*"The best work of the four completed in Paris and, in the opinion of this writer, one of the most impressive works of Somers' entire career is the String Quartet No. 2 (1950). It is a balanced, coherent work, rich and imaginative in ideas, with a final slow movement which contains some of the most profound music that Somers has ever written…"*

-Brian Cherney[1]

[1] Brian Cherney, *Harry Somers* (Toronto: University of Toronto Press, 1975), p. 48.

# University of Alberta

Harry Somers' String Quartet No. 2: An Analytical Study of the Idea of Unification

by

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# Abstract

Harry Somers' music of the 1940s and 1950s presents a wide range of historical and contemporary compositional influences. This historical syncretism is widely understood in stylistic terms as the juxtaposition of heterogeneous tonal and atonal idioms representing a musical past and present. In contrast to this descriptive convention, I consider Somers' musical output during this period under the rubric of a unification of musical styles as evident in *String Quartet No. 2* (1950). Set-theoretical and transformational methodologies permit me to investigate a poetics that emerges through the persistence of two distinctly identifiable sets of intervals: 1, 11 and 5, 7. This mathematical modelling approach to analysis reveals numerous formative aspects of the intervals in a broad range of musical parameters including thematic design, formal organization, projective network structures, and symmetry seen through the lens of multiplicative operations and network comparisons of distinct pitch-class collections across two different interval spaces.

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# Introduction

The following analysis of Harry Somers' *String Quartet No. 2* (1950) offers a novel theoretical avenue for the interpretation and understanding of the idea of unification of past and present that is a common theme and preoccupation in his music. The quartet is in the form of three movements, divided by two interludes: 1st Movement; Interlude #1; Masque (2nd Movement); Interlude #2; and 3rd Movement. The analysis I present, rather than pursuing a full and comprehensive examination of the quartet, focuses instead on various excerpts or sections that allow me to concentrate more fully on details of structural organization, as well as to explore new analytical methodologies for interpreting

Somers' music. As with most composers, Somers' compositional language and style changed throughout his career. Therefore, the investigative work I undertake is pertinent as a glimpse into a specific period of his career corresponding most appropriately with the compositions ranging from the late 1940s to the early-mid 1950s. It is my hope that the work accomplished in this thesis generates further discussion and promotes greater insight into Somers' compositional language and style around this time.

Harry Stuart Somers (1925–1999) was born on September 11th, 1925 in Toronto, Ontario. A latecomer to music, it was not until his teenage years that he began studying piano, starting lessons in 1939. However, no later had he started piano lessons than he began to compose music, writing several pieces without any formal instruction in theory or composition. It was not until 1942 that Somers began rigorous study with composer John Weinzweig at the Toronto Conservatory of Music, covering topics such as traditional harmony, counterpoint, twelve-tone procedures, orchestration, score analysis, and so forth. Weinzweig's teaching incorporated music from the medieval period to the present for analytical purposes, making his pupils aware of a wide range of compositional approaches. According to him, "a composer can 'look back' but he or she cannot 'go back'."[1] Nevertheless, the three years preceding instruction with Weinzweig proved important for Somers, since it was during that free and

[1] Elaine Keillor, *John Weinzweig and his Music: The Radical Romantic of Canada* (Metuchen, N.J., & London: The Scarecrow Press Inc., 1994), p. 96.

unbounded period that he began to develop a unique musical language, aspects of which would remain with him throughout his career despite absorbing many new compositional techniques and influences along the way.

In 1949, Somers received a $2,000 scholarship granted by the Canadian Amateur Hockey Association to study abroad in the field of the arts. Somers decided to use the scholarship in hopes of studying in Paris with *Les Six* member Arthur Honegger (1892–1955).[2] However, after struggling too long to arrange lessons with Honegger, Somers decided instead to join the composition class of another *Les Six* member, composer Darius Mihaud (1892–1974). The influence that Mihaud's classes had on Somers was, in his words, "not of style, but of perspective."[3] Indeed, Somers' compositional style and technique was much different than Mihaud's, but the classes resulted in the young composer reevaluating his own development and broadening his horizons.[4]

Somers was among the relatively few composers who eventually, beginning in the early 1960s, was able to make a living simply from commissions. Throughout a prosperous career, he wrote music for a wide range of genres and ensembles, including opera, symphony, concerto, ballet, vocal music, chamber music, solo instrumental music, music for film and television, among others. One

[2] *Les Six* is the familiar name given to the group of six early twentieth-century French composers, including Darius Milhaud, Arthur Honneger, Francis Poulenc, Georges Auric, Louis Durey, and Germaine Tailleferre, whos music is often considered a reaction against the compositional practices of Richard Wagner and Claude Debussy.
[3] "Harry Somers' Letter to Lee Hepner," *The Canada Music Book 3* (Autumn–Winter, 1971), p. 95.
[4] Diane Houghton, "The solo vocal works of Harry Somers" (D.M.A. thesis, U of Missouri-Kansas City, 1980), pp. 8–9.

of Somers' greatest compositional achievements—and the work for which he is most often remembered—is the opera, *Louis Riel*, which premiered in Toronto during Canada's centennial celebration in 1967. Somers, a founding member of the *Canadian League of Composers*, was made a companion of the order of Canada in 1972, and will be remembered by many as one of Canada's most significant artists of the twentieth century. [5]

Somers' unique and constantly evolving style of composition includes a wide variety of influences ranging from early music such as Gregorian chant and Baroque counterpoint to more modern styles such as jazz and compositions using twelve-tone procedures. It was partially Somers' continued exposure to different musical sounds of the past and present within his surrounding environment that influenced his own compositional language and style. These wide-ranging influences correspond directly to his distinctive view of musical style—namely that it is a product of the composer's environment and his or her response to it.

Because of his stylistic eclecticism, the term neoclassical is often used to describe Somers' music, especially in the compositions of the 1950s. The term is associated with contemporary music that sought a revival of musical aesthetics

[5] The Canadian League of Composers (CLC) is an organization that was formed in 1951 by a group of eight Canadian composers—Murray Adaskin, Louis Applebaum, Samuel Dolin, Harry Freedman, Phillip Nimmons, Harry Somers, Andrew Twa, and John Weinzweig—who had the common goal of promoting and advancing new Canadian music. Comparisons are often made to a group of Canadian painters, known as the *Group of Seven*, which formed in Canada in the 1920s for similar reasons with regard to the promotion and advancement of Canadian art. See George A. Proctor, *Canadian Music of the Twentieth Century* (Toronto: University of Toronto Press, 1980). See also the CLC website at www.composition.org.

of earlier times. On the one hand, Somers' music demonstrates many characteristics that stamp it as neoclassical, such as the use of contrapuntal textures or historical forms. On the other hand, however, neoclassicism is often considered a reaction against both the unrestrained emotionalism of the late romantic period and the overly experimental music of the early twentieth century, and this interpretation of the term appears less pertinent to Somers' aesthetic focus. As Arnold Whittal writes:

> As a generic term for specific stylistic principles, 'neo-classical' is notably imprecise and has never been understood to refer solely to a revival of the techniques and forms of Haydn, Mozart and Beethoven. Insofar as the movement had a slogan, it was 'back to Bach'; yet it was less significant for its revival of traditional procedures than for the strength of its reaction against the more extreme indulgences of the recent past.[6]

Indeed, Somers' musical ideology does not necessarily coincide with the concept of a reaction against modernism. On the contrary, Somers felt strongly that the past was naturally contained within the field of knowledge and memories of the self. In a journal from 1955, reflecting on the history of music and the organization of materials in the act of writing music he wrote: "I feel, in a very real way, that all time is now. As we are the sum total of all that has gone before, so we contain all that has gone before, and by natural process, are a part of that which is to come."[7] Consequently, instead of rejecting the past as some

[6] Grove Music Online, s.v. "Neo-classicism," by Arnold Whittal, accessed February 8, 2014, http://www.oxfordmusiconline.com.login.ezproxy.library.ualberta.ca/subscriber/article/grove/music/19723.

[7] Harry Somers, *Secret Agent: The Selected Journals and Letters of Harry Somers*, ed. William Scoular (Toronto: Canadian Music Centre, 2009), pp. 24–25.

of his contemporaries had done, Somers often sought to embrace it. In a letter to Lee Hepner, Somers comments on his position regarding the advantages of eclecticism in music:

> …A wide range of music has always interested me…I admired much and responded to much and absorbed a great deal of what I liked into my creative system without hesitation and produced compositions…
>
> …I sometimes got annoyed at the puritanical streak in composers, myself included, which spoke of integrity, purity, and consistency of style, 'music of our time', and so on, with all the self-rightousness of bigoted missionaries out to save the world and convert the heathen. I didn't want to get into a box or a bag. I wanted to work and develop freely within my own feelings, instincts, needs of my environment, with whatever intelligence I might possess.[8]

Many of Somers' compositions are marked by an extreme eclecticism, which reveals elements from a far wider range of historical periods than those typically defined by neoclassicism, stretching as far back in time as Gregorian chant, and as far ahead as perhaps electronic music. For that reason, neoclassicism—as a term applied to Somers' compositions—is best understood in terms of a historical syncretism rather than as a reaction to anything specific.

Given Somers' ideological views on music and composition, it is only fitting that his music reflects such diversity. Yet, although Somers' musical style absorbed many external influences, it nevertheless maintains a consistent musical individuality that reflects a unique and enigmatic mind—one that was

[8] Letter to Lee Hepner, 1971, pp. 91–92.

continually responding to an ever-changing and fluctuating musical environment.[9]

The period between the late 1940s and early-mid 1950s under which *String Quartet No. 2* falls is marked by a musical style that contains a distinct predilection for Baroque (and earlier) musical structures, albeit remaining within a contemporary context. In these pieces, references to the past are expressed through the use of fugal forms, modal organization, triadic structures, quartal and quintal harmonies, imitation, harmonic motion along the circle of fifths, stepwise motion, among many others. Despite the presence of these perhaps anachronistic markers, however, Somers achieves an unequivocally contemporary musical style. Indeed, his musical language during this period can be understood as functioning on two different levels at the same time—one with its foot in the past, the other in the present.

My goal in this study is to examine and interpret how these two contrasting styles—i.e. Somers' dual conception of music as looking towards

[9] For a more complete biography of Harry Somers see Brian Cherney, *Harry Somers* (Toronto: University of Toronto Press, 1975). Shorter biographies are found in: Leonard J Enns, "The Sacred Choral Music of Harry Somers: an Analytical Study" (Ph.D. diss., Northwestern University, 1982), pp. 1–17; Diane Houghton, "The Solo Vocal Works of Harry Somers" (DMA diss., University of Missouri–Kansas City, 1980), pp. 5–14; Lee Alfred Hepner, "An Analytical Study of Selected Canadian Orchestral Compositions at the Mid-Twentieth Century" (Ph.D. diss., New York University, 1971), pp. 81–87; Edward Gregory Butler, "The Five Piano Sonatas of Harry Somers" (D.M.A. diss., University of Rochester, 1974), pp. 1–5. An even more personal and intimate glimpse into Somers' life—arguably more than any biography could do justice to—is found in the publication *Secret Agent: The Selected Journals and Letters of Harry Somers*, 2009. The book is a collection of letters and journals by Somers himself, written intermittently between the years of 1948 up until the very day before his death in 1999. The collection also contains a complete listing of compositions and published writings by Somers, as well as a short DVD that includes various interviews with the composer throughout his life.

both past and present—are not only distinctly manifest within the music, but also, how they interact structurally within the overarching framework of a single, unified whole. I argue that the manifestation of a musical past in Somers' works is not limited to the mere surface presence of older musical forms or pitch organizations, but rather, that it exists as an intricately synthesized structure that maps the past onto the present and vice versa. Therefore, instead of looking more generally at the stylistic use of fugal forms, modal composition, quartal and quintal harmonies, imitation, the circle of fifths, etc., when considering the framework of the past, I focus on the more fundamental elements that generate these frameworks—namely musical intervals.

Accordingly, my interpretation of the dialectic of past and present in *String Quartet No. 2* explores the relationship of intervals 5, 7, 1, and 11 and their associated transformations, which are both formative and have repercussions within the quartet's structure as a whole. The intervals, along with their isomorphic transpositions, are initially investigated via their involvement on a thematic and organizational level primarily in the fugue exposition of the opening movement. Subsequently, I consider a hypothetical division of the intervallic complexes as elements representing either the past (intervals 5 and 7) or the present (intervals 1 and 11), and I analyze their musical application in the context of the quartet's second interlude. With the dynamics of past and present thusly laid out, I consider the idea of unification though excerpts drawn primarily from the quartet's third movement, by analyzing these complexes

simultaneously within the context of two distinct musical spaces—an idea inspired by the work of David Lewin in *Generalized Musical Intervals and Transformations*.[10] Music-theoretical ideas grounded in mathematical modelling inspired by Herbert Eimert, Hubert Howe, and Godfrey Winham provide a framework for investigating the application of the four intervals in the context of mod 12 space.[11] The ultimate goal of this approach is to reveal how these stringent sets of intervals have implications on a formal and compositional, as well as interpretive level. A review of the literature on Somers' work places this methodology in a broader context, and shows the place that Somers occupies in music-theoretical studies of contemporary Canadian music.

[10] David Lewin, *Generalized Musical Intervals and Transformations* (New York: Oxford University Press, 1987).

[11] Herbert Eimert, *Lehrbuch der Zwölftontechnik* (Wiesbaden: Breitkopf & Härtel, 1950); Hubert S. Howe "Some Combinatorial Properties of Pitch Structures," *Perspectives of New Music* Vol. 4, no. 1 (Autumn–Winter, 1965), pp. 45–61; Godfrey Winham, "Composition with Arrays," *Perspectives of New Music* Vol. 9, no. 1 (Autumn–Winter, 1970), pp. 43–67.

# Literature Review

Although no significant music-theoretical studies of Somers' works have surfaced for almost two decades, the 1970s and 80s witnessed a fairly significant number that focused on various aspects of Somers' oeuvre. The earliest study was in 1971 by Lee Hepner, whose dissertation, "An analytical study of selected Canadian Orchestral Compositions at the Mid-Twentieth Century,"[1] includes an analysis of Somers' *Passacaglia and Fugue for Orchestra* (1954), along with analyses of works by fellow Canadian composers John Weinzweig and Harry

[1] Lee Alfred Hepner, "An Analytical Study of Selected Canadian Orchestral Compositions at the Mid-Twentieth Century" (Ph.D. diss., New York University, 1971).

Freedman.[2] Hepner attempts to ascertain, compare, and contrast the musical styles and techniques of these works in order to reveal common characteristics of three important Canadian compositions of the 1950s. His analytical approach takes into account the treatment of sound, harmony, melody, rhythm, and growth (musical form) in each work.

Although the three works display many differences, Hepner nevertheless proposes that a sufficient number of similarities exist between them to warrant pursuing the terms under which they are related. This relationship, he suggests, originates with Weinzweig, with whom both Somers and Freedman studied composition in the 1940s. He considers Somers' strong tonal sense, prominent use of perfect intervals, avoidance of wide melodic leaps in favor of smaller intervals, and use of repetition with rhythmic variation as some of the characteristics that also pervade the two works of Freedman and Weinzweig. Conversely however, Hepner also recognizes musical styles and techniques that differentiate Somers' work from his peers. For instance, exclusive to Somers' work is the frequent use of gradually increasing rhythmic complexity in building long crescendos, or the use of a melody that "is generally in a state of growth, so that activity is freely evolving."[3] Although Hepner's study of Somers' musical style and compositional technique is limited to the *Passacaglia and Fugue for*

[2] The two works by Weinzweig and Freedman were also written in the 1950s, several years after Somers' *Passacaglia and Fugue for Orchestra*. They are: *Symphonic Ode* (John Weinzweig, 1958); and *Images* (Harry Freedman, 1957–58).
[3] Hepner, 1971, p. 2.

*Orchestra*, many of his initial observations in relation to this work are further explored and expanded upon in subsequent studies from other authors.

The next two studies, dating from 1973, are Master's theses written by Frances Jean Smith and David Gordon Duke. Smith's thesis, "An analysis of selected works by Harry Somers,"[4] attempts to discern the composer's characteristic style and track its development in various works over two decades from 1948 to 1968.[5] His analytical approach involves a survey of orchestration, musical form, harmony, melody, and rhythm within and between the works investigated. Smith concludes his study by documenting several consistencies found within the works, pointing to a progression of characteristic musical styles and idioms. On the one hand, he considers melodic "tunefulness" along with conventional rhythms as consistent elements that permeate all the works. On the other hand, he also suggests a chronological development of musical parameters. For example, he attributes Somers' gradual adoption of serialism to his desire for greater unity—a characteristic, he proposes, that is already evident in earlier works, in part because of the structural organization of horizontal and vertical elements via the same recurring intervals. For instance, regarding harmonic structures in *North Country (1948)*, Smith identifies Somers' affinity towards sonorities built through combinations of perfect intervals. He also notes

[4] Frances Jean Smith, "An analysis of selected works by Harry Somers (M.Mus thesis, University of Western Ontario, 1973).

[5] Seven compositions form the basis for Smith's enquiry: *North Country* (1948); *Suite for Harp and Chamber Orchestra* (1949); *Passacaglia and Fugue for Orchestra* (1954); *Sonata No. 2 for Violin* (1955); *Twelve Miniatures* (1963); *Louis Riel* (1967); *Improvisation* (1968).

the structural significance of perfect intervals alongside semitones in *Suite for Harp and Chamber Orchestra* (1949).[6] Then, in later works that begin to employ serial techniques, such as the *Passacaglia and Fugue for Orchestra* (1954), Smith notes that perfect intervals characterize the row-form of the passacaglia section, while "nearly fitting" chromatic structures characterize the row form of the fugue section.[7] This eventual gravitation towards serial organization coincides with Smith's contention that Somers' music, in the seven works he studies, demonstrates a noticeable progression towards an emphasis of melodic construction over harmonic considerations.

Smith's study—one of the first to examine Somers' music in greater detail—is successful in underscoring many recurring compositional techniques and dynamics that help distinguish Somers' music. In fact, Smith suggests that Somers' Opera, *Louis Riel* (1967) functions in some respects as a culmination of all the techniques and styles used in the earlier works. Demonstrating sections of tuneful melodies, driving rhythmic patterns, static harmonies, serial organization, neo-classical sections, and so on, the opera brings together many of the musical elements that characterize the music of Somers' oeuvre from over two decades.

David Gordon Duke's thesis, "Neo-classical Composition Procedures in Selected Works of Harry Somers, 1949–59," looks at selected works of Somers

[6] Smith, 1973, p. 106.
[7] Ibid., p. 107.

dating from 1949–1959 in an attempt to investigate his music through the lens of neoclassicism.[8] Duke summarizes his findings into two categories: the historical succession of the works, and the specific and consistent neoclassical procedures used. As far as historical succession is concerned, Duke identifies Somers' neoclassical preoccupations as beginning in 1949 with the *Suite for Harp and Chamber Orchestra*. Then, less than a decade later, he suggests that Somers' compositional style was already drifting away from the practice, with the last work under the neoclassical marker being the *Sonata for Guitar* (1959).

As for common procedures, Duke associates four primary trademarks of neoclassicism with Somers' music: "an interest in historical forms, use of updated ornament patterns, a continuous interest in counterpoint, and the use of baroque and classical derived idioms such as specific figuration patterns, [and] melodic cliches."[9] Somers' exploration of historical forms is seen most frequently through his use of the fugue, passacaglia, and the da capo aria. Duke examines these forms in such works as *12 X 12 Fugues for Piano* (1951), *Passacaglia and Fugue for Orchestra* (1954), and *Sonata No. 2 for Violin and Piano* (1955). As for contrapuntal devices, Duke suggests canon as the most important to Somers. Canonic sections, just like the use of fugal forms, are ubiquitous in the works of the 1950s. The author also calls attention to juxtaposition of tonal and serial

[8] David Gordon Duke, "Neo-classical Composition Procedures in Selected Works of Harry Somers, 1949–59" (M.A. thesis, University of North Carolina, 1973). The major works analyzed by Duke are: *Suite for Harp and Chamber Orchestra* (1949); *12 X 12, Fugues for Piano* (1951); *Sonata No. 1 for Violin and Piano* (1953); *Passacaglia and Fugue for Orchestra* (1954); *Sonata No. 2 for Violin and Piano* (1955); *Five Songs for Dark Voice* (1956); and *Sonata for Guitar* (1959).

[9] Duke, 1973, p. 120.

writing, arithmetical sequences, "dynamic" crescendos, antiphonal orchestration, and rhythmic truncation as elements that, although not necessarily neoclassical, are peculiar to Somers' musical style during the 1950s.[10]

The next study, "The five piano sonatas of Harry Somers," is a doctoral thesis by Edward Gregory Butler dating from 1974.[11] The dissertation focuses on the evolution of Somers' pianistic style by investigating the musical parameters of sound, harmony, melody, rhythm, and musical form within the five piano sonatas, written by Somers between the years 1945–1957.[12] Throughout the study, Butler identifies both recurring and changing musical elements that characterize Somers' pianistic style. Recurring elements include such things as Somers' characteristic use of the wide range of the keyboard (often imparting structural significance, and/or providing a variety of tone colours), the immediate development of melodic ideas, and the prominence of the minor second interval. For instance, the immediate development of melodic ideas is evident in the serially organized work, *Piano Sonata No. 5*, in which Butler observes the initial tone row as the progenitor of the entire work. As for the minor second interval, Butler recognizes it as a necessary element in understanding much of Somers' "harmonic sense."[13] In fact, in the first three sonatas he proposes that the minor second interval is an important overarching

[10] Ibid., p. 121.
[11] Edward Gregory Butler, "The five piano sonatas of Harry Somers" (D.M.A. diss., University of Rochester, 1974).
[12] The five piano sonatas are: *Testament of Youth (Piano Sonata No. 1)*, (1945); *Piano Sonata No. 2*, (1946); *Piano Sonata No. 3*, (1950); *Piano Sonata No. 4*, (1950); *Piano Sonata No. 5*, (1957).
[13] Butler, 1974, p. 77.

structural element. For instance, in *Piano Sonata No. 1* he suggests that the minor second is projected via two distinct tonal centers around B and C.[14] Or, in the last movement of *Piano Sonata No. 3* he suggests that B♭ and B♮ may possibly function as a "tonic and quasi-dominant in relationship to each other."[15]

As far as an evolution of style is concerned, Butler identifies several differences between the earlier Sonatas compared with the later ones. For instance, although Butler identifies serial organization as evident in all five sonatas, he notes that its application is more involved in *Piano Sonata No. 4* and *No. 5*. Accordingly, he proposes that organization in *Piano Sonata No. 1*, *No. 2*, and *No. 3* favours melodic and harmonic construction around quartal, quintal, and secondal structures instead. Consequently, Butler is somewhat hesitant to label the sonatas as atonal, especially with regard to the earlier ones, which he understands as projecting various tonal centres. In relation to this he writes: "In the sense that tonal centers exist, and are, for the most part, clearly defined, Somers is a tonal composer." When speaking of *Piano Sonata No. 1*, he suggests that it "might be described as a rather free tonal procedure often approaching atonality." With that in mind, Butler's work suggests the idea that the sonatas were continually evolving towards a more progressive means of pitch organization—and that by *Piano Sonata No. 5*, atonal and serial procedures were in full effect.

