

# Stravinsky and the Octatonic: A Reconsideration

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Recent and not-so-recent studies by Richard Taruskin, Pieter van den Toorn, and Arthur Berger have called attention to the importance of the octatonic scale in Stravinsky's music.<sup>1</sup> What began as a trickle has become a torrent, as claims made for the scale have grown more and more sweeping: Berger's initial 1963 article described a few salient octatonic passages in Stravinsky's music; van den Toorn's massive 1983 tome attempted to account for a vast swath of the composer's work in terms of the octatonic and diatonic scales; while Taruskin's even more massive two-volume 1996 opus echoed van den Toorn's conclusions amid an astonishing wealth of musicological detail. These efforts aim at nothing less than a total reevaluation of our image of Stravinsky: the composer, once thought to epitomize the "unsystematic" type of musician, working at the piano and following the dictates of his ear, is here portrayed as a systematic rationalist, exploring with Schoenbergian rigor the implications of a single musical idea. And the octatonic scale, once thought to represent a distinctive surface color, occasionally used by Stravinsky and others, has now been promoted to the deepest level of musical structure, purportedly controlling extended lengths of musical time.

I challenge this view in this paper. I do not question that the octatonic scale is an important component of Stravinsky's vocabu-

lary, nor that he made explicit, conscious use of the scale in many of his compositions. I will, however, argue that the octatonic scale is less central to Stravinsky's work than it has been made out to be. In particular, I will suggest that many instances of purported octatonicism actually result from two other compositional techniques: modal use of non-diatonic minor scales, and superimposition of elements belonging to different scales. In Part I, I show that the first of these techniques links Stravinsky directly to the language of French Impressionism: the young Stravinsky, like Debussy and Ravel, made frequent use of a variety of collections, including whole-tone, octatonic, and the melodic and harmonic minor scales. The use of these latter two scales reaches a peak in the first sections of *The Rite of Spring*, where they—and not the octatonic scale—account for the majority of non-diatonic material in the piece. (I also show that these scales have been consistently misinterpreted by van den Toorn as instances of "octatonic-diatonic interaction.") In Part II, I turn to the issue of triadic superimpositions and the scales that often accompany them. I will contrast two views: one, which sees scales (such as the octatonic) as analytically prior to chordal superimpositions (such as the C-major and F#-major triads which comprise the "Petrouchka chord"); and the other, which sees the superimpositions themselves as prior to the scales they produce. Drawing on previous work, where I have shown that triadic superimpositions invariably produce subsets of a small number of familiar scalar structures, I present analytical examples suggesting that we frequently need to understand Stravinsky's scales as arising from his superimpositions, and not the other way around.

<sup>1</sup>See Taruskin 1996, van den Toorn 1987 and 1983, and Berger [1963] 1968. This general point of view has also been endorsed by Antokoletz 1984, Craft 1984, Walsh 1984, and, in the case of *The Rite of Spring*, Moevs 1980. For more critical, but by no means dismissive, perspectives see Straus 1984 and Kielian-Gilbert 1991.

In the conclusion, I take up the broader question of how we should think about Stravinsky's compositional style. Taruskin and van den Toorn have both presented a picture of Stravinsky as a composer whose approach to music is dominated by a single guiding idea, a Stravinsky who is no less systematic in his musical thinking than Schenker or Schoenberg. This view has no doubt had some salutary consequences: certainly, it provided a way of defending Stravinsky against those who felt that systematicity and rigor were crucial components of musical value. Perhaps more importantly, it encouraged a kind of careful attention to analytical detail that was—it must be said—sorely lacking in many earlier attempts to understand Stravinsky's music. Nevertheless, I believe that this picture is fundamentally mistaken. For Stravinsky was indeed a methodological pluralist, a *bricoleur* who used a variety of techniques that do not admit of easy categorization. This conclusion may seem like a return to an earlier way of thinking. But it is tempered by the understanding—ironically, gained in part through the work of Berger, van den Toorn, and Taruskin—that though Stravinsky's music may be unsystematic, it is still intelligently constructed, and that the principles of its construction can be uncovered through close analytical scrutiny.

## SCALES IN STRAVINSKY

### THE FOUR LOCALLY DIATONIC SCALES

Elsewhere I have argued that the diatonic and octatonic scales are part of a family of four scales which share some interesting properties. Each of these collections is capable of being arranged so that adjacent notes are separated by one or two chromatic semitones, while notes adjacent but-for-one-note are separated by three or four chromatic semitones. In other words: the “seconds” in these scales are (enharmonically equivalent to) diatonic seconds, while the “thirds” are (enharmonically equivalent to) diatonic thirds. These four scales are thus “locally diatonic” in that each of their three-note segments is enharmonically equivalent to some three-note span of some diatonic scale. Consequently, the four

scales represent a natural avenue of exploration for composers interested in expanding the vocabulary of traditional tonal harmony: first, because they provide natural scalar counterparts to the extended triadic sonorities much beloved by early twentieth-century composers; and second, because as scales they are recognizably similar to the major and minor scales of the classical tradition.<sup>2</sup>

The four scales in question are the diatonic (trivially), octatonic, whole-tone, and the ascending form of the melodic minor scale. In my previous paper, I argued that they are central to the harmonic vocabulary of the Impressionists as well as to contemporary jazz. Here I want to suggest that this same collection of scales, inherited from both Russian and French sources, plays an important role in Stravinsky's first three ballets. Whole-tone scales suffuse *The Firebird* and make important appearances in both *Petrouchka* and *The Rite of Spring*. Likewise, the latter two pieces contain substantial passages of the modal use of ascending melodic minor scales.<sup>3</sup> *The Rite of Spring* also contains several prominent passages involving modes of the *harmonic* minor scale, as well as passages that alternate between harmonic and melodic minor collections. (The harmonic minor scale is not part of my collection of four scales, but it is part of a related seven-scale collection: see p. 88 below.) In these respects, the early ballets wear their Impressionist influences on their sleeves. It is perhaps for this reason that the scales appear less frequently in Stravinsky's later music. Indeed, as we shall see, Stravinsky began even within the first three ballets to erase the most obvious signs of his debt to the French tradition.

If my argument is sound, and if it can be established that Stravinsky made use of a variety of non-diatonic scales beyond the octatonic, then this should have important repercussions for analysis.

<sup>2</sup>For a detailed account of this material see Tymoczko 1997.

<sup>3</sup>For Debussy's use of the modes of the ascending melodic minor scale, see Gervais 1971 (who also finds the scale in Fauré's music) and Howat 1983. Debussy's use of the scale is also mentioned in Steven Kostka and Dorothy Payne's 1989 harmony textbook.

For many of the collections that might have seemed to be “obviously” octatonic in origin turn out to belong to more than one type of scale. The 6-z23[023568] hexachord, for example, appears in the melodic minor scale as well as the octatonic. (Other “typically octatonic” collections, such as the 4-17[0347] tetrachord and the 6-27[013469] hexachord, belong to the harmonic minor scale.) Thus, widening our conception of Stravinsky’s scalar vocabulary prevents the easy inference from these smaller sets to an octatonic source-set. This brings to mind the adage that when the only tool you have is a hammer, every problem starts to look like a nail: if, like Taruskin and van den Toorn, all you have are the octatonic and diatonic collections, then many sets will seem to be clearly octatonic, if only because they are clearly *not* diatonic. If, however, you are working with more than just two scales—and Stravinsky certainly knew more than two—then these same sets will be understood to have multiple potential derivations. Thus, for analysts, the key issue is not whether Stravinsky occasionally used ascending melodic minor or whole-tone scales. Rather, it is whether acknowledging that he did use these other scales forces us to rethink our ideas about what sets are or are not “obviously” octatonic in origin.

#### WHOLE-TONE SCALES

Whole-tone scales clearly play a significant role in *The Firebird*. In Example 1(a), they control the vertical dimension, as parallel augmented triads move in contrary motion. (In general, any two subsets of the whole-tone scale can be transposed in contrary motion to produce subsets of the whole-tone set; the technique is much used in jazz arranging.) At (b), a Debussian whole-tone glissando punctuates a more-or-less whole-tone texture. And at (c), the “Firebird theme” (the melodic 6-7[012678] hexachord) appears against a whole-tone wash. These passages represent Stravinsky at his most Impressionist and could easily appear in the music of Debussy or Ravel.

In *Petrouchka*, whole-tone scales appear less frequently, as Stravinsky begins to develop his own powerfully original pitch

language. Example 2 shows one explicit passage of whole-tone material, representing the trained bear as it walks awkwardly on its hind legs.<sup>4</sup> I hear this passage as a wry acknowledgement of Debussy’s influence: the bear trainer plays a high tootling tune on his clarinet/pipe that sounds like a parodic quotation of the beginning of Debussy’s *Faun*. Influence is here being felt and rejected in a single gesture: the passage is at once Impressionist and anti-Impressionist, and it transmutes French elegance into lumbering Russian spectacle.

*The Rite of Spring*, and indeed all of Stravinsky’s later music, bids farewell to such explicit whole-tone sonorities. However, as Example 3 shows, the whole-tone scale does appear prominently—albeit in combination with other material—at the end of both parts of the ballet.<sup>5</sup> As in *Petrouchka*, Stravinsky’s relationship to Debussy is ambiguous: on the one hand, the scale does appear—very explicitly and recognizably, and at crucial moments in the ballet. At the same time, its characteristic “floating” quality is neutralized by the presence of extra-scalar elements. Indeed, the blaring, fanfare-like quality of Example 3(b) hearkens back to Example 2, only without any of the humorous quality of the earlier excerpt.

#### ASCENDING MELODIC MINOR SCALES

The situation is just the opposite with regard to the ascending form of the melodic minor scale (henceforth referred to simply as “melodic minor” and abbreviated “mm” in the examples). It is not a prominent feature of *The Firebird*’s harmonic language, although it does make a brief appearance at rehearsal 1 (suggesting an incomplete melodic minor scale on A $\flat$ ; see Example 4). It does, however, appear quite strikingly in a few places in *Petrouchka*,

<sup>4</sup>Where possible, I have used Stravinsky’s own two-piano reductions of *Petrouchka* and *The Rite of Spring*.

<sup>5</sup>Messiaen (1956, Chapter 16) describes this technique of blunting the distinctive sonic signature of the whole-tone scale by combining it with other scales.

Example 1. The whole-tone scale in *The Firebird*

(a) reh. 8, m. 4                      (b) reh. 16, m. 2                      (c) reh. 174

Winds, Hp.                      Winds, cel., hp.                      Str.

Str.                      Ob.                      Str.

w.t.                      w.t.                      w.t.

Brass

Bass

Hp., pno.                      w.t. gliss

Example 2. The whole-tone scale in *Petrouchka*, reh. 100, mm. 3–5

Cls.

