is not always clear that such motion is being stipulated as cadential.[35] When directed motion occurs between any two voices at a point of musical closure identifiable from the conditions enumerated above in table 1, this will henceforth be called a *discant cadence,* so called because it adheres to the principles of discant theory.

Based upon the results of a tabulation of cadences in actual works, I propose to designate one voice-leading pattern as the definitive cadential type of the fourteenth century—a judgment that accords both with modern scholarship and, as is shown above, with the teachings of medieval music theorists.[36] This archetypal contrapuntal progression obtains when all three voices move stepwise to a cadential sonority, with the upper voices each resolving to a perfect consonance from the nearest imperfect consonance in contrary motion to a tenor descending as low voice. Most often this voice leading is expressed as a 6-3 sonority (both major intervals) progressing to an 8-5, or alternatively with the middle voice transposed up an octave: 10-6 to 12-8.[37] I suggest that this prototype be designated the

paradigmatic discant cadence of the fourteenth century, since, at the most obvious points of closure, one or the other form of this progression is used far more than any other: in the corpus of three-voice mass settings introduced above, it occurs in 69 of 79 final cadences (87 percent).[38] Both types are typically expressed as the familiar "double-leading-tone cadence," where the tenor descends by step and both upper voices ascend by half step. In the absence of signatures, this progression occurs diatonically when the tenor moves from G to F. With a tenor moving D to C, it requires the application of an F sharp in the applicable upper part at the penultimate. When the tenor moves from A to G or from E to D, however, and in very many other cases, all imperfect intervals above the tenor are diatonically minor. This brings up the alternative of placing the half-step motion in the low voice instead of the higher ones:

Example 3: Variable position of half step in paradigmatic discant cadences.

KEY: solid oval = vox 3 (discantus or discantus 1); solid diamond = vox 2 (contratenor or discantus 2); void diamond = tenor

The progression on the left (the so-called phrygian cadence) seems in the fourteenth century to have been reserved almost exclusively for internal articulations.[39] But this, of course, is only one of many types of interior cadence, and if the tenor has no signature such a progression might well be altered as in the example on the right, which has a B-natural and raises the D and the G.[40] In the absence of specified signatures or accidentals, such choices must be made time and again when preparing period works for performance.

Given the frequency of its occurrence, not to mention its correspondence to progressions illustrated by contemporary theorists, it seems legitimate to regard the paradigmatic discant cadence as a touchstone—a standard from which to measure contrapuntal variation at points of articulation.

Fuller's definition of directed progression implies the proviso of stepwise contrary motion; this, indeed, is the crucial element that makes the progression "directed," as opposed to "non-directed."[41] It should be reiterated, however, that directed progressions conforming strictly to her definition are ubiquitous even within musical and textual phrases.[42] Hence it is

advisable to distinguish one particular manifestation from among the myriad instances of directed voice leading, namely, those that occur at points of definable musical articulation.[43] As in the paradigmatic discant cadence, such directed motion is normally effected by the tenor descending stepwise, with another voice moving from the major sixth to the octave above, or from major third to perfect fifth. But it is also possible for two voices to proceed from a minor tenth to an octave (in which case the tenor typically ascends and the upper voice descends) or from a minor third to a unison (in which case another voice is usually below the tenor at the penultimate). This last point shows that the tenor need not be the lowest voice; it is not, in fact, a prerequisite that the tenor participate at all. Directed motion can be set between any two parts at points of articulation.

Two further aspects of directed motion need also to be mentioned here. The first is seen when the voice leading is properly executed, but the connection between the penultimate and cadential sonority is interrupted by a rest in one voice, or possibly both. Usually this rest is of a minim's duration, but it can be as much as a semibreve or even longer. I regard the presence of a rest as not invalidating directed motion, but prefer to indicate it as an irregularity. The second aspect is that it is sometimes difficult to ascertain which pitch is structural at the penultimate position of cadences that are embellished melodically. Normally, if an imperfect consonance is present at all in the penultimate sonority, and the cadential interval is a perfect consonance with a lower part, this suffices for it to be analyzed as the structural note. Very often the pitch in question occupies either the greatest duration of the penultimate sonority, or is its last note, or both. Occasionally both upper voices have the requisite imperfect consonance above the lowest pitch (sixth, third, or their compounds), but these consonances are not coordinated with each other vertically, as for example:
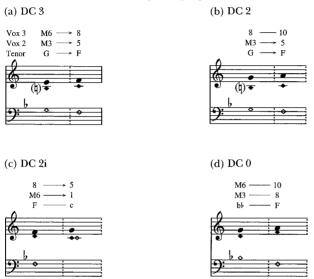
Example 4: Non-coordinated embellishment of cadential sonority in upper parts.[44]

To illustrate the range of voice-leading variation at cadences, example 5 shows four progressions along a continuum of strong to weak.[45] Example 5a shows the paradigmatic discant cadence, followed by two weaker cadences (5b and 5c) with directed motion in only two voices. The fourth

example (5d, with explanatory comments in note 46) is contrapuntally the weakest, incorporating no directed motion. Such progressions typically attain the status of a cadence only on the strength of other considerations (see above, table 1).

Example 5: Continuum of strength in contrapuntal progressions.[46]

(a) DC 3

Vox 3	M6	→	8
Vox 2	M3	→	5
Tenor	G	→	F

(b) DC 2

8 —— 10
M3 —→ 5
G —→ F

(c) DC 2i

8 ——→ 5
M6 ——→ 1
F —— c

(d) DC 0

M6 —— 10
M3 ---- 8
b♭ —— F

Of the four examples shown above, progression (b)—although differing from (a) only in the top part—is much less conclusive, for two reasons: 1) there is no voice that moves to an octave with the tenor; and 2) the upper voice moves to an imperfect sonority at the cadence. Progression (c) manifests directed motion, but in an irregular fashion (hence "DC 2i"). The intervallic relationship between the upper voices is 3→5, with the middle part progressing to a unison with the tenor. The tenor, however, does not move by step, but rather by leap. In this case it is impossible to inflect vox 3 to make a major third (f♯) above vox 2 in the penultimate sonority, as that would bring about a false relation between the latter voice and the tenor; inflecting the tenor to correct this is quite out of the question as it would entail a diminished-fifth leap to the ultimate sonority. The other option, namely of flatting the d in the middle part, is plausible but arguably uncharacteristic for the period in question; therefore, the best course is probably to leave unaltered the diatonic minor interval, thus further mitigating the sense of contrapuntal closure. Nevertheless, this progression cannot be treated as anything other than a cadence, since it

occurs at a clear phrase-ending in the text, which, furthermore, is fol-
lowed in the source by vertical strokes indicating a caesura; moreover, it
ends on entirely perfect intervals, so that in this respect, at least, it is more
conclusive than progression (b). Example 5d has directed motion be-
tween *no* two voices (thus "DC 0"), with the upper voice again moving to
an imperfect sonority. Yet the placement of this progression—it comes at
the end of text phrase and its duration at the ultimate sonority is a breve
—indicates that it too must be assessed as a cadence. Note also that exam-
ple 5d does, in fact, set an orthodox doubly imperfect sonority at the
penultimate;[47] this creates the expectation for a paradigmatic discant ca-
dence to an 8-5 sonority over A, which is then evaded by the leapwise
motion in the two lower parts—a "deceptive cadence" of the fourteenth-
century variety.

Excepting example 5c, the above progressions were chosen specifically
because they close on F and thus simplify matters by obviating the issue of
applying *musica ficta* at the penultimate.[48] It should be emphasized, how-
ever, that whenever *ficta* choices do exist for a given interior cadence, they
will be materially affected by one's evaluation of its relative strength ac-
cording to the criteria of table 1.

Example 5d demonstrates that directed motion is not an absolute re-
quirement for producing a cadence, and that even a non-directed pro-
gression can yield a sense of contrapuntal closure by complying with the
broader criterion of simply proceeding from an imperfect to a perfect
sonority. This realization is perfectly consistent with general theoretical
precepts, which often do not carry the injunction of moving from the *clos-
est possible* imperfect consonance to a perfect consonance; nor do they al-
ways carry the stipulation of contrary motion.[49] In his study on *musica ficta,*
Karol Berger refers to a dichotomy between "strict" and "relaxed" rules of
interval progression.[50] While not nearly as common as the class of ca-
dences having directed motion in at least two parts, there do exist some
instances of non-directed progressions even at the conclusion of entire
movements, as here:

Example 6: Non-directed progressions in final cadences.[51]

(a) Gloria, Ivrea no. 42   (b) Gloria, Apt no. 34   (c) Gloria, E-Bcen 971 no. 2

All of the above progressions adhere to the general principle of imperfect interval(s) progressing to perfect, and in all of them the final sonority consists solely of perfect intervals, yet none situates directed motion between any two voices—the only final cadences in the Ivrea–Apt corpus of which this can be said. All incorporate a leap in the tenor, which is the primary cause of contrapuntal irregularity in such progressions. Cadence (a) is singular in that all the voices move leapwise, but considered solely from the standpoint of the intervallic progression, it is the most orthodox of the three, since it moves from a doubly imperfect sonority to a doubly perfect one, whereas neither of the others employs a doubly imperfect sonority at the penultimate. Cadence (b) has the normal ascending stepwise motion in the discantus, but has leaps in both other voices. The repeated note A in the composite "middle voice" (occasioned by the crossing of the lower parts) is highly unusual for this time. Cadence (c) is exactly the same as (b) except for the contra, which moves to the twelfth above the tenor instead of the fifth. The dissonant seventh in the contra's penultimate note is also a rarity for a final cadence at this time. Another noteworthy aspect of cadence (c) is that if the tenor's penultimate were E instead of A, the result would be a paradigmatic discant cadence (providing that appropriate *ficta* inflections were applied) moving to a 12-8 sonority.[52]

In the theoretical treatises of the period, examples of interval progressions invariably involve just two parts, cadencing to a perfect interval (i.e., unison, octave, or their compounds). In actual three- and four-voice writing, however, we observe a variety of sonority types as goals, with directed motion typically occurring between two or more parts. Through about 1450, final sonorities virtually always consist entirely of perfect intervals, so that any cadential sonority having one or more imperfect consonances must by definition be assessed as a transitory point of closure. Accordingly, a cadential sonority containing one perfect and one imperfect consonance can signify only a partial goal, ordinarily reached through directed motion in two voices only. By acting simultaneously as a relatively unstable goal and as a relatively weak penultimate, this sonority type evinces a dual tendency, and it is this quality that constitutes the real functional significance of "triadic" sonorities in fourteenth-century cadences.[53]

The syntactic tendency of the doubly imperfect sonority, on the other hand, is incapable of evoking a sense of aural stability. If other factors deem that a doubly imperfect sonority really does stand in the position of a cadence, then the situation must entail some further explanation. Such a case is illustrated below in example 7.