[14] Ibid., pp. 31–32.
[15] Ibid., p. 77.

The most complete study on Somers and his music is found in Brian Cherney's 1975 publication, *Harry Somers*, commissioned by the Canadian Music Centre.[16] The book chronologically traces Somers' development as a composer from his earliest works as a student in 1939 through his professional career up to 1973, mostly by analyzing and comparing individual works while situating them within a biographical context. Cherney categorizes Somers' works into several chronological periods, each distinguished by new developments and techniques in his compositional practices. The 1940s were the apprenticeship years, during which the young composer was acquiring craft and skill in composition. Cherney identifies key compositional elements that are frequently used in the works from this period, including "motoric, patterned figures, often ostinato-like; the presentation and rhythmic transformation of distinctive interval cells; and the extended, often intense melodic line, moving through small intervals in the general shape of an arc."[17] These techniques are ubiquitous in early works such as *String Quartet No. 1* (1943), and *Testament of Youth (Piano Sonata No. 1)* (1945).

By the late 1940s several newer compositional practices slowly appear: "serial techniques, contrapuntal devices, and large-scale structures…[via]…build up and release of tension."[18] Cherney identifies these techniques as first surfacing in works such as *Rhapsody for Violin and Piano* (1948), *Woodwind*

[16] Brian Cherney, *Harry Somers* (Toronto: University of Toronto Press, 1975).
[17] Ibid., p. 22.
[18] Ibid., p. 59.

*Quintet* (1948), and *North Country* (1948). Cherney considers the 1950s a period of consolidation and further refinement of the techniques of the 1940s, but with a significant new development: *style juxtaposition*. He uses the term to refer to the application of both tonal and non-tonal styles within the same work or movement, with the earliest manifestation found in the *Suite for Harp and Chamber Orchestra* (1949). Cherney's idea of style juxtaposition and its compositional function is partially understood in terms of a letter that Somers wrote to Lee Hepner, in which he remarks on his use of eclecticism in his compositions of the 1950s. In the letter Somers comments on the idea of superimposing tonal and non-tonal material, speaking to two primary aims of its use: to achieve a high degree of tension by fracturing the strong associations of tonal and tonal-centre organizations through their joining with non-tonal material; and to realize the superimposition of planes of sound. Cherney also identifies the use of style juxtaposition as a means of releasing the build-up of tension, such as in *String Quartet No. 2* (1950), or *Symphony No. 1* (1951), or to "heighten the dramatic and emotional impact of a given situation," such as in the *Fool* (1953), or *Piano Concerto No. 2* (1956).[19]

Looking farther ahead to the 1960s, Cherney identifies a move in a new direction for Somers—that is, towards the use of texture, sound colour, and shape as compositional elements. It is during this period that the previous developments of the 1940s and 1950s, such as style juxtaposition and the use of

[19] Ibid., p. 71.

interval cells, were eventually abandoned. He traces the beginning of these newer developments to two works from the late 1950s: *Fantasia for Orchestra* (1958); and *String Quartet No. 3* (1959). The two works foreshadow newer developments through musical elements such as block sonorities, or the use of dynamic shapes as thematic sources in place of more traditional-like musical themes and thematic development. Then, by the mid-1960s, Cherney detects yet another change towards less prescriptive musical composition that enables the performer to make more interpretive decisions. This new development, he argues, coincides with a shift of focus from instrumental to vocal composition. An early indication is found in the solo vocal work, *Evocations* (1966), in which durations, tempi, and rests are not metrically notated, but leave the performer in charge. Cherney recognizes the late 1960s and early 1970s as a further development of the practices of the 1960s through such works as *Improvisation* (1968), and *Voiceplay* (1971), while the work *Kyrie* (1972) is one that he regards as the culmination of Somers' new vocal techniques and musical language of the 1960s.

The next major work on Somers dates from 1980: a dissertation by Diane Houghton titled "The Solo Vocal Works of Harry Somers."[20] The work involves a discussion and analysis of Somers' solo vocal works from 1942 through 1979.[21]

[20] Diane Houghton, "The solo vocal works of Harry Somers" (D.M.A. thesis, U of Missouri at Kansas City, 1980).

[21] The solo vocal works explored in Houghton's dissertation include *Stillness* (1942); *Three Songs* (1946); *A Song of Joys* (1947); *A Bunch of Rowan* (1947); *Three Simple Songs* (1953); *Conversation*

Four chapters are included: a biographical sketch; Somers' influences and philosophies; specifics of compositional style; and an analysis and discussion of the individual songs. Houghton explores the relationship between music and text, discusses performance techniques and practices, speaks to the conception of the works, and searches for meaning and interpretation. A seven-and-a-half-hour taped interview with Somers provides Houghton with a great deal of first-hand information about the solo works, as well as the composer's influences, musical philosophy, and writing style. Houghton's dissertation is accompanied throughout by numerous references to the interview.

Although Houghton recognizes commonalities between the solo vocal works—such as Somers' emphasis on the close relationship of music to text—she nonetheless identifies various stages of an advancement of Somers' compositional style. For instance, in *Three Simple Songs* (1953) she discerns a newer development in the accompaniment part. Whereas in earlier works, such as in *Stillness* (1942), she argues that the accompaniment often involves mere word-painting, in *Three Simple Songs* she suggests that the entire accompaniment part serves to set the mood of the text. She also proposes a chronological separation between compositional periods as evidenced through the style in the solo vocal works. That is, from *Twelve Miniatures* (1963) and on, she regards Somers' approach to text setting and choice of text to have changed.

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*Piece* (1955); *Five Songs for Dark Voice* (1956); *Twelve Miniatures* (1963); *Evocations* (1966); *Kuyas* (1967); *Voiceplay* (1971); and *Love-in-idleness* (1976).

The texts of the earlier works tend to be darker and more introspective, whereas the latter are brighter in mood and more optimistic. Houghton also understands the latter works as less likely to paint a specific picture or mood than they are to evoke images that the listener must interpret—a dynamic that begins to surface in works such as the *Twelve Miniatures,* and *Evocations* (1966). She traces this greater space for freedom of interpretation as gradually passing to the performer, who, in Somers' later works (such as in *Kuyas* (1967), and *Voiceplay* (1971)) becomes more involved in the creative process.

Aside from the solo vocal works, Houghton's dissertation is also successful in elucidating many different philosophical and stylistic details that characterize Somers' music, especially since she was able to discuss these details at length with the composer himself. For instance, she provides much insight into Somers' position regarding pitch organization in his music. His demeanour was of a composer who embraced all possibilities, regardless of whether or not certain pitch combinations, such as triadic structures for example, produced strong associations for the listener. Somers found that there was "an awful lot of composition by…negation, that is avoiding sounding like something else." Instead, Houghton argues that Somers' compositions are created from a separate set of problems, or a particular concept of organization.[22] For example, she calls attention to Somers' propensity for organization of pitch around four specific intervals: the minor second, major seventh, perfect fourth and perfect

[22] Houghton, 1980, p. 43.

fifth. Applications of these intervals are found extensively in the works from the 1940s and 1950s, including *North Country* (1948), *String Quartet No. 2* (1950), *Symphony No. 1* (1951), and *Piano Concerto No. 2* (1956). Another discussion involves Somers' principle of multi-planes of tempi, which Somers explains as follows:

> [I am] constantly fascinated by the different planes of movement, both in consciousness and in physical terms, in relative terms of time...the physical realities of the different movement of objects from clouds, cars, to everything you see in the cities, to the concepts of time and space…so the concept of multi-tempi, again, comes from the desire to communicate this or to realize it.[23]

Houghton suggests that flexible metrical structures often allowed Somers to achieve this "multi-tempo" dynamic, such as in *Twelve Miniatures* (1963) which involves entire songs or phrases with no bar lines.

"The Sacred Choral music of Harry Somers: An Analytical Study" is the title of a dissertation written in 1982 by Leonard Jacob Enns.[24] The author proposes two separate categories for Somers' choral works: sacred and secular. Although he recognizes many stylistic similarities between these two categories, he nevertheless argues that the secular works display more erratic and irregular rhythms, as well as a more humorous effect than the sacred works.[25] Enns identifies five sacred works, and provides an analysis by investigating the

[23] Ibid., p. 45.
[24] Leonard Jacob Enns, "The Sacred Choral Music of Harry Somers: an Analytical Study" (Ph.D. diss., Northwestern University, 1982).
[25] Ibid., p. iii.

relationship between music and text, linear and vertical aspects of pitch construction, texture, rhythm, musical form, and performance considerations.[26]

Analysis reveals each sacred choral work to display unique characteristics determined by both its general nature,[27] and by the style period in which it was written—understood by Enns as the neoclassical 1950s, eclectic 1960s, and vocally experimental 1970s. For instance, the choral work, *Where Do We Stand, Oh Lord?* (1955), contains a fugal section typical of the works of the 1950s in which it was written, or *Crucifixion* (1966) which explores choral timbre and textural layers—compositional elements that Enns suggests are common in Somers' works of the 1960s.

Despite these differences, however, Enns also discerns general characteristics that most of the sacred works share, including texts set in a clear and direct manner, intervallic movement by stepwise motion or by fourth or fifth, traditional choral textures, and a teleological progression realized through

[26] The choral works studied by Enns include: *Where Do We Stand, Oh Lord?* (1955); *God, The Master of this Scene* (1962); *Gloria* (1962); *Crucifixion* (1966); and *Kyrie* (1972).

[27] Somers understood his style of composition as involving three different functional levels:
"…On one level my approach has been what I call 'community music' or 'music for use': music which functions within a particular social context, music designed for an unsophisticated audience (and I don't mean that condescendingly) and musicians of limited technical means, music for schools, church, amateur choirs, soloists, orchestras, etc. The idioms employed have been within, or close to, those with which such audiences have become familiar and can absorb with comparative ease. A variation of the preceding has been music written for the same kind of audience but to be performed by accomplished musicians.
"On a second level I've created 'functional music,' in the specific sense: music for television, films and theatre, where the composition has to work in company with another medium and serve the demands of that medium. In this sort of music I have always drawn on a wide range of diverse resources and have demanded musicians of considerable technical skill to perform it.
"On a third level I have created without consideration for any limitations, sometimes completely experimentally, sometimes extending the line of a particular direction on which I had been working through a series of works." Harry Somers (Brochure, Performing Rights Organization of Canada Limited, July 1979).

an overall build-up and release of tension using different musical parameters (i.e. rhythmic density, textural saturation). He even suggests that the progression of energies and densities is the most important form-giving factor in the sacred choral works as well as in other works of Somers. For instance, in an analysis of *Kyrie* (1972), he considers three middle sections as defined by gradually accumulating textures that work together to produce a teleological effect.[28]

Along with studying the choral works, Enns also provides an opening chapter that considers typical characteristics of all of Somers' oeuvre, including linear and vertical aspects of pitch construction, texture, rhythm, and larger structural aspects. Similar to other authors, Enns also notes Somers' "propensity for aggregates of perfect fourths and/or fifths… plus one or two non-perfect intervals," in various works of the 1940s and 50s, such as in *Suite for Harp and Chamber Orchestra* (1949).[29] Another compositional element that Enns observes is melodic construction through short agitated cells (or motives), as well as the long melodic line, which he argues is often related to the material of the agitated cell. For instance, he shows how the melody in *North Country* (1948) is constructed of the original cell through such techniques as fragmentation, inversion, and rhythmic augmentation.[30]

The most recent studies of Somers' works have dealt with his operas. In 1984, Lillian Buckler wrote an MA thesis focusing on the use of folk music in

[28] Enns, 1982, p. 202–203.
[29] Ibid., p. 39.
[30] Ibid., pp. 27–28.

Somers' Opera, *Louis Riel* (1967).[31] She traces the history and origin of various folk songs—categorized as either native peoples music, or English and French popular songs—found within *Louis Riel*, and compares the original scores to their specific manifestations in the opera through an analysis of text, melody, and rhythm. Buckler attempts to understand how the folk songs are changed to reflect Somers' characteristic style, as well as how he used this style to underline the purposes of the drama. She concludes that three main stylistic differences are found when comparing Somers' folk songs to their respective originals: the use of highly ornamented melodic lines; the adoption of different rhythms and meters; and sections of juxtaposition and superimposition of different musical styles. She interprets these characteristics, as well as Somers' use of recurring melodic motives and instrumental colours, as the primary musical ways that he was able to underline the purposes of the drama.

Finally, the work of Andrew M. Zinck constitutes the last significant analytical study of Somers' works. Zinck focuses on Somers' operas: his masters thesis in 1990, "Theatrical Communication in Harry Somers' Opera Louis Riel,"[32] deals specifically with the opera *Louis Riel*, while his doctoral thesis of 1996, "Music and Dramatic Structure in the Operas of Harry Somers,"[33] is concerned with all six of Somers' operas. In the former, Zinck attempts to combine a

[31] Lillian Buckler, "The Use of Folk Music in Harry Somers' Opera Louis Riel" (M.Mus thesis, University of Alberta, 1984).
[32] Andrew M. Zinck, "Theatrical Communication in Harry Somers' Opera Louis Riel" (M.Mus thesis, University of Alberta, 1990).
[33] Andrew M. Zinck, "Music and Dramatic Structure in the Operas of Harry Somers" (Ph.D. diss., University of Toronto, 1996).

traditional analysis of *Louis Riel* with a study of its stage realization in the 1969 CBC television production. An initial score analysis focuses primarily on the use of leitmotivs, musical styles, and relationship of music and text in guiding the drama of the opera. Subsequently, he argues that the opera's stage performance aspects (i.e. stage action, lighting, sets, costumes, etc.) involve a communication system that generates musical meaning in addition to that inherent within a score analysis. In the latter work, Zinck studies all six of Somers' operas by investigating the role of the librettos in the composer's creative process. Through a survey of thematic and motivic elements, pitch structures (tonal, modal, and atonal), vocal styles, and timbral effects, Zinck attempts to show a consistency of perceptual oppositional structures in Somers' opera music that provides musical meaning through clear articulation of dramatic structure and social order in the six librettos.

Besides some of the approaches to serially organized works, many of the analyses in the works I have surveyed share a rather common analytical approach—that is, they are largely conventional, using tools, interval systems, and formal terminology borrowed from tonal music theory to understand and interpret Somers' music. Although there are certain benefits to using such a system for analysis—especially in light of Somers' use of past musical conventions—it nevertheless comes with certain analytical limitations. For instance, many pitch collections that lie outside the domain of conventional triadic structures are left undefined. Although triadic structures are found in

Somers' music, it is far more often the case that one finds chords and pitch collections built through a combination of intervals, including perfect fifths, perfect fourths, minor seconds, and major sevenths. Accordingly, many of the analyses struggle to make sense of these chords or pitch collections. Because of this, any pitch that remains equivocal within a given structure is understood in terms of its timbre or tone colour effect. For instance, Smith identifies the use of vertical structures built through a combination of perfect intervals in Somers' music (i.e. quartal and quintal harmonies). However, when vertical structures are built through a combination of both perfect intervals and semitones, such as in *Suite for Harp and Chamber Orchestra*, Smith suggests the semitones are superfluous to the structure, added to give a "gently dissonant" effect.[34] Likewise, Enns identifies vertical sonorities derived from perfect intervals in works of the late 1940s. However, when non-perfect intervals are added to these same structures, such as in *North Country*, Enns suggests merely that they add "a certain poignancy to the sound."[35] Enns is only able to interpret the non-perfect intervals as nonessential to the structure of the music. In both cases the analytical apparatus restricts the understanding of given pitch combinations.

Many of these authors have suggested that Somers' music is neither tonal (in the strict sense of the word) nor atonal. Butler, for example, identifies the piano sonatas as tonal—in the sense, however, that they gravitate around

[34] Smith, 1973, p. 106.
[35] Enns, 1982, p. 36.

tonal centres. Nevertheless, Butler struggles to pinpoint consistent and distinct tonal centres in his analysis. For instance, in his analysis of *Piano Sonata No. 1* (1945), he suggests that tonal centres exist around pitches D and E♭, respectively, through pedal point, repetition, functional harmonic structures, melodic emphasis, etc. However, at the same time he also acknowledges that potential tonal centres around pitches C♯, or E, or B, convolute any tonal analysis.[36] Later, in his analysis of *Piano Sonata No. 3* (1950), he argues that the "abundance of secondal, quintal, and quartal structures make any attempt at functional analysis futile."[37] Here, Butler begins to recognize a problem of analytical approach—Somers' music is not as compatible with conventional theory as one might think.

Similarily, Hepner's analysis of the *Passacaglia and Fugue for Orchestra* (1954) often seems confused when tonal or modal analysis is involved. At one point in his analysis of the passacaglia subject, Hepner suggests many possibilities for a tonal centre: dorian mode beginning on C, or a G tonic, or B♭ tonic because of a diminished fifth, or B major, or Lydian mode starting on E.[38] Hepner acknowledges the uncertainty, stating: "Regardless of the ambiguity concerning classification, the passacaglia subject, making use of fourth and fifth intervals, has a strong tonal character."[39] Because of the nature of Somers' music, Hepner concludes that the subject is simply tonal in character.

[36] Butler, 1974, pp. 16–19; 31–32.
[37] Ibid., p. 77.
[38] Hepner, 1971, p. 94.
[39] Ibid., p. 95.

Another common thread found throughout the studies of Somers' music is the inquiry into Somers' musical style and its development. That is, all of the authors are concerned, to some extent, with specifying the characteristics and style of Somers' music. However, instead of focusing on single works, almost all of these studies have sought to expose some form of development, progression, or evolution of his compositional technique and musical style. Although this chronological tracing reveals some interesting patterns and correlations, it is at the expense of in-depth analysis of individual compositional entities from the standpoint of the different conceptual and interpretive perspectives they offer when viewed as self-standing and autonomous works of art.

Most important to my study is the fact that existing literature on Somers' music is less focused on the idea of a musical synthesis (or unification) of past and present, than it is with a superimposition/juxtaposition of past and present. Zinck, for instance, writes about the idea of oppositional structures in his analysis of Somers' operas. For him, juxtaposition and superimposition of different pitch organizations serve to articulate irreconcilable social orders within the opera libretti. Other authors, such as Hepner, Cherney, and Duke, have noted Somers' assertion that he intended to "unify conceptions of the Baroque and earlier…with the high tensioned elements of our own time."[40] However, discussion of the musical past and present in their studies perpetuates a division,

[40] *Thirty-four Biographies of Canadian Composers* (St. Clair Shores, Michigan: Scholarly Press, 1972), p. 93. Reprint of 1964 edition, Montreal, CBC International Service.

rather than provides grounds for unification, of past and present. Indeed, concepts such as Cherney's *style juxtaposition* are used principally to label the heterogeneity of styles, tonal and non-tonal, within the same work or movement.

In summary, existing literature focuses largely on the use of analytical tools conducive to tonal and modal music, generally searches for characteristic musical styles and techniques and their progression or development over time, and often understands the musical past as a distinct and irreconcilable element in the present. By contrast, my perspective is to explore Somers' music in a different light, drawing on atonal analytical tools (set theory) to examine a specific work (*String Quartet No. 2*) in light of a concept of unification of past and present (synthesis).

Set theory provides a flexible way to analyze Somers' music, which often surpasses conventional tonal or modal analysis. In the current work pitch-class (pc) sets and associated network structures are analyzed within two different musical spaces. The first space is most common to set theory. It comprises the twelve pitch-classes (pcs) under equal temperament, arranged in chromatic order around a clock face. In this space, the interval between any two pcs x and y

is the number of moves proceeding clockwise from x to y.[41] The second space, based on a space of fifths, is introduced in chapter 3.[42]

The three chapters of my thesis develop a narrative that builds from smaller, more localized parameters such as thematic structure, to broader ideas of compositional structure. The guiding theme and organizational trajectory for my work is the idea of unification, which comes into the foreground in its fullest resonance through the ideas on formal organization along multiple parameters that are presented in the final chapter. Chapter one isolates a motivic cell of three notes that generates the material of the entire quartet. The motivic cell (identified as set [013]), along with associated network configurations, is studied in terms of its transformations and structural treatment in the opening fugue exposition, which reveals the intervals 5, 7, 1, and 11 as the four primary structural intervals. In Chapter two the interaction of these intervals is explored further (with a concentration on intervals 5 and 7) in the context of the quartet's second interlude, in order to demonstrate the compositional application of the 5 -- 7 and 1 -- 11 interval pairings as characteristic of two distinct musical styles functioning within the same space. Intervals 5 and 7 are presented as reflecting

[41] See the musical space outlined in section 2.1.3 of David Lewin's *Generalized Musical Intervals and Transformations* (Yale University Press, 1987; reprint, New York: Oxford University Press, 2007), p. 17.

[42] The second space comprises the twelve pcs under equal temperament, arranged in perfect fifths (i.e. C, G, D, A, etc.) around a clock face. In this space, the interval between any two pcs x and y is the number of moves proceeding clockwise from x to y. For instance, whereas in space 1 the interval from C to G equals 7 (seven steps clockwise), in space 2 the interval from C to G equals 1 (one step clockwise). Lewin hypothesizes about the nature of this space in *Generalized Musical Intervals and Transformations*, 2007, p. 22.

musical dynamics of the past, with intervals 1 and 11 reflecting musical dynamics of the present. Chapter three explores intervals 1 and 11 in more detail in the opening of the quartet's third movement, highlighting an organizational parallel to intervals 5 and 7. The concept of unification is introduced through the investigation of a second musical space, based on fifths instead of semitones. This enables me to compare the network structures of given pitch-class collections across both spaces, and to demonstrate mappings (under multiplicative operations $M_7$ and $M_5$) that take place from one space to the other and vice versa, as network automorphisms. The ensuing network structures of each space exhibit a symmetry resulting from pc collections containing both intervals 1/11 and 5/7. The unification of past and present, therefore, is largely demonstrated within given pc collections that exhibit both "perfect intervals" and "semitones"—collections that have, in previous studies of Somers' music, been left undefined.

