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**Goldsmiths**  
UNIVERSITY OF LONDON

Gloria Toplis

## Stravinsky's Pitch Organisation Re-examined

Pieter C. Van den Toorn, *The Music of Igor Stravinsky* (New Haven, Connecticut: Yale University Press, 1983), £25.00

It was at the time that the first issues of *Perspectives of New Music* appeared during the early 1960s that a significant corpus of analytical writings on the music of Stravinsky began to be established. The new journal included Edward T. Cone's influential analysis of *Symphonies of Wind Instruments* (1920), in which he shows that the continuity of the music is constantly being interrupted because blocks of

material, each involving different textures, registers, harmonies, rhythms, and metres, are set synchronically side by side; when considered apart from their immediate context, the blocks may be seen to possess one or another of these parameters in common.<sup>1</sup> The same author has defined the structuring of the first movement of the *Symphony in C* (1938-40)—one of the neoclassical works most obviously akin in spirit to Classical models—not in terms of the tonal relationships of sonata form, but in terms of the temporal proportion to one another of the sections (established by means of rather ill-defined tonal areas), which is very much the same as that of a typical sonata form movement.<sup>2</sup>

Stravinsky students in the sixties were strongly influenced by the somewhat scathing and (in the opinion of later analysts) harmful remarks of Pierre Boulez on the composer's compositional technique in works following *The Rite of Spring* (1911-13). Comparing Stravinsky unfavourably with his more adventurous Viennese contemporaries because of his own view of technical progress, Boulez propounded the idea that after *The Rite* Stravinsky ceased any attempt to invent a new language, and fell back on the 'prop' of traditional procedures and techniques (he spoke of modality as well as tonality). The typical minor/major thirds, diminished and augmented octaves, 'displaced' bass notes, and 'avoided notes' that abound in the neoclassical works were interpreted by Boulez as mannerisms grafted onto an established mode of organisation.<sup>3</sup>

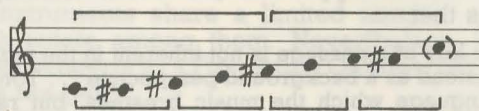
Essential to Boulez' thinking were his conclusions about the meaning of one of the few passages in Stravinsky's copious writings in which a technique for establishing pitch relationships is hinted at. The passage in question has been a point of departure for many who have attempted a serious investigation of this aspect of Stravinsky's music:

So our chief concern is not so much what is known as tonality as what one might term the polar attraction of sound, of an interval, or even of a complex of tones. The sounding tone constitutes in a way the essential axis of music . . . All music being nothing but a succession of impulses and repose, it is easy to see that the drawing together and separation of poles of attraction in a way determine the respiration of music.<sup>4</sup>

In Boulez' opinion the 'poles of attraction' were none other than the tonic, dominant, and subdominant. Other analysts were more guarded in their interpretation. Arthur Berger, in perhaps the most interesting and well-substantiated study of the 1960s dealing with pitch relationships, favoured an approach to the music that does not presuppose the presence of tonality as a crutch.<sup>5</sup> He was concerned with passages from the works of the Russian and neoclassical periods, from which he extrapolated the 'octatonic' scale—an alternation of semitones and tones (the scale that forms Messiaen's second mode of limited transposition). The octatonic scale allows the division of the octave into halves at the tritone, the two segments having the same interval content; each tritone can be further divided into two minor thirds, similarly equivalent in interval content (Example 1).

Because of its symmetrical partitioning of the octave, the use of the octatonic scale as a basis for composition offers different possibilities from the familiar major scale, which possesses no such symmetrical ordering of intervals but divides at the dominant under the dictates of traditional tonal practice—the system of 'functional tonality'. It is not surprising that a theory positing the existence in Stravinsky's music of a scale that offers a means of evading dominant-tonic polarity should appeal to anyone trying to demonstrate that this music does not