Here, a sustained doubly imperfect sonority comes at the *end* of a text phrase, rather than on the penultimate, and the expected contrapuntal resolution comes at the beginning of the next text phrase (m. 21); thus, the contrapuntal *arrival* coincides with a textual *departure*. In practice, this

Example 7: Doubly imperfect sonority acting as penultimate of "bridge cadence."
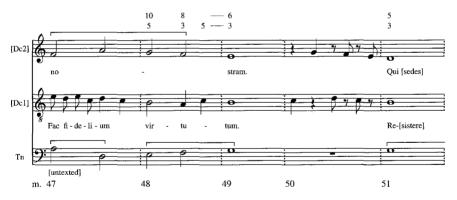

Sanctus, Apt no. 27

situation happens so frequently that it should be acknowledged as consti-
tuting a definite compositional resource; I refer to it as a *bridge cadence.*[54]

Another instance seems actually to reverse the normative expectations
of cadential voice leading:

Example 8: Unresolved doubly imperfect sonority at end of textual phrase.[55]

Gloria *Clemens Deus artifex,* Ivrea no. 42

The above passage is unique in that the doubly imperfect sonority at m.
49 is never resolved contrapuntally: the discantus 2 rests and then leaps up
a third, and although the discantus 1 does indeed make a leading-tone
motion to C (mm. 50–51), the tenor conspicuously avoids the expected
G→F countermotion; instead, it rests, and the little hocket between the
upper voices that follows in m. 50 avoids simultaneities altogether.

Apart from such obvious exceptions, the conventional procedures overwhelmingly in evidence at the ends of complete pieces, or of major sections thereof, cannot fail to produce an aural sense of closure due to the coordination of the following elements: 1) textual phrase ending, 2) duration of their ultimate sonority, 3) a caesura following,[56] and 4) directed contrapuntal motion in two or more voices. Such instances exemplify the cadence in a definitive sense, and as such they constitute a firm basis for interpreting, by extension, a wider range of musical articulations.

III. Basic Techniques of Counterpoint in the Fourteenth and Early Fifteenth Centuries

A valuable tool for developing a vocabulary of "common-practice harmony" in late medieval polyphony would be at hand if one could reduce the manifold possibilities of voice leading observable in surviving compositions to a limited number of fundamental categories. Among several scholars who have dealt with this issue, it has been Ernst Apfel who has had the most success in developing analytical paradigms for compositional techniques. These criteria, moreover, do not exist in a historical vacuum but are demonstrably rooted in the theoretical literature of the period.

Based on his research into medieval discant theory, Apfel identified two cardinal means of treating multi-voice counterpoint in the fourteenth and fifteenth centuries:

> From these [teachings of polyphonic discant composition] and from the corresponding musical sources, one sees [1] that there existed two different types of polyphony, and [2] how they differ: the first . . . developed from the possible duplications of a cantus [i.e., discantus] through improvisation, and the second consisted in the possibilities for expansion of a basic two-voice discant composition through supplementary voices.[57]

After a period of terminological experimentation in the 1950s and early 1960s, Apfel settled on consistent names for these techniques: the first he calls *mehrfach-zweistimmiger Satz* ("multiple two-voice counterpoint"); the second he refers to as *erweiterter Satz* ("expanded counterpoint")—a term deriving from its definitive characteristic, to be detailed presently.[58] I designate the latter as "expanded two-voice counterpoint," to emphasize the parallel with "multiple two-voice counterpoint." These two terms will be used for the respective techniques in the following discussion. In Continental music of the fourteenth century, Apfel's contrapuntal types correlate strongly with the two categories of musical texture ("paired upper-voice" and "cantilena") introduced above in part I.[59]

The concept of multiple two-voice counterpoint is an extension of theories of Apfel's teacher, Thrasybulos Georgiades, who in his 1935

dissertation argued that certain discant treatises, while describing counter-point in terms of two parts only, actually provide for the composition or improvisation of more than one voice over a tenor.[60] The essence of the technique is that all upper parts are related individually to whichever voice is lowest at any given time. In both theory and practice, this low voice usually proves to be the tenor, especially in three-part writing. Example 9 is thoroughly representative of this kind of voice-leading:

Example 9: Voice relationships in multiple two-voice counterpoint.

Dc1–Dc2:	3	7	8	5		4	5		4		6		5		4		3		1	(3	4	2	2		2	4		4		5		3)
Dc1–Tn:	10	11	12	12		11	12		10		10		10		8		8		7—	6	5	6-	5		4	3 →		5		6 →	8	
Dc2–Tn:	8	5	5	8			8		7		5		6—		5		6		7	8		7-	6—	5	6 →		8		10	10	

fa - cto - rem cae - li et ter - rae, vi - si - bi - li - um   om - ni - um,

fa - cto - rem cae - li et ter - rae, vi - si - bi - li - um   om - ni - um,

Tn

m.   5   7   9   11

Credo, Ivrea no. 48

In example 9, each of the upper voices makes an orthodox counter-point individually with the tenor, but they are not coordinated so as to stand alone without it (note the several instances of unsupported fourths, and the consecutive seconds in the third measure of the example). This characteristic is a definitive quality of multiple two-voice counterpoint, namely, that each upper voice retains the possibility of being treated inde-pendently with respect to the lowest part, a technique that may well have originated as dual soloistic improvisation over a tenor. Apfel remarks that the harmonic intervals of each upper part are made "without considera-tion of the consonances made by the voices already added to the tenor."[61] This comment adheres to the traditional view that voices were composed "successively" in a mechanical sense. Such dissonances, however, are per-haps better explained as an idiomatic aspect of style than as reflecting a procedure wherein voices are added without being subject to adjustment.

Another characteristic aspect of multiple two-voice counterpoint shown in example 9 is that the two discantus parts are not clearly differentiated from each other registrally: they both occupy the space between about a third and a twelfth above the tenor, crossing often.[62] In the Credo, Ivrea no. 48, no voice other than the tenor ever occupies solely the lowest pitch

of a sonority à 3, and this circumstance is typical of three-voice pieces conceived in the technique of multiple two-voice counterpoint. Note also that neither of the texted upper parts is labeled in the source, and that no voice is explicitly designated "contratenor."

In a later study, Apfel describes a variation of multiple two-voice counterpoint, observable in Continental works, where the tenor (the lowest voice according to the treatises)[63] is not necessarily the sole point of reference:

> The tenor cantus firmus is, to be sure, the most important [voice] in the counterpoint, but it is the sole connective voice only for the second voice. For the third and fourth voice of the composition, the second or third voice can also be its connective voice. In this case, the tenor cantus firmus relinquishes to the appropriate voice a part of its function as main connective voice of the counterpoint.[64]

This way of relating the individual lines, which Apfel introduced in connection with the thirteenth-century motet, is reflected in theoretical statements to the effect that "if the triplum be discordant with the tenor, it will not be discordant with the discant[us], and vice versa."[65] According to Apfel, however, this particular variation "does not represent an independent compositional technique"; it is used only "within" a given piece, and represents only another "case of multiple two-voice counterpoint."[66]

Most of the three-voice Franco-Flemish mass settings from the *Ars nova* up through ca. 1440 correspond to Apfel's second basic contrapuntal type, which I refer to as "expanded two-voice counterpoint." This technique is predicated on the existence of a two-part framework, where one voice—usually the one that dominates the upper melodic profile—constitutes a self-sufficient counterpoint with the tenor. Apfel discusses this method primarily in the context of the fifteenth century, but he illustrates it as being a typical attribute of secular works of the preceding century (e.g., those of Machaut) that have one texted upper voice accompanied by a tenor and contratenor operating in an approximately equal register.

Contemporaneous theoretical confirmation of the technique of expanded two-voice counterpoint finds unequivocal expression in the *Ars contratenoris* of Anonymous XI:[67]

> Anyone who wishes to write a contratenor above any tenor should see where the discantus begins. . . . Note that anyone who wants to write a contratenor should not have two [consecutive] octaves with the tenor, either ascending or descending, nor admit [perfect] consonances next to each other, but should follow what the dis-

cantus requires, so that the contratenor is consonant with the tenor, but not always with the discantus, because the contratenor may very well serve as a contradiscantus. And see that the contratenor does not have a fifth [with the tenor] when the discantus has a sixth, because that would make a second [between the two voices], etc. . . . . Note also that we should not reckon eight notes above the tenor, as we do in the case of a contrapunctus or a discantus, but [should think of the contratenor as being] at the same pitch, because it is just as low as the tenor and sometimes lower.[68]
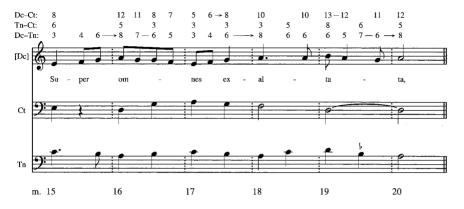
This brief passage clearly stipulates certain characteristics that prove to be definitive of expanded two-voice counterpoint: 1) the third voice is called *contratenor;* 2) the contratenor is contrapuntally secondary to the tenor and discantus; 3) the simultaneous placing of the discantus and contra at intervals of a fifth and a sixth above the tenor is prohibited (this stricture is not observed by upper parts in multiple two-voice counterpoint); 4) the contra does not inhabit the range of a discantus part, but rather has a range comparable to the tenor; 5) the contra may (and does) descend below the tenor at times.

The essence of expanded two-voice counterpoint is that structural dissonances between the discantus and tenor (i.e., those occurring in the unembellished *contrapunctus simplex*) are almost nonexistent. The resulting contrapuntal framework—what German scholars refer to as a *Gerüstsatz*—thus acts as a structural skeleton for the composition, where the discantus and tenor typically open and close at an octave's distance, and to which a third voice, often specifically designated "contratenor" in the sources, is added. This contra, when it lies above the tenor, is not required to be consonant with the discantus (since the tenor as low voice can ameliorate a dissonance). But when the contra is the lowest part, the tenor and discantus rarely, if ever, assume a dissonant relationship, even though as upper parts this would technically be allowable.