Tba.

Str., Hn.

Str., Bsn.

Example 3. The whole-tone scale in *The Rite of Spring*

(a) reh. 75, mm. 7–9

Tpt., Vln. (F min.)

Hn., Vla. (B $\flat$  min.)

Str., Bsn., Bass Cl. (w.t.)

(b) reh. 175, m. 3–reh. 176, m. 1

Winds (w.t.)

Brass, Str. (w.t.)

Timp., Str., Cbsn., low Brass (w.t.)

Example 4. The melodic minor scale in *The Firebird*, reh. 1

A $\flat$  mm

and in *The Rite of Spring* it plays a dominant role in the first two sections of Part I, as well as in the “Ritual Action of the Ancestors” section of Part II. Thus, while the use of the whole-tone scale declines over the course of the first three ballets, the melodic minor scale becomes increasingly important. Although Stravinsky may have started to remove Debussian whole-tone sounds from his vocabulary, the prominence of the melodic minor scale in *The Rite of Spring* testifies to his continuing debt to the French tradition.<sup>6</sup>

Example 5 lists four places in *Petrouchka* where the complete melodic minor scale appears. Example 5(a), the most extensive of the three, occurs near the beginning of the “Russian Dance” of the first tableau and contains four different transpositions of the melodic minor scale in sequence. Of course, the passage does not particularly *sound* like it is in minor, since the scale has been

<sup>6</sup>The Stravinsky of *Expositions and Developments* (1962, 163) was explicit about this: “*Le Sacre* owes more to Debussy than to anyone else except myself, the best music (the Prelude) as well as the weakest (the music of the second part between the first entrance of the two solo trumpets and the *Glorification de l’Étue*.)”

modally rearranged to emphasize the oscillations between two “dominant-seventh”<sup>7</sup> chords a whole-step apart. Example 5(b) shows another passage from *Petrouchka*’s first tableau: here, the registration of the scale suggests an augmented triad on B $\flat$  with a major seventh. (This sonority will reappear prominently in the *Symphony of Psalms*; see Example 14 below.) Example 5(c) shows the same sonority as it reappears just before the curtain rises in the fourth tableau. Example 5(d), from the third tableau, is taken from a passage that is notably indebted to Debussy in construction: it begins with a simple diatonic melody over a B $\flat$  pedal, suggesting B $\flat$  lydian, or perhaps D natural minor. (This music is not shown in the example.) When the melody repeats, the accompaniment adds a harmonic A $\flat$ , producing a mode of the F melodic minor scale.

Example 6 lists seven examples of modal uses of the melodic minor scale in *The Rite of Spring*. The clearest and most extensive is shown at (a), which takes up the last twenty-four measures of the “Augurs of Spring.” If we take the melody’s A to be the tonic

<sup>7</sup>I use the term “dominant seventh chord” here to refer to a *collection*, and not to the functional chord of traditional tonality.

Example 5. The melodic minor scale in *Petrouchka*

(a) reh. 35

8<sup>va</sup>

Fl., Vln.

(various insts.)

G mm                      A mm                      B mm                      c mm

(b) reh. 7

Str., Winds

Bsn., Str.

G mm

## Example 5. [continued]

(c) reh. 87, mm. 3–6

Tpts.

Tremolo str.

D major      G mm      D major

of this section, then the mode in question is the one that begins on the sixth degree of the normal ordering of the C melodic minor scale. (Jazz theorists sometimes call this the “locrian #2” mode, since it is equivalent to the locrian mode with a raised second degree.) This passage is prefigured at (b), which is slightly more ambiguous in that the melodic minor scale (here in the string sections and horn) is superimposed atop a C-major scale fragment (in the trilling bassoons and solo strings) that is foreign to the scale. Example 6(c), from the “Ritual Action of the Ancestors,” represents another fairly clear passage. Bass D is the primary pitch of this section, so that the passage implies the seventh mode of the E $\flat$  melodic minor scale. (Jazz musicians would call this the “altered scale.”) Note that I am considering the melodic B to be an embellishing tone, a chromatic neighbor to the sustained C.<sup>8</sup> But it could well be taken to be harmonic, in which case the alto flute’s sinuous melody would represent an alternation between E $\flat$  *harmonic* and melodic minor. This sort of alternation is actually

<sup>8</sup>I am also considering the English horn’s initial chromatic glissando to be nonharmonic.

(d) reh. 65, mm. 5–8

Cls.

Str.

D natural minor  
or B $\flat$  lydian      F mm

common in the *Rite*, as Examples 6(g), 7(a) and (b) below will show. Example 6(d) shows a passage from the Introduction to Part I, at rehearsal 7. Here, the mode is the same as that of Example 6(a).<sup>9</sup> As in the first three examples, the melodic minor scale accounts for virtually all of the pitches present.

In Example 6(e), which occurs a few measures after (d), the melodic minor scale appears superimposed on top of other material. The first measure presents all the pitches of the B melodic minor scale, again in the seventh mode, as in (c). (I am considering the second note of the D-clarinet melody, here a D $\sharp$ , to be non-harmonic.) We clearly hear this material as a unit, as it is directly derived from the music of Example 6(d). In measure two of the example, however, the alto flute heads off in its own direction,

<sup>9</sup>I am considering the second note of the clarinet melody to be a passing tone, as I believe it is in almost all of the melody’s appearances; see Examples 6(e) and 7(b). One potential exception is at rehearsal 10 ff., where it is arguably the D $\sharp$ , rather than the E $\sharp$ , that is non-harmonic. However, this is a passage that features a large number of superimposed musical layers, so that the very notion of an “underlying harmony” becomes problematic.



playing a noodling line that suggests D minor and D mixolydian. It is joined a measure later by a flute figure (not shown in the example) that also does not belong to the B melodic minor collection. Such superimpositions of melodic minor and other material are also characteristic of the final two examples. In 6(f), we find a fascinating interplay of four different musical layers. What I consider the core material harmonic material is found in layer 2: a series of trills and ruffles in the flutes (as well as in the third horn) that outline the pitches A–B–C#–D#–F#–G#, a gapped scale-fragment suggesting either the Lydian mode on A or the third mode of F# melodic minor. The primary melodic material, in layer 3, exploits this ambiguity, alternating (and superimposing) the two notes that would naturally tend to fill the gap in layer 2. Consequently, this passage does not present a scale in the (relatively) clear fashion of Examples 6(a)–(e); instead, it toys with scalar ideas, exploiting our tendency to hear (and analyze) music in scalar terms, while producing a characteristically ambiguous Stravinskian sonority. Furthermore, the outer layers—layers 1 and 4—present material that is foreign to both scales implied by layers 2–3, thus heightening the non-scalar sound of the passage as a whole.

Example 6(g), which in the score follows immediately upon (f), intensifies this procedure. The alto flute melody contains a statement of the complete D melodic minor scale, here centering on B. Thus the mode is again “locrian #2,” as in Examples 6(a), (b), and (d). (Note that the three sustained pitches also belong to this scale.) Against this, the bass clarinet presents a five-note fragment of the G melodic minor scale, while the English horn adds a transposed version of the tune first heard at rehearsal 2. In Example 6(h), I have shown how the registral partitioning of the pitches in this passage suggests that three separate scales are operative at once: in the top register, D harmonic minor; in the middle register, D melodic minor;<sup>10</sup> and in the lowest register, a six-note

<sup>10</sup>Recall in this connection the melodic/harmonic minor interplay of Example 6(c).

Example 6. The melodic minor scale in *The Rite of Spring*

(a) reh. 32

(b) reh. 25

Example 6. [continued]

(c) reh. 129, mm. 7-8

Alto Flute \* \* \*

E.h. 3 \*

Str., II. 3

(starred notes are nonharmonic) E $\flat$  mm

(d) reh. 7

Fl., Ob. 5 \* 5 5

D-clarinet 3 \* 3 3

Ob. 6 6

Cl. 3 3 3 3 3 3

3 3 3 3 3 3

E $\flat$  mm

## Example 6. [continued]

(e) reh. 8

subset of the G melodic minor scale. Here, as elsewhere in Stravinsky's music, register and timbre combine to keep different layers distinct, allowing us to understand the music as a construction of seemingly independent musical ideas.

## HARMONIC MINOR

In Example 6(c), we saw a predominantly melodic-minor passage colored by a brief infiltration from the harmonic minor scale. Now I would like to consider two examples of the opposite phenomenon: a predominantly harmonic minor sound that is lightly colored by notes from the other minor scales.

The most obvious instance, Example 7(a), comes from the "Augurs of Spring" section and features the chord that has come to serve as a metonymy for the *Rite's* harmonic innovations. This

sonority, an E $\flat$  dominant seventh superimposed atop an E-major triad (spelled F $\flat$ ) involves all the pitches of the G $\sharp$  melodic minor scale and no others. Although we may not *hear* it as "minor" in origin, it arguably results from just the same procedures that gave rise to Examples 5 and 6. Note in this context that the bassoon's melody can be understood as arising from the G $\sharp$  melodic minor scale. Thus, the passage as a whole involves the same kind of harmonic/melodic minor ambiguity that was found in Example 6(c). Here, however, the primary sonority comes from the pounding harmonic minor chords in the strings.

Readers may well be skeptical about this proposed derivation of the "Augurs" chord, preferring instead to think of it as resulting from a superimposition of two (unrelated) tertian harmonies.<sup>11</sup> I am somewhat sympathetic to this objection, and will address the relation between scales and superimpositions below. But Example 7(b) provides a measure of support for the derivation I have proposed. Here, we find the same modal use of the harmonic minor scale, indeed at the same pitch-level and with a very similar E-major triad in the bass. In 7(b), however, the harmonic minor colorings of the piccolo clarinet line are very explicit: the descent from G $\sharp$  to G to E, all over the oboe's insistent D $\sharp$ , outlines the characteristic 4-7[0145] sound of the harmonic minor scale. (This set is very distinctly *non*-octatonic, and does not appear in that collection.) In mm. 4–5 of the example, Stravinsky gradually inserts notes from the other G $\sharp$  minor scales: first an F $\sharp$  (from G $\sharp$  natural minor) and then, in m. 5, the harmonic minor's E $\sharp$ . These infiltrations are again reminiscent of those in Examples 7(a) and 6(c), and while they enrich the harmonic minor sonority of the passage, they do not, at least to my ear, fundamentally dislodge it.

<sup>11</sup>Cf. Frederick Smith (1979, 178), who writes of the chord: "there is no harmonic analysis called for; it is simply a question of how the composer placed his hands on the keyboard." I have taken this quotation from Whittall 1982.