### Example 1



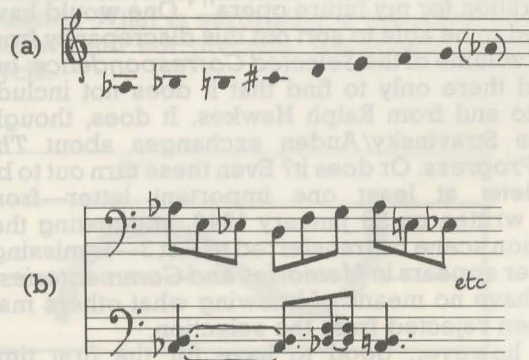
conform to the dictates of functional tonality. The appropriateness of the octatonic theory to Stravinsky's output becomes increasingly obvious the more closely the constitution of the scale itself is examined. For example, each degree articulating a division at the minor third supports both a minor and a major triad—in Example 1 C supports the triads C-E flat-G and C-E-G, E flat supports the triads E flat-G flat-B flat and E flat-G-B flat, and so on; overlapping tetrachords a minor third apart contain interlocking minor/major thirds—C-C sharp-D sharp-E, D sharp-E-F sharp-G, F sharp-G-A-A sharp, A-A sharp-C-C sharp. There is scarcely a work of Stravinsky's that does not feature minor/major triadic interplay.

Berger's octatonic theory has now been extensively applied to Stravinsky's music by Pieter Van den Toorn. His book, for which a two-part article published in 1975 served as a preliminary study,<sup>6</sup> covers a wide variety of works, starting early and tracing the composer's progress through what are termed his two 'changes of life'—from Russian to neoclassical and from neoclassical to serial periods. Some 20 works that lend themselves particularly well to deductions about octatonic practice are selected for detailed analysis; these range chronologically from *The Firebird* (1910) to *Abraham and Isaac* (1962-3).

In an early chapter on *The Firebird* Stravinsky's method of switching between octatonically derived material and passages based on the major scale, with its associated tonal relationships, is shown to have a precedent in the operas and symphonic poems of his teacher, Rimsky-Korsakov; Rimsky frequently depicts 'magical' characters by means of exotic sounds based on the octatonic scale, whereas real-life figures are portrayed in tonal music. Van den Toorn regards the block juxtaposition of octatonic with non-octatonic material as essential to Stravinsky's developing compositional technique; and he would explain the abrupt changes observed by Cone as the inescapable result of using the octatonic scale with all its peculiar attributes.

A passage such as that in Example 2b is melodically and harmonically static; it relies on the articulation of the two (embroidered) dyads A flat-E and D-F, together spanning the interval of a tritone (A flat-D), over their transposition into the complementary tritone (D-A flat), where they appear as B flat-D and A flat-B; all the notes here except E flat are accounted for by the octatonic collection shown in Example 2a.

### Example 2



## Example 3

The celebrated 'Petruška chord' (Example 3b), referable to the octatonic collection of Example 3a, is similarly capable of interpretation as a static entity, a 'complex sonore'<sup>7</sup> in which no one element asserts priority over the others—this interpretation provides an alternative to the usual explanations involving 'bitonality' or 'polytonality'. Static sonorities such as those in Examples 2b and 3b yield themselves in only a very limited way to development because of the nature of the scale on which they are based; indeed 'development' is confined mainly to transposition. To continue in Van den Toorn's words:

For as here defined, (0, 3, 6, 9) symmetrical construction<sup>8</sup> within blocks defies internally motivated 'progress' or 'development' along traditional tonal lines (the sense of harmonic progression, resolution, or cadence associated with tonality and the diatonic C-scale). Change, 'progress', or 'development' is possible only by abruptly cutting off the symmetrically conceived deadlock, only by terminating activity and abruptly juxtaposing it with something new in the collectional reference or in its partitioning. . . . In other words, juxtaposition, like superimposition, is no mere formality, no mere architectural curiosity to be heard and understood solely in terms of 'form' . . . Abrupt block juxtaposition is *content-motivated*, prompted (one might say necessitated and brought into being) by the static, non-progressive nature of the balance, polarity, or locked confrontation of Stravinsky's octatonic settings. [pp.62-3]