Example 10 illustrates the distinguishing attributes of expanded two-voice counterpoint, where, from the standpoint of voice leading, the discantus and tenor constitute a continuous self-sufficient framework, and the contra is a subordinate part.[69]

In the excerpt shown above, the contratenor is the lowest part, thus providing support for potential dissonances occurring between voices placed above it. But this possibility is not actually exploited, and no structural dissonances between the upper voices (tenor and discantus) can be found.[70] Rather, these two parts consistently observe the rules of correct intervallic treatment, and make by far the most coherent of the three two-voice combinations. Most importantly, these two voice-parts proceed in

Example 10: Discantus-tenor framework in expanded two-voice counterpoint.


```
Dc–Ct:   8              12  11   8    7      5   6 → 8        10       10   13 – 12     11    12
Tn–Ct:   6                    5      3        3       3        3    5    8        6      5
Dc–Tn:   3      4    6 → 8   7 — 6   5       3   4   6 ——→ 8   6    6    6    5   7 — 6 → 8
```

[Dc]   Su - per   om - nes   ex - al - ta - ta,

Ct

Tn

m. 15   16   17   18   19   20

Kyrie *O sacra virgo beata,* Apt 9

directed motion (major sixth to octave) at the end of the phrase. The
discantus-tenor counterpoint can thus stand by itself, irrespective of the
contratenor, even though the contra is the low voice throughout. On
the other hand, the contratenor does not disturb the passage: it generally
concords with both of the other voices.

In order to emphasize the distinction between multiple two-voice and
expanded two-voice counterpoint, the passages in examples 9 and 10 have
been chosen to illustrate paradigmatic aspects of each type, respectively. In
practice the two types are not necessarily opposed to each other diametri-
cally, and certain works are difficult to categorize.[71] Once attuned to their
salient characteristics, however, one will almost invariably find critical
clues pointing to one technique or the other as underlying a given piece.

The decisive affinity of the two procedures just outlined is that both
realize a multi-voice complex as a concatenation of dyads codified pro-
gressively. In any such hierarchical construct it may be possible to assess
certain voice parts as being contrapuntally dispensable and others as indis-
pensable on the basis of whether or not they describe a structural basis for
the composition.[72] And in fact, this dispensability *is* expressed differently
in the two basic techniques. In three-voice pieces realized as multiple two-
voice counterpoint, it is the sequence of low pitches, often identifiable lit-
erally with the tenor line, that is the indispensable element. In this type of
piece the upper parts are not clearly differentiated in function, and there-
fore there is no single two-voice framework to be "expanded." Instead, ei-
ther upper voice can be viewed as contrapuntally dispensable, excepting
those cases when one of them descends below the tenor, in which case it

temporarily acts in place of the latter.[73] Conversely, in expanded two-voice counterpoint the discantus-tenor duet is conceptually primary and the contratenor is subordinate to both. But in this technique, the criterion of contrapuntal dispensability—as important as it is in clarifying the conceptual basis of the part writing—does not render the contratenor absolutely superfluous. From the fact that the discantus-tenor pair evinces the highest degree of contrapuntal integrity it does not follow that those voices must constitute a "complete" composition in every sense of the term.[74] Furthermore, the presence of alternative contratenors in different sources does not constitute evidence that this part was conceptually less important to the composition in a broader sense, for two reasons: First, the rhythmical and textural contribution of the contra is frequently crucial to the character of a given piece, such that a performance of the same work with only the discantus and tenor would be vapid in comparison to the three-voice rendition.[75] Second, in order to allow the structural voices periodically to rest, the contratenor becomes indispensable to the maintenance of polyphonic fabric.[76] Thus, rather than being an entity that is necessarily complete in and of itself, the two-voice framework represents simply a grammatical basis for the composition, which then can be "interpreted" in any number of ways through the addition of a contratenor.

It is commonly accepted that the contra also enriches such compositions by acting as a harmonic "filling voice," providing a third pitch to sonorities.[77] A number of scholars have interpreted the many resulting triads as adumbrating the system of harmony codified by European theorists of the eighteenth and nineteenth centuries. Some researchers, notably Heinrich Besseler, have even asserted that certain compositions of the early fifteenth century—especially those in which the contra is consistently the lowest voice—represent a clear expression of that system. Such conclusions, however, are based on false premises, and I would caution strongly against accepting Besseler's argument that the mere presence of "low-clef" or "six-line" contratenors, with "fifth-fourth-construction" denotes the origins of "bass function" and "tonal-dominant harmony" in the late medieval chanson, or indeed in any genre of this period. Besseler's triadic analysis of the Dufay rondeau *Helas, ma dame par amours* is particularly revealing in that it utterly disregards the voice-leading continuity of discantus and tenor, even though these two parts comport themselves in a thoroughly conventional manner and establish an unequivocal basis for sonority-direction in the piece. If one accepts the dyadic premises of discant theory as the operative element of voice leading and sonority-building in the late medieval era (and the theory itself allows for no alternative), then triadic interpretations can only obscure the "harmonic" functionality of any music to which these premises apply.[78]

In defining his contrapuntal categories, Apfel concentrates on the theory and practice of the early fifteenth century. This chronological focus was undoubtedly influenced to some degree by themes developed in previous scholarship, but Apfel also justifies it with the observation that the earliest music theory comprehensively and unambiguously treating part writing for more than two voices appeared only at that time. According to Apfel, treatises describing the technique of expanded two-voice counterpoint began to appear on the Continent before 1450, whereas the English theorists continued to describe the older technique of multiple two-voice counterpoint.[79] Although Apfel's account implies that descriptions of the former technique cannot be traced before about 1400, a discantus-tenor framework indisputably does characterize much fourteenth-century French music, including many, if not most, of Machaut's chansons. I am not yet in a position to judge the extent to which the expanded two-voice technique was cultivated by contemporary English composers,[80] but the reciprocal proposition—how extensively the multiple two-voice method was practiced on the Continent in the 1300s—has not been emphasized. In fact, all of the mass settings in the Tournai manuscript and most of those in Ivrea 115 are multiple two-voice works, and the technique also appears to typify the motets in the later fascicles of the Montpellier codex and in the *Roman de Fauvel,* as well as Machaut's motets.[81] Moreover, all of the four-voice mass movements stemming from the French orbit, including Machaut's cycle, can be shown to have been composed in this manner.[82]

The above discussion has centered on the two primary types of counterpoint evident in Continental music during the fourteenth century. What has not yet been mentioned is a third type identified by Apfel, which he refers to as *klanglich-freier Satz,* or "tonal-free counterpoint." Because it is unquestionably a later and more sophisticated development, whose applicability to Continental music before approximately the second quarter of the fifteenth century appears to be next to nil, this technique is introduced below in part IV.

IV. The Concept of Contrapuntal Referentiality

As is explained above in part I, the tenor in three-part French mass settings of the fourteenth and early fifteenth centuries generally acts both as the lowest line and as the line that determines the voice-leading possibilities for the other parts. Both roles are directly corroborated in the music theory of the time, but an important distinction must be made between these two concepts—a distinction that hitherto has not been adequately addressed in the musicological literature. The problem can be clarified as follows: in the former aspect, the tenor is occupying its normal place as

what might be called the *referential pitch* of a given sonority, providing a point of reference for the tones placed above it, whereas in the latter aspect the tenor is acting as a *referential voice,* imparting coherence to voice-leading progressions.[83]

The referential pitch I define as the lowest note of any given "chord," to which all upper parts must conform, and from which they are reckoned in modern terminology (e.g., 10-6-3). This numerical means of identification is not found in medieval theory, but contemporaneous justification for a vocabulary of multi-voice sonorities based upon the lowest pitch does indeed exist, as in the following statement from Anonymous I:

> If you want to discant below the plainsong, [you do so as] if you are simply above the plainsong; [however,] no one is able to sing above this [plainsong] unless he is aware of the position of the low pitch, since all higher pitches have to adjust to the lowest, which makes a good consonance.[84]
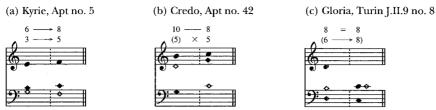
The referential pitch, then, provides the supporting platform for a given sonority, and is crucial to the integrity and function of that sonority. This circumstance is explicitly corroborated by theoretical evidence, as in the following passage of Johannes de Grocheo:

> But the tenor is that part upon which all others are founded, just as the parts of a house or a building [are based] upon its foundation. And it regulates the others and gives them quantity, just as the bones [do with respect] to the other parts [of the body].[85]

The low pitch is, in fact, most often identified by the theorists specifically with the tenor, although this state of affairs does not necessarily apply to the actual compositions of the time, as has already been demonstrated.[86] In practical composition, the referential pitch is frequently required to legitimize irregular dissonant intervals, such as fourths and tritones, occurring between voices lying above it.

The referential voice, on the other hand, is a contrapuntal, not a solely vertical, concept: it takes the linear progress of each voice part into account as well as their sonorous intervals. I define the referential voice as the one that is *conceptually anterior* to the others—the one that *creates the voice-leading possibilities* for the other parts. As will now be shown, the referential pitch and the referential voice are not necessarily identical. Example 11 shows three progressions, all taken from final cadences in actual works, which together serve to illustrate the distinction that must be made between referentiality in a vertical, as opposed to a contrapuntal, sense.

Example 11: Referential pitch vs. referential voice in contrapuntal progressions.[87]

(a) Kyrie, Apt no. 5   (b) Credo, Apt no. 42   (c) Gloria, Turin J.II.9 no. 8

Example 11a, a paradigmatic discant cadence, is the quintessential expression of the referential voice in the fourteenth century, which here is equivalent to the sequence of referential pitches. In this cadence, one voice (almost always the tenor) descends stepwise at a clear point of articulation. Here, not only does this part act as the lowest voice throughout the progression, but also, its descending motion by step creates the opportunity for the two upper parts to move in directed motion with it, while simultaneously supporting the parallel fourths between them. This type of progression, with tenor as lowest voice, is by far the most frequent one found at the ends of significant text sections, and is particularly in evidence in multiple two-voice counterpoint.[88] Rarely, the tenor occupies the middle position in this progression, but such cases can be discounted as being distinctly exceptional to the norm.