# Chapter One

Somers' compositions, especially those written earlier in his career, often exhibit formal organizations derived from pc collections that project onto both foreground and background structures within the music. Other authors have noted a similar phenomenon, including Cherney, who has identified this dynamic in many of Somers' earlier works. For instance, he recognizes the presentation and rhythmic transformation of a 'small interval cell' in *Testament of Youth* (1945).[1] The interval cell, first presented in the introduction to the first

[1] In set theory Cherney's 'small interval cell' would be understood as a six-note pc collection of set-type [012356] in the sequence D–F♯–F♮–C♯–E–G.

movement, "becomes the basis of a driving rhythmic figure in the latter part of the first movement, and fragments also appear in the second and third movements."[2] Two fragments he identifies are subsets of the six-note pc collection, including a three-note collection used near the end of the first movement, and a two-note collection found in the melody of the second movement.[3] Similarly, Enns writes about the idea of foreground cellular construction in Somers' music. For instance, in *North Country* (1948) he recognizes large-scale melodic construction based on cellular manipulation, where a 'source cell' generates the entire melody through "inversion, pitch exchange, fragmentation, concatenation, and intervallic and rhythmic modification."[4] Cherney, on the other hand, identifies the same source cell as Enns in his analysis of *North Country* (1948), with the exception of a single pc. Accordingly, he identifies a 'tiny interval cell' as the basis of construction of both the first violin line in the introduction and the ostinato-like accompaniment in the middle section of the first movement.[5]

Both Cherney and Enns attribute this compositional technique to Weinzweig, Enns suggesting that his guidance led to "a more sophisticated

[2] Cherney, 1975, pp. 19–20.
[3] In set theory the fragments would be understood as set-type [014] and [01], respectively.
[4] Enns, 1982, p. 27. In set theory Enns' 'source cell' would be understood as a five-note pc collection of set-type [02357] in the sequence A–G–D–C–B.
[5] Cherney, 1975, pp. 35–36. In set theory Cherney's 'tiny interval cell' would be understood as a four-note pc collection of set-type [0257] in the sequence G–A–D–C.

approach to melodic continuity through cellular development."[6] Although the repetition of short musical ideas was present in Somers' works before he studied with Weinzweig, their systematic use as a means of generating musical content and establishing formal organization is largely traceable to his teacher. In a letter to Lee Hepner, Somers comments on Weinzweig's influence regarding his organizational use of what he calls 'cells' of notes:

> In his own music, Weinzweig has always had certain idiosyncrasies. One in particular is the working around particular 'cells' of notes, constantly varying their individual stresses and durations like someone turning an object around and around to reveal all its shapes and colours. This crept into my work here and there.[7]

Indeed, many of Somers' works exemplify this type of thematic composition, and *String Quartet No. 2* is no exception. Similar to *Testament of Youth* (1945), the work presents a small pc collection—or 'cell' of notes as Somers might call it—in the opening movement that generates much of the material through the entire work, especially in the first movement. Cherney suggests a similar idea, writing that the "quartet opens with a pensive viola melody which is the progenitor of much of the motivic material of the first movement."[8] However, Cherney only suggests this idea in passing, overlooking the exact nature of the motivic material derived from the viola melody.

[6] Enns, 1982, p. 27.
[7] Somers, 1971, p. 95.
[8] Cherney, 1975, p. 49.

Accordingly, I argue that set-type [013] is the specific pc collection (i.e. 'cell' of notes) introduced in the viola melody that generates the material of the quartet. The analysis that follows reveals various manifestations of pc set [013] on both a foreground and background level primarily within the fugue exposition of the first movement. More importantly, the resultant manifestations hold transpositional relationships of $T_5$, $T_7$, $T_1$, and $T_{11}$ to one other that are revealing on the level of structure and organization, especially with respect to their decisive role in the idea of unification of past and present discussed in the introduction.

Immediately following the sounding of two distinctive trichords, the first movement of the quartet opens in the style of a fugue exposition.[9] Fugal entries occur in the following order of voices: viola, second violin, first violin, cello. The first entry—the fugue subject played by the viola beginning in measure 5—is illustrated in Figure 1.1. The subject line has a distinct contour and tessitura, ascending to its apex at E♭4 in measure 7, and falling to its low point at F♯3 in measure 9. Its design is structured around a three-note pc collection I identify as the *motivic cell* (MC), outlined in the figure by horizontal square brackets below the staff.

[9] The exposition is reproduced in its entirety in appendix I. The opening trichords, {E,G,B} and {G♯,C♯,G}, are discussed further in more detail: {G♯,C♯,G} in chapter one; and both {E,G,B} and {G♯,C♯,G} in chapter three, when I revisit them in connection with the idea of unification.

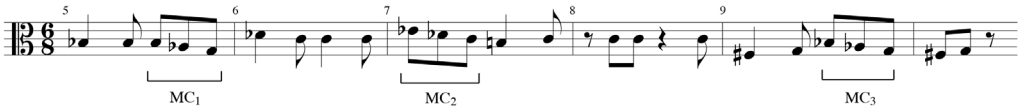



**Figure 1.1** *First entry of the fugue subject (mm. 5–10, viola)*

The MC appears three times within the fugue subject, on the first or the second half of the measure. The first cell, {B♭,A♭,G}, is labelled $MC_1$; the second cell, {E♭,D♭,C}, is labelled $MC_2$; and the third cell, {B♭,A♭,G}, is labelled $MC_3$. All three MCs share an identical durational pattern of three eighth notes, they contain the same pitch intervals between the three pcs (interval 10, interval 11), and the combined three pcs that form each MC are instances of set-type [013]. I argue that this three-note pc collection—in the form presented in the fugue subject—is Somers' particular 'cell' of notes which he will, like an object, turn "around and around to reveal all its shapes and colours."[10] Although my focus is on the fugue exposition, I will first give a few examples of how the MC projects outwards into sections of the first movement. Since the MC is used to generate new material, I use its original form within the fugue subject in Figure 1.1 as a 'source cell' or reference point from which to gauge any variation.

Although manipulation of the MC for the purpose of generating musical content becomes increasingly fragmented later in the quartet, it is easily discernable in the first movement. Numerous permutations of the MC are

[10] Somers, 1971, p. 95.

generated using such techniques as augmentation, diminution, inversion, retrograde, pitch repetition, and fragmentation. Two different instances are apparent directly following the fugue exposition. For instance, the MC is abstracted and used to generate the material of the following *Vivace* section. Like the exposition, the Vivace section involves a series of imitative entries. The first entry begins on the cello in measure 41, and outlines a four-note sequence G2–F2–G2–E2, illustrated in Figure 1.2[a]. The collection of pcs, {G,F,E}, form an instance of the MC since they make up set-type [013], outlined in the figure by horizontal square brackets above the staff.

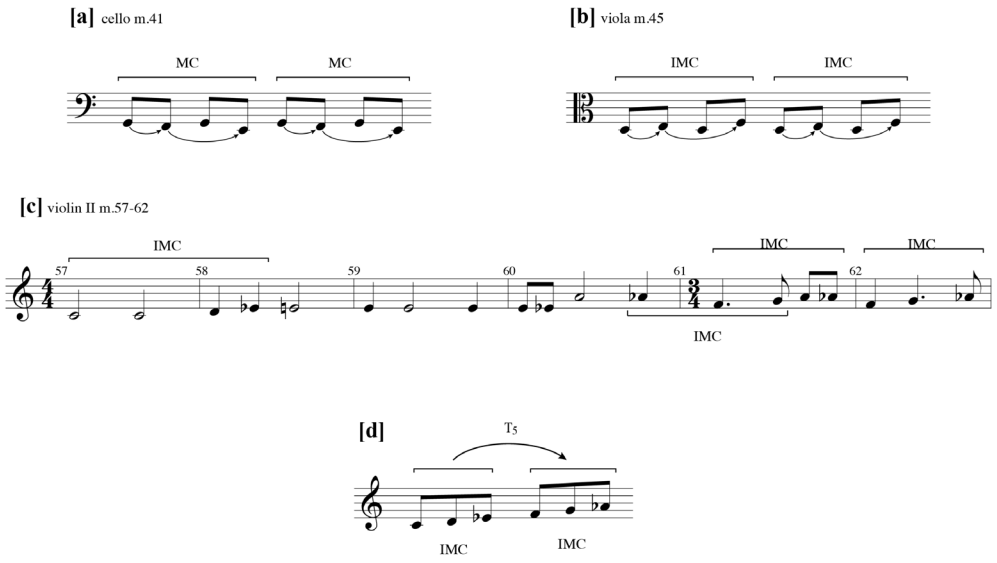



**Figure 1.2** *Permutations of the MCs and IMCs following the fugue exposition (mm. 41–62, cello, viola, violin II)*

However, along with a change of meter from compound to simple time and a different transposition of the original cell, each instance of the MC is expanded by the insertion of the pitch G2 on the third eighth note. Arrows in the figure trace the primary MC pitch sequence, G2–F2–E2. The second entry occurs in the viola part in measure 45, where it imitates the cello with another four-note sequence D3–E3–D3–F3, illustrated in Figure 1.2[b]. Again, the collection of pcs, {D,E,F}, is also an instance of set-type [013]. However, instead of presenting the original MC pitch sequence, this entry presents its inversion, what I call the *inverted motivic cell* (IMC). Just like the MC of the first entry, the IMC is expanded by the insertion of the pitch D3 on the third eighth note. Arrows in the figure trace the original IMC pitch sequence, D3–E3–F3.

The third entry imitates the viola at the octave beginning on D4 in the second violin in measure 48, and outlines the sequence D4–E4–D4–F4. Finally, the fourth entry in the first violin does not immediately begin with direct imitation, but ascends instead in measure 50 towards the same imitative entry in measure 51, beginning on A5 and outlining the sequence A5–G5–A5–F♯5. Besides the particular MCs and IMCs I have outlined in the *Vivace* entries, others are present in accompaniment parts, including the pc collections {F♯,G♯,A}, {C♯,D,E}, {A,B♭,C}, and {G,A,B♭}, all of which are instances of set-type [013]. Through a change of meter, coupled with a few minor permutations of the

original MCs and IMCs, Somers is able to generate an entirely new, yet highly interrelated, section of music.

Another instance of cell manipulation is apparent in the second violin in measures 57–62. The passage is labelled: *leading voice, expressive*. The melodic line, provided in Figure 1.2[c], incorporates rhythmic augmentations of the IMC indicated by horizontal brackets above and below the staff. The first instance occurs in measures 57–58, beginning on C4 and involving the pc collection {C,D,E♭}. The original eighth-note rhythm of the IMC is augmented to include two half-notes on C4, and quarter-notes on D4 and E♭4, respectively. Subsequent instances are found in measures 60–62, and involve the pc collection {F,G,A♭}. Here, the three pcs of the IMC are presented rhythmically as either eighth notes, quarter notes or dotted quarter notes.

Many more permutations of the MCs and IMCs are evident throughout the remainder of the opening movement and quartet as a whole. This is especially seen with the dyad [01], a fragment of the original MC, which is explored further in chapter three. Yet, Somers uses the MCs and ICs not only to generate musical content, but also to provide formal structure partially through the transformational relationships that they produce. For instance, Figure 1.2[d] abstracts both of the augmented IMCs of the melodic line from Figure 1.2[c] in order to compare them. Since each IMC is a trichord of set-type [013], they relate to one another under transposition or inversion. Accordingly, the two

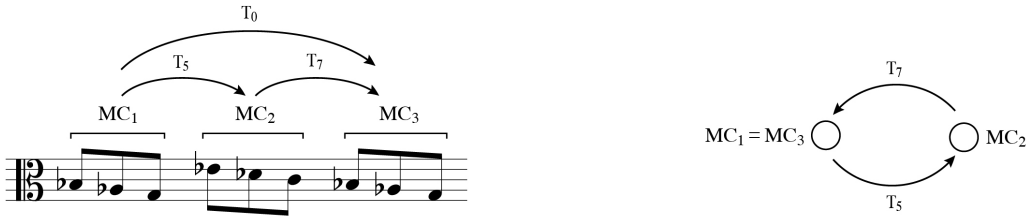
IMCs relate under $T_5$ and $T_7$, illustrated in the figure via the arrows above and below the staff.

Looking back to compare the various MCs and IMCs of the *Vivace* section with one another reveals a similar relationship: the initial pitch of each subsequent entry of an MC or IMC tends to follow a transpositional pattern of interval 7 (or interval 5 if reversed). The first entry begins on pc G (see Figure 1.2[a]), the second and third entries begin on pc D (see Figure 1.2[b]) which is interval 7 from pc G, and the fourth entry begins on pc A, which is interval 7 from pc D. In addition, if we account for the MCs and IMCs found in the accompaniment part to these entries, other instances of interval 7 are apparent. For instance, accompanying the second entry (which starts on pc D) is an IMC starting on pc A (interval 7 from pc D), and accompanying the third entry (which also starts on pc D) are two MCs starting on pc A, and pc E, respectively (pc A being interval 7 from pc D, and pc E being interval 7 from pc A).

To recap, whereas interval 7 (or its inverse 5) presents a common relationship between the initial pc of the MCs and IMCs within the *Vivace* section, the isomorphic transposition of interval 7 and 5 ($T_5$ and $T_7$) defines the transformational relationship between the two distinct IMCs of the melodic line in measures 57–62 (Figure 1.2[c]). These relationships, or musical 'gestures,' are ubiquitous throughout the quartet and serve a structural purpose that has both

formal and interpretive implications. However, intervals 5 and 7 are not the only relationships that are prominent in the quartet.

Examining the various entries of the fugue exposition and the relationship of its MCs reveals these and other intervals that are pertinent to the structure of the quartet. Figure 1.3[a] extracts the three instances of the MC from the opening fugue subject presented earlier in Figure 1.1. The arrows above the MCs in Figure 1.3[a] illustrate the transformational relationships between them.




[a] *Transpositions between $MC_{1,2,3}$* [b] *Abstracted network of $MC_{1,2,3}$*

**Figure 1.3** *Three instances of the MC extracted from the subject (mm. 5–10, viola)*

The arrow from $MC_1$ to $MC_2$ is labelled $T_5$; the arrow from $MC_2$ to $MC_3$ is labelled $T_7$, and the arrow from $MC_1$ to $MC_3$ is labelled $T_0$. Together, $T_5$ and $T_7$ form the identity operation, $T_0$. This aspect provides the subject with a sense of directed movement—one that begins at a given point ($MC_1$), moves somewhere

else ($MC_2$), before finally returning to where it began ($MC_3 = MC_1$). This idea is captured visually in the graph of Figure 1.3[b]. The figure shows that the transformation $T_5$ from $MC_1$ to $MC_2$ is undone by the transformation $T_7$ from $MC_2$ to $MC_3$. A sense of balance is achieved through the return of $MC_1$ at the end of the subject (now labelled $MC_3$). This allows both $MC_1$ and $MC_3$ to operate as reference points in relation to $MC_2$, resulting in a particular structure that insinuates a quasi-tonal sound. Indeed, the transformations $T_5$ and $T_7$ are foundational relationships in tonal music: a dominant harmony under $T_5$ becomes tonic, which relates under $T_7$ back to dominant (in the major mode), and a tonic harmony under $T_5$ becomes subdominant which relates back to tonic under $T_7$ (in both major and minor modes). The graph of Figure 1.3[b] could also be used to represent these tonal relationships. Somers has spoken about the principles of tonal-centre organization using cells of notes as structural reference points:

> There is what I call a modal or modular kind of composition in which you work around cells of notes, and tonal center writing in which you establish tonal reference by length, the duration, or the color of a particular tone…The relation to a given tone produces then the relationships, the relative nature of tension and fusion. I know [in] a lot of music I was deliberately moving around tonal centers, using cells of notes, which also produce particular color in a piece as the reiteration or cycling around, and so forth…[T]hrough reiteration of notes [there is] a strong tonal sense about them. And they aren't diatonic, I think necessarily, but I think they might be modal in their way, but modal in the sense that modality is created by those little cells of notes and

> reiterations….The mode is created by the returning and moving away from the central points.[11]

Accordingly, Somers uses the MCs in conjunction with movement around two tonal centres (or axes) on C and G, respectively. Whereas the MCs of the subject provide a certain characteristic or 'colour' to the fugue subject, the C and G axes provide a point of reference upon which each MC cycles. The returning and moving away from these axes places the MCs within a strong modal framework—one that recalls many conventional idioms, including the use of dissonance and resolution to emphasize the C and G axes, and a strict treatment of melodic motion.

For instance, the last eighth note in measure 5, G3, leaps by interval 6 (i.e. a diminished fifth) to D♭4 on the first beat of measure 6, illustrated in Figure 1.4. The stepwise resolution (interval 11) from D♭4 to C4 emphasizes C as a tonal centre. Consequently, D♭4 acts as an upper leading tone to the C4, around which $MC_2$ cycles. As a result, the underlying structural interval is formed between G3 to C4, which is interval 5, illustrated in Figure 1.4 via the arrow below the staff.

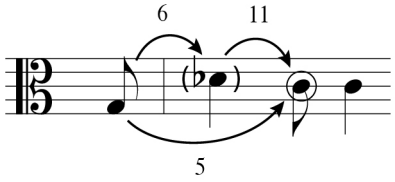



**Figure 1.4** *D♭4 acting as an upper leading tone resolving to C4 / Overall motion is interval 5: G3 to C4 (mm. 5–6, viola)*

[11] Houghton, 1980, pp. 39–40.

Whereas D♭4 resolves to C4 from above, there is also a B♮3 on the second beat of measure 7 acting as a lower leading tone, resolving to C4. Similar to D♭4, B♮3 also works to circumscribe the C tonal centre.

The melodic leap from C4 to F♯3, which occurs from measure 8 to 9, generates another instance of interval 6. The measures are illustrated in Figure 1.5. The stepwise resolution (interval 1) from F♯3 to G3 in measure 9 emphasizes G as a tonal centre. As a result, F♯3 acts as a lower leading tone to the G3, around which $MC_1$ cycles.

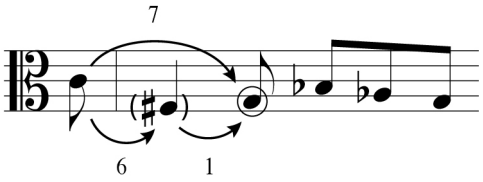



**Figure 1.5** *F♯3 acting as a lower leading tone resolving to G3 / Overall motion is interval 7: C4 to G3 (mm. 8–9, viola)*

In this case the underlying structural interval is formed between C4 to G3, which is interval 7, illustrated in the figure via the arrow above the staff. The structure of the MC also helps to circumscribe the tonal centre G3. This is because of the [01] dyad that is formed between G and A♭ of $MC_1$. The A♭3 acts as an upper leading tone to G3, just as D♭4 had done in relation to the C4 of $MC_2$.

Understanding F♯3, A♭3, D♭4, and B♮3 functioning as upper and lower leading tones emphasizes as tonal centres both C and G, in addition to intervals 5 and 7, which map the C and G tonal centres onto one another within the subject's structure.

The returning and moving away from the C and G axes places the MCs within a strong modal sphere by strictly following some key historical idioms of melodic motion: there are no instances of two adjacent leaps in the same direction; all leaps lead to accented beats; and all contain some form of compensation.[12] The first leap, G3 to D♭4 in measures 5–6, is followed by stepwise motion in the opposite direction. At that point, there is another leap from C4 to E♭4 across the bar line into measure 7. This leap is also compensated by contrary stepwise motion, filling in the space with the descending progression E♭4–D♭4–C4. Another leap from C4 to F♯3 occurs in measures 8–9, and is followed by stepwise motion in the opposite direction to G3. Finally, the last leap from G3 to B♭3 in measure 9 is followed by contrary stepwise motion, filling in the space with the descending progression B♭3–A♭3–G3. Besides these four leaps, the rest of the subject's motion is stepwise.

[12] These specific melodic ideals are demonstrated in such historical works as Knud Jeppesen's study of counterpoint, "*The Polyphonic Vocal Style of the Sixteenth Century,*" which discusses some key ideas of melodic construction: two or more leaps in a row in the same direction is less desirable; ascending leaps that land on unaccented beats are less desirable; motion involving a leap—especially those that ascend—should be compensated through contrary stepwise motion directly following the leap; contrapuntal motion by step is most desirable (Jeppesen, 1939, pp. 83–97). Jeppesen's text describes these melodic idioms in close correspondence to the music of Palestrina.

In fact, stepwise motion plays a key role in structuring the fugue subject. This is easily observed through an interesting theory of melodic structure that David Lewin presents in his 1983 article, "An interesting Global Rule for Species Counterpoint." The rule states that, "[f]or every note X of the counterpoint line lying above (below) the cadence tone, some note lying one step closer (higher) than X must appear in the line at some point subsequent to X."[13] The rule involves a convergence of pitches by strict stepwise motion to a cadence tone, while avoiding any placement of a pitch that is isolated from this motion: what Lewin refers to as "hanging" tones.[14] If G3 in measure 10 is considered the cadence tone, then Somers' subject line follows Lewin's global rule without deviation. Figure 1.6 illustrates the subject in terms of the rule.

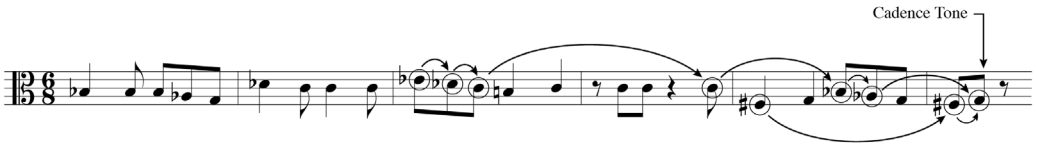



**Figure 1.6** *Convergence of pcs in the fugue subject (mm. 5–10, viola)*

The highest pitch of the line is E♭4 in measure 7. Continuing from E♭4 to the cadence tone G3 in measure 10, there is always a pitch that appears one step

[13] David Lewin, "An interesting Global Rule for Species Counterpoint," *In Theory Only* vol. 6, No. 8 (1983), pp. 19–44.
[14] Lewin, 1983, p. 20.