This description relates more or less convincingly to the works of the Russian period, but if octatonic theory is to be applied to the works of Stravinsky's neoclassical period, a considerable degree of octatonic/diatonic interaction has to be allowed for. In the neoclassical and serial literature extensive passages in which the octatonic scale is used exclusively are rare, though the minor/major triads which are central to a particular work or section of a work may sometimes be referable to one of the octatonic collections. In the neoclassical works the fact that one triad, the tonic, predominates (even if it is not defined in terms of the harmonic relationships intrinsic to functional tonality) means that Van den Toorn's essential prerequisite for regarding material as octatonically derived—the potential for four equal tonal centres—is lacking. This criterion is in fact seldom met in the neoclassical period, yet in spite of his earlier assertion Van den Toorn finds it difficult to let go of the octatonic explanation, even when it leads him into rather questionable views of stylistic evolution:

Thus all neoclassical manifestations of . . . 'minor-major third' emphasis, whether found in passages explicitly octatonic or not, are here viewed as having their origin in the octatonic pitch collection. Evidence suggests that Stravinsky was drawn to the emphasis by way of his earlier invention with referentially octatonic material. [p.265]

In discussing Stravinsky's two 'changes of life'—in particular the conversion to serialism—Van den Toorn quotes at length from the composer's own statements, recorded in the volumes of dialogues with Robert Craft.<sup>9</sup> While he sometimes naively falls prey to the danger of too literal interpretation of

Stravinsky's words, it is useful to have this substantial documentation relating to Stravinsky's adoption of twelve-note technique; the extracts also reveal how difficult it is to discern the composer's motive for beginning to use serial processes. Though Van den Toorn revamps Henri Pousseur's observation that, in terms of internal construction Stravinsky's early sets—for example those used in *Agon* (1953-7)—bear a strong similarity to the twelve-note sets of Webern—for example that of the *Variations op.30*<sup>10</sup>—he abandons any attempt at interpreting Stravinsky's manipulation of sets, either in terms of his heritage from the Viennese or in terms of the theoretical constructs put forward by exponents of serial theory in the USA over the last two decades; he simply remarks:

were we to confine our scrutiny solely to the 'Bransle simple', 'Bransle gay', and 'Bransle double' of *Agon* (a stretch of some one hundred measures), we would find exemplified nearly all of the so-called classical techniques commonly inferred from the music of Schoenberg, Webern, and Berg—the very stock in trade itemized, say, in a compendium such as George Perle's *Serial Composition and Atonality*. . . . [In fact] we survey the scene not so much from the standpoint of its literature and theoretical haunts as from that of Stravinsky's past, confronting the at times elusive but nonetheless unmistakable circumstance that somehow Stravinsky remains Stravinsky. [pp.386-7]

In keeping with Van den Toorn's central hypothesis, of course, 'the scene' has to involve the octatonic scale; where the serial works are concerned the scale is understood as operating in the background, influencing set construction, choice of set forms, and transpositions.

At this point in the text even the most innocent student must become aware that, in his careful avoidance of the application of one theory to Stravinsky's *oeuvre*—that of functional tonality—Van den Toorn has substituted another equally binding—that of the operation of the octatonic scale. To do him justice, however, his close examination of certain of the later, large-scale serial works, such as *Abraham and Isaac* (he also refers to *Requiem Canticles*, 1965-6), adequately demonstrates what he terms Stravinsky's 'hexachordal transposition-rotation scheme'.

Following Berger, Van den Toorn employs the now widely accepted integer notation to designate melodic and harmonic complexes; this has the advantage, of course, of obviating the need for terms that imply the use of functional tonality, and conveniently circumvents awkward verbal descriptions. There is an important difference, however, between Van den Toorn's practice and that of Allen Forte, for example (one of the few other analysts to devote a book to Stravinsky's music—though he deals with only one work).<sup>11</sup> In selecting a particular degree of an octatonic collection for the designation 0, Van den Toorn implies the priority of that pitch class in the work or passage concerned, whereas Forte's system avoids such implications, since C is always 0, D flat always 1, D always 2, and so on. The 'structural level' diagrams used throughout Van den Toorn's book, which necessarily isolate particular pitch classes of priority at the 'background' level, can be confusing when they are superimposed on a theory that leans towards an interpretation of music in terms of interlocked centres. It is interesting that a different theory involving levels has lately been tested on some of the works discussed by Van den Toorn: in a disappointingly sketchy study Joseph Straus has applied Schenkerian ideas of structure and prolongation to Stravinsky's music, which results in the emergence of a pattern of dynamic progressions