Progression (b)—a so-called octave-leap cadence—differs from (a) in that its referential voice is not simply equivalent to the succession of referential pitches. Here, the tenor is again the primary referential voice; it descends stepwise, concurrently describing the major-sixth-to-octave motion with the discantus, just as in progression (a). In progression (b), however, the tenor occupies the referential pitch only in the second sonority: the contratenor departs from its stereotyped middle-voice motion from major third to perfect fifth; instead, it leaps up an octave from its position as referential pitch in the penultimate, to the fifth above the tenor in the cadential sonority. This procedure adds an element of flexibility to the voice-leading, a characteristic typical of expanded two-voice counterpoint. In accord with the contentions developed above in part III, I would emphasize that in this technique the discantus, because it forms a grammatically intact duet with the tenor, acquires the status of a secondary referential voice relative to the contratenor.[89]
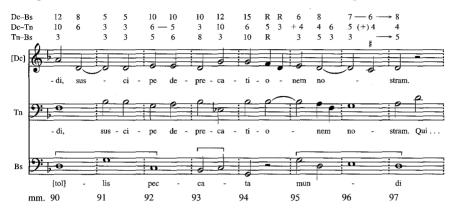
Examples 11a and 11b have in common the stepwise descent of the tenor that is present in a great majority of all significant cadences in the three-voice French mass settings of the period, regardless of contrapuntal technique. It is this regularity of tenor motion that determines the normal voice-leading alternatives of the remaining parts, even in other types of ca-

dences, and notwithstanding the registral position of the other parts relative to the tenor. In the few mass settings where the tenor has a demonstrable structural pattern, it is likely that that voice was fixed firmly before any other parts were written. In most cases, however, the referential voice is strictly a conceptual priority of composition, not literally a chronological one—it does not necessarily entail a *cantus prius factus*.

Progression 11c differs from 11a and 11b in that the contra occupies the referential pitch throughout, and moreover, it has the descending stepwise motion normally assigned to the tenor. But this is not simply a double-leading-tone cadence, since here the contra moves in parallel octaves with the discantus. Rather, there are two unconnected instances of directed motion here: 6→8 between tenor and contra, and 3→1 between discantus and tenor. Cadence (c) is noteworthy in that the discantus and contra *both* have usurped the tenor's normal stepwise descent, whereas the tenor *ascends* stepwise. In such a case I would nevertheless attribute priority to the tenor as referential voice, since it is the only part moving in contrary motion with both the other voices. This is a key criterion by which one can identify the primary referential voice in a given progression, namely, that any voice moving in contrary motion with all other parts takes precedence over any voice or voices descending stepwise.

The concept of referentiality is no less pertinent to a third contrapuntal category posited by Apfel, which was introduced above at the end of part III—the so-called *klanglich-freier Satz*. This type is not treated in part III because it is not observable in the early Franco-Flemish mass settings upon which the research for this study is primarily based. It is, however, crucial to understanding the compositional procedures of later generations, which, as far as I can see, still proceed from dyadic premises and thus maintain a potential distinction between the referential voice and the referential pitch. On the basis of his analyses of fifteenth-century works, Apfel initially identified this third technique as an outgrowth of expanded two-voice counterpoint, in which the discantus-tenor framework, while essentially intact, does incorporate some dissonances, and the ostensibly subordinate voice (often still labeled "contratenor," but now often joined with or replaced by the designation "bassus") lies more consistently below the tenor and is more fully assimilated into the composition. The underlying principles of this procedure are perhaps best rendered in English as "consolidated discant counterpoint," since, from a contrapuntal standpoint, all parts must now be considered integral to the composition. In his earliest published discussion of the *klanglich-freier Satz*, Apfel cites the following example from Ockeghem's *Missa Quinti toni*, claiming that this passage suffices to demonstrate "that the mass corresponds to a different compositional principle" than expanded two-voice counterpoint.[90]

Example 12: Intervallic treatment as basis of consolidated discant counterpoint.

Dc–Bs	12	8		5	5		10	10		10	12		15	R	R	6	8		7 — 6 → 8
Dc–Tn	10	6		3	3		6 — 5			3	10		6	5	3	+ 4	4	6	5 (+) 4 4
Tn–Bs	3			3	3		5	6		8	3		10	R		3	5	3	3 → 5

[Dc]

- di, sus - ci - pe de - pre - ca - ti - o - nem no - stram.

Tn

- di,   sus - ci - pe de - pre - ca - ti - o - nem no - stram. Qui ...

Bs

[tol] - lis   pec - ca - ta   mun - di

mm. 90   91   92   93   94   95   96   97

Ockeghem, *Missa Quinti toni* (Gloria)

As usual, the yardstick Apfel uses for evaluating compositional integrity is the contrapuntal dispensability or indispensability of the individual voice parts. Accordingly, he assesses the contra (here labeled *bassus* in the source) as indispensable to the composition, since it is required to legitimize the irregular fourths of the nominal structural voices at an unambiguous point of cadence (mm. 95–97).[91] In this sense the bassus has unquestionably become the referential voice. But this evaluation is incomplete, because here the bassus serves as a referential voice in another way as well: it has appropriated the tenor function of making the directed progression with the discantus.

While Apfel's point is thoroughly valid as far as it goes, it should be remarked that progressions where the bassus legitimizes irregular fourths between the discantus-tenor pair are scarce in this mass, and the work as a whole is probably best characterized as expanded two-voice counterpoint with a low contra. Those few divergences from traditional intervallic usage thus merely point in a new direction and should not in themselves be construed as constituting an entirely novel compositional resource. This observation places into relief the problem of relying solely on the criterion of intervallic irregularity of the structural voices in identifying progressive configurations of dyadic counterpoint. Such a basis is limiting especially in that the fourth is not a common interval in the fifteenth century, and is particularly rare between tenor and discantus in three-voice pieces. The ultimate manifestation of this phenomenon, the "non-quartal piece," was touted by Charles Warren Fox as being an important factor in the development of the homogeneous voice ideal so characteristic of the years

leading up to 1500.[92] In such works, criteria of contrapuntal dispensability become largely irrelevant.[93] Therefore it would be well to explore other ways in which a hierarchy of voice function might be recognized in music of the later fifteenth century.

In point of fact, any examination of Franco-Flemish polyphony from the time of Ockeghem onward is likely to reveal some sort of radical manipulation or reformulation of the two-voice framework. This typically takes the form of the discantus and tenor functions being objectified and parceled out among the various voice parts *ad libitum*.[94] It is perhaps in this respect that the foundations of a new and truly "consolidated" technique of discant-based composition can best be understood. Probably the first scholar to recognize the ramifications of this point was Bernhard Meier, who, in one of his earliest publications, conjectures an abstraction of the functions of discantus, tenor, and contratenor, and attempts to show how these roles were refashioned by Obrecht and his contemporaries into a procedure that was much more flexible than that of previous generations, yet which continued to be based on clear dyadic principles.[95] Concurrently, Meier rejects the idea that the "V–I cadence" can be traced to the early fifteenth century, alleging instead that the descending stepwise motion of the tenor, even as late as Josquin's time, is harmonized variously by the bassus, such that "stepwise sonority progressions, successions of third-related sonorities, and successions of fifth-related sonorities have completely equal entitlement."[96]

As a second example, we can consider the beginning of *Je ne puis vivre*, one of the "Jacqueline d'Hacqueville" chansons of Busnois. Here, the integration of voices is not simply a matter of contrapuntal relationships.

In this chanson, the integral role of each voice is operative on various planes. At the beginning (mm. 2–6), the contra is indispensable in a textural sense due to the tenor's delayed entry. This opening suggests that the contra is essential to the basic conception of the piece, not only because it is needed to establish polyphony, but also because it participates in the scheme of melodic imitation. These elements indicate that musical texture plays a decisive role in fashioning an organic unification of parts, although the influence of counterpoint is far from being completely overshadowed.[97] In any case, the contrapuntal self-sufficiency of the discantus-tenor pair is no longer absolute, as it typically was around 1400. This change is evidenced by the contra's assuming the role of referential voice when it cadences in directed motion with the discantus (m10→8) in mm. 11–12. While it is not unprecedented in fourteenth-century music to encounter such a transference of the referential voice, the systematic exploitation of this concept is a fifteenth-century phenomenon, which seems to derive from the sectional duos for upper voices that came into

Example 13: Textural basis of consolidated discant counterpoint.

Busnois, *Je ne puis vivre* (Bergerette)

vogue in the first few decades of the century (cf. Dufay's motet *Nuper rosarum flores*).

The result of the procedures just outlined is a work in which no voice is dispensable either contrapuntally or texturally. The handling of imitation, while not as systematic as would become typical in the sixteenth century, serves to integrate the piece motivically as well—a preoccupation new to the generation of Busnois.

The above discussion has attempted to sketch out the sorts of questions that need to be explored further in delimiting distinct procedures of consolidated discant counterpoint in vocal polyphony through the time of Palestrina.[98] With examples 12 and 13 I have tried to show how indispensability of parts can be expressed in the realms of both counterpoint (through voice function and dissonance treatment) and texture (through variation of voice couplings and treatment of imitation). This is not, of course, intended as an exhaustive catalogue of procedures, but is merely offered to enunciate certain principles that should prove helpful in analyzing music of the later fifteenth century—a period in which the paradigm of expanded two-voice counterpoint is only peripherally applicable.[99]

V. Referentiality as a Tool for Interpreting Musical Style

The general precepts developed above in part IV can profitably be applied in analyses and classification of extant works. For example, the concept of referentiality allows one to differentiate between two variant techniques of multiple two-voice counterpoint in three-voice works of the fourteenth century. The clearer of the two is seen where the tenor acts consistently as a low voice, with two more-or-less independent upper voices (usually both texted) moving above it.[100] In this technique the referential pitch is virtually identical with the referential voice—and both are identified almost exclusively with the tenor.[101] It exists in its purest form in a series of three-voice Glorias and Credos from the Ivrea codex.

