

**A Construct-Centric Approach to Harmony in Stravinsky's *Mass*:
Stravinsky's Use of 0257 and 0134 Tetrachords to Define Transient
Tonal Areas Delineated By Rhythmic/Metric Blocks With an
Exploration Of Performance Considerations**

by

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Chapter 1: Introduction and Background

Introduction

Since Arthur Berger introduced the theoretical concept of tonal centricity in 1963 in his article “Problems of Pitch Organization in Stravinsky,” analysts have debated the merit and execution of that concept. Berger defines music “that is centric (i.e. organized in terms of tone center) but not tonally functional,” and debates the reasons for an analytical model that explains centricity in 20th-century music, particularly that of Stravinsky.¹ Tonal centricity as defined by Berger contrasts with tonal function, as understood through the Schenkerian concept of prolongation, the primary musical analytical tool at the time. The main difference resides in the orientation of the principal sonority, that is, the tone center in a centrist model and the tonic in a prolongational model. In a centrist model, all notes proceed in conjunction with the tonal center, but they may change around that center without changing its definition. In a prolongational model “the generation of the harmonic and contrapuntal substance of a piece” is produced “by a linear elaboration of its fundamental structure,” or tonic, and therefore is

¹Arthur Berger, “Problems of Pitch Organization in Stravinsky,” *Perspectives of New Music* II/2 (1963): 11.

dependent upon that tonic for definition.² Berger's recognition of tonal centricity in the music of 20th-century composers continues to elicit analyses aimed at defining centricity. One centrist model is a construct-centric analysis, or, according to Ethan Haimo, "lacking a tonic," but "viewed in terms of a reference tetrachord or hexachord."³

Construct-centric analyses uncover sets smaller than scales (e.g. tetrachords or hexachords) that operate as an organizational mechanism for a piece of music. Boretz, for example, in "Meta-Variations, Part IV," suggests that the DEGA tetrachord centers the First Scene of *Petrouchka*. According to Boretz, different scales and referential sonorities change fluidly around the DEGA tetrachord without changing its central organizational capacity.⁴ Construct-centric models do not deny the presence of tonal areas determined by repeated triads, use of scales or scale fragments etc., but acknowledge that certain other construction patterns operate at a more basic organizational level than these tonal vestiges.

The following analysis uses a construct-centric model to suggest that Stravinsky organized his *Mass* upon two tetrachords, pc sets 0257 and 0134. These tetrachords in turn combine to create two scales, the diatonic octad and the octatonic scale. At any given time, two or more of these tetrachords influence harmonic activity and define tonal

²William Drabkin, "Prolongation," Grove Music Online ed. L. Macy (Accessed 12 November, 2006), <<http://www.grovemusic.com>>

³ Ethan Haimo, "Problems of Hierarchy in Stravinsky's Octet," in *Stravinsky Retrospectives*, ed. Ethan Haimo and Paul Johnson (Lincoln: University of Nebraska Press, 1987), 36-54.

⁴ Benjamin Boretz, "Meta-Variations, Part IV: Analytic Fallout (II)," *Perspectives of New Music* II/2 (1973): 167-175.

areas in reference to the two scales. Tonal areas exert a level of priority within a passage but do not influence the central organizational role of the tetrachords. Rather, they derive from tetrachordal interaction through the creation of scales. Tonal areas move fluidly from one to the next, and thereby reflect the transient nature of tonality in the *Mass*.

Tonal areas in the *Mass*, because they are transient, do not define form. Likewise, the 0257 and 0134 tetrachords transition smoothly from one to the next with equally little form-defining capacity. Formal definition in the *Mass*, therefore, depends upon other considerations, particularly rhythmic/metric blocks. Because harmony in post-tonal music relates to form, this analysis will open with a discussion of form defined by rhythmic/metric blocks. A definition of the 0257 and 0134 tetrachords will follow that discussion.

In chapter three an analysis of the tetrachords in the first four movements of the *Mass* will show their defining capacity as an organizational tool, and the ways Stravinsky establishes tonal areas through the aid of octatonic scales and diatonic octads. Chapter four presents an analysis of the *Agnus Dei* from start to finish to demonstrate Stravinsky's use of rhythmic/metric blocks, tetrachords, scales, and tonal areas in a full movement. In addition, chapter four presents a discussion of intervallic imitation in canonic composition. These compositional procedures and their placement throughout the work suggest specific performance considerations that differ from performance considerations in the tonal repertory. Growth, for example, reflects a conflict between forward motion created by 0134 tetrachords and stasis created by 0257 tetrachords. The final chapter will

offer an explanation of performance considerations based upon the theoretical discussion in chapters two through four.

Historical Information and Literature Review

Stravinsky is one of the most important 20th-century composers to have devoted considerable time to choral composition. More important than the number of works perhaps, is Stravinsky's approach to choral music. His compositional techniques yield a unique music, one that stretches choral musicians through its approach, and therefore one that deserves continuous exploration and performance. Included among his sacred works are his three motet settings (*Pater Noster*, *Ave Maria*, and *Credo*), *Threni*, *Anthem*, *The Flood*, *Requiem Canticles*, *Cantata*, *Symphony of Psalms*, and his only *Mass* (See Appendix A for a complete list).

Information about Stravinsky's religious devotion is somewhat varied. He attended church as a child, though his parents were not very religious. They attended a Russian Orthodox church, which featured only unaccompanied singing, and in which singing played an integral role. After leaving the church as a young adult, Stravinsky made his way back to the Russian Orthodox church in the 1920s and wrote three motets, *Otche nash* (1926), *Simvol veri* (1932), and *Bogoroditse devo* (1934), to be performed in the services at his new church. These three pieces were translated into Latin in 1949 as the *Pater Noster*, *Credo*, and *Ave Maria*, the liturgical equivalent texts to the original Russian motets.

Stravinsky moved to the United States from Paris in 1939 after fleeing Europe. He lived in the United States for the rest of his life. Stravinsky conceived the *Mass* as a reaction to some masses by Mozart that he read in Los Angeles soon after moving to the United States. As he tells the story, “My Mass was partly provoked by some Masses of Mozart that I found in a secondhand music store in Los Angeles in 1942 and 1943. As I played through these rococo-operatic sweets-of-sin, I knew I had to write a Mass of my own, but a real one.”⁵ He began work on the *Mass* in 1944. By the end of the year he had completed work on the *Kyrie* and *Gloria*, but did not resume work on the rest of it until 1947. The complete *Mass*, with few adjustments made to the first two movements after 1944, was finished in 1948 and first performed in 1949. Stravinsky had hoped that it would be used liturgically. He wrote a Roman Catholic mass because the Russian Orthodox church would not allow instruments, and, he could “endure unaccompanied singing in only the most harmonically primitive music.”⁶

The *Mass* falls at the end of Stravinsky’s neoclassical compositional period which ostensibly ended in 1952 with the composition of *Cantata*. The first years of 1940 saw a series of less-successful pieces by the composer including many attempts to find work with the film industry in Hollywood; each ended in failure. His best received pieces during this thirteen-year time period after his move to the US and before the beginning of his serial period were *Orpheus* (1947) and *The Rake’s Progress* (1948-1951). The *Mass*, was completed during a time in Stravinsky’s life when he found less public support, and

⁵ Igor Stravinsky and Robert Craft, *Expositions and Developments* (New York: Doubleday and Company, 1962), 65.

⁶ *Ibid.*, 65.

at the end of over two decades of exploration of the neoclassical compositional style. It both reflects his commitment to writing works that engaged references to the past, and his desire to move away from these models. Some compositional elements in the *Mass* appear in his earlier works, such as use of the major 7th, rhythmic/metric blocks, manipulated word rhythms, and the 0134 tetrachord. Other elements that surface frequently in his earlier music, such as the use of the 0235 tetrachord, “Russian” parallel chords, and the full use of the octatonic scale appear less frequently in the *Mass*.

The *Mass* score includes four part chorus, five woodwinds (oboe 1 and 2, English horn, bassoon 1 and 2) and five brass instruments (trumpet 1 and 2 in Bb and C, and trombone 1, 2, and 3).⁷ The score dictates a chorus of children’s voices for the upper parts, and men for the bottom two. Vocal solos appear in the *Gloria* (SA) and *Sanctus* (SATB). The *Mass* contains the traditional five movements of the Ordinary and lasts approximately 17 minutes.⁸ In general Stravinsky does not set the text dramatically, even in the *Credo* where composers typically offer dramatic text setting. He does, however, incorporate some established compositional procedures such as the tripartite setting of the *Kyrie*. In it, each voice sings “Kyrie” three times in the opening section, and the “Christe” and final “Kyrie” appear in three distinct blocks each. Further, he sets the *Agnus Dei* text three times, and separates through musical means the principle textual divisions in the *Credo* (1. “Credo” to “et homo factus est,” 2. “Crucifixus” to “non erit finis” and 3. “Et spiritum sanctum” to “Amen”).

⁷ He uses the Italian words *discanti*, *alti*, *tenori*, and *bassi*, *oboi*, *orno inglese*, *fagotti*, *trombi*, and *tromboni*.

⁸ The “Hosanna” and “Benedictus” are part of the *Sanctus*.

The first performance, in the Teatro alla Scala, Milan, on October 27, 1948, was directed by Ernest Ansermet who conducted a choir of men and women. The next two premieres, in London and New York, also were performed in concert halls with mixed adult voices. In February 1949, Craft conducted the first performance with children's voices in New York, and in December of that year, the UCLA A Cappella Choir and Los Angeles Chamber Symphony, directed by Roger Wagner, performed the work for the first time in a liturgy, but with organ accompaniment. After this performance Stravinsky considered writing an organ part, but never did so.

Public reception of the piece was mixed; some enjoyed it, others criticized the performances, and some criticized the work itself, but much was said. Robert Craft's "1949 Stravinsky's Mass: A Notebook," published in Edwin Corel's essay collection entitled *Igor Stravinsky*, defends the work through a brief analysis.⁹ Likewise, Richard Goldman, in 1949, published a brief defense of Stravinsky and the *Mass* in light of the recent negative and confusing press the work had received.

Goldman felt that the discussion surrounding religion and archaic references, found frequently in Craft's article, shortchanged Stravinsky and misrepresented him to a public less familiar with older music, to say nothing of their familiarity with newer music.¹⁰ He wrote;

The Mass has been discussed in terms of its conscious (or self-conscious?) archaism; it has been represented as the work of a composer

⁹Robert Craft, "1949 Stravinsky's Mass: A Notebook" in *Igor Stravinsky*, ed. Edwin Corle (New York: Merle Armitage, 1949): 201-206.

¹⁰ Richard F. Goldman, "Current Chronicle," *The Musical Quarterly* 35 (1949): 451-458.

lately devoted to the work of 14th-century masters, a kind of *Ars Novissima*. I cannot depose as to the extent of Stravinsky's study of Machaut, or, for that matter, of Perotinus, but I am not, on the other hand, convinced that this is a matter of great importance. I am aware, in the *Mass*, of melodic elements, contrapuntal relations, mannerisms of rhythm, cadences and open sounds that suggest at times what medieval music is supposed to have been; but I am far more aware of music that only Stravinsky could have written, and of elements that have for many years been apparent in his style.¹¹

The *Mass* elicited debate among music enthusiasts, perhaps due to public attitude toward Stravinsky at the time, yet for all of the discussion in and around 1949, it did not succeed in securing the *Mass* an important place in Stravinsky's oeuvre or a secure place in the liturgical canon.

Review of Literature on Stravinsky's *Mass*

The *Mass* is one of Stravinsky's less analyzed works, yielding only four published analyses (three of them fewer than ten pages), and several doctoral dissertations and masters theses. Those who have written about the *Mass*, Stravinsky and Robert Craft, Richard Goldman, Kofi Agawu, Don Moses, Eric Walter White, Nancy Brunnemer, Leslie Hennessey, Daniel Mahran and David VanZyeldt each approach the work from a unique angle, some historical and some theoretical. Their analyses primarily focus on tonal function with Agawu exploring a post-tonal Schenkerian analysis. This is largely because the *Mass*, as with many of Stravinsky's pieces, references tonality through

¹¹ Ibid., 453-454.

definable vestiges derived from the tonal system. They posit key centers, dominant-tonic (sometimes “dissonant tonic”) function, tonal hierarchy, Renaissance and Medieval derivatives, and voice-leading principles to prove that the work is a tonal piece. Still, for all of its similarities with past music, Stravinsky’s *Mass* is post-tonal and centric, and therefore depends upon organizational procedures beyond tonal derivatives. Important discussions within their work include references to tonal areas, the 0257 tetrachord, and rhythmic/metric blocks. These points reflect the interplay between tonality and construct centricity and begin the discussion that will follow in chapters two through five.

The published analyses of the *Mass* include Craft’s four-page commentary “1949 Stravinsky’s *Mass*: A Notebook,” Richard Goldman’s “Current Chronicle,” a brief discussion in Eric Walter White’s *Stravinsky: The Composer and His Works*, and V. Kofi Agawu’s “Stravinsky’s *Mass* and Stravinsky Analysis.”¹² Among the doctoral dissertations and masters theses by Don Moses, Leslie Hennessey, Nancy Brunnemer, David VanZyteld and Daniel Mahraun each approaches the *Mass* from a slightly different

¹² Craft, “A Notebook”; Goldman, “Current Chronicle”; V. Kofi Agawu, “Stravinsky’s *Mass* and Stravinsky Analysis” *Music Theory Spectrum* 11/2 (Fall 1989): 139-163; and Eric Walter White, *Stravinsky: The Composer and His Works* 2nd ed. (Berkeley: University of California Press, 1979).

perspective.¹³ Moses (1968) and Hennessey (1974) present a tonal analysis. Moses examines the work for the benefit of performance preparation. He adopts a critical stance toward rhythmic and text issues in addition to tonal ones. Hennessey offers an analysis that explores formal considerations and key centers from a strictly tonal perspective. Brunnemer (1993) and VanZyteld (1998) engage the subject from a historical perspective. They include the Roman Catholic church's official position on musical practice from 1903-1962, what is known of Stravinsky's own religious beliefs, information about the premiere, insight into Craft, Agawu and others, and an exploration of contemporary liturgical practice. Each attempts to provide meaningful information on the performance and understanding of the *Mass* through a summation of the history associated with it. Mahraun (2003) examines temporal/proportional relationships in the *Mass*, and suggests that tempo relationships centered on the golden mean and other important proportions contribute to the effectiveness of the work.

¹³ Don V. Moses, *A Conductor's Analysis of the Mass (1948) by Igor Stravinsky* (DMA diss., Indiana University, 1968); Leslie, P. Hennessey, "A Structural and Harmonic Analysis of Igor Stravinsky's *Capriccio for Piano and Orchestra* and *Mass*" (masters thesis, Indiana State University, 1974); Nancy Alice Brunnemer, *Igor Stravinsky's Mass: An Unacceptable Vehicle for The Roman Catholic Liturgy* (masters thesis, California State University, Long Beach, 1993); David William VanZytveld, *Igor Stravinsky's Mass: Toward an Appreciation of the Composer's Aesthetic* (masters thesis, University of California, Los Angeles, 1998); Daniel A. Mahraun, *Tempo, Duration, and Proportion in Stravinsky's Mass (1948)* (DMA diss., University of Colorado, 2003).

Robert Craft's "Notebook," Stravinsky's Comments, and Goldman's "Current Chronicle"

Craft's "Notebook" continues to influence *Mass* analysis because it appeared before any other analysis, and because Craft enjoyed a unique relationship with Stravinsky. In it, Craft presents a matter-of-fact approach to the *Mass*, and highlights surface tonal and pre-tonal references. The "Notebook," like the other essays in Corle's *Igor Stravinsky*, is brief, but provides an important first look at the tonal derivatives in the *Mass*.

He begins with a quotation attributed to Stravinsky as a comment to Evelyn Waugh, a journalist, in which he positions Stravinsky as a purist, the lone connection to a lost tradition, as a contrast to his contemporaries and immediate predecessors, and as a conduit of God. The quotation opens with the statement "My Mass was not composed for concert performances but for use in the church. It is liturgical and almost without ornament." And closes:

Liturgical music has practically disappeared, except, of course, the third rate academic kind. The tradition has been lost. Look at the Victorian hymnology which compressed into four-squares and brutally harmonized the most beautiful plainsongs. In Los Angeles one hears anything in church, Rachmaninoff, Tristan and Isolde [sic.]. The Credo is a kind of contact with God.

Craft's apparent attempt to boost Stravinsky's reputation through the use of this quotation reveals an insight into musical politics of the 1940s, and probably reveals something about Stravinsky's own image of himself at the time, or at least an image he wanted to

promote. Stravinsky (and/or Craft) attempts to project his own rightful place of importance as a conduit to a past tradition, one that lies before the Romantic era. Stravinsky/Craft also designate the *Mass* as “not composed for concert performances but for use in the church” implying his attempt to foster active piety by writing functional religious music in contrast perhaps to the radically non-liturgical requiem masses of Verdi or Berlioz.

In the rest of the essay Craft highlights Stravinsky’s connection with pre-Baroque music, and uses three separate tactics to establish a lineage between Stravinsky and Renaissance and Medieval composers. The first connects Stravinsky with less-known early composers. “Stravinsky has a deep admiration for the 14th century madrigals of Jacopo da Bologna,” Craft says. He continues, “Indeed, no 18th or 19th century composer could have heard, much less have the habit of the great bulk of Renaissance music.”¹⁴ The second tactic suggests that Stravinsky’s *Mass* represents a forgotten musical form, superior to other classical forms popular in the 1940s. He berates “The horned imperatives of symphonic program, solo recital program, chamber music and choral concert, opera,” as deterrents that “have all but wiped out some of the major literatures of music. Stravinsky composes another work which demands not only a familiarity with obsolescent cultures but a new or revived performance hierarchy.”¹⁵ Craft’s third tactic compares Stravinsky’s adopted Roman Catholicism with classical traditions of Lutheran composers in an attempt to distance Stravinsky from common-practice tonal music

¹⁴ Ibid., 202.

¹⁵ Ibid., 204.

altogether. “Stravinsky is predominantly Roman Catholic” he says, “but always with that rare angle from 6th century Ravenna (i.e. before the Russian Orthodox split).

The Mass itself is completely Roman Catholic. In a contrapuntal work this can only mean that it has avoided John [sic.] Sebastian Bach.”¹⁶ Craft, therefore, argues a case for Stravinsky’s superiority both as a composer and as a composer of sacred music by associating Stravinsky with past composers and with marginalized traditions. He advances a radically neoclassical stance, so much so that it might be termed neoMedieval, and advocates connections to earlier music in order to celebrate Stravinsky’s unique compositional style.

Craft’s analysis devotes five paragraphs to an exploration of Renaissance- and Medieval-derived surface elements, orchestration, use of modes, comparisons with other Stravinsky pieces, and rhythmic elements. Craft offers examples of ways that Stravinsky borrowed compositional elements, not outright quotations, from an earlier period.

“Plainsong,” “canon,” “organum,” “neumes,” and “concertante-ripieno vocal style” each hearkens back to previous compositional practices. For example, he suggests that “The Credo is redolent of plainsong, has a canonic Amen and a Plagal cadence. There is an exquisite use of Organum in the Gloria and an amazing revival of Gregorian Neumes in the Sanctus.”¹⁷ Craft also comments on orchestration, but not on color or voicing. Instead, he describes a neoclassical version of what mid-20th-century theorists believed likely to have accompanied voices in Medieval music.

¹⁶ Ibid., 205.

¹⁷ Ibid., 203.

The orchestra which Stravinsky says “tunes” his choir never plays quite the same music. It adds tones, sounds different root tones than appear in the vocal parts, stresses, underlines, imitates, counterpoints, sets off and augments the chorus. . . The sonority is altogether unlike anything before, including Stravinsky.¹⁸

With this statement Craft turns potential criticism of the *Mass* into praise. The chance that Stravinsky could be dismissed as borrowing compositional techniques from past music (a hallmark of neoclassicism) must have played an important role in the reception of Stravinsky’s later neoclassical works. Craft, therefore, attempts to celebrate Stravinsky’s neoclassical tendencies as uniquely original rather than academically derivative.

Craft’s two-paragraph musical analysis describes both tonal and pre-tonal musical elements. His comments are general, such as, “A major and infrequently mentioned shift effected by Stravinsky is his emphasis on the Phrygian,” and “The Mass is also marked by the use of the Dorian mode,” to which he provides loose references from the score (e.g. the ritornello at the end of the *Agnus Dei*). Interestingly, his references to these collections do not account for some important notes in the passages. For example, in

¹⁸ Ibid., 206. The dominant mid-20th-century understanding of Medieval and Renaissance performance practice hinged on a belief that vocal polyphony was accompanied, or at the least could be accompanied, by wind instruments. Daniel Leech-Wilkinson provides a convincing lineage of the musicological practices and beliefs that compelled the music community to believe this to be true. Stravinsky, being well-versed in Renaissance and Medieval music, would certainly have known of this view. Craft’s statement, therefore, attempts to distance Stravinsky from simply mimicking Medieval composers by showing that Stravinsky provides a different solution through a similar means. See Daniel Leech-Wilkinson, *The Modern Invention of Medieval Music* (Cambridge: Cambridge University Press, 2002).

reference to the final measures of the *Mass*, he says, “The effect of these two woodwind bars, Dorian after the quiet brass with its mixed C and C sharp, is serene and complete.” He does not attempt, however, to explain the C and C sharp inconsistency even though it maintains a relationship with the woodwind bars.¹⁹

Similarly, his comments on tonality are tantalizing, but left largely unexplored. In reference to the *Kyrie*, Craft speaks of “blocks of tonalities,” during which “In only 52 bars there are cadences in seven keys.” “One could write a book,” he concludes “on the systems of keys in this little piece.”²⁰ At one level, Craft is correct in his assessment of Stravinsky’s frequent and smooth tonal area shifts across blocks. However, his understanding of the piece seems to stay on the surface without penetrating to the deeper levels of organization. When he explains the Ab in the opening trombone line as “a kind of harmonic appoggiatura to the final G [the last chord of the *Kyrie*],” Craft stretches both the ability of the human ear to hear this phenomenon, and an understanding of the organization of the *Mass*.²¹ Like the rest of his analysis, at this moment Craft highlights an important surface element, one that deserves discussion, but he stops here rather than looking for reasons that explain how these key systems function and on what basis they survive.

Stravinsky himself seems to comment on Craft’s “Notebook” later in life during his and Craft’s published conversations. In *Expositions and Developments* (1962) the two have a brief conversation in which Stravinsky defends his *Mass* as a liturgically-

¹⁹ Ibid., 204.

²⁰ Ibid., 205-206.

²¹ Ibid., 206.

driven Roman Catholic piece. He explains why he wrote for the Catholic church and not the Russian Orthodox church and, while acknowledging that it had not been used liturgically as he had wanted, he defends his original intentions. After revealing that he was inspired to write a mass after looking at some of Mozart's masses, he concludes their discussion by saying "Incidentally, I heard Machaut's Mass for the first time a year after mine was composed, and I was not influenced in my Mass by any 'old' music whatever, or guided by any example."²² One must wonder if this is a direct response to Craft's comments or to public criticism of the *Mass*. Regardless, he makes clear that his compositional decisions in the *Mass* reflected a new compositional direction, not a copy of an old process. Like all of his neoclassical works, although obvious surface elements in the work reference older compositional processes, they are not themselves the central organizational scheme, but merely a surface reference.

Richard Goldman, like Craft, was quick to defend the *Mass* in the brief article he published in 1949 soon after the American premiere in New York. Goldman's principle conjecture is that Stravinsky's critics, as well as musical critics in general, had somehow taken a wrong turn. He is impatient with critics who cast Stravinsky's music as cold or sterile, and suggests that Stravinsky, in a league with Schoenberg, Webern, and Bartók, stands out as one of the best living composers of the time. He responds to the accusation that Stravinsky manipulates old musical processes for selfish, unmusical ends with the comment "With Stravinsky there is no pointless (or, to use the word of accusation: "sterile") imitation; if there is mannerism, it is mannerism of a sort that has become

²² Stravinsky, *Expositions*, 65.

integrated into a completely personal expression. There is much less inconsistency of ‘style’ in Stravinsky than in many composers who repeat themselves more obviously.”²³ Instead, Goldman sees a brilliant work, rich with a successful composer’s inner-personal stylizations, and brimming with performance potential. The last half of his article includes musical quotations from the *Mass*, but with little analysis. About the musical examples that he portrays that show chord progressions, rhythmic repetition, and orchestration (1-4 bars of each), Goldman says “Something remains to be said about the beauty of texture and freshness of color in this extraordinary work. . . The use of these instruments is a stroke of genius; the successive sounds, with or without the voices, the combinations, alterations, and permutations are breath-taking, and of a nature that even a musician fairly versed in orchestration does not anticipate.”²⁴ Like Craft, Goldman notices that Stravinsky created a work whose intricacies would take time to uncover. His comments on the piece, as he acknowledges, remain on the surface, but his admiration for it suggests a desire to understand further the basis on which Stravinsky develops brilliant surface elements.

Eric Walter White’s *Igor Stravinsky*

White’s 1966 *Stravinsky: The Composer and His Works* retains an important place in the literature written about Stravinsky. In this first far-reaching biography of the composer, White offers a brief analysis of each of Stravinsky’s compositions. After

²³ Goldman, “Current Chronicle,” 454.

²⁴ *Ibid.*, 456.

providing a brief history of the *Mass*, information about its first performance, and an overview of some of Craft's ideas White writes a five-page analysis of the work. This discussion focuses on large-scale formal centricity and a few interesting surface elements, after the example of Craft.

White opens his analysis with, "The *Credo* is the centre of the *Mass*, and the other movements are grouped, more or less symmetrically, round it."²⁵ The second level of symmetry, the *Gloria* and *Sanctus*, move away from the *Credo* on either side, each containing vocal soloists. The final level of symmetry, though White does not say it specifically, is the *Kyrie* and *Agnus Dei*, one must assume, because they are fully choral throughout. Although one could probably make a detailed case for symmetrical form in the *Mass*, White does not discuss the several movements that display distinct internal symmetry. His remarks do, however, begin a discussion of formal implications in the *Mass*, a discussion that is integral to an understanding of the piece.

White, like Craft and Goldman, comments on several surface elements. In one such comment, he explains that Stravinsky uses chant in the *Credo* and that this is only the third time in any work that he did so. White suggests that Stravinsky resorted to chant because of the amount of text in the *Credo*, but rightly acknowledges that in Stravinsky's motet setting of the *Credo* he does not do the same. White probably labels the *Credo* as chant-like to draw a parallel to pre-tonal music; however, it is his description of the marked nature of the chords that "move slowly through their measured cadences," and the syllabification of words that "goes on at a measured quaver pace and

²⁵ White, *Igor Stravinsky*, 408.

at an unvarying piano level” that better describes the movement.²⁶ Measured cadences, a measured quaver pace, and an unvarying piano level point to the amount of control that Stravinsky places upon his performing forces in order that specific elements, the text and certain harmonies in particular, are heard. In another comment he describes the “Amen” as “a separate porch attached to a building,” a comment that recognizes Stravinsky’s rhythmic/metric blocks, but without further explanation.²⁷

In other surface-focused comments he describes Stravinsky’s use of soloists, and comments on melodic similarity between the “Hosanna” and melodies in *Les Noces*. His only comment about the *Kyrie* echoes Craft by saying that the *Kyrie* “cadences in at least seven different keys.”²⁸ He also briefly discusses the ritornello found in the *Agnus Dei*. Recalling a quotation by Ansermet bemoaning Stravinsky’s placement of the G-D fifth in the otherwise A major final cadence of the *Sanctus*, White argues that the unadulterated D major chord at the end of each ritornello “seems almost too obvious and simple a solution to the maze of ten-part polyphony that precedes it and is apt (rather inappropriately) to remind the listener of the satirical treatment of the Lutheran chorales in *The Soldier’s Tale*.”²⁹ With this treatment White opens a door into post-tonal analysis, but only barely. He recognizes the appropriateness of the added G-D fifth and the oddness of the unadulterated D major chord at the end of several 5- and 6-note chords. His vantage

²⁶ Ibid.

²⁷ Ibid., 408.

²⁸ Ibid., 410.

²⁹ Ibid., 411.

point remains tonal, though, and his conclusion relies on an analysis that separates the obvious tonal vestiges from the post-tonal complexities.

V. Kofi Agawu's "Stravinsky's *Mass* and Stravinsky Analysis"

Agawu's article provides the most thorough analysis of the *Mass* to date. Agawu gives a post-tonal analysis of the piece through a tonal lens by using a version of Schenkerian analysis to posit conclusions about Stravinsky's compositional process. He writes that

By taking my lead from Schenker—a lead that goes in directions not necessarily advocated by him—I seem to be arguing the case for a tonal rather than an atonal *Mass*. It is not on such a sweeping and simplistic declaration that my argument turns, however. The tension between “old” and “new” which inevitably confronts Stravinsky analysts is an important motivation here too, but it should not obstruct the central task of suggesting ways in which, to put it simply, we might hear or learn to hear the *Mass*.³⁰

He bases this analysis on “what Schenker calls *Zusammenhang*—coherence—or, more specifically, ‘connection,’ the ultimate indicator of dynamism both in tonal and (arguably) in atonal music.”³¹ “The aim of the present study” he says “is to describe the principal methods of pitch organization in a single work of Stravinsky’s,” and he does so by labeling pitch class priority as an attempt to “stress Schenker’s idea of ‘connection,’

³⁰ Agawu, “Stravinsky’s *Mass*,” 141.

³¹ *Ibid.*, 140.

manifest in three conventional categories, cadence, diminution, and prolongation.”³²

Agawu recognizes that Stravinsky intermingles tonal elements in a post-tonal composition. In his attempt to define this relationship, however, he leans toward tonality and draws conclusions that focus on surface elements (e.g. D major as the tonic of the *Agnus Dei*) and avoids a thorough discussion of background organization (e.g. the 0257 chord in the *Agnus Dei*). The strength of Agawu’s argument lies in his summation of Stravinsky’s voice-leading patterns, and in his recognition of certain prominent pitch-class sets.