## Example 6. [continued]

(f) reh. 5

The image shows a musical score for rehearsal 5 of Example 6, with four layers of analysis. The score is in 2/4 time and features five staves: Cl. B. Cl., Flutes, Ob., Hn., Cl., and Hn. The first three staves contain the original musical notation with various annotations like triplets and slurs. The fourth staff is a bass line. To the right of the score, four layers of analysis are listed: Layer 1: chromatic; Layer 2: A Lydian/F# melodic minor; Layer 3: completing the scales in two different ways; Layer 4: "foreign" bass note. Each layer is represented by a horizontal line with notes corresponding to the analysis.

The preceding analyses lie along a continuum, ranging from explicit and, to my mind, clearly intentional uses of the scale (Examples 5[a], 6[a], and 6[b]) to more subtle passages (Example 6[g]) that require a good deal of analytical interpretation. I do not expect that all of these interpretations will be convincing to every reader. I do, however, think that as a whole they demonstrate that non-diatonic minor scales are an important part of the vocabulary of both *Petrouchka* and *The Rite of Spring*. For both the number of the examples (thirteen in all) and their concentration in just two pieces suggest that we are not dealing with coincidences here, but rather with matters of compositional technique.<sup>12</sup> To this internal

<sup>12</sup>“Compositional technique” can be in part a subconscious matter: it is quite possible that Stravinsky picked up the *sound* of these two scales by listening to other music, and used them without full awareness of what he was doing.

evidence, we may also add the historical fact that modally-conceived minor scales are common in the works of Debussy and Ravel, two composers whom Stravinsky knew and admired.

Nevertheless, van den Toorn has analyzed most of these passages—specifically, Examples 5(a) and (b), 6(a), (b), (e)–(g), and 7(a) and (b)—as resulting from the combination of octatonic and diatonic materials.<sup>13</sup> This, I submit, is not just wrong, but wrong in a

<sup>13</sup>For Examples 5(a)–(b), see van den Toorn 1983, 84–6; for 6(a)–(b), see van den Toorn 1987, 153–5; Examples 6(c) and (d) are not analyzed by van den Toorn; for (e)–(g), see van den Toorn 1983, 100–10; for 7(a), see van den Toorn 1983, 108; for 7(b), see van den Toorn 1987, 152. Richard Taruskin (1996, 939 and 942 [example]) also analyzes Example 5(b) in terms of “octatonic-diatonic interaction.” Peter Hill (2000, 61–2), who expresses some reservations about octatonic-centered readings of Stravinsky, nevertheless describes 7(b) as “the first ‘octatonic’ sound of the work.”

## Example 6. [continued]

(g) reh. 6

The musical score for Example 6 (g) reh. 6 consists of four staves. The top staff is labeled 'E. h.' and contains a melodic line with a triplet of eighth notes. The second staff is labeled 'Alto Flute' and features a triplet of eighth notes followed by a sixteenth-note run. The third staff is labeled 'Fl., Bsn.' and shows a sustained chord with a fermata. The bottom staff is labeled 'Bs Cl.' and contains a complex rhythmic pattern with a triplet and a five-note run.

(h) Registral partitioning at reh. 6 of *The Rite of Spring*

The musical score for Example 6 (h) shows three scales: D melodic minor (top staff), D harmonic minor (middle staff), and G melodic minor (incomplete) (bottom staff). The D melodic minor scale is shown in a higher register, while the D harmonic minor and G melodic minor scales are shown in a lower register.

way that should make us suspicious of the underlying methodology. For Examples 5(a) and 6(a) are near-incontrovertible instances of modal use of the melodic minor scale; if even *these* passages can be interpreted as the result of “octatonic-diatonic interaction,” then we should rightly ask whether there is any music that *cannot* be understood in this way.

In a sense, there is not: any proper subset of the chromatic scale can be decomposed into octatonic and diatonic components.

It is particularly tempting to analyze the non-diatonic minor scales in this way. For both scales share six notes with a diatonic collection and six notes with an octatonic collection, as Example 8 shows. Both scales can also be understood as combining the octatonic scale’s signature 4-3[0134] tetrachord with a diatonic scale-fragment, as in Example 9. Thus, the non-diatonic minor scales naturally tend to evaporate under the scrutiny of the analyst predisposed to interpret music in terms of diatonic and octatonic

Example 7. The harmonic minor scale in *The Rite of Spring*

(a) reh. 19, mm. 2–5

Bsn.

Str.

G# harmonic minor

Detailed description: This musical score is for rehearsal 19, measures 2-5 of *The Rite of Spring*. It features two staves: a Bassoon (Bsn.) staff in the upper register and a String (Str.) staff in the lower register. Both are in 2/4 time. The Bsn. part plays a melodic line: G#4 (quarter), A4 (quarter), B4 (quarter), C#5 (quarter), D5 (quarter), E5 (quarter), F#5 (quarter), G#5 (quarter), followed by a rest. The Str. part provides a harmonic accompaniment with chords: G#4-B4 (quarter), A4-C#5 (quarter), B4-D5 (quarter), C#5-E5 (quarter), D5-F#5 (quarter), E5-G#5 (quarter), F#5-G#5 (quarter), and G#5 (quarter). A bracket below the Str. staff indicates the G# harmonic minor scale.

(b) reh. 4

D clar.

Ob.

Str., Cl.

G# harmonic minor (incomplete)

Detailed description: This musical score is for rehearsal 4, measures 1-5 of *The Rite of Spring*. It features three staves: D Clarinet (D clar.), Oboe (Ob.), and String Clarinet (Str., Cl.). The time signature is 3/4. The D clarinet part plays a melodic line: G#4 (quarter), A4 (quarter), B4 (quarter), C#5 (quarter), D5 (quarter), E5 (quarter), F#5 (quarter), G#5 (quarter), followed by a rest. The Oboe part plays a rhythmic accompaniment with chords: G#4-B4 (quarter), A4-C#5 (quarter), B4-D5 (quarter), C#5-E5 (quarter), D5-F#5 (quarter), E5-G#5 (quarter), F#5-G#5 (quarter), and G#5 (quarter). The String Clarinet part provides a harmonic accompaniment with chords: G#4-B4 (quarter), A4-C#5 (quarter), B4-D5 (quarter), C#5-E5 (quarter), D5-F#5 (quarter), E5-G#5 (quarter), F#5-G#5 (quarter), and G#5 (quarter). A bracket below the Str., Cl. staff indicates the G# harmonic minor scale (incomplete).

fragments.<sup>14</sup> This tendency should be resisted, since both analytical and historical evidence suggest that in Stravinsky's music the non-diatonic minor scales are entities in their own right, rather than mere derived (or "surface") formations.

#### A BRIEF OVERVIEW OF THE FIRST TWO SECTIONS OF *THE RITE OF SPRING*

Readers will have noticed that most of Examples 6 and 7 come from the first few sections of *The Rite of Spring*. The heavy concentration of modally-reconceived minor scales in these few minutes of music may prompt us to look for a higher-level analysis. In particular, we may want to know the relative importance of octatonic scales and minor passages in these opening sections of *The Rite of Spring*. This comparison will provide an important test of the notion that Stravinsky's language is predominantly octatonic in derivation, especially in light of van den Toorn's assertion that the *Rite* is "generally octatonic" and "without question the most thoroughly octatonic of all Stravinsky's works."<sup>15</sup>



Examples 10(a) and 10(b) provide such a comparison. In these tables, I have attempted to summarize scales used in all the different "blocks" of material in the first two sections. As one can see, minor scales play an important role in a third of the measures in the introduction (25 out of 75 measures). By contrast, the introduction contains *not a single measure* of incontrovertibly octatonic music.<sup>16</sup> In the "Augurs of Spring," the situation is even

<sup>14</sup>Since the melodic minor scale shares five notes with the whole-tone collection, it is sometimes misinterpreted as a product of whole-tone/diatonic interaction. See, for example, Whittall 1975, particularly the analysis of mm. 26–8 of *Des pas sur la neige*.



<sup>15</sup>"Generally octatonic": van den Toorn 1983, 101; "without question": van den Toorn 1983, 470, n. 4. Cf. also Robert Moevs's claim that "perhaps ninety percent of this composition can be referred directly to a matrix of alternate half and whole-tone steps" (1980, 100).

<sup>16</sup>Van den Toorn (1983, 42–4) claims that the material at rehearsals 6 (Example 6[g]) and 8 is "explicitly" octatonic (cf. their appearance on "List 1"), but his argument is undermined by the fact that his graphs of these pas-

Example 8. Minor scales as composed of octatonic and diatonic components

(a) C melodic minor	(b) C harmonic minor
stems up: C major	stems up: E $\flat$ major
	
stems down: B-C octatonic	stems down: B-C octatonic

Example 9. Minor scales as composed of octatonic and diatonic scale-fragments

(a) C melodic minor	(b) C harmonic minor
	
0134	0134

more extreme: more than *half* of the measures of the section (93 out of 172) potentially involve modal uses of minor scales. By contrast, there are just a few measures of explicit octatonicism: the eight measures of rehearsal 30, and the five measures at rehearsal 23. These numbers strongly suggest that the octatonic scale is a relatively minor feature of the first two sections of *The Rite*. What emerges instead is a picture that is fundamentally at odds with previous analyses of this piece. In these first 247

sages consistently, and without comment, leave out non-octatonic grace notes. (For the analysis with the missing grace notes, see pp. 104–5.) Note that van den Toorn's analyses do contain grace notes when they do not interfere with his octatonic readings.

