Liszt’s Experimental Idiom and Music of the Early Twentieth Century

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The question of historical precedents for the remarkable new music that suddenly—or so it seemed to contemporaries—appeared on the scene in 1908–09 has always fascinated musicians. The question has necessarily been reformulated, however, as a result of changes in theoretical and analytical approaches over the last fifty years or so. While older studies, such as Ernst Kurth’s Romantische Harmonik, suggested in somewhat less-than-precise terms the existence of certain evolutionary processes in late nineteenth-century music, recent work has provided more specific analytical information in an effort to establish a firm technical basis for a better understanding of the emergence of the music of the twentieth-century avant garde.¹

In this emergent phase one hesitates even to suggest that it was any kind of orderly evolu-

tionary progression) the music of Liszt appears to have played an important precursory role. Indeed, there is a rather extensive specialized literature concerned with what is regarded as his main contribution to this transition, the late music (after 1880), and with certain of its striking surface features, such as the “augmented triad” and various exotic scales.

In view of these writings—many of which will be cited in the course of this article—it may seem presumptuous to address, once again, the topic of Liszt’s music as precursor of early twentieth-century music. Still, careful study based upon more effective analytical techniques may produce a deeper and more comprehensive view of the music of Liszt that is most closely related to that of the early twentieth century, the music composed in what I shall call his experimental idiom.

Under the term “experimental” I mean to include not only the radical late works, but also segments of earlier works, extending back into the pre-Weimar period, before 1848. This view is based upon the assumption that there are two general categories of music represented in Liszt’s œuvre: the traditional music of triadic tonality and the experimental music, which represents innovational departures from the norms of tonal syntax. In the latter there is an increasingly stronger movement toward a different sphere of sonic organization, one that came into full view some twenty-three years after Liszt’s death in the new music of Bartók, Schoenberg, Webern, Scriabin, and Stravinsky.

It is not my intention to assert that there is a direct connection between Liszt’s non-traditional music and the music of the avant-garde composers of the early twentieth century, but rather to show that when he created music that was remarkably similar in specific general structural aspects to the innovative music that followed the Jahrhundertwende, he anticipated a significant historical development. This disclaimer requires qualification, however, since, with the exception of the late works (most of which were unpublished and unperformed when the twentieth-century avant garde appeared on the scene), Liszt’s music forms part of the repertory of concert music of the later nineteenth century and was known to Schoenberg, Bartók, and others. Yet, in the absence of explicit testimonials from those composers, the extent to which its unusual features exerted influence upon them remains moot.2

Music in the experimental idiom exhibits specific surface characteristics. For example, it is often recitative-like, occurring in the introductions to such longer works as the last tone poem, Hamlet. Very often it is threnodic in quality, even when the title does not explicitly indicate an elegiac program, as it does in Am Grabe Richard Wagners. Finally, there is the definite impression that a specific tonal focus is in abeyance, or has at least become very attenuated—a feature that has been observed by other writers. Often the absence of a key signature underscores this characteristic, even though a conventional key signature may appear later in the music when the more traditional idiom enters.

This brief description of some of the general surface characteristics of the experimental idiom is intended only as the most casual kind of introduction to this extraordinary music. Far more penetrating analysis is required to reveal its inner workings.

That statement leads naturally to a brief overview of published analytical work relevant to the present study. Within this extensive literature, the writings that relate most directly to the present one are those by James M. Baker, Robert P. Morgan, R. Larry Todd, and Paul Wilson.3 It is no accident that these are all American scholars whose work reflects, to a

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greater or lesser degree, the influence of Heinrich Schenker. Additional references to their work as well as to the work of other scholars will appear at appropriate points below.

In general, much of the literature that touches upon aspects of the experimental idiom (primarily the late piano music, as noted above) is disappointing. Perhaps the most obvious of the defects is the virtual absence of studies of complete compositions. Moreover, although many authors assert that the music has atonal characteristics, they do not pursue the technical implications of such an assertion. In the worst cases, the studies are desultory, impressionistic, and based upon models that are demonstrably inappropriate in that they do not produce substantive analytical results. Prime examples of the latter are the recent Hungarian writings based upon the “scalar” approach, a literature also often burdened with political and ethnic platitudes.

Of greater significance, however, is the general disregard of the concept of structural levels and its expression in large-scale linear motions as they relate to details of structure—a disregard that goes along with a seeming preoccupation with the identification of certain easily recognized entities, notably, the “augmented triad,” the “diminished seventh chord,” the whole-tone scale, and the “Hungarian” scale. Once these components have been identified, no further conclusions ensue. Exceptions to this criticism, in addition to the publications by Morgan and Todd cited in footnote 2, will be mentioned as we proceed.

The analytical technique employed in the present study derives from, but is not identical to, the linear methods of Heinrich Schenker. It also incorporates pitch-class set analysis, which offers a range of interpretive tools that seem to be effective in illuminating the innovative music that is the main topic of this essay. Since pitch-class set names are now used more and more in the literature, it seems that no explanation is required here. However, I refer those readers who wish an introduction to this nomenclature to my study, The Structure of Atonal Music, pp. 11–13 [see fn. 10]. Although no attempt has been made in this article to be absolutely rigorous in the application of pitch-class set names, so that informal designations such as “diminished triad” and “augmented triad” may be used in place of 3-10 and 3-12, respectively, the reader should bear in mind that those traditional rubrics may imply certain tonal functions, whereas pitch-class set names are neutral. In addition, the reader will see that there are many harmonic formations in the composer’s experimental music that lack any such familiar traditional names. In such cases,

4. However, examples of Liszt’s music, experimental or otherwise, are virtually absent from Schenker’s own writings. Exceptions are his discussions of two passages from the Piano Sonata (vis-à-vis modal attributes) and one from the ninth of the Transcendental Etudes. See Heinrich Schenker, Neue Musikalische Theorien und Phantasien, Band 1: Harmonielehre [Stuttgart and Berlin, 1906], pp. 94, 139, 403. An excellent study of Liszt’s tonal music, using Schenkerian methods, may be found in David Damschroder, The Structural Foundations of “The Music of the Future” [Ph.D. diss., Yale University, 1981].

5. Morgan and Todd, the only authors cited in fn. 2 who deal directly with Liszt, are exempt from this criticism.


7. Among recent publications is an article by Bengt Johansson, “Modernities in Liszt’s Works,” Svensk Tidskrift för Musikforskning 46 (1964), 83–117, which, although it forgoes in-depth analytical techniques and the results those might afford, offers interesting comments on many pieces.