Agawu recognizes a connection between Stravinsky’s voice-leading practices and tonally functional voice leading. The strength of the argument ends where it begins, however, as his conclusions based upon this recognition rest too much on the appearance of tonality and avoid a discussion of the connection between voice leading and centrist organization. He connects Stravinsky’s patterns to tonal music through diminutions (e.g. the passing tone) and stepwise voice leading at cadential points, as a means of supporting each part of his essay. In his estimation, these voice-leading principles articulate and affirm Stravinsky’s use of tonality, thereby ensuring a tonal orientation to the *Mass*.

His definition of cadences and diminutions establishes a basis on which he can support a tonally-derived explanation of prolongation. He begins by showing that Stravinsky has definite stopping points, places of repose, in his music, and, by extension, that these points become consonances. Agawu continues, that because these stopping points are approached by consistent, definable, and tonally-appearing melodic lines, the

³² Ibid., 141.

chord roots, or at times the note that he determines as the root, must be a representative tonic. Speaking of the 0257 tetrachord found in the final chord of rehearsal 6 in the *Kyrie*, Agawu says;

It is a cadence because, as a terminal sonority, it represents a moment of rest, of completion; rhythmic articulation and voice leading secure the cadential function. To accept this function is to accept a fundamental extension of conventional tonal practice in Stravinsky's language. . . In the context of [this] example. . . F has priority not only because it is the bass note of the sonority but further, and more important, because the journey to F follows a dual 3-2-1 (bass) and 7-8 ('tenor') course."³³

Agawu's definition of cadence at this juncture reveals an important Stravinskian practice: that through rhythmic orientation and voice leading, Stravinsky creates short, well-defined formal blocks. This point in Agawu's argument contains its greatest validity, for he shows that because Stravinsky uses compositional elements fundamental to tonal compositions, Stravinsky's *Mass* has the look and feel of tonality, but he goes a step further.

Agawu makes the assumption that because Stravinsky's music looks and feels like tonal music, that it must conform to tonal expectation. In fact, however, Stravinsky uses elements found within the tonal system, but frustrates tonal expectations at every turn. Therefore, the chord Agawu defines at the end of rehearsal 6, rather than having a note of priority, in fact has intervallic priority, but yields to no specific note. That being said, "F has priority" is a misrepresentation of the final chord of rehearsal 6, where indeed, the interval set 0257 creates priority, and F simply acts within that intervallic relationship as

³³ Ibid., 145.

one of four notes with equal priority. In essence, the individual parts could be rearranged and the effect of the chord would remain the same. Indeed this happens at the end of rehearsal 7 when the same chord appears, but the bass sings a G instead of an F and the tenor sings an F instead of a Bb. In this instance the construct-centricity of the piece is illuminated. Instead of establishing priority through an individual pitch center or a prolonged tonic, the 0257 construction asserts authority.

Once Agawu projects that cadence and diminution prolong notes and chords in the *Mass*, and he builds his final argument which begins with this cause and effect statement:

If cadential articulation is central to the *Mass*, and if its voice leading admits diminutions on a fundamental level, then, proceeding hierarchically, we can say that prolongation is also central to structural articulation. In its simplest form, prolongation is conceived as a composing out of an interval or chord. The prolonged element acts as the focal point throughout the passage in question and secures its ultimate meaning.³⁴

He attempts to prove this through a discussion of the *Agnus Dei* ritornello as having a D major tonic. To begin Agawu dismisses Donald Grout's Roman numeral analysis of the ritornello in *A History of Western Music*, because it does not account for voice leading.³⁵ Whereas this argument is initially true, Agawu's fulfillment of the argument (as does his fulfillment of the argument of tonal orientation in the *Mass* itself) falls short. In the end he concludes that, "The priority of the D-major triad at the end of this progression dwarfs

³⁴Ibid., 150.

³⁵ Donald J. Grout and Claude V. Palisca, *A History of Western Music*, 4th edition (New York: Norton, 1980), 720.

any other potential priority, and this priority, although it is challenged in the final sonority of the movement (D), remains perceptually dominant since no other pitch or pitch class is offered as an alternative.”³⁶ Agawu falls prey to Stravinsky’s illusion when he places unfailing authority upon D major simply because it is the most tertian (and therefore tonal) of all of the chords in the *Agnus Dei*. D relates to this movement as a surface tonal area, but is not a tonic to and from which other notes and chords progress. Importantly, the internal organization of the *Agnus Dei* follows a path separate from D major that includes D but does not place priority upon it. This method, one that relies upon construct-centric priority instead of a tonic or tonal center, will be discussed in chapter 4.

Agawu concludes his discussion of prolongation with an observation of Stravinsky’s use of the 0257, or Forte’s designation 4-23, pitch-class set. He notices its use at the end of the *Mass*, as the final concluding sonority, and as an organizing force in the *Kyrie*, connecting the movement from start to finish. Agawu suggests that “We might therefore refer to set class 4-23 as a tonic, a “dissonant tonic” perhaps.”³⁷ He then describes the inherent conflict in the notion of a tonic dissonance, since a prolongational tonic by definition implies consonance. (See Joseph Straus’ argument at the beginning of chapter 2.) Therefore, “The claim that set class 4-23 is prolonged in this movement. . . implies a radical extension of the meaning of prolongation, one which reduces the significance of the term to mere prominence, and therefore excises the quality of *contrapuntal control* that is inextricably linked to it.”³⁸ At this juncture Agawu realizes

³⁶ Agawu, “Stravinsky’s *Mass*,” 155.

³⁷ *Ibid.*, 161.

³⁸ *Ibid.*, 161.

his second point of brilliance. He defines Stravinsky's music as Stravinskian by eliminating the need for a point of harmonic control upon the form of the piece. His definition of the conflict inherent between 0257 as an important focal point and prolongation as a means of realizing that focal point, rather than being the dismissal he intended it to be, clearly defines the organization of the *Mass*. Rather than allowing this discontinuity to guide his analysis, however, he attempts to force prolongation upon the construct-centric 0257 tetrachord.

Agawu chooses to conclude his argument by defining a "dual. . . way of hearing the tonal process in this movement," and insists upon the importance of the BbCEbF 0257 tetrachord as an organizing force equally matched, or bested, by the conventionally tonal, prolonged tonic of G major.³⁹ Agawu's analysis of the *Mass* wrestles with the Stravinskian paradox: that post-tonal music contains compelling tonal vestiges. He brings evidence to the fore that helps to define organizational processes, like the use of the 0257 tetrachord as a chord of prominence, but is unable to escape Stravinsky's ruse. Rather than acting as a prolonged tonic, the 0257 tetrachord, in addition to the 0134 tetrachord, provides the hub from which tonal derivatives emerge. Tonal areas remain a reflection of tonal music tied to a construct-centric organizational process that operates beneath the surface. Agawu does not allow for motion and harmony without prolongation, and therefore settles on a definition of the *Mass* that limits the surface beauty of these tonal areas by insisting that surface elements function as prolongational tonics.

³⁹ Ibid., 161.

Analytical Dissertations

Don V. Moses' 1968 *A Conductor's Analysis of the Mass (1948) by Igor Stravinsky*, offers insight into the *Mass* even without the benefit of important late 20th century Stravinskian research. Primarily, Moses recognizes Stravinsky's transformation of tonal elements. He says "In Stravinsky's music, traditional pitches, instruments, chords, rhythms, time signatures, and bar groupings are used, but new functions, progressions, con-texts, textures, and images are the product."⁴⁰ Although, in light of post-tonal analysis over the past twenty-five years, this statement seems commonplace, it shows that Moses understands the work as a reworking of traditional elements in a post-tonal sense.

Moses focuses on elements that effect choral preparation and performance. He defines how text articulation and pronunciation, rhythm, tempo and form each influence a conductor's understanding of the work by providing a point-to-point analysis of each movement. Statements like "The 'Hosanna' has a driving quality achieved by varied repetitions of the melodic motive" serve to guide a conductor toward important elements within the piece.⁴¹ He also discusses Stravinsky's religious devotion. He briefly describes Stravinsky's purpose for writing a mass, quoting a number of individuals who defended Stravinsky as a model of religious piety. Analytically Moses views the work through contrasting themes and key centers, form, and rhythmic cells. Once established,

⁴⁰ Moses, *Conductor's Analysis*, 16.

⁴¹ *Ibid.*, 30.

he proceeds to the text setting. He explores text repetition patterns, such as the thrice-repeated “Kyrie eleison” in each vocal part, and how Stravinsky sets certain words with varied inflection on different syllables. All of these observations support Moses’ thesis that Stravinsky worked with conventional materials in an unconventional way.

Moses designs a foldout chart that portrays formal organization for each movement. The *Gloria*, for example is a “quasi-rondo,” and the *Credo* a “syllabic choral recitation.”⁴² He echoes the conjecture of early responses to the *Mass*, calling Stravinsky’s setting “severe and dogmatic.”⁴³ Tonally, Moses defines the *Mass* in terms of key centers based largely upon instigating and concluding sonorities (e.g. D minor at rehearsal 3 supports G major, the final chord, as the tonic of the *Kyrie*), but recognizes that “an analysis of the harmonic function is impossible in traditional terms.”⁴⁴ As Moses explores musical motives, he points to “tightly-knit unity achieved by the limiting and reworking of a few motives.”⁴⁵ In all, Moses’ analysis sheds little light on Stravinsky’s work in terms of contemporary analysis, but it does reveal the changing sentiment in the late 1960s toward analysis, and specifically, toward Stravinskian analysis.

Leslie P. Hennessey’s *A Structural and Harmonic Analysis of Igor Stravinsky’s Capriccio for Piano and Orchestra and Mass*, proves the difficulty inherent in a traditional tonal analysis of Stravinsky’s, and post-tonal, music. After establishing

⁴² Ibid., 15, 22.

⁴³ Ibid., 22.

⁴⁴ Ibid., 24.

⁴⁵ Ibid., 27.

Stravinsky's music as extra-tonal, Hennessey presents chords and tonal relationships in the *Mass* that ignore important note relationships. Hennessey blurs lines of modality and tonality, providing little support for his choice of key centers. Like Moses, Hennessey operated without the benefit of the important Stravinskian research of the 1980s. His thesis, however, provides an interesting test-case. Since he pursues a strictly tonal assessment of the *Mass*, his analysis remains inconclusive.

Daniel A. Mahraun's *Tempo, Duration, and Proportion in Stravinsky's Mass* (1948) explores the *Mass* from a durational/proportional standpoint. In it, Mahraun implores the need for adherence to Stravinsky's tempo markings for reasons of proportional integrity. He discusses rhythmic/metric blocks in Stravinsky's music, particularly as defined by Pieter van den Toorn.⁴⁶ He says that these blocks create a need for absolute recognition of tempo and metric proportions in the *Mass*. Mahraun's methodology relies on Jonathan Kramer's "Discontinuity and proportion in the music of Stravinsky," and argues that certain proportions, the most principle being the "golden mean" or 3:2, remain active in successful music, Stravinsky's *Mass* among them.⁴⁷ He compares three recordings by assessing actual tempo and length of the performances and contrasting them to the written tempo designation. His conclusions suggest that as

⁴⁶ Rhythmic/metric blocks define form in Stravinsky's music through an interaction of meter and rhythm that work against one another to create a sense of discontinuity. This discontinuity establishes hard lines of demarcation that in turn create form. A discussion of these blocks appears in chapter 2.

⁴⁷ Jonathan D. Kramer, "Discontinuity and Proportion in the Music of Stravinsky," *Confronting Stravinsky: Man, Musician, and Modernist* (Berkeley: University of California Press, 1986).

conductors, Stravinsky and Craft adhered closely to the suggested tempo thereby maintaining the proportions necessary to elicit successful performances.

Historically Focused Dissertations

David VanZytveld's *Igor Stravinsky's Mass: Toward an Appreciation of the Composer's Aesthetic* attempts to define the factors that motivated Stravinsky to write a mass, and by doing so, to reveal insight into Stravinsky's compositional process. He begins by showing reasons for the decline of religious music in the 20th century, moves on to discuss Stravinsky's attitude toward religion and religious music, and ends with an analysis based on these factors. VanZytveld also catalogs comments by Stravinsky and Craft, and blends them with other historic information.

VanZytveld notes that Christian worshippers have an affinity for established liturgical works, that is, those written before 1900, and that 20th-century secularism encouraged composers away from churches and churches away from composers. Further, he argues that the Roman Catholic Church's view of music drastically changed in 1903 with Pope Pius X's *Motu Proprio*, thereby discouraging Catholic composers from writing new sacred music. He then discusses Stravinsky's feelings toward religion and religious music. In this discussion he considers statements by Stravinsky and others that describe him as a pious, if slightly unorthodox, Christian. Stravinsky, he says, understood music to be important to the religious process, and, on four occasions, wrote music strictly for liturgical use. In addition, Stravinsky wrote many pieces based upon biblical texts or subjects (see Appendix A). VanZytveld's conclusion is that Stravinsky wrote religious

music, acted somewhat religiously throughout his life, and believed the church to be an important motivator of music, but was not devoted wholly to religious pursuits.

Prior to his analysis of the *Mass*, VanZytveld reviews six Masses by Stravinsky's contemporaries. He dedicates a paragraph each on masses by Vaughan Williams, Martin, Poulenc, Hindemith, Persichetti, and Roy Harris. His goal in looking at each of these masses is to draw comparisons between other "modest-length works, like that of Stravinsky," that "embrace traditional forms and retain some aspect of tonality, although not necessarily in the common-practice sense."⁴⁸ His principal conclusion to this section queries Stravinsky's choice to set his mass for orchestra, as all of the other settings are unaccompanied or for chorus and organ.

VanZytveld bases his analysis of Stravinsky's *Mass* upon Craft's 1949 "Notebook" and Agawu's article. He aims to compare his analysis to the aesthetic discussion put forth in the first half of his thesis. To accomplish this task, VanZytveld, posits that "Stravinsky almost exclusively uses seven-pitch, diatonic scales," but "does not restrict himself to major and minor scales but frequently uses other church modes," thereby drawing a connection between Stravinsky and past music of the Roman Catholic church.⁴⁹ He also notices that "The more elusive aspect of Stravinsky's compositional technique involves decoding his harmonic idiom and voice leading practices."⁵⁰ Still, he believes that Stravinsky "avoids common practice harmonic idiom," while "still

⁴⁸ VanZytveld, *Igor Stravinsky's Mass*, 25.

⁴⁹ *Ibid.*, 27.

⁵⁰ *Ibid.*

observing a tonal center,” and with “definite dominant-tonic relationships.”⁵¹ Like those before him VanZyvteld shows the difficulty in finding the line between Stravinsky’s post-tonal practice and his tonal references. His defense of seven-pitch diatonic scales and dominant-tonic relationships is inconclusive, with too few examples to support the claim.

Nancy Brunnemer’s *Igor Stravinsky’s Mass: An Unacceptable Vehicle for the Roman Catholic Liturgy*, explores the history of the *Mass* thoroughly, in conjunction with the history of 20th-century Roman Catholic performance practice. Her research includes a look at a priest’s skepticism of Stravinsky and his instrument choices, acceptable instruments in the Roman Catholic tradition, appropriate liturgical music, an in-depth look at Stravinsky’s religious past and his sacred compositions, and an overview of the *Mass* itself. Brunnemer’s approach leads her to the conclusion that, although Stravinsky intended for his *Mass* to be used liturgically, the Roman Catholic church was not in the position to accept such a work, and, after the Vatican II Council of 1963, Latin masses have declined so much that frequent modern liturgical performance is unlikely. She concludes with a brief analysis of performance considerations.

Review of Literature Conclusion

Research on Stravinsky’s *Mass* has uncovered a distinct history of the motivation for and composition of the work. Authors have put forth explanations about the reasons for its performance history and acceptance by the public. Analyses of the work recognize

⁵¹ Ibid.

the unique approach to tonality and the ancient liturgical text, and work to define the methods through which Stravinsky manipulates each. In their efforts to define these differences the above authors often describe surface elements that resemble compositional processes centuries removed from Stravinsky, a tacit acknowledgement of Stravinsky's neoclassical compositional practices. They also define tonal elements as essential to the organization of the *Mass*. However, each depends upon tonal prolongation or common-practice tonality to explain these tonal elements. The following analysis concurs with the historical research posited by the above authors and that an explanation of Stravinsky's use of tonality in the *Mass* requires a creative approach to analysis. However, the analysis below will conclude that tonal vestiges in the *Mass* proceed not from common-practice tonality and prolongation, but from a post-tonal standpoint, thwarting diatonic expectation while utilizing tonal compositional references. Organization therefore depends upon a means separate from prioritized tertian chords and tonic prolongations. Instead the analysis will show that rhythmic/metric blocks create form and that tonal areas exist around the central 0257 and 0134 tetrachords. These organizational forces provide a means through which Stravinsky builds the constituent elements of his composition, and on which tonal references rely.

Chapter 2: Theoretical Background and Method

Research over at least the past 45 years has wrestled with the question of tonality in post-tonal music, and specifically with what forms of tonal analysis can be applied to post-tonal music and what new methods need to be developed to begin where tonal analysis ends. Attempts to explain post-tonal music through tonal, prolongational models have been attempted, as have attempts to create new analytic models. In his article, “The Problem of Prolongation in Post-Tonal Music,” Joseph Straus addresses the key conflict with using tonal analysis for post-tonal music. According to Straus, prolongation represents the principle defining factor in tonal analysis, and, four elements must be present in order to claim prolongation. He summarizes these elements as follows;

First, there is the consonance-dissonance condition; we need a way based on pitch of distinguishing between structural and nonstructural tones. Second, there is the scale-degree condition; we need some kind of hierarchy among the consonant harmonies. Third, the embellishment condition; we need a consistent model of voice leading that will enable us, for example, to tell an arpeggiation from a passing note. Fourth, there is the harmony/voice leading condition; we need to be able to distinguish motions within a voice from motions between voices.¹

Tonal music achieves all of these goals, and therefore can be explained through prolongational analysis. Post-tonal music, including Stravinsky’s *Mass*, does not. If we accept Straus’ argument, past analyses of the *Mass*—while making some important

¹Joseph Straus, “The Problem of Prolongation in Post-Tonal Music,” *Journal of Music Theory* 31/1 (Spring 1987): 1-21, 7.

observations—have failed to confront the work on its own terms. Therefore, the questions arise: what elements in the *Mass* persuade individuals that this post-tonal piece should be explained through a tonal lens, and which of these tonal elements remain important in a post-tonal analysis?

Stravinsky's compositional methods in the *Mass* recall tonal music at several junctures. These include the use of intervallic relationships, tonal areas (analogous to key centers), triads and 7th chords, and stepwise, often diatonic, voice leading. These tonal elements appear on the surface but also pertain to a deeper organizational level. This deeper level, defined by Straus as the “post-tonal middleground,” brings meaning to tonal elements in the *Mass*. According to Straus “post-tonal middlegrounds are often constructed to replicate the contextual structures of the surface, without reference to any common practice of harmony or voice leading.”² In other words, tonal vestiges in post-tonal music reflect a deeper, more central perhaps, level of organization that in turn allows for these vestiges to retain some of their assumed connection with tonality.

Stravinsky uses 0257 and 0134 tetrachords as this post-tonal middleground in the *Mass* to create relationships that reflect tonality. Even though he creates tonal expectation by establishing tonal areas, however, Stravinsky avoids fulfillment of that expectation by releasing tonal areas from functional progressions. Over and again he moves fluidly from one tonal area to the next. Therefore, intervallic relationships, tonal areas, triads, 7th chords, and voice leading retain a level of connection with the tonal tradition in that they resemble relationships found in that tradition, but, they more

² Ibid., 8.

importantly relate to the central focus of the two tetrachords. The sum of their tonal reference can be defined as a tonal area.

A tonal area as defined for use in the following analysis differs from the concepts of tonal center and key center in small but important ways. Each of them refers to a note or chord in a selected passage of music that retains a level of priority over other notes in that same passage. Through voice leading, placement (e.g. bass line or melody), repetition, support by other interval relationships (e.g. major third above or perfect fourth below), etc. individual notes or chords rise to prominence. The concept of a tonal center or key center suggests that these prominent notes exert a level of authority over other notes, that they in some fashion dictate the organization of the notes around them.³ Tonal areas, on the other hand, contain no such command over the organization of a passage and therefore remain a surface element. They defer authority instead to tetrachords which form the central organizational concept of the passage. For example, the four measures at the beginning of rehearsal 10 in the *Gloria* that form an A major tonal area, because of the abundance of the AC#E triad, contain with greater relevance the ABDE and BC#EF# tetrachords. The A major tonal area exists and acts as a strong reminder of the tonality that fed Stravinsky's compositional learning, but, the tetrachords are the central focus; the "post-tonal middleground."

³ See Joseph Straus, "Stravinsky's Tonal Axis," *Journal of Music Theory* 26/2 (1982): 261-290, in which he discusses the polarity of two triads, CEG and EGB, as the organizational force in the first movement. These triads relate to one another as opposing poles of the CEGB tetrachord. The tonal centers that form around the triads are essential to an understanding of the analysis.

These tetrachords combine to form diatonic octads (8 note diatonic scales) and octatonic scales. The presence of diatonic octads and octatonic scales allows for transient tonal areas to surface through repetition and note placement within rhythmic/metric blocks. The most stable and important organizational elements in the *Mass*, therefore, are rhythmic/metric formal blocks and the 0134 and 0257 tetrachords. Individual tonal areas depend upon the tetrachords, and, at certain times even yield to the tetrachords in such a way that multiple tonal areas exist simultaneously.

When attempting to understand and explain the *Mass* through post-tonal means, we define a piece that “is not a strange, deformed tonal piece,” rather “It is a rich, idiomatic post-tonal piece that, with ironic effect, mimics tonal structure.”⁴ The organizational elements that mimic tonal structure in the *Mass* are rhythmic/metric blocks through which 0257 and 0134 tetrachords provide a harmonic framework on which the diatonic octad and octatonic scales combine to form tonal areas.

Centric and Construct-Centric Analysis

This analysis is construct centric because it discusses the organizational process of the piece through an exploration of units smaller than the scale. This process in turn defines tonal areas that result from the interaction of these smaller units. The smaller units (0257 and 0134) provide, through repeated and definable procedures, harmonic coherence. They create a basis for tonal areas and interact to insure that those tonal areas operate in a consistent manner.

⁴ Ibid., 19.

Construct-centric analysis derives from a larger movement in post-tonal analysis, one that defines some unit in a piece as the center-most element. In recent decades models of centricity (music organized by tone centers but not tonally functional) and construct dependent centricity (music organized around smaller sets than a scale, e.g. tetrachords or hexachords) have been devised to explain post-tonal compositions without the need to rely on prolongation as a model.⁵ Ethan Haimo and Paul Johnson explore the intricacies of centrist models of analysis in relationship to Stravinsky's music. Haimo, in particular, attempts to determine what hierarchical structure can be applied to centrist analysis. Johnson shows that composers connect music through triadic pc sets that rotate and vary with greater frequency than tonic triads do in diatonic music, but that still articulate tonal centers without the aid of dominant-tonic relationships. The struggle with using such a system lies in determining the criteria for the articulation of a referential sonority within a given passage or work. The goal is to determine which pc sets, and more specifically, which pitches are prominent. Because a tonal center is only a tonic in certain ways, notes that make up the tonal center and collections associated with it are determined by local emphasis through bass line, melody, frequency, articulation, volume, doubling, etc., and therefore require, at some level, composition-specific definitions.

⁵ For further discussion see: Berger, "Problems of Pitch Organization," 11-43. Berger was the first to define centricity as a means of analytic organization; Benjamin Boretz, "Meta-Variations, Part IV: Analytic Fallout (II)," *Perspectives of New Music* II/2 (1973): 167-175. Boretz identifies an 0257 tetrachord as the basis of organization for part of *Petrouchka*; van den Toorn, *Igor Stravinsky*. Van den Toorn (as shown above) discusses the existence of tetrachords and hexachords in Stravinsky's music as the basis for central priority notes; and Joseph Straus, "Stravinsky's Tonal Axis," *Journal of Music Theory* 26/2 (1982): 261-290. Straus posits that Stravinsky uses triadically-based tetrachords and trichords to create tension and resolution through a polarity around subset triads and diads of these tetrachords and trichords.

Haimo discusses the history of centricity as an analytical process in “Problems of Hierarchy in Stravinsky’s Octet.”⁶ He examines the methods of several theorists who have attempted to deal with the conflict between Stravinsky’s post-tonal compositional practice and tonal derivatives, and particularly notices the diversity of theoretical approaches used to deal with this issue in this manner. Some suggest that a referential sonority can function through tonal procedures (e.g. a “dissonant tonic”), others that such a sonority functions through a form of tonal centricity. He warns against the dangers of loosely referencing the tonal system, but hastens to add that “we cannot automatically reject the possibility that there could well be real, not just superficial, connections with past procedures and that ideas borrowed from tonal theory could prove most useful.”⁷ He suggests that many of the theorists who have approached the concept of centricity have included in their definition some reference to hierarchy. Whether through terms like “referential sonority,” tonal center, the implication of diminutions or some other means, hierarchical constructs find their way into post-tonal analyses. Haimo aims, therefore, to codify the concepts of hierarchy found in centrist models of analysis, to examine “The types of collections used, their specific pitch-class content, the presence or absence of local tonal centers, the existence of global referential sonority (or tonic), the use of elaborative tones, and the syntax that would permit their identification.”⁸

⁶ Haimo, “Problems of Hierarchy,” 36-54.

⁷ Ibid., 37.

⁸ Ibid., 37-38.

Haimo asserts that “in contrast to tonal music, a tonic is not a given in Stravinsky’s diatonic music, and in particular in the Octet, and that it must be defined by the context, the possibility existing that a given passage could have *no* tonic.”⁹ Still, in his analysis of the Octet, Haimo finds notes and chords within sections that serve as tonal centers through their contextual support. Some are the clear result of local emphasis and some rely on surrounding events to assert authority. This concept of context-specific hierarchy surfaces frequently in Stravinskian analyses including the present one. Certain elements apply to most if not all of Stravinsky’s pre-serial music (e.g. that tonal derivatives play a role in construction, that individual notes receive some level of priority, and that prolongation has a diminished role or is eliminated altogether as a defining factor), but for each piece context continues to determine certain note and hierarchical relationships.

Paul Johnson explores centricity as a model of analysis for Stravinsky’s music. In his attempt to define “an underlying unity, so that beyond the spectacularly divergent forms, pitch materials, and harmonies [in Stravinsky’s music] there is an unmistakable, if elusive, ‘Stravinsky style,’” Johnson suggests that more specific compositional processes than those listed above apply to all of Stravinsky’s pre-serial music.¹⁰ He posits that

⁹ Ibid., 44.

¹⁰ Paul Johnson, “Cross-Collectional Techniques of Structure in Stravinsky’s Centric Music” in *Stravinsky Retrospectives*, ed. Ethan Haimo and Paul Johnson (Lincoln: University of Nebraska Press, 1987): 55.

Stravinsky consistently used these processes “to articulate the properties of two favored collections: the octatonic and 0123578t [diatonic octad] collections.”¹¹

Johnson describes the diatonic octad (he prefers the term “eight-note diatonic scale”), as an unordered combination of two diatonic scales a fifth apart, and suggests that, even though thirty-six possible areas exist within a single collection, Stravinsky prefers the use of three particular orderings: the #4, b7 and b2 ordering. Figure 2.8 demonstrates these three particular orderings of the scale that include the pitches CDEFF#GA and B.

Figure 2.1 Diatonic Octad #4, b7, and b2 orderings



He goes further to suggest that certain pc sets within the orderings surface frequently. These reflect the major third “Since major-third relationships seem to predominate in Stravinsky’s works that use this collection.”¹² Therefore, the pc set 047e acts as a referential sonority for the diatonic octad and contains two, and only two, triads (his example references CEGB which contains the CEG major triad and the EGB minor

¹¹ Ibid., 55.

¹² Ibid., 56.

triad). These two delineate “a polarity between triads a major third apart.”¹³ The triads of the polarity work against one another to define tonal centers. Likewise, Stravinsky uses the symmetry around the tritone to create two areas of polarity within the referential collection.

In the same way, the octatonic scale contains four areas of polarity based upon its symmetrical division of the minor third. Johnson yields to other author’s in-depth description of the octatonic scale properties, van den Toorn being one of the more prominent. The octatonic scale can be described as alternating half steps and whole steps. It can be organized in two ways, one begins with the half step interval (van den Toorn’s 1-2 ordering) and the other with the whole step (van den Toorn’s 2-1 ordering).¹⁴ Only three potential octatonic collections exist and are defined by van den Toorn as Collection I (C#DEFGAbBbB), Collection II (DEbFF#G#ABC), and Collection III (EbEF#GABbCDb). These collections are symmetrical around the minor third and the tritone, and can be understood as a combination of two diminished 7th chords. In each collection each of the notes of one of the two diminished 7th chords has the capacity to form diminished, minor, and major triads as well as diminished, minor and dominant seventh chords. The notes on which these chords are built are known as octatonic nodes. Symmetrical organization around the tritone yields two melodic tetrachords: from the 1-2 ordering, 0134, and from the 2-1 ordering, 0235. Johnson suggests that the octatonic-derived, triad-based 0347 tetrachord (e.g. DFF#A) has polar organizational emphasis

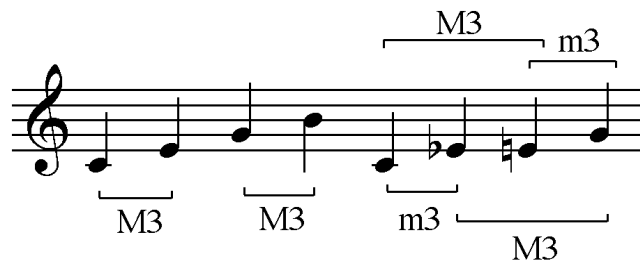
¹³ Ibid., 56.