Example 10(a). Scalar structures in the Introduction to Part I of *The Rite of Spring*

<i>Measures</i>	1–9, 13	10–12, 14–19	20–4	25–7	28–31	32–8	39–41, 43
<i>Rehearsal number</i>	1	2–3	4	5	6		7
<i>Key scalar elements</i>	C major bassoon melody w/ chromatic accomp.	E.h.: C $\sharp$ minor pentachord (chromatic accomp.)	G $\sharp$ harm. min.	A lyd./ F $\sharp$ mm.	D harm/mm; also G mm.	4-10[0235] flute melody/ chromatic accomp.	E $\flat$ mm.
<i>Notes</i>			see Ex. 7(b)	see Ex. 6(f)	see Ex. 6(g)		See Ex. 6(d)
<i>Measures</i>	42, 44–5	46–51	52–6	57–65	66–75		
<i>Rehearsal number</i>	(7)	8	9	10–11	12		
<i>Key scalar elements</i>	D mm. (+ harmonic?)	Initially B mm., later joined by other diatonic scales	Superimposed diatonic scale fragments	Massive superimposition of elements, including chromatic scales, A $\flat$ pentatonic, G $\sharp$ harmonic minor, others	Return of bassoon melody, introduction of “Augurs” ostinato, altered dominants on F $\sharp$ , E $\flat$		
<i>Notes</i>		Similar to Ex. 6(g)	See Ex. 6(e)				

## Example 10(b). Scalar structure in the “Augurs of Spring”

<i>Measures</i>	76–83	84–7	88–97	98–109	110–144	145–6	147–52	
<i>Rehearsal number</i>	13	14	(14)–15	16–17	18–21	(21)	22	
<i>Key scalar elements</i>	G $\sharp$ harm. min.	Superimposed triads: C, E, e + ostinato (G $\sharp$ harm. min. with an added C?)	G $\sharp$ harm. min. (+ chromatic melody)	Superimposed diatonic elements	G $\sharp$ harm. min. (+ G $\sharp$ mm.)	Non-scalar chords (m. 145: possibly octatonic)	chromatic ostinato + C/D trill	
<i>Notes</i>				low register: B $\flat$ –C–D $\flat$ –E $\flat$ –F upper register: C mixolydian	See Ex. 7(a)			
<i>Measures</i>	153–7	158–73	174–81	182–9	190–207	208–15	216–23	224–47
<i>Rehearsal number</i>	23	24–5	26	27	28–9	30	31	32–6
<i>Key scalar elements</i>	octatonic	B $\flat$ mm. + C major trills	Same as 158–73, but with a chromatic melody	B $\flat$ dorian (C maj. trills continue)	E $\flat$ dorian (trills now suggest E $\flat$ mm.)	Octatonic (over diatonic ostinati in low strings)	A minor (+ chromatic bass)	C mm. (+ chromatic flurries)
<i>Notes</i>		See Ex. 6(b)						See Ex. 6(a)



measures, the primary musical materials—besides the diatonic collection—are not octatonic, but rather minor scales.

To be sure, these scales play a less important role in the rest of the *Rite* (although they are very prominent in the “Ritual Action of the Ancestors.”) And, starting in the “Ritual of Abduction,” octatonic materials *do* make an important appearance. But throughout the piece, the octatonic scale continues to be just one element of many: much of the music (“Spring Rounds,” “Evocation of the Ancestors”) is diatonic; some sections (“The Dancing Out of the Earth”) involve the superimposition of diatonic elements on other scales; some are octatonic (especially the “Ritual of Abduction,” the central part of the “Ritual Action of the Ancestors,” and some parts of the “Sacrificial Dance”), and still other parts (such as the “Naming and Honoring of the Chosen One,” and much of the “Sacrificial Dance”) have no clearly identifiable scalar background. In a word, the music is *heterogeneous*, exhibiting a variety of techniques and compositional procedures. To my mind, this heterogeneity is a major feature of Stravinsky’s style. The challenge for the analyst, then, is to explain the music’s coherence while still doing justice to the variety of different techniques that animate it.

### SUPERIMPOSITIONS

#### STRAVINSKY, POLYSCALARITY, AND THE “PETROUCHKA” CHORD

Perhaps the most striking aspect of Stravinsky’s harmonic language is *polyscalarity*: the simultaneous use of musical objects *which clearly suggest different source-collections*. Polyscalarity is a kind of local heterogeneity, a willful combination of disparate and clashing musical elements. It is the feature that prompted the Italian composer Alfred Casella (1924) to compare Stravinsky’s musical style to the “cubist” technique of Picasso and Braque, in which single objects are portrayed from more than one vantage point. Whether this is an apt description of cubism is open to question, but the analogy is certainly useful in thinking about Stravinsky: here, the “different perspectives” are different scales, or radically different harmonic areas, and their simultaneous pre-

sentation represents a fundamental challenge to the traditional assumption that a single scale or key area (or “referential collection”) should govern music at any one time.

One can speak of this, if one likes, as “polytonality.” This is a concept that has come in for much undeserved abuse. Some theorists, such as Benjamin Boretz and Allen Forte, have argued that the very notion of polytonality involves logical incoherence.<sup>17</sup> Others have questioned whether it is possible for human beings to perceive two or more keys simultaneously.<sup>18</sup> We can grant that a piece of music cannot, in the fullest and most robust sense of the term, be in two keys at once; indeed, it may be impossible for us to hear one and the same note as having two tonal functions simultaneously. Still, this should not cause us to jettison the notion of polytonality altogether. For many pieces—including many of Stravinsky’s—naturally segregate themselves into independent auditory streams, each of which, if heard in isolation, would suggest a different tonal region.<sup>19</sup> Further, it seems clear that we can, in some more rudimentary sense of the term, hear more than one tonal area at once. (Imagine an oboist playing “My Country ‘Tis of Thee” in F, while across the room a pianist plays the Star-Spangled Banner in D $\flat$ : this is a musical situation that can reasonably be described as involving “polytonality,” and it is one in which I suspect most skilled listeners would have no problem discerning the presence of two independent tone-centers.) Out of

<sup>17</sup>See Forte 1955, 137, and Boretz [1972] 1995, 244. (Both passages are cited in van den Toorn 1983.) Boretz seems strangely to think both that the idea of polytonality is logically contradictory *and* that we can experience more than one tonality at once. This is delicate ground, but I am inclined to think that if a concept accurately describes a common, non-illusory experience, then it is probably not incoherent or contradictory. For an analysis (of a Milhaud work) that is sympathetic to polytonality, see Harrison 1997. Harrison helpfully suggests some reasons why analysts have been reluctant to take polytonality seriously.

<sup>18</sup>See Krumhansl 1990, 226–39, for an empirical discussion of the issue.

<sup>19</sup>I use “tonal region” here in a very general sense that is not restricted to the voice-leading conventions of Western classical music.

deference to terminological sensibilities, I will use the word “polyscality” to refer to music of this sort. I intend the term to carry no implication that we can (in the most robust sense) perceive two keys at once.<sup>20</sup>

The desire to avoid “polytonality” seems to have been one of the major motivations for octatonic-centered readings of Stravinsky.<sup>21</sup> For it often happens that on an octatonic interpretation, what might at first *sound* like objects that belong to different scales—say a C-major triad and an F $\sharp$ -major triad—are interpreted as sonorities that derive from a single octatonic collection. As Arthur Berger put it, apropos the Petrouchka chord:

Since the entire configuration may now be subsumed under a single collection with a single referential order, i.e., the octatonic scale, the dubious concept of “polytonality” need no longer be invoked.<sup>22</sup>

Van den Toorn quotes this passage approvingly, adding

questions regarding the “bitonality” or “polytonality” of certain passages in this literature can no longer be taken seriously within the context of this inquiry. Presumably implying the simultaneous (C-scale tonally functional) unfolding of separate “tonalities” or “keys,” these notions—real horrors of the musical imagination—have been widely (and mercifully) dismissed as too fantastic or illogical to be of assistance . . . There is [in the Petrouchka chord] no simultaneous (tonally functional) unfolding of “two keys,” but

<sup>20</sup>There is an old debater’s trick of refuting an opponent’s claim by interpreting it only in its extremest possible sense. The attack on the notion of polytonality sometimes seems to partake of this: theorists sometimes seem to suppose that by showing that we cannot “perceive two keys” in *the richest possible sense*, they have shown that *there is no useful sense* in which we can be said to perceive more than one key at a time.

<sup>21</sup>Taruskin ([1987] 1990, 1996) is the exception here. He, too, argues that polytonality is a useful notion, though he seems to think that Stravinsky’s use of “multiple keys” arises from deeper-level octatonicism.

<sup>22</sup>Berger [1963] 1968, 134–5.

merely this oscillation or superimposition of the (0,6) tritone-related (0 4 7) triads of Collection III at C and F $\sharp$ .<sup>23</sup>

Note the structure of the argument: beginning with the notion that we cannot (in some rich sense of the term) perceive two keys at once, van den Toorn concludes that the Petrouchka chord is monoscalar in origin. But this is doubly problematic. First, although some seeming instances of polyscality can in fact be resolved by the octatonic scale, many others cannot.<sup>24</sup> Thus, although the availability of the octatonic scale may provide the impression that we can do without the notion of polytonality (or its weaker cousin, polyscality), this is not the case: sooner or later, even the partisans of octatonicism will have to confront the fact of Stravinsky’s multiscalar superimpositions. The second problem is that even when we can interpret a given passage of music as deriving from the octatonic scale, it is not clear that we should necessarily do so. For in many places, Stravinsky clearly does make use of multiple scales at a single time. (Indeed, he explicitly spoke of the music of *Petrouchka*’s second tableau as being “in two keys.”<sup>25</sup>) While it might be possible to interpret the Petrouchka chord as monoscalar, it may be more fruitful to regard it as polyscalar, deriving from the superimposition of elements belonging to the C-major and F $\sharp$ -major collections. Whatever scruples we may have about the notion of polytonality, the music itself will necessarily be our last court of appeal.

Let us consider the various transformations of the Petrouchka chord in that ballet’s second tableau. The first is shown in Example 11(a). Notice that the chord is accompanied by a note (the bassoon’s G $\sharp$ ) foreign to the octatonic collection that contains it. (The bassoon’s complete melody, which is not shown in the

<sup>23</sup>van den Toorn 1987, 63–4.

<sup>24</sup>For example: the music at rehearsals 6, 8, 9, 10, 11 of the introduction of *The Rite of Spring*; the figure which is first heard at 43, and much of the music of the last section of Part I.

<sup>25</sup>Stravinsky 1962, 156.

example, is a six-note subset of the harmonic minor collection.) The second time the chord appears, 11(b), it is again in a poly-scalar context: the piano's F $\sharp$  arpeggio is now accompanied by a G-major arpeggio. (This association of F $\sharp$  major, G major, and C major continues throughout the second and third tableaux, and is as characteristically a part of Petrouchka's musical personality as is the bare juxtaposition of F $\sharp$  and C.) This development makes more sense if we understand the Petrouchka chord as a superimposition of two different scales, one white-note and the other black-note; if we see the original chord as wholly octatonic, then the appearance of the non-octatonic G major will have to be independently motivated. Consider now the material at rehearsal 59, shown in Example 11(c).<sup>26</sup> Again, we find the same non-octatonic pattern of superimposition of black notes and white notes: here, the white notes appear on the last three quintuplets (or on unaccented sextuplets), and contain all but one of the notes of the C major scale (E is missing). All five of the black notes are used (the A $\sharp$  will not be found in the example: it appears in measures 8–9 of rehearsal 59).

What happens next is quite telling: at rehearsal 60 (Example 11[d]), the material of rehearsal 51 ("Petrouchka's cries") is transformed into a representation of Petrouchka's despair. Again, we find the same trilling alternation of black notes and white notes, but here, instead of F $\sharp$  and C (the Petrouchka chord proper) F $\sharp$  is juxtaposed with D minor. This shifts the music completely out of the octatonic realm—the resultant sonority is an instance of the hexatonic 6-20[014589] set, structurally analogous to the octatonic collection (alternating half-steps with minor thirds, instead of half-steps and major seconds) but very different in its sonorous qualities. This hexatonic sonority alternates with the original Petrouchka chord in the first four measures of rehearsal 60. Finally, the hexatonic sound is transposed away from the white-note/black-note orbit at rehearsal 76 of the third tableau, shown in

Example 11(e) ("The Moor and the Ballerina Prick Up Their Ears"), where E $\flat$  major alternates with B minor. This sonority is the point of furthest remove from the "Petrouchka" chord proper.