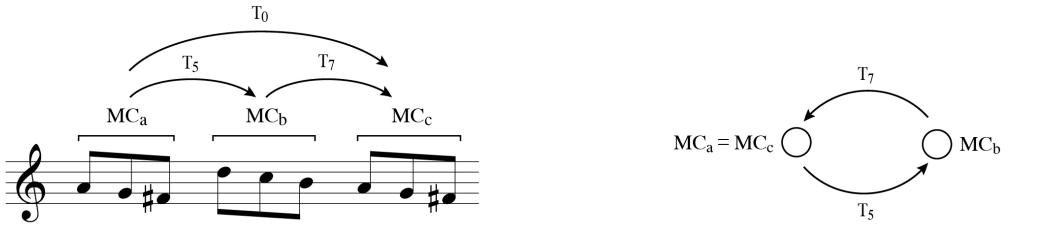
closer to the cadence tone from every pitch X that appears after E♭4. In other words we can trace a stepwise decent from E♭4 to G3 without the occurrence of "hanging" tones. Figure 1.6 traces this path using arrows connecting pitches above the staff. The figure also traces the stepwise motion of the lowest pitch of the line, F♯3 in measure 9, to the cadence tone G3 in measure 10 using arrows below the staff.

One might ask why Somers would place the MCs in such a strong modal sphere, when the quartet as a whole is principally non-tonal. Somers wrote about his intentional use of superimposition or juxtaposition of various styles and techniques of writing as a working principle:

> Tonal and tonal centre organizations create their 'solar systems' so strongly that, for me, maximum tension is achieved only by fracturing them and jarring them with non tonal material. This, I believe, is not only aesthetic but also psychological, for tonality has such strong associations of order in most people, that it is a shock when it is broken, or challenged in the same composition…So I was deliberately using memory and association as compositional elements.[15]

The idea of 'breaking' or 'challenging' tonality is intrinsic to the overall dynamic at play in the quartet. In the present context the fugue answer provides this dynamic. The second violin enters with the fugue answer beginning in measure 10. The transposition affects the relationship of the three embedded MCs in interesting ways. Figure 1.7[a] extracts the MCs in order to examine them in isolation.

[15] Somers, 1971, pp. 91–92.




[a] *Transpositions between $MC_{a,b,c}$* [b] *Abstracted network of $MC_{a,b,c}$*

**Figure 1.7** *Three instances of the MC extracted from the answer (mm. 10–17, violin II)*

The first cell, {A,G,F♯}, is labelled $MC_a$, the second cell, {D,C,B}, is labelled $MC_b$, and the third cell, {A,G,F♯} is labelled $MC_c$. Since group structure is preserved under transposition, the transformations $T_5$ and $T_7$ also occur between the MCs of the fugue answer. The arrows above the MCs in the figure illustrate the transformational relationships between them. The arrow from $MC_a$ to $MC_b$ is labelled $T_5$; the arrow from $MC_b$ to $MC_c$ is labelled $T_7$, and the arrow from $MC_a$ to $MC_c$ is labelled $T_0$. As they did in the fugue subject, these transformations also provide the fugue answer with a sense of directed movement, captured visually in the graph of Figure 1.7[b].

The fugue answer immediately challenges the modal framework established previously in the fugue subject. First of all, the two fluctuating tonal centres of C and G that encompassed the MCs of the subject are now shifted to B and F♯, respectively. The MCs of the answer, {A,G,F♯} and {D,C,B}, are thus

immediately placed within a contrasting modal framework. In tonal theory C and G tonalities are considered distantly related to those of B and F♯, making this an abrupt transposition for a fugue subject that displayed a strong modal framework to begin with.

Secondly, the relationship of a fugue answer to its subject brings to mind a few structural considerations of tonal harmony. The traditional tonal fugue involves an answer that is a transposed version of the subject. The transposition typically maps the subject onto either the dominant or subdominant harmony, both of which are instances of the transformation $T_5$ or $T_7$. In Somers' opening, however, the transposition level of the answer is not $T_5$ or $T_7$, but $T_{11}$. Figure 1.8 examines the relationship between the subject and answer using the three MCs that were extracted from each.

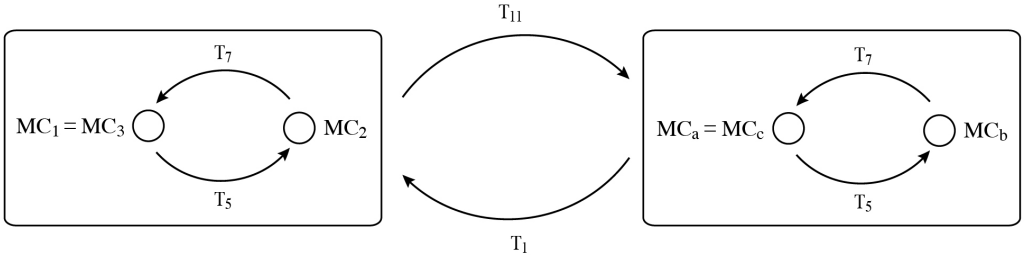



**Figure 1.8** *Network comparison of the MCs of the subject ($MC_{1,2,3}$) with the MCs of the answer ($MC_{a,b,c}$)*

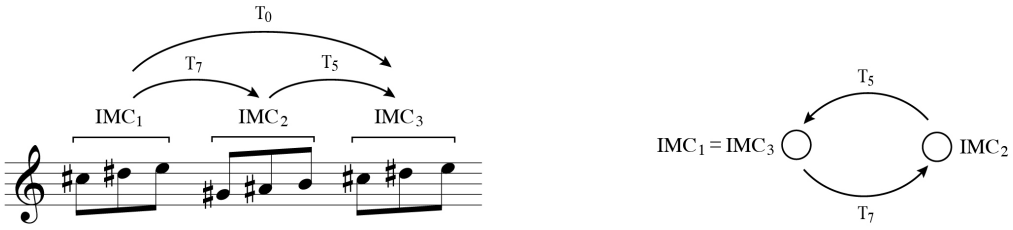
Instead of comparing the pitch content of each MC we can simply compare the transformational graphs that represent them. The figure illustrates the transformations $T_{11}$ and $T_1$ that are spanned between the graph of the subject ($MC_{1,2,3}$) and that of the answer ($MC_{a,b,c}$).

Consequently, $T_{11}$ and its inverse $T_1$ suggest a reinterpretation of the tonic-dominant relationship ($T_5/T_7$) found in tonal harmony. This reinterpretation finds parallels in other early works from Somers, and is noted by other authors. For instance, Butler comments on the significance of the minor second interval, writing that the realization of its importance "is necessary in order to appreciate his harmonic sense."[16] His interpretation recognizes the minor second interval as an essential element of harmonic structure in Somers' music. Butler also notes the functional parallel in *Piano Sonata No. 3* (1950) between the minor second interval and the dominant-tonic relationship of tonal harmony. He writes: "[t]he predominant tonal centre of each movement documents the importance of this [minor second] interval, and it is possible and very probable that B-flat and B in the last movement function as a tonic and quasi-dominant in relationship to each other."[17] This idea resonates well with respect to many of the musical structures presented in *String Quartet No. 2*. As we will see in this chapter as well as in chapters two and three, $T_{11}$ and its inverse $T_1$ are compositional elements written into the fugue exposition that, along with $T_5$ and its inverse $T_7$,

[16] Butler, 1974, p. 77.
[17] Ibid., pp. 77–78.

become an important embryo of musical structure—one that permeates the quartet, both on a foreground and a background level.

The third fugal entry begins in measure 17 in the first violin. This middle entry is an inverted version of the subject, beginning on C♯5. Figure 1.9 extracts the three instances of the IMC from the violin subject (measures 17–22) in order to examine them in isolation. The first cell, {C♯,D♯,E}, is labelled $IMC_1$; the second cell {G♯,A♯,B} is labelled $IMC_2$; and the third cell {C♯,D♯,E} is labelled $IMC_3$.




[a] *Transpositions between IMCs* [b] *Abstracted network*

**Figure 1.9** *Three instances of the IMC (mm. 17–22, first violin)*

Again, just like in the subject and answer, three relationships between the IMCs are apparent. The arrows above the staff in Figure 1.9[a] provide the transformational relationships between them. The directed movement caused by these transformations is captured visually in the graph of Figure 1.9[b].

Continuing in the same manner of comparing adjacent relationships between fugue entries, we find that the transformation mapping the fugue answer $MC_{a,b,c}$ onto $IMC_{1,2,3}$ is $I_{10}$. Index number 10 represents the particular mapping cycle under which each pc of $MC_{a,b,c}$ will map onto a corresponding pc within $IMC_{1,2,3}$. In this case, each pair of corresponding pcs add up to index 10. Figure 1.10 includes the $I_{10}$ transformation that maps the graph of $MC_{a,b,c}$ onto the graph of $IMC_{1,2,3}$.

Finally, the last subject entry occurs in the cello in measure 29. It repeats the opening subject, starting on B♭. However, unlike the subject the last entry is incomplete: only the first two MCs ($MC_1$ and $MC_2$) are present. The missing $MC_3$ should appear on the second beat of measure 33. Instead, the melody descends until measure 35, where it reiterates $MC_b$ of the answer. The cello does the same in measure 14, where it causes a delay of $MC_c$ in the fugue answer.

The transformation that maps $IMC_{1,2,3}$ onto $MC_{1,2,3}$ is $I_{11}$. Figure 1.10 provides the network of the four fugue statements, giving the relevant transformations between adjacent statements.

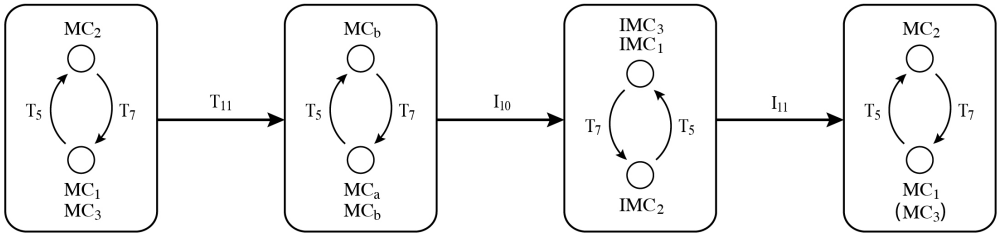
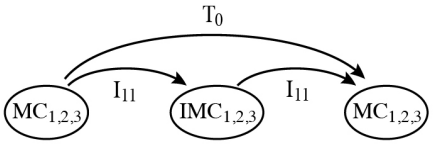
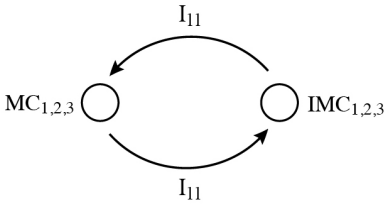



**Figure 1.10** *Relationship between networks of MCs and IMCs from the four fugue entries*

Although comparing adjacent entries of the fugue has provided some insight, comparing non-adjacent entries reveals a structural parallel to the transformational network found between the MCs and IMCs shown in Figures 1.3, 1.7, and 1.9. We saw in Figure 1.8 that $MC_{1,2,3}$ of the subject underwent a transformation of $T_{11}$ to become $MC_{a,b,c}$ of the answer. However, we can also compare the transformation of the subject's MCs to those of $IMC_{1,2,3}$. Doing this shows that $I_{11}$ maps the graph of $MC_{1,2,3}$ onto the graph of $IMC_{1,2,3}$. This transformation suggests an interesting structural representation of the exposition. As we recall from the MCs and IMCs of each fugal entry, two transformations were definitive: $T_5$ and $T_7$. Together these transformations produced the identity operation $T_0$, which resulted in a return to the initial MC or IMC, as illustrated in Figures 1.3, 1.7, and 1.9. Interestingly, a similar transformation occurs between the fugal entries themselves, illustrated in Figure 1.11[a]. It shows that $I_{11}$ applied twice results in the identity operation, $T_0$, just as $T_5$ and $T_7$ had done. The resulting structure therefore engages the same design of directed movement that occurred within each fugal entry. Now, however, the direction is between entries themselves, beginning at a given point ($MC_{1,2,3}$) moving somewhere else ($IMC_{1,2,3}$), and returning ($MC_{1,2,3}$). This idea is illustrated in Figure 1.11[b]. It shows that the transformation $I_{11}$ from $MC_{1,2,3}$ to $IMC_{1,2,3}$ is undone by the same transformation $I_{11}$ from $IMC_{1,2,3}$ to $MC_{1,2,3}$.

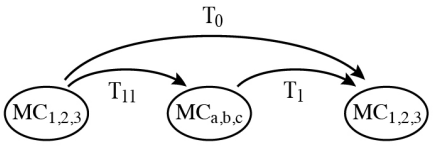


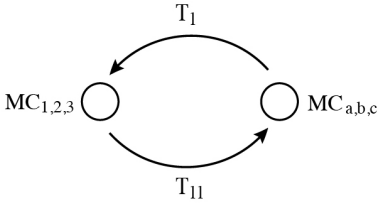




[a] *Relationship between $MC_{1,2,3}$ and $IMC_{1,2,3}$* [b] *Abstracted network*

**Figure 1.11** *Transformational network of $MC_{1,2,3}$ and $IMC_{1,2,3}$*

We could also isolate the relationship between $MC_{1,2,3}$ to $MC_{a,b,c}$ and back to $MC_{1,2,3}$, which would produce another directed motion between subject and answer through the transformations $T_{11}$ and $T_1$, which together form the identity operation, $T_0$. Figure 1.12[a] shows that where $T_{11}$ maps $MC_{1,2,3}$ onto $MC_{a,b,c}$, the inverse operation $T_1$ maps $MC_{a,b,c}$ back onto $MC_{1,2,3}$. Directed movement between $MC_{1,2,3}$ and $MC_{a,b,c}$ is shown in Figure 1.12[b].




[a] *Relationship between $MC_{1,2,3}$ and $MC_{a,b,c}$* [b] *Abstracted network*

**Figure 1.12** *Transformational network of $MC_{1,2,3}$ and $MC_{a,b,c}$*

This allows $MC_{1,2,3}$ to act as a reference point at the beginning and end of the exposition, as a parallel to yet another tonal-like motion. This idea

reverberates well with Butler's suggestion that intervals 1 and 11 function as a reinterpreted tonic-dominant relationship, since returning to $MC_{1,2,3}$ at the end of the exposition is comparable to a tonal fugue returning to tonic harmony during re-entry of the fugue subject.

The initial two fugal entries are also realized at a deeper level of symmetry, where intervals 11 and 5 project the initial MCs of the subject and answer as a harmonic backdrop that encompasses the fugue. Three [016] trichords occur at the beginning, middle, and ending of the fugue exposition. The first chord is found in measures 3–5, and consists of the pc collection {G♯,C♯,G♮}, shown in Figure 1.13[a].

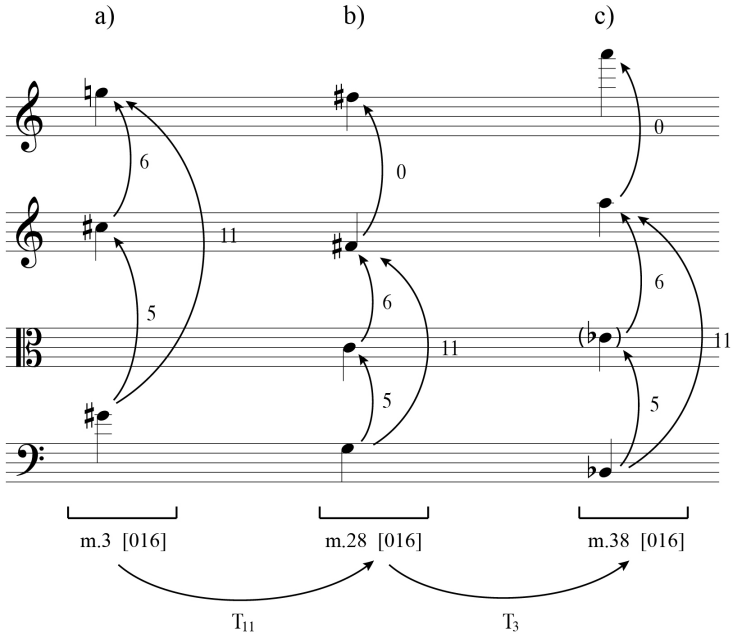



**Figure 1.13** *[016] trichords from the fugue exposition*

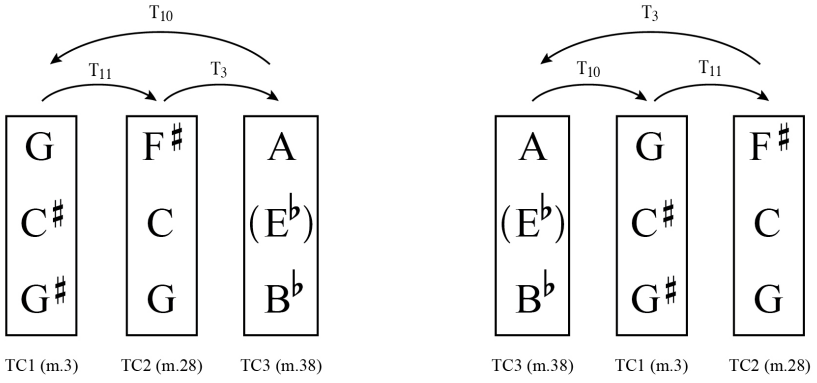
Three intervals are given: the interval from G♯4 to C♯5 is 5; the interval from G♯4 to G5 is 11; and the interval from C♯5 to G5 is 6. The second chord appears in measure 28, shown in Figure 1.13[b]. It consists of the pc collection {G♮,C♮,F♯}. Again, this chord has the same three intervals in the same relative registral ordering: the interval from G3 to C4 is 5, the interval from G3 to F♯4 is 11, and the interval from C4 to F♯4 is 6. The third chord appears in measure 38, at the end of the fugue exposition and before the transition into the *Vivace* section, illustrated in Figure 1.13[c]. Although this is not a complete trichord, we can imagine a hypothetical E♭ to complete it, resulting in the pc collection {B♭,E♭,A}, a member of set-type [016]. Such a structure would imply the same three intervals that occurred within the previous two trichords in 1.13[a] and [b]. In this case the interval from B♭2 to E♭3 is 5, the interval from B♭2 to A6 is 11, and the interval from E♭3 to A6 is 6. In any case, without the hypothetical E♭, the dyad {B♭,A} is nevertheless a fragment of the [016] trichord and shares the same interval 11 with the first two trichords.

Some musical features support the choice of these three [016] trichords for comparison. In particular, each iteration of the trichord occurs directly before an increase in rhythmic activity. The first trichord occurs directly before the initial entry of the subject, which initiates the pulse and meter of the fugue. The last two iterations occur at the tail end of a *sempre diminuendo* and *rallentando*,

directly before the *a tempo* marking. As well, both the first and second iterations are marked as forte and double forte, respectively, and both occur directly before the entry of $MC_{1,2,3}$.

Just as the transformation of $T_{11}$ mapped the fugue subject onto the answer, $T_{11}$ functions here as well to map the trichord of measure 3 onto the trichord of measure 28. The $T_{11}$ arrow below the staff in Figure 1.13 indicates the transformation. On the other hand, the transformation from the trichord in measure 28 to the trichord in measure 38 is $T_3$, illustrated by the second arrow below the staff in Figure 1.13.

Figure 1.14[a] abstracts the three trichords (now labelled as TC1, TC2, and TC3) as three distinct collections, arranging their pcs on the page to indicate their relative registral ordering. Arrows labelled with the relevant transformations connect the chords to each other.




[a] *Given Arrangement* [b] *Re-ordering*

**Figure 1.14** *Transformations between [016] trichords*

$T_{11}$ maps TC1 onto TC2, while $T_3$ maps TC2 onto TC3, and $T_{10}$ maps TC3 onto TC1. The arrows and nodes of a transformation graph do not necessarily reflect ordering in the music, and it is possible to rearrange them visually to highlight different relationships. Figure 1.14[b] rearranges the nodes of [a] so that their order is TC3, TC1, TC2, from left to right. The network maintains the same arrow directions of Figure 1.14[a]. Figure 1.14[b] is developed further in Figure 1.15. The three vertical groups of TCs are divided once more into three horizontal groups of three pcs.

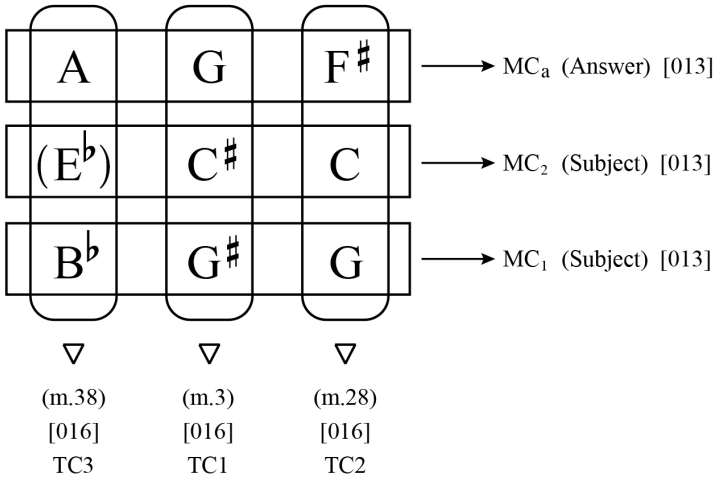



**Figure 1.15** *Horizontal division of [016] trichords, resulting in MCs*

Remarkably, this ordering results in three instances of the trichord [013]. The top row consists of the pc collection {A,G,F♯}; the middle row of pc collection {E♭,C♯,C}; and the bottom row of pc collection {B♭,G♯,G}. The bottom collection,

{B♭,G♯,G}, has the same pc content as $MC_1$. The cello plays the individual pitches of this bottom collection in measures 3, 28, and 38, respectively. On the other hand, the top row, {A,G,F♯}, has the same pc content as $MC_a$. The first violin plays the pitches of this top collection, sometimes doubled an octave lower by the second violin in measures 3, 28, and 38. Lastly, the middle row, {E♭,C♯,C}, which includes the hypothetical E♭, contains the same pc content as $MC_2$.