¹⁴ van den Toorn, *Igor Stravinsky*, chapter 2.

similar to the diatonic octad's 047e. According to Johnson, this polarity defines Stravinsky's compositional process and relationship to the octatonic scale.

Comparisons between the two collections arise from these similarities and differences. Precisely, "in the octatonic there are eight possible tonics but only two referential orderings; in the eight-note diatonic collection, there are three preferred tonics, but each establishes a unique ordering."¹⁵ Therefore, at any given time within the same collection different notes can assume priority, and, likewise, from any given note, several collections can find employment. Smooth and frequent motion from one collection to the next, therefore, is a hallmark of Stravinsky's style. From this definition Johnson goes on to discuss how Stravinsky uses polarity within the collections, based upon the 047e tetrachord in the diatonic octad and the 0347 tetrachord in the octatonic scale, to motivate and connect small and large-scale divisions of his music. In each instance, the primary tetrachord is triadically based and elicits polarity through the relationship of the third, the major third in the octad and a combination of major and minor third in the octatonic scale. Figure 2.9 shows the principle third relationships in each tetrachord.

Figure 2.2 Principle 3rd relationships in the 047e and 0347 tetrachords



¹⁵ Ibid., 57.

Johnson's recognition of centricity through polarity has less impact on the *Mass* than it does on other Stravinsky compositions. His discussion of centricity, however, establishes models of pc set and scale integration that will be used in the following analysis. In the *Mass* both the diatonic octad and the octatonic scale interact with tetrachords. The tetrachords in the *Mass* have properties separate from the triadically-based tetrachords explored by Johnson. These properties and their impact on tonal areas follow a discussion of Stravinsky's use of rhythm and meter to define form.

Rhythmic/Metric Form

A core aspect of Stravinsky's compositional practice is his approach to form. By employing rhythmic/metric blocks (often referred to as static blocks) he releases harmony from the need to define form. His harmony is therefore free to flow from one focal point to another. In Stravinsky's words his harmonies "seduce with the individual splendors of their harmonic effects."¹⁶

Craft alludes to this process in his question to Stravinsky, "In your own music, identity is established by melodic, rhythmic, and other means, but especially by tonality. Do you think you will ever abandon the tonal identification?" Stravinsky answered; "We can still create a sense of return to exactly the same place without tonality: musical rhyme can accomplish the same thing as poetic rhyme. But form cannot exist without identity of some sort."¹⁷ Two important points surface through this short exchange. The

¹⁶ Igor Stravinsky and Robert Craft, *Conversations with Igor Stravinsky* (New York: Doubleday and Company, 1959), 121.

¹⁷ *Ibid.*, 21.

first is that Stravinsky, even in 1959, thought of his music as tonal. The second is that a sense of return within music is variable, but that form must have identity.

Beginning with a look at Edward Cone's 1963 essay "Stravinsky: the Progress of a Method," Craig Ayrey discusses the prominent theory surrounding the contemporary understanding of formal considerations in Stravinsky's music.¹⁸ Ayrey articulates that Cone developed the theory of discontinuity as one of the first formalist Stravinskian analyses. Ayrey says that

the process of formal disunity. . . becomes the cardinal structural principle of Stravinsky analysis, valued both as surface shock. . . and as a generator of new, proportional modes of 'global coherence': time shaped in proportionally related blocks presents a cohesion that can bind discontinuous material into a higher unity with no need of harmonic or other teleology (though these are not axiomatically obstructed) and facilitates formal processes based on principles of recurrence, circularity and rotation.

Cone's 1962 analysis began an analytic development that continues to define Stravinsky's musical form as discontinuous blocks and that suggests aesthetic principles not based on organicism or continuity. Since Cone's assertions were first made known, others have followed his lead and produced a sizable collection of literature on the subject.

¹⁸ Edward Cone, "Stravinsky: The Progress of a Method," *Perspectives of New Music* 1 (1962): 18-26; and Craig Ayrey, "Stravinsky in Analysis: The Anglophone Tradition," in *The Cambridge Companion to Stravinsky*, ed. Jonathan Cross (Cambridge: Cambridge University Press, 2003): 208.

Gretchen Horlacher developed a theory of reiteration based on Stravinsky's rhythmic/metric formal identification, or rhythmic/metric blocks.¹⁹ In her articles "Running in Place" and "Rhythms of Reiteration," she explores Stravinsky's use of rhythm and meter to define form and encourage development in his music. She establishes a "model of development" based upon observance of rhythmic cycles, reiterated in blocks, through which pitch motion is established and central or "key pitches and/or sonorities" sounded.²⁰ "This model of development," she says, "draws upon but moves away from traditional models. In its considerations of the 'varied disposition' superimposition produces, it borrows centuries-old ideas of contrast and change; the resultant phrases, however, do not rely upon a tonally conceived movement toward a

¹⁹ Horlacher's theory is based upon van den Toorn's rhythmic/metric theory found in his *Igor Stravinsky*.

²⁰ Gretchen Horlacher, "The Rhythms of Reiteration: Formal Development in Stravinsky's Ostinati," *Music Theory Spectrum* 14 (1992): 174. See also, Gretchen Horlacher, "Running in Place: Sketches and Superimposition in Stravinsky's Music," *Music Theory Spectrum* 23 (Fall 2001): 196-216.

goal.”²¹ In her articles, Horlacher echoes Stravinsky’s statement showing how he devised a way to “create a sense of return to exactly the same place without tonality.”²²

In Horlacher’s model, juxtaposition of rhythm and meter is the key element in formal development. In essence, the rhythmic/metric block model exposes the relationship between repeated rhythmic cells and changes in meter (see Example 2.1a and 2.1b). In each rhythmic block there is either a steady meter and an alternating rhythmic pattern, or vice versa, an alternating meter and a steady rhythmic pattern. Whichever one alternates is the foreground element, and whichever one remains steady is the background. These patterns can be simple or complex.

In Example 2.1a from the *Gloria*, the trombone III plays a steady duple background rhythm across a series of 3/4 and 2/4 measures. Examples such as this one permeate such works as *L’Histoire du Soldat* and *Les Noces*. Although the foreground meter signifies a change in ictus, the background rhythm maintains a steady pattern and works against the grain of the notated meter.

Example 2.1a *Gloria* rehearsal 23: Rhythmic/Metric Block with Metric Foreground

²¹ Ibid., 173-174. Horlacher borrows the term “varied disposition” from Pierre Boulez: “Stravinsky also utilized the system of superimposed rhythmic pedals—that is to say, his polyphonic apparatus being made up to some degree of clearly characterized stages, he gives each of them an independent rhythmic period. The linkings of these several superimpositions will not be reproduced at the same intervals, but so as to obtain a varied disposition. Where there are superimpositions of motifs, they are carried out in an extremely rigid fashion, each motif unrolling obstinately on the same intervals. In sum, there is no development, properly speaking, but only varied repetition, no chemical reaction, but only a physical mixing; we can allow ourselves to see in that difference a great lowering of level.” Pierre Boulez, *Notes of an Apprenticeship*, trans. Herbert Weinstock (New York: Alfred A Knopf, 1968): 62.

²² Stravinsky, *Conversations*, 121.



Example 2.1b exhibits the opposite. The background meter maintains a steady 4/4 count, but the foreground rhythm changes frequently. Rhythmic cells delineated by a sixteenth note turn motive change from five beats, to six, back to five, etc. These two examples demonstrate the basic foreground, background principle. Each rhythmic block in the *Mass* operates on this principle, though not all are as straightforward. Rhythmic and metric complexity changes frequently within blocks, but their sharp delineation from one another based upon these principles drives growth through formal contrast across blocks. As a result the blocks free harmony to respond to and support growth rather than create it.

Example 2.1b *Kyrie* rehearsal 3: Rhythmic/Metric Block with Rhythmic Foreground

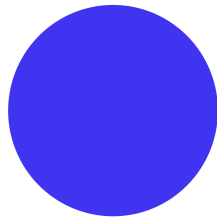
Ob. I,II

Joseph Straus comments on Stravinskian formal considerations in his article “Sonata Form in Stravinsky.” Straus suggests that “In the classical era, form is a

manifestation of underlying harmonic structure; for modern pieces in sonata form, however, the order is reversed and the form comes first.”²³ Harmony, therefore, loses its capability to define form and, more importantly, the need to define form. Harmony in a global sense acts instead as a means of connection, a means through which Stravinsky ties formally independent sections together across stark boundaries, and as a means of contrast to underscore the established rhythmic/metric boundaries.

Figure 2.3 visually describes Stravinsky’s combination of rhythmic/metric blocks and harmony. Three separate forms, a blue circle, red square, and green triangle, have specific delineations that set them apart from the others (e.g. dimension, color, etc.). Hard lines and vibrant color keep each form visually separate from the other.

Figure 2.3a Single Discrete Shape

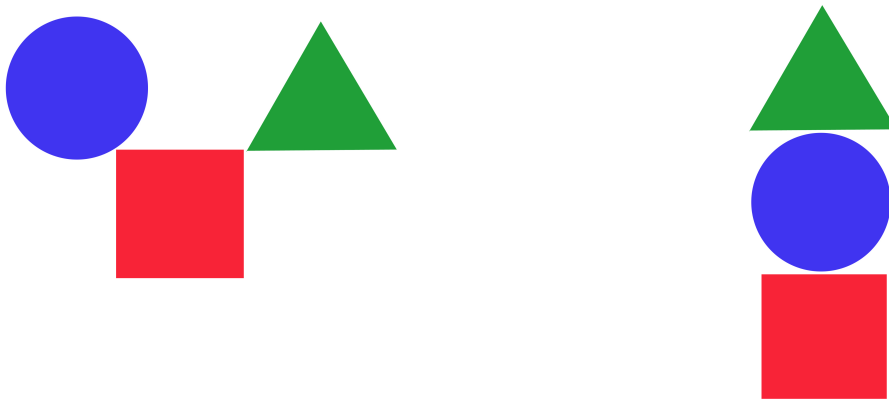


Alone, the eye catalogs them as a single colored shape. However, when placed together, the mind creates a new form, one based upon each shape individually, but, more importantly, on the combination of the three (see Figure 2.3b). Change the configuration, and the reaction to the whole changes. Like the colored shapes, rather than being an integrated whole, Stravinsky’s rhythmic/metric blocks are a combination of multiple, clearly-defined delineations, that when placed together become a whole by virtue of their

²³Joseph Straus, “Sonata Form in Stravinsky,” in *Stravinsky Retrospective*, ed. Ethan Haimo and Paul Johnson (Lincoln: University of Nebraska Press, 1987).

juxtaposition with one another in time. If the rhythmic/metric influence defines the shape/form of each block, the harmony defines the color. The two in our metaphor, as in Stravinsky's music, are mutually exclusive. In the same way that the circle could be red or green, so Stravinsky's harmony can change within rhythmic blocks without affecting the rhythmic/metric form.


Figure 2.3b Multiple Shapes/Colors in different configurations




Large-Scale Form of the Individual Mass Movements

Rhythmic/metric blocks combine over the course of a piece to create large-scale form through contrast and connection. Defining characteristics of blocks include specific metric patterns, rhythmic patterns, text, text rhythm, block duration, internal rhythmic cells, and individual vocal or instrumental parts that perform a particular pattern or occupy a particular section. Each movement of the *Mass* has a distinct form based upon combinations of these rhythmic and metric elements in blocks. Contrast between movements brings further growth to the work. The following examples highlight large-scale form in the *Mass*, with the *Kyrie* chart featuring a more in-depth look at individual rhythmic blocks. The form charts display large-scale form, rhythmic/metric blocks

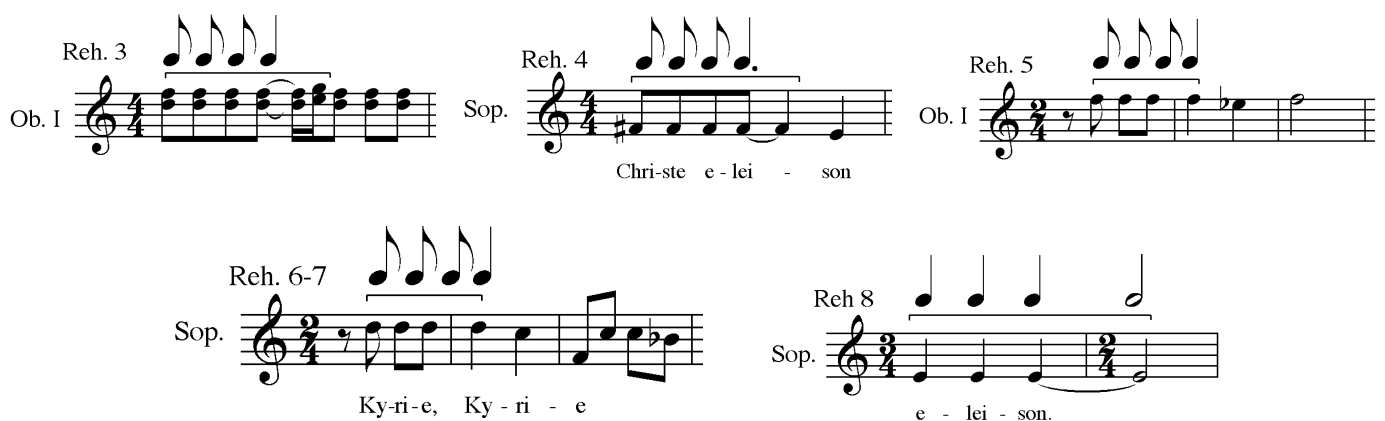
The *Kyrie* at first glance presents a maze of complex contrasting blocks, but in actuality is organized through a simple tripartite ABA form (See Figure 2.4a). The first A section contains three blocks, each delineated by text repetition and a steady quarter note pulse. Even though each block lasts a different number of measures (Reh. 0=5, Reh. 1=4, Reh. 2=6), the text repetition and rhythmically repetitive and incisive Eb-C bell tones that open each block help to maintain sharp contrast.

A	B	A ¹
United by text repetition and quarter note pulse	United by the  rhythm	United by text repetition and quarter note pulse



The B section contrasts to the A section and within itself through constant change in the length and organization of each block. Also in the B section, meter and rhythm trade between foreground and background. The conflict is underscored by contrast through orchestration and harmony. Figure 2.4a, however, shows a uniting element at work in the B section. The rhythm within each block conforms to variations on the following pattern: . This rhythmic repetition binds each block of the B section together in juxtaposition to the contrast of the foreground/background and durational conflicts. The opening rhythmic cell of each block in the B section is shown in Example 2.2. Above each example, the specific rhythmic variation that defines that block appears. The A¹ section, acts as a recapitulation of the A section, and relies on textual repetition and quarter note pulse to define the return.

Example 2.2 *Kyrie* rehearsals 3-8: B section rhythmic cells



Example 2.2 displays five musical excerpts illustrating rhythmic cells from the B section of the *Kyrie*, specifically rehearsals 3 through 8. Each excerpt shows a specific instrument or voice part with a rhythmic pattern indicated above the staff.

- Reh. 3:** Ob. I (Oboe I) in 4/4 time, showing a rhythmic cell of a quarter note, an eighth note, a quarter note, and a quarter note.
- Reh. 4:** Sop. (Soprano) in 4/4 time, showing a rhythmic cell of a quarter note, an eighth note, a quarter note, and a quarter note. The lyrics "Chri-ste e-lei-son" are written below the staff.
- Reh. 5:** Ob. I (Oboe I) in 4/4 time, showing a rhythmic cell of a quarter note, an eighth note, a quarter note, and a quarter note.
- Reh. 6-7:** Sop. (Soprano) in 4/4 time, showing a rhythmic cell of a quarter note, an eighth note, a quarter note, and a quarter note. The lyrics "Ky-ri-e, Ky-ri-e" are written below the staff.
- Reh. 8:** Sop. (Soprano) in 4/4 time, showing a rhythmic cell of a quarter note, an eighth note, a quarter note, and a quarter note. The lyrics "e-lei-son." are written below the staff.

Repetition in the *Gloria*, like the *Kyrie*, defines large-scale form. In the *Gloria*, however, the two principle defining characteristics in the repeated A and B sections are rhythmic or metric foreground and individual vocal parts that perform in a particular section. The A sections include rhythmic foreground (the A^{II} being an exception, but, in contrast to the B sections, is relatively calm) and are dominated by vocal soloists. The chorus joins in the B sections over a constantly changing metric foreground. The contrast of a quickly-changing metric foreground in the B sections further offsets them from the A sections.

Figure 2.4b *Gloria* Large-Scale Form: ABABA

A	B	A ^I	B ^I	A ^{II}
Reh 10-12 3 blocks Rhythmic Foreground Vocal Soloists “Gloria” – “bonae voluntatis” Duple beat cells against triple meter guided by triplet rhythmic pattern	Reh 13-14 2 blocks Metric Foreground Chorus “Laudamus” – “gloria tuam” Alternating 3- and 2-beat 8 th -note cells against mixed meter	Reh 15-17 3 blocks Rhythmic Foreground Vocal Soloists “Domine” – “Deus” Duple beat cells against triple meter guided by triplet rhythmic pattern	Reh 18-21 6 blocks Metric Foreground Solo and Chorus “Agnus” – “nobis” Solo passages same as “A” sections. Chorus passages alternating 3- and 2-beat 8 th -note cells	Reh 22-24 4 blocks Metric Foreground Vocal Soloists “Quoniam” – “Amen” Three smaller sections organized into groups of 15-12-15 beats respectively

A steady alternation of rhythmic cells in the B section brings background focus to the abrupt meter changes (see Example 2.3). Unlike rehearsal 23 (discussed on page 47) that maintains a steady duple pattern against a changing meter, however, the choral and instrumental parts in the B sections of the *Gloria* alternate in cells of 3 and 2 beats. This slight change in the employment of background rhythm brings complexity to the rhythmic/metric interplay and greater interest to the B sections. Example 2.3 shows

rhythmic blocks alternating in 2- and 3-beat cells. The cells are bracketed beneath the choral parts and contrast with the changing metric foreground.

Example 2.3 *Gloria* rehearsal 13: B Section, block 1, Rhythmic Background as 3- and 2-beat cells

Discanti

Alti

Tenori

Bassi

Lau - da - mus Te: Be - ne - di - ci - mus Te:

a - do - ra - mus - Te: Glo - ri - fi - ca - mus Te:

3 2 3 2 3

2 3 2 3 2 3

Textual divisions guide formal development in the *Credo* and *Sanctus*. The *Credo* is marked by similarity more than any other movement. In it, although the chant-like speech rhythms do not coordinate with spoken word rhythms, text-based divisions break the movement into three parts. The first, labeled with the Roman numeral “I” in Figure 2.4c, contains nine blocks split into two sections from “Credo” to “Deo factus est.” These sections are delineated by a change in rhythmic and metric foreground. Even

with the change from rhythmic foreground to metric foreground, the basic chant-like rhythms dominate the texture and blocks are defined through textual phrase endings that contain slightly longer notes than the internal text. The second part, “II,” from “Crucifixus” to “non erit finis,” has the greatest amount of contrast from one block to the next. Like the B section of the *Kyrie*, in this section of greater contrast the blocks begin with a three 8th-note head motive. This head motive unifies section II. Section III, “Et in prophetas” to “Amen,” contains eight blocks in two sections. Like the first section, these blocks exhibit frequent rhythmic repetition, but, like the second section, most of the blocks begin with the three 8th-note head motive.

Figure 2.4c

Credo Large-Scale Form: Text-based, I, II, III

I	II	III
Reh 25-31	Reh 32-35	Reh 36-42
A		A
B		B
4 blocks	5 blocks	3 blocks
5 blocks		5 blocks
Rhythmic Fgrd	Rhythmic Foreground	Rhythmic Foreground
“Credo” – “saecula”	“Crucifixus” – “non erit finis”	“Et in” – “Prophetas”
“Deo” – “factus est”		“Et unam” – “Amen”
	All but first block begin with a 3	Most blocks begin with 3 8 th -note

The *Sanctus* divisions are text-based and rhythmically supported. In the A section, “Sanctus, Domine Deus SABAOTH,” a quintuplet rhythm and a snap rhythm (sixteenth-dotted eighth) unifies the four blocks and delineates the start and end of blocks. In the B section, SATB soloists sing a fugue that employs the same snap rhythm.

Like the A section, the B section also has a recurring rhythmic pattern created by two sixteenth notes and an eighth note. The “Hosanna” text defines the two C sections, and each contain two internal blocks. These blocks are offset from one another by the type of rhythm found on the concluding syllables “sanna.” In the first block of each C section, “sanna” contains triple rhythm patterns, and in the second block, it contains duple patterns. The D section, the “Benedictus,” contrasts most severely with the other sections because of its unification through a quarter note pulse. Still, the bassoon part plays the snap rhythm in the first block of the section as a unifying motive with the other sections. The coda repeats the “Hosanna” text and the snap rhythm permeates. Large-scale form in the *Agnus Dei* will be discussed in Chapter Four.

Figure 2.4d
Sanctus Large-Scale Form: ABCDC coda

A	B	C	D	C ¹	coda
Reh 43-45a Rhythmic Fgd 4 blocks	Reh 45b-47 Metric Fgd 2 blocks	Reh 48-49 Rhythmic Fgd 2 blocks	Reh 50-51 Rhythmic Fgd 2 blocks	Reh 52-53 Rhythmic Fgd 2 blocks	Reh 54 Rhythmic Fgd 1 block
“Sanctus” – “SABAOTH”	“Pleni” – “tua”	“Hosanna in excelsis”	“Benedictus” – “Domini”	“Hosanna in excelsis”	“Hosanna in excelsis”
Text-based divisions unified through quintuplet patterns and snap rhythms	Soloist fugue unified through 2 sixteenth-8 th patterns and snap rhythms	Block 1 uses triple rhythmic cells on “sanna” block 2 uses duple rhythmic cells on “sanna”	Unified through quarter note pulse Block 1 consistent bass line snap rhythm	Block 1 uses triple rhythmic cells on “sanna” block 2 uses duple rhythmic cells on “sanna”	Unified through snap rhythm and half note pulse in orchestra

These large-scale formal diagrams reveal the arrangement of formal blocks and the nature of their discontinuity and connection. Throughout the *Mass* these blocks create contrast through rhythmic and metric organization. Likewise, they connect to one another through means such as characteristic rhythms across formal lines. Although rhythm and meter create form, the presence and arrangement of these blocks interacts with tetrachordal centricity. Through chords that create a harmonic framework at the beginning and end of blocks and through tetrachord notes that interact with characteristic rhythms, tetrachords join to rhythm and meter to accent and further enforce formal contrast and connection.

The Tetrachords

In the *Mass*, the rhythmic/metric blocks shape form. The 0257 and 0134 tetrachords shape harmony. These tetrachords serve as the organizational basis of all harmonic and melodic aspects in the piece including chords, melodic motives, tonal areas, transitions, and chromaticism. The tetrachords interact within rhythmic/metric blocks and coordinate with formal elements to enhance continuity and discontinuity established by rhythm and meter. These particular tetrachords contain specific characteristics that make them suitable for Stravinsky. For the following reasons, they appear throughout Stravinsky's compositional output as important pc sets and sonorities.

Set 0257

“This is set class 4-23 or [0257], significant for its symmetrical intervallic arrangement and, in this context, for its relatively “open” sound, the latter enabling an exploration of tonality-defining intervals such as fourths and fifths.”²⁴

The principle constituent intervals of the 0257 tetrachord, when reduced to interval class, are [021030], or two major seconds, one minor third, and three perfect fourths (see Figure 2.5a).²⁵

Figure 2.5a Intervals found in the 0257 tetrachord

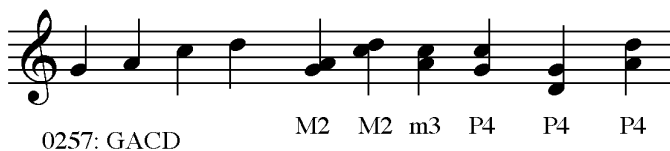
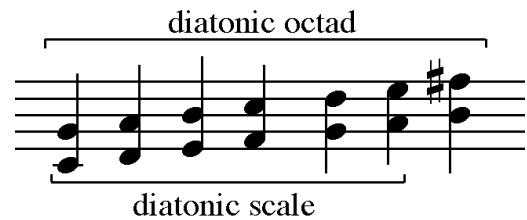


Figure 2.5b



Perfect 5ths (4ths) found in the diatonic scale and diatonic octad

The most repeated interval in the set, the perfect fourth/fifth, holds a special place in tonal music due to its prevalence in the diatonic scale. The diatonic scale contains six perfect fourth/fifths and four 0257 tetrachords (see Figure 2.5b). By extension, there are seven perfect fourth/fifths in the diatonic octad and five separate 0257 tetrachords.

²⁴ Agawu, “Stravinsky’s *Mass*,” 145.

²⁵ [021030] is an interval class vector, a representation of the types and amounts of interval classes found in a pc set. The numbers stand for the amount of a particular interval class present in the set, and the placement of those numbers moves from smallest to largest interval, left to right: [m2 M2 m3 M3 P4 +4] or [half step, whole step, minor third, major third, perfect fourth, tritone].

Stravinsky uses the 0257 tetrachord throughout the *Mass* as an integral part of pitch organization, articulated through placement and repetition. Specifically, the tetrachord appears in the following contexts as:

- a block framing element
- distinct melodic material
- bass line and top voice melody
- voice-leading cells (motion, cadence-defining coincidence, and cadential convergence)
- vertical sonority
- transitions between and within blocks to change tonal areas
- incorporated into chromaticism
- textual emphasis
- surface level imitation
- primary and cadential sonorities (including embedded 4th/5th)

Altogether, these elements of pitch organization motivate note choices throughout the *Mass*. However, organization by use of the pc set does not designate specific pitches. No single 0257 tetrachord operates with more frequency than any other in a hierarchical manner. Rather, versions of 0257 sound alongside one another, increasing the tetrachord's sonic influence. The tetrachords almost always act discretely, but never out of context with the surrounding music.

Other authors, van den Toorn in particular, discuss the same set as 0279. The arrangement of the intervals outside of the 0257 prime form suggests that van den Toorn believes the set to have a specific use. In *The Music of Igor Stravinsky*, he examines this tetrachord in its bass-line function and relationship to the (023579) hexachord in

L'Histoire du Soldat.²⁶ Van den Toorn speculates that the interaction of the perfect fifths in 0279 creates the relationship necessary for a reasonable definition of the opening “March” in *L'Histoire du Soldat*.

While the encircling (02) (79) units of the (0 2 3 5 7 9) hexachord are indeed frequently encountered as reiterating 2s or whole steps, it is perhaps ultimately to their definition as an 0-7-2-9 succession of three 7s or “fifths” (reading down; or as a 9-2-7-0 succession of three 5s or “fourths”), and then to the transposition and superimposition of (0 2 3 5 7 9) hexachords related by the interval of 7, a “fifth” apart, that we can best turn in order further to probe this ambiguity or variance [of pitch-class priority].²⁷

His description of the tetrachord’s use in *L'Histoire du Soldat* is part of a multi-chapter discussion in which he defines centricity in Stravinsky’s music in relationship to the octatonic and diatonic (or C-scale) scales. His definition of the 0257 tetrachord as 0279 relies on a definition of this set as the beginning and end of a diatonic hexachord (023579). Although this hexachord does not influence the *Mass*, van den Toorn’s attention to the 0257 (0279) tetrachord substantiates its use as an organizational tool in Stravinsky’s music, particularly that of the “Russian” and neoclassical periods.²⁸ This analysis is construct-centric because in it van den Toorn shows how the 0257 tetrachord serves as scalar bookends to a hexachord, not as a tonic to a scale. Therefore, he

²⁶Pieter C. van den Toorn, *The Music of Igor Stravinsky* (New Haven: Yale University, 1983), 178-197.

²⁷ *Ibid.*, 180.

²⁸ van den Toorn, *Igor Stravinsky*, 178-197. He explores *L'Histoire du Soldat*, *Les Noces*, *Agon*, and *Symphony of Psalms*.

describes it as an organizing force, one on which tone centers form. As a bass line in *L'Histoire du Soldat*, 0279, he says, helps to establish individual notes and areas of priority.

Agawu also mentions 0257 in his analysis of the *Mass*. In the final part of his essay he makes reference both to the concluding 0257 (GACD) chord of the *Mass*, and to an “unfolding” of the 0257 tetrachord BbCEbF across the *Kyrie*, to which he prescribes that we “therefore refer to set class 4-23 [0257] as a tonic, a ‘dissonant tonic’ perhaps.”²⁹ Unlike van den Toorn, Agawu understands the 0257 tetrachord as a tonic that responds to prolongation and other tonal manipulations. He places it alongside G major as a parallel tonic that engages the *Mass* in a similar way to this traditional tonic.

Both of these analyses recognize the importance of the 0257 set, but each in a different way. Agawu defines it as a prolonged tonic and van den Toorn defines the set as an organizing element that bookends the 023579 hexachord. He speaks about the “March” as “in the presence here of a diatonicism but in the absence of anything remotely resembling C-scale (or major-scale) tonality functional behavior, to shun the specter of ‘keys,’ ‘chords,’ and the dominant-tonic-subdominant relation.”³⁰ This diatonicism centers around the tonal center D, but is organized by the 0279 tetrachord. He references the 0279 tetrachord as an essential organizational tool in many of Stravinsky’s pieces. The final aim of his analysis seems to be to undermine the notion that Stravinsky establishes tonics, and to support the notion that tonality responds to a centric middleground construction. Further, van den Toorn connects his scale-defined harmonic

²⁹ Agawu, “Stravinsky’s *Mass*,” 161.