I summarize this process in Example 12. What should be clear is that the transformations applied to the Petrouchka chord are guided not by underlying octatonicism, but rather by the principle of black-note/white-note superimposition. Indeed, the development of the Petrouchka chord represents a fairly systematic exploration of the possibilities of such superimposition. Initially a C-major triad is juxtaposed against an F $\sharp$ -major triad, producing a clear octatonic sound (albeit distorted by the bassoon's initial G $\sharp$ ). Gradually the number of white notes in the superimposition is increased—first, to include the notes of the G-major triad, and then to include those of the D-minor triad as well. Correspondingly, the number of black notes in the superimposition is increased, producing resultant sonorities that are ever more chromatic, and eventually including all but one of the twelve pitch classes. Once this maximum point of chromatic saturation is achieved, the initial C- and G-major triads disappear, while the black notes are reduced to their original F $\sharp$ -major sound. This produces the hexatonic sonority, strongly contrasting with the original octatonic sound, and yet still recognizably Petrouchka-esque.

Contrast this with Taruskin's interpretation of *Petrouchka's* second tableau (1996, 737–56). In Taruskin's view, the octatonic scale is a stable tonic collection throughout the entire movement. Various departures from this collection—such as the extended diatonic episode beginning at rehearsal 52—are to be understood as analogous to modulations in traditional tonal music. Even the hexatonic collection of Example 11(d) above is seen in relation to the octatonic set: in Taruskin's reading, the D-minor chord is an appoggiatura to the C-major portion of the Petrouchka chord proper. And although Taruskin does acknowledge that there are some grounds for thinking of this music—especially Examples 11(b) and (c)—as "polytonal," he writes that this is acceptable only "so long as it is borne in mind that the keys in question were chosen not simply ad libitum but from among the circumscribed

<sup>26</sup>Similar material can also be found at rehearsal 50.

Example 11(a). The first appearance of the Petrouchka Chord, reh. 49

Example 11(b). The Petrouchka Chord, reh. 49, mm. 11–2

Example 11(c). Development of the Petrouchka Chord, reh. 59

Example 11(d). Development of the Petrouchka Chord, reh. 60

Example 11(e). Development of the Petrouchka Chord, reh. 76, mm. 2–3

Example 12. The development of the Petrouchka Chord: summary

<i>Rehearsal</i>	49	(49)	59	60	76
<i>Superimposed element #1</i>	C triad	C, G triads	All the white notes except E	D-minor triad	B-minor triad
<i>Superimposed element #2</i>	F# triad	F# triad	All the black notes	F# triad	E♭ triad
<i>Resultant sonority</i>	Octatonic	Chromatic (8 notes)	Chromatic (11 notes)	Hexatonic 6-20[014589]	Hexatonic 6-20[014589]
<i>Notes</i>	White-note/black-note superimposition				

and historically sanctioned wares of the octatonic complex.”<sup>27</sup> The octatonic scale, in other words, *produces* the Petrouchka chord, rather than the other way around.

We can certainly accept Taruskin’s point that juxtapositions of tritone-related major triads are characteristic of the music of Stravinsky’s Russian precursors.<sup>28</sup> But are we so sure, even in light of this history, that all such juxtapositions *derive from* the octatonic scale? And is it even clear that the Petrouchka chord itself arises out of the “octatonic complex”? There is surprisingly little in the music which might tell us this: if we set aside the appearances of the Petrouchka chord proper—since this is the entity that we are trying to understand—then we note that in the entire second tableau, there are only *four other measures* of octatonic material. (These are mm. 1 and 7, and the two-measure cadenza that precedes rehearsal 59.) At the same time, there are approximately thirty measures of music (including Examples 11[b]–[d] above) that seem to derive from polyscalar black-note/white-note superimposition. Counting is, of course, no substitute for musical analysis, but here it does suggest that octatonicism is not the main technique

in the second tableau. It is instead a *foreground* phenomenon, a surface manifestation of the more fundamental (“middleground”) principle of black-note/white-note opposition. Granted, such juxtapositions *can* produce octatonic sonorities; but they can also, as Stravinsky shows us, produce chromatic or hexatonic sonorities.

#### SCALES AND SUPERIMPOSITIONS

The appearance of octatonic and hexatonic sonorities in our analysis of the Petrouchka chord should not be surprising. As is well known, the superimposition of *any* two (major, minor, or diminished) triads whose roots are separated by a minor third or tritone will produce a subset of the octatonic scale. Similarly, the superimposition of any two (major, minor, or augmented) triads whose roots are separated by major third will produce a subset of the “hexatonic” scale.<sup>29</sup> In analyzing a work where triadic superimpositions play an important role, we should therefore expect that octatonic and hexatonic sonorities will be produced as a natural byproduct of the superimpositions themselves.

<sup>27</sup>Taruskin 1996, 749. Taruskin’s original paper ([1987] 1990) argues more forcefully in favor of the polytonal explanation of the chord.

<sup>28</sup>Taruskin has done more than anyone else to uncover this history. See especially Taruskin 1996, Chapter 4.

<sup>29</sup>One can go further: superimposition of two (major or minor) triads separated by a half-step produces a subset of either the harmonic minor or its inversion. This fact is somewhat unfamiliar to theorists, and it perhaps accounts for their reluctance to see the harmonic minor scale in passages such as Examples 7(a) or 18(b).

More generally, as I showed in a previous paper, there is a set of seven scales which has the remarkable property of containing as subsets all those pitch-class sets that do not themselves contain a 3-1[012] trichord.<sup>30</sup> (These seven scales are the diatonic, melodic minor, whole-tone, octatonic, harmonic minor, its inversion [sometimes called the “harmonic major”], and the 6-20[014589] hexatonic scale.) As a consequence, *any* superimposition of two triads—major, minor, diminished, or augmented—will necessarily produce a subset of one of these seven scales.<sup>31</sup> (*A fortiori*, the same holds for the superimposition of subsets of triads.) There is thus a deep link between the technique of triadic superimposition and harmonies that are recognizably scalar. But, crucially, this is an intrinsic feature of the twelve-tone universe and not a result of decisions made by individual composers.

What this means is that we must take care in analyzing the work of a composer who, like Stravinsky, makes use both of scales and of superimposed triadic sonorities. Is it the scale that is analytically fundamental, determining the choice of the objects that are to be superimposed? Or, as I suggested in the case of the Petrouchka chord, does the superimposition lie at the deepest musical level, producing scales in the foreground? If the latter, are the surface scales even an important part of the musical development? Or are they merely the inevitable byproducts of the superimpositions involved? I do not think that there need be any one answer to these questions, and, indeed, I think we can find examples of a wide variety of procedures in Stravinsky’s work. At the same time, I think that it is important to take these questions seriously. For otherwise, we are in danger of mistaking scales that are the mere

byproducts of triadic superimpositions for the entities which produce those superimpositions. In other words, we risk treating the constraints inherent in the twelve-tone universe as distinctive features of a composer’s style.

By way of example, let us examine the set-classes that result from the superimposition of a triad with one other note. (I will call these sets the “triadic tetrachords”: triadic tetrachords containing a major triad will be “major triadic tetrachords”; those containing a minor triad will be “minor triadic tetrachords,” and so on.<sup>32</sup>) As Example 13 makes clear, six of the major triadic tetrachords belong to the diatonic scale; five of them belong to the octatonic scale; and only one belongs to neither. (Since the diatonic and octatonic scales are inversionally symmetrical, the situation is the same for the minor triadic tetrachords). That one set, 4-19[0148], contains the augmented trichord—one of only two trichords that belong neither to the diatonic nor the octatonic scale.<sup>33</sup>

Now consider Example 14, from the *Symphony of Psalms*, which shows the first climax of the last movement’s fast section. The first four measures of the passage involve all three major triadic tetrachords that do not belong to the diatonic scale, and only one other (4-z29[0137], which belongs to both the diatonic and octatonic collections). The first chord, here an A-major triad over a bass F, is the one triadic tetrachord that is neither diatonic nor octatonic.<sup>34</sup> The next chord, F major over a G#, is octatonic, while the third, D major over a G#, is both octatonic and diatonic. (Note, however, that this octatonic-flavored tetrachord has a distinctly non-traditional sound.) The last, F major over a G#, again belongs

<sup>30</sup>Tymoczko 1997. See also Pressing 1978.

<sup>31</sup>To be more accurate: any superimposition of any triad or *diminished seventh chord* with any other triad or diminished seventh chord will produce a subset of one of these seven scales. The reason is that triads and diminished seventh chords do not contain major or minor seconds, and thus it is impossible to superimpose two of them in such a way as to produce a set containing a 3-1[012] trichord.

<sup>32</sup>Obviously these definitions are non-exclusive. 4-17[0347], for example, is both a major and minor triadic tetrachord.

<sup>33</sup>The other trichord is 3-1[012]. The only tetrachords which do not belong to either the octatonic or diatonic scales are 4-7[0145] and those which contain either a 3-1[012] or 3-12[048] trichord.

<sup>34</sup>I am considering the E, which appears only in the second bar, to be an implied part of the chord throughout.

to the octatonic scale. Each of these tetrachords is further associated with a different scalar region: the first two measures of the excerpt (mm. 46–7 of the piece) belong to both the D harmonic and melodic minor scales; while the second two measures belong to a single octatonic collection.<sup>35</sup> (Note that the last two measures suggest the D “harmonic major” scale and include a fifth triadic tetrachord.) In short, the excerpt seems to involve a number of different major triadic tetrachords that produce a series of different scalar harmonies.<sup>36</sup>

Or does it? As analysts, we have a choice between taking the scales as the primary objects (determining the triadic tetrachords to be used) and seeing the tetrachords as occupying the fundamental musical level. In this case, I believe the choice is clear. If we see the tetrachords as producing the scales, then the first four measures of the passage are consistent and comprehensible: they present the various non-diatonic triadic tetrachords, and fill them out with scales that contain those sonorities. If, on the other hand, we see the scales as fundamental, then it is unclear what (other than the triadic tetrachords) could link them together. Furthermore, it is difficult to imagine that these scales could have been chosen first, and that Stravinsky only later realized that they provided the opportunity to explore the three non-diatonic triadic tetrachords.<sup>37</sup> As

<sup>35</sup>It is important to note that this passage is preceded by a series of E-major arpeggios over an F–G bass ostinato, a formation which can be attributed to the octatonic scale.