The second variant of multiple two-voice counterpoint is represented in the works of the Tournai manuscript[102] and elsewhere. Although the tenor tends to predominate as the low voice in such pieces, any of the three parts can occupy the lowest position. Therefore, this technique may be said to manifest a "composite lower voice," as opposed to the tenor being always low. However, in none of these pieces is there a question of expanded two-voice counterpoint, since there is never any consistent two-voice framework that is contrapuntally self-sufficient. Rather, the vertical intervallic structures simply relate to whichever voice is lowest at any given moment. This type of counterpoint is equivalent to that "variation" of the multiple two-voice technique reported by Apfel, where the tenor "relinquishes a part of its function as main connective voice of the counterpoint"

to another voice.[103] Moreover, the standard treatment of four-voice writing during the fourteenth century can be viewed as simply an extension of this contrapuntal procedure, although texturally the four-voice pieces tend to be more regularized.[104]

In multiple two-voice works where there is much crossing between the lower lines (as is typical in works à 4), no single voice part acts as a referential voice at all, and this is exactly how Apfel had described such pieces as long ago as 1955, when he characterized the phenomenon as a *kombinierte Tiefstimme* ("combined lower voice").[105] In such situations, the succession of lowest tones (referential pitches) simply generates a composite referential voice, thus maintaining the essential characteristic of multiple two-voice counterpoint, namely, that all upper intervals, as well as their voice-leading possibilities, are reckoned individually from the lowest pitch, although the result was certainly subject to subsequent adjustment.[106] This interpretation leads to a recognition of the solus tenor's relevance to compositional process in four-voice writing, namely, that the solus tenor—a conflation (or sometimes a recomposition) of the lowest tones of the tenor and contratenor—is nothing other than a reflection of the multiple two-voice conception of four-part works during the fourteenth and early fifteenth centuries, permitting a performance with only three voices while still maintaining orthodox intervallic relationships between the upper parts and the composite low voice. Thus, contrary to opinions that have been aired in the literature from time to time, the solus tenor is conditioned not merely by performance-practice exigencies, but can be related directly to principles of counterpoint.[107]

The normal procedure of expanded two-voice counterpoint, having a consistent two-voice framework between the discantus and tenor, with a contratenor that is for the most part contrapuntally dispensable, is evident in many three-voice pieces from the Apt manuscript, and is particularly characteristic of the mass settings in sources coeval with Bologna Q15. Works such as these also display a composite lower line in that the contratenor often has an almost equal share with the tenor in providing the referential pitch, but this shared "melody" is not a referential voice *per se,* since that function, with few exceptions, remains exclusively within the province of the tenor. This is true even when the contra lies below the tenor, by virtue of the contrapuntal integrity of the discantus-tenor duet. It is noteworthy that none of the four-voice mass settings from the period display this type of part-writing, because there is never a conventional two-voice framework, operating at the interval of an octave, that provides a contrapuntal basis for the composition.[108]

Conversely, Besseler's concept of the *Kombinationsbaß* does not discriminate between the two types of composite lower line I have been describing, even though their divergent character consists precisely in the

manner by which sonorities are directed (i.e., the identity of the referential voice).[109] This same lack of differentiation underlies Leech-Wilkinson's criticisms of analyses that treat the contratenor as contrapuntally secondary, in support of which he adduces the solus tenor as proof that the lowest notes are solely responsible for sonorous direction of a piece. The difficulty here is that the analyses concern mostly three-part works realized as expanded two-voice counterpoint, whereas the solus tenors are associated with four-part works realized as multiple two-voice counterpoint.[110]

Above are outlined some of the practical considerations that enter into a contrapuntal assessment of a body of actual works. As is stated above in part III, however, individual pieces do not necessarily fit neatly into one or the other category. For instance, one can point to a number of expanded two-voice examples that display residual elements of multiple two-voice counterpoint.[111] In such cases, one must appeal to other means of demarcation in order to judge which of the two techniques best fits the contrapuntal character of a given piece. But the existence of such exceptional pieces does not invalidate the categories, which are eminently applicable to a large number of works—it simply demonstrates the multifaceted options open to composers of the time.

In ambiguous cases, further clues for identifying expanded two-voice counterpoint can be invoked. These include: 1) the use of consistent octave closures between the tenor and another voice, with the third voice taking the fifth or the twelfth; and 2) the presence of an intervallic progression between the tenor and an upper voice that is orthodox, but which simultaneously creates parallel fifths (or less often, octaves) between the upper voice and a third voice, lower than the tenor. Both conditions just enumerated constitute evidence that the third voice is contrapuntally dispensable—a hallmark of expanded two-voice counterpoint.

On the other hand, additional criteria for identifying multiple two-voice counterpoint include: 1) short passages where the upper voices move in parallel unisons or seconds; 2) the setting of two upper parts simultaneously at intervals of a fifth and a sixth against the tenor in the underlying *contrapunctus simplex* (note-against-note reduction); 3) the presence of two upper voices that share the melodic profile more or less equally; and 4) the existence of passages in which another voice assumes a position lower than the tenor, with the tenor and upper voice moving irregularly (for example, in parallel fourths). The first three of these conditions all indicate that the two upper parts are operating independently of each other—a signal characteristic of multiple two-voice counterpoint. The fourth condition indicates that the referential pitch (low note) in successive sonorities is decisive for the voice-leading possibilities of the piece; this, of course, is the element that all multiple two-voice pieces have in common, regardless of the behavior of the upper parts.[112]

Most pieces not easily classifiable into one of the basic contrapuntal cat-
egories are characterized by a texture wherein the voices are consistently
stratified, with vox 3 always topmost, vox 2 (sometimes labeled *contratenor*)
always in the middle, the tenor always low, and there are very few, if any,
voice crossings.[113] By definition, such pieces express one kind of cantilena
texture, but the effect of stratifying the voices is to obfuscate the boundary
between the two contrapuntal techniques.[114] Historically, these works rep-
resent a peculiar intermediate stage between multiple two-voice and ex-
panded two-voice composition—a point at which it had been recognized
as desirable that each of the three parts have a distinct identity and contra-
puntal function, but at which musicians had not yet conceived how to pro-
vide the voice-leading flexibility for a third part to operate below a tenor
linked contrapuntally to a discantus in a two-voice framework.

Given the intricate nature of the arguments presented above regarding
contrapuntal referentiality, I recapitulate my main points: In multiple two-
voice counterpoint the referential voice is defined as the sequence of ref-
erential pitches, and there may be no single voice part acting consistently
in that role. On the other hand, when evaluating expanded two-voice
counterpoint, one must often distinguish between the referential *pitch* in
individual sonorities and the referential *voice* in a contrapuntal sense,
since in this technique the tenor normally is the primary directive voice
(i.e., "referential" to the other parts) regardless of whether or not another
voice lies below it. When more than one part has equal claim to being the
referential voice, priority should be assigned to the tenor (especially if it
harbors a *cantus prius factus*), or possibly to the discantus.[115] In practice,
the tenor usually does prove to be the referential voice in the French mass
corpus of the fourteenth century, regardless of contrapuntal technique.
The term "referential voice," however, is conceived differently in the two
fundamental types of counterpoint (multiple two-voice and expanded two-
voice), since in the latter, referentiality is defined by the contrapuntal
integrity of tenor and discantus, irrespective of which voice has the low
pitch, whereas in the former, referentiality is a function of the upper-part
intervals—and their linear-connective possibilities—being reckoned pre-
cisely *from* the sequence of lowest pitches, irrespective of which voice or
voices participate in the profile of that line. Thus, when the tenor occu-
pies solely the position of the low voice in multiple two-voice counter-
point, it can indeed be said to be the referential voice, but when the se-
quence of low pitches is expressed as a composite, as is typically the case in
four-voice writing, then the function of referential voice is shared between
the lower parts (it is highly significant that this latter condition is in many
cases literally reflected by the presence of a supplementary solus tenor in
the manuscript). In the fifteenth-century technique of consolidated dis-
cant counterpoint, the principles of expanded two-voice composition still

basically apply, except that the procedures have become vastly more flexible: now the concept of voice function is treated abstractly, with the result that any line can assume the role of referential voice based on the prototype of discantus or tenor. Concurrently, the notion of a bassus voice-type of equal functional entitlement begins increasingly—but not yet decisively—to influence the structural hierarchy among parts. These traits of consolidated discant technique directly facilitated development of the fluid, equal-voice style of imitative polyphony in five and six parts that was to predominate in sixteenth-century music.

I would like to conclude by affirming that the two contrapuntal techniques defined in part III exhibit characteristic ways of treating referentiality, and that the resulting patterns in turn suggest general stylistic trends.[116] As is intimated in the preceding paragraph, I firmly believe that consistent patterns of analogous nature will prove to be observable in later music as well, even though compositional priorities and procedures continued to evolve throughout the fifteenth and sixteenth centuries.[117] The commonalities identified in this study tend to reflect exigencies of artistic creation, and one cannot expect to find explicit corroboration for all of them in contemporaneous theory, although their precedents are regularly to be found there. The basic contrapuntal techniques (and other means of deploying musical resources) explicated above thus represent *compositional tendencies* rather than *prescriptive rules*. Often their characteristics are present in paradigmatic form; at other times they are less in evidence, but they are always discernible in some fashion. The lack of absolute consistency in the way individual pieces are realized should not surprise us, nor should it lead us to eschew the concepts developed above as a point of departure for evaluating and codifying compositional processes in vocal polyphony of the late medieval period.

Notes

* This is a substantially expanded version of a paper originally read at a meeting of the Northern California Chapter of the American Musicological Society at Mills College, 25 February 1995.

1. For a pertinent example one could point to the recent hypotheses suggested for the provenance and dating of codices Apt (F-Apt 16 bis) and Ivrea (I–Iv 115)—both central sources for the corpus of Franco-Flemish liturgical polyphony of the fourteenth century introduced below (note 6). After many pages devoted to the genesis of manuscript Apt, Andrew Tomasello's best estimate of its dating based on watermarks is that "fascicles V and VI were most likely compiled between 1377 . . . and 1412. . . . If one uses the narrowest range of dates, the time frame of 1395–1405 is reached" (Tomasello 1983: 145). The author does not even hazard a firm suggestion for the parchment fascicles, I–IV. Similarly, Karl Kuegle has come to some provocative conclusions regarding Ivrea, including revisions of its probable place and time of origin (Kuegle 1993: 130 ff.), yet neither assertion has been

established beyond doubt. These results appear to define the present limits of cod-
icology for the repertory in question.

2. An essential starting point for this task is to achieve a suitable method of
identifying basic contrapuntal techniques. Such a method has, in fact, been in ex-
istence for some time, but its validity and usefulness have hitherto been greatly un-
dervalued in the English-language literature. See below, part III.

3. This applies particularly to the era of the *Ars nova* and *Ars subtilior* with the
completion of the series *Polyphonic Music of the Fourteenth Century* (24 vols., general
eds. Kurt von Fischer, et al., 1956–91); it is less true of the succeeding period, for
which a large percentage of the music transmitted in the Trent codices, and re-
lated sources, remains unpublished.

4. One can never, of course, afford to stray very far from the original codices in
which the pieces are transmitted. This is true for two reasons: first, awareness of
paleographical and notational issues (such as folio format) can often work to clar-
ify analytical or performance questions; second, the modern editions are not de-
void of errors, and one must always be in a position to consult the source manu-
scripts to verify questionable or stylistically incongruous readings.

5. In her pioneering study on the conceptual bases of sonority treatment in the
fourteenth century, Sarah Fuller suggests that the contrapunctus manuals "are ele-
mentary texts," which are "certainly not addressed to experienced discantors or
even apprentice composers of motets" (Fuller 1986: 39).

6. The two most important sources are the aforementioned Apt and Ivrea
codices (see note 1 above). For a comprehensive listing of the corpus and its
sources, see the present author's dissertation (Moll 1994: 10–60), where criteria
for the inclusion or exclusion of individual pieces and groups of works are also dis-
cussed (18–27).