³⁰ van den Toorn, *Igor Stravinsky*, 181.

functions with rhythmic/metric form, and spends a chapter discussing rhythmic/metric occasions and their impact on harmony.

Stravinsky not only used 0257 in his *Mass*, but he used it throughout his career. Examples other than those described by van den Toorn appear in *Symphony No 1 in Eb* (1905-1907), *Les Noces* (1914-1922), *Symphony in C* (1938-1940), and *Threni* (1957-1958). Stravinsky employs the 0257 tetrachord in these works as a distinct sonority (see Examples 2.4-2.7). These sonorities do not negate other note-defining activity within the following examples, but their existence in these measures shows their importance to Stravinsky's music. In the *Scherzo* of *Symphony No. 1 in Eb* Stravinsky uses 0257 as a block harmony, showing, even in this early work, an inclination toward this pc set. For twelve measures the string parts, supported by the bassoon and horns, sustain the tetrachords BbCEbF and FGBbC, the two distinguished by movement in the first violin. In Example 2.4 the notes of the tetrachords appear inside blocks. The two violin notes are connected to the changing tetrachords by dotted lines.

Example 2.4 *Symphony in Eb Scherzo* rehearsal 0: harmonic blocks as 0257

The musical score for Example 2.4 shows the first five staves of a rehearsal mark in Stravinsky's *Symphony in Eb Scherzo*. The staves are Violini I, Violini II, Violenze, Violoncelli, and Contrabassi. The key signature is three flats (Eb) and the time signature is 2/4. Above the Violini I staff, two tetrachords are labeled: BbCEbF and FGBbC, with dotted lines indicating the movement of the first violin's notes between them. The string parts (Violoncelli and Contrabassi) play sustained block chords corresponding to these tetrachords. The Violini II and Violenze parts also play sustained chords. The score continues with 'etc.' at the end of the first measure.

Examples of 0257 permeate *Les Noces*, often, as in *L'Histoire du Soldat*, defining the bass line. At rehearsal 94, the bass line in piano four plays the notes D#E#G#A#. This bass line, like the one in *Histoire*, is segmented into whole steps, the A#G# sounding together as seen in the first two notes in the first measure. The D#E# sound together as well, though not until the third measure. These tetrachords are bracketed below the staff in the following example.

Example 2.5 *Les Noces* rehearsal 94: 0257 bass line function

Piano IV

The musical score for Piano IV in *Les Noces*, rehearsal 94, illustrates the 0257 bass line function. The score is presented in two systems, each with two staves. The bass line is highlighted in the bottom staff of each system. Brackets below the staves indicate the tetrachords D#E#G#A#.

First system:

- Staff 1 (Treble): Measures 1-4.
- Staff 2 (Bass): Measures 1-4.
- Bracketed tetrachord: D#E#G#A# (Measures 1-2).
- Bracketed tetrachord: D#E#G#A# (Measures 3-4).

Second system:

- Staff 1 (Treble): Measures 5-8.
- Staff 2 (Bass): Measures 5-8.
- Bracketed tetrachord: D#E#G#A# (Measures 5-6).
- Bracketed tetrachord: D#E#G#A# (Measures 7-8).

Melodically, the intervals from the 0235 tetrachord influence the vast majority of the considerable melodic material in *Les Noces*, however, other sets, including 0257 appear in melodies. Note in Example 2.6 that in rehearsal 50, the *Basso profundo del coro*'s chant is organized around the GACD tetrachord. Every two measures another of the pitches asserts itself through melodic repetition, prominence within the measure, and voice leading, ending with the final G. The last two measures are almost exclusively GACD. Example 2.6 demonstrates that other notes play an active role in rehearsal 50 (E for example, in the second measure). The passage uses the diatonic collection, but the 0257 tetrachord organizes all of the notes in the passage and allows tonal areas to surface.

Example 2.6 *Les Noces* rehearsal 50: 0257 melodic generation

The musical notation shows a bass line for the Basso profundo del coro. The notes are organized into measures, with a bracket labeled 'GACD' spanning the final two measures. The notes are labeled with letters C, A, D, and G, indicating the tetrachord structure. The notation includes a key signature of one flat and a time signature of 3/4.

Symphony in C ends with a convincing display of the 0257 tetrachord as a concluding sonority. The final chord in the wind and brass parts is CDFGB. CG holds the bass and GD the top notes while CF sits in the middle, spelled as a fourth. The final chord of the piece, in the strings, engages slightly less with the 0257 tetrachord, but contains three notes of the previous tetrachord CD(F)G, with GD occupying the treble

once again. As mentioned previously, Straus, in his article “Stravinsky’s Tonal Axis,” shows how Stravinsky organized this piece around the CEGB (047e) tetrachord, and the polarities of the CEG and EGB trichords. The presence of 0257 as a sonority at the end of the piece does not negate Straus’ assessment, but demonstrates Stravinsky’s use of the tetrachord as a concluding sonority in conjunction with other centrist forces.

Example 2.7 *Symphony in C*: 0257 concluding sonority

The image displays a musical score for the concluding sonority of Stravinsky's *Symphony in C*. The score is written for a full orchestra, with the following instruments listed on the left: Flgr (Flute), Ob (Oboe), Clsib (Clarinet in B-flat), Fag (Bassoon), Cor (Cor Anglais), Tr in Do (Trumpet in D), Trb (Trumpet), Viol I (Violin I), Viol II (Violin II), Viole (Viola), Vcl (Violoncello), and Cb (Contrabass). The music is in common time (C). The key signature is C major. The score shows the following chords and their components:

- Flgr, Ob, Clsib, Fag:** Play a chord consisting of the notes C, E, G, and B (CEGB tetrachord).
- Cor, Tr in Do, Trb:** Play a chord consisting of the notes C, D, F, and G (CDFG tetrachord).
- Viol I, Viol II, Viole:** Play a chord consisting of the notes C, D, F, and G (CD(F)G tetrachord).
- Vcl, Cb:** Play a single note, C.

The combination of these chords forms the 0257 sonority, which is the concluding sonority of the piece.

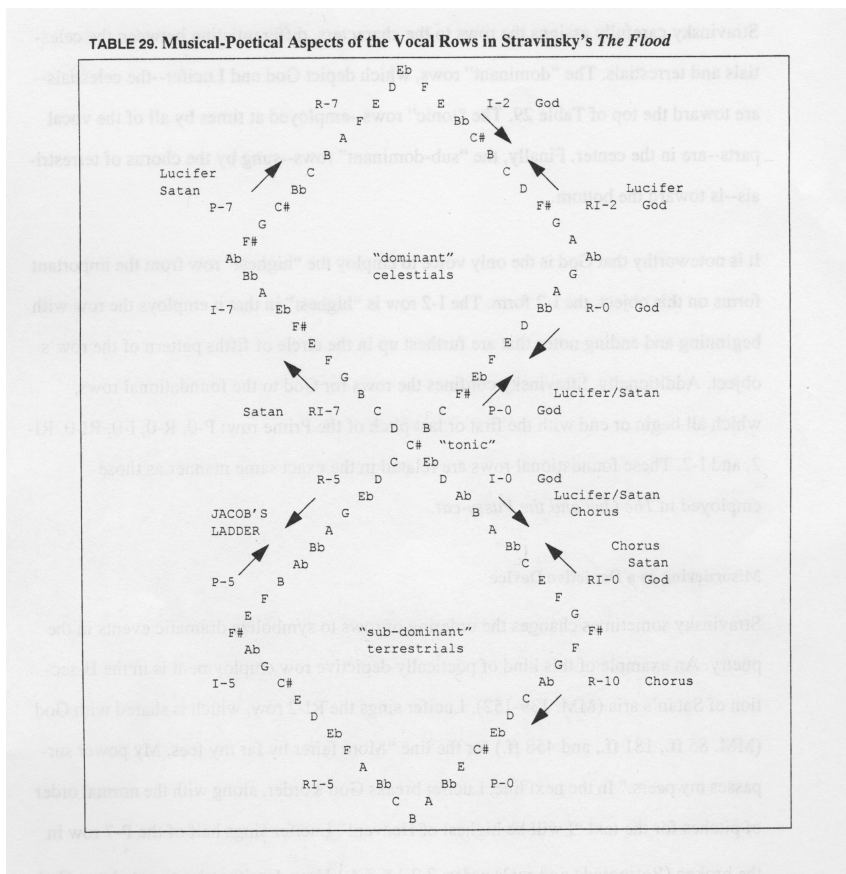
Even as late as his serial compositions, Stravinsky uses the 0257 tetrachord organizationally. In *Stravinsky's Topology*, Andrew Kuster develops a system of “object-oriented analysis.”³¹ These objects visually unite Stravinsky’s serial rows. Kuster shows that Stravinsky connected his rows with pivot notes, and that with these pivot notes he created structural connections throughout the pieces (See Figure 2.6). In many of these objects the pivot notes relate to one another by the interval of the perfect fourth and fifth. These individual fourth and fifth relationships combine with one another to create the 0257 tetrachord.³²

Stravinsky incorporates the intervals of the perfect fourth and fifth into his music throughout his career. His attention to these notes as a distinct sonority shows their importance. Throughout the *Mass* the 0257 tetrachord motivates, unites, and distinguishes harmonic and melodic activity.

³¹ Andrew Kuster, *Stravinsky's topology : an examination of his twelve-tone works through object-oriented analysis of structural and poetic-expressive relationships with special attention to his choral works and Threni* (DMA diss., University of Colorado, 2001).

³² All other pivot notes relate to one another by minor or major third, therefore, 0134.

Figure 2.6 Kuster's "Topology": 0257 "pivot" notes³³
 0257 (enharmonic): DbEbGbAb and F#G#BC#



Set 0134

"The sequences of two minor thirds joined by a major third, the root idea of the whole work, were derived from the trumpet-harp motive at the beginning of the *allegro* in Psalm 150."³⁴

While discussing his *Symphony of Psalms*, Stravinsky speaks of "two minor thirds joined by a major third." The note combination of which he speaks appears clearly at rehearsal 5 of the *Symphony of Psalms* in the oboe I (see Example 2.8). Here the melodic

³³ Ibid., 48.

³⁴ Igor Stravinsky and Robert Craft, *Dialogues and a Diary* (Berkeley: University of California Press, 1968), 45.

line involves cascading minor thirds that create over and over again the 0134 set. The same pattern appears as a motive in each movement of *Symphony of Psalms*. Around this specific 0134 motive, Stravinsky uses 0134 as a pc set in ways similar to his use of it in the *Mass*. Certainly, his description and use of this set provides evidence that Stravinsky thought in terms of specific intervallic relationships.

Example 2.8 *Symphony of Psalms*, rehearsal 5: set 0134

The musical notation is for an Oboe part in 4/4 time. It consists of two measures. The first measure contains the notes A-flat, G, F, and E, which are grouped under the label 'AbGFE'. The second measure contains the notes F, E, D, and C-sharp, which are grouped under the label 'FEDC#'. The notes are written on a single staff with a treble clef. The key signature has one flat (B-flat). The time signature is 4/4. The notes are beamed together in pairs: A-flat and G, F and E in the first measure; and F and E, D and C-sharp in the second measure.

The set 0134 contains the following interval classes [212100], or two minor seconds, one major second, two minor thirds, and one major third (see Figure 2.7). 0134 penetrates deeply into Stravinsky's neoclassical music, owing to its connection to the diatonic scale (through the major and minor thirds) and to the octatonic scale (see Figure 2.8). Octatonic connections in Stravinsky's music, and the octatonic organization around set 0134 and its subsets 013 and 014 appear frequently in Van den Toorn's work. In the same way that the diatonic scale reflects the perfect fourth/fifth, so does the octatonic scale, with its alternating half steps and whole steps, reflect the 0134 tetrachord.

Figure 2.7 Intervals found in the 0134 tetrachord

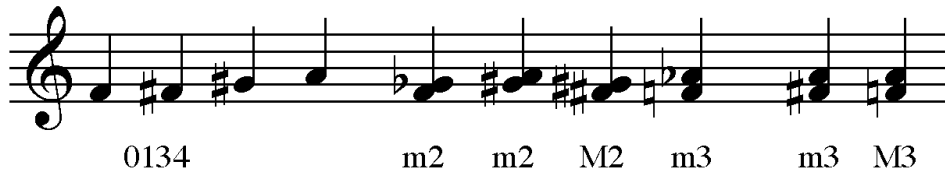
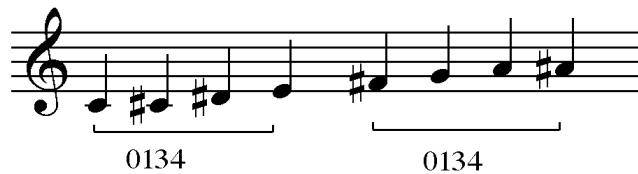


Figure 2.8 Octatonic scale: 0134



Within the *Mass* Stravinsky uses 0134 as a complete sonority in addition to the 013 and 014 subsets through placement and repetition. Each appears in the following contexts as:

- distinct melodic material
- bass line and top voice melody
- cadential preparation
- voice leading (motion, cadence defining coincidence, and cadential convergence)
- chord-defining sonorities (especially major 7th/9th chords and major/minor chords)
- a means to shift fluidly between tonal areas
- incorporated into chromaticism
- textual emphasis
- primary and cadential sonorities

Like the 0257 tetrachord, no single 0134 tetrachord operates with more frequency in a hierarchical manner. Rather, versions sound alongside one another. The tetrachords

almost always act discretely, but never out of context with the surrounding music. The net result of this activity creates a sonic priority, but does not engender a need for chord resolution.

013 and 014 as Subsets of 0134

Pieter van den Toorn discusses the implications of 0134 and its subsets 013 and 014, defining them as the $(0\ 1\ 3\ 4)$ or $(0\ 3\ 4/3\ 4\ 7/3\ 6\ 7)$ set— $(0\ 3\ 4)=(014)$ and $(3\ 4\ 7/3\ 6\ 7)=(013)$. He speaks about the set as growing from Stravinsky's "Russian" period into his neoclassical period, and serving as a pivot between Stravinsky's use of the octatonic (or Model A) and diatonic (or C-scale) scales. He notices, aptly, that the presence of the 0134 set causes apprehension about labeling notes from the set as tonal.

These "Russian" manifestations of $(0\ 1\ 3\ 4)$ or $(0\ 3\ 4/3\ 4\ 7/3\ 6\ 7)$ emphasis surface without a trace of Classical C-scale conventionality, chromatic tendency-tone inflections, or any Classical C-scale "minor-major third" ambiguity upon which apprehension of the Stravinskian C-scale reference—or this present neoclassical form of octatonic (Model A) and diatonic C-scale interaction—hinges.³⁵

Yet, van den Toorn continues in an attempt to support a primary thesis of his book; that Stravinsky integrates the diatonic and octatonic scales throughout his oeuvre to create new and interesting compositional procedures. He suggests that "manifestations of $(0\ 1\ 3\ 4/3\ 4\ 6\ 7)$ or $(0\ 3\ 4/3\ 4\ 7/3\ 6\ 7)$ 'minor-major third' emphasis are neoclassical only by

³⁵ van den Toorn, *Igor Stravinsky*, 273.

virtue of a shared, intersecting relationship with Classical C-scale conventions and inflections, and hence only when this relationship surfaces in the form of an octatonic (Model A) and diatonic C-scale interaction or interpenetrations.”³⁶ To van den Toorn, the 0134 set is the key to understanding this scalar interaction, for it becomes the pivot through which the two scales coalesce within musical passages.³⁷

Just as with 0257, Stravinsky also uses 0134 throughout his career. The same four pieces explained briefly above show examples of the 0134 tetrachord (see Examples 2.9-2.12). In the *Scherzo* of *Symphony No. 1 in Eb*, 0134 drives melodic motion from rehearsal 13 to rehearsal 14, as heard clearly in the cello part. Beginning at rehearsal 13, the cello plays the trichord 013 (CDEb) exclusively. At two before rehearsal 14, it switches to FGAb. At 2 after rehearsal 14 it returns to CDEb and at 8 after to D#EF#. These 013 occasions flank a complete statement of 0134 (DEbFF#) which occurs in the middle of the passage. Further, the concluding five measures of rehearsal 14 use the 0134 tetrachord as a transitional element. The section opens with D-C# and ends with BBb. Motion from the D to the Bb rests primarily upon the DC#BBb tetrachord, with the aid of the 013 trichord (D#EF#).

³⁶ Ibid., 274.

³⁷ van den Toorn discusses the 0134 set in *Concerto in D* (1946), *Symphony in Three Movements* (1945), *Dances concertantes* (1942), *Babel* (1944), *Symphony of Psalms* (1930), *Oedipus Rex* (1927), and *Orpheus* (1947).

Example 2.9 *Symphony in Eb Scherzo* rehearsal 13: 013 and 0134

Violoncelli & contrabassi

The musical score consists of three staves in bass clef with a key signature of one flat (Bb) and a 2/4 time signature. The first staff has a bracket labeled '013' under the first three notes. The second staff has brackets labeled '013' under the first three notes, '0134' under the next three notes, and '013' under the last three notes. The third staff has a bracket labeled '013' under the first three notes. A dashed line connects the first note of the second staff to the first note of the third staff.

Symphony in C demonstrates the use of the major/minor triad and the major 7th/9th chord as distinct uses of the 014 and 013 trichords. At the beginning of the *Largo*, Stravinsky uses the GBbB 014 trichord in conjunction with the CDFG and FGBbC tetrachords. The example shows a recurrent FGB rhythmic ostinato in the trombones and F horns while the low bassoon plays a separate ostinato centered around Bb. The three notes GBbB (designated with boxes) align vertically twice to create an 014 harmony, and their consistency within the passage provides a strong sense of connection between the two.

In a separate instance the simultaneous appearance of the major 7th and major 9th intervals above the a central pitch creates an 013 trichord (e.g. BCD). This occasion occurs often in Stravinsky's music. In the final wind/brass chord of *Symphony in C*, the lowest note is C and BD sit above it as the highest notes. The final chord for strings has the same trichord with B in the second violin, C in the viola, and D in the first violin.

Example 2.10 *Symphony in C Largo* rehearsal 0: 014

0257: FGBbC 0257: CDFG

Fag 1

cor. in F

014: GBbB

etc.

Trb.

Example 2.11 *Symphony in C: final cadence 013 (BCD)*

Fl gr

Ob

Cl sib

Fag

013

cor

Tr in Do

Trb

Viol I

Viol II

013

Vcl

Cb

In *Les Noces*, 0134 appears in conjunction with the octatonic scale multiple times at rehearsal 93. One occasion, in the piano III, highlights the tetrachords GAbBbCb, EFGAb, BbCbDbEbb, and GAbBbCb. On this particular occasion, the whole-step interval is highlighted by simultaneous statements of both notes that create the whole-step. Although the example does not label them specifically, the whole steps appear as simultaneous diads in the upper staff.

Example 2.12 *Les Noces* rehearsal 93: 0134

Piano III

The tone rows in *Threni*, as mentioned above, also are influenced by 0134. The row pivot notes derive from the same intervals that Stravinsky uses to create 0134, major and minor thirds. Therefore, each of the pivot note groups in his serial pieces are either perfect fourths (0257) or major or minor thirds (0134) (see Figures 2.9a and 2.9b). The pivot notes occur at the right angle intersections of the lines.

Figure 2.9a Kuster's "Topology": Major 3rd connection at pivot notes FAC#³⁸

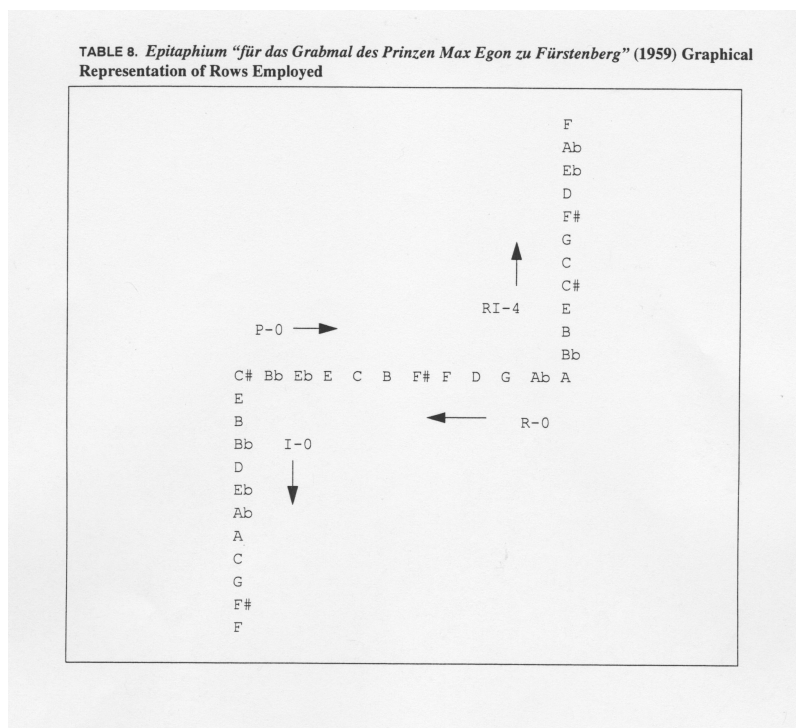
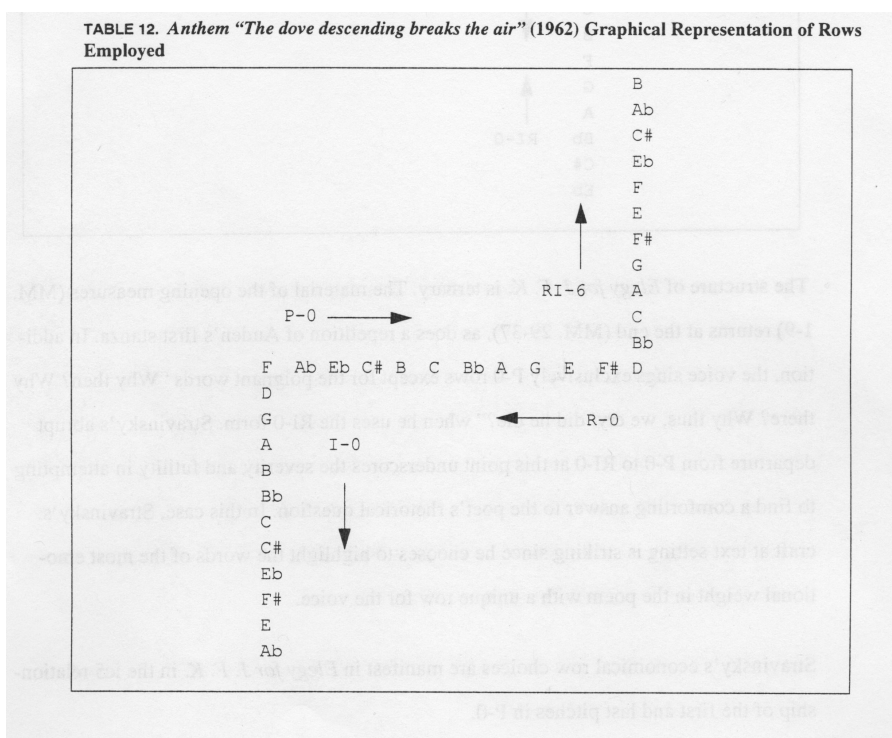


Figure 2.9b Kuster's "Topology": Minor 3rd connection at pivot notes BDFAb³⁹



Tonal Areas in the *Mass*

The tetrachords have certain analogous relationships with surface tonal derivatives. The 0257 tetrachord with its repeated fifths, for example, allows for three tonal areas to be articulated at once. The 0134 tetrachord contains two half steps that often mimic the leading tone function in tonal music. It also contains a minor and major third, each of which is used to create triads. The 0134 tetrachord, as a subset of the octatonic scale and the diatonic octad, provides a means of dialogue between the two. The dialogue between tetrachords, and by means of extension, between scales, dictates tonal areas in the *Mass*. Melodic motion and voice leading, therefore, operate through tetrachordal interaction that allows for smooth and frequent transitions between tonal areas.

0134 and 0257 establish the basis on which tonal areas form. Tonal areas in the *Mass* are notes that appear with significant repetition in a particular rhythmic/metric block or group of blocks. They are generally accompanied by the note a perfect fifth above (or fourth below), with scale fragments, and/or a major or minor third above either melodically or harmonically. Often, but not necessarily, in addition to their frequent repetition, they occupy a place at the start or finish of a rhythmic/metric block.

In the *Mass* these tonal areas change with great frequency. Further, in the *Mass*, no particular pitch or group of pitches functions with any more regularity than another. Instead of a single hierarchical tonal center (to which all other notes in a passage respond), several areas share surface priority in rapid succession or even simultaneously.

0257 and 0134 account for all of the notes in a passage through connection to a diatonic octad(s) and/or an octatonic scale(s). At any point in a block any of the notes in the scale may share a degree of priority, and all of the tonal areas find support not by extension of themselves, but through tetrachordal interaction. For example, in the opening measures of the *Gloria*, Example 2.13, four tonal areas intermingle around the tetrachords EF#AB, ABDE, and F#G#BC# and the A b7 diatonic octad (ABC#DEF#GG#). A and C# (the major third above A) dominate the opening chords of the rhythmic/metric block in conjunction with the ABDE tetrachord. As the example shows, the two notes continue to play an important role over the next three measures. In the fourth measure C# moves to B and A to F# to end this block with an emphasis on B and F#. The B finds support in D and F# as the combination creates a B minor triad. The F# through A and C# equals the F# minor triad.

The alto soloist begins the next block with an emphasis on E (supported by G#) and continues with this emphasis over the next six measures, during which the English horn continues to focus on F#. Starting four measures after rehearsal 11 the oboe begins a shift in emphasis to the F#G#BC# tetrachord, a move that is echoed in the English horn's emphasis on B. This emphasis in the English horn connects with both the EF#AB and F#G#BC# tetrachords, and shows the smooth transitions that occur due to notes that overlap within tetrachords. The passage quoted in Example 2.13 shows a shift that begins in the final two measures of the example with the English horn's A#, and signals a change in tetrachords and octad. The F#G#BC#, BC#EF#, and G#A#C#D# tetrachords begin to exert influence in this measure and continue into rehearsal 12 thereby changing

the octad from A b7 (ABC#DEF#GG#) to E #4 (EF#G#AA#BC#D#). Prior to this change five different tonal areas surface in ten measures. None of them maintains priority for long, but all interact through the same tetrachords and move smoothly one to the next.

Example 2.13 *Gloria* rehearsal 10: Tetrachords, Octads, and Tonal Areas (bottom staff reduction)

The musical score for Example 2.13, *Gloria* rehearsal 10, is presented as a bottom staff reduction. It includes staves for Alto, Ob. I, Cl, Fag. I, Tromba I in Bb, and a bottom staff reduction. The score is divided into two rehearsal marks, Reh 11 and Reh 12.

Reh 11: E tonal area

Rehearsal 11 features the E tonal area. The bottom staff reduction shows the following tonal areas and tetrachords:

- ABDE: 0257
- A
- A b7 octad
- EF#AB: 0257
- Bm
- F#m
- E

Reh 12

Rehearsal 12 features the C# tonal area. The bottom staff reduction shows the following tonal areas and tetrachords:

- C# tonal area
- F# tonal area
- B tonal area
- F#G#BC#: 0257
- C#m
- F#m
- F#
- BC#EF#: 0257
- E #4 octad
- (G#A#C#D#)

The eighth and final note of each octad (G in the A b7 octad and A in the E #4 octad) occurs only once. For this reason this note does not appear in one of the constituent tetrachords. At rehearsal 10 the G surfaces in the trumpet line in the third measure. Prior to rehearsal 12 the bassoon plays the A. Neither of these notes plays a dominant role, but both have an audible impact over the passage because of their direct association with the other notes of the octad. Both, by their mere presence, underscore the importance of the diatonic octad in the *Mass*. The bottom staff in Example 2.13 shows the tetrachord and scale interaction and tonal areas over the course of three blocks.

The diatonic octad and octatonic scales serve as conduits between organizational tetrachords and tonal areas. In most cases in the *Mass* two-four 0257 tetrachords combine to form a diatonic octad or in a few cases two or three 0134 tetrachords combine to form an octatonic scale. Their interaction through these scales, shifting easily from one to the next, opens a range of tonal areas. If GACD, for example, defines a section at the same time that BbCEbF defines a section, several tonal areas can ensue, including F, G, D, Bb, Eb and C. When combined with the 0134 tetrachord, further possibilities arise. Using the same two 0257 tetrachords in conjunction with the 0134 tetrachords EbDCB and DEbFF#, possibilities for triads such as G major, G minor, Eb major, C minor, B minor, Bb major, etc. arise. In fact, this happens in the opening measures of the *Kyrie*, where F, Bb, Ab, C, G, and Eb tonal areas exist simultaneously or within a few measures of one another. Over the course of fifteen measures, the Eb #4 octad (EbFGAAbBbCD) is created by the three 0257 tetrachords found in these measures (EbFAbBb, BbCEbF, and GACD). Further interaction occurs through the creation of octatonic collection II in

the opening five measures. EbDCB and DEbFF# commingle with the above-mentioned 0257 tetrachords and create greater complexity on top of the same organizational elements. This section will be discussed in detail in Chapter Three.

The above discussion is meant to show that pitch class sets 0134 and 0257 permeate the *Mass*. The combination of 0257 and 0134 as divisions of the diatonic octad and octatonic scale allows for the constant possibility of tonal areas in close proximity or simultaneously. These areas appear prominently but not dominantly, in that they do not exert control (even through polarity) over a given passage. The tonal areas are the outcome of the organizational process, not the generator of that process. The hierarchy, therefore, is based upon the combination of 0257 and 0134 tetrachords that create scale forms that allow for equally weighted tonal areas within (and sometimes across) rhythmic/metric blocks. The following chapter explores first the specific ways that 0257 and 0134 appear in the *Mass*, and then demonstrates how these compositional processes lead to scale formation and eventually tonal areas.