9. For example, on p. 67 of Bence Szabolcsi, The Twilight of Ferenc Liszt [Budapest, 1959], we find: “Thus the old Liszt’s art becomes a phantastic synthesis of Hungarian and Russian, French and German, Italian and Gregorian elements, a synthesis which is, however, pervaded by an utterly new, revolutionary, sharp [sic] East-European atmosphere.”

the use of pitch-class set names is not only a convenience, but perhaps also a necessity.\footnote{11See, however, Serge Gut, \textit{Franz Liszt: Éléments du langage musical} (Paris, 1975), in which the author presents a method of harmonic analysis that features multiply altered chords and polyharmony with accompanying Roman numerals and figured bass symbols. However attractive this alternative might be to those oriented exclusively to vertical slices of music, it should be recognized that analysis carried out on this basis alone may preclude serious consideration of other structural spans and levels.}

The following study contains three main sections. In the first, examples of Liszt’s experimental idiom will be discussed through excerpts from his early music. In the second and larger section, his late visionary music provides excerpts for analytical discussion. The third section consists of an analysis of an entire composition, well known as an example of Liszt’s most advanced writing, the piano piece \textit{Nuages gris}.\footnote{12As an indication of the attention that this short work has recently received we note that it is now included in a standard textbook: Donald Jay Grout, \textit{A History of Western Music}, 3rd edn. with Claude V. Palisca (New York, 1980), p. 583.} It is hoped that these interdependent sections will carry out the two-fold goal of the article: to examine in some detail the structure of the composer’s experimental music and to point out correspondences that it bears to music of the early twentieth-century avant garde.

Before we proceed to matters analytical in connection with the musical examples, a word about the latter is in order. Because space limitations do not allow for the presentation of complete scores, most of the musical illustrations consist of analytical sketches in quasi-Schenkerian notation annotated with pitch-class set names and other symbols. The main part of the article is based upon these sketches.

**The Experimental Idiom in the Early Works**

\textit{Vallée d’Obermann} (1855). As an early instance of the experimental idiom, let us consider the second version of the piano composition \textit{Vallée d’Obermann}, which appeared in the first volume of \textit{Années de pèlerinage}, though its composition (or—in the case of most of the numbers—recomposition) goes back half a dozen years. The first version, which was composed in 1835–36 and is the longest work in the \textit{Album d’un voyageur}, differs radically from the recomposed version, as can be seen in ex. 1. Indeed, the two versions share only certain basic motives at the foreground level, notably the melodic motive that spans a minor third. In ex. 1a, which follows a porten-tous introduction of twenty-one bars, the motive occurs in the tenor, initiating the long thematic scalar figure based upon the minor-seventh chord in the right-hand accompaniment. After the resolution upon the tonic triad in m. 2 a consequent phrase of two bars leads to the mediant harmony, G major, a completely traditional progression.

In ex. 1b, the first four bars of the recomposed version, the bass has vanished (to return in m. 34) and a chromatic passing tone, A♯, is introduced to delay the entry of the tonic triad. However, the most striking difference between the two versions is seen in the consequent phrase, which ended on the mediant harmony in the original version and which now modulates to G minor, with a suspended seventh delaying the tonic note in the upper voice. This modulatory process continues over the next four-measure group, producing the large-scale motions shown in ex. 2. [The bass from m. 34 is included there, enclosed in brackets.]

Overlaid on the unusual tonal organization of this opening music (ex. 2) is an analysis that shows by means of beams connecting stemmed noteheads the basic pitch-class set structures that are formed in the middleground. The upper voice forms the trichord 3-10 (the “diminished triad”), as does the bass, while the tenor melody in each four-measure group sets forth a form of the trichord 3-12 (the “augmented triad”). With reference to Liszt’s experimental music, the analytical selection of these harmonies requires little justification, as will be substantiated below.\footnote{13See Todd, “Liszt, Fantasy and Fugue,” in which the author points out long-range relations involving the diminished triad.}

Trichords 3-10 and 3-12 also occur in the contrapuntal detail of ex. 2. Specifically, 3-12 is formed in m. 9 by the pitches (from the bass up) A–C♯–E♯, 3-10 follows, in m. 10, as G♯–B–E♯. When F♯ in m. 9 is added to the 3-12 trichord, tetrachord 4-19 results. Similarly, when E is added to 3-10 in m. 10, tetrachord 4-18 ensues. In both cases these pitch-class sets come into existence as a result of decorative motion in the foreground: the 5–6 suspension in m. 9 brings 4-19 into play, while the appoggiatura E in m. 10 forms 4-18 with 3-10. Both of these tetrachordal sonorities play a fundamental role in Liszt’s experimental idiom, as does the five-note sonority 5-31, which comprises the total content of m. 10 in ex. 2.\footnote{14Set 5-31 has long attracted the attention of students of nineteenth-century music. For example, Kurth (\textit{Romantische Harmonik}, p. 412) cites an instance from Strauss’s \textit{Salome}, describing it as a “combination of fundamental chord with the diminished-seventh chord in C minor.”}

Of all the foreground sonorities in the opening music of this composition, perhaps the most characteristic is 4-26, the tetrachord in the right-hand part of m. 1, duplicated a minor third higher in m. 5. In traditional nomenclature this is a minor-seventh chord. Here, in the absence of a clear-cut harmonic function, consideration of its intervallic organization
Example 1: Vallée d’Obermann

Example 2: Vallée d’Obermann, second version
The large-scale upper voice motion comprises pitch-class set 3-12, the pitches Eb—G—B shown as the stemmed and beamed open noteheads in ex. 3. Attached to the opening Eb is again 3-12, graphed as stemmed and beamed closed noteheads. With respect to pitch class this form of 3-12 is identical to the one of larger scale in the upper voice, exemplifying the correspondence of musical spans found in many compositions of the early twentieth century. The Bagatelles, Bartók’s op. 6, offer many examples of more complex, but related, correspondences, involving more than one set class—for example no. 8 of that work. It is not difficult to imagine these Lisztian structures as prototypes, in the metaphorical sense, of course, of such avant-garde musical phenomena.

At m. 5 the surface configurations suggest for a moment that the passage is to be merely a transposed replica of the music that begins in m. 1. This, however, is not the case, for instead of 3-12, 3-10 now unfolds, a demonstration of the striking ways in which the composer often juxtaposes these two sonorities (cf. ex. 2). Here and elsewhere in the work the two sonorities are, of course, musical emblems associated with the program.

Closer study of ex. 3 reveals that the lower-level trichords 3-12 and 3-10 do not occur in isolation. Set 3-12 has an “upper neighbor note,” C, attached to its last component, while 3-10 has a “lower neighbor note,” D#, attached to its last component. These half-step motives are labelled a and a’ on ex. 3. As indicated, they combine with 3-12 and 3-10 to form 4-19 and 4-18, respectively. This is but one instance of a general aspect of Liszt’s harmonic language in the experimental idiom: tetrachords 4-18 and 4-19 are fundamental components of much of that music.

This feature seems to have escaped the attention of students of Liszt’s music in the experimental idiom. Other important aspects, such as the large-scale linear-harmonic projections that seem to be universal every harmonic event to B minor would be a distortion.” See also his *Between Romanticism and Modernism: Four Studies in Music of the Later Nineteenth Century*, tr. Mary Whittall (Berkeley and Los Angeles, 1980), pp. 46–47.