7. The term "referentiality" denotes the quality of a pitch or pitch sequence in
a given voice part (or parts) being referential (i.e., taking conceptual precedence
over a pitch or pitch sequence in another voice part or parts). I have coined it not
because I especially wish to add to the analytical jargon of early music, but because
I find it useful for sorting out the relationship between voice leading, sonority, and
tonal coherence in a body of music whose relationship to later principles of func-
tional triadic tonality is problematic at best. For a historiography and evaluation of
the issues, see my essay entitled "Toward a Comprehensive View of Compositional
Priorities in the Music of Dufay and his Contemporaries" (Moll 1997: 3–64), which
the present study is intended to complement.

8. Schering 1914: 123. Schering's *superius* is interchangeable with my *discantus*
(see note 12 below).

9. Jeppesen 1927: xlv; Ficker 1951: 114–15 (translated in Moll 1997: 118–20).

10. The concept of musical texture is entertained at greater length in Moll
1994: 126–35, 318–24, 368–69, where also can be found an assessment of earlier
scholarship on the subject, a literature culminating in Hannah Stäblein-Harder's
definitive study published in 1962.

11. The discussion both here and below focuses on three-voice writing, since
this was undeniably the standard from about 1300 to 1450, and also because
anything like an adequate treatment of four-voice counterpoint in the fourteenth

and fifteenth centuries would entail a degree of conceptual redefinition that is well beyond the scope of this paper. Those aspects of the issue that are relevant to the period up to around 1420 are introduced in Moll 1994: 219 ff. (see also note 108 below).

12. I have chosen the term *discantus* in preference to *superius* because it occurs much more commonly in theoretical treatises stemming from before ca. 1450, and in preference to *cantus* because the latter is sometimes used in earlier polyphonic theory to denote what would later be called a tenor—to which a discantus, indeed, is added (for particulars, see Moll 1994: 7, n. 29 and its accompanying discussion). In sources of French liturgical music of the fourteenth and early fifteenth centuries, the most notable occurrences of the archaic designations *motetus* and *triplum* are found in connection with the Tournai and Machaut masses, where they apply to parts that are fully texted. Apart from the two cycles just mentioned, the appellation *triplum* in this period seems to have been reserved mainly for an untexted or supplementary upper part, especially one that lies higher than a texted discantus (see the Kyrie, Apt no. 11). For a table of voice designations correlated with the presence or absence of texting in the three- and four-voice repertoire under investigation, see Moll 1994: 133 and 218, respectively.

13. Many mass compositions of this type, particularly those transmitted in the Ivrea codex, set the same text in both upper voices simultaneously (see example 9 below), a phenomenon that is all but nonexistent in contemporaneous motets and chansons. Note that in this and all applicable examples below, the measure numbers accord with the most recent modern edition (Cattin et al.: 1989/91). Regarding the recent renumbering of Ivrea's contents (not reflected in the present study) see below, note 44.

14. For particulars of text disposition in the applicable mass settings, as well as an assessment of the general textural and contrapuntal character of each piece, see Moll 1994: 392–497 (app. II). These statistics reveal a fundamental notational indeterminacy, namely, that the sources consistently transmit a high percentage of works in which one or both lower parts is untexted or is only rudimentarily texted, not to mention cases where a given voice part is texted in one manuscript but not in a concordant source (although a few surviving works do indeed have all parts texted in full—e.g., the Credo, Ivrea no. 62). In grappling with such issues, one quickly realizes that not only are the performing forces in question (i.e., vocal versus instrumental), but also, if one does decide to conform to current wisdom and add editorial text underlay (see note 15 below), one is continually forced into making decisions affecting the very form of a given piece. Specifically, the process of imposing an interpretation of how text declamation should coordinate grammatically among the various voice parts must in turn have a direct effect upon one's reading of the hierarchy of cadences and related articulations (see part II below), and hence upon musical structure itself. To this extent, any modern realization of such a piece becomes nothing less than a recomposition.

15. Roger Bowers in particular has advocated strictly vocal performance of English liturgical polyphony of the time (Bowers 1983: 161–92). If this view also applies to the contemporaneous French repertoire, which I believe is likely, then the existence of a so-called simultaneous style, which has been common currency

in the literature for years (see particularly Stäblein-Harder 1962), must be called into question. For a more thorough examination of this point, see Moll 1994: 126–35, 318–24. Regarding untexted voice parts, see note 14 above.

16. Bernhard Meier adduces evidence that this cadential formula of the tenor retains its leading role in polyphony through the time of Zarlino (Meier 1988: 91).

17. This statement applies to thirteenth- and fourteenth-century music. As evidence, I offer the corpus introduced above (note 6), among which there are only three works in which parts explicitly named *tenor* do not end on the low pitch at the final sonority—and all three betray other unique elements correlating with that unusual condition (Moll 1994: 189, 191). For general evidence regarding the primacy of the tenor, see the source just cited (186 ff.). It is well known that in the fifteenth century the tenor gradually lost its default position as lowest part in favor of various types of contratenor.

18. See below, examples 10, 12, and 13.

19. Fuller 1986: esp. 45 ff. A full consideration of all three topics lies outside the scope of this paper, and the first will not be pursued further beyond the few comments made here. Another study that explores similar issues is Leech-Wilkinson 1984.

20. The above quotations are all taken from Fuller 1986: 49–56.

21. Fuller visualizes a "continuum from neutral or non-committed to definitely directed" progressions (1986: 51).

22. Fuller 1986: 54.

23. See Pfannkuch 1958: col. 406. Meier discusses certain aspects of this issue as they relate to sixteenth-century music (1988: 90–101).

24. See Sachs 1974; also Apfel 1994, 1993, 1988.

25. These conclusions are based on exhaustive scrutiny of the French and related mass settings introduced above (see note 6). For a raw tabulation of major cadences in the complete works (appendix I), as well as structural reductions showing cadences and other points of articulation (appendix II), see Moll 1994: 377 ff.

26. A number of such extensions are illustrated in the source cited in the above note, chapters 9 and 10; see also example 7 below.

27. The list shown below (table 1) is based on fourteenth-century practice. By incorporating whatever modifications are necessary to account for the idiosyncrasies of a given repertory, however, I have found these criteria to be generally valid for European vocal polyphony through the time of Palestrina.

28. Some extraordinarily challenging problems can arise when considering pieces that are not fully texted in all parts, especially when text has been added editorially by modern editors or performers (see note 14 above).

29. All of the topics just specified are developed and illustrated in Moll 1994 (chapters 7, 9, and 10).

30. Pelinski 1975: 62–71. I prefer to designate this phenomenon more generally as "sustained sonority."

31. Fuller 1986: 56. In evaluating such effects, the element of text placement is, of course, crucial.

32. Various types of significant non-cadential sonorities are defined and illustrated in Moll 1994: 267–71.

33. Fuller 1986: 45–46.

34. Frobenius 1971: 67. Original: ". . . dum ad graviorem partem ipsius proportionis duple tendimus, utimur tertia, que minus ab huiusmodi parte distat, puta semiditonali, sic, dum in acutam partem finire volumus, utimur sexta, que in distantia equali ab ea parte acuta residet, puta semiditonali, que tonum integrum facit supra quintam; econtra autem sicut dum ad quintam tendimus, distantiam ipsius tertie a graviore dilatamus utendo tertia ditonali, sic distantiam consimilem, dum ad quintam tendimus, inter octavam et sextam penitus mensuramus. . . ."

35. A number of modern commentators have tacitly treated the phenomenon just defined as being literally equivalent to a cadence, but such an assumption is a gross oversimplification with respect to both the theory and the practice of the time. From the various theoretical stipulations, Sachs merely concludes that as a general rule, perfect consonances "stand at the beginning and end of a composition," whereas imperfect consonances "occupy the penultimate [position]" (1974: 113).

36. Among many citations that could be made from the secondary literature, Jeohash Hirshberg (1980: 40) refers to this as the "regular discant cadence," whereas Fuller refers to it as the "standard cadential formula" of the fourteenth century (1986: 38).

37. This of course entails that any imperfect intervals in the penultimate sonority that are diatonically minor must be made major through application of *musica ficta*.

38. A taxonomy of final and major-sectional cadence types à 3 is given in Moll 1994: 212–16, along with an analogous taxonomy of cadences à 4 (229–32); this latter tabulation shows the paradigmatic discant cadence (10-6-3→12-8-5) occurring in 41 of 73 comparable articulations in the four-voice works (56 percent). Criteria for judging what constitutes "major sections" of pieces are developed in chapter 10 of the same study.

39. This point is noted by Richard L. Crocker (1986: 113).

40. In his comprehensive survey of theories of *musica ficta*, Karol Berger concludes that when either progression is possible, i.e., when there is no B-flat signature in the lower voice(s) and no accidentals are given in the source, fourteenth-century theorists overwhelmingly sanction raising the upper voices rather than lowering the tenor (Berger 1987: 140–43).

41. Fuller defines "directed progression" as "a succession of two adjacent sonorities—the first imperfect in nature and unstable in quality, the second perfect in nature and stable in quality—in which the first moves to the second according to the norms of contrapunctus voice-leading" (Fuller 1992: 231). The author subsequently claims that "the power of the directed progression lies in its syntax of tendency followed by resolution" (232). As I see it, however, the term "directed" should be reserved solely for progressions in which imperfect sonorities are resolved stepwise according to the strictest principles of discant theory, so that any imperfect-to-perfect progression not incorporating such motion, even if

acknowledged as having a "tendency" toward resolution, should be considered "non-directed." This cavil is largely a matter of semantics, but it does affect the classification of cadence types (see below, example 6). Regarding directed progressions, see also Pesce 1990: 291.

42. Fuller recognizes this fact, saying that cadences are "special cases of directed progression," which are "not accomplished by quality or structure of the progression alone" (1986: 54).

43. Directed motion of voices, which occurs by definition in discant cadences but is also routinely placed at other points of musical articulation (see, for instance, example 7 below), should in most cases be inflected through *musica ficta* if necessary. Conversely, instances of directed motion within musical or textual periods (i.e., not coordinated with other elements listed in table 1) typically should *not* be inflected with accidentals to make minor imperfect intervals major. Such indiscriminate application of cadential *ficta* would distort the grammatical continuity of the composition. See also note 14 above.

44. This progression occurs at a relatively weak interior articulation in the Credo, Ivrea no. 46, mm. 70–71. Incidentally, the numbering of this piece as Ivrea 46 follows the *RISM* catalog (Reaney 1969: 294), but it should be noted that Ivrea has more recently been reindexed and its contents renumbered (Kuegle 1993: 358–82). For key to voice-part symbols in this and all following illustrations that apply, see example 3 above. As is explained below in note 46, the arrows indicate directed motion. In example 4, structural pitches in the penultimate sonority are shown in boldface.