Chapter 3

0257 and 0134 Tetrachords in the *Kyrie, Gloria, Credo, and Sanctus*:

Specific uses and integration with tonal areas through the diatonic octad and octatonic scale

The following chapter reveals prominent methods through which Stravinsky manipulates the two tetrachords. Specific patterns of usage, including frequently-occurring melodic cells and harmonies, are defined. This discussion includes an explanation of the ways that these patterns combine to create scales that support tonal areas. An exploration of these patterns in complex harmonic passages follows. This chapter will show that Stravinsky uses the tetrachords on an organizational level in both simple and complex passages throughout the *Mass*.

0257 and 0134 as Harmonic Framework and Melody: *Kyrie* Rehearsals 0-2

Individual chords that derive from harmonic uses of the tetrachords will be presented later in the chapter. The harmonies that frame rhythmic/metric blocks, however, interact importantly with melodic elements. These harmonic framework notes support contrast between adjacent blocks and foster connection across series of blocks by articulating organizational notes at the start and finish of these blocks.

Melody links framework notes through placement and repetition of selected pc sets. In the opening three rhythmic/metric blocks Stravinsky connects framework notes through bass line melody, isolated melodic cells, 2-3 part melodic cell integration, and

other distinct melodic patterns. Rehearsals 0-2 offer a condensed and readily accessible depiction of the harmonic framework notes and melodic patterns found throughout the *Mass*. Figure 3.1 and Example 3.1 indicate them.

In Figure 3.1 the first line, “Framework: 0257,” labels the notes that occur at the start and finish of rhythmic/metric blocks in the *Kyrie*, rehearsals 0-2. Each column represents a different rhythmic/metric block. The second row depicts occasions of 0134 melodic tetrachords. Arrows suggest connection from one tetrachord to another. The third row, “Melody: 0257,” integrates with the first row. This 0257 melodic material appears internally (i.e. not in the bass line). Like in the second row, cells are organized within columns by their appearance temporally in the music. The last row shows important bass pitches and their association, by placement in the column, to the framework notes in the first row. Example 3.1 applies this information to the score, and labels framework notes and melodic patterns (e.g. “internal melodic cells”).

Figure 3.1 *Kyrie* rehearsals 0-2: 0257 and 0134 harmonic framework and melody

	Reh 0: Block-1	Reh 1: Block-2	Reh 2: Block-3
Framework: 0257	Eb F C C	Eb Bb C F	Eb FEb GA C AbBb CD
Melody: 0134	(Ab)BCDEb→DEbFF#(A)	//6 th chords GABb/CDEb	CBAAb→FF#G#A→DEbFF#→ BCDEb (GAbBbB)
Melody: 0257	Eb-C (F)	FGBbC→CDFG	EbFBbC
Melodic bass: 0257	Eb Ab C(F)	Eb(C) Bb (C) F	EbFBbC FGBbC/GACD

Example 3.1 *Kyrie* rehearsals 0-2: 0257 and 0134 harmonic framework and melody

Example 3.1 (continued)

0134: 2-3 part melodic cells

DEbFF#

BCDEb

EbDCB

Framework

Discanti

Alti

Tenori

Bassi

Ob. I.II

Tr. in Bb I.II

Trb. I.II

Trb. III

"Bell Tones"

EbC

Framework

013: isolated melodic cells

0257: isolated melodic cells

013: distinct melodic patterns

BbF

Framework

0257: bass line motion (EbFABbBb and BbCEbF)

Framework

"Bell Tones"

Framework

②

0134: (AG#F#F) isolated melodic cell

0134: cadential motion

0134 (GAbBbB): 2-3 part melodic cells

0257 (BbCEbF): 2-3 part melodic cells

Framework (0257 EbFABbB and GACD)

"Bell tones"

Framework

0257: bass line motion (BbCEbF and GACD)

Harmonic Framework

The harmonic framework of the first fifteen measures highlights the 0257 tetrachord as 1) the repeated Eb-C “bell tones” 2) the second inversion F major chord that ends the first rhythmic block 3) the second inversion Bb major chord that ends the second block and 4) the two 0257 tetrachords that end the third block. From a tetrachord organizational perspective, the first five framework harmonies combine to create the tetrachord BbCEbF in rehearsals 0-1. Each acts either as the beginning or conclusion of a

rhythmic/metric block. The connection between these events depends upon the sharp definition of the rhythmic/metric blocks and their placement. These harmonies (e.g. F/C at the end of rehearsal 0 and Eb/C at the beginning of rehearsal 1) help to define form through contrast. Note choice, orchestration, and rhythm set the framework chords apart from one another. Across the three blocks, however, these notes combine to produce the BbCEbF tetrachord, thereby integrating three otherwise sharply-defined blocks. Example 3.2 isolates framework notes on a staff in an abstract representation of rehearsals 0-2. Note the tetrachord combinations BbCEbF, EbFAbBb and GACD.

Rehearsal 2 opens with the same Eb-C bell tones found at the start of rehearsals 0-1. After dense melodic combination of 0134 and 0257, however, the choir sings EbFAbBb and GACD chords consecutively. In each, Stravinsky offsets one of the four notes in each tetrachord by a beat. The F from the first chord occurs one beat before Eb, Ab and Bb, and the G sounds one beat prior to the D, C and A.

An important element in rehearsals 0-2 is the fact that 0257 dominates each framework harmony. The first five framework chords relate to the same 0257 chord, and the final moment provides two others. These three tetrachords, when combined, create the Eb #4 octad. Therefore, Stravinsky uses these chords to create contrast across rhythmic/metric blocks and connection through their interaction to create the diatonic octad. Likewise, throughout the *Mass*, framework notes align with the beginning and ending of rhythmic/metric blocks, provide for contrast and connection across those blocks, and vary in construction and detail.

Example 3.2a *Kyrie* rehearsals 0-2: Framework Harmony (BbCEbF, EbFAbBb, GACD)

The musical notation for Example 3.2a is organized into two systems. The first system, labeled 'Reh 0' and 'Reh 1', features a treble staff with four measures of music. The first measure is labeled 'bell tones' and contains a Bb and a C. The second measure is labeled 'sop/bass' and contains an Eb and a Bb. The third measure is labeled 'bell tones' and contains a Bb and a C. The fourth measure is labeled 'trombone/bassoon' and contains an Eb and a Bb. The second system, labeled 'Reh 2', features a treble staff with three measures of music. The first measure is labeled 'bell tones' and contains a Bb and a C. The second measure is labeled 'choir' and contains a Bb and a C. The third measure is labeled 'choir' and contains a Bb and a C. Both systems have an empty bass staff below them.

Bass Line Melody

In the *Mass*, the bass line consistently joins harmonic framework notes through elaborations of these notes and provides a horizontal framework within formal blocks. The bass line buoys other melodic and harmonic material within blocks and bolsters harmonic connections. As with framework harmonies, though, bass line execution varies greatly over the course of the *Mass*.

In rehearsals 0-2 the tetrachords EbFAbBb, BbCEbF, and GACD emerge through bass line melodic patterns (see Example 3.2b). Each of these tetrachords integrates with another. The first two notes in Example 3.2b show how the trombone opens the *Mass* with the leap of a perfect 4th upward from the final bell tone, Eb, to Ab which begins the EbFAbBb tetrachord. The BbCEbF tetrachord begins at the same time with the other bell tone note, C, seen as the third note in Example 3.2b. Although F is not a bass note, the F

major chord that concludes rehearsal 0 highlights F, thereby continuing both the EbFAbBb and BbCEbF tetrachords at the final structural notes of rehearsal 0. The notes Eb, Bb, and F dominate rehearsal 1 and complete both of the tetrachords begun in rehearsal 0. A deeper connection to the opening Eb-Ab occurs at the close of rehearsal 1 when the trombone plays a downward leap of a Perfect 4th from Bb to F, connecting the Eb-Ab line to the EbFAbBb tetrachord through the same interval in the opposite direction.

Eb, F, G, A, Bb, C, and D make up the bass line of rehearsal 2. These notes mirror the final framework chords (EbFAbBb and GACD). Unlike the prominent, elongated statements of each note in rehearsal 1, the bulk of the notes in this section (F, G, A, and Bb) occur in one quick gesture of sweeping 8th notes articulated here as quarter notes to show their structural importance. Such a gesture underscores the variety of ways Stravinsky integrates 0257 tetrachords into different bass lines.

Example 3.2b *Kyrie* Rehearsals 0-2: Bass line (EbFAbBb, BbCEbF, GACD)

Reh 0 Reh 1

Framework Structure

Bass line

trombone (soprano) trombone & bassoon

Reh 2

trombone

0257 Melodic Cells and Patterns

0257 provides the melodic patterns that accompany framework and bass line notes as isolated melodic cells and across several parts at once. Likewise, patterns derive from tetrachord combination and travel across several parts. Rehearsal 0 is dominated by 0134 (see Example 3.2d discussion below). The 0257 framework notes (EbFBbC) that surround it, however, appear over the course of the four-measure choral statement. Eb and C dominate the opening two measures in every part and F acts as a connecting note to Eb and/or C. The following two measures include less Eb even though it still maintains a place of prominence. F and C take a greater role, and Bb exerts itself in the final measure mimicking the diatonic 4-3 cadential pattern. The 0257 melodic pattern, therefore, can be heard, beginning in the soprano, as Eb-C-(Bb)-F, in the midst of 0134 interchanges. This seam helps to connect the 0257 framework.

The tenor line after rehearsal 1 sings two isolated melodic cells, each a complete statement of the 0257 tetrachord. The FGBbC and CDFG tetrachords intertwine similarly to bass line tetrachords, but in closer succession. The second melody of the two is a complete statement without interruption. The two are separated for clarity in Example 3.2c. Few unadulterated 0257 melodic tetrachords such as these exist in the *Mass*, and mostly occur at structurally important places. The tenor line establishes 0257 as an important melodic organizational cell in the *Mass*. In rehearsal 2, bass and tenor parts join in the third measure to create EbFBbC. Melodic statements of tetrachords across two-three parts is another way Stravinsky integrates these sets into the texture. In

this case, the bass moves upward from Eb-F and in the next measure from Bb to the tenor's C. The connection is subtle, but no less important in the overall sonic texture.

Example 3.2c *Kyrie* rehearsals 0-2: 0257 Melodic Cells and Patterns (BbCEbF, FGBbC, CDFG)

The image displays musical notation for three rehearsals (Reh 0, Reh 1, Reh 2) of a Kyrie. The notation is organized into two systems. The first system, labeled 'Framework 0257', shows Reh 0 and Reh 1. Reh 0 features a soprano line (treble clef) and a tenor line (bass clef). Reh 1 features a tenor line (bass clef). The second system shows Reh 2, featuring a tenor line (treble clef) and a bass line (bass clef). The notes are written in a key signature of two flats (Bb and Eb). The notation includes various melodic cells and patterns, with some notes grouped together. The labels 'soprano', 'tenor', and 'bass' are placed above or below the corresponding lines. The labels 'Reh 0', 'Reh 1', and 'Reh 2' are placed above the first measure of each rehearsal. The label 'Framework 0257' is placed to the left of the first system. The label 'Bass line' is placed to the left of the second system.

0134 Melodic Cells and Patterns

The 0134 tetrachord contains smaller intervals than the 0257 tetrachord and therefore appears more often in melodic cells and patterns. Although complete 0134 statements are fairly frequent, the 013 and 014 trichords function regularly as a subset of the tetrachord. Rehearsals 0-2 show one of the three areas in the *Mass* with the greatest concentration of complete 0134 tetrachords (the other two are rehearsal 35 in the middle of the *Credo* and rehearsal 63 in the final choral phrase in the *Agnus Dei*). Rehearsal 1

reveals Stravinsky's propensity for combining 013 trichords with 0257 tetrachords, and 014 appears melodically for the first time in rehearsal 2.

In the first four choral measures, 0134 appears in two separate forms, BCDEb and DEbFF#. The tetrachords do not appear in any single voice, but, rather, they demonstrate 2-3 part melodic cell integration. These cells are represented in Example 3.2d as isolated cells removed from their multiple-part interaction. The first begins with the tenor's C-B and ends in the next measure with the alto's D-Eb. This melody repeats beginning with the same alto Eb, and continues back to the tenor line in the next measure descending to D, C, and B. The second melody begins in the alto line in measure four with D-Eb and continues to the soprano line F#-F to end the passage. Only 4 of the 57 notes (approximately 7%) in these four measures are notes other than BCDEbF or F#. Nowhere else in the *Mass* does Stravinsky give this much unchallenged weight to the 0134 tetrachord, except in the final three choral measures of the work.

In the same way that 0134 dominates rehearsal 0, 0257 dominates rehearsal 1. In rehearsal 0, 0257 appears as a melodic pattern under the surface of the 0134 melodies. Likewise, in rehearsal 1, 013 represents 0134 through distinct melodic patterns in an 0257 passage. The first example is a series of 013 trichords found in the 1st and 2nd trombones that play a downward-moving scalar pattern. The trichords BbAG, FEbD, and CBbA, and GFE join to create a falling line of parallel 6ths spanning an octave. In the final measure of rehearsal 1, the soprano and alto lines G-A-Bb and C-D-Eb highlight the 013 trichords in short, but focused patterns used often throughout the *Mass*.

0134 appears again to close the A section of the *Kyrie*. After rehearsal 2, five 0134 statements commingle, four in 2-3 part interchanges and one, a complete statement in the soprano part. These cells are represented in Example 3.2d as isolated cells for the purpose of clarity. In the third measure of Example 3.2d the cells overlap to mimic the overlapping found in the score. The first, CBAAb, begins in the tenor line four measures after rehearsal 2 and continues to the bass line over the next two measures. BCDEb and DEbFF# share their common notes, BCDEb beginning in the fifth measure after rehearsal 2 in the tenor and alto parts, and DEbFF# in the alto and soprano parts of the same measure. GAbBbB straddles the fourth-sixth measures beginning with the alto G-Ab moving to the bass' Bb-B and concluding in the sixth measure with the bass' Ab-G. In addition to these multi-part statements, the soprano line sings G#AF#F (FF#G#A) as a distinct melodic cell in the fifth measure after rehearsal 2.

Example 3.2d *Kyrie* rehearsals 0-2: 0134 Melodic Cells and Patterns (CBAAb, BCDEb, DEbFF#, GAbBbB, FF#G#A) and 013 (BbAG, FEbD, CBbA, and GFE)

The musical score for Example 3.2d is organized into three rehearsal sections: Reh 0, Reh 1, and Reh 2. The top staff, labeled 'Framework 0257', contains the main melodic lines. The bottom staff, labeled '0134 Bass line', provides the bass accompaniment. The score includes various melodic cells and patterns for different parts: ten-alto, alto-ten, alto-sop, trombone // 6ths, sop/alto cadence, ten-bass, alto-ten, alto-sop, alto-bass, and sop. The key signature is B-flat major (two flats).

Tonal Areas Established Through 0257 and 0134

The opening A section of the *Kyrie* uses the 0257 tetrachords EbFABb, BbCEbF, and GACD and the 0134 tetrachords EbDCB, DEbFF#, and CBAAb (see Example 3.1, pp. 82-83). These notes combine to form the Eb #4 diatonic octad (EbFGAbABbCD) and the octatonic collection II (EbFF#AbABC). From these scales Stravinsky establishes the following tonal areas: Eb, Ab, Bb, F, G, Cm and D. Generally speaking when one tonal area surfaces at least one other is equally present. Overlapping tetrachords support overlapping scales which support transient and often layered tonal areas.

Voice Leading

Stravinsky shapes melodic lines, especially at important points (e.g. the ends of rhythmic blocks), through voice leading based upon the two tetrachords. Frequently used voice-leading patterns develop over the course of the work, many of which can be found in the first three blocks of the *Kyrie*. In the *Kyrie*, tetrachord-based voice leading guides internal melodic connection, acts as motion toward a cadence, and provides for cadential convergence.

Internal melodic connections are tetrachord-derived notes within rhythmic/metric blocks that guide the aural perception of a passage (see Example 3.1, pp. 82-83). In Example 3.1 internal melodic connections are delineated by brackets and pc set labels.

After rehearsal 1, the tenor line's tetrachords FGBbC and CDFG proceed by leaps of perfect fourths or fifths and whole steps, usually in alternation. The first measure begins with the leap of a fourth (G-C) followed by a whole step down to Bb. The FGBbC tetrachord, begun here, finds completion in the third measure whole step from G to F. Prior to this completion, C moves by whole step to D and then D skips down to G before completing the CDFG tetrachord simultaneously with the completion of FGBbC. This line with its established voice leading pattern centers rehearsal 1 and provides a core focus for the 0257 tetrachord around which other notes (e.g. the 013 trichord subsets) react. This passage represents a standard voice leading pattern for 0257 melodic motion in the *Mass*.

Tetrachord-based motion towards a cadence is seen in Example 3.3. The end of rehearsal 2 contains an example of particularly focused cadential motion, because of multiple full statements of 0134. The four 0134 tetrachords mentioned earlier (CBAAb, AG#F#F, F#FEbD and EbDCB) not only dominate melodic material, but lead to the two 0257 framework chords, EbFABb and GACD. Two of them, AG#F#F and EbDCB move toward the EbFABb chord and the other two move through the EbFABb chord to the GACD chord. The 0134 tetrachords create motion toward the 0257 chords and provide a strong sense of completion at the end of the first major section, after which, the texture and surface compositional devices change. The strong pull toward and resolution on the 0257 chords provided by the 0134 chords occurs because of the half step/whole step combination found in the 0134 tetrachord.

Example 3.3 *Kyrie* rehearsal 2: 0134 motion toward a cadence

AG#F#F

F#FEbD

EbDCB

CBAAb

134

create

134

create

final 0257 chords: F--EbBbAb G--ACD

THESE TWO SCALES HELP TO IDENTIFY SEVERAL TONAL AREAS THAT COEXIST IN REHEARSAL 2. EXAMPLE

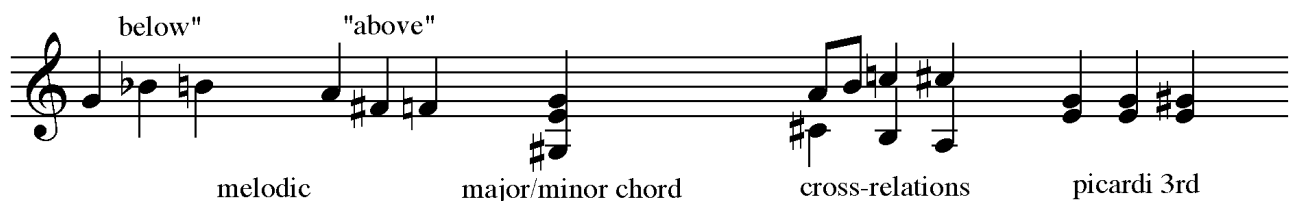
3.3 shows G, Eb, and C areas. The bass line supports G through its G major/minor melody. G-Bb-B (with D-C in the tenor) proceed back through A to G over three measures. The line ends on an F# that acts as the third of a D7 chord, thereby sounding as the dominant of G. C occupies the tenor and alto lines as a C minor scale fragment (C-D-Eb-G-Ab-Bb), and the soprano and alto parts focus on Eb through the Eb #4 octad (Eb-F-G-Ab-A-Bb-C-D). Both C and Eb appear in the octatonic collection II. D is one of the nodes of this collection, meaning that minor, diminished, and dominant 7th chords can be built over it. Therefore, the D7 chord at the end of rehearsal 2 not only supports G, but also supports C and Eb as a node of the octatonic scale to which they each belong.

Therefore, this phrase can not be understood simply as (i VI iv V7) in G minor because each of the three tonal areas, G, Eb, and C, has a separate relationship with the defining chord of the phrase, the final D7 chord.

014 as an 0134 Subset

014 also appears in these opening measures. 014, unlike 013, often creates a sense of modal tension due to its simultaneous major and minor third. Four distinct patterns for 014 develop through the course of the *Mass*; melodic (“above” and “below”), harmonic (major/minor chord), cross relations, and a cadence-defining “Picardi 3rd” (see Figure 3.2). After rehearsal 2, two melodic 014 trichords are sung that are based on 014 and its inversion. Beginning in the fourth measure after rehearsal 2, the bass sings G-Bb-B, outlining the major/minor chord and drawing attention to the G tonal area. The G sounds as the “root,” below the Bb and B, and therefore is an example of the 014 “below” melodic pattern. A measure later, the bass sings an A while the soprano sings F-F# and also draws attention to G. In this “above” example, the “root” changes over a stable “third.” Throughout the *Mass* Stravinsky relies on these trichords for voice leading and chord creation, and here, at the beginning, he underscores their importance in conjunction with the importance of their parent tetrachord.

Figure 3.2 Four 014 uses in the *Mass*



Stravinsky uses 014 as a cadence-defining coincidence, often as harmonic major/minor chords. At cadential points during rehearsal 4 and at the end of rehearsal 8, the 014 chord appears in three of the four ways that it appears in the *Mass*.

Rehearsal 4 consists of two almost exactly repeated two-bar phrases (see Example 3.4). These phrases are built on the 014 chord ACC#, sounded as a vertical major/minor harmony once, and expanded through melodic activity to include an 0134 statement and cross relations. The vertical major/minor chord sounds in the middle of the two bar phrase and is designated with an upward arrow in Example 3.4. The cross-relations begin prior to this 014 simultaneity. C# holds the vocal bass line in addition to sounding in the low trombone and bassoon I. In the second measure, the alto and tenor trade C-naturals. C# returns at the end of the 3/4 measure completing the cross-relation. In Example 3.4 the final two cross-relations are designated with crossing lines between the tenor and alto parts.

Example 3.4 *Kyrie* Rehearsal 4: 014 trichords as EC#C “above,” ACC# “below,” ACC# cross relations, ACC# major/minor chord, EGG# “below,” and 0134 G#ABC

The musical score for Rehearsal 4 of the Kyrie is presented for four vocal parts: Descanti, Alti, Tenori, and Bassi. The time signature is 3/4. The score includes several annotations:

- EG# 014 EG**: A bracket above the first two measures of the Descanti part.
- melodic "above"**: A label above the Alti part, with notes C, E, and C#.
- C-C#**: A label above the Alti part, with notes C and C#.
- cross relation**: A label above the Tenori part, with notes C and C#.
- melodic "below"**: A label above the Tenori part, with notes A, C, and C#.
- 0134: G#ABC**: A label above the Bassi part, with notes G#, A, and B.
- major/minor chord ACC#**: A label below the Bassi part, with an upward arrow pointing to the chord.

The way in which these C-naturals appear causes motion toward the cadence. Their interaction in two simultaneous parts builds tension toward an eventual release on the third note of the trichord. The alto melody, the 014 “above” version, moves from C to E, the root, and back down to C#. The tenor line, the 014 below version, moves from A through B to C and then C#. Both of these melodic lines create a cross relationship within themselves, and with one another, a relationship that drives motion toward the cadential point of repose due to half step tension. In addition, the last note in the first measure of the tenor line combines with the tenor notes in the second measure to create the 0134 tetrachord G#ABC, shown with a bracket below the tenor line. The presence of the parent tetrachord brings added voice leading interest to the passage. Finally, the G# functions similarly with E and G as the C# does with A and C. Tension increases around the EGG# trichord as it does around ACC#.

Rehearsal 8 begins with EFG (013) sounding as the prominent sonority that guides the passage. After F moves to E in the soprano, alto, and oboe 1 parts, the section concludes with G moving to G# in the tenor. This Picardi 3rd resolution, similar to the ACC# in rehearsal 4, accomplishes a goal of tension toward a point of repose (see Example 3.5). The opening 013 trichord, EFG, also connects to the G#, creating an 0134 tetrachord, completing the connection, and bringing the tension to further resolution.

Example 3.5 *Kyrie* rehearsal 8: 014 Picardi 3rd EGG# and 0134 EFGG#

The image shows a musical score for two parts: Alti (Alto) and Tenori (Tenor). Both parts are in 2/4 time. The Alti staff (top) and Tenori staff (bottom) are shown. A bracket above the Alti staff from the 3rd to 5th measure is labeled "0134 EFGG#". An arrow points from the 5th measure of the Tenori staff to the text "Picardi 3rd". The Tenori staff has an "8" below the first measure.

Cadential Convergence

Cadential convergence involves multiple 0257 and 0134 tetrachords, or 013 and 014 trichords, in beats that progress toward a final chord of a rhythmic/metric block. Characteristics of 0257, 0134, and 014 in these instances resemble those discussed above.

The final two measures of rehearsal 9 in the *Kyrie* show a compelling cadential convergence. The first three measures of the rehearsal 9 choral parts contain the same music as the rehearsal 0 choral phrase. An important difference lies in the instruments. Instead of a singular instrumental line in the low trombone, at rehearsal 9 all ten instruments play and focus harmonic motion away from the 0134 tetrachords found in the chorus. A further problem arises in the final measure. Instead of moving from DEbF# to F, and the notes that accompany it, the final measure moves toward G and D, yielding a separate tetrachord and trichord focus (although the trumpet 1 does play a complete statement of DEbFF# in this measure).

The third measure of the tenor and alto line still contains the EbDCB tetrachord. However, in the fourth measure, a separate combination ensues, one that converges from a range of positions on the final G chord. The alto ends the *Kyrie* with DC#B and the

tenor with EFG. When combined with the bass, they form the 0134 tetrachord C#DEF.

Example 3.6 is a reduction of the choral and orchestral parts into two staves. The notes represented in this reduction are those that participate in one of the cadential convergence patterns. The choral parts have been displaced by an octave where necessary to maintain closed position chords. The tetrachord motion toward the final cadence contains three 0134 tetrachords, one 014 trichord and an 0257 tetrachord. These chords each move confidently toward a point of repose.

Example 3.6 *Kyrie* rehearsal 9 reduction: 0134, 013, 014, and 0257 Cadential convergence

The image shows a musical score reduction for two parts: Chorus (top staff, treble clef) and Orchestra (bottom staff, bass clef). The time signature is 4/4. The Chorus part features a melodic line with several chords. The Orchestra part features a bass line with several chords. The score is annotated with chord names and their corresponding tetrachord/trichord labels:

- Chorus: DEbFF#, DCBBb: 0134
- Chorus: C#DEF: 0134
- Orchestra: DEGA: 0257
- Orchestra: GBbB: 014

Note in the example above that the 014 trichord GBbB found prominently in the bassoon 2 creates the melodic Picardi 3rd relationship. 0134 derivatives converge on the final notes at the same time that the trombones and low trumpet melodically outline the DEGA tetrachord. At this, one of the five most important cadences in the work, each tetrachord and trichord join to build toward the concluding sonority. That the final chord BGDG is neither an 0134 or 0257 tetrachord does not negate the overpowering presence

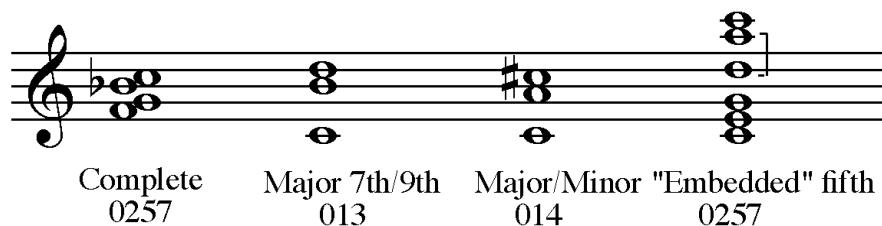
of the two in these final measures. Stravinsky uses tetrachords at each of the five concluding sonorities. Two of the five contain full 0257 chords, one an embedded fifth, and one is only a fifth. The *Kyrie* shows another angle from which Stravinsky highlights tetrachordal organization at cadences. The lack of an 0257 or 0134 chord in the final sonority underscores that the tetrachords are organizational and not tonic substitutes.

Harmony Through Chords and Chordal Blocks

The tetrachords appear as specific chords throughout the *Mass* and help to delineate tonal areas through complete vertical statements. The 0134 tetrachord appears vertically as a complete statement, but most often it is seen as the 013 trichord in the form of a major 7th/9th chord, and as the 014 major/minor triad. The 0257 tetrachord appears often as a complete statement of the tetrachord, and as an embedded fourth or fifth.

Figure 3.3 shows each of these chord types. The first is the FGBbC version of the 0257 tetrachord, the second the BCD 013 major 7th/9th, the third the ACC# major/minor chord, and the last shows DA embedded in a C major chord. The final sonority creates the GACD tetrachord in addition to C major.

Figure 3.3 013, 014, and 0257 Frequent Chord Types



At four measures after rehearsal 6, the vocal parts and woodwinds settle on the chord FGBbC to end the phrase. The same chord is repeated in rehearsal 7 underscoring the importance of this 0257 tetrachord. Although Agawu asserts that voice leading prioritizes F, voice leading actually prioritizes each pitch. The voice leading patterns found in the four parts (SA: 0257 and TB: 013) suggest that each note of the chord should receive equal weight. In contrast to the 013 major 7th/9th chord and the 014 major/minor chord, complete 0257 chords provide resolution, and therefore often occur at final or pivotal moments. At rehearsal 6 and 7 the motion of the *Kyrie* slows into the eventual recapitulation of the opening choral phrase. The two 0257 tetrachords that end these blocks help to clear space for this repeat and the conclusion of the movement.