This arrangement suggests that the MCs of the fugue subject and answer are combined vertically to produce chords, which are then used to project a harmonic backdrop at the beginning, middle and end of the fugue exposition. It demonstrates an apparent and hidden level of symmetry that reflects back on the MCs and the $T_{11}$ transformation of the subject-answer relationship. This exemplifies an aspect of Somers' compositional technique that is not easily apparent from the musical surface—that is, sensitivity to symmetrical design and organization of more far-reaching dimensions than is ordinarily realized.

The design of the [016] trichord is studied further in chapter 3, since it projects both intervals 5 and 11 within its arrangement, and represents a chord that, in previous studies of Somers' works, has been left undefined. However, what is most important from this preliminary set of observations is the prevalence of intervals 1, 5, 7, and 11 in the structuring of this initial movement in correlation to the MCs and IMCs. As we will see in the next few chapters, these same intervals play a key role in the structure of other movements.

# Chapter Two

Somers sought to unify the past and the present—an idea that preoccupied his compositional practice during the 1950s. In a 1964 biographical sketch Somers states: "During the early fifties I was very involved with contrapuntal technique, attempting to unify conceptions of the Baroque and earlier, which appealed to me enormously, with the high tensioned elements of our own time."[1] Accordingly, discussion of past and present in his music has revolved around the appropriation of the idea of a past-as-tonal and a present-as-non-tonal. However, inquiry into the relationship between this past and

[1] *Thirty-four Biographies of Canadian Composers* (St. Clair Shores, Michigan: Scholarly Press, 1972), p. 93. Reprint of 1964 edition, Montreal, CBC International Service.

present has centred primarily around the idea of juxtaposition and less on the idea of synthesis or unification.

For instance, Duke argues that Somers' style is "that of juxtaposition—tonal with serial techniques, personal expressiveness with intentionally tight Baroque forms, extreme dissonance content with persistently contrapuntal thinking."[2] The revival of the past that Duke explores in the context of neoclassical compositional procedures serves to perpetuate a division between past and present. Similar to Duke, Cherney writes about the idea of *style juxtaposition* within Somers' music.[3] The term often denotes the inclusion of tonal references within a predominantly non-tonal context. Such references include major or minor-based chords or keys in a variety of realizations, as well as the use of tonal musical forms (i.e. fugue, canon, passacaglia, etc.).

However, the idea of juxtaposing elements of the past with the present does not necessarily embody the concept of a synthesis or unification, since juxtaposed elements must retain their individuality: they cannot be synthesized into a mass. Style juxtaposition—a practical term when obvious tonal references or forms are present—nevertheless necessitates a division between the past and the present. Alternatively, if one interprets Somers' music as embodying the spirit of unification then one might explore the potential of this idea through frameworks other than simple tonal and non-tonal juxtaposition.

[2] Duke, 1973, p. 27.
[3] Cherney, 1975.

Besides specific tonal references, other elements appear in Somers works that have weaker affiliations to tonality. For instance, chords built through successive intervals of 5 or 7 can also suggest conventional diatonic structuring, and are found throughout a number of Somers' early works, including *String Quartet No. 2*.[4] Such chords are commonly referred to as *quartal* or *quintal* harmonies in tonal theory, and are found in other twentieth-century music by composers such as Debussy, Schoenberg, Webern, and Bartók, to name a few. Though such sonorities imply tonality, they remain divorced from any particular tonal centre. For instance, in discussing Schoenberg's Quartet in F♯ minor, Webern comments on the use of these chords in the fourth movement, writing about their freedom from any tonal relationship. He interprets the fourth chords, as well as the use of the whole-tone scale, as elements in Schoenberg's music that undermine tonality. However, at the same time he acknowledges their tonal character.[5] Quartal and quintal harmonies, although having no definitive link to a particular key, nevertheless represent a weak connection to tonality. However, Cherney's idea of style juxtaposition does not extend to these chords since they do not contain quality-defining thirds, and are therefore not

[4] Other early works from around the same period that incorporate chords built through successive intervals of 5 or 7 include *Piano Concerto No. 1* (1947), *Suite for Percussion* (1947), *North Country* (1948), *Rhapsody for Violin and Piano* (1948), *Woodwind Quintet* (1948), *Suite for Harp and Chamber Orchestra* (1949), *Piano Sonata No. 3* (1950).

[5] Webern writes: "Aber diese Beispiele zeigen ganz klar, wie nunmehr Schönbergs Musik ganz von der Tonalität wegdrängt. Die wird von der Ganztonskala, den Quartenakkorden und dieser Melodik ganz zersetzt…Durch Alteration werden die Quartenakkorde zu noch nie gehörten Harmonien, die frei von jeder tonalen Beziehung sind." Anton Webern, "Schönberg´s Music," in *Arnold Schönberg. Mit Beiträgen von Alban Berg et al*. (München, 1912) pp. 22–48.

explicitly tonal. Thus, such chords are more or less understood for their characteristic colour rather than for their structural significance. Cherney, for example, interprets quartal and quintal chords simply as producing "a characteristic 'Somers' sound."[6]

Of course, if we are to interpret String Quartet No. 2 as embodying the idea of stylistic unification, then it still remains for us to identify the distinct elements that are involved in this process. One solution is to consider more fundamental elements or ideas of musical style that lend themselves to this potential. The term style is defined in the Oxford online dictionary as "a particular procedure by which something is done," and "a distinctive appearance… determined by the principles according to which something is designed."[7] Following this definition of the term, what I suggest, then, is to consider not the sum total or the resultant of the design, but to uncover the underlying structure of those designs—a 'principle' according to which something is designed. Of course, the design principles could reflect a variety of musical structures and objects. This opens the door to numerous interpretations, varied and diverse in their own right. The synthesis I will propose is thus synthesis on the level of design principle.

[6] Cherney, 1975, p. 19.
[7] Oxford Online Dictionary, accessed February 17, 2014, http://www.oxforddictionaries.com/definition/english/style?q=style

We observed in chapter one that intervals 5 and 7, along with their isomorphic transpositions, $T_5$ and $T_7$, represent an important dynamic within the fugue exposition of the quartet's first movement. In fact, they are prevalent throughout the duration of the quartet. At the same time we also observed that intervals 1 and 11, along with their isomorphic transpositions, $T_1$ and $T_{11}$, defined the relationship between subject and answer in the fugue exposition. Similar to intervals 5 and 7, intervals 1 and 11 assume an active role in the organization of String Quartet No. 2. Therefore, since the quartet makes extensive use of intervals 5 and 7 as well as intervals 1 and 11, I suggest they play an important role in highlighting two different design principles or "styles" within the work. In other words, intervals 5 and 7 constitute one design principle, while intervals 1 and 11 constitute another. Musical elements that combine these intervallic dynamics hover between both. Consequently, we gain access to the sound-worlds of the past and present through a careful consideration of intervals rather than the generalities of juxtaposed tonal and non-tonal materials.

Other authors have noted the significance of intervals 5, 7, 1 and 11 in Somers' earlier works. For instance, in his analysis of selected works by Somers, Smith observes the importance of these intervals in *North Country* (1948). Regarding the fourth movement, *Allegro Vivace*, he writes:

> One should note the importance of the interval G–A flat to this movement. It is heard as a minor second, major seventh and minor ninth…[t]his interval always sets up the theme, and prepares the ear for the A and B flat that are finally reached at the high point of the

> movement. The closing sonority is E flat, F, B flat; once again its derivation is from perfect fourths.[8]

Smith's observations point to a distinct emphasis of these intervals as design elements in Somers' music.

Elsewhere, in Chapter III of her dissertation, Houghton records various questions and answers in an interview with Somers regarding intervals. In replying to the question of whether individual interval relationships were important to him, Somers replies "Oh, interval relationship was primary to me….I feel that the relationships of pitches to each other produce very strong responses in the individual listener and that they are very important."[9] The four vertical intervals that Houghton identifies as most commonly used by Somers are the perfect fourth, perfect fifth, minor second, and major seventh (intervals 5, 7, 1, and 11).[10] When Houghton asked Somers whether these four intervals were "an attempt to avoid writing music which the listener might label as consonant or dissonant" Somers replied:

> It would depend during the period, too. I recall in the '50s…I built up a general concept of what I called intense interval relationships, relaxed interval relationships. So that if there were two parts, the basic scale of tension and relaxation in intervals was probably pretty close to the traditional concept of it…But in relation to the fourths, the perfect intervals and the sevenths, I think from the beginning they were simply intervals that appealed [to me].[11]

[8] Smith, 1973, p. 22.
[9] Houghton, 1980, pp. 41–42.
[10] Ibid., p. 42.
[11] Ibid., P. 42.

The appeal of these intervals to Somers is partly due to the specific texture and tone colour they produce. To him intervals 5 and 7 embody a "clear, uncluttered" sound, while intervals 11 and 1 embody a "thrilling sound."[12] Indeed, Somers had a clear idea in mind regarding the combination of these intervals in his early works. His comments are highly suggestive of the idea of the co-presence of two distinct designs or styles within his composition.

Likewise, Cherney identifies four intervals (5, 7, 1, and 11) as important in Somers' early works, such as such in *Testament of Youth* (1945): the major seventh, which "permeates much of the Sonata, particularity the outer movements"; the "frequent use of parallel progressions of bare fourths or fifths"; and "the inactive, expressive melody of the second movement, with its falling semitone…which recurs throughout the fifties."[13]

Specifically regarding String Quartet No. 2, Cherney writes of the significance of the minor second and perfect fourth intervals (intervals 1 and 5) as two of the most important intervals within the quartet's motivic organization.[14] The presence of these intervals, along with intervals 7 and 11 in the quartet's *Interlude #2* is suggestive of their use as two distinct styles or designs functioning within the same space: 5 and 7 as one style, and 1 and 11 as the other. Like the opening movement of the quartet, *Interlude #2* makes explicit use of fugal techniques. However, unlike the fugue exposition of the first

[12] Ibid., P. 43.
[13] Cherney, 1975, pp. 18–20.
[14] Ibid., p. 49.

movement, it contains a countersubject, instances of overlapping lines in canonic sections, and an associative resemblance to the design of a tonal answer.[15]

The fugue is constructed around two principal formal regions: an exposition (measures 13–43) that returns before the conclusion of the movement, and a developmental section (measures 57–94). Each region is preceded by a short introduction or variation thereof, which returns as a brief coda to end the interlude. Figure 2.1 collates these observations: the exposition is labelled B and the development is labelled B'; introductory areas are labelled A and A' while the coda is labelled A".

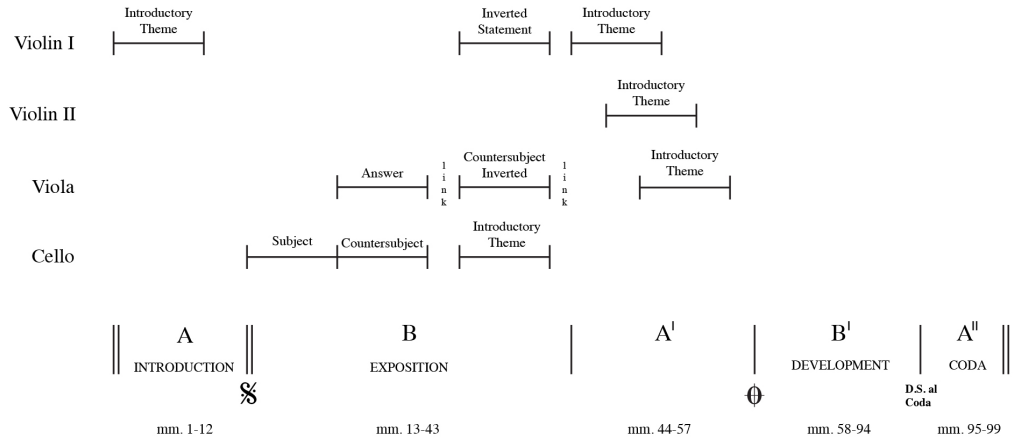
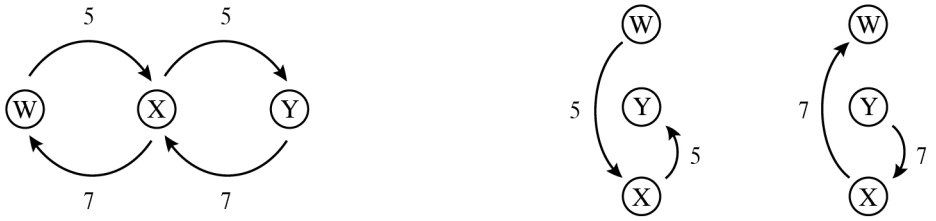



**Figure 2.1** *Overall structure of Interlude #2*

Harmonically, the fugue emphasizes pc collections that belong to the set-type [027]. The set is built by successive applications of interval 5 (or 7). This idea

[15] For reference, the score is provided in appendix II.

is captured visually in Figure 2.2[a], where W, X, and Y represent abstract pcs. The arrows connecting the pcs represent intervals 5 or 7.



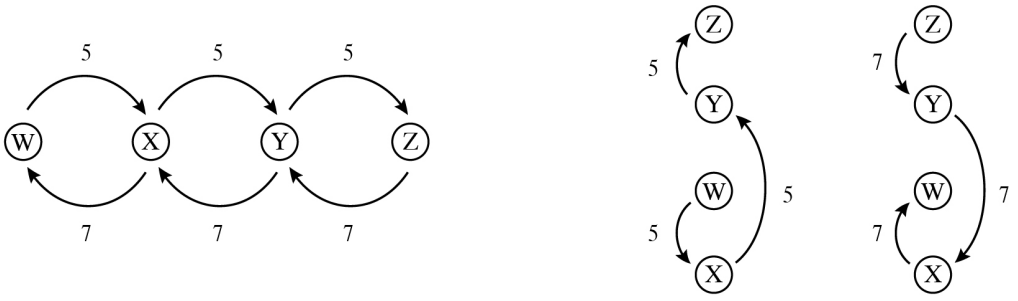

[a] *Abstracted arrangement* [b] *Common vertical alignment*

**Figure 2.2** *Intervals 5 and 7 given between pcs (X,Y,Z) of set [027]*

The interval from W to X, and from X to Y is 5, or vice versa with interval 7. Figure 2.2[b] realizes the same set of relationships vertically. In this arrangement, the succession of interval 5 given between pcs begins on the pc in the top register (W), and ends on the pc in the middle register (Y), or vice versa with interval 7. The [027] collections in the arrangement shown in Figure 2.2[b] are found throughout the quartet, as we will see in this chapter as well as in chapter 3, which investigates the third movement of the quartet.

Interestingly, other vertical arrangements of the set are also used, suggesting a parallel to permutations of triadic structures in root position and inversion. The suggested chord positions are detectable by way of the placement of interval 2 (or interval 10) within the chord structure. For instance, in Figure 2.2[b] it is understood that interval 2 extends from Y in the middle register to W

in the top register (or vice versa with interval 10). Other arrangements might involve interval 2 extending between the lower or outer registers. An example of this different ordering is found in the third movement in measure 17, where interval 2 is realised between the outer voices (from B♭ in the first violin to C in the viola) of the [027] trichord. In some instances a fourth pc is added, producing a [0257] tetrachord. Just like set-type [027], set-type [0257] is built through the succession of interval 5 or 7. The added pitch is labelled Z in Figure 2.3[a]. The interval from W to X, from X to Y, and from Y to Z is 5, or vice versa with interval 7. Figure 2.3[b] illustrates a common vertical arrangement of elements of [0257].




[a] Abstracted arrangement [b] Common vertical alignment

**Figure 2.3** *Intervals 5 and 7 given between pcs (W,X,Y,Z) of set [0257]*

Two examples of the vertical arrangement found in Figure 2.3[b] appear in measures 58–60 of the interlude, as the tetrachords {G,D,A,E} and {A,E,B,F♯}. Again, and just like with the [027] trichords, other vertical arrangements of

[0257] tetrachords are found throughout the quartet, suggesting an association to chords in root position and inversion.

Chords built through intervals 5 and 7 constitute an important part of the sonorities of Interlude #2. We can now consider how they—as well as intervals 1, and 11—are represented structurally within sections of the interlude. The introduction section (measures 1–12) presents an agitated theme in the first violin part, along with a predominantly syncopated harmonic accompaniment in the second violin, viola, and cello parts. The accompaniment consists of four different members of the [027] trichord. These are extracted and shown in Figure 2.4.

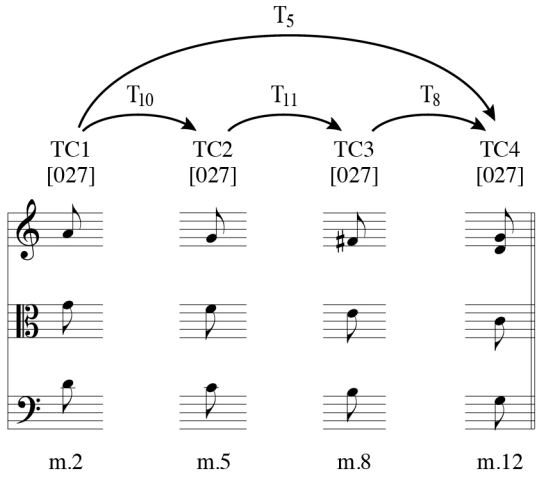



**Figure 2.4** *Four instances of set [027] in the introduction (mm. 1–12, violin II, viola, cello)*

It is noteworthy that each trichord is given in the vertical ordering that was illustrated in Figure 2.2[b]. The first trichord, {G,D,A}, is labelled TC1; the

second trichord, {F,C,G}, is labelled TC2; the third trichord, {E,B,F♯}, is labelled TC3; and the fourth trichord, {C,G,D} is labelled TC4. The four trichords are transpositionally related. Scanning the trichords from TC1 to TC4, we notice a descending progression is formed by the operations $T_{10}$, $T_{11}$, and $T_8$, labelled by the relevant arrows in the figure.[16] However, the overall motion through the four collections is $T_5$, represented by the arrow extending from TC1 to TC4. The significance of this transformation lies within the construction of the chords themselves: just as the elements within each set of [027] are generated through successive applications of interval 5, the first overarching gesture of the group of [027] trichords corresponds to $T_5$, the transpositional isomorph of interval 5.

What is not apparent from the surface is an initial descending gesture of the set [027] by the transformation $T_{11}$, in addition to the obvious motion of TC2 to TC3, illustrated in Figure 2.4. In fact, if one takes into consideration both the theme and the accompaniment, $T_{11}$ and $T_1$ transformations are traceable throughout the twelve-measure introduction. Figure 2.5 carries out an analysis in light of this idea.

In measure 4, the first violin outlines the trichord {F♯,G♯,C♯}—a member of set-type [027]. I will call this trichord TCA. Instead of hearing the $T_{10}$ transformation from TC1 to TC2 in Figure 2.4, we can include TCA in the mix to

[16] The [027] trichords in Figure 2.4 reveal another instance of the MC that was studied in chapter one. From measures 2–12 the cello has the pc collection {D,C,B}, the viola has the pc collection {G,F,E}, and the violin II has the pc collection {A,G,F♯}, all of which are instances of set-type [013].

hear a $T_{11}$ transformation from TC1 to TCA, and another $T_{11}$ transformation from TCA to TC2. The $T_{11}$ arrows in Figure 2.5 show these relationships.

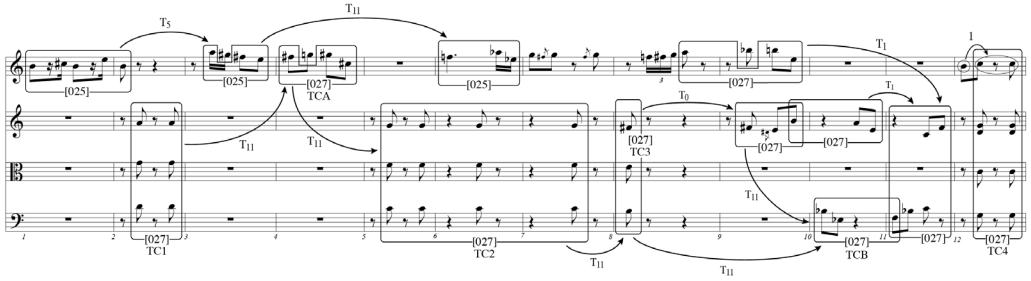



**Figure 2.5** *Transformations between [027] and [025] sets in the introduction (mm. 1–12)*

We have already seen in Figure 2.4 that $T_{11}$ extends from TC2 to TC3. However, $T_{11}$ also maps the pcs of TC3 onto the pcs {E♭,B♭,F} in the cello in measures 10–11, labelled as TCB in the figure. The second violin also participates with the same $T_{11}$ transformation onto TCB, since it also presents an instance of TC3 {E,B,F♯} in measure 9.

The end of the introduction involves an isolated instance of $T_1$, the inverse of $T_{11}$. The pc collection {B,A,E} in measures 8–9 is imitated in the second violin in measures 9–10. Both map under $T_1$ to the pcs {B♭,C,F} in measure 11, illustrated in the figure with two separate arrows. The final gesture of the

introduction is the intervallic isomorph of T1, interval 1, extending from B4 to C5 in measure 12, where C5 belongs to the introduction's concluding trichord, TC4.

Another interesting transformation is found within the introductory theme of the first violin. Three [025] sets are labelled inside rectangles in Figure 2.5. As we recall, set [025] is a subset of [0257], a set derived from successive intervals of 5 or 7. The first set {B,C♯,E} relates under $T_5$ to the second set {E,F♯,A}, illustrated by the arrow in the figure. Cherney suggests that this opening theme in the first violin projects the key of E major.[17] However, the theme also presents pitches that deviate from E major in measures 6–9. The [025] set in measures 3, {E,F♯,A}, maps under $T_{11}$ onto the [025] set in measure 6, {E♭,F,A♭}, illustrated by the arrow in the figure. This third [025] set in measure 6, {E♭,F,A♭}, undermines the stability of an E major tonal centre with three pcs that are not a part of the E major scale. Instead of projecting the key of E major, I suggest that the projection of the [027] trichord is the more decisive and significant design principle governing this opening theme.