*Instances of 4-19 are to be found everywhere in the non-tonal music of the early twentieth century. Indeed, if there is a single harmony that is emblematic of that music it is 4-19. A few occurrences in familiar works are: the “Wir arme Leut” motive in Berg’s *Wozzeck* (see Janet Schmalfeldt, *Berg’s Wozzeck: Harmonic Language and Dramatic Design* [New Haven and London, 1993], p. 87), Bartók, Fourteen Bagatelles, op. 6 (see James E. Woodward, “Understanding Bartók’s Bagatelle, Op. 6/9,” *Indiana Theory Review* 4 [1981], 11–32); Stravinsky, *The Rite of Spring* (see Allen Forte, *The Harmonic Organization of The Rite of Spring* [New Haven and London, 1978], p. 104); and Scriabin, Sonata No. 7 (“White Mass”), upper voice of mm. 1–3. Set 4-18 is almost as prominent in this repertory. It is, for example, a major component of Stravinsky’s *Petrochka*, and it occurs at the very beginning and throughout Schoenberg’s *Pierrot Lunaire*, a work in which 3-10 (4-18) and 3-12 (4-19) are primary harmonic symbols.

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15Several authors have recognized the important role the augmented triad assumed in music of the later nineteenth century. Among these are Robert P. Morgan (“Dissonant Prolongations”) and Gregory Proctor, *Technical Bases of Nineteenth-Century Chromatic Tonality: A Study in Chromaticism* [Ph.D. diss., Princeton University, 1978].

16In “*Franz Liszt und die Vorgeschichte der Neuen Musik,*** *Neue Zeitschrift für Musik* 122 (1961), 387–91, Carl Dahlhaus touches upon foreground harmonic relations in the introduction to *Hamlet* and states: “An attempt to refer
in this music, have also gone virtually unrecog-

The passage from *Hamlet* (ex. 3) suggests even
more strongly than did ex. 1 that as early as the
Weimar period, and probably even before, Liszt was
composing with tetrachords that are essentially non-
tonal in nature, independent sonic objects that are
not treated according to the syntactic rules of tonic-
dominant tonality. With the advent of atonal and
other non-tonal music around 1908, the tetrachord
became the basic harmonic building block of new
music, replacing the triad in that role. Liszt had al-
ready made that replacement in the music of his ex-
perimental idiom shortly after the middle of the
nineteenth century, at the latest.19

Among the other twentieth-century harmonies in
the excerpt shown in ex. 3 is the pentad 5-31, men-
tioned earlier [see fn. 13]. This occurs in two ways:
first, as the “diminished seventh chord,” 4-28, plus
bass F#; second, as that same chord plus bass B. Thus,
the change of bass from F# to B alters the pitch con-
tent but does not change the harmony [set class].
This remarkable passage, which is not at all atypical
of the experimental idiom, could serve as a model for
many in Schoenberg’s atonal or in Stravinsky’s early
non-tonal works.20

The two hexachords in ex. 3, labelled 6-z29 and
6-27, reflect a still larger sphere of harmonic activ-
ity, the octatonic.21 Extended discussion of this as-
pect of the composer’s experimental idiom as well as
consideration of the octat 8-18 here, as an instance
of complementation, is reserved for a subsequent part
of this article.

**Blume und Duft (1860).** The song *Blume und Duft*, a
striking instance of the experimental music of Liszt,
has attracted attention recently and deserves addi-
tional study.22 Example 4 shows some of the organi-
zational features of the song.

Readers conversant with the lore of pitch-class
sets will recognize immediately that all of the sets in
the three parts of the example [a, b, and c] are sub-
sumed by the octatonic collection, pitch-class set 8-
28. However, as remarked above, more extended dis-
cussion of this set with respect to Liszt’s music will
be postponed until later, since the reader can under-
stand the essentials of the illustration here without
being subjected to theoretical digressions.

Example 4a is an analysis of the introductory mu-
sic, mm. 1–4. This reading avoids the obvious “dom-
inant seventh” label that might be attached to the
four verticals, a label that has no analytical conse-
quences whatsoever since the sonorities so design-
nated play no functional role within a tonality, ex-
plcit or implicit. [For a strikingly similar instance of

18However, Morgan (“Dissonant Prolongations”) and Todd
(“Lisz, Fantasy and Fugue”) have recognized large-scale
motions, as have the following authors, to whom we will re-
fer again later: Howard Cinnamon, “Tonal Structure and
Voice-Leading in Liszt’s *Blume und Duft*” *In Theory Only
6* (1982), 12–24, and Edwin Hantz, “Motivic and Structural
Unity in Liszt’s *Blume und Duft*,” *In Theory Only 6* (1982),
3–11.

19—Istvan Szélényi, “Der unbekannte Liszt,” *Studia mu-
sicologica 5* (1963), 311–31, for speculations on the role that
Liszt’s study of Greek theory and scales (especially tetra-
chords, p. 314) may have played in his composing. In Lina
Rammann, *Lisztiana: Erinnerungen an Franz Liszt* (1873–
1886) [Mainz, 1983], pp. 317–18, is an amusing account of
Liszt’s outrage upon learning that the “Herren von der The-
orie” had asserted that the “Hungarian” scale was not of
Indian origin, hence, presumably, not of sufficiently respect-
able antiquity.

20See Forte, *Structure*, ex. 43, and *Harmonic Organization*,
ex. 54 for examples in Schoenberg and Stravinsky, respec-
tively.

21See Pieter C. van den Toorn, *The Music of Igor Stravinsky*
[New Haven and London, 1983], pp. 48–60, for an extended
theoretical exposition of the octatonic collection with re-
ference to the music of Stravinsky.

22The two articles on this song cited in fn. 18 present analy-
ses and analytical graphs. Of the two, Cinnamon’s is the
more conservative, complete with Roman numerals. Hantz
deals with “harmonic ambiguity” and emphasizes the role
of “symmetrical harmonic structures,” asserting that “the
home chord, . . . the Urklang, is an augmented triad” [p. 11].
Neither author recognizes the octatonic component, and
both seem to regard the song as a kind of aberration within
Liszt’s *œuvre*. But the experimental idiom is clearly dis-
played not only by *Blume und Duft*, but also by other Liszt
Lieder, such as *Ein Fichtenbaum* (c. 1855), in which 4-19 is
prominent, and, even earlier, by *Es Rauschen die Winde* (c.
1845), where both 4-19 and 4-18 occur in the foreground.

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the non-functional use of a “dominant seventh” chord [4-27] in a non-tonal passage, see Forte, *Harmonic Organization*, ex. 60; there 4-27 is a subset of 8-28, the octatonic collection.] Indeed, these verticals group in pairs, as indicated, to form the hexachordal succession 6-27/6-27 in which the second form of 6-27 is a transposition of the first up three semitones. In each case, 6-27 includes a form of 4-18, presented as a pair of sonorities in the upper voices. Perhaps most interesting, however, is the outer-voice configuration shown in example 4b: not only does the tetrachord 4-3 unfold in the horizontal dimension (the upper form a minor third higher than the lower if they are compared in unordered form), but also each pair of components in the vertical dimension sums to that set class (4-3). And again, those two forms of 4-3 are transpositionally related by a minor third, since the second dyad in the lower part repeats the first dyad in the upper part.