The major 7th/9th chord appears throughout the *Mass* either as a complete sonority, or with one of the three notes (e.g. CBD) in an adjacent chord. In Example 3.7 a clear occasion of the first of these two possibilities occurs two measures before rehearsal 1. The unaccompanied choral parts sing the chord Eb (bass), D (tenor/alto), and F (soprano) isolating the 013 major 7th/9th as a single chord. The opening chord of rehearsal 5 includes two of the notes in the 013 chord, Db and C (“root” and “major 7th”). These notes find their third note, the Eb “major 9th,” in the oboe part which plays F-Eb-F. Example 3.8 shows that the Eb occupies the second, and adjacent, chord of the phrase and joins with the C and Db across a single beat. As in the simultaneous 013 statement, the 013 adjacent chords appear throughout the *Mass*, often sounding as a prominent sonority of a section.

Example 3.7 *Kyrie* rehearsal 1: 013 EbDF
major 7th/9th

Discanti

Alti

Tenori

Bassi

EbDF maj7/maj9 013 chord

Example 3.8 *Kyrie* rehearsal 5: 013 CDbEb
major 7th/9th with one adjacent tone

Ob. I. II.

C.I.

Fag. I

C Db---Eb
013 major 7th/9th

The 014 major/minor chord also functions as a prominent harmonic sonority, though not as frequently as the 013 major 7th/9th chord. Rehearsal 22 in the *Gloria* presents a prime example of this compositional tool (see Example 3.9). At this point in the *Gloria*, the A^{II} section begins. The prominent C major chord (CEG) of the first measure yields to the prominent E major chord (EG#B) of the second measure creating an EGG# 014 cross relation. This exchange is signified in Example 3.9 by a line connecting the trombone 2 and 3 with the trumpet 1. From the EGG# chord the phrase continues through C#EE# to DFF#. After constant 8th note pulsations throughout the movement that lead to this moment, Stravinsky chooses to hold the DFF# chord for two beats (eight 8th notes). The temporal prominence he places on these chords helps them surface as important sonorities within the *Gloria* and the *Mass*.

Example 3.9 *Gloria* rehearsal 22: EGG#, C#EE#, and DFF# 014 major/minor chords

Dis solo

Alti solo

Ob.I. II.

C.I.

Fag. I II.

Tr in Bb 1

Tr. in Bb 2

Trb 1

Trb 2 and 3

014 EGG#

0134 C#DEF

014 DFF#

The final chord of the *Gloria* (Craft's "Plagal cadence") ends with an "embedded" fourth, as does the final chord of the *Sanctus*. These embedded fourth/fifths are extensions of one of the notes in the chord (usually the fifth of the final chord) or complete an 0257 tetrachord in addition to the other sonority present (usually a major

¹ Craft, "A Notebook," 252.

third) which occupies a place of prominence in the chord. Through repetition and placement the fourth/fifths always occur in the same or similar instruments, and within range, that is, not displaced by an octave. In the *Gloria*, the embedded fourth appears as BE in a chord spelled otherwise entirely of D and F# (see Example 3.10). Were Stravinsky to have completed the D major chord with the fifth, he would have created the 0257 chords ABDE and EF#AB.² Had A appeared in the penultimate chord, due to a positive G presence, the 0257 chords DEGA would have been created. Rather, A is consciously avoided in the final chords of this passage, not only absent from the final chord, but in the two chords prior to the final chord. A does appear prominently, however, throughout the soprano solo line, creating through emphasis of notes, the EF#AB tetrachord, especially when joined with the trombone I and II parts (the parts that play EB in the final chord). The EB embedded fourth in the final measure, therefore, refers to a principle organizing element of the final passage. These notes represent two of fourteen total pitches (all the others D and F#), and therefore, are a subtle part of the sonority.

In a passage that ends with a strong root-major third chord, D major centrality seems clear. However, the measures leading to the D major cadence in the *Gloria* are characteristically ambiguous. The tetrachords in these final measures include EF#AB, ABDE, DEGA, and the 0134 chord G#ABC. These tetrachords combine to form the scale DEF#GG#ABC. Except for one note this scale creates the D #4 octad. The absence of C# and its replacement with C natural, however, causes more ambiguity than normal.

² EF#AB is a prominent set in the third part of the *Gloria*, rehearsal 15-22.

The tonal areas sound most clearly through melodic motion. The soprano line focuses on G and includes the notes EF#GABCD. The trombone I and II parts, however, focus on E with the notes EF#G#BCD. This part begins with the root-third E major, EG#, and ends with the root fifth, EB. The lowest trombone focuses on C with the scale fragment BCDE. Each of these parts that appear in Example 3.10 represent the notes of one or more other parts through their particular melodies. The final embedded fourth then, not only serves to represent the 0257 tetrachord at a final cadence, but helps to justify tonal areas separate from D major.

Example 3.10 *Gloria* rehearsal 24: 013 and 0257 embedded 4th

The musical score for 'The Song of the Shrike' is presented in three staves. The top staff is for the Soprano (Sop.) voice, the middle for Trb I, II, and the bottom for Trb III. The key signature is one sharp (F#) and the time signature is 3/4. The score is divided into four measures. The first measure is labeled 'G tonal area' and '0134: G#ABC'. The second measure is labeled 'E tonal area' and 'EF#AB'. The third measure is labeled 'EF#AB' and 'ABDE'. The fourth measure is labeled 'D tonal area' and 'embedded 4th'. The Soprano part features a melodic line with a trill in the first measure and a sustained note in the fourth. The Trb I, II part features a melodic line with a trill in the first measure and a sustained note in the fourth. The Trb III part features a rhythmic accompaniment with eighth and sixteenth notes. The score is labeled 'tenor' and 'bassoon' at the end.

The above analysis describes some of the ways in which Stravinsky uses the 0257 and 0134 tetrachords as an organizational tool specifically in relationship to melody and harmony. These processes appear throughout the piece as a representation of the organization that the tetrachords provide for the *Mass*. The following discussion will show how the tetrachords combine into diatonic octads and octatonic scales from which tonal areas evolve even in passages with complex harmonic activity.

Gloria: Transition and Connection Across Rhythmic/Metric Contrasting Blocks

Stravinsky uses the 0257 chord as a transitional tool between rhythmic/metric blocks, and as a connection between blocks that display strong rhythmic/metric contrast. The large-scale form of the *Gloria* includes A and B sections. The A sections employ rhythmic foreground and the B sections employ rapidly shifting metric foreground. The addition of contrast between soloists in the A sections and larger ensembles in the B section furthers this contrast. The tetrachords and tonal areas derived from the diatonic octad and octatonic scales act as a bridge between these contrasting sections. At the divisions between the blocks, 0257 chords provide transition by playing similar notes on either side of the division. Across the end of the first A section, through the B section, and into the A¹ section four tetrachords (three 0257 and one 0134) combine to form the E #4 diatonic octad. This octad produces six different tonal areas that interact across four rhythmic/metric blocks.

Example 3.11 shows what appears on the surface to be an abrupt harmonic shift. Rehearsal 12 ends with the tetrachord F#G#BC#, the F#G# and C# found in the concluding oboe, English horn and bassoon parts, and the B as the concluding note of the soprano solo. As seen below, rehearsal 13 begins with the chord DbEbGbAb in the trombones and trumpets. Three of the four notes in the first tetrachord (F#, G# and C#) are the enharmonic equivalents of three of the notes in the second tetrachord (Gb, Ab and Db). 0257 therefore acts as a transition from one section to the next by virtue of the repetition of exact pitches within a slightly different tetrachord. In Example 3.11 lines

connect enharmonic pitches between sections, and tetrachords are notated near their constituent notes. Once sounded, the DbEbGbAb tetrachord repeats unyieldingly throughout the sixteen measures of rehearsals 13 and 14, securing the sonority as a centerpiece within the *Gloria*.

Example 3.11 *Gloria* Rehearsals 13-15: 0257 and 0134 combination in diatonic octad

15

S

A

T

B

Ob. 1

Bsn.

Tr. in Bb I/II

Tbn. 1

Tbn. 2

0257: DbEbGbAb

0134: DbCBbA

EF#AB

etc.

Example 3.11 (continued)

The musical score for Example 3.11 (continued) features the following parts and annotations:

- Discanti:** Treble clef, 3/4 time. Measure 13 is circled with the number 13.
- Alti:** Treble clef, 3/4 time. Measure 13 is circled with the number 13.
- Tenori:** Treble clef, 3/4 time. Measure 13 is circled with the number 13.
- Bassi:** Bass clef, 3/4 time. Measure 13 is circled with the number 13.
- Ob. I.II:** Treble clef, 3/4 time. Measure 13 is circled with the number 13.
- C.I.:** Treble clef, 3/4 time. Measure 13 is circled with the number 13.
- Fag. I.II:** Bass clef, 3/4 time. Measure 13 is circled with the number 13.
- Tr. in Bb I.II:** Treble clef, 3/4 time. Measure 13 is circled with the number 13.
- Trb. I:** Bass clef, 3/4 time. Measure 13 is circled with the number 13.
- Tb II.III:** Bass clef, 3/4 time. Measure 13 is circled with the number 13.

Annotations and Chords:

- 0134: DbCBb(A) - A begins reh 15
- 0257: F#G#BC#
- 0257: DbEbGbAb etc.
- E #4 octad: EF#G#ABbBC#D#
- 0257 chords: DbEbGbAb, C#D#F#G#, F#G#BC#, EF#AB
- 0134: DbCBbA

transitions to C#D#F#G#, the same tetrachord spelled enharmonically. In this instance, however, three of the four notes sound but for an instant, and the fourth, F#, appears two measures later. This kind of context specific use of tetrachords provides insight into Stravinsky's organizational pattern. He needn't linger as long on the second transition for it to engender the same response as the first one. A further transition occurs across the sections using the 0134 tetrachord DbCBbA. At the end of the A section and beginning of the A¹ section two of the four notes appear (C# and A/C#). In the B section, three of the notes appear (BbCDb). Example 3.11 shows these pitches as connected by lines to the DbCBbA tetrachord. Because these three notes continually sound throughout the B

section, their completion in the two A sections bridges the contrast. Therefore, what looks like a radical shift, and what feels rhythmically like a radical shift, actually connects both sides of the B section through a smooth harmonic process.

Chromaticism

Chromaticism influences melodic lines and chords in the *Mass*, though, most often subtly and quickly (e.g. the 16th note English horn flurry before rehearsal 12 in the *Gloria*). Nowhere in the *Mass*, however, presents more of an analytical challenge than the “et iterum venturus” section at rehearsal 35 of the *Credo* because of its sustained chromaticism. This section is highly chromatic, every chord involving no fewer than four different pitch classes, most often five or six. The top melody in the soprano/trumpet 1 line moves by half step from B upward to Eb over ten measures, and an equally chromatic bass line extends through the low trombone. This is one of the few places in the *Mass* where 0134 sounds vertically. Attempts to explain this section as octatonic, by van den Toorn, and as an extension of an A-Eb axis, played out over the course of the *Credo*, by Lundergan, fall short of a complete explanation of the melody and harmony involved in this section. Lundergan, for example, highlights the emphasis Stravinsky places on the text through the presence of “The ‘reserved’ pitch-classes, Bb, G#, and Eb, which serve as structural references because of their rarity [in the *Credo*],” and “also serve to highlight the most dramatic and emotionally charged moments in the text: the crucifixion, the resurrection, and the promise of eternal life.”³ While observances of this

³Edward Lundergan, “Modal Symmetry and Textural Symbolism in the Credo Of the Stravinsky Mass,” *The Choral Journal* 45/8 (2005): 9-17.

kind point to the dramatic effects of this ten measure chromatic passage, they do not define the underlying harmonic premise on which it, and the rest of the *Mass* is built. Rather, they emphasize possible surface note organizational schemes that play upon that harmonic premise.

The melody and harmony in the “et iterum venturus” section work through the intermingling of the DEGA and DbEbGbAb tetrachords, and the ABDE, CDFG, FGBbC, and AbBbDbEb tetrachords that surround these primary two (see Example 3.12). That the primary two tetrachords are a half step apart accounts for a large part of the chromaticism in this section, and the addition of ABDE at the beginning and CDFG and AbBbDbEb near the cadence point, adds to this chromaticism by acting as an extension of DEGA and DbEbGbAb. The FGBbC tetrachord sits in between the two groups, connecting to each through two different octads, the A b2 ordering (ABbBCDEFG) and the Ab b7 ordering (AbBbCDBbFGbG). Further, these ten measures show the highest concentration of complete 0134 tetrachords in the *Mass*. Two distinguish sub-sections through block transitions, two function linearly, one creates the upper line and one the bass-line, and three pronounced vertical 0134s with an emphasis on 014 (e.g. GBbB). The high concentration of 0134 tetrachords creates reference to each of the three octatonic collections. One reference contains the entire collection I (EFGAbBbCbDbD), one contains six notes of collection III (GbGABbCDB) and one contains four notes from collection II (BCDEb).

Example 3.12 *Credo* rehearsal 35 reduction: 0257 and 0134 organization
 Soprano melody with 0134 and 0257 chords, Reduction of full
 harmony, and Bass line

(a) BC(DEb) 0134 (b)

Melody 0134 0257

Chords EF GG# 0134 ABb CD b 0134 Gb GBb 014 Db(Eb) Gb Ab 0257

Full Harmony

"Et iterum venturus est cum gloria" "judicare vivos et mortuos:"

Bass line (EF) GG# 0134 (D) EGA 0257

(c) (BC) DEb 0134

FG Bb C 0257 Ab Bb Db(Eb) 0257 Bb Cb Db D 0134 Gb Bb 014 Db Eb Ab Bb 0257

"cujus regni non erit finis"

C(D F) G 0257 DEG(A) 0257 (C) D F(G) 0257 EFG(G#) 0134

Example 3.12 reduces rehearsal 35 to three staves. The top staff shows the soprano melody, 0257 chords and 0134 chords. The middle staff reduces the chords on each beat to triads in closed position to illuminate the dense chromaticism found in the passage, and the bottom staff shows the bass line. The 0257 tetrachord DEGA opens and closes the “et iterum venturis” section. The opening two measures of rehearsal 35 includes the pitches E, G and A, and the D functions as a transitional note from the last measure of rehearsal 34 which includes E, G, and D. Likewise, the section ends with DEGA, the D, E, and G forming much of the low notes in the trombones and vocal bass, and the A found as the only note from the DEGA tetrachord to appear in the center section, dominated by DbEbGbAb.

DbEbGbAb provides for notes in the center section (b) beginning two measures after rehearsal 35 with the appearance of F# in the alto and trumpet 2 (changed enharmonically to Gb in the next measure). In the third measure Db influences multiple parts, and Ab occupies the bass. In the following measure the appearance of A signals the beginning of the return of the DEGA tetrachord, which takes place over the next five measures, followed by the introduction of G, E, and D. DbEbGbAb continues, however, intermingling with DEGA, and changing to AbBbDbEb especially through the influence of the soprano, alto, and trumpet parts.

These parts play out the new tetrachord through the soprano/trumpet 1 motion from Db-Eb and the alto/trumpet two motion from Ab-Bb. CDFG appears first as the DEGA tetrachord begins to reassert itself in the sixth measure. Here, a sustained C in the trombone 1 part and a return to G in the bass line (trombone 3) instigates the beginning of

the tetrachord, which finds completion at the cadence in the trombone II and III's F-D chord sounded against the Eb-Ab of the AbBbDbEb tetrachord in the upper parts. These four tetrachords alone create a considerable amount of chromaticism and stand in contrast to Stravinsky's normal use of the 0257 tetrachord, a practice that generally relies on common-note tetrachords. Usually, Stravinsky incorporates 2-4 tetrachords that overlap (e.g. GACD, DEGA, CDFG, and FGBbC). Here, however, he juxtaposes four tetrachords in sets of two that do not overlap with the tetrachords in the other set (DbEbGbAb and AbBbDbEb vs. DEGA and CDFG) except through the central-placed FGBbC. FGBbC acts as a pivot between two conflicting tetrachord sets.

Further support for tetrachordal organization in this section comes from Stravinsky's use of 0134 chords (see Example 3.12). Chords in the top staff of Example 3.12 show that in these ten measures, seven different examples assert themselves. They function as inner-block transitions, as 014-focused vertical sonorities, and as melodies connecting the entire block through the highest and lowest sounding lines.

ABbCDB and BbCbDbD occur at inner-block transitions and serve to connect the otherwise disparate chord structure of the outer and middle parts of the section. ABbCDB appears at the first major shift of (a) to (b), from DEGA to DbEbGbAb in the third measure of rehearsal 35. A and C dominate the second measure tenor and soprano notes, and change to Bb and Db on the second beat of the third measure. The tenor continues on to C, and the bass eventually takes up the Bb a measure later at which time A reappears further connecting the four notes. The transition that sees a return of the DEGA/CDFG tetrachords occurs at seven-eight measures after rehearsal 35 (c). In the seventh measure,

the soprano, tenor, and trumpet parts sing/play Db and Bb exclusively. In the eighth measure they transition from Db/Bb to D/Cb. This transition occurs in the exact way that the first one occurred. The similar transitions separate the text into three subgroupings 1) “and he shall come again in glory” 2) “to judge the living and the dead” 3) “and his kingdom shall have no end.”

On three occasions, also associated with the three text subsections, Stravinsky places the 0134 chord vertically, highlighting the 014 trichord. Each of these chords appears at the start of a textual subgroup. EFGG# opens rehearsal 35, providing a transition from the previous section’s final chord (E, G, G#) and establishing the 0134 tetrachord as an important element to the “et iterum venturus” text. This opening chord includes the notes EFGG# and B, four of the five notes in the 0134 tetrachord. The chord focuses on the 014 trichord by proximity. The lowest notes, in the low trombones, play E-G# and the vocal bass and tenor/alto sing E-G thereby establishing the major/minor triad above and below the “root” note E, or the “below” voicing discussed earlier.

The next occasion of 0134/014 begins the second section. On the downbeat of the third measure (the same beat that utilizes transition through ABbCDB) the tetrachord GbGABb appears. Although one of the notes occurs an eighth note early, the three 014 trichords occur on the beat. The low trombones play G-Bb while the tenor and alto play Bb-Gb, thereby centering the major/minor thirds around the Bb, or the “above” voicing. The third example occurs at the transition to the third textual subgroup with GAbBbCb. In this instance, like in the GbGABb chord, the Ab appears one eighth note apart from the Bb, but the 014 trichord dominates the texture. Finally, for almost an entire two measures

(each surrounded by an Ab) the low trombone, vocal bass, high trombone, tenor and alto parts play GBbCb, This time the G is in the bass. The major and minor thirds occupy space above the G and occur an octave apart from one another representing the “below” voicing.

The 0134 tetrachord guides the two melodic lines that connect this section, the lowest (trombone 3) and highest (soprano and trumpet 1) lines. The bass line plays the notes FGG#A. The first three dominate the line, and the A appears for only two beats. The FGG# connect with the E that ends rehearsal 34, appears in the first chord at Reh 35 and begins rehearsal 36, creating EFGG#. From the end of rehearsal 34 through the beginning of rehearsal 36, the bass line functions as E-F-G-G#-G-Ab-(A)-Ab-G-F-E, moving from the lowest note in the tetrachord to the highest one, and back again.

The soprano line mirrors the bass line and acts to bind the section melodically. This chromatic line B-C-Db-D-Eb is framed by the tetrachord BCDEb. It opens with four beats of B, and four more of C, and closes with four beats of D and seven of Eb, a total of 19 beats. The Db in the middle dominates the soprano line over 19 beats in succession. This central focus of Db helps to anchor the 0257 tetrachords that include the note, and stands in opposition to the 0134 pattern that frames the passage. In addition, Db integrates with the two transitional 0134 tetrachords, giving it equal validity as an 0134 tetrachordal member.

To discuss tonal areas amongst this high level of chromaticism seems difficult at best. Areas such as E, Db, C and G appear in quick, usually one-measure incidents derived from the constituent octads and octatonic scales, and they never sound

unchallenged by other notes in the section. This passage is either a cacophony of tonal areas or truly chromatic. Although the passage contains consistently complex harmonies, however, it still maintains directed harmonic motion. This suggests that the organization based upon the tetrachords continues to function even without a clear understanding of tonal areas, and, more importantly, that the surface information provided by tonal areas is less important than the organization provided by the tetrachords.

Fugal Interaction of the Tetrachords: The *Sanctus* Fugue

The *Sanctus* fugue (rehearsals 45-47) demonstrates the most pointed use of the 013 trichord specifically in relationship to melodic motion and tonal area definition. In addition, like the “et iterum,” it displays a deep integration of the 0134 and 0257 tetrachords. The vocal parts during the fugue are all built upon the 013 trichord and 0257 tetrachord, and fugue entrances begin on E, B, E, and B. The trombones and trumpet 1 support vocal imitation with a steady motion of one- and two-part counterpoint that outline 0257 tetrachords ABDE and GACD. Further, all parts end the section on a complete statement of GACD. Example 3.13 reduces the fugue to four measures (one measure per vocal entrance). The reduction includes reference to 013, 0134, and 0257 chords as they occur.

Stravinsky initiates the fugue with the trichord DEF in the bass solo at two measures after rehearsal 45. Beginning in the second measure, however, he introduces the 0257 DEGA tetrachord. The tenor entrance at rehearsal 46 mimics the 013 DEF trichord with the ABC trichord. In addition, the entrance on B connects with the bass line to form the ABDE tetrachord over the next two measures. Unlike the bass part, the tenor part does not yield melodically to an 0257 tetrachord, but proceeds to another 013 trichord A#BC# which begins the 0134 tetrachord A#BC#D that extends over the next measure and a half, interrupted momentarily by the CD^bE^b trichord. The bass line also changes trichords after rehearsal 36, using F#GA, EFG, and GAB^b before rehearsal 47. At rehearsal 47 the alto part enters with the same DEF trichord begun by the bass part, and the bass and tenor solos changes to the BCD trichord. Like the tenor part, the alto

does not integrate the 0257 tetrachord, but changes to the trichord EF#G. In one measure after 47 the tenor changes to the trichords EF#G followed by C#DE, and the bass line progresses to C#DE. The soprano enters at two after rehearsal 47 on B, and sings the ABC trichord. The soprano continues to the tetrachord ABDE in the manner of the bass solo entrance. The bass and tenor lines at two after rehearsal 47, followed by the alto in the following measure, shift focus from the 013 trichords to the GACD and DEGA tetrachords, interrupted by C#DE trichord in the tenor. From this point forward all parts focus on 0257 tetrachords ABDE, DEGA, and GACD with only two more 013 voice-leading passages, the soprano's EF#G and the bass's CBA. The final choral chord of the fugue is GACD. This chord is echoed in the trumpet and trombones, which play CG. This final tetrachord also serves as the basis for all of the tonal areas in the *Sanctus* fugue. Over the course of twelve measures each note, GAC and D serves as a tonal area at least twice, connecting to the D b7 octad.

The above examples demonstrate Stravinsky's commitment to the organizing rhythmic/metric blocks and 0257 and 0134 tetrachords, their connection to the diatonic octad and octatonic scale, and his ability to draw transient tonal areas from this relationship. The rest of the *Mass* proceeds in a similar manner, and leads to the conclusion that the *Mass* is highly organized around a focused construction process.

Chapter 4: *Agnus Dei*

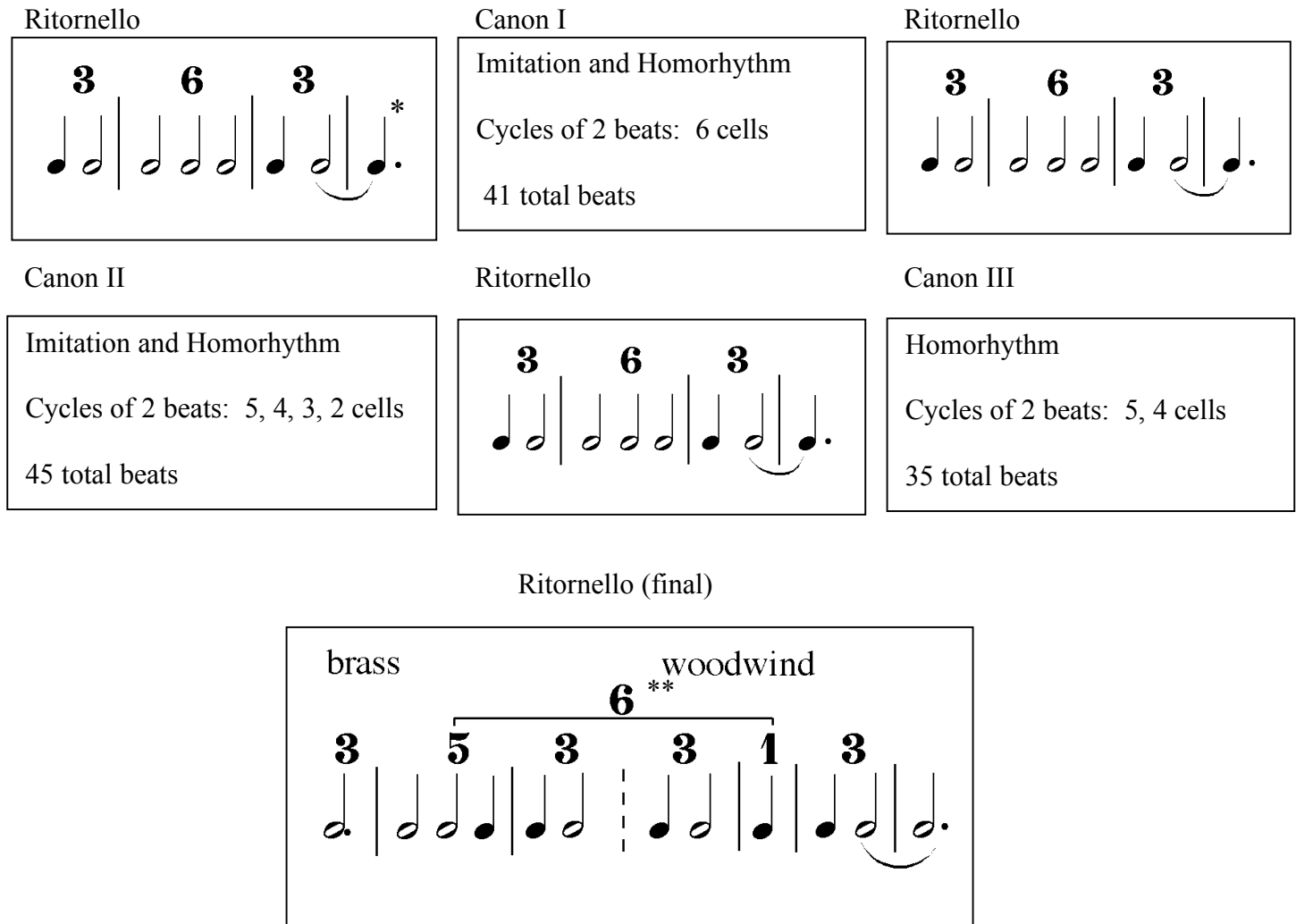
Frequent and definable use of intervals in the 0257 and 0134 tetrachords, trichord subsets of these tetrachords, and the scales and tonal areas derived from their interaction dominates harmonic and melodic relationships in the *Mass* and plays an important organizational role in the *Agnus Dei*. However, Stravinsky refines his approach to both harmony and rhythmic/metric blocks in the movement. Rhythmic/metric blocks in the *Agnus Dei* create sharply-defined instrumental ritornello and choral canon sections, the bulk of the movement occupied by the choral canon. In addition to tetrachord-based harmonic construction, intervals in the canon undergo strict imitation. Both the tetrachordal organization and the harmonic organization of the canon subsist on interaction between specifically defined intervals, but the intervallically-defined canon hones the power of the construct-centric compositional process. Through clearly defined and repetitive rhythmic/metric blocks and through tetrachord interaction and intervallic imitation in the canon, the *Agnus Dei* proves the most strictly organized movement in the work.

Formal Definition: Ritornello and Canon

The form of the *Agnus Dei* includes four short instrumental ritornelli and a 29-measure choral canon divided into three portions. As Figure 4.1 demonstrates, the ritornelli maintain a tightly constructed symmetry based upon three rhythmic cells of 3 beats, 6 beats, and 3 beats respectively (the final ritornello is an elaboration on that pattern). Repetition of the ritornello helps to define form in the *Agnus Dei*, and repetitive rhythm defines form inside the ritornello. The canonic segments, on the other hand, vary

in overall length and rhythmic makeup. Again, Figure 4.1 shows that the ritornelli provide contrast with the canonic sections. These canonic sections proceed through imitation and homorhythm in variant cycles.

Figure 4.1 *Agnus Dei* Large-Scale Form: ritornello and canon



*=the extra beat and a half at the end of each ritornello rhythmic figure reflects importantly on the harmonic organization of the ritornello but less-importantly on the rhythmic organization shown in this diagram. Rhythmically it has the effect of a fermata. The same holds true for the three beats at the end of the final ritornello.

**=The combination of the inner beats of the final ritornello create a similar pattern to the first three ritornelli. Instead of six inner beats found in the 3/2 measure, however, a combination of two internal six-beat patterns unfold. The first through a connection of the five beats in the middle of the brass section and the one beat that centers the woodwind section, and the second through a combination of the end of the brass section and beginning of the woodwind. The pattern 3-6-3 therefore unfolds as 3—5+1 and 3+3—3.

The ritornello contains fourteen beats. The final two beats act as a harmonic extension of the last chord, but do not influence rhythmic organization. Rhythmically, therefore, the ritornello is divided into three sections; 1) three beats ($\frac{3}{4}$ meter), 2) six beats ($\frac{3}{2}$ meter) and 3) three beats ($\frac{3}{4}$ meter). The two $\frac{3}{4}$ measures share emphasis on the second beat of the measure, the first by stopped motion on the second beat, and the second by a decrescendo that begins on the third beat, thereby emphasizing the second beat. Therefore, the rhythmic repetition in the second $\frac{3}{4}$ measure provides closure. The $\frac{3}{2}$ measure proceeds in three two-beat pulses that bring regularity to the center of the ritornello, and contrast to the $\frac{3}{4}$ measures. The ritornello, thus, provides rhythmic predictability, and defines the large-scale form of the movement by rhythm and repetition.