We can explore this idea further in connection with the fugue subject, which also contains [025] sets within a symmetrical design. The subject begins in measure 13 in the cello, abstracted from the score in Figure 2.6. The subject's distinctive character is defined by its rhythmic intensity, repetitive nature, and shape through a contrast of stepwise and leaping motion. Indeed, the subject is

[17] Cherney, 1975, P. 50–51.

already familiar to the listener, since it is a variation of the introductory theme seen previously in Figure 2.5. The rhythmic character of the introductory theme is uneven and agitated, but in its placement into a new rhythmic context as the fugue subject it emerges with a steadier pulse and rhythm.

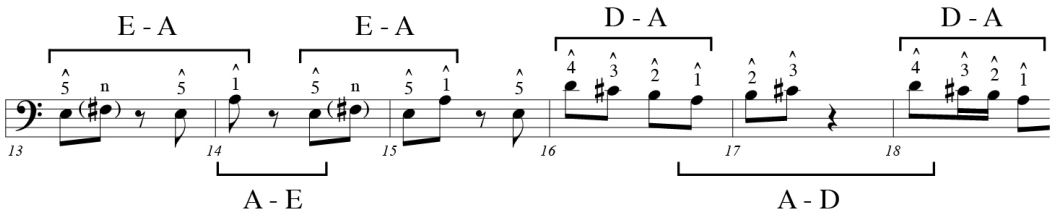



**Figure 2.6** *First entry of the subject (mm. 13–21, cello)*

Cherney detects two tonal centres resulting from the melodic material within *Interlude #2*: E major and its subdominant, A major.[18] The tonal centres he infers are manifest within various entries of the fugue subject and answer. For instance, the initial fugue subject in measures 13–21 (Figure 2.6) may be understood with respect to A major. The repeated motion from E3 to A3 in measures 13–15 imitates a dominant-to-tonic gesture from $\hat{5}$ to $\hat{1}$. Three instances are shown in the subject via horizontal square brackets above and below the staff, labelled as E–A or A–E. Heard in this way, the F♯3 in measures 13 and 14 is an upper neighbouring note to E3. The dyad {E,A} is highlighted in this hearing.

[18] Cherney, 1975, pp. 50–51.

In measures 15–17, we encounter an A major scale outlined by motion from $\hat{5}$ to $\hat{1}$ followed by an ascent to $\hat{3}$. However, the repetition in measure 18 only includes a descent from $\hat{4}$ to $\hat{1}$. Looking back at the first stepwise decent in measures 15–16, we also notice that $\hat{5}$ (E3 on the last beat in measure 15) is detached registrally from the progression of $\hat{4}$ to $\hat{1}$ (D4–C♯4–B3–A3) in measure 16. This is because the leap from E3 to D4 isolates the span D4–A3.[19] Therefore, just like the motion heard between E and A, another three instances of a similar motion occur between D and A. This is shown in the figure via horizontal square brackets above and below the staff, labelled as D–A or A–D. In this hearing, the C♯4 and B3 act to simply fill in the space between the dyad {D,A}, which is highlighted similar to the previous dyad {E,A}.

The subject's motion between D4 and A3 complements the contour of the opening motion between E3 and A3. Figure 2.7 captures this by isolating intervals 5 and 7 to show the relationship between the two motions, illustrated below the two rectangular brackets above the staff. Whereas the first bracket includes the interval sequence 5–7–5 between the E and A, the second bracket includes its inversional intervallic dual, 7–5–7 between D and A.

Instead of understanding the subject specifically as a tonal reference that outlines A major, as Cherney writes, we could also understand it as working closely with the structure of intervals 5 and 7. With this in mind, an interesting

[19] This idea is also seen in the introductory theme in Figure 2.3. The line here centres around E major. Notice that the descent in measure 3 begins on $\hat{4}$ to $\hat{1}$, with an absence of $\hat{5}$.

relationship surfaces between the two dyads: the transposition $T_5$ maps the dyad E–A onto the dyad D–A, outlined in Figure 2.7 with the arrow connecting the brackets.

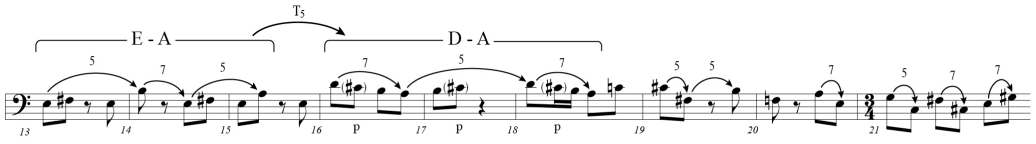



**Figure 2.7** *Mapping of two dyads in the fugue subject (mm. 13–21, cello)*

Aggregating the two collections produces {E,A,D}, a trichord of set-type [027]. Abstracted in this way, D4 and E3 are arranged symmetrically around A3: E3 lies interval 7 from A3, while D4 lies interval 5 from A3. The three pcs encompass almost the entire line, where they function as the highest and lowest points of the subject: D4 the highest pitch, and E3 the lowest. This observation strongly suggests that set [027] generates the symmetrical character of the subject itself. Whereas the opening material introduced a progression of vertical [027] trichords (measures 1–12), the fugue subject continues this dynamic by projecting and accentuating the [027] set through its contour and movement around tonal centres.[20]

[20] The introductory theme in the introduction also outlines set-type [027], by motion between the pitches B4, E5, A5.

In fact, if one collates the pcs in measures 13–18 (with exception of C♮ in measure 18), a [024579] hexachord {D,A,E,B,F♯,C♯} is the result. Just like [027] and [0257] chords, the [024579] hexachord is built through successive intervals of 5 or 7. Dividing the hexachord into two trichords produces two [027] sets: {D,A,E}—the trichord outlined by the fugue subject's contour, and {B,F♯,C♯}, the other pcs that are included within the subject line. In fact, this second set of {B,F♯,C♯} is isolated in measure 19, directly after the initial projection of {D,A,E} that was discussed. The isolated [027] set, {B,F♯,C♯}, is illustrated with beams below the staff in Figure 2.8. This suggests even further that the fugue subject is informed by the symmetry produced through intervals 5 and 7.[21]

After the initial emphasis of the [027] trichord {E,A,D} through the contour of the fugue subject, it is stressed again through a linear projection beginning in measure 18. Connected beams above the staff in Figure 2.8 (measures 18–21) illustrate this idea. Beginning on D4 in measure 18, we can trace a linear descent to E3 in measure 21: **D**, C♯, B, **A**, G, F♯, **E**, again outlining the span of the [027] trichord, {E,A,D}.

[21] An identical structure occurs earlier when we look back to the introductory theme in the first violin, measures 1–3. That is, instead of projecting the key of E major, as Cherney infers, we might instead suggest that intervals 5 and 7 provide its structure. In this case the collated hexachord from the pcs in measures 1–3 produce another [024579] hexachord {A,E,B,F♯,C♯,G♯}, with exception of the G♮ in measure 3. Similarly dividing this hexachord into two trichords produces another two [027] sets: {B,E,A}—the trichord outlined by the introductory theme's contour, and {G♯,C♯,F♯}, the other pcs that are included within the line. Interestingly, the entire hexachord collection here shares 5 pcs in common with the collection discussed previously in the fugue subject in measures 13–18. This allows for hearing a close relationship between the two lines.

Within the descent we can also identify four other instances of set [027]. We have already seen that the set {B,F♯,C♯} in measure 19 is one instance. The three other instances are: {A,E,B} in measures 19–20; {F,C,G} in measures 20–21; and {F♯,C♯,G♯} in measure 21, each illustrated in the figure with beams below the staff.

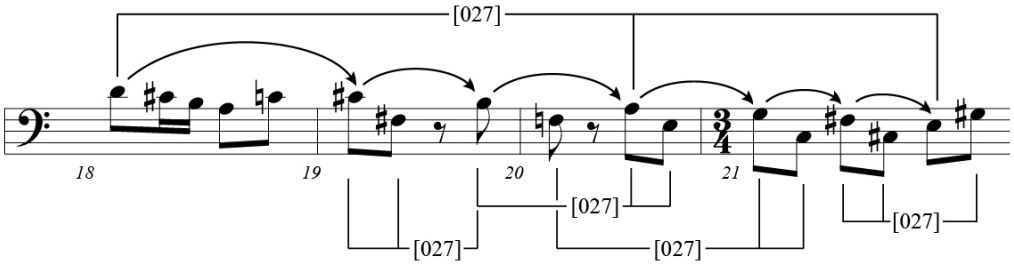



**Figure 2.8** *Linear decent projecting symmetry of set [027] and further manifestations of set [027] (mm. 18–21, cello)*

The many leaps of interval 5 or 7 within this span serve to imitate the rhythmic character of the beginning of the subject. These are illustrated in the previous Figure 2.7 with arrows labelled 5 or 7 that connect adjacent pcs.

Once the subject concludes in measure 21, the answer is given by the viola in measure 22. The answer is the $T_7$-transform of the subject, in keeping with conventional fugal logic. We will recall that this answer is unlike the one found in the exposition of the first movement, which was the $T_{11}$-transform of its

subject. Also, unlike the previous fugue of the first movement, the answer here is accompanied by a countersubject, another conventional element.

The fugal form, which often places a countersubject against a subject or answer, allows for a formal superimposition of two different ideas. F.W. Marpurg's characterization of the dynamics of fugue provides a good descriptive vocabulary for this understanding. Accordingly, Marpurg understands a countersubject to share elements with the subject as well as project its own, distinct character, noting that a countersubject often borrows portions from the subject as a way of imitating its character. He writes that, "[i]n a fugue all the voices 'quarrel with each other,' and none has any privileges at the expense of the others," and that the subject and countersubject display rhythmic independence by means of syncopations, and passing tones.[22] The prospect of placing two different melodic lines against each other in the context of a subject-countersubject 'quarrel' provides a formal organization for contrasting what I have called the musical past and present—that is, intervals 5 and 7 versus 1 and 11.

Other early works from Somers demonstrate a similar intervallic approach to create contrast between melodic lines, such as the *Passacaglia and Fugue for Orchestra* (1954). For instance, Hepner identifies two separate twelve-tone rows that generate the content of the passacaglia section and fugue

[22] This Quote is taken from David A. Sheldon's *Narrative Translation and Critical Study of Marpurg's Thoroughbass and Composition Handbook* (NY: Pendragon Press, 1989), p. 241.

section, respectively. He observes a clear disparity between the intervallic construction of each, stating that the two rows "are clearly contrasted with intervals of fourths and fifths prominent in the passacaglia row, while that of the fugue is characterized by a chromaticism resulting from the prominence of semitones."[23] Hepner even goes as far as to comment on the consequence of these intervals with respect to the tonal/atonal character of the work. According to him, the "sequence of intervals of fourths and fifths lend a strong tonal character to the passacaglia subject. The tone row, used as a basis for the fugue is by comparison highly chromatic. The use of small intervals and the avoidance of fourths and fifths tends in the direction of atonality."[24]

Along the same lines, Enns suggests that different densities of vertical sonorities are used as a means of distinguishing sections and supporting formal structure. Accordingly, he recognizes low-density sonorities as produced by unisons, octaves, and fifths, and high-density sonorities as produced by minor seconds, major sevenths, and tritones.[25] For instance, in *Where Do We Stand, Oh Lord?* (1955), he argues that a "generalized envelope pattern may be seen within each section, with sonorities generally progressing from lower to higher densities and occasionally returning again to low densities."[26] Hence, formal structure is

[23] Hepner, 1971, p. 90.
[24] Ibid., p. 91.
[25] Enns, 1982, p. 70.
[26] Ibid., p. 69.

supported and partially informed by changing textural densities, where intervals 5 and 7 represent a contrasting dynamic to that of intervals 1 and 11.

Intervals 5, 7, 1, and 11 are used in a similar manner to contrast the subject and countersubject of *Interlude #2*, providing further evidence that Somers was using these intervals to create two distinct styles. The cello part, having finished its statement of the subject in measure 21, accompanies the viola's answer with a countersubject. This occurs in measure 22, one beat after the viola's entry. The character of the countersubject is contrasted strongly to that of the subject. Whereas the fugue subject is strongly marked by intervals 5 and 7, the countersubject is strongly marked by intervals 1 and 11. Figure 2.9 provides the countersubject, along with arrows that illustrate the various instances of intervals 1 and 11.

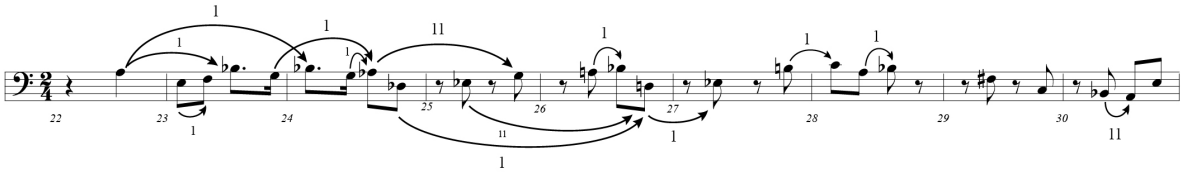



**Figure 2.9** *First entry of the countersubject (mm. 22–30, cello)*

As the analysis indicates, intervals 1 and 11 are realised not only through the relationship between adjacent pcs, but also through non-adjacent pcs via specific registers and their linear retention. Although intervals 5 and 7 are

evident between the various pcs of the countersubject, intervals 1 and 11 are far more prominent than they were in the fugue subject, where they were almost non-existent. Moreover, whereas the subject was placed within a context of perceptible tonal centres, (i.e. A, E, and D), the countersubject is far more tonally ambiguous. Besides the intervallic contrast of the subject and countersubject, other dynamics work to further divide them. For instance, the rhythmic independence of the subject and countersubject is easily discernable. The countersubject uses much syncopation, and often plays in the negative space of the subject. The syncopated beats, along with the many rests, provide it with a disjunctive character, unlike the subject, which almost exclusively accents the strong beat.

The fugue answer and countersubject end in measure 30, giving way to a link section from measures 31–33 involving the viola and cello moving by oblique motion while maintaining a rhythmic unison. Once this link concludes in measure 34, the third statement begins in the first violin. Two other lines accompany it: one is sounded by the viola, which states an inversion of the countersubject; the other is sounded by the cello, which states a transposition of the introductory theme from measures 1–8. The transformations that connect the statements are illustrated in Figure 2.10.

The transformation mapping the subject (S) (measures 13–21, cello) onto the answer (A) (measures 22–30, viola) is $T_7$. From there, the transformation $I_5$

maps the first countersubject (CS) (measures 22–30, cello) onto the second countersubject (CS) (measures 34–42, viola).

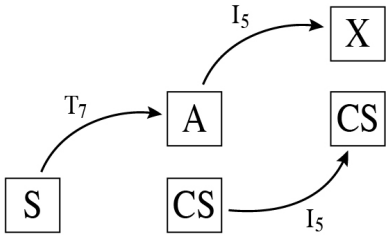



**Figure 2.10** *Transformational relationship between entries*

Similarly, the third statement (X) (measures 34–42, violin II) relates to the previous answer (measures 22–30, viola) under $I_5$. However, this third statement (X) is not an exact transformation. While the second half of the statement is a strict inversion of the corresponding elements in the subject, the beginning few measures contain a number of deviations, as illustrated by the circled pcs in Figure 2.11.

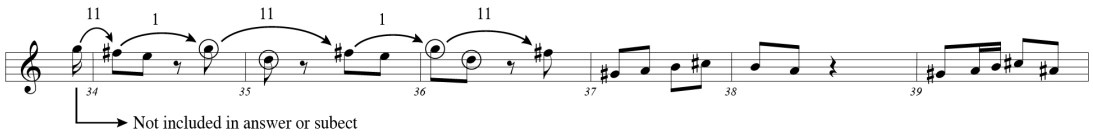



**Figure 2.11** *Inverted fugue statement (mm. 33–39, violin I)*

Two different pcs, G and D, are transposed at interval 1 from where they would have appeared under the mapping of $I_5$: the circled note G5 in measures 34 and 36 replaces what would normally be F♯5 if a strict inversion under $I_5$ were realised; in the same manner, the circled note D5 in measures 35 and 36 replaces C♯5. Because of this shift, the dyad that would have occurred between the pitches F♯5–C♯5 occurs instead between pitches G5–D5.

Some important relations emerge. Unlike the subject and answer, which were marked by a strong presence of intervals 5 and 7, this altered version of the subject presents a strong oscillation between interval 1 and 11 among pcs G5 and F♯5. Whereas subject and countersubject strongly defined two contrasting styles through intervals 5, 7, 1, and 11, the stylistic lines become more blurred in cases like this. Accordingly, we could understand the statement in Figure 1.11 as projecting an equivocal construction that embraces both designs.

Collating the pcs of measures 34–36 reveals the addition of intervals 1 and 11: A strict $I_5$ mapping of the answer without the two deviations would have resulted in the pc collection {F♯,C♯,E}. The collection belongs to set-type [025], and does not contain interval class 1 (ic1). However, with the deviation taken into consideration the pcs of measures 34–36 result in the pc collection {D,E,F♯,G} (Figure 2.11). The collection belongs to set-type [0135], and contains ic1 within its design. Similar to the [016] chord discussed in chapter one, I will return to this chord briefly in chapter three, since it provides another instance of

a sonority that contains both designs of 5/7 and 1/11 (or in other words, ic1 and ic5).

The inverted countersubject, inverted statement, and introductory theme end in measure 42, where a one-measure link brings about a return to a variation of the opening introduction section beginning in measure 44. Unlike the beginning introduction, there is no chordal accompaniment. Instead a canon develops through successive entries of the introductory theme. The violin is the first to enter, stating the theme on B♮ in measure 44. One measure later the second violin imitates the theme starting on F♯, $T_7$ from the first violin part. Then the viola joins in the next measure with the same imitation, now starting on C♯, $T_7$ from the second violin part. Again, we have an instance of successive $T_7$ transformations connecting statements.

Section A', beginning in measure 44, brings about another entrance of the fugue subject. This time however, all voices participate together in a homophonic texture. The four voices enter successively with different transpositions of the subject. The cello begins on A3, the viola on E4, the second violin on D5, and the first violin on G5. Because of this, the four voices combine vertically in measures 58–60 to form a tetrachords of set [0257]. The relationship between these various lines highlights yet another $T_5/T_7$ transformation succession. Nevertheless, deviations occur again, this time in the viola and cello: in measures 59 and 60, the cello sounds E4 and not E♭4, whereas the viola

sounds A4 and not G♯4. Both notes deviate by either interval 1 or 11 from where they should have mapped under $T_5/T_7$.

Another canon begins immediately after in measure 60: the second violin and viola enter in succession to imitate the first violin in canon. Unlike the previous canonic section in measures 44–54, imitation is at the octave below (two octaves below in the viola). As well, the imitating voices now enter in closer proximity to each other, displaced only by a single beat. This idea culminates with another [0257] tetrachord of pcs {C,G,D,A}, with all parts participating. This chord is the same as the chord that ended the opening introduction, but with an added pc A to make it a set-type [0257], instead of [027].

This chapter has explored the idea of interval 5, 7, 1 and 11 as designs or styles within the context of *Interlude #2*. Sonorities built through successive applications of intervals 5 and 7 were shown to function within the harmonic framework of the movement as well as to project a symmetrical layout of melodic lines. On the other hand, intervals 1 and 11 were cast as a contrasting design to 5 and 7, and were shown to occupy a separate and distinct framework of opposing symmetries, such as in the subject-countersubject duality of the fugal form. Deviations and ambiguities were shown to exist in certain instances, where musical elements encompassed dynamics of both designs. With the dichotomy of the two styles specified and uncovered, the process of understanding a synthesis or unification through compositional procedures is possible. The following Chapter 3 seeks to reconcile the two designs by

highlighting a structural parallel between intervals 5/7 and 1/11, thereby revealing a mapping that preserves group structure between transformational networks in two different musical spaces.

# Chapter Three

The regular use of intervals 5, 7, 1, and 11—along with their respective isomorphic transpositions—between pcs and groups of pcs throughout the quartet suggests that Somers was often thinking not only within a musical space of "semitones," but also a space of "fifths." Collections of pcs formed through successive applications of intervals 1 or 11 provide a structural parallel to those formed of intervals 5 or 7 that were studied in the context of *Interlude #2* in chapter two. Consequently, collections of pcs that exhibit a combination of intervals 5, 7, 1, and 11 suggest a form of unification through automorphic mappings evident between two cyclically related musical spaces—one of "fifths"

the other of “semitones.” Several pc arrangements in the third movement of the quartet expose network configurations that seem to support this idea.

The third movement is relatively short in length: 104 measures in comparison to 246 and 186 in movements one and two, respectively.[1] It is organized in an ABA' form [A: mm. 1–52, B: mm. 53–81, A': mm. 82–104]. The movement begins with motivic gestures of interval 11, played by the viola and second violin. The first instance occurs in measure 1 and is illustrated in Figure 3.1. As the figure shows, two instances of interval 11 are presented by a compact collection of three pcs {B♭,B,C}: from C4 in the second violin to B3 in the viola; and from B3 to B♭3 in the viola, shown in the figure with arrows. The three pcs, taken together as a trichord, belong to set-type [012].

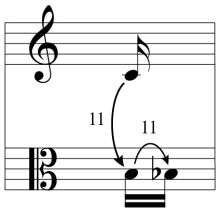



**Figure 3.1** *Motivic gesture of interval 11 (m.1, viola, violin II)*

The interval 11 gesture is not something new to the quartet at this point. Instead, it is introduced throughout various movements leading up to the final third movement. For instance, it is clearly articulated and featured near the end

[1] Measures 1–59 of the third movement of *String Quartet No. 2* are provided in Appendix III.

of the opening movement in measures 211–224, and 242–243. It is also integral to the texture in the second movement through measures 21–46, and permeates almost the entire construction of Interlude #1, between movements one and two.

Cherney refers to this gesture as Somers' 'falling semitone figure' or 'falling minor second' and observes its frequent appearance not only in *String Quartet No.2* (1950), but also in other works such as *Testament of Youth* (1945), *Piano Sonata No. 4* (1950), *Symphony No. 1* (1951), *The Fool* (1953). For Cherney, however, the figure is more or less understood in terms of its associability, for example its "associations of pain or sadness"[2] rather than carrying any structural significance. This is apparent in *The Fool* (1953), where he suggests the falling minor second is used as a 'weep' or lament after the death of a character.[3] On the other hand, Enns refers to the use of the semitone as a "generating interval at various hierarchical levels" in the choral work, *Crucifixion* (1966).[4] He notes that semitones serve a motivic importance in the musical foreground, while non-contiguous semitone relationships combine to produce two symmetrical expansions around a referential axial pitch.