The extent to which the composer was aware of all these relations is perhaps moot. However, this passage, and the entire song, prefigure the modern music of his very last period, a period in which the evidence of conscious manipulation of such structural properties seems incontrovertible. Liszt was certainly aware of the unusual nature of his experimental music; consider the amusingly defiant gloss that appears in his handwriting at the end of the manuscript of the experimental work, *Ossa arida* (1879), with a final shift into Latin for added emphasis:

Professors and apostles of the conservatories most strongly disapprove of the dissonance of the continuous thirds-construction of the first twenty bars, which is not yet customary. Nevertheless, so has he written. Liszt [Villa d’Este, 18–21 October 79].

(Professoren und Jünger der Conservatorien haben die noch nicht gebräuchlichen [sic] Dissonanz des Fortgesetzen [sic] terzenweisen Aufbau der 20 ersten Takte gründlichst zu missbilligen: nichts destoweniger scripsit.)

Example 4c extracts still another octatonic con-

![Example 4a: Blume und Duft](image_url)

![Example 4b: Blume und Duft](image_url)

![Example 4c: Blume und Duft](image_url)

**Example 4: Blume und Duft**
Example 5: Mignon, orchestral arrangement

Thus, the first two phrases of the introduction comprise a linearization of the vertical tetrachordal subsets of the thematic sonority—a remarkable prefiguration of a process that can be observed in much of the non-tonal music of the early twentieth century. In 5-22, 4-19 occurs twice as a non-contiguous formation, a secondary component in this case. It is interesting to recall that 4-18 contains 3-10 and 4-19 contains 3-12, representing the diminished triad and augmented triad spheres of harmonic activity, respectively. The combination of 4-18 and 4-19 in pentad 5-22 is a very special circumstance on other grounds too, since among all the pentads only 5-22 and 5-26 contain both 3-10 and 3-12.

Faust Symphony (1854–57). Many surveys of Liszt’s music, as well as specialized articles that touch on the experimental music, cite the beginning of the Faust Symphony for its daring use of the augmented triad. Yet not one of these analyses incorporates the opening A♭ in violas and cellos, which is marked "ff" and is to be played with downbow (ex. 6). Set 4-19 results when this initial A♭ is followed by 3-12, G–B–E♭, after which the remaining three forms of 3-12 complete the total chromatic (with one repetition). Because of a special chromatic relation between 3-12 and 4-19, each of the augmented triads expands to a form of 4-19, so that the subject, after the initial form of 4-19, consists of the series of interlocking forms of that tetrachord—seven in all, as shown in ex. 6. The subject also exhibits harmonies larger than the tetrachord. As shown at the bottom of ex. 6, the eighth rests partition the subject into sets 7-21 and 6-20, both collections are common in early twentieth-century music, especially in the works of Bartók and Schoenberg. Thus, although 3-12 is the most obvious surface feature of the subject, the initial A♭ generates a structure of considerably greater intricacy, the fundamental component of which is the tetrachord so basic to the composer’s experimental idiom, 4-19.

Late music in the Experimental Idiom

Before we move to the main part of this article, devoted to exs. 7–10, some informal theoretical information about relations among sets should be set forth. Among these, the most important for the present study is the inclusion relation. We have already seen an illustration of this:

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23See, for example, George Perle’s analysis of Webern’s Five Pieces for String Quartet, op. 5, no. 4, in Serial Composition and Atonality, 2nd edn. (Berkeley and Los Angeles, 1968), p. 16.
25For an example from Bartók, see Paul F. Wilson, “Atonality and Structure,” p. 164. Set 6-20 is everywhere in Schoenberg’s atonal music, and in the advanced twelve-tone music it is equally prominent. For example, it is the main hexachord in his Ode to Napoleon, op. 41 (1942), where he exploits its special combinatorial properties.
26The publication status of the late music is provided by Szabolcsi in Twilight, p. 68ff., and by Humphrey Earle in The New Grove. Of the late works cited in the present article, only one, Psalm 129, was published during the composer’s lifetime (Leipzig: C. F. Kahnt, n. d.), repr. in Franz Liszt, Six Psalms (1864–81), Gregg International Publishers, Ltd., England, 1972). The late piano works were published in vol. IX of the collected works in 1927, with the exception of Trauer-Vorspiel and La lugubre Condola (1887 and 1886, respectively). Via crucis appeared in the collected works in 1936. Therefore, as indicated earlier, it is unlikely that the few works in the experimental idiom available to composers in the early twentieth century could have exerted any direct influence on compositional practice.
27See Forte, Structure, pp. 24–28, for a more detailed explanation.
3-12 is included in 4-19 and 4-19 includes 3-12. In equivalent language, 3-12 is a subset of set 4-19 and 4-19 is a superset of set 3-12.

Certain of the specific inclusion relations among the Lisztian harmonies require brief comments, since they represent unusual circumstances among pitch-class set inclusion relations in general, reflecting the composer's special sense of selectivity. First, 3-10 and 3-12 occupy quite different domains with respect to four-note and five-note sets. None of the total array of twenty-nine possible tetrachords contains both 3-10 and 3-12 (else the composer would certainly have found it), and only two of the thirty-eight possible pentads contain both of the trichords: 5-22 and 5-26, as noted above. Of these pentads, only 5-22 contains both 4-18 and 4-19. Therefore when this pentad occurs in an experimental passage (as in ex. 5), it has—in two senses—a special resonance. Among composers in the early twentieth century who were aware of this unusual pitch-class set kinship, Alban Berg comes to mind. In his Wozzeck, 5-22 is always a composite symbol of Marie, whose primary tetrachordal emblem is 4-18, and the protagonist, who is associated with 4-19, the set that underlies the "Wir arme Leut" motive, which is the basic musical symbol of the entire opera (see fn. 17).

To complete this preliminary theoretical information, we observe that 3-12 has only two tetrachordal supersets, 4-19 and 4-24, the latter a "whole-tone" tetrachord. No other trichord has such restricted relations with respect to its tetrachords. For example, 3-11, the "major/minor triad" can be enclosed in tetrachords of nine different set classes. This means that the addition of any note to 3-12 will produce either 4-19 or 4-24, a simple but rather remarkable fact that has to do with the way in which 3-12 partitions the basic store of twelve pitch classes. Specifically, if a note a whole-step away from any note of 3-12 is added to 3-12, set 4-24 results; if a note a half-step away from any note of 3-12 is added to that trichord, set 4-19 is formed.