The final ritornello reflects an elaborated version of the first three. In the first three ritornelli, metric irregularity provides foreground interest while rhythmic symmetry provides background stability. In the final ritornello, Stravinsky switches the dichotomy, so that the rhythm provides for the foreground and the stable $\frac{2}{4}$ meter the background. Similar symmetry results in the final ritornello, but with a few important differences. The final ritornello splits the brass and woodwind choirs into two-measure blocks (instead of the four-measure blocks of the first three that has all ten instruments play simultaneously). Each block in the final ritornello produces its own truncated version of the original four-measure passage.

Both of the final blocks open and close with three-beat cells, as is seen in the “Ritornello (final)” portion of Figure 4.1. The three-beat cells in the brass phrase surround a five-beat cell (3+2) and the three-beat cells in the woodwind phrase surrounds

a 1-beat cell. The two inner phrases together equal six beats, thereby yielding the same 3+6+3 symmetry, but split into two choirs. In addition the two combined represent a single elongated phrase with three-beat cells on either end of two six-beat cells, notated with a bracket in the figure.

A final important element in formal definition is durational contrast. The ritornello maintains a consistent length, but the canon proceeds irregularly. Each ritornello is fourteen beats long (with the exception of the final one). The three sections of the choral canon contain 41, 45 and 35 beats respectively. Therefore, the ritornello establishes a point of repose and regularity within the irregular length and execution of the canon.

Canon

The three separate canonic sections are organized by rhythmic imitation and homorhythm. Each canon has a foreground meter that changes frequently. The rhythm also changes but in a series of patterns of two- and three- beats, or cell cycles. This pattern recalls the 3-2 beat alternation in the B section of the *Gloria* but with less regularity. The specific two- to three-beat pattern organization depends largely upon cell cycles (see Example 4.1).

The first two canonic sections include rhythmic imitation, as shown at rehearsal 56 in Example 4.1. The first canon begins with a rhythmic cycle that includes six two-beat cells. The upper parts initiate the cycle, which is imitated exactly in the lower parts two measures later. The second point of rhythmic imitation begins at rehearsal 60 with the upper parts and contains cells of both two and three beats. In all, this rhythmic cycle

begins at rehearsal 60 and contains four two-beat cells and two three-beat cells. The lower parts begin on the off beat of the upper part's second two-beat cell, thus creating syncopation.

At most other points in the canonic passages, all parts move in homorhythm, but continue to create cycles. The full collection of these rhythmic cycles from beginning to end creates a series of decreasing two-beat cells that moves from large to small before beginning again. These cycles include collections of 6 cells (Reh. 56), 5 cells (Reh. 59), 4 cells (Reh. 60), 3 cells (2 b/f Reh. 61), 2 cells (Reh. 62), back to 5 cells (3 a/f Reh. 62), and 4 cells (Reh. 63). Here we see Stravinsky using the same rhythmic/metric foreground/background procedure but with a twist. Instead of a mixed meter and steady rhythm, he uses a mixed meter and patterned rhythm, one that references the imitative element of his compositional process, the canon.

Example 4:1 *Agnus Dei* canon: rhythmic imitation, homorhythm, and two- to three-beat cell cycles interspersed with ritornello rhythm.
 Canonic entries marked in large numbers

The musical score is divided into three systems. The first system includes parts for Discanti, Alti, Tenori, and Bassi. The second system continues the vocal parts and introduces the Oboe I, II. The score is characterized by frequent time signature changes and complex rhythmic groupings. Key markings include:

- Reh 56** and **Reh 57** at the top of the first system.
- homorhythm** markings above the Discanti and Alti staves in the first system.
- imitation: 6 cells** markings under the Alti and Bassi staves in the first system.
- SA:** and **TB:** markings with rhythmic values (2, 3) under the Alti and Bassi staves.
- ritornello** and **Reh 59** markings at the start of the second system.
- exact note imitation** marking between the Alti and Tenori staves in the second system.
- 5 cells** marking under the Bassi staff in the second system.
- homorhythm** marking above the Discanti staff in the second system.
- 3**, **6**, and **3** markings above the Oboe I, II staff in the third system.

Example 4.1 (continued)

Reh 60

homorhythm

imitation: 4 cells

exact note imitation →

imitation: 4 cells

3 cells

ritornello

Reh 62

homorhythm

Reh 63

2 cells

5 cells

4 cells

Oboe I, II

The musical score consists of four staves. The first two staves are for Reh 60, the next two for Reh 62, and the bottom staff is for Oboe I, II. The time signature changes frequently, including 3/2, 3/4, 2/4, and 3/8. The Reh 60 section has a 'homorhythm' bracket over the first two staves. Below the first staff of Reh 60, there are annotations: '2 2 2 2 3 3 3' and 'imitation: 4 cells'. Below the second staff of Reh 60, there are annotations: '2 2 2 2 3 3 3' and 'imitation: 4 cells'. Below the third staff of Reh 60, there are annotations: '2 2 2 2 3 3 3' and 'imitation: 4 cells'. Below the fourth staff of Reh 60, there are annotations: '2 2 2 2 3 3 3' and 'imitation: 4 cells'. The Reh 62 section has a 'ritornello' annotation. The Reh 63 section has a 'homorhythm' bracket. Below the first staff of Reh 63, there are annotations: '2 2 3 2 2 2 3 3 2 2 2 2 3'. Below the second staff of Reh 63, there are annotations: '2 2 3 2 2 2 3 3 2 2 2 2 3'. Below the third staff of Reh 63, there are annotations: '2 2 3 2 2 2 3 3 2 2 2 2 3'. Below the fourth staff of Reh 63, there are annotations: '2 2 3 2 2 2 3 3 2 2 2 2 3'. The Oboe I, II part is at the bottom with a 3-measure phrase.

Harmony, Melody, and Voice Leading in the Ritornelli

The *Agnus Dei* ritornelli provide a clear example of the construct-centric organizational process described in Chapter Two and shown by example in Chapter Three. Two 0257 tetrachords organize the notes in the ritornelli in tight succession. In addition, four 013 trichords and one 014 trichord dictate voice leading around a central sonority that itself is a combination of the 0257 tetrachords and 013/014 trichords. The notes in these chords articulate the D b7 ordering of the diatonic octad (DEF#GABCC#) and create two tonal areas on either side of the central sonority.

The notes of the GACD tetrachord create a framework for the four-bar ritornello. Example 4.2a shows that these four notes appear as diads with CG to open the passage and DA to close it.

Example 4.2a *Agnus Dei* rehearsal 55: ritornello framework CG : DA

Framework

The musical notation shows a four-measure framework in 3/4 time. The top staff (treble clef) and bottom staff (bass clef) each contain four measures. The notes are: Measure 1: C4 (bass), G4 (treble); Measure 2: D4 (bass), A4 (treble); Measure 3: D4 (bass), G4 (treble); Measure 4: C4 (bass), A4 (treble). The notes are written as half notes.

C and D dominate the bass line, moving from C priority to D priority. The passage ends with D and A, first in trombones II and III, and, two beats later, in the bassoon and English horn. In both the first and last chords, upper parts coordinate with the bass notes

Example 4.2b *Agnus Dei* rehearsal 55: ritornello C(G)D(A) bass line

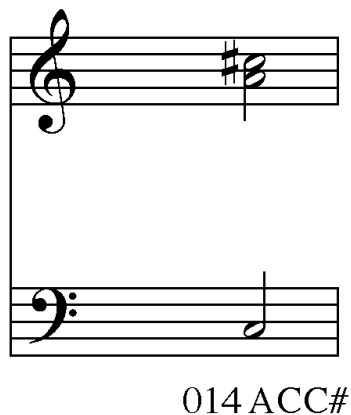
The GACD and DEGA tetrachords provide melodic interest throughout the four-measure passage. DEGA begins with EA in the oboe parts of the first chord, and ends with DA in conjunction with GACD on the final chord. Two melodic patterns in Example 4.2c show the importance of DEGA to the ritornello. The first, found in the oboe 1 part, proceeds in half notes and plays the highest line of the passage (see Example 4.2c, treble clef, second measure half notes). The second, found in the oboe 2, proceeds in quarter notes and plays an octave below the oboe 1 part until the end of the second measure when they join on A. GACD, found melodically in the trumpet I and II parts, mirrors the oboe 1 part in rhythm and range (it is notated down an octave in Example 4.2c for clarity). In each case the melodic lines move in whole steps and perfect 4th/5ths.

Example 4.2c *Agnus Dei* rehearsal 55: ritornello 0257 melodic

The image displays a musical score for a section of *Agnus Dei*. It consists of two staves: the top staff is labeled 'Framework 0257 Melodic' and the bottom staff is labeled 'Bass line'. The top staff is in treble clef and the bottom staff is in bass clef. The music is written in 3/4 time, with a key signature of one flat (B-flat). The top staff features a melodic line with various intervals and rests, while the bottom staff provides a harmonic foundation with chords and single notes. The score is divided into four measures, each with a 3/4 time signature. The first measure has a 3/4 time signature, the second and third have a 3/2 time signature, and the fourth has a 3/4 time signature. The bass line starts with a half note, followed by a quarter note, and then a half note. The melodic line starts with a half note, followed by a quarter note, and then a half note. The bass line ends with a half note, followed by a quarter note, and then a half note. The melodic line ends with a half note, followed by a quarter note, and then a half note.

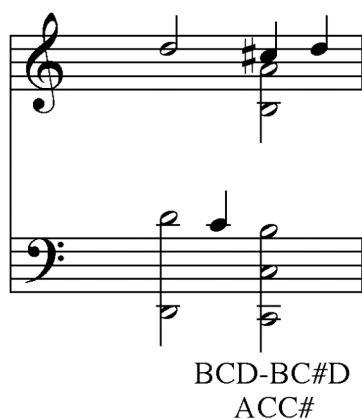
The 013 and 014 trichords add a final layer of organizational support to the ritornelli. They intertwine particularly around the center of the passage and highlight the centricity therein. The ritornelli have fourteen beats (3+6+3+2), the center of which is the 8th beat, or, the third beat of the 3/2 measure. At this beat a shift occurs that transfers priority from the CG-defined area to the DA-defined area. The 8th beat central chord becomes a hub of activity in this short passage. On this beat each 0257 tetrachord (represented through AC-EA), 013 trichords belonging to the CG area (BCD and EFG) and the DA area (BC#D and AGF#), and the only 014 trichord (ACC#) commingle. The ACC# shown in Example 4.2d trichord is the core of the 8th beat central chord that focuses the passage.

Example 4.2d *Agnus Dei* rehearsal 55: ACC# 014 trichord as the core of the 8th beat central chord



The A occupies a central location under C# and above C. Two groups of 013 trichords provide motion toward and away from the 014 focal point, and account for the other two notes of the central chord, E and B. Each group accentuates the exchange from CG to DA across the center point. EFG changes to EF#G (followed by AGF#) and BCD changes to BC#D in the upper parts (BCD continues in the bass line because of its essential 013 supporting role). The BCD-BC#D exchange occurs closest to the 014 chord.

Example 4.2e *Agnus Dei* rehearsal 55: ritornello 013 BCD-BC#D exchange Around the ACC# central core



Example 4.2e demonstrates how the D occurs in the chord immediately before and immediately after the central chord. The B-C and B-C# diads function in a similar manner to the ACC# trichord. B acts as a center point below C# and above C. The low D leads to the C over which B completes the trichord. Likewise, B and C# combine with the C#-D diad found in the oboe 1 to complete the BC#D trichord. E also centers the EFG-EF#G (AGF#) motion as a member of the central chord.

Example 4.2f *Agnus Dei* rehearsal 55: ritornello 013 EFG-EF#G (AGF#) exchange
Around the ACC# central core

EFG-EF#G (AGF#)
BCD-BC#D
ACC#

EFG and EF#G extend further away from the 014 trichord to the first and last measure of the ritornello. Example 4.2f demonstrates that even with a third and more extended layer of notes, the passage remains symmetrical around the 8th beat chord. EFG occupies upward-moving lines toward the central chord. G sounds immediately before the chord, E as a part of the chord, and F# translates focus from CG to DA on the beat following. AF#G mirrors the melodic line found in the EFG trichords prior to the central chord, but

moves away from it in a downward-moving line. A composite diagram of harmonic framework, bass line, 0257 melodic, and 013 melodic motion around the 014 central core chord reveals a complex construction built on the two constituent tetrachords of the work.

Figure 4.2g *Agnus Dei* rehearsal 55: composite construction: framework, bass line, 0257 melodic, 013 melodic and 014 central chord

The musical score consists of two staves. The top staff, labeled 'Framework 0257 Melodic', is in treble clef and 3/4 time. It shows a sequence of chords and melodic lines. The bottom staff, labeled '013/014 Bass line', is in bass clef and 3/4 time. It shows a sequence of chords and melodic lines. The music is in 3/4 time and features various chords and melodic lines.

In the opening measure of the ritornelli, the oboe I and II parts play CG. The passage ends with an unadorned D major chord (DF#A), through which the DA(D) perfect fourth/fifth accentuate the 0257 tetrachord. In the center of the passage EFG and BCD change to EF#G and BC#D. The combination of these notes and the notes that surround them creates the D b7 diatonic octad (DEF#GABCC#). More importantly, however, the harmonic framework and melodic lines create two distinct tonal areas, one on each side of the central trichord. The notes prior to the central chord all belong to the C major scale (CDEFGABC) and those following the center belong to the D b7 octad. Neither has a strong degree of priority over the other, but, the method of interchange underscores two principle factors in the *Mass*: 1) Stravinsky uses organizational tetrachords to create tonal areas and 2) through rhythmic/metric formal blocks he

neutralizes the priority of one tonal area over another. In this case, he does so through the symmetrical placement of each tonal area around a central chord that is a combination of principal notes found in each one. The organization of these notes reveals tetrachord-based construction instead of fulfilling diatonic expectation.

Example 4.3 *Agnus Dei* Ritornello: Central Chord, Scales and Tonal Areas

The musical score for Example 4.3, *Agnus Dei* Ritornello, features seven instrumental parts: Oboe I, II; Corno Inglese; Fagotti I, II; Trombi in C I; Trombi in C II; Tromboni I; and Tromboni II, III. The score is divided into three measures, each with a specific time signature: 3/4, 3/2, and 2/4. The first measure is labeled 'C tonal area' and the second 'D tonal area'. The third measure is labeled 'CG' and 'CDEFGAB'. The fourth measure is labeled 'EFG-EF#G', 'D-CBC#-D', and 'ACC#'. The fifth measure is labeled 'DA' and 'DEF#GABCC#'. The score includes various musical notations such as notes, rests, and accidentals, with some notes highlighted in boxes to indicate specific tonal areas.

C tonal area

D tonal area

Oboe I, II

Corno Inglese

Fagotti I, II

Trombi in C I

Trombi in C II

Tromboni I

Tromboni II, III

CG
CDEFGAB

EFG-EF#G
D-CBC#-D
ACC#

DA
DEF#GABCC#

Internal Connection in the Choral Canon

Stravinsky uses canon as a surface compositional element in the *Mass* three different times prior to the *Agnus Dei*. Each previous time he uses the canon as a form-generating rhythmic element. In them he intertwines 0257 and 0134 tetrachords with Renaissance counterpoint technique to explore rhythmically-established, surface-defined canonic passages. These same practices apply to the *Agnus Dei* canon, with two important differences. In regard to form, the *Agnus Dei* canon influences the entire movement, operating in conjunction with the ritornello. Other instances of canon in the *Mass* occur singularly within a given movement, influencing local form only. Secondly, Stravinsky relies on intervallic imitation to organize the choral canon. Harmonically, in the other canonic passages, Stravinsky composes imitative melodies based upon the tetrachords (0257 in the *Kyrie* and *Credo*, and 0134 and 0257 in the *Sanctus*). Although he uses rhythm, meter, 0257 and 0134 tetrachords as important organizational elements in the *Agnus Dei*, another organizational layer supercedes them. In the *Agnus Dei* canon, Stravinsky uses four vocal parts to create a two-part canon through vertical intervallic imitation rather than horizontal melodic imitation (see Example 4.5).

The soprano and alto parts function as a single “voice,” juxtaposed with the tenor and bass parts that also work together. The “parts” in the two-part canon then are 1) SA and 2) TB. This specific reading is necessary because it is the interval content between vertical sonorities that determines the organization. In the following explanation, intervals have been reduced to their interval-class so that any interval greater than a tritone (ic 6) has been reduced to its smaller equivalent (e.g. a major 6th, ic 9, has been reduced to ic 3—a minor 3rd). The following analysis shows that Stravinsky composed

with intervals in this way in order to create a tightly-controlled canon. This reveals a systematic compositional technique, a process that impacts the tetrachord organizational theory because it displays another analogous intervallic compositional construction within the same work.

Example 4.5 *Agnus Dei* rehearsals 56-57: Canon I Interval Class Connection

The musical score for Example 4.5, *Agnus Dei* rehearsals 56-57: Canon I Interval Class Connection, is presented in two systems. Each system consists of four staves (treble, alto, tenor, and bass). The first system includes interval labels (P4, M7, P5, m3, M2, M3, m7, P5, P4, P4) and fingering numbers (a) 5, 1, 5, 3, 2, 4, b) 5, 5, 2, 5, 5, 5. The second system includes interval labels (m3, M3, m3, m2, m6, P5, m3, P4, m7, P5, P4, P4, M6, m6, M6, M7, m6, P5, m3) and fingering numbers (c) 3, 4, 3, 1, 4, 5, 3, 5, 2, 5, 5, 5, c) 3, 4, 3, 1, 4, 5, 3). Arrows indicate connections between the two systems.

In the *Agnus Dei* canon, the imitative part (TB during the first choral section) exactly imitates the interval-class organization of the first part. For example, the SA part opens with the intervals P4 (GC), M7 (CB), P5 (DA), m3 (EG), M2 (EF#), M3 (DF#). The interval-classes are P4=5, M7=1, P5=5, m3=3, M2=2, M3=4 (5 1 5 3 2 4). The TB part opens with the intervals P4 (FBb), M7 (BbA), P5 (CG), M6 (FD), m7 (ED), m6 (EC). The interval-classes are P4=5, M7=1, P5=5, M6=3, m7=2, m6=4 (5 1 5 3 2 4). Although the specific intervals differ (P4, M7, P5, m3, M2, M3 vs. P4, M7, P5, M6, m7, m6), the interval classes are identical (5 1 5 3 2 4). Stravinsky maintains this process throughout the choral sections of the *Agnus Dei*. Moreover, he ties the sections together across ritornello interjections through the same method (see Example 4.6). For example, the SA in the first choral section ends with the ic set (1 3 3 3 5 3). The TB part which opens the second choral section begins with ic set (1 3 3 3 5 3).

Example 4.6 *Agnus Dei* rehearsals 57 and 59: Interval Class connection across ritornello

SA at 3 after 57

TB at 59

In the two instances where Stravinsky ties the choral sections together across the ritornelli he uses either the same pitches or their octave equivalents (thereby creating the same ic sets). Both times, however, he manipulates the pitches through rhythm. By using the same pitches he unifies the canon otherwise cut in two by the ritornello passage. The rhythmic changes certify that rhythm and meter supercede harmony in the *Mass*, for, by slightly changing the rhythm Stravinsky invigorates the same harmonic/melodic passages and convinces the listener that they are hearing new material.

In the final choral section Stravinsky begins both parts simultaneously, but continues to use the same practice of interval-class organization. The second choral section ends with the TB part singing the intervals (5 1 3 0 2 3 3 2 5 5). The TB part opens the third choral section with these intervals (5 1 3 0 2 3 5). Unlike the first transition, this interval class order is not exact. Stravinsky eliminates repeated intervals, and the major 2nd three intervals from the end and writes separate pitches on the final two intervals of the new canon. However, the close similarity creates the same sense of connection that the exact interval class order would have (see Example 4.7).

Example 4.7 *Agnus Dei* rehearsals 60 and 62: Interval Class connection across ritornello

TB at 4 after reh. 60

TB at reh 62

The interval-class pattern within the third canon differs slightly from the other two as well (see Example 4.8). After six notes the SA part sings the same interval-class order that the TB part sings (pattern a) 5 1 3 0 2 3 5 3 4 3 3) and continues this pattern until two notes from the end. In addition, the opening notes of the SA part, save two, (pattern b) 2 2 1 1 4 1) become the next notes in the TB part (5 1 3 0 2 3 5 3 4 3 3 1 1 4 1). Although some notes remain unaccounted for in the interval-driven canon, these that remain unaccounted for play an important role as concluding sonorities to the *Agnus Dei*, and more importantly, to the *Mass*. This important point will be explored below.

Example 4.8 *Agnus Dei* rehearsals 62-63: Canon III: Interval Class connection

The image displays two systems of musical notation for Canon III of the *Agnus Dei*. Each system consists of four staves: two vocal staves (Soprano and Tenor) and two piano accompaniment staves (Right and Left Hand). The time signature changes from 3/2 to 3/4 and back to 3/2. Interval class labels (M2, m9, M3, m2, P5, m3, PU, m10, P8, m7, M6, m6, M3, M7, m9, M10) are placed below the notes to indicate the intervals between consecutive notes. Pattern labels 'a)' and 'b)' are used to group specific sequences of interval classes. Pattern 'a)' is 5 1 3 0 2 3 5 3 4 3 3, and pattern 'b)' is 2 2 1 1 4 1. The score illustrates how these patterns are connected across the different parts of the canon.

Agnus Dei Conclusion: Tetrachord Intervals Prominent As Concluding Sonorities

The final measures of the *Mass* reveal Stravinsky's commitment to and dependence upon the 0134 and 0257 tetrachords. In both the final choral canon and instrumental ritornello, he focuses full attention upon complete statements of the tetrachords. This focus solidly reveals his use of these two pc sets as important note-generating sets in the *Mass*.

Example 4.9 *Agnus Dei* rehearsal 63: 0134 as concluding sonority

The image displays a musical score for Example 4.9, *Agnus Dei* rehearsal 63, focusing on the 0134 tetrachord as a concluding sonority. The score is written for three staves, each in 3/2 time. The first staff is in treble clef, the second in treble clef, and the third in bass clef. The key signature is one sharp (F#). The score is divided into three measures, each containing a tetrachord. The first measure is labeled '0134 (DD#E#F#)' and the second measure is labeled '0134 (C#DEE#)'. The third measure is labeled '0134 (G#ABB#)'. The notes are: Measure 1: D4, D#4, E4, F#4; Measure 2: C#4, D4, E4, E#4; Measure 3: G#3, A3, B3, B#3. The notes are grouped by a bracket above the first two measures and a bracket below the third measure. The notes are also grouped by a bracket above the first measure and a bracket below the second measure.

The final notes of the TB part in the third choral section (highlighted with a box in Example 4.9) create the complete G#ABB# 0134 tetrachord. The final two intervals of the SA part are major 3rds (C#E#) that when combined with notes from the four previous chords create two more complete 0134 tetrachords; C#DEE# and DD#E#F#. That Stravinsky reserves this location at the end of the choral music in the *Mass* (the first of two conclusions) for the last complete statement of the 0134 tetrachord underscores its prominence.

The intervals unaccounted for by Stravinsky at the end of the canonic pattern may be accounted for when understood as the interaction between three 0134 tetrachords and a single 0257 tetrachord. Example 4.10 below shows that the notes in the last four choral measures create a complete octatonic collection II (ABB#DD# E#F#G#). Collection II alone, however, does not account for two of the notes in the passage, E and C#. In addition to the collection II octatonic scale, the A #4 octad (ABC#DD#EF#G#) grows from the constituent tetrachords and highlights the opening notes in the soprano and alto lines, the ABDE tetrachord. ABDE and the three 0134 tetrachords discussed above are shown in Example 4.10. They act as representatives of the A #4 octad and collection II octatonic scale. Together, the octad and octatonic scale combine to create A and C# tonal areas that exist simultaneously. The A priority seems strongest at the beginning of the four-measure passage owing to the frequency of A major 7th chords, and, likewise, at the end the C# major 7th chord demands focus.

Example 4.10 *Agnus Dei* rehearsal 63: collection II and A #4 octad, A and C# tonal areas

A #4 octad: ABC#DD#EF#G#

ABDE DD#E#F#

C#DEE#

G#ABB#

octatonic collection II: ABB#DD#E#F#G#

A tonal area C# tonal area

Tonal Areas From a Simplified Scale

Whereas the final choral canon ends with three complete statements of 0134, the final ritornello ends with a complete statement of 0257. Here, instead of all ten instruments playing simultaneously, Stravinsky breaks the instruments into two five-instrument ensembles by family. Further, the final ritornello is one bar longer than the others to allow for both instrument groups to play a complete, if truncated, version of the opening ritornelli. The brass phrase closely resembles the other ritornelli in shape and note content. The woodwind phrase, on the other hand, importantly omits the notes C# and F#, and therefore, does not refer to a diatonic octad. The following examples will

show how this omission reveals Stravinsky's deep commitment to construct-centric tetrachords.

As seen in Example 4.11a, the brass plays first among the two instrumental groups, moving from the solo trombone's C through a similar symmetry found in the other ritornello passages. The 013 trichord BCD still plays an important role as the bass line. In addition, the 11-beat brass phrase pivots around the 014 trichord ACC#, with a similar, but shortened, harmonic motion from EFG to EF#G (AGF#) and BCD to BC#D around the central chord. GACD also plays an important role as the passage opens with CG and closes with DA. Because these note combinations remain in tact, the brass phrase also contains the same two scales and tonal areas. The first, C, occurs prior to the ACC# chord, and contains the notes of the C major scale. The second, D, occurs after ACC# with the D b7 octad.

Example 4.11a *Agnus Dei* rehearsal 63: Final Ritornello, tonal areas around tetrachords and trichords in the brass

The musical score for Example 4.11a shows the brass section (Trumpet in C, Trombone 1, and Trombone 2, 3) in 3/2 time. The score highlights specific harmonic moments with labels: CG, DA, BCD-BC#D, and tonal areas C (CDEFGAB) and D (DEF#GABCC#).

Example 4.11b demonstrates the absence of C# and F# in the woodwind phrase. Unlike the brass entrance that matches the other ritornelli in content, the woodwind

phrase begins on the chord DADED (instead of CDEGB) as an extension of the final brass chord seen in Example 4.11a. The woodwinds proceed through similar voice leading patterns to the brass phrase led prominently by the bass line D-C-B-C-D. Like the brass, the woodwind phrase pivots on a trichord, but this time it is the 013 (BCD) instead of the 014 (ACC#) trichord. This pivot is crucial, for, without the C#, the dichotomous C major/D octad division is not established. Rather, all of the notes in the final woodwind phrase combine to create the C major scale by extension of the opening part of the brass phrase and the other ritornelli phrases. The notes of this scale (CDEFGAB) could be understood as D Dorian as well. Such a reading of the passage is underscored by the D-A fifth present in the first and last chords, and by the D-E-F-E-D melody in the oboe 1 part. However, the voice leading patterns found in the oboe 2, English horn, and bassoon 2 bring focus to C major with a final CG diad, the presence of the B leading tone and the major third, E.

The notes that create this tonal area ambiguity, and that reconcile it, are those of the 0257 GACD tetrachord. In Example 4.11b these notes appear in blocks, offset from the other notes. As can be seen, the English horn melody anchors the closing phrase with a complete statement of the 0257 tetrachord and that statement resolves into a harmonic 0257 tetrachord to end the work.

Example 4.11b *Agnus Dei* rehearsal 63: Final Ritornello, woodwind passage without C# or F#, 0257 as GACD

Oboe 1

Oboe 2

English Horn

Bassoon

0257 (GACD)

0257 (GACD)

CDEFGAB

BCD-BCD

CDEFGAB

C or D tonal area?

Does a lack of C# in the final two measures reveal a C tonal area, or does the voice leading lean the passage toward D Dorian? The answer is that through this final phrase of his composition, Stravinsky allows for both tonal areas in a passage by using a simplified tetrachordal basis and scale set (a single GACD tetrachord and C major instead of an octad or octatonic scale). He builds on an expectation established through the rhythmic/metric organization of the other ritornelli and in the brass phrase just a measure earlier and anchors this new, distilled woodwind phrase with the use of the GACD tetrachord. The 0257 tetrachord sounds as the final sonority, and by doing so underscores his organizational premise; that the 0257 and 0134 tetrachords are the basis of harmonic construction and that they allow for the creation of scales and the existence of tonal areas in frequent succession or simultaneously. The final chord is intentionally ambiguous as it

relates to the surface elements of scale and tonal area, just like the rest of the *Mass*, but in the simplest possible terms.

The *Agnus Dei*, therefore, presents two important distillations of Stravinsky's organizational construction. Through his use of interval-class as a compositional tool to create canon, Stravinsky shows his deep interest in the interval as an organizing element, the same interest that guides his use of tetrachords here and elsewhere in the *Mass*. He further exploits intervallic organization through simplification of the tonal area juxtaposition found in the ritornelli. He reduces it to a single diatonic scale to show how he is able to manipulate a simple seven note scale through a single 0257 tetrachord to create an equally weighted juxtaposition of tonal areas. The ambiguity of the tonal areas in the final two measures underscores the surface function of tonal references in the *Mass*. This surface tonal ambiguity contrasts with the 0257 and 0134 tetrachords as an organizing force as seen at the end of the choral and instrumental sections respectively where he concludes with not one, but six complete utterances of one of the two tetrachords.

Chapter 5: Practical Application

The chief aim of analysis is to provide for informed, successful performance. Musical understanding, especially with new or relatively new music, often depends upon creative and insightful analysis in order to provide performers with necessary performance tools that they may not otherwise have. In *Repetition in Music* Adam Ockelford suggests that “our reception of any piece will inevitably be influenced by the extramusical beliefs and knowledge we bring to bear, and it may indeed be possible to hear music as exemplifying mathematical constructs, as modeling divine precepts, as deriving from acoustical phenomena, or as mirroring the complexion of society.”¹ This being the case, most trained musicians bring extramusical beliefs based upon tonal music to their performance experience. These beliefs/understandings shape the way we perform, and, therefore, must change according to the necessities of post-tonal composition.