In the quartet, the gesture plays as important a role as intervals 5 and 7 had in the pc organization of the quartet's *Interlude #2*. The opening motivic gesture of interval 11 is repeated several times, undergoing different

2 Cherney, 1975, p. 20.
[3] Ibid., p. 74.
4 Enns, 1982, p. 138.

transpositions to generate multiple collections of set-type [012]. Figure 3.2 provides the score as well as extracts each instance of the set between measures 1–5, where they are displayed in rectangular boxes labelled X1 to X6. Each collection contains two instances of interval 11, illustrated with arrows connecting the pcs. Although the motivic gesture normally involves a chromatic step downwards (interval 11), the overall direction of motion on a more background level in measures 1–5, and likewise throughout many other sections of the movement, involves a contrary ascending chromatic motion (operation $T_1$) of the [012] trichords. This is illustrated in the figure by the forward-directed $T_1$ arrows above the staff, which expose the relationship between various pitch collections X1–X6.

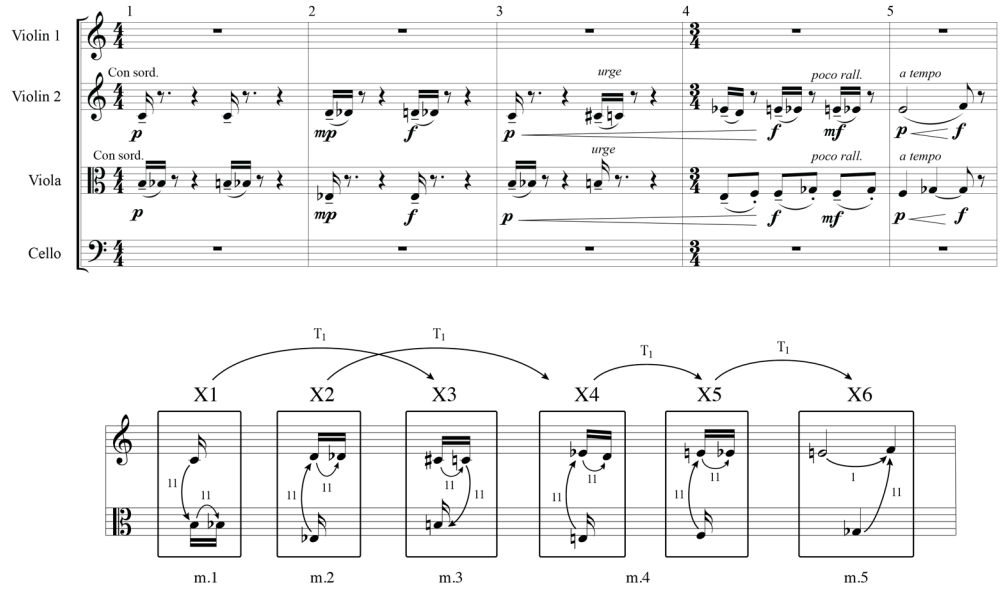



**Figure 3.2** *[012] trichords resulting from consecutive $T_1$ transpositions (mm. 1–5, viola, violin II)*

Pitch collection X1 in measure 1 undergoes a transformation of $T_1$ to become pitch collection X3 two measures later, where X1($T_1$) = X3. Likewise, pitch collection X2 in measure 2 undergoes a transformation of $T_1$ to become pitch collection X4 two measures later, where X2($T_1$) = X4. The process of a chromatic rise accelerates when, in the same measure, pitch collection X4 undergoes another transformation of $T_1$ to become pitch collection X5, until finally ending in measure 5 at pitch collection X6. In this case, X2($T_1$) = X4, X4($T_1$) = X5, and X5($T_1$) = X6. On one hand, interval 11 draws attention to a descending motivic gesture that permeates the opening measures on a more foreground level. On the other hand, $T_1$ draws attention to the ascending chromatic design of the background structure.

Although the [012] trichords ascend in pitch space by operation $T_1$, they also project a structure that expands outwards in opposite directions. Figure 3.3 illustrates both the smooth stepwise motion of the underlying two-voice counterpoint, along with a tightly organized intervallic relationship that unifies the five-measure opening phrase.

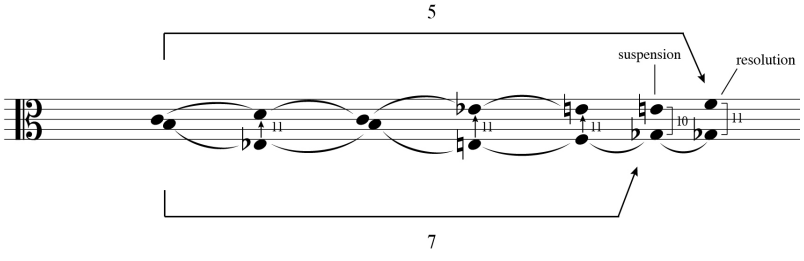
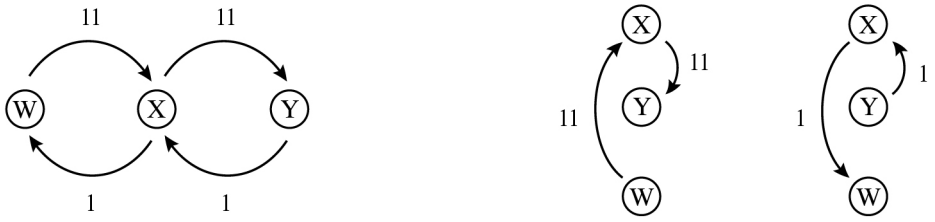



**Figure 3.3** *Linear expansion outwards of interval 5 and 7 (mm. 1–5, viola, violin II)*

Examining the first and last pitches of each voice in the phrase shows that the linear motion beginning on B3 and C4 ends on G♭3 and F4, respectively. Therefore, the overall motion of each voice culminates in either interval 5 or 7: interval 5 maps the second violin's initial C4 in measure 1 onto the phrase-ending pitch F4 in measure 5; interval 7 maps the viola's initial B3 onto the phrase-ending pitch G♭3 in measure 5.

As was stated earlier, the three pcs that make up this chromatic gesture belong to set-type [012]. The set is built through successive applications of interval 1 or 11. The idea is captured visually in Figure 3.4, where W, X, and Y represent three distinct pcs and 1 and 11 the intervallic relationship between those pcs in mod-12 space. The interval between W and X is 11, and between X and Y is 11, or vice versa with interval 1. Figure 3.4[b] shows the vertical alignment that was evident in the pc collections X2, X4, X5, and X6 from Figure 3.2.



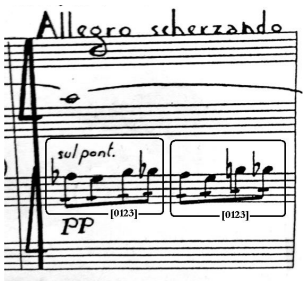

[a] *Abstracted arrangement* [b] V*ertical alignment*

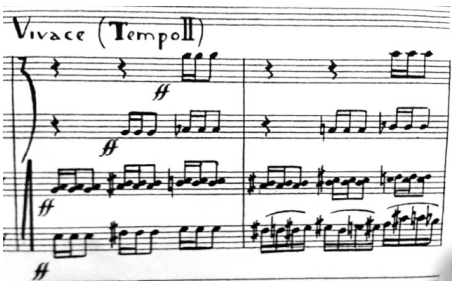
**Figure 3.4** *Intervals 1 and 11 spanned between pcs of set [012]*

The structure is similar to Figure 2.2[b] from chapter two, where chords were built on successive intervals of 5 or 7. Similar to the [027] collection, we could add another successive interval of 1 or 11 to the set [012] to generate set-type [0123]—pc collection built through four successive applications of interval 1 or 11.[5]

Although they are vastly different in many ways, intervals 5, 7 and 1, 11 nevertheless share a unique structural characteristic that no other intervals can reproduce: successively applying any of the four intervals to a pc (x) generates the aggregate set of twelve pcs of the chromatic scale. This special characteristic is the result of their integers being co-prime in relation to mod-12 pc space. Any two integers (x) and (y) are co-prime if the only positive integer that divides both into equal segments is 1. Therefore, in order to generate all twelve pcs within mod-12 space, x must be co-prime with y, where y equals the cardinality of the pcs in mod-12 space, and x equals any interval that operates within that space. Intervals 1, 5, 7, and 11 are co-prime with 12, but 2, 3, 4, 6, 8, 9, and 10 are not.

[5] Collections of [012] and [0123] relationships are found throughout the quartet, for example in the first interlude where the viola begins a repeated succession of [0123] collections, first occurring in measure 1 involving the pcs {F,G♭,G♮,A♭} (excerpt on the bottom left), or in the densely chromatic texture of the second *Vivace* section of the first movement (excerpt from measures 162–163 on the bottom right), where various [012] and [0123] collections are discernable:



This idea is represented visually in Figure 3.5 by applying successive transformations of a given $T_n$ to integers 0–11 around clock faces, where n = the interval of transposition. The cycles produced are called $T_n$ cycles.

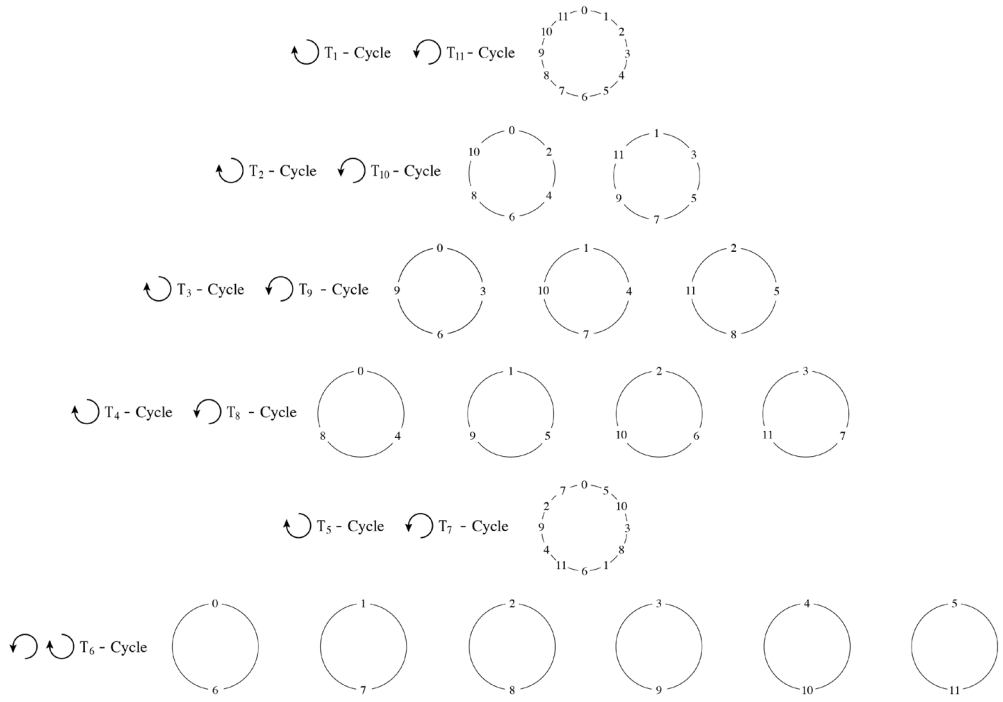



**Figure 3.5** *$T_n$–cycles generated by successive intervals 1–11.* [6]

The cycles are illustrated in either clockwise or counter-clockwise motion. Only in $T_n$ cycles 1, 5, 7, and 11 is the aggregate group of twelve pcs realized within a single cycle. $T_n$ cycles 2 and 10 (the whole-tone scale) require two

6 Figure 3.5 is based upon Figure 4–9 found in Joseph Straus's *Introduction to Post-Tonal Theory* (River, New Jersey: Prentice Hall, 2005), p. 154.

separate cycles to generate the aggregate, $T_n$ cycles 3 and 9 (fully diminished seventh chord) require three cycles, $T_n$ cycles 4 and 8 require four cycles, and $T_n$ cycle 6 requires six cycles. Since $T_n$ cycles 1/11 and 5/7 share the same cyclic structure, any function that maps the elements of one cycle onto the other is known as an automorphic mapping.[7] The mapping is one-to-one and onto, while preserving group symmetry. The set-theoretical concept of mapping between $T_n$ cycles is relevant to Somers' music since the use of the 1/11 and 5/7 cycles throughout his music is prevalent. It provides a functional relation between different pc collections built through intervals of either 1/11 or 5/7.

Multiplicative operations allow for such mapping, while providing a unique comparison between the seemingly contrasting transformations.[8] Unlike $T_n$ and $I_n$ operations, the multiplicative operation $M_m(x)$ is a transformation that involves multiplying a pc (x) by any integer (m). As well, multiplicative operations 1, 5, 7, and 11 are unique since they are the only $M_n$ operations that are one-to-one mappings. Others are many-to-one. Of these four, two particular operations, $M_5(x)$ and $M_7(x)$, provide a direct mapping between the $T_1/T_{11}$ and $T_5/T_7$ cycles.[9] Operation $M_5(x)$ maps a $T_1$ cycle (chromatic scale) onto a $T_5$ cycle (circle of

[7] Robert D. Morris, *Composition with Pitch-Classes: A Theory of Compositional Design* (New Haven and London: Yale University Press, 1987), p. 148.

[8] According to John Rahn, since the mid 1950s many composers have found the M5(x) and M7(x) operators useful (Rahn, 1980, 53). Along these lines, Robert Morris understands it as an important transformation in jazz harmony of the 1950s and 60s, and also suggests its potential in analyzing some of Bartok's music (Morris, 1987, 149).

[9] Herbert Eimert was the first theorist to write about the application of multiplicative operations in music in his *Lehrbuch der Zwöfltontechnik*, using the terms *Quartverwandlung*, and *Quintverwandlung*, which map the chromatic scale onto a succession of perfect fifths and perfect fourths, respectively. Herbert Eimert, *Lehrbuch der Zwöfltontechnik* (Wiesbaden: Breitkopf & Härtel, 1950), pp. 29–33.

fourths)—a transformation known as the "circle of fourths transform."[10] On the other hand, $M_7(x)$ maps a $T_1$ cycle onto a $T_7$ cycle (circle of fifths)—a transformation known as the "circle of fifths transform." Therefore, $M_5(T_1$ cycle) = $T_5$ cycle; and $M_7(T_1$ cycle) = $T_7$ cycle. The opposite is true when applying the operations to the $T_{11}$ cycle: $M_5(T_{11}$ cycle) = $T_7$ cycle; and $M_7(T_{11}$ cycle) = $T_5$ cycle. The mapping is illustrated in Figure 3.6.


**Figure 3.6** *One-to-one mappings of pcs in mod-12 space under circle of fourths transform and circle of fifths transform*

The circle of fourths transform—a result of operation $M_5(x)$—reveals that integers 1 and 5 are exchanged, as well as integers 7 and 11. On the other hand, the circle of fifths transform—a result of the operation $M_7(x)$—reveals that integers 1 and 7 are exchanged, as well as integers 5 and 11.[11] All other integers

[10] Godfrey Winham, "Composition With Arrays," *Perspectives of New Music* Vol. 9, no. 1 (Autumn–Winter 1970), p. 49.

[11] Although interval content is not always preserved under operations $M_5$ and $M_7$ (since intervals 1 and 5 are exchanged as well as intervals 7 and 11, or vice versa for $M_7$) their application does not necessarily produce a less similar relation than $M_{11}$ or any inversion operation for that

either remain invariant (as for instance 0, 3, 6, and 9 in the circle of fourths transform) or map onto their mod-12 complements (as for instance 2 and 10 or 4 and 8 in the circle of fourths transform). Applying operation $M_5$ or $M_7$ twice results in the identity operation $M_1(x)$, since $M_7(x)M_7 = M_{49}(x) = M_1(x)$; and $M_5(x)M_5 = M_{25}(x) = M_1(x)$. Therefore, applying either $M_7(x)$ or $M_5(x)$ consecutively to a given pc set of X, will result in no change.

In Somers' quartet, set [027] is found throughout the third movement as often as set [012]. These sets first appear as trichords within a repetitive figure that begins in measure 17, executed by three voices in a homophonic texture. This ostinato-like figure is the product of a steady oscillation between different [027] trichords. Similar to the interval 11 gesture from measures 1–5, the ostinato involves a downward motion as well. However, instead of a descending interval 11 like the opening gesture, the [027] trichord descends by operation $T_4$ to map onto a second [027] trichord. This results in a sort of expansion of the interval 11 gesture found in the opening [012] chord. Figure 3.7[a] compares the trichord from measure 1 ([012]), with the trichord of measure 17 ([027]).

The two sets map onto each other under operation $M_7$. Figure 3.6[b] illustrates the mapping by comparing pcs on two clock-faces of both $T_n$ cycles 1

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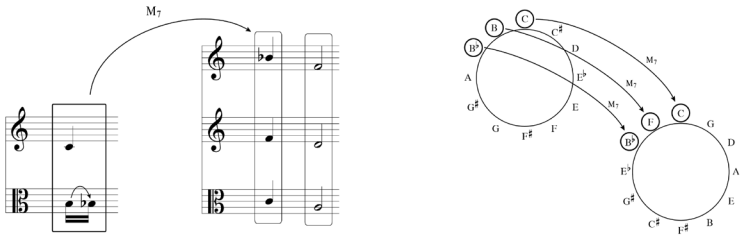
matter. Theorist Hubert Howe pointed out an interesting quality about operations $M_5$ and $M_7$ when he remarked that, "while M5 (and M7) preserves certain intervals and complements others, inversion complements all intervals and preserves only those which are their own complements, and in this sense M5 is "closer" than M11." Hubert S. Howe "Some Combinatorial Properties of Pitch Structures," *Perspectives of New Music* Vol. 4, no. 1 (Autumn–Winter, 1965), p. 55.

and 7. If we name pc C as 0 (C = 0), then the group of pcs {C,B,B♭} equal the integers {0,11,10}.




[a] [b]

**Figure 3.7** *Expanded falling motion of trichord oscillation (mm. 17–18) compared with falling chromatic gesture (m. 1)*

We can then apply the circle of fifths transform to the set: $(M_7)\{0,11,10\}$ = {0,5,10} = {C,F,B♭}. The pcs C and B♭ are held invariant, while pc B exchanges with F. Of course, this mapping is really only the result of establishing pc C as reference. However, my purpose in exploring this mapping is to show the similar configuration created by the two trichords [012] and [027]: each contains three adjacent pcs on their respective cycle.

The element x in $M_n(x)$ does not necessarily have to represent a pc within a given space, but can also represent a pc *operation* within a given space, such as

the operations $T_n$ or $I_n$.[12] With this in mind, a transformational network of a group of pcs can be compared via operation $M_n$ to the network of another group. If one network maps onto another through operation $M_n$, then the two graphs are considered automorphic mappings under operation $M_n$.

If we take for instance the [012] sets that are ubiquitous throughout the quartet, they can be seen to display an analogous transformational structure with the many [027] sets that also permeate the work. Operations $M_5$ and $M_7$ map the structures of one onto the other. The mappings are illustrated in Figure 3.7. $M_5(11) = 7$, and $M_5(7) = 11$; $M_5(1) = 5$, and $M_5(5) = 1$; $M_7(11) = 5$, and $M_7(5) = 11$; and $M_7(1) = 7$, and $M_7(7) = 1$.

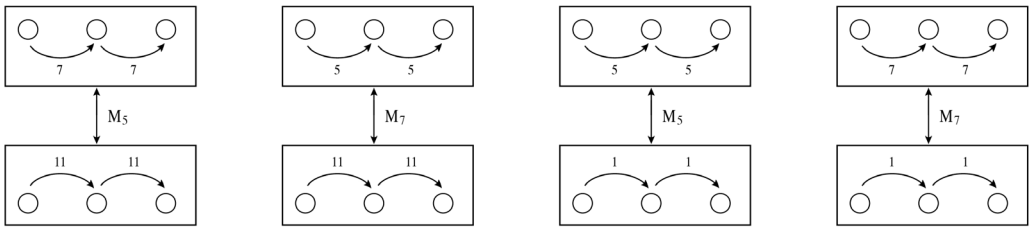



**Figure 3.8** *Mappings of [012] and [027] networks under $M_x$ operators*

The similarity of their structure is easy to visualize by comparing the $T_{5/7}$ cycles with $T_{1/11}$ cycles that were shown in Figure 3.5. Both move by single positions (or steps)—either in clockwise or in counter clockwise motion—by interval 1 or 11 on the one cycle and interval 5 or 7 on the other. They each

[12] Morris, 1987, p. 148.

represent three adjacent positions on their respective $T_n$ cycles. Adding another adjacent move around the clock face of the $T_{5/7}$ cycle results in set-type [0257]. On the other hand, the same move around the $T_{1/11}$ cycle results in set-type [0123]. Both are found throughout the quartet. For instance, set [0257] was identified in the second interlude discussed in chapter two. Set [0123] can be found throughout the third movement, the entire first interlude, and in many instances in the second movement (refer back to the examples in footnote 5).

Since chords and melodies are often built on successive steps found in the $T_{5/7}$ Cycle or $T_{1/11}$ Cycle throughout the quartet, those that contain both cycles become interesting. However, instead of understanding two different dynamics functioning within the same musical space, we could also imagine that these dynamics function within an ambivalent space—one generated either by the $T_{5/7}$ cycle, or the $T_{1/11}$ cycle. The two spaces share some interesting characteristics that blur the lines between them.