For the convenience of the reader, table 1 provides an index in ordinary music notation of the twenty-six pitch-class sets represented in the musical examples that accompany this article. In each case the noteheads stand for the prime form of the set. 28

*Via crucis*, Station 8. The opening of Station 8 of *Via crucis* (ex. 7) is entirely in the experimental idiom, without any referential tonality. Most striking, and most important for an understanding of Liszt's musical thought, is the chromatic motion in the upper parts. This prolongs a form of 4-18, identified by

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28 See Forte, *Structure*, pp. 3–5, for a definition of prime form, a basic referential pitch-class form for each set class.
beams. After the initial component of 4-18, D, the arrival on each of the succeeding three components [B, A, and G] is signalled by the simultaneity formed with the lower parts. While the upper parts progress in vertical major thirds, the lower parts progress in vertical minor thirds. Contrary to what one might expect in such an apparently "schematic" composition, the horizontal motion in the lower parts is not uniform, each of the two voices projects a form of tetrachord 4-13 [F#–E–D–C and E–C–B–A]. As a result, the four-note verticals created when upper and lower parts coincide are not of the same type. The first two are forms of 4-19, while the last two are forms of 4-27. As shown at the bottom of the lower stave in ex. 7, the two 4-19 tetrachords sum to 7-21, which represents the augmented-triad harmonic domain, while the two 4-27 tetrachords sum to 8-18, representing the diminished-triad harmonic domain.29

In this remarkable way, the composer has juxtaposed the two fundamental harmonic areas that we encounter throughout the experimental music, not merely in the foreground as 3-12 and 3-10, but also in the horizontally prolonged tetrachord 4-18 and in the large-scale harmonies indicated on the graph, 7-21 [representing 3-12] and 8-18 [representing 3-10]. In addition, tetrachord 4-18 and octad 8-18 are complement-related sets. This important relation, complementation, is amply illustrated in subsequent examples.

With respect to general shape and organization, the beginning of Station 8 of *Via crucis* [ex. 7] is strikingly similar to the eighth of Bartók's *Fourteen Bagatelles*, op. 6 (1907), one of the earliest non-tonal works of the twentieth century, and one associated chronologically with the first atonal works of the Viennese school, composed by Anton Webern. Although more complex and less "schematic," the Bartók work also features direct chromatic progressions that prolong slower-moving projections of sets. Even at the surface level, in its presentations of 4-19, it resembles the Liszt work.

The direct chromatic motion in example 7 represents a special instance of a general process, the traditional process of diminution, an understanding of which is essential to the correct analytical reading of Liszt's music in the experimental idiom. As in more

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29Throughout this religious work, the two sets 3-12 and 3-10 appear to be emblematic—the first of the Holy Trinity, the second of the act of crucifixion. The direct chromatic motions [as in ex. 7] are symbolic of Mary and also depict the traversal of the stations of the cross.
conventional music, diminutions belong to the foreground and cannot be completely understood without reference to structures at the middleground level. These middleground structures offer no significant obstacle to the student of the composer’s experimental idiom, for they conform to only a few types, based upon the linear projection of a limited number of special sets, several of which we have already encountered during the foregoing exposition. These projections are made audible in a number of ways, of which metric-rhythmic placement is perhaps the most apparent.

That Liszt was fully aware of the traditional practice of diminution—one would hardly expect otherwise—is apparent not only from his finished composition, but also from some of his sketches and drafts. A particularly compelling demonstration is afforded by ex. 8, a diplomatic transcription of a portion of a sketch-draft of music related to Via crucis.

What we have in ex. 8 is a four-part texture consisting of bass and upper voices. The essential bass line, notated on the middle staff, is a linear projection of 4-18: B–F–G♯–E. On the lower staff the composer has written a diminution of this line, involving an upper neighbor note and two passing notes within each two-measure pattern. The second passing note in each case is accented, displacing the main note of 4-18 from its position of metrical priority. Notice that the composer strikes out the first two whole notes on the middle stave, clearly indicating that had he carried the sketch through to completion to form a part of the final version of Via crucis, the diminutions on the lower stave would have replaced the long notes on the middle stave. In that case the end notes of each pattern would have expressed the underlying essential bass progression of 4-18, which is the simplified pattern that would have emerged had the bass been analyzed following the procedures used in this article. That the bass whole notes were to have been replaced by the faster diminutions on the lowest stave is further indicated by the crossing out of the whole notes in the first two measures and the confusion of durations in m. 2 of the diminutions. The composer reminds himself to correct these features in the rapidly notated incipit of the piece by the annotation above the top stave, "2 Takte neu umschreiben."

Virtually all of Via crucis is in the experimental idiom. Some of the movements lack key signatures and clear tonal orientation, while others have key signatures and referential tonalities, frequently occluded. For example, Station 10 bears a key signature of four flats (suggesting F minor), yet the linear configurations projected in bass and soprano are not dependent upon the tonal frame for the coherence of their structural roles. This is provided, in a way similar to that shown in ex. 7, by controlling pitch-class set structures to which stepwise diminutions are attached. For example, over the first seven measures of the piece these sets are 4-19 and 4-18 in the upper voices, while 4-20, a symmetrical set for which the composer had a predilection in the experimental music, governs the bass, unadorned.

Trauer-Vorspiel (1885). This work, from the next-to-last year of Liszt’s life, encapsulates the 3-10/3-12 di-
chantomy at the surface level and presents a greatly distilled—indeed, almost a schematic—image of the complex compositional vision evident in some of the earlier music. In this respect it serves as a key illustration in this article.

Pitch-class set 3-12, in the upper-voice form that dominates Trauer-Vorspiel (C♯–A–F–C♯), is marked by up stems and by a beam at the beginning of ex. 9, while down stems and a beam show the interlocking form of 3-10 (C♯–B♭–E–C♯). Here the combination of 3-12 and 3-10 produces the special pentad 5-22 mentioned earlier in connection with ex. 5 as one of only two pitch-class sets that contain both trichords.

Trauer-Vorspiel, in common with many other of the very last compositions, does not exhibit tonality, as a vestigial feature or otherwise; its musical structure is entirely dependent upon pitch-class sets and their interrelations, as expressed over the temporal span of the work.

Unstern (after 1880). Like Trauer-Vorspiel, the long introduction to the late piano work, Unstern, is based primarily upon sets, such as 4-19, familiar from previous examples. However, the opening passage is remarkable and novel even in Liszt’s innovative works because it exhibits a highly structured pitch-class set hierarchy. At the highest level this consists of 7-7, an atonal set that is very distinctive among the thirty-eight heptads. With respect to interval content it is the only heptad to contain five minor seconds and five perfect fifths. Moreover, it is one of only six heptads to contain three tritones. Among its many early twentieth-century manifestations we might note that set 7-7 and its five-note complement, 5-7, are the predominant sonorities in the first of We- bern’s Orchestra Pieces (1913, published posthumously in 1971), and those collections also occur frequently in that composer’s other orchestral music, such as op. 6, no. 5 (1909) and op. 10, no. 1 from 1913.