Stravinsky questioned throughout his life the ability and motivation of conductors to realize his music. The basis of his skepticism relied somewhat upon his understanding of conductor’s preconceived notions of performance. He spoke specifically of “interpreters” in comparison to “executants” in *The Poetics of Music*.² Although he

¹ Adam Ockelford, *Repetition in Music: Theoretical and Metatheoretical Perspectives* (Burlington: Ashgate Publishing Company, 2005), 19.

² In “Stravinsky Conducts Stravinsky,” Nicholas Cook shows that Stravinsky’s public battle with other conductors began in the 1920s and continued through the rest of his life. Nicholas Cook, “Stravinsky Conducts Stravinsky,” in *The Cambridge Guide to Stravinsky* (Cambridge: Cambridge University Press, 2003): 176-191.

realized that no musical score could represent all aspects of a musical experience, he warned sharply against too much personal intervention on the part of the conductor.

Between the executant pure and simple and the interpreter in the strict sense of the word, there exists a difference in the make-up that is of ethical rather than of an aesthetic order. . .one has the right to seek from the interpreter, in addition to the perfection of this translation into sound, a loving care—which does not mean, be it surreptitious or openly affirmed, a recomposition.³

So what are the elements in a Stravinsky score that a conductor must understand, master, and learn to communicate with clear definition in order to avoid a recomposition and instill loving care?

In a review of three recordings of the *Rite of Spring*, published in 1962, Stravinsky comments on a single recording of each by Von Karajan/Berlin Philharmonic, Boulez/Orchestre National, and Kpaot/Moscow State Symphony Orchestra.⁴ He makes a few brief statements on each performance for every section of the ballet. The vast majority of his comments focus upon tempo, articulation and balance. If this is any indication of his thoughts about interpretation, then these elements provide a decent starting point for the preparation of a Stravinsky score. In addition, if he was serious in his closing comment that “None of the three performances is good enough to be preserved,” then perhaps these three elements are merely the starting point, and other important aspects lay beyond, or within, the proper execution of tempo, articulation and

³ Igor Stravinsky, *Poetics of Music*, trans. Arthur Knodel and Ingolf Dahl (New York: Ransom House, 1947), 129.

⁴ Igor Stravinsky and Robert Craft, *Dialogues* (Berkeley: University of California Press, 1982), 81-90.

balance.⁵ Within these designations lie rhythmic, textual, and harmonic execution and tone quality. All of these elements, as with his approach to tonality, grow out of Stravinsky's distinctive style.

Imitation and Repetition

Prior to an exploration of tempo, articulation and balance a performer must engage with the expressive language found in formal design. Stravinsky's music resounds upon a framework of contrast in similarity based upon his particular manipulation of imitation and repetition. Because of his use of rhythmic/metric blocks and repetitive harmonic tetrachords/cells (e.g. 0257 and 0134 in the *Mass*), Stravinsky's music presents challenges that four-bar phrase repetition and tonic prolongation do not. In traditional tonal music, metric periodicity accented by the fulfillment of a prolonged tonic dictates motion that grows from the opening note to the final chord; from tonic to tonic. The final point of repose reflects the initial point of instigation. Imitation and repetition within predictable metric periods creates growth. Each phrase builds upon the one before it, the culmination of growth eventually coming to rest at the final tonic.

Imitation and repetition in Stravinsky's *Mass*, unlike the music of his predecessors, engages with neither a tonic nor metric periodicity, but is based on rhythmic/metric blocks that respond to one another through the process of discontinuity. Therefore, one block does not build on a previous block the way that phrases in a Classical piece build one on another, but instead each block maintains its form, shape,

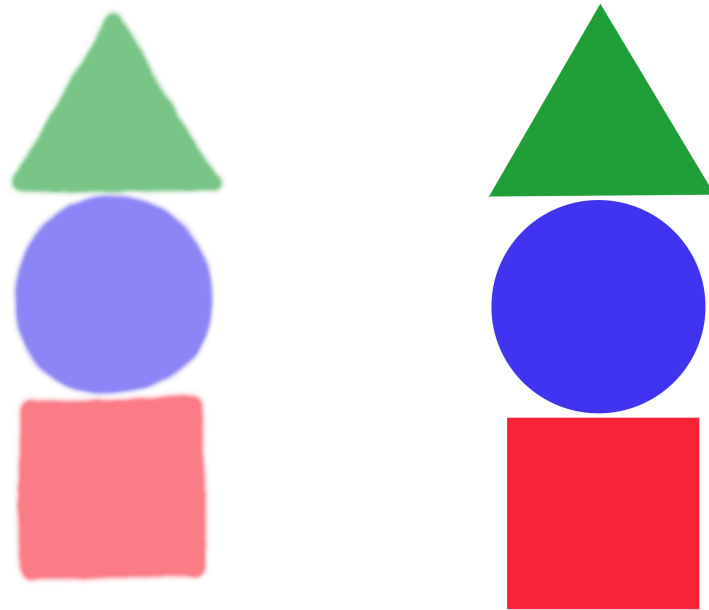
⁵ Ibid., 90.

and growth independent of those around them. Rather than building upon one another, the juxtaposition of each imitation or repetition provides growth. Whereas other music builds through repetition, Stravinsky's music contrasts through repetition. In the *Credo*, for example, static, chant-like vocal patten defines the first half of the movement. As the excerpt of the "filium Dei" section below demonstrates, rhythmic, harmonic, metric and formal repetition occur over and again producing sharply-defined edges. Such a design affects performance preparation by insisting that a conductor and an ensemble find expression within the sameness, rather than, as in much tonal music, applying expression through change. In these moments tempo, articulation and balance issues guide decisions about expression.

Tempo and Articulation

Tempo and articulation interact with form as extensions of rhythm and meter. Both impact the constitution of formal blocks, helping to enforce sameness and contrast within and between blocks. Recalling the colored shape metaphor from the second chapter, tempo and articulation help to enhance the vibrancy of the color and sharpness of the lines between the shapes (see Figure 5.1). Without a clear presentation of these elements, formal blocks run together in a seamless and boring blur. However, when appropriately distinguished, phrases and sections create texture and motion. Application of tempo and articulation occur through decay, syllabic uniformity, and rhythmic accentuation.

Figure 5.1 Poorly defined form vs. Sharply defined form



Tempo is the first consideration. Stravinsky mentions tempo as *the* important aspect of his music in *Conversations* when he says “a piece of mine can survive anything but a wrong or uncertain tempo.”⁶ The first step is to establish the right tempo, which, in the *Credo* Stravinsky dictates as quarter note=72. The next step, maintaining that tempo,

⁶ Stravinsky, *Conversations*, 135. Cook shows that Stravinsky struggled to support this type of claim throughout his life, because his own tempo execution often varied from one performance to the next. Still Stravinsky felt compelled over and over again to discuss tempo and its impact on his music, and it therefore has some bearing on an understanding of his music. See Nicholas Cook, “Stravinsky Conducts Stravinsky,” in *The Cambridge Companion to Stravinsky*. ed. Jonathan Cross (Cambridge: Cambridge University Press, 2003).

presents certain challenges in any piece, but impacts Stravinsky's music especially since strictness of tempo helps to illuminate rhythmic/metric discontinuity.

Several factors impact tempo maintenance. The first is decay that should occur at the ends of phrases. Stravinsky talked openly throughout his life about the propensity of some musicians to play through to the ends of notes and to connect phrases throughout a piece. He had little patience with these musicians. He believed that certain musicians were unable or unwilling to understand that his music demands a certain amount of decay at phrase endings. As Stravinsky didn't explain his concept of decay beyond a reference to its necessity in a proper interpretation of his music, a performer must determine how to execute this concept. To define decay mathematically, the note at the end of a phrase should begin to decay around the half-way point of that note. This decay should then increase so that the final 20% of the note is silent (almost the equivalent of a sixteenth note value from a quarter note).⁷

In the "Filius Dei" section of the *Credo*, phrase endings coordinate with the text. Each phrase is offset by a longer note at its conclusion. The commas found in Example 5.1 designate phrase endings in the instrumental parts, and are present in the score. At these phrase endings each musician should decay slightly (according to the proportion stated above), and renew the next phrase with a release and fresh attack. When appropriately executed, the decay helps to create rhythmic space through which the tempo remains stable, and formal lines are delineated.

⁷ This mathematical explanation is based upon observed phenomena in Stravinsky's conducted recordings.

Decay provides the opening through which textual and phrase articulations extend. When voices and instruments alike decay at designated phrase endings, textual ideas surface one after another in obstinate succession. The slight separation yielded through softened phrase endings keeps musical ideas fresh and crisp, and allows for sharply defined rhythmic/metric blocks.

Example 5.1 *Credo* rehearsal 26: “Filius” phrase definition and articulation

actual performance >

phrases 1 2 3

Discanti
Fi-li-um De-i u-ni-ge-ni-tum. Et ex Pa-tre na-tum an-te om-ni-a sae-cu-la

Alti
Fi-li-um De-i u-ni-ge-ni-tum. Et ex Pa-tre na-tum an-te om-ni-a sae-cu-la

Tenori
8 Fi-li-um De-i u-ni-ge-ni-tum. Et ex Pa-tre na-tum an-te om-ni-a sae-cu-la

Bassi
Fi-li-um De-i u-ni-ge-ni-tum. Et ex Pa-tre na-tum an-te om-ni-a sae-cu-la

Ob. I, II

C. I.

Trb. I, II

Trb. III

Syllabic execution also influences tempo. Stravinsky notoriously worked against spoken text accents in his choral works.⁸ Instead of relying on text and phrase accents developed from speech patterns, Stravinsky reduced all syllables to the same level and provided specific direction as to syllables that should receive more emphasis. Because of the repetitive nature of his text setting, Stravinsky’s music, especially the *Credo*, demands syllabic uniformity in performance. Syllabic uniformity suggests that no note receive greater or lesser volume than another note. This applies to the attack of the note, the execution of the note, and the release. For singers, it also impacts consonant and vowel production. For example, the “s” sung at the end of the phrase “Miserere nobis” in the *Agnus Dei* should receive no more or less volume than the “m” sung at the end of the phrase “dona nobis pacem” in the adjacent choral section. Syllabic uniformity creates an audibly measurable representation of the tempo. Like the steady ticking of a second hand on an analog watch, syllabic uniformity makes the tempo present and allows for note repetition and rhythmic/metric interplay to shine through the texture.

Figure 5.2

Speech rhythm vs. Metric accentuation in “Filium”

Speech								
	Filium Dei unigenitum Et ex Patre natum ante omnia saecula							
Metric								

Bold words in this example delineate accented words within the phrase. Lines represent spoken accents above the text and metric accents (from the music) below. Although some speech rhythms and metric accents align, no established accent pattern between the two governs text accentuation in this phrase.

⁸ For a further discussion of Stravinsky’s text underlay, see Richard Taruskin, “The Rejoicing Discovery” in *Stravinsky and The Russian Traditions: A Biography of the Works Through Mavra* (Berkeley: University of California Press, 1996): 1119-1236.

Articulation

Articulation provides contrast within the temporal similarity found throughout the *Mass*. Although often subtle, articulation devices offer deep interest when coupled with strict execution of the above-mentioned tempo-related elements. As with notes at phrase endings, notes within phrases require a degree of decay. Each one, unless otherwise notated, should decay but to a slightly lesser degree than notes at phrase endings. A decrescendo should begin at a little more than halfway through the note and release the last 10% of the note, or about the same as a 32nd note from a quarter note. At the speed of the *Credo* this decay is barely audible. However, the effect generated by the decay serves to open the texture to necessary articulation within the music.

Accent markings contrast with syllabic uniformity and bring variation to the syllabic invariance found in Stravinsky's text setting. The most prominent accent marking in the *Mass* is the *tenuto*. In the *Mass*, *tenutos* prescribe that notes be held for their full value, and have only a slight separation from the note before them. Therefore, notes marked *tenuto* contrast with the normal decay found in Stravinsky's music. The combination of standard decay and designated held notes invigorates rhythmic interplay within rhythmic/metric blocks. At rehearsal 30 and 31, Stravinsky makes decisive use of *tenuto* markings in both the instrumental and choral parts (see Example 5.2 and 5.3).

Example 5.2 shows that far from following spoken text rhythm (which would emphasize the syllables "na", "Spi", "Sanc," "Ma" and "Vir" within individual words and the words "Spiritu, "Maria" and "Virgine" within the phrase), Stravinsky places *tenutos*

above “Et in” and “ex Ma-ri,” notated by a downward arrow in the example.

Instrumental accents coincide with the textual ones. If spoken text-based accentuation were followed in a performance, then these musical accents would not be heard. Instead, when unaccented, unmarked syllables are sung with uniformity in conjunction with designated musical highlights that exist separate from the text, rhythmic interest results.

Example 5.2 *Credo* rehearsal 30: The impact of *tenuto* accents on syllabic uniformity

actual performance >

Discanti

Alti

Tenori

Bassi

Ob.I.II

C.I.

Trb.I.II

Trb.III

Et in - car-na-tus est de Spi-ri-tu Sanc-to ex Ma - ri - a Vir-gi-ne:

The phrase “Et homo factus est,” found in Example 5.3, contains *tenutos* on each word, echoed in the instruments. By changing the impact of the notes through a simple musical gesture Stravinsky enunciates one of the more important phrases in the *Credo* text (“and was made man”), a phrase that also ends the first of three major sections of the *Credo*. After 61 measures of similar syllabic execution, only illuminated by *tenutos* near the end of the section, these full-valued notes enunciate the text without the need for the kinds of dramatic effects resorted to by countless other composers at this point in the *Credo*. As an extension of the *tenuto* an interesting articulation symbol appears on the final choral note of the section, a tie to nothing. This articulation mark appears in several locations in the *Mass*, and is a signal to performers to sustain a note to the end of the measure rather than to observe the standard phrase-ending decay.

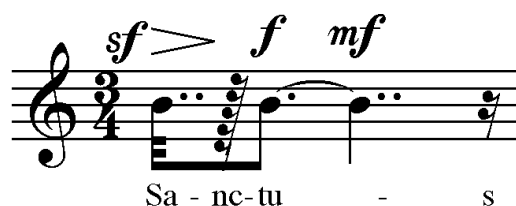
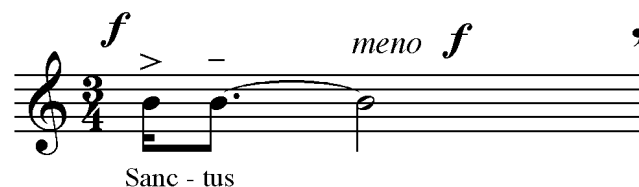
Example 5.3 *Credo* rehearsal 31: “Et homo” *tenutos* and tie-to-nothing as articulation

The image displays a musical score for four staves, likely representing different vocal parts in a choir. The music is in 3/8 time, indicated by the '3' over the '8' in the first staff. The lyrics are 'Et ho - mo fa - ctus est.' written below each staff. The notation features several notes with horizontal lines (tenutos) above them, particularly on the words 'mo', 'fa', and 'est'. The final note on 'est.' in each part is followed by a horizontal line, representing a 'tie-to-nothing' articulation. The staves are arranged vertically, with the first three in treble clef and the fourth in bass clef.

At certain places in the *Mass* (e.g. the opening measure of the *Kyrie*, *Gloria*, and *Sanctus*) *marcato* accents dictate a strong attack. This accent mark, like the *tenuto*, creates clear contrast to the syllabically unified notes elsewhere in the piece. The beginning of the *Sanctus* demonstrates the difference between the *marcato* and *tenuto* accents in the *Mass* (See Example 5.4a). In this measure the chorus is to first sing an accented note at a *forte* volume. This note, because not otherwise specified as a *tenuto*, is to decay after the initial attack. The second note is to be struck at the same *forte* volume, but without the accent. After a dotted-eighth note value, that note is to be reduced in total volume to a slightly less loud level, and be sustained at that level until the end of the measure. At the measure's end parts lift off of the note to allow space for the entering soloist in the next measure. Perhaps Example 5.4b represents a more comprehensive view of the event, though visually overwhelming. In this example the rhythmic values are adjusted for decay and release, and further dynamic markings are applied to specify the relationship between articulation and volume. Stravinsky uses a small range of articulation designations in the *Mass*. Therefore, well-placed contrast is necessary for them to be heard.

Example 5.4a and 5.4b

Sanctus rehearsal 43: accents, soprano part (a) as written and (b) as actually performed



Gesture Considerations

A conductor's gesture can help facilitate clear execution of tempo and articulation. The first goal of the conductor in a Stravinsky piece is deft metrical articulation. Stravinsky's rhythmic/metric blocks, the foundation of form in his music, are built upon the interplay of repetitive rhythms and changing meter. The only true representation of meter comes from the silent gesture of the conductor. For this reason, the conductor must take extra precaution to produce a tempo-accurate downbeat at each juncture. These downbeats provide the basis for the other performers' articulation, syllabic sameness, decay and rhythmic reiteration. The subtle but important interplay between the audible rhythm and inaudible meter creates important interest within a Stravinsky piece. Without a clearly enforced meter, the listener can not perceive the richness of Stravinsky's music.

To facilitate these downbeats, a dry but relaxed gesture is necessary. Conductors who attempt to influence accentuation or growth with arm weight or large gesture will succeed in slowing the tempo and upsetting rhythmic articulation. Quick, inaudible breaths at points of decay will help coordinate decay in the ensemble, and help with rhythmic precision at reentry. Otherwise, active downbeats in the *Credo* will help the tempo remain steady. Conductors should employ a passive gesture in the last measure of

each rhythmic block. A sharp ictus and active breath as a preparation for the following entrance will to help insure audible block separation.

Balance

As tempo and articulation relate to rhythmic/metric form, so balance relates to harmony. To achieve balance in the *Mass* requires recognition of the organizational elements imposed by the impact of the 0257 and 0134 tetrachords on vertical tuning and harmonic motion. Balance first depends, however, upon a unified tone quality and vowel shape. Unified tone and vowel shape helps to clarify individual tones within the line. Singers and instrumentalists alike should produce a forward tone, and should control that quality by allowing for little vibrato if any. If women sing the soprano and alto parts, they should pay extra attention to these suggestions. Vowels should be bright to produce a tone similar to the woodwind and brass instrumentation. Bright vowels, however, should not be spread, but have a rounded embouchure to control the tone and keep it forward. Cleanliness of sound and precise diction will ensure that each note in each harmony finds its proper place within the dense texture. Balance through tone and vowel unity will ensure that complex chords sound with utmost richness.

The 0257 and 0134 tetrachords play an important role throughout the *Mass*, as has been demonstrated by the previous chapters. For a chorus and orchestra to understand which notes are the most important and which notes affect tuning requires an understanding of these tetrachords, their interaction with the diatonic octad and octatonic scale, and their connection with tonal areas. The practicalities of ensemble preparation

do not allow for ensemble members in most cases to have a thorough understanding of the theory behind a work, but the following suggestions will aid in their acquisition of necessary information.

Tuning presents particular challenges when faced with passages that contain frequently shifting or simultaneous tonal areas at once. In general, individual parts should tune fourths and fifths first. Intervals should be tuned according to their function within tetrachords rather than their function within triads. Thirds more often than not yield to the 0257 perfect fourths and fifths. In Example 5.1 above (“filium dei”) the soprano and tenor parts sing a twelfth (F#-C#) and the basses and altos sing a eleventh (E-A). Rather than tuning the second (TB: E-F#) and third (SA: A-C#), the parts should tune these “fifths.” Instruments should do likewise. This tuning will ensure that notes within the 0257-based chords balance to one another, and will highlight the appropriate notes through sonic integration. When faced with complete 0257 chords parts should tune with the fourth or fifth in closest proximity to their own note. At the end of rehearsal 6 in the Kyrie, for example, the bass’ and bassoon’s F should tune with the tenor/English horn Bb, whereas the soprano and alto C should tune upward with the oboe’s G and C (see Example 5.5). When fifths are not immediately present, or when singing complicated melodic lines, scales and tonal areas should be taken into account. Often a single part will focus on a tonal area for multiple measures while another part focuses on a different one simultaneously. Maintaining separation by tuning to tonal elements (e.g. thirds, fifths, leading tones) will help articulate each tonal area in the whole. Depending on the sophistication of the singers and players, rehearsal exercises

and warm-ups that focus the ensemble's ears on tetrachordal construction may be necessary. On certain chords, the conductor may need to instruct the singers/players to circle their own notes and draw a line that connects notes to which they should tune. These techniques will function to "retrain" their ears to hear the 0257 and 0134 tetrachords as central to the piece.

Example 5.5
Kyrie rehearsal 6: 0257 tuning

Discanti

Alti

Tenori

Bassi

Ob.I.II

C.I.

Harmonic Motion

Growth in the *Mass* is the outcome of both rhythmic/metric elements and harmonic/melodic ones. Rhythmic/metric elements, as discussed above, create growth through sameness and contrast: through combinations of distinct shapes. Growth is based upon tetrachordal interaction. Throughout the *Mass* 0134 elicits harmonic motion and 0257 projects harmonic stasis. The interplay of these two distinct aural functions facilitates motion and repose. At places in the *Mass* with the most simplified tetrachordal usage (e.g. the opening two blocks of the *Kyrie*, rehearsal 22 in the *Gloria*, and the “Amen” of the *Credo*) this motion and stasis is clearly evident. At more complex locations (e.g. rehearsal 2 of the *Kyrie*, the end of the *Sanctus*, and the *Agnus Dei* ritornello) the push and pull of integrated tetrachords creates a passage teeming with rich juxtaposition and intensity. Therefore, understanding tetrachordal organization is essential for an exciting and meaningful interpretation of the *Mass*.

Two examples show clearly the effect of the two tetrachords on harmonic motion within rhythmic blocks. The first, from the opening two blocks of the *Kyrie* (see pp. 82-83, Example 3.1), shows each tetrachord behaving in relative isolation from the other

and the effect that this isolation has upon the two blocks. The second, the *Agnus Dei* ritornello (see pp. 125-130, Example 4.2a-4.2g), shows how Stravinsky uses the two tetrachords simultaneously to create motion through complex harmonic means, all derived from two simple intervallic patterns.

The choral parts at rehearsal 0, the opening block of the *Kyrie*, yield primarily to the 0134 tetrachord. According to the growth theory posited above, the 0134 focus in this passage should entail forward motion, based upon the completion of each tetrachord. This indeed happens. The tenor-alto line in the first two measures and the alto-tenor and alto-soprano lines in the last two show the emergence of a compelling growth pattern. Through interaction between CBDEb, EbDCB and DEbF#F, these four measures move toward the notes in the final chord of the section, CACF with confidence. This confidence is due in large part to the attraction of the two half steps found in the 0134 tetrachord. The interval of the half step mimics, therefore, the diatonic leading tone pull.

The second block, rehearsal 1, yields to the 0257 tetrachord in a similar way. In the same way that the first block moves forward, this one remains static, unmoved from start to finish. The 0257 tetrachords that influence this three measure choral/orchestral phrase contrast sharply with the forward motion of the previous block. Whereas the opening four measure phrase elicits a solid sense of arrival on CAFC, the second seems to simply end. The contrast between these two blocks is then combined in rehearsal 2 where Stravinsky demonstrates the complexity and vibrancy possible through a combination of these pc sets and the perceptions created by each.

The ritornello in the *Agnus Dei* equally demonstrates the combined forward motion of 0134 with the stasis of 0257, illuminating the growth potential found through tetrachordal combination. In the ritornello, rhythmic and harmonic elements converge, both focused on a central point. The third beat of the second measure, the 014 ACC# chord, cuts through the texture as the center point of attraction. 013 chords revolve around ACC# growing with earnest toward, falling with ease away from, and mutating due to the power of this center pole. The 013 set EFG, for example, moves toward ACC# and changes to EF#G. Further away from the center, the 013 chord CBD instigates and concludes the passage, competing in intensity with, but not able to overpower, the center 014 influence. The dramatic interplay of these trichords finds constant repose in the calm stasis of 0257 tetrachords. GACD opens and closes the passage, thereby molding to and mellowing the CBD trichord. Likewise DEGA and GACD suspend dramatic motion around the 014 center chord by lying across the passage in stubborn consistency. Without one or the other the passage would cease to breathe. If focus upon the 0257 dominates, the passage fails, and if 0134 prevails, the music becomes overly dramatic. Tension between the two fulfills the growth potential for rhythmic/metric blocks.

From a performance standpoint, ensemble members must understand the function of their notes within these complex passages. Members who participate in the 0257 tetrachords (e.g. oboe and trumpet) must know to play through their notes without break or decay, and, most importantly, to keep them steady and without growth or ornament. Likewise, those participating in the 013-014 exchange (e.g. trombone and oboe-last measure) must follow the growth of the line toward and away from the third beat of the

second measure. The conductor has the option to show stasis in one hand (e.g. an unmoving, upturned left hand raised to shoulder height) and growth in the other (motion from small to medium weight and back again in the right hand), or to simply instruct the 0257 instrumentalists to hold their line regardless of the conductor's gesture.

Voice leading should be taught in conjunction with the tetrachords and trichords, and in deference to harmonic versions of the tetrachords. The goal is to convince the ensemble to begin to hear phrases and harmonies as construct-centric with tonal vestiges instead of traditionally tonal. In the same way, major 7ths and 9ths should be heard as 013 trichords, and tuned to one another, and motion based upon these tetrachords and trichords (like the ritornello in the *Agnus Dei*) should be emphasized, rather than motion toward the final cadence.

C and D as tonal areas in the ritornello articulate the organizational elements of the passage (0257 and 0134 tetrachords). They relate directly to the organizational sets as scale derivatives and create surface interest because of that relationship. Although they are important surface references, they do not excite the same growth that the ACC# 014 central chord does. The difference in energy between the C and D tonal areas and the point at which they change places defines the relationship. The surface elements shift quickly and produce immediate interest through note change (e.g. F to F#). The tetrachords provide interest through growth and connection, the deeper levels that guide surface elements.

Conclusion

Stravinsky's music remains distinctive in the post-tonal world of composition. Although he shares characteristics with some of his contemporaries and predecessors, elements of his compositional voice stand out from other composers of his day. Yet, his music retains a consistent unifying quality that sounds uniquely Stravinskian. The analysis presented here attempts to answer the question of how Stravinsky manipulates tonality in his *Mass*. Perhaps Goldman's comments in 1949 say it best, that "Here again [with the *Mass*] we have evidence of the direction appropriate for new music; we have had it before, of course. . .it is away from the bloated conventional symphony orchestra, which has the vulgarity and noisiness of all mass media, and in which there is nothing new, but merely globs of heavy sound highly conventionalized since Strauss."⁹ Instead of abandoning tonality, Stravinsky took a logical, if small, step away from certain expectations found within tonality. The 0257 and 0134 tetrachords justify, in a way, his desire to move from what he and some contemporaries viewed as distasteful excess. Tetrachordal organization demonstrates not only a new partitioning of tonality, but also a leaner version. From these tetrachords Stravinsky offers the listener multiple layers of interest from complex chords to layered tonal areas, all held together through an infectious combination of rhythm and meter. At every turn we are greeted with the elements that make tonality attractive without the extra information used in tonal works to connect one point of attraction to the other. The delicate interplay of his construction, however, requires a creative approach, one that strives to uncover the layers of

⁹ Goldman, "Current Chronicle," 457.

organization from the performer's side of the stage in order to share with the audience the wonders of Stravinsky's surface lumination.

Appendix A: Stravinsky's Choral Works

Title	Voicing	Date
Cantata for the 60th birthday of Rimsky-Korsakov (lost)	chorus, pf?	1904
Zvezdolikiy (Le roi des étoiles) “The king of the stars”	TTBB, orch	1911–12
Svadebka (Les noces) “The Wedding”	S, Mez, T, B, SATB, 4 pf, perc ens	1914–1923
Podblyudniye (Four Russian Peasant Songs)	female vv, rev. for equal vv, 4 hn	1914–17 rev. 1954
1. U spasa v' Chigisakh “In Our Saviour's Parish at Chigasi”	4vv	1916
2. Ovsen' “Ovsen”	2vv	1917
3. Shchuka “The Pike”	3 solo vv, 4vv (rev.)	1914
4. Puzishche “Mr Portly”	solo v, 4vv	1915
Otche nash' “Our Father” rev. as Pater noster	SATB SATB	1926 1949
Oedipus rex	nar, solo vv, male chorus, orch	1926–7
Symphonie de psaumes	SATB, orch	1930
Simvol verī “Symbol of faith” rev. as Credo	SATB SATB	1932 1949
Perséphone	spkr, T, SATB, TrA, orch	1933–4
Bogoroditse devo “Blessed Virgin” rev. as Ave Maria	SATB SATB	1934 1949
Babel	male nar, male vv, orch	1944

Mass	SATB, 2 ob, eng hn, 2 bn, 2 tpt, 3 trbn	1944–8
The Rake's Progress	solo vv, chorus, orch	1947–51
Cantata	S, T, female vv, 2 fl, ob, ob + eng hn, vc	1951–2
Canticum sacrum ad honorem Sancti Marci nominis	T, Bar, chorus, orch	1955
Threni: id est Lamentationes Jeremiae prophetae	S, A, 2 T, 2 B, chorus, orch	1957–8
A Sermon, a Narrative and a Prayer	A, T, spkr, chorus, orch	1960–61
Anthem "The dove descending breaks the air"	SATB	1962
Introitus (T.S. Eliot in memoriam)	male vv, pf, hp, 2 timp, 2 tam-tams, va, dbs	1965
Requiem Canticles	A, B, chorus, orch	1965–6

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