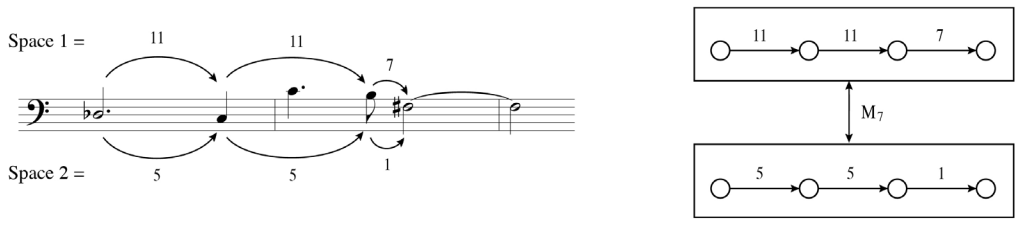
One musical space measures intervals-modulo-the-octave by semitones. This is the space that has been used so far in this work. The $T_{1/11}$ cycle represents this space wrapped around a clock face. One step clockwise within the space is equivalent to interval 1 (one semitone), two steps clockwise equivalent to interval 2 (two semitones), and so on. On the other hand, one step counter clockwise is equivalent to interval 11 (eleven semitones), two steps counter clockwise 10 (ten semitones), and so on. I call this space “space 1.”

We can also imagine a different musical space, one that David Lewin has discussed within *Generalized Musical Intervals and Transformations*.[13] He theorizes about the use of a generalized interval system that measures "intervals-modulo-the-octave by (equally tempered) fifths rather than by semitones."[14] The $T_{5/7}$ cycle represents this space of tempered fifths wrapped around a clock face. Unlike space 1, each of the interval steps in space 2 is equivalent to five or seven semitones (perfect fourths or fifths) instead of a single semitone. That is, one step clockwise is equivalent to interval 1 (a perfect fourth, or five semitones), two steps clockwise equivalent to interval 2 (two perfect fourths, or ten semitones), and so on. On the other hand, one step counter clockwise is equivalent to interval 11 (a perfect fifth, or seven semitones), two steps counter clockwise is equivalent to interval 10 (two perfect fifths), and so on. I will call this second musical space "space 2."

Analyzing the structure of the solo cello line at the beginning of the third movement within space 1 and space 2 highlights some interesting structural parallels. If we take, for instance, the first phrase of the opening cello solo in measures 7–9, illustrated in Figure 3.9[a], we might observe that the line begins a chromatic descent from D♭3 to C3(4) to B3, and then falls to F♯3. If we imagine this line within space 1, we can show the succession of intervals between the pcs from D♭ to F♯3. Notated above the staff in the figure are two instances of interval

[13] David Lewin, *Generalized Musical Intervals and Transformations* (Yale University Press, 1987; reprint, New York: Oxford University Press, 2007).
[14] Lewin, 2007, p. 22.

11, and one interval 7: interval 11 maps D♭3 onto C3, and C3 onto B3, while interval 7 maps B3 onto F♯3.



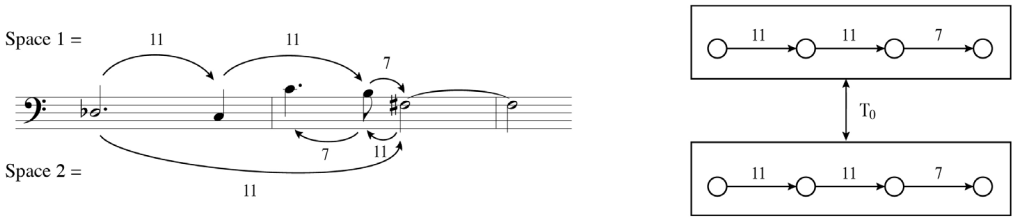

[a] [b]

**Figure 3.9** *Comparison of cello phrase (mm. 7–9) between space 1 and space 2*

On the other hand, instead of imagining the line as operating within space 1, we could also imagine it as operating within space 2. Just like we did with space 1, we can show the succession of intervals between the pcs from D♭3 to F♯3. Steps around a clock face of "fifths" and not semitones now represent intervals. Notated below the staff in the figure are two instances of interval 5, and one interval 1: interval 5 maps D♭3 onto C3, and C3 onto B3, while interval 1 maps B3 onto F♯3. Since we are using a space created by steps of fifths around a clock face, the "circle of fifths transform" ($M_7$), indicates the mapping between these transformations. Figure 3.9[b] shows the relationship between the two networks of space 1 and space 2. Under the transformation $M_7$, interval 11 maps

onto interval 5 and vice versa, while interval 7 maps onto interval 1 and vice versa.

Of course, we could also re-arrange the arrows within Figure 3.9[a] to elucidate other interesting connections between pcs that are non-adjacent. This form of re-arrangement emphasizes the pcs as a complete set or *group*, and not individually or through adjacent pcs on the staff. Therefore, we could even imagine the pcs arranged verticality or in reverse order, etc. Figure 3.10[a] keeps the arrows of space 1 constant, but re-arranges the arrows of space 2. Notated below the staff in the figure are two instances of interval 11, and one interval 7: interval 11 maps D♭3 onto F♯3, and F♯3 onto B3; while interval 7 maps B3 onto C3. The particular network selected for space 2 highlights a symmetrical relationship that the group of pcs produce between each respective space: the transformation network of space 1 is related to the network of space 2 by the identity operation $T_0$.




[a] [b]

**Figure 3.10** *Comparison of cello phrase (mm. 7–9) between space 1 and space 2, with space 2 network re-arranged*

Specifically, the network outlined by the four-note cello phrase reveals a structural automorphism between the two musical spaces. Because of this there exists another operation, $T_n$ or $I_n$, that will, in conjunction with $M_7$, map the elements of the group {B,C,D♭,F♯} from space 1 onto space 2 and vice versa. Accordingly, the group maps one-to-one and onto under operation $M_7T_6$ between spaces 1 and 2, while preserving the group structure.[15] Figure 3.11 captures the symmetry of the structure produced by the set of elements in the group (i.e. the pcs) by mapping them around the two clock faces that represent space 1 and space 2. In both spaces, the four pcs of the cello phrase are connected via solid lines such that they lie in their normal form—their most compact form. In space 1 the group comprises of the normal form {B,C,D♭,F♯}. As a group, they belong to set-type [0127].

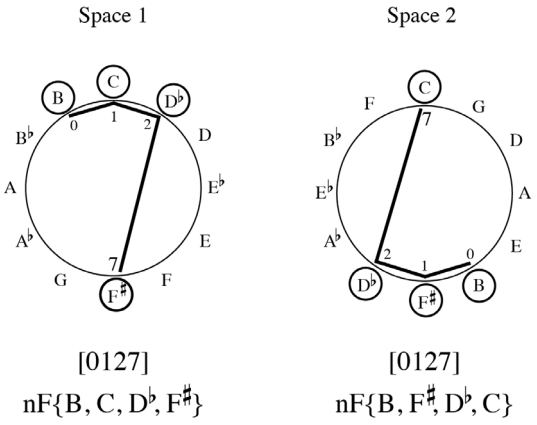



**Figure 3.11** *Symmetry displayed between spaces 1 and 2 with pcs from cello phrase (mm. 7–9)*

[15] Operation $T_6$ was used in conjunction with $M_7$ in order to map the elements of the group, {B,C,D♭,F♯}, onto itself. Otherwise the group {B,C,D♭,F♯} in space 1 would map under $M_7$ onto the group {F♯,F,C,G}. Figure 3.11 shows that {F♯,F,C,G} in space 2 would lie in the same equivalent position on the clock face as {B,C,D♭,F♯} in space 1.

On the other hand, space 2 comprises the normal form ordering {B,F♯,D♭,C}. Remarkably, this group of pcs also constitutes an instance of set-type [0127]: however, now within the space of "fifths." Whereas in space 1 pcs B and D♭ flank C, in space 2 they flank F♯, while C and F♯ remain invariant since they map onto themselves other under $M_7T_6$.

Whether analyzed within a musical space of semitones (space 1) or of fifths (space 2), the collection of pcs outlined by the cello phrase project an analogous network structure. The particular structural parallel between the spaces is the result of having ic1 and ic5 as part of the interval content of the pc collection (i.e. the result of having the pc collection constructed of both intervals 1/11 and 5/7). Howe explains this idea when he writes about mappings of multiplicative operations:

> There is one significant property which serves nevertheless to differentiate M5 and M7 from the more familiar operations of inversion and identity. Since 1 and 11 are complementary, the interval-content of a pitch-structure is always preserved under M1 and M11, while under M5 and M7 perfect fourths (and perfect fifths) exchange places with minor seconds (and major sevenths). Thus only when a PS [pitch structure] has the same number of intervals 1 and 5 do its operational equivalents under M11 and M5 have the same interval content.[16]

Since the pc collection {B,F♯,D♭,C} of the cello phrase contains two instances of ic1 and two instances of ic5, mapping under $T_6M_7$ simply exchanged the "perfect fourths and perfect fifths…with minor seconds and major sevenths," resulting in the same interval content in each space. Other pc collections do not

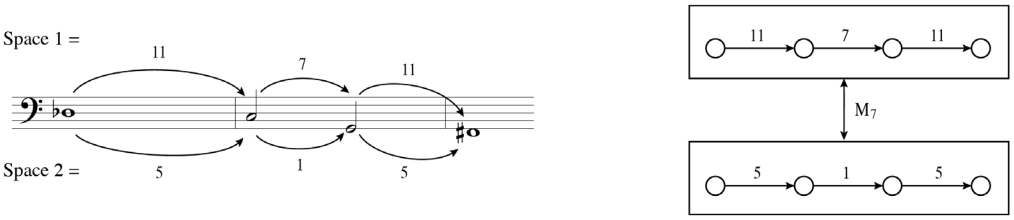
[16] Howe, 1965, p. 55.

produce the same symmetry, such as major or minor triads, whose interval content is altered under $M_7$. If we take for instance a C major triad, {C,E,G}, and make C a reference 0, then under operation $M_7${C,E,G} = $M_7${0,4,7} = {C,E,C♯}. C and E are held invariant, but G maps onto C♯. Examining the two clock faces of Figure 3.11 shows that the collection {C,E,G} produces a different structure in space 1 than it does in space 2, where interval content is not preserved. Since {C,E,G} and {C,E,C♯} constitute different set-types, with different interval content, no operation $T_n$ or $I_n$ can map one onto the other.

It is worth noting that the cello line in Figures 3.9 and 3.10 has embedded within its structure both pc sets [027] and [012] in space 1, or vice versa in space 2: the group {B,C,D♭} forms set [012] in space 1 and set [027] in space 2, while the group {B,F♯,D♭} forms set [027] in space 1, and set [012] in space 2.

The third entrance of the solo cello—another four-note phrase—reveals another structural automorphism between the two musical spaces, similar to the one just examined. I will follow the same general steps to illustrate the mapping. The phrase starts on D♭3 in measure 15, and descends to C3, G2, and F♯2 in measures 16 and 17. The phrase is illustrated in Figure 3.12[a].

If we imagine the phrase within space 1, then the network includes two instances of interval 11, and one interval 7: interval 11 maps D♭3 onto C3, and G2 onto F♯2; while interval 7 maps C3 onto G2.

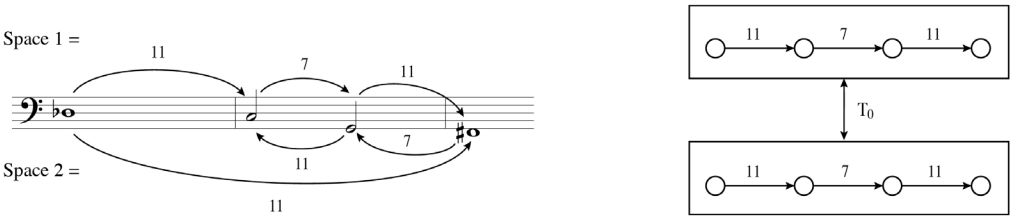



[a] [b]

**Figure 3.12** *Comparison of cello phrase (mm. 15–17) between space 1 and space 2*

On the other hand, in space 2 the succession of intervals includes two interval 5, and one interval 1: interval 5 maps D♭3 onto C3, and G2 onto F♯2; while interval 1 maps C3 onto G2. Again, since we are using a space created by steps of fifths around a clock face, the "circle of fifths transform" ($M_7$), indicates the mapping between the transformations, illustrated in Figure 3.12[b]. Therefore, under the transformation $M_7$, interval 11 maps onto interval 5 and vice versa, while interval 7 maps onto interval 1 and vice versa.

Figure 3.13[a] elucidates a different connection between pcs that are non-adjacent. The figure keeps the arrows of space 1 the same, but re-arranges the arrows of space 2. With this new arrangement there are two instances of interval 11, and one instance of interval 7: interval 11 maps D♭3 onto F♯2, and G2 onto C3; while interval 7 maps F♯2 onto G2.




[a] [b]

**Figure 3.13** *Comparison of cello phrase (mm. 15–17) between space 1 and space 2, with space 2 network re-arranged*

Figure 3.13[b] shows that the network of space 1 is related to the network of space 2 by the identity operation $T_0$. This highlights another structural automorphism between the two spaces. In this case the group maps one-to-one and onto under operation $M_7T_0$ between spaces 1 and 2, while preserving group structure. Figure 3.12 maps the elements of the group around two clock faces that represent space 1 and space 2.

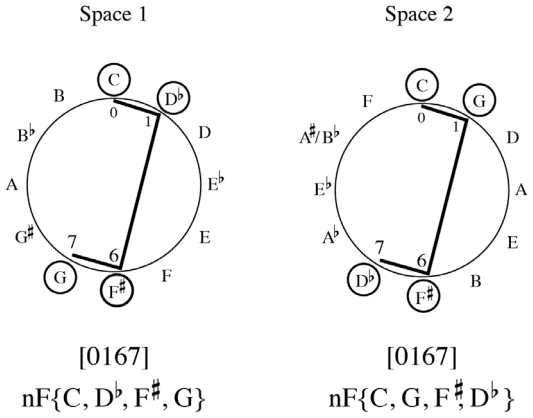



**Figure 3.14** *Symmetry displayed between spaces 1 and 2 with pcs from cello phrase (mm. 15–17)*

In space 1 the group comprises the normal form {C,D♭,F♯,G}. As a group, they belong to set-type [0167]. On the other hand, space 2 comprises the normal form ordering {C,G,F♯,D♭}. This group is also an instance of set-type [0167], but within the space of "fifths," instead. Examining the figure shows that the two pairs of adjacent pcs within space 1, C–D♭ and F♯–G, exchange pcs D♭ and G to produce the same structure within space 2, while C and F♯ remain invariant.

The pc collections that the solo cello outlines often emphasize the symmetry that the two spaces share. As mentioned earlier, these automorphic structures are partially the product of pc collections built through a combination of the same number of ic1 (intervals 1/11) and ic5 (intervals 5/7).

Throughout this chapter as well as chapters one and two other examples of pc collections built through intervals 5/7 and 1/11 were examined, and in some cases they were built through a combination of both. Such was the case in chapter two with the inverted fugue statement found in measures 33–39 in violin I. Unlike the previous statement this one contained a deviation from its $I_5$ mapping, a move that introduced ic1 into the design. The resultant pc collection was supposed to outline set-type [025], but resulted in set-type [0135]. Similar to the major triad, set [025] under $M_7$ (or $M_5$) produces a different structure in spaces 1 and 2, because interval content is not preserved. However, set-type [0135] on the other hand, results in yet another automorphic mapping (under $I_x$ $M_7$) between spaces 1 and 2 while preserving group structure and interval

content. The fugue statement was strongly marked by intervals 5/7, while the countersubject was strongly marked by interval 1/11. Accordingly, the deviation in the inverted fugue statement in measures 33–39 affected a change that brought the fugue statement into both design realms, ic1 and ic5, simultaneously.

Whether articulated as functioning in space 1 or space 2, the resultant group structures of collections built through a combination of ic1 and ic5 are sometimes relatively unaffected, or not all. The lines begin to blur even more between these spaces upon consideration of some special characteristics that $M_x$ generates. Looking back at Figure 3.6, we find that certain integers remain unchanged under operation $M_5$ and $M_7$. The invariant integers under the circle of fourths transform are 0, 3, 6, and 9, while the invariant integers under the circle of fifths transform are 0, 2, 4, 6, 8, and 10.

This reveals the potential of transformational invariants between spaces 1 and 2. In this case, a move clockwise by x number of steps within space 1 results in an identical group of pcs as the same clockwise move by x number of steps within space 2: under operation $M_7$, $T_x = T_x$ when x = 0, 2, 4, 6, 8, and 10; under operation $M_5$, $T_x = T_x$ when x = 0, 3, 6, and 9.

For instance, in space 1 we could move two steps in a given direction (refer back to the two clock faces of space 1 and space 2 of Figure 3.14). If we start on a dyad of C–G and move two steps clockwise ($T_2$) in space 1, then we end up with the dyad D–A. On the other hand, we could also imagine the dyad

C–G within space 2 (now a different structure than the dyad C–G of space 1: whereas in space 1 the dyad C–G spans seven clockwise steps, it spans only one clockwise step in space 2). If we move the same two steps in a clockwise direction ($T_2$) in space 2, we also end up on the dyad D–A, just as we did with the dyad C–G of space 1.

The [027] trichords that resurface beginning in measure 17 make use of these invariant transformations. The trichords are organized into twelve groups, labelled F1 to F12 in figure 3.15. Each group contains one instance of the augmented falling gesture that was described earlier. The first trichord in measure 17, {B♭,F,C}, moves to a trichord {F,D,A}, a d minor chord. After these first two trichords, a consistent succession of [027] trichords begins from F2 to F12.

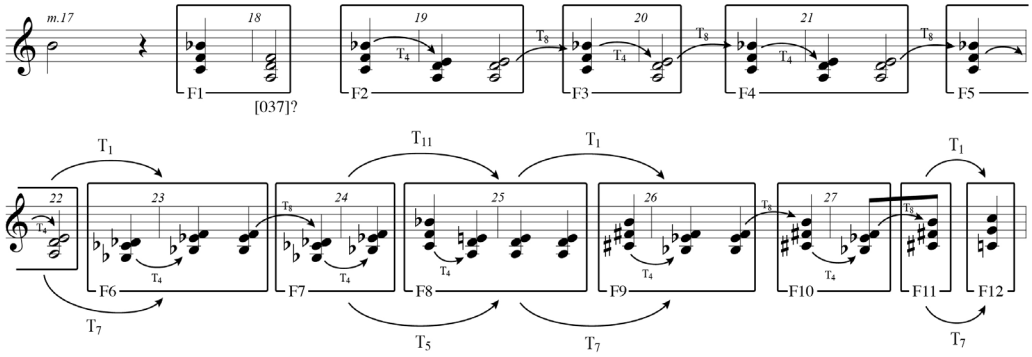



**Figure 3.15** *Treble clef reduction of [027] pitch collections, mm. 17–27*

Since all trichords from F2–F12 are members of [027] they relate under transposition. If we imagine the trichords as operating within space 1, then the

transformation from the first trichord in every group to the second trichord always corresponds to the operation $T_4$. In F2 for example, trichord {B♭,F,C} maps onto trichord {D,A,E} under $T_4$. After this, operation $T_8$ undoes $T_4$ by mapping {D,A,E} back onto {B♭,F,C} for a repetition of the same gesture in F3. This continues measure 22–23, when group F5 ascends $T_1$ to map onto group F6, illustrated by the arrow above the staff. Again, the augmented falling gesture within F6 still involves operation $T_4$. Next, operation $T_{11}$ maps F7 onto F8 (the same group of pcs as F2–F5). Then $T_1$ maps F8 onto F9, which continues until a final $T_1$ maps F11 onto F12. The overall motion of the groups F2–F12 corresponds to the transformation $T_2$ ($T_1 + T_{11} + T_1 + T_1$).

On the other hand, we could also imagine the chords as operating within space 2. The transformations between trichords in groups F2–F10 correspond once again to $T_4$ and $T_8$, just as it did within space 1. Therefore, the transformations $T_4$ and $T_8$ that connect trichords within the figure represent both spaces 1 and 2, with the exception of a few transformations labelled below the staff in figure 3.15: in space 2 F5 maps onto F6 via $T_7$, illustrated by the arrow below the staff; operation $T_5$ maps F7 onto F8; and $T_7$ maps F8 onto F9, until a final $T_7$ maps F11 onto T12. The overall motion of the groups F2–F12 corresponds to the transformation $T_2$ ($T_7 + T_5 + T_7 + T_7$). Thus, though the individual operations are different in space 1, the overall transformation $T_2$ is the same for both.

During these chord progressions, the first violin plays a melody above the [027] trichords, working through variations of the same material that was found in the cello part in measures 7–18. In measure 35, the ostinato resumes as [05] dyads played by viola and second violin. By measure 44, the cello melody and violin melody align at points with these dyads to emphasize [027] trichords, as well as [016] and [015] trichords. The texture of the music gradually increases in density, and along with a *sempre cresendo* that began in measure 44, brings about a tutti double forte in rhythmic unison in measure 51. The four voices align vertically to form [0156] tetrachords—a chord whose structure in space 1 and 2 involves yet another example of a network automorphism. After two measures of quick rhythmic bursts that mimic the opening falling gesture by movements of interval 1 and 11, the cello line enters with a plucked double forte E minor chord that strikes every beat, almost like a drone. During this passage the violins play in unison through different [01] dyads. The section is provided in Figure 3.15.

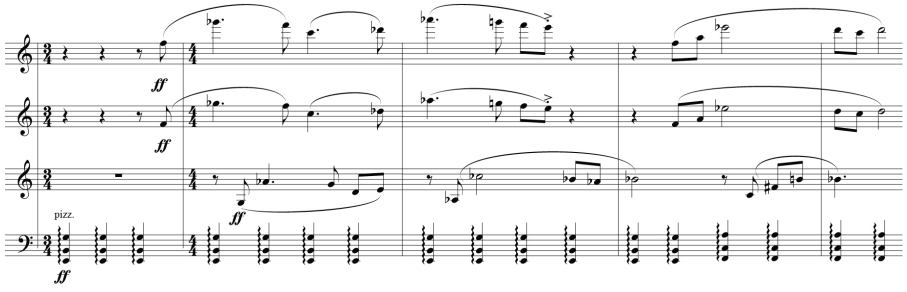



**Figure 3.16** *Third Movement, mm. 53–57*

At this point, with the breakthrough of the strummed E minor sonority in the cello in measures 53–57, the disparate musical elements that had saturated the structure of the work into a unifying and mutually interreflecting web is entirely separated, and unequivocally juxtaposed to one another. That is, the archaic, the past, has broken through the surface and is showing its face clearly.[17]

Comparing this outburst to the opening chords of the quartet using the analytical tools developed in the present chapter reveals an arrangement that supports the idea of unification of past and the present through intervallic combinations. The reader will remember from chapter