45. All four progressions occur at ends of significant text phrases, but none is a final cadence: (a) Credo, Ivrea no. 56, mm. 14–15; (b) Sanctus, Ivrea no. 58, mm. 9–10; (c) Credo, Ivrea no. 57, mm. 13–14; (d) Credo, Ivrea no. 46, mm. 224–25. These examples are not, of course, intended as an exhaustive or absolute illustration of the range of possibilities.

46. The symbols I have adopted for the various kinds of intervallic progression are as follows: the presence of directed motion between any two parts is shown for each applicable voice by an arrow (→); any irregularity in the realization of directed motion, such as its being interrupted by a rest, is indicated by a broken arrow (⇢); a dash (—) indicates progression in a given voice—either leapwise or by step—that does *not* result in directed motion with any other part; a sign of equivalence (=) signifies a voice progressing in parallel motion with the sequence of low pitches. The resulting cadence types are designated by the abbreviation DC (Discant Cadence), followed by a numeral indicating the number of voices proceeding in directed motion; the letter "i" indicates that the progression is realized in an irregular fashion. Fuller uses the arrow symbol to indicate "the inclination of T[endency] toward R[esolution]," but I am using it to denote a specific *kind* of resolution, i.e., directed motion; see Fuller 1992: 232 (also note 41 above).

47. The term "doubly imperfect" refers to a sonority having two imperfect intervals above its low tone (e.g., 10-6). Although space constraints prevent my going into the issue at length, I consider it imperative to draw attention here to a terminology initially devised by Hellmut Kühn (1973) for describing multi-voice sonorities according to the dyadic usage of fourteenth-century theorists. As subsequently

modified by Sarah Fuller (1986), this scheme provides the basis for a valuable ana-lytical vocabulary, one relevant aspect of which is introduced below (note 84 and its accompanying discussion).

48. In every case, the B♭ signature applies only to the tenor, and all imperfect consonances in the penultimates are major.

49. Friedemann Otterbach overstates the case when referring to directed mo-tion as "ein 'mandatum' der Satzlehre" (1975: 19). Several prominent studies of fifteenth-century music have also posited directed motion as a contrapuntal stan-dard without having fully weighed the theoretical principles underlying that as-sumption (see, for example, Perkins 1973: 193; also Randel 1971: 77).

50. See Berger 1987: 123 ff. The theorists' lack of consensus as to the necessity of moving from the closest possible imperfect consonance raises the possibility that *ficta* was only required at the most important articulations (final cadences and the ends of significant sections). Berger remarks that "there is a gray area . . . in which a [*ficta*] decision has to be made (by the composer, performer, or editor) as to whether a given progression should be treated as a cadence and properly in-flected, or left intact" (138). The possibility of "relaxed" progressions and the po-tential choices of *ficta* evince the layers of subtlety that can be involved in inter-preting contrapuntal articulations. See also note 14 above.

51. In example 6b, the low pitch given in outline form (𝔽) and the interval above it in parenthesis indicate that the tenor is not the low voice; the "x" indicates voice crossing. Examples 6b and 6c represent, in fact, alternative versions of the same piece.

52. But notice that here the contra is above the discantus.

53. Fuller discusses some interesting illustrations of the phenomenon (1986: 44–45). For other examples of "triadic" function in the fourteenth century, see Moll 1994: 254–56. The existence of these "triads," however, results from the si-multaneous presence of perfect and imperfect intervals codified dyadically, and there is no compelling case for interpreting them (as Heinrich Besseler and others have done) as presaging the system of "functional triadic tonal harmony" codified in the theory of the eighteenth and nineteenth centuries (see below, note 78). Hellmut Kühn's account of "triadic" sonorities in the fourteenth century (1973: 78–79) agrees in essence with those I have formulated here.

54. Fuller also uses the term "bridge" to describe similar phenomena (1992: 246). This and other resources of musical articulation are sometimes applied to rhetorical ends of text expression, especially in Credos; for particulars, see Moll 1994: 331–34. If the diatonic imperfect consonances over the tenor in m. 20 hap-pened to be minor, I would recommend that they be raised through application of *musica ficta*.

55. This piece—the only extant one of its kind—sets the Gloria text in the dis-cantus 2 and a trope in the discantus 1. In the excerpt shown, the two texts have coordinated phrase endings, confirmed by the subsequent untexted two-voice "link" (m. 50).

56. Most sectional cadences are followed by single or double vertical strokes entered into the manuscript itself (see table 1, no. 3); these serve to demarcate large-scale divisions in a piece, exactly as do the double barlines of today.

57. Apfel 1994: 19. This study exists in its original form as the author's dissertation at the University of Heidelberg (Apfel 1953). Original: "Aus diesen [Lehren des vielstimmigen Diskantsatzes] und aus den entsprechenden Denkmählern ergibt sich, daß es zwei verschiedene Arten von Vielstimmigkeit gegeben hat, und worin sich diese unterschieden haben: Die eine dieser beiden Arten entwickelte sich aus den möglichen Verdoppelungen eines Cantus bei der Improvisation und die andere bestand in der jeweiligen Erweiterung eines realen zweistimmigen Diskantsatzes durch Zusatzstimmen."

58. In the interest of completeness, it should be mentioned that Apfel's original term for *mehrfach-zweistimmiger Satz* was *klanglicher Satz* (or *motettischer Satz*), and his original term for *erweiterter Satz* was *freier Diskantsatz*. For the most concise explanation of the respective compositional techniques (using the earlier terms), see Apfel 1957: 31–33. A short sketch of the development of these ideas is provided in Moll 1997: 48–50.

59. See examples 1 and 2. I have previously suggested this typology as a revision of the "style categories" (initially proposed by Friedrich Ludwig in 1923) to classify the corpus of fourteenth-century French mass settings—a system that was subsequently adopted by Hanna Stäblein-Harder and many others. For references to further literature, see notes 10 and 15 above.

60. This study was published two years later (Georgiades 1937, see esp. 56–57). Sylvia Kenney subsequently claimed that "discant theory was concerned primarily with two voices only," although she did recognize that the *practice* of discant could entail more than two parts (Kenney 1964: 94–95). For counter-arguments supporting Georgiades's view, see Apfel 1988: 6–7.

61. Apfel 1953: 220. The original wording is ". . . ohne Rücksicht auf die Konsonanzen der bereits vorhandenen Stimmen zum Tenor. . . ."

62. This disposition is characteristic of paired upper-voice texture, illustrated above in example 1.

63. In theoretical descriptions of two-part counterpoint, the tenor is a *cantus prius factus* and, for all intents and purposes, is always lowest. In practice, however, "the lowest voice is decisive, whether it be the tenor or, when it lies below the tenor, the contratenor" (see Apfel 1955: 301; translated in Moll 1997: 176). Apropos of the foregoing comment, I might point out that other voice types besides contratenors (discantus, triplum, motetus) can be lowest.

64. Apfel 1988: 25. Original: "Der Tenor—c.f. ist zwar die wichtigste, aber nur für die zweite Stimme des Satzes die alleinige Bezugsstimme des Satzes. Für die dritte und vierte Stimme des Satzes kann auch dessen zweite oder/und dritte Stimme Bezugsstimme sein. Der Tenor—c.f. gibt in diesem Falle einen Teil seiner Funktion als Hauptbezugsstimme des Satzes an die betreffende Stimme ab."

65. Franco of Cologne (contained in Strunk 1950: 155). The original citation is in *CS* 1, 132. A newer Latin edition, edited by Gilbert Reaney and André Gilles (1974), exists as vol. 18 of the series Corpus Scriptorum de Musica.

66. Apfel 1988: 24–25.

67. *CS* 3, 465. This treatise is usually considered to date from the first half of the fifteenth century.

68. Slightly amended Latin text taken from Andrew Hughes (1969: 376–77). Original: "Si enim quis vult facere contratenorem supra quemlibet tenorem, debet videre ubi discantus incipiat. . . . Sciendum quod volens facere contratenorem non debet facere duas octavas cum tenore ascendendo, nec descendendo, nec debet accipere proximas concordantias, sed accipiat secundum quod discantus requirit, ita quod contratenor concordat cum tenore et non semper cum discantu, quia bene potest fieri in contratenore contradiscantus. [Et videndum ne] contratenor habeat quintam quum discantus habeat sextam, quia esset secunda, etc. . . . Et notandum etiam quod supra notas tenoris non debemus numerare octo sicut in contrapuncto vel in discantu, sed simpliciter una, quia contratenor est ita gravis sicut tenor est, aliquando gravior."

69. It is not coincidental that this passage is also presented as the first part of example 2 above; on the contrary, it is specifically intended to show the close correlation that exists around 1400 between cantilena texture and expanded two-voice counterpoint.

70. The fourths in mm. 15 and 17 are clear passing tones of short (minim) duration, placed in relatively weak metrical positions.

71. Certain cases of problematic identification are illustrated in part V below (see note 111).

72. See the interesting exploration of contrapuntal dispensability in Apfel 1960: 89–93 (translated in Moll 1997: 230–36); see also Dahlhaus 1990: 85. The question of dispensability takes on a heightened complexity and significance in four-voice counterpoint, but this topic will not be pursued here; it is explored further in Moll 1994: 219–24.

73. For a more complete discussion of this point, see the beginning of part V below.

74. This point has been made by Wolfgang Marggraf (1966: 19; translated in Moll 1997: 312). For further evidence, including a reference from contemporary aesthetician Nicole Oresme, see Leech-Wilkinson 1984: 24, note 6. See also my discussion in "Toward a Comprehensive View of Compositional Priorities" (Moll 1997: 58–59). Still, it is plausible that medieval musicians and listeners took for granted a wider latitude of performance possibilities, particularly in secular music, than some twentieth-century scholars would be inclined to accept.

75. A good example of rhythmic-textural indispensability is illustrated by the Cordier Gloria (Apt 38, with a concordance in I-Bc 15:30). The type of leaping contratenor that characterizes this piece was clearly becoming an important ingredient of musical style in the years before 1400, and it remains a prominent characteristic in Dufay's chanson output.

76. Absolute contrapuntal dispensability of the contratenor only obtains when neither of the structural voices is allowed to rest for more than perhaps a semibreve throughout the course of a piece—but this robs the composer of a valuable textural resource, namely the ability to utilize a variety of two-voice combinations. As the style of expanded two-voice counterpoint evolved in the course of the fifteenth century, composers seem to have become less and less willing to abdicate this option.