With respect to subset organization, the most characteristic trichord of 7-7 is 3-5, a common formation in early twentieth-century music that we have not seen in the excerpts until now. Set 7-7 contains nine forms of 3-5, more than any other heptad. It is this trichord that dominates the foreground of the music up to m. 21, with three interlocking forms of that sonority comprising the opening subject (ex. 10). Perhaps most extraordinary, however, is the fact that these forms of 3-5 combine to produce two transpositionally equivalent forms of 5-7, the complement of the large harmonic set 7-7. Moreover, when 5-7 is transposed up five semitones, as here, a trichord of type 3-5 will always be preserved between the two transpositionally related forms, affording a strong and specific pitch-class set bond between the two occurrences of 5-7. Transposition alone does not guarantee that the common trichord will occupy contiguous positions in each set. Here, however, 5-7 is ordered in such a way that the last trichord in the second form of 5-7 is pitch-class equivalent to the first trichord in the first form: E–F–B—incidentally, a pitch motto often found in the late works. It is significant that this form of 3-5 returns (four times) at the


32 See Forte, Structure, 73–82, for the significance of the complement relation in non-tonal music. In this connection, I note that the special harmony 5-22 often found in the experimental music, for reasons detailed above, is the complement of 7-22, one form of which is the “Hungarian” scale.
climax in m. 70, as noted on the graph [ex. 10]. This opening passage, in its austerity and its economy of means with respect to the musical processes it represents, is strongly reminiscent of the music of Anton Webern, which we have already had occasion to mention in connection with this excerpt from Liszt’s experimental music.33

The final 3-5 in this opening passage then merges with G♯ in the upper voice (m. 21) to create 4-18, the only strong manifestation of that “diminished triad” set in this music—although 3-10 itself returns, together with 3-12, in the climactic music that begins in m. 70.

At the middleground level, the upper voice G♯ in m. 21 links to E in the opening measure, as indicated by the stemmed open noteheads and beam in ex. 10.34 From this point on, the upper-voice motion is completely regular, consisting of ascending semitones, each of them prolonged, which fill in the diminished fourth from G♯ to C, the penultimate goal of the passage and the climactic pitch in the highest register in m. 70. As in previous examples, the prolongations of the ascending chromatic line are “organic,” in the specific sense that they are linear projections of

4-19, the set that is gradually being unfolded in the middleground.

In addition to 4-19, set 4-7 also serves a prolongational function at two points: after m. 25 and before m. 41. In both cases the set is created by lower neighbor notes to elements of 3-12, a motivic reflection of the semitone motives in the first section. Parallel intervals of this kind are always significant in Liszt’s experimental music, just as are the seemingly mechanical directly chromatic motions. For instance, the “parallel fifths” in the late work, Csárdas macabre, express the symmetrical set 4-8. Similar usage is common in early atonal music, for example in Schoenberg’s song Am Strande (1909).

At m. 45 the symmetrical whole-tone tetrachord 4-25 suddenly appears as a vertical, supporting the next-to-last passing note, B, within the large-scale diminished fourth, G♯ [m. 21] to C [m. 70]. Here the function of this set, which does not fit neatly into Liszt’s experimental harmonic vocabulary, is analogous to a half-cadence. Precisely because 4-25 does not relate closely to any of the other sets in the work, it performs this caesural role effectively and interrupts the continuity established by the previous regular succession of forms of 4-19.

Immediately after the melodic climax on c♯ in m. 70 set 5-22 is created in the vertical dimension. It will be recalled that this is one of only two pentads that contain both 3-10 and 3-12. Here the two trichordal components are lucidly presented: 3-12 is tied over from the climax, then 3-10 is adjoined, completing 5-22. In addition, a horizontal form of 3-5, pitch-identical to the first trichord in the piece [the Lisztian motto E–F–B], completes the roster of trichordal constituents.

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33 Of many similar passages, the opening of Webern’s op. 7 is representative. Paul Wilson (‘Atonality and Structure,’’ p. 186) shows a striking passage in Bartók’s op. 18, no. 3, based upon sets 5-7 and 3-5.

From m. 78 to the double bar [ex. 10], three basic events of significance transpire. First, the arrival on C♯ completes the large-scale 4-19 in the upper voice. Second, 4-7 refers back to the occurrences of that set in support of the chromatic line that ascends from m. 21. And third, the 3-10 and 3-12 domains merge, with the right-hand part expressing 5-21 (3-12), while the left-hand part reiterates 3-10 from the preceding climactic music, within the context of 4-12.

Via crucis, Station 5. The most extended manifestations of the 3-10 genus in the composer’s experimental idioms are those that engage the octatonic collection (see fn. 21), a pitch-class set with which Liszt was probably the first to compose in a thorough-going way. The technical reason for the association of 3-10 with the octatonic collection, 8-28, has to do with complementation and inclusion. As is explained in my study, *The Structure of Atonal Music*, of the seven trichordal classes represented as subsets of 8-28, each an equal number of times, only 3-10 is in the symmetric set-complex relation Kh with 8-28. This close relation between 8-28, the complement of 4-28, the “diminished seventh chord,” can be grasped intuitively, without recourse to arcane theoretical explanation, when it is realized that any note added to a form of 8-28 will always produce a nine-note set of class 9-10, the complement of 3-10.

Although octatonic structures have appeared in previous examples [e.g., ex. 4], they will be discussed in greater detail here. In this connection it is important to recall that octatonic elements may be both “ordered” and “unordered.” That is, while we expect to find octatonic structures set out as scalar formations or portions of scalar formations, we will also regard as octatonic other configurations that may not represent a fixed linear ordering. For example, if two vertical trichords that have no referential linear ordering combine to form one of the six octatonic hexachords, we will take that hexachord to be just as octatonic as one of its scalar brethren.

Station 5 of *Via crucis* [ex. 11] offers a compelling instance of Liszt’s sophisticated octatonic usage. The octatonic component becomes evident with very little analytical coaxing: from the beginning of the piece to the double bar the upper voice projects a linear form of 7-31, which, it will be recalled from the discussion of ex. 4, is the only seven-note class within 8-28, the total octatonic collection. Example 11b displays the diminished seventh [4-28] constituents of this line as they ascend from the initial B to the climactic D. The octatonic basis of the music is also apparent in the large harmonic groupings marked by brackets below the lower stave in ex. 11b. These comprise, in order, 7-31, 8-28, and finally 5-31, which is the prolonged upper-voice motion, as indicated by the beamed stems. Here 5-31 prolongs D, or, more precisely, the sixth from D down to F. In m. 10 a descending structure also prolongs the main upper-voice note B♯, but in this instance the set is 4-26, a special tetrachord that appears often in the experimental idiom [see ex. 2]. In this work the set has a special significance, for it is the melodic configuration at the opening, where it occurs in a pentatonic context and is identical to the one here with respect to pitch class. It is one of the principal sonic symbols of *Via crucis*.36

While the upper voice is organized in terms of 4-28, the bass is set out in terms of another tetrachordal subset of 8-28, 4-12. The two beamed forms of this set are transpositionally related by major sixth [minor third]. As in the upper-voice prolongations in m. 10 and at the end of the section, the octatonic sets incorporate non-octatonic elements as passing and neighbor notes, shown as filled-in noteheads slurred to the main stemmed and beamed elements and marked P in several instances.

At the double bar, m. 25, with the introduction of a key signature of four flats, a more traditional idiom replaces the octatonic music. Nevertheless, the octatonic characteristics persist, in the 4-28 and 5-31 formations as well as in the bass’s 6-z23, one of the six hexachordal classes of the octatonic collection, which here spans the interval C–A♭ within the A♭ major tonality. And, as might be expected, with the new music come strong references to the 3-12 domain, a trichord totally unrepresented in the preceding introductory section, which featured 3-10 and its kindred. Thus, the first chromatic motion in the upper voice, from E♭ to E, brings in 4-19, and set 4-24 then occurs as a result of the passing motions in bass and soprano. For both tetrachords the core, 3-12, is C–E–A♭, and this finally appears in pristine form at the end of the excerpt.

Example 11 provides an appropriate occasion for a general comment on Liszt’s music, one that is relevant to further research. Study of the experimental


36The pentatonic aspect of some of Liszt’s music is well known. His use of pentatonic sets, prefiguring their function as pitch-class sets independent of tonality, occurs as early as “Sposalizio” (*Annaées de Pèlerinage* II, 1838, in which 4-23, the archetypal pentatonic tetrachord, is the motto set stated at the very outset [cf. Leon Plantinga, *Romantic Music* [New York, 1984], pp. 186–88]. The same set plays a basic role in an early hybrid tonal/atonal work by Schoenberg, the *Entrückung* movement of the Second String Quartet.

37The octatonic collection is not always fully present in this music—just as it is not always completely spelled out in Stravinsky’s octatonic music—but may be represented by one of its subsets, by 6-z23 in this instance. Similarly, although “Sunt lacrymae rerum” (*Annaées de Pèlerinage* III, 1872) bears the subtitle “en mode hongroise,” a reference to the “Hungarian” scale, 7-22, the scale does not appear in its entirety at the beginning of the music, but is represented by one of its subsets, 6-z24, in an ordering that presents the characteristic interval-patterns associated with the complete scale.
Music with effective analytical method may illuminate certain facets of the more traditional diatonic music, as here, where we find structures supposedly endemic to the experimental idiom appearing in the traditional language. This, of course, is the converse of the situation pointed out earlier in this article, where the experimental sonorities were shown to have originated in the traditional forms.

Before proceeding to the final section of this article, which contains an analysis of a complete and quite well-known composition, I would like to say something about a work that is not well known, but which deserves attention for several reasons.

Psalm 129 (1881). Even in its external, notational appearance this choral composition resembles a distillation of the music of Webern, especially the twelve-tone music, and in its severity it even suggests a kinship with a very late religious work by Schoenberg, his incomplete Moderner Psalm, op. 50c (1950). At a deeper structural level, the work presages many of the procedures that are characteristic of the non-tonal music of the early twentieth century, as we shall see.

The composition begins, uncompromisingly in the vernacular of the early twentieth century, with the symmetrical tetrachord 4-8, which we have seen before in ex. 11. In the first section (delimited by double barlines in ex. 12) 4-8 is presented in two different ways: first, as a succession of two ascending major sevenths, and second, as a vertical sonority that emphasizes its perfect fifths, an arrangement effected by an exchange of voices, as indicated by crossed arrows on ex. 12. When the chorus enters in m. 10 the set assumes still another shape, one that emphasizes the major third as well as the minor second. What could be more characteristic of the foreground of much early twentieth-century music than

38 The use of this essentially atonal set is itself astonishing. In what is perhaps the most "classical" of all the early twentieth-century atonal works, Berg's Wozzeck, this set underlies the subject of the Ländler, act II, sc. 4, m. 412ff.
this rearrangement of musical materials to show new facets that suggest other possibilities for structural development?

In the next section of the composition 4-8 occurs in one-for-one transposition up a minor second with respect to its statement in the first section of the work. As a result of this transformation the pitches F and C remain fixed between the two forms. The longer-range result of the transposition, however, engages the middleground. As shown by the beamed stems over the first four sections [mm. 1–28], the lowest voice projects still another form of 4-8, one that is identical, with respect to pitch-class, to the form in the third section [mm. 19–28]. Again, as is typical of the experimental music of Liszt, there are strong unifying factors, factors that involve more than one aspect of the music. In this case we have the succession of transpositionally related 4-8 tetra-chords that comprise each section and over the span of the first three sections we perceive a linear projection of the same set class, a remarkable way of coordinating musical spans and one that is usually attributed to the pioneers of early twentieth-century music.

With the entry of the chorus in m. 28, the harmonic components change, now summing to the diatonic hexachord 6-32. When tetrachord 4-20 enters, its association with 4-8 is unmistakable due to the ascending major thirds D–F and G–B, the interval it shares with 4-8 in its appearance in the second section. The arrival on 4-26 at the end of the section would seem illogical in pitch-class set terms, were it not for the fact that this tetrachord shares two perfect fifths with both 4-8 and 4-20, the only interval-type they have in common. In this way 4-20 carries forward the primary intervallic characteristic that is projected in the middleground bass form of 4-8, which governs the first four sections of the music. Although we have seen 4-8, 4-20, and 4-26 in other examples [see table 1], their appearance here together suggests that a basic structural feature of this music is determined by shared interval content. In this respect, again, the experimental idiom, as represented in this extraordinary work, prefigures in a highly significant way the music of the early twentieth century.

**Example 12: Psalm 129**

**A Complete Work in the Experimental Idiom**

**Nuages gris [1881].** Except perhaps for Unstern [ex. 10], the best known of the composer’s final works in the experimental idiom is the piano piece known as Nuages gris. [Liszt’s primary title was Trübe Wolken.] Probably this is due to the attention accorded it in Szabolcsi’s book on the composer’s late years and its subsequent inclusion in the 1972 edition of a widely used history of music textbook.39

As indicated by double bars and upper-case letters on ex. 13, the work comprises four sections. Section A is organized around the major third D–B♭ in the upper voice, with B♭ in the bass, decorated by its lower neighbor note to form an ostinato figure. The upper-voice major third, D–B♭, proves to be the initial interval of 4-19, the tetrachord that is projected over the entire span of the work, as indicated by stemmed open noteheads on the analytical sketch.

Because the verticals in the upper voice, after the initial embellishment of the G-minor triad, consist of a regular succession of 3-12 trichords while the bass ostinato remains constant, multiple forms of 4-19, together with two forms of 4-24, are produced. Note, however, that the first two tetrachords in the piece are marked 4-18, a set class that reappears in section C [m. 25ff.] together with its complement, 8-18.

In the B section [m. 21], which is a short interlude,

39Szabolcsi, Twilight; Grout, History [see fn. 12]. Jim Samson includes a discussion of Nuages gris in his Music in Transition [New York, 1977]. He remarks (p. 17) "the most distinctive features of Liszt’s late style are present in this short work—the avoidance of a conventional cadential structure, the importance of semitonal movement, the use of the augmented triad as the central harmonic unit and of parallelism as a principal means of progression." Bernard C. Lemoine offers a curious, Schenker-like analysis of the work in "Tonal Organization in Selected Late Piano Works of Franz Liszt," in Liszt-Studien, ed. Sergei Gut (Munich, 1981). Among other peculiarities, the final chord is misspelled.
the bass ostinato figure A–Bb (marked δ) combines with the initial upper-voice dyad, C#–D (marked α), to form set 4-7. (Set 4-7 is not new in the music; it is a subset of 5-21 in the upper parts of m. 9.) This interlude is effectively a condensation of the main melodic components of the A section. Thus, 4-7 has motivic as well as harmonic significance with respect to the preceding section; not only does it incorporate motives δ and α, but it also includes Bb and D, beamed in ex. 13, a repetition of the interval spanned by the upper voice of the A section.

Section C (m. 25ff.) introduces new elements in the upper voice, namely, prolonged melodic forms of trichords 3-10 and 3-11, beamed on the graph. Here 3-11 as the minor triad is the referential tonic sonority, which, in the context of this piece—despite the key signature of two flats—may even be regarded as subsidiary to 3-12, so predominant is the role that set plays, particularly in the large-scale upper voice. The conflict between 3-11 and 3-12 is emphasized in the upper voice from m. 29 to m. 33, where the head-note D of the 3-11 (G-minor) configuration stretches across to incorporate Bb and, finally, F#, forming 3-12 at the middleground level.

The final section of Nuages gris is designated D, with A' given in parentheses because up to the final chord the lower parts are identical to the entire opening section. Above this progression the upper voice traverses the ascending octave from F# to F# chromatically. The ultimate destination of this motion, however, is high G (g2), which completes the large-scale 4-19 in the upper voice: D–Bb–B–D–F#–G.

Since the final chord has been the subject of some speculation in the published writings about this work, the sketch includes a partial analysis of its structure. In its entirety the chord is a representative of set class 5-26, which shares with 5-22 the special property that it contains both 3-10 and 3-12, as explained earlier. Here the lower tetrachord of 5-26 is 4-24, taken directly from the left-hand part, as indicated by the brackets and arrow on ex. 13. The upper tetrachord of 5-26 here is 4-19, representing the primary tetrachord of the piece.

With the final ascent to G in the upper voice over the sustained 4-24, the entire sonority reduces to 4-24 and is pitch-class identical to the next-to-last vertical in the A section. Thus, the work closes with a reference to the opening music and on one of the two tetrachordal supersets of 3-12, which constitutes a “resolution” into that attenuated harmonic domain and an appropriate and logical setting for the final note of the large-scale linear motion of the upper voice, a projection of the other tetrachordal superset of 3-12, 4-19.40

Example 13: Nuages gris

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40 Lawrence Kramer, "The Mirror of Tonality: Transitional Features of Nineteenth-Century Harmony," this journal 4 [1981], 191–208 for a different view of the unusual
The penultimate vertical, 5-26, contains 3-10 in the same form in which that trichord occurred in m. 9: F#—E♭—A. This provides a somewhat concealed reference to the 3-10/4-18 domain, which is prominent in the C section (mm. 25–32), where 4-18 is reiterated in the left-hand part and mirrored by its complement, 8-18, which is formed by all the pitches in the section.

Below the lower stave of section D in ex. 13 is a further analysis of the upper voice which shows that if we take as middleground components the notes that begin and end the five-note chromatic figure (a procedure entirely consistent with previous read-ings of chromatic prolongations), two interlocking forms of 4-19 are brought to the analytical surface, both incorporating 3-12 as B—E♭—G, the core sonority in the penultimate chord, 5-26. These observations comprise a demonstration that even on the “subliminal” level certain basic musical phenomena highly characteristic of the Lisztian experimental idiom penetrate the structure.

To sum up, Nuages gris, for all its brevity, represents a high point in the experimental idiom with respect to expressive compositional procedure. Set organization is manifested in the most artistic and coherent ways throughout the musical fabric, and the long-range melodic structure as it relates to the harmonic content of the individual sections could hardly be projected more clearly.

**Conclusion**

From the theoretical standpoint, what makes the experimental music of Liszt so special and so interesting is not its unusual surface features—which are, of course, extraordinary—but the fact that it represents a systematic expansion of traditional voice-leading and harmonic models, an expansion that incorporates, as basic harmonies, sonorities (pitch-class sets) that are not part of the central syntax of tonal music, but that derive, in the most extreme instances, from a process of accretion to the augmented triad and the diminished triad, to form the 3-12 and 3-10 domains mentioned so often in the course of this article.

Example 14: *Harmonies poétiques et religieuses*

It is also remarkable that these sonorities appear in Liszt’s music at more than one level long before their more obvious occurrences in the later music. When did these unusual features first surface in the composer’s creative output? Harold Thompson states categorically: “The octatonic scale . . . enters Liszt’s works first in the *Sonetto* [c. 1846].” The octatonic collection, however, is clearly represented at the beginning of the first piece in the first version of *Harmonies poétiques et religieuses* (1834) by 5D31, and elsewhere by the octatonic heptad 7-31 and the octatonic hexad 6-249.

This entire work is especially interesting with respect to the question of the origin and development of certain experimental features, for upon completing the second version in 1843, the composer declared the first version invalid, perhaps because of certain refinements he had introduced into the second. For example, the untitled first piece in the first version became the basis for the movement entitled *Pensées des morts* in the second; there the composer altered the upper-voice melody as shown in ex. 14a, changing F# to F, so that the augmented triad became the central melodic symbol. A similar discrepancy between the two versions crops up later on (ex. 14b), where the revision introduces overlapping contiguous forms of 4-19 and 4-24 that rotate about their common satellite, 3-12,

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41Harold A. Thompson, *The Evolution of Whole-Tone Sound in Liszt’s Original Piano Works* (Ph.D. diss., Louisiana State University, 1974).
and brings those harmonies into the immediate foreground.42

A second question of interest to students of late nineteenth-century music in general and Liszt’s music in particular is: how pervasive are what have been termed the experimental features in his music? Among the works that invite further study along these lines are the tone poems—such as, notably, Prometheus (1850).43 Also the six psalm settings, which span a period of eighteen of the later years (1864–81), contain symmetrical and other special non-tonal harmonies that are highly suggestive in this respect.

The two topics broached above are just two among many that invite further study, as contributions to a larger and more precise picture of the development of Liszt’s musical thought, not only as it pertains to the experimental idiom, as we have termed it, but also to the entire range of his diversified output. We are still far from a comprehensive picture of his position in nineteenth-century music and his relation to the twentieth century.

42Here and elsewhere the whole-tone aspect of Liszt’s music has been overly emphasized. In general, sets such as 4-19, 5-21, and 5-22, which are highly characteristic of the experimental idiom, relate directly to 3-12 by inclusion, whereas they are not subsets of 6-35, the whole-tone hexachord.
43Prometheus was viewed as a radical work at the time. See Carl Friedrich Weitzmann, Die Neue Harmonie im Streit mit der Alten (Leipzig, 1861), in which Prometheus serves as an exemplar of the new harmony. Other studies relevant to this area of research are: Norbert Nagler, “Die verspätete Zukunftsmusik,” in Musik-Konzepte 12: Franz Liszt, ed. Heinz-Klaus Metzger and Rainer Riehn (Munich, 1980), pp. 25–36, and Dieter Torkewitz, Harmonisches Denken im Frühwerk Franz Liszts (Munich–Salzburg, 1978). And finally, Diether de la Motte, Harmonielehre (Kassel, 1976), a work that deals with some unusual features of Liszt’s music such as occurrences of the augmented triad in the early music (see pp. 237–48).