<sup>36</sup>Notice that in a van den Toorn-style interpretation, the first chord in the passage is anomalous since it belongs neither to the diatonic nor octatonic collection; it is only the middle two measures that count as truly characteristic of Stravinsky’s language. In the interpretation I am proposing, this sonority is by contrast *just as typical* of Stravinsky’s language as the rest of the passage.

<sup>37</sup>I would like to emphasize that I do not mean for these words to express undue concern with the way Stravinsky thought about this passage or the way he *actually* composed. Instead, I take analyses to represent a kind of hypothetical story about how a piece of music *might have been* logically and rationally composed. That a good analysis makes a piece of music look sensible, and that composers often work in intuitive or even irrational ways simply underscores the difference between analysis and history.

Example 13. Octatonic and diatonic set-membership of the major “triadic tetrachords”

	Triad	Added Note	Total Set
<b>Diatonic Only</b>	CEG	D	4-22[0247]
		F	4-14[0237]
		B	4-20[0158]
<b>Diatonic and Octatonic</b>	CEG	F#	4-z29[0137]
		A	4-26[0358]
		B $\flat$	4-27[0258]
<b>Octatonic Only</b>		C#	4-18[0147]
		E $\flat$	4-17[0347]
<b>Neither Diatonic nor Octatonic</b>		A $\flat$	4-19[0148]

in *Petrouchka*, it is superimpositions—here, superimpositions of a major triad with notes foreign to that triad—that determine the choice of scales, rather than the other way around.

#### THE SYMPHONY OF PSALMS, É RST MOVEMENT

With these points in mind, let us look more closely at the outer two movements of the *Symphony of Psalms*. Van den Toorn describes the *Symphony of Psalms*, with *Scherzo Fantastique*, *Petrouchka*’s second tableau, *The Rite of Spring*, and the *Symphony in Three Movements*, as Stravinsky’s most octatonic works, but one could go further: the first movement of the *Psalms* is quite possibly the most thoroughly octatonic of all of Stravinsky’s mature compositions. As such it represents the strongest possible case for an octatonic-centered reading of Stravinsky’s *oeuvre*.

I do not so much wish to deny as to qualify the claim that the octatonic scale is central to the first movement of the *Psalms*. For although the scale is present in forty-one of the piece’s seventy-eight measures, it often appears alongside other notes and scales foreign to the octatonic collection, as Example 15 demonstrates. Indeed, the scale appears on its own (“unimpeded”) in only eigh-

Example 14. *Symphony of Psalms*, III, m. 46–51 (mm. 5–10 of reh. 5)

The image shows a musical score for three staves: Winds, Pno.; Brass; and Strings, Low brass. The score is in 4/4 time and consists of measures 46 through 54. The first section, labeled 'D harmonic or melodic minor', covers measures 46-48 and includes chord symbols A/F, F/F#, D/G#, and F/G#. The second section, labeled 'octatonic', covers measures 49-51. The third section, labeled 'D harmonic major', covers measures 52-54. The Winds and Pno. staff features complex rhythmic patterns with triplets. The Brass staff has a more rhythmic, block-like texture. The Strings and Low brass staff has a simpler, more melodic line.

teen measures of the piece. Of course, this is still a fairly high proportion by Stravinsky's standards, but it is important to remember that there are pieces in the literature which are vastly more octatonic than this. Messiaen's "Regard du Pere," for example, the first piece of the *Vingt Regards*, is a work whose nineteen measures last more than twice as long as the first movement of the *Psalms*. This piece is almost entirely octatonic in derivation, save for one progression at the end that suggests functional tonality. Indeed, the movement contains only a single sonority (the second to last) which does not belong to an octatonic collection. Furthermore, the octatonic scale appears on its own, without interference from notes foreign to the collection, in almost every measure of the piece. This is true and explicit—some might even say excessive—octatonicism. By comparison, Stravinsky's use of scales tends to be subtle, qualified, and ambiguous.

The opening of the *Psalms* is a case in point. The piece begins with the celebrated octatonic passage shown in Example 16(a): an E-minor triad, followed by dominant-seventh chords on B $\flat$  and G. But having established this octatonic frame of reference, Stravinsky immediately begins to break it down: in m. 5 the B $\flat$ <sup>7</sup> arpeggio

is infiltrated by an A, a note foreign to the collection that suggests an outward ("augmented sixth"-style) resolution of the minor seventh. In m. 7, the G<sup>7</sup> arpeggio is accompanied by an F $\sharp$ , again suggesting an outward resolution of the seventh. These non-octatonic outward resolutions immediately create the recognizably Stravinskian sound of clashing scales.

The point here is simply that Stravinsky, even at his most octatonic, is notably reluctant to use the scale for very long. In mm. 11–13, shown in Example 16(b), the octatonic scale reappears, this time underneath an ascending F dorian scale. In m. 20, it is accompanied by a melody in the horn and solo cello that suggests E phrygian. At rehearsal 4, it appears on its own for seven measures; but immediately thereafter, the full chorus, singing *forte*, superimposes notes from the key of C minor on top of it. Likewise, in mm. 68–74, the scale appears underneath notes from the E phrygian collection. So, while it is true that this movement can be well accounted-for in terms of octatonic and diatonic scales, it is equally true that it frequently blurs its own octatonicism, combining that scale with notes foreign to the collection. In this sense even Stravinsky's most insistently octatonic work suggests that it



Example 15. Scalar structures in *Symphony of Psalms*, I

<i>Measures</i>	1–4	5–10	11–4	15–8	19–25	26–32	33–6	
<i>Rehearsal number</i>		1		2	3	4	5	
<i>Key scalar elements</i>	Octatonic	Polyscalar: “aug. 6th” resolution of dom. 7th chords <b>See Ex. 16(a)</b>	Octatonic and F dorian <b>See Ex. 16(b)</b>	E phrygian	Octatonic and E phrygian	Octatonic	Octatonic and C minor	
<i>Notes</i>								
<i>Measures</i>	37–40	41–8	49–52	53–9	60–4	65–7	68–74	75–8
<i>Rehearsal number</i>	6	7–8	9	10–11		12	13	
<i>Key scalar elements</i>	Diatonic (m. 40: chromatic)	Octatonic	E phrygian	Mostly E phryg.	Mostly C min.	E phryg.	Octatonic and E phryg.	C min.

is not octatonicism *per se* that characterizes the composer’s harmonic language, but rather polyscalar superimposition—which may or may not involve octatonic scales.

I do not think that van den Toorn would necessarily deny this. His analyses are filled with instances of “octatonic-diatonic interaction,” in which Stravinsky’s music is segregated into independent diatonic and octatonic streams. If we are to take these analyses as having perceptual relevance, rather than representing mere formalist decompositions of the music, then we are presumably supposed to *hear* such passages as involving independent diatonic and octatonic musical “layers.” But then we have not come so far from the pre-octatonic view of Stravinsky, with its multiple layers, superimpositions, and “bitonality.” Speaking loosely, we could say that for van den Toorn, “octatonic-diatonic interaction” is a *species* of “bitonality”—indeed, the only one his analytical methodology recognizes.<sup>38</sup>

<sup>38</sup>I say “speaking loosely,” because I understand that there is no such thing as an “octatonic tonality.” Nevertheless, the phenomenon of superimposed scales, each with its own distinctive sonic identity, is the one which the word “polytonality,” however inaccurately, was meant to capture.

(More properly, we could say that van den Toorn recognizes polyscalarity and superimposition as important aspects of Stravinsky’s vocabulary, but limits himself to superimpositions involving octatonic elements.) As we have seen, however, Stravinsky’s superimpositions come in many varieties, some of which involve the octatonic scale, and many of which do not.

## THE SYMPHONY OF PSALMS, THIRD MOVEMENT

Superimpositions play an even more important role in the third movement of the *Psalms*. Some involve non-diatonic, non-octatonic elements; others involve diatonic fragments belonging to different collections; and still others involve diatonic elements belonging to a single scale. Example 17 shows two prominent superimpositions of the first type. Example 17(a), from the beginning of the fast section of the movement, has three seemingly independent components: a C-major triad, a set of interlocked diatonic thirds in the trumpet and harp, which suggests the C natural-minor scale, and a chromatic ostinato in the low bass. (Notice that if we *were* interested in attributing all of this material to a single collection, we could treat the low F $\sharp$  as a

Example 16(a). The opening of the *Symphony of Psalms*

Ob.

Bsn.

octatonic

non-octatonic  
"augmented sixth"  
resolution of B $\flat$ 7

aug-6th  
res. of  
G $^7$

Example 16(b). Scalar superimposition in *Symphony of Psalms* I, mm. 11–3

Ob.

Pno. (col 15mb)

E.h.

Bsn.

Ob.

winds: octatonic  
pno: f dorian

neighbor note; everything else would then belong to the F melodic minor scale.) At (b), we find a whole-tone scale in the trombone combined with parallel triads in the trumpets that bark out the “interlocked thirds” motive from the beginning of the movement’s fast section.

Example 18, by contrast, contains three instances of the combination of diatonic materials to form non-diatonic totalities. At (a), an F-major arpeggio is combined with an octave transposed ver-

sion of the “interlocked-thirds” motive to form the inversionally symmetrical set 7-z17[0124569]. (Note that the registration of the English horn arpeggio recalls the lower half of the famous “Psalms chord” that opens the first movement.) At (b), a major triad in the flutes and trombone is juxtaposed with another major triad a half step above it. (Note that here the registration of the flute/trombone triad recalls the *upper* half of the “Psalms chord.”) The resultant sonority is a six-note subset of the harmonic minor

scale. And at (c), we find a complicated series of typically Stravinskian chords. (The example omits the harp and chorus parts, which I think belong to different “strata” of music.) As the example should make clear, these chords are registrally partitioned into two halves, each of which on its own is diatonic. The upper part of the chords belongs to B $\flat$  major (or C dorian), and consists of an E $\flat$ -major triad, an incomplete F-major triad, a stack of fifths beginning on B $\flat$  (B $\flat$ -F-C), and another F-major triad. The lower half contains, respectively, a stack of fifths on C, a perfect fourth (D $\flat$ -G $\flat$ ) that perhaps represents an incomplete G $\flat$  triad, an incomplete E $\flat$ -major triad, and a 3-6[024] trichord {D, E, F $\sharp$ }, in a registration that here suggests a D $^9$  chord. Of the four resultant sonorities, the first and third are diatonic, both belonging to B $\flat$  major/C dorian. The second chord forms a five-note subset of the actual pitches of Example 18(b). Similarly, the final sonority, typically Stravinskian in its clangorous beauty, is a six-note subset of the actual pitches of Example 18(a). The appearance in Example 18(c) of subsets of the actual pitches in both (a) and (b) suggests that Stravinsky was, if not conscious of the reuse of the sonorities themselves, at least acutely aware of the characteristic sounds of superimpositions of different diatonic materials. And while it is probably unrealistic to expect listeners to pick up the similarities of pitch content among Examples 18(a)–(c), it is perhaps not unreasonable to expect that they would hear that these various examples all result from a characteristically Stravinskian superimposition of different scalar regions.

Finally, in Example 19, I have listed some examples of another common form of Stravinskian superimposition: the combination of materials that belong *within* a single scale. The most striking of these sonorities are those that cannot easily be interpreted as extended tertian harmonies—9ths, 11ths, and 13ths. In particular, the combination of low-register dominant material with high-register pitches from the tonic triad produces a very bright and energetic sound of uncertain tonal function, one that is typical of Stravinsky’s neoclassic period. Example 19 lists two such sonorities: At (a), the dominant chord in a relatively traditional  $i^7$ -iv $^6$ -

V $^4$ -I progression appears underneath the tonic note in the melody, skewing the listener’s sense of tonal function. (The non-diatonic bass D $\flat$  further contributes to this effect.) At (b), high oboes produce a similar sound, undermining a very explicit, neo-Baroque vi-ii-vii $^\circ$ -iii sequence in the low strings and bassoons. Viewed from a set-theoretic or scale-theoretic perspective, such superimpositions are unremarkable, since they produce only subsets of the major scale; but viewed in the light of Stravinsky’s technique as a whole, these all-diatonic formations demonstrate the variety and range of Stravinsky’s superimposition procedures.

In Example 20, I have catalogued all the different forms of superimposition that appear in Movement III of the *Symphony of Psalms*. In Example 21, I summarize Example 20. One hundred fifty-seven of the movement’s 212 measures contain some form of superimposition. Most of these superimpositions result in a chromatic sonority, although all of them involve diatonic elements. About a third of the superimpositions produce a diatonic result (and perforce involve only diatonic elements from the same key). Superimpositions are involved in thirteen measures (8%) of clearly octatonic music, while the remaining nine measures (6%) produce sonorities that suggest non-diatonic and non-octatonic scales. Admittedly, these classifications involve interpretation, and are therefore open to question. But even if we regard them as useful approximations, the lesson is clear: superimposition is an extremely characteristic feature of Stravinsky’s pitch organization in the third movement of the *Psalms*; the majority of these superimpositions produce a chromatic totality, although they often use diatonic materials to do so. Octatonicism, though present, is a relatively minor feature of Stravinsky’s harmonic procedures here; even less frequent, though not unimportant, are superimpositions that produce non-diatonic, non-octatonic, yet still recognizably scalar totalities.

Putting aside the issue of superimpositions (since almost sixty measures of music do not involve this technique), we see that the same picture still holds. Eighty-nine of the 212 measures of the piece (42%) are clearly diatonic, while ninety-three (44%) are

Example 17. Superimposition of non-diatonic elements in *Symphony of Psalms*, III

(a) mm. 35-6 (and elsewhere)  
diatonic and chromatic

(b) mm. 108-9, 112-3  
whole-tone + parallel triads

The score consists of three staves. The top staff is for Trumpets and Horns (Tpt., Hp.), the middle for Horns (Hn.), and the bottom for Strings (Str.). Section (a) shows a horn part with parallel triads and a string part with a chromatic line. Section (b) shows trumpets and trombones with whole-tone triads and parallel lines.

Example 18. Superimposition of diatonic elements belonging to *different* collections in *Symphony of Psalms*, III

(a) m. 109ff  
E.h., Hp.

(b) mm. 148-9  
Fl., Tbn.

(c) m. 58  
winds, Vlc.

The score consists of three staves. The top staff is for Euphonium and Horns (E.h., Hp.), the middle for Piano and Horns (Pno., Hp.), and the bottom for Violin and Bass (Vlc., Bass). Section (a) shows a horn part with a diatonic line. Section (b) shows a piano and horn part with a diatonic line. Section (c) shows a violin and bass part with a diatonic line.

(hp., chorus omitted)

Example 19. Superimposition of diatonic elements belonging to the same collection in *Symphony of Psalms*, III

(a) m. 53

Sop., Hn. 1

Hn., Hp., Pno.

Bsn., Pno.

(Timp./Hp. ostinato omitted)

(b) m. 78

Ob.

Tpts., E.h.

Str., Bsn.

chromatic—although it should be emphasized that “chromatic” here encompasses quite a wide range that stretches from largely-diatonic yet chromatically-tinged music to extremely dissonant, non-diatonic music. Twenty (9%) measures involve potential examples of octatonicism, while 10 (5%) involve other scales. These results contrast strongly with van den Toorn’s claim that almost *half* of the movement (102 measures) betrays the signs of octatonic influence. With all due respect to van den Toorn, and in light of all that has been said above, I think we need to ask whether this rampant octatonicism might lie in the eye of the beholder. The octatonic scale is important in Stravinsky, but it is not so omnipresent as it has been made out to be.

## CONCLUSION

This paper has drawn its examples from three pieces that by all accounts are among the most octatonic that Stravinsky wrote: *Petroushka* (especially the second tableau), *The Rite of Spring*, and the *Symphony of Psalms*. I have tried to show that even these

works are less octatonic than they have been made out to be. Very often the analyses that purport to uncover the octatonic basis of crucial passages make questionable assumptions about which tones are structural and which are not, or about the priority of scales over superimpositions. In short, they seem to require a *prior commitment* to the idea that the octatonic scale is fundamental to Stravinsky’s music. But, of course, it is just this that Berger, Taruskin, and van den Toorn’s analyses were supposed to be demonstrating. To my mind, the failure of the octatonic hypothesis, in these paradigm cases of Stravinskian technique, means we need to expand our ideas about Stravinsky’s compositional methods.

My own analyses have made free use of a variety of concepts, some (“in C minor,” “augmented sixth”) belonging to the tradition of tonal music, and others (“B $\flat$  Lydian,” “polyscalar superimposition”) more tangential to that tradition. It may seem, therefore, that I am producing a methodological hodge-podge, an undisciplined analysis that helps itself to an *ad hoc* set of unrelated concepts. Something very much like this sentiment seems to lie behind van den Toorn’s criticism of earlier Stravinsky scholarship:

Here, a bewildering succession of descriptive terms and explanatory notions (e.g., “key,” “C-major,” “tonality,” “bitonality,” “atonality,” “pan-tonality,” “pandiatonicism,” “polyharmony,” “polychordal,” “superimposition”), invariably left undefined or underdefined, deprives the undertaking of all meaning and consequence. Stravinsky’s music, everywhere and at once, is made to embrace every conceivable musical technique.<sup>39</sup>

But I do not think that such methodological pluralism is necessarily a vice. Why should we think that we can analyze sophisticated music with just a few techniques? Why should it not be the case that Stravinsky’s music, sometimes bewildering in its complexity, multi-

<sup>39</sup>van den Toorn 1983, xiv.

Example 20. Superimpositions in the third movement of the *Symphony of Psalms*

<i>Measures:</i>	1–6	7–8, 11	9–10	12–20	21–3	24–36	
<i>Rehearsal:</i>	1			2		3–4	
<i>Key area:</i>	C minor	C major		C minor	C mix.	C	
<i>Superimposition elements:</i>				Diatonic ostinatos		Diatonic & chromatic	
<i>Resultant sonority:</i>			C major/minor	Diatonic		F melodic minor (?)	
<i>Element 1:</i>			C-minor triad			C-major triad	
<i>Element 2:</i>			C-major triad			C-minor scale fragment	
<i>Element 3:</i>						3-1[012] trichord	
<i>Notes:</i>				Ostinati of different lengths		<b>See Ex. 17(a)</b>	
<hr/>							
<i>Measures:</i>	37–39	40–3	44–5	46–7	48–9	50–1	52
<i>Rehearsal:</i>		5					6
<i>Key area:</i>		E (?)	E	?	?	?	C (F mm.)
<i>Superimposition elements:</i>	Diatonic	Diatonic		Diatonic	Diatonic	Diatonic/	
<i>Resultant sonority:</i>	Chromatic	Octatonic?		D minor (harmonic or melodic)	Octatonic	harmonic major	
<i>Element 1:</i>	D-major triad	E-major triad		A-major triad	F-major/D-major triads	D harmonic major	F <sup>#</sup> -minor <sup>7</sup> arpeggio
<i>Element 2:</i>	C-minor scale fragment	C-minor scale fragment		F	F <sup>#</sup> /G <sup>#</sup>	D harmonic major arpeggio	
<i>Element 3:</i>				G–D–A horn call			
<i>Notes:</i>				<b>See Ex. 14</b>	<b>Ex. 14</b>	<b>Ex. 14</b>	

## Example 20. [continued]

<i>Measures:</i>	53–5, 57, 60 (Ostinato 1)	56, 58–9 (Ostinato 2)	61–4	65–71	72–9	80–6
<i>Rehearsal:</i>	6–7			8	9	10
<i>Key area:</i>	C minor		C (loosely)	C (octatonic)	C major	C major/C mixolydian (similar to reh. 9, but voices have B $\flat$ )
<i>Superimposition elements:</i>	Diatonic	Diatonic	Diatonic		Diatonic/chromatic	Diatonic/chromatic
<i>Resultant sonority:</i>	Diatonic	Chromatic	Quasi-diatonic		Quasi-diatonic	Quasi-diatonic
<i>Element 1:</i>	V chord (in harmony)	C dorian	Minor 6ths in horns		C-major progression in low instruments	C-major progression in low instruments
<i>Element 2:</i>	Tonic (in melody)	Various	Choral melody (C mixolydian?), various others		Chromatic lines in winds	Chromatic lines in winds
<i>Element 3:</i>		Timpani ostinato	Timpani ostinato		Oboes superimpose tonic on low instruments' V	
<i>Notes:</i>	<b>Ex. 19(a)</b>	<b>Ex. 18(c)</b>			<b>Ex. 19(b)</b>	
<i>Measures:</i>	87–98	99–103	104–8	109, 113–14	110–12	115–31
<i>Rehearsal:</i>	11	12	13		14	15–17
<i>Key area:</i>	C9/A7	C min./F phryg.	C phryg.	?	?	C/E
<i>Superimposition elements:</i>	Diatonic/chromatic			Whole-tone/diatonic	Diatonic	
<i>Resultant sonority:</i>	Quasi-diatonic			Chromatic	Chromatic	
<i>Element 1:</i>	C-major progression in low instruments			Whole-tone scale	A/D major scale fragment	
<i>Element 2:</i>	Chromatic lines in winds			“thirds motive” (parallel triads)	F-major arpeggio	
<i>Element 3:</i>	4 mm. sequence in voice					
<i>Notes:</i>				<b>Ex. 17(b)</b>	<b>Ex. 18(a)</b>	Repeat of mm. 28–45

## Example 20. [continued]

<i>Measures:</i>	132–4	135–7	138–46	147–9	150–6
<i>Rehearsal:</i>		18	18–19	(19)	20
<i>Key area:</i>	B <sup>b</sup> mixolydian	E <sup>b</sup>	?	?	G
<i>Superimposition elements:</i>		Diatonic		Diatonic	Diatonic
<i>Resultant sonority:</i>		Diatonic		B <sup>b</sup> harmonic minor	Diatonic
<i>Element 1:</i>		E <sup>b</sup> -major horn melody F dorian scale in low instruments		F-major triad	Functional G- major progression
<i>Element 2:</i>				F <sup>#</sup> -major triad	G-major triad
<i>Notes:</i>			Transposed rpt., mm. 44–9	<b>Ex. 18(b)</b>	
<i>Measures:</i>	157–62	163–74	175–82	183–6	187–98
<i>Rehearsal:</i>	21	22–3	24	25	26–7
<i>Key area:</i>	B <sup>b</sup> mixolydian, others	E <sup>b</sup>	B <sup>b</sup> -minor	Various	
<i>Superimposition elements:</i>		Diatonic	Diatonic/chromatic	Diatonic/chromatic	
<i>Resultant sonority:</i>		Diatonic	Chromatic	Chromatic	
<i>Element 1:</i>		“Laudate” music	Chromatic oboe chords (ostinato)	Chromatic oboe chords	
<i>Element 2:</i>		E <sup>b</sup> -B <sup>b</sup> -F-B <sup>b</sup> ostinato	E <sup>b</sup> -B <sup>b</sup> -F-B <sup>b</sup> ostinato	E <sup>b</sup> -B <sup>b</sup> -F-B <sup>b</sup> ostinato	E <sup>b</sup> -B <sup>b</sup> -F-B <sup>b</sup> ostinato
<i>Element 3:</i>					
<i>Notes:</i>					Repeat of mm. 163–74



## Example 20. [continued]

<i>Measures:</i>	199–204	205–12
<i>Rehearsal:</i>	28	29
<i>Key area:</i>	Various	
<i>Superimposition</i>		
<i>elements:</i>	Diatonic/chromatic	
<i>Resultant</i>		
<i>sonority:</i>	Chromatic	
<i>Element 1:</i>	Chromatic oboe chords	
<i>Element 2:</i>	E $\flat$ –B $\flat$ –F–B $\flat$ ostinato	
<i>Element 3:</i>		
<i>Notes:</i>	Varied repeat of mm. 2–8	

faceted in its influences and references, should not require a similarly complicated analytical apparatus? Granted, it would be gratifying if we were able to understand Stravinsky in terms of a few fundamental procedures. But we have no strong evidence that this is possible. After all, it may just be that Stravinsky's music is by turns tonal, pantonal, bitonal, atonal, and many other things besides.

Elsewhere, van den Toorn writes:

Stravinsky's music has seemed stubbornly to resist binding analytic-theoretical legislation. This is curious because of the conviction voiced by those familiar with his music that there *is* a consistency, a remarkable identity or distinction in "sound" that certainly *ought* to lend itself to such legislation.<sup>40</sup>

Here, it seems to me, we come to the heart of the matter: Stravinsky's music always *sounds* characteristically Stravinskian, and therefore there *should be* some specifiable characteristic that accounts for this. This, I believe, represents a fundamental misconception of the nature of musical style, one that has been abetted by some of the century's most prominent theorists. It is of a piece

<sup>40</sup>van den Toorn 1983, xiii.

Example 21. Summary of the different superimpositions in the last movement of the *Symphony of Psalms*

<b>Resultant sonority</b>	<b>Number of measures in which this type of superimposition appears</b>
chromatic	87 (all involving diatonic elements)
diatonic	48
octatonic	13
other scales	9

with the view that musical language is systematic and regular, a quasi-logical system that is grounded in a few surveyable principles. And it is the sort of view that naturally leads analysts to search for totalizing accounts of a composer's individual "sound."

I agree that Stravinsky's music sounds characteristically Stravinskian. But I do not think that there need be any single explanation of why this is so. (Similarly, I do not think there is any non-complex explanation of why Mozart sounds like Mozart, or why Charlie Parker sounds like Charlie Parker.) Instead, the "unity" that we perceive in Stravinsky's music may be the result of a multitude of disparate factors which together constitute the "Stravinsky sound." In place of van den Toorn's *essentialist* account, I am therefore proposing something more like a *family resemblance*: an explanation in which the perceived unity of Stravinsky's music is due to a cluster of different techniques, no one of which is truly central to the composer's style. Octatonicism is one of these techniques, but so are polyscalar superimposition, modal use of the non-diatonic minor scales, and many others.

It is in this spirit, then, that I would suggest we return to the familiar picture of Stravinsky as pluralist, a *bricoleur* who used a variety of materials possessing no systematic unity. This is a composer who—to use Isaiah Berlin's tired but useful metaphor—was

more fox than hedgehog, a man who knew many small musical tricks rather than a single large one. This is a musician who cared not a whit about technical explanations or theoretical concepts. He is the composer who never once spoke about the octatonic scale, and who described the Petrouchka chord as being in “two keys.” This Stravinsky worked at the piano, finding the note that was right (though most other composers would have heard it as “wrong”) through the power of one of the century’s great musical ears. Some may feel that this picture cannot account for the unity of Stravinsky’s language, the characteristic “Stravinsky sound” that persists across radical stylistic changes. But others can take heart in the thought that “unity” need not be a matter of any one specifiable technique, much as a rope may be unified though no one thread runs along its length. Stravinsky’s musical style, one might say, is a family of practices, of mixed Russian and French heritage, a motley assemblage that still manages to produce the impression, if not the analytically obvious fact, of unity.

#### LIST OF WORKS CITED

- Antokoletz, Elliott. 1984. Review of *The Music of Igor Stravinsky*, by Pieter C. van den Toorn. *Journal of the American Musicological Society* 37: 428–36.
- Berger, Arthur. [1963] 1968. “Problems of Pitch Organization in Stravinsky.” In *Perspectives on Schoenberg and Stravinsky*. Edited by Benjamin Boretz and Edward T. Cone. New York: Norton, 123–54. Originally in *Perspectives of New Music* 2.1: 11–42.
- Boretz, Benjamin. [1972] 1995. “Meta-Variations, Part IV: Analytic Fallout (1).” In Volume 1 of *Meta-variations/Compose Yourself*. Red Hook: Open Space. Originally in *Perspectives of New Music* 11.1: 146–223.
- Casella, Alfred. 1924. “Tone-Problems of Today.” *Musical Quarterly* 10: 159–71.
- Craft, Robert. 1984. “Pluralistic Stravinsky.” In *Present Perspectives*. New York: Alfred A. Knopf.
- Forte, Allen. 1955. *Contemporary Tone Structures*. New York: Columbia University Press.
- Gervais, Françoise. 1971. *Etude comparée des langues harmoniques de Fauré et de Debussy*. 2 volumes, special numbers 272–3 of *La Revue Musicale*.
- Harrison, Daniel. 1997. “Bitonality, Pentatonicism, and Diatonicism in a Work by Milhaud.” In *Music Theory in Concept and Practice*. Edited by James M. Baker, David W. Beach, and Jonathan W. Bernard. Rochester: University of Rochester Press, 393–408.
- Hill, Peter. 2000. *Stravinsky: The Rite of Spring*. New York: Cambridge University Press.
- Howat, Roy. 1983. *Debussy in Proportion*. New York: Cambridge University Press.
- Kielian-Gilbert, Marianne. 1991. Review of *Stravinsky and The Rite of Spring: The Beginnings of a Musical Language*, by Pieter van den Toorn. *Music Theory Spectrum* 13: 252–9.
- Kostka, Stefan and Payne, Dorothy. 1989. *Tonal Harmony*. Second Edition. New York: Alfred A. Knopf.
- Krumhansl, Carol. 1990. *Cognitive Foundations of Musical Pitch*. New York: Oxford University Press.
- Messiaen, Olivier. 1956. *The Technique of My Musical Language*. Translated by John Satterfield. Paris: A. Leduc.
- Moevs, Robert. 1980. Review of *The Harmonic Organization of The Rite of Spring*, by Allen Forte. *Journal of Music Theory* 24: 97–107.
- Perle, George. 1977. “Berg’s Master Array of the Interval Cycles.” *Musical Quarterly* 63: 1–30.
- Pressing, Jeff. 1978. “Towards an Understanding of Scales in Jazz.” *Jazz Research* 9:25–35.
- Smith, F. Joseph. 1979. *The Experiencing of Musical Sound: Prelude to a Phenomenology of Music*. New York: Gordon and Breach.
- Straus, Joseph. 1984. Review of *The Music of Igor Stravinsky*, by Pieter van den Toorn. *Journal of Music Theory* 28: 129–34.
- Stravinsky, Igor, and Craft, Robert. 1962. *Expositions and Developments*. New York: Doubleday.

- Taruskin, Richard. [1987] 1990. "Chez Petrouchka: Harmony and Tonality chez Stravinsky." In *Music at the Turn of the Century*. Edited by Joseph Kerman. Berkeley: University of California Press. Originally in *Nineteenth Century Music* 10: 265–86.
- . 1996. *Stravinsky and the Russian Traditions*. Berkeley: University of California Press.
- Tymoczko, Dmitri. 1997. "The Consecutive Semitone Constraint: A Link Between Impressionism and Jazz." *Intégral* 11: 135–79.
- van den Toorn, Pieter. 1983. *The Music of Igor Stravinsky*. New Haven: Yale University Press.
- . 1987. *Stravinsky and the Rite of Spring: The Beginnings of a Musical Language*. Berkeley: University of California Press.
- Walsh, Stephen. 1984. "Review-Survey: Some Recent Stravinsky Literature." *Music Analysis* 3: 201–8.

- Whittall, Arnold. 1975. "Tonality and the Whole-tone Scale in the Music of Debussy." *The Music Review* 36: 261–71.
- . 1982. "Music Analysis as Human Science? *Le Sacre du Printemps* in Theory and Practice." *Music Analysis* 1: 33–54.

#### ABSTRACT

The importance of the octatonic scale in Stravinsky's music has consistently been overstated. While octatonicism is an aspect of Stravinsky's technique, it is just one of a number of different components that jointly produce the "Stravinsky sound." The article focuses on two techniques that have often been mistaken for octatonicism: modal uses of the non-diatonic minor scales; and the superimposition of elements that belong to different scalar collections.