77. For an example from a recent textbook, see Atlas 1998: 64.

78. The analysis is found in Besseler 1950: 40–43; the terms quoted above all appear in chapter 3, 45–65. My interpretation accords entirely with Sachs's account of sonority-building (1974: 126), and also with Dahlhaus's criticisms of Besseler (1990: 84–86). See also Perkins 1973: 191–92; and Moll 1997: 27–48. As this study was in its late stages of preparation, I encountered yet another analysis of *Helas, ma dame* that corroborates the views expressed above (Bent 1998: 40–42).

79. For a summary of the relevant issues, see Apfel 1988: 6–12; also Apfel 1994: 95 ff. Many of these theoretical tracts still await a firm dating, but the views just related imply that a considerable time elapsed in the thirteenth and fourteenth centuries, in which all treatises described either two-voice counterpoint exclusively, or multiple two-voice counterpoint.

80. Apfel claims that one of two styles of mass settings in the Old Hall manuscript is a type that "aside from the occasional use of a cantus firmus, corresponds . . . to the French chanson style [i.e., expanded two-voice counterpoint]" (1988: 251). It still remains to ascertain how far back into the fourteenth century such a method was cultivated by the English. The question of how extensively, and under what conditions, the technique of expanded two-voice counterpoint was practiced in England seems to me to be crucial to any attempt at comparing English to Continental practice before ca. 1420.

81. Apfel does acknowledge this fact, saying that "many Continental motets of the *Ars nova* are constructed according to the English [i.e., multiple two-voice] model" (1988: 11).

82. It is thus incontestable that multiple two-voice counterpoint dominates mass composition in the early part of the fourteenth century (see the list of three-voice settings in Moll 1994: 339). Since this technique is not necessarily predicated on any single two-part voice pair, one must now be prepared to acknowledge that, in strict terms, the concept of the "contrapuntally self-sufficient Cantus/Tenor framework, within which and around which other voices play," is *not* likely to be demonstrable as "a central principle of medieval composition" until around mid-century in three-voice writing, and much later in four-voice writing. (The quotations are from Leech-Wilkinson 1984: 11.)

83. In the Austro-German scholarly literature, the words *Klangträger* and *Harmonieträger* are often employed to signify the concepts just introduced, but neither term constitutes a definite explication of the principles I am detailing here. In the study introduced above in note 7, I have explored these terminological issues in much greater detail.

84. Anonymous I, *CS* 3, 360–61. Original: "Si supra planum cantum esses tantummodo, discantaveris sub plano cantu; nullus potest cantare supra hunc nisi sit expertus gravium de vocum sedibus, quia omnes superiores voces ad graviores habent recedere ad hoc quod consonantia bona sit." Another version of this text exists in *Quatuor principalia,* dated 1351 (*CS* 4, 294). See also note 47 above and its accompanying discussion.

85. Latin text in Rohloff 1967: 146. Original: "Tenor autem est illa pars, supra quam omnes aliae fundantur, quemadmodum partes domus vel aedificii super suum fundamentum. Et eas regulat et eis dat quantitatem, quemadmodum ossa partibus illis."

86. See example 10 above.

87. For key to voice-part symbols, see example 3. Intervals in parenthesis above the staff indicate that the tenor is not the low voice; "x" indicates voice crossing.

88. See the discussion of cadences in part II (above). Georgiades and Apfel both see the underlying principle of this progression—the "stepwise relationship of sonorities" (*Nachbarschaftverhältnis der Klänge*)—as a definitive attribute of multiple two-voice counterpoint, but the progression occurs frequently in expanded two-voice compositions as well.

89. But note also that the discantus and the contra cannot stand alone in the last sonority of progression (b). For some further deliberations on the referential status of the discantus, see note 115 below.

90. Apfel 1955: 298 (translated in Moll 1997: 173). It is not possible here to deal comprehensively with this more advanced technique of dyadic counterpoint, but I plan to do so in a future study.

91. I might take this occasion to point out that one recent study seriously misrepresents Apfel's compositional paradigms as they apply to the *Missa Quinti toni*. In accounting for the work's dissonance treatment, Andrew Kirkman (1995: 266–67) invokes Apfel's description of the *klanglicher Satz* (a term identified in note 58 above). This connection, however, is specious, since Apfel unequivocally characterizes the *Missa Quinti toni* as a *klanglich-freier Satz*, i.e., as a contrapuntal type whose principles differ materially from the ones Kirkman cites. For comparisons, see Apfel 1955: 303 (quoted by Kirkman) and 307 (regarding the *klanglich-freier Satz*); translations of these two passages can be found in Moll 1997 (178 and 183, respectively).

92. Fox 1945: 33–53.

93. There does remain the possibility of the contra legitimizing diminished fifths, but this interval, too, is infrequent.

94. That Apfel's thinking was moving in a similar direction is attested by his describing a second variant of the *klanglich-freier Satz*, wherein the tenor holds the cantus firmus in long notes while the contra takes the tenor's normal place as structural voice with the discantus (1955: 310). As an exponent of this practice, I would point to the *Missa Ecce ancilla Domini* of Johannes Regis, a work whose structural integrity is expressed almost solely through the continuity of the discantus and contratenor altus, even though both the tenor and contratenor bassus carry cantus firmi at various times.

95. See Meier 1952, esp. 32 (translated in Moll 1997: 156).

96. Meier 1952: 38 (translated in Moll 1997: 163). See also the sources cited above in note 78.

97. The tenor of *Je ne puis vivre* is remarkable in that it has exactly the same compass as the discantus (a twelfth—a–e′ in Guidonian notation), a circumstance most likely occasioned by the capabilities of specific performers but also reflected compositionally through imitative entries at the unison. This equalization of voice register militates against each line's independence, yet despite the constant voice crossings (and the attendant exchanges of voice function), vestiges of the discantus-tenor framework remain in evidence whenever both parts are sounding together.

98. Apfel declares that earlier representatives of the *klanglich-freier Satz* are to be found in English music even as early as the Old Hall corpus, but this hypothesis

still awaits further investigation (see Apfel 1960: 81–84; translated in Moll 1997: 219–23). For another perspective on the classification of compositional procedures, see Apfel's engaging comments regarding Ockeghem's *Missa Caput* (1955: 311–12; translated in Moll 1997: 189–90).

99. Up to now I have scarcely addressed the fundamentally more complex problem of four-part works (see note 11 above), not to mention the existence of pieces such as the Binchois rondeau *Dueil angoisseus*, which are transmitted in both three- and four-part versions. I intend to explore these kinds of issues more fully in future research.

100. See example 9 above, and its accompanying explanation. Note also that example 1 conforms to this criterion.

101. The term "tenor-founded multiple two-voice counterpoint," while admittedly rather cumbersome, accurately conveys the essence of the procedure. The possibility of a tenor-founded technique for four voices is discussed in Moll 1994: 226–27.

102. This source (B-Tc 27, *olim* 476) includes the six movements of the Tournai Mass (all à 3), as well as an independent Kyrie, which is probably three-voiced but may be monophonic, and a Sanctus that *is* monophonic apart from the two three-part *Osanna in excelsis* sections. For a discussion of the latter two movements, see Moll 1994: 147–49. Other works in the style of the Tournai Mass include the Kyrie attributed to "Chipre," Apt no. 5 with concordance as Ivrea no. 49, and the Credo of Murrin, Apt no. 41.

103. Apfel 1988: 25 (see note 64 above).

104. See Moll 1994: 217–27 and 369–70.

105. Apfel 1955: 303. Besseler uses a similar term, *Kombinationsbaß*, but he treats the phenomenon as though it were simply equivalent to the functional bass in triadic tonality, and thus misses the crucial distinction that must often be made in compositions of the early fifteenth century between the referential pitch and the referential voice; see Besseler 1950: 86 ff., as well as theses 44 and 45 in the same study (204).

106. Moll 1994: 184.

107. See Moll 1994: 224–26, 289–93, and 369–70, where the ramifications of this viewpoint upon compositional process in the Franco-Flemish liturgical repertory of the fourteenth century are explained. A similar interpretation of the solus tenor's relevance to four-voice composition is advanced in Bent 1981: 628–31.

108. See Moll 1994: 224–27, where the existence of a contrapuntal "proto-framework" between a tenor and contratenor of essentially equal register is hypothesized.

109. For particulars of Besseler's position, see note 105 above.

110. Leech-Wilkinson 1984: 25–26, note 13. See also Bent, who sketches out the compositional precepts involved (1981: 626).

111. Such pieces include the Kyrie, Apt 10 (attributed to Guymont), the Kyrie, Apt 6, and the Kyrie from the Toulouse Mass.

112. An apparent exception to this rule occurs in some four-voice works, but—significantly—only at major points of articulation (see Moll 1994: 241, example 9-2).

113. The term "always" discounts the minor exceptions usually found in such pieces. For a list of the applicable mass settings with stratified voices, see Moll 1994: 246.

114. Such pieces tend to act as a rudimentary form of expanded two-voice counterpoint, with the dispensability of the third part expressed more in textural than in contrapuntal terms.

115. In expanded two-voice counterpoint the tenor and discantus act as a unit and both are conceptually anterior to the contra. In certain types of pieces, as for example the large group of freely composed chansons, the melodic integrity of the discantus may well prevail over that of the tenor, with the former acting as a primary referential voice and the latter as a secondary one (see Moll 1997: 40, 59–61). Such an interpretation accords with arguments advanced by Peter Lefferts (1995: 119). Nonetheless, even in secular genres the tenor quite often cadences in contrary motion with the two other parts, and thus arguably should be assessed as the referential voice.

116. I must emphasize that a comprehensive set of style criteria can be achieved only by accounting for musical texture (see examples 1 and 2 above), in conjunction with counterpoint, whereupon it is possible to interpret distinct chronological trends in the repertory considered above (Moll 1994: 341–43). The results indicate that the mass corpus occupies a central place in the spectrum of compositional methods practiced by Franco-Flemish composers of the fourteenth century. While it has not been possible here to evaluate the contemporaneous French motets and chansons in light of the contrapuntal-textural typology outlined above, I am convinced that close analysis of these genres will confirm its general validity. Indeed, I can confidently predict the motets to correlate highly with multiple two-voice counterpoint and paired upper-voice texture, and the chansons with expanded two-voice counterpoint and cantilena texture. The actual range of basic conceptions and intermediary stages, however, will not be clarified until these secular and paraliturgical repertories are taken more fully into account.

117. Several distinct means of contrapuntal treatment during the first half of the fifteenth century are sketched out (with musical examples) in Apfel 1955: esp. 301–09 (translated in Moll 1997: 176–86). As is evidenced by the points raised above at the end of part IV (see also Moll 1997: 53–58), these hypotheses will most likely require further revision and refinement in light of a more thorough exegesis of the musical and theoretical texts. It also remains to apply the concept of texture more systematically to fifteenth-century repertoire.

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