between tonal centres.<sup>12</sup>

Van den Toorn's book lucidly expounds, explores, and illustrates a theory, but the theory itself hangs on a thin thread: the author admits that there exists not a single mention of the octatonic scale in all the Stravinsky-Craft writings. Perhaps, as he put it in 1975:

In our quest for a theoretical framework and an accompanying analytical approach (or approaches) which will satisfy our binding instincts . . . we may have to contend not with consistency, identity, or distinctiveness, but with consistencies, identities, and distinctivenesses.<sup>13</sup>

- <sup>1</sup> Edward T. Cone, 'Stravinsky: the Progress of a Method', *Perspectives of New Music*, vol.1, no.1 (1962), pp.18-26; reprinted in *Perspectives on Schoenberg and Stravinsky*, ed. Benjamin Boretz and Edward T. Cone (Princeton: Princeton University Press, 1968), pp.156-64.
- <sup>2</sup> Edward T. Cone, 'The Uses of Convention: Stravinsky and his Models', *Musical Quarterly*, vol.48 (1962), p.287; reprinted in *Stravinsky: a New Appraisal of his Work*, ed. Paul Henry Lang (New York: Norton, 1963), p.21.
- <sup>3</sup> Pierre Boulez, 'Trajectoires', *Relevés d'apprenti* (Paris: Editions du Seuil, 1966), pp.245-50; Eng. trans. as 'Trajectories: Ravel, Stravinsky, Schoenberg', *Notes of an Apprenticeship*, trans. Herbert Weinstock (New York: Alfred A. Knopf, 1968), pp.242-64.
- <sup>4</sup> Igor Stravinsky, *Poetics of Music in the Form of Six Lessons*, trans. Arthur Knodel and Ingolf Dahl (Cambridge, Mass.: Harvard University Press, 1947), p.49.
- <sup>5</sup> Arthur Berger, 'Problems of Pitch Organization in Stravinsky', *Perspectives of New Music*, vol.2, no.1 (1963), pp.11-42; reprinted in *Perspectives on Schoenberg and Stravinsky*, ed. Boretz and Cone, pp.156-64.
- <sup>6</sup> Pieter C. Van den Toorn, 'Some Characteristics of Stravinsky's Diatonic Music', *Perspectives of New Music*, vol.14, no.1 (1975), pp.104-38; vol.15, no.2 (1977), pp.58-96.
- <sup>7</sup> Berger ('Problems of Pitch Organization', p.137) borrows the term from Stravinsky's *Poetics*.
- <sup>8</sup> See below for Van den Toorn's integer notation.
- <sup>9</sup> Originally published in six volumes by Doubleday and Alfred A. Knopf in New York: *Conversations with Igor Stravinsky* (1959); *Memories and Commentaries* (1960); *Expositions and Developments* (1962); *Dialogues and a Diary* (1963); *Themes and Episodes* (1966); and *Retrospectives and Conclusions* (1969).
- <sup>10</sup> Henri Pousseur: 'Stravinsky by Way of Webern: the Consistency of a Syntax', *Perspectives of New Music*, vol.10, no.2 (1972), pp.13-51; vol.11, no.1 (1972), pp.112-45.
- <sup>11</sup> Allen Forte, *The Harmonic Organization of 'The Rite of Spring'* (New Haven, Conn.: Yale University Press, 1978).
- <sup>12</sup> Joseph Straus, 'Stravinsky's Tonal Axis', *Journal of Music Theory*, vol.26 (1982), pp.261-90.
- <sup>13</sup> Van den Toorn, 'Some Characteristics of Stravinsky's Diatonic Music', pp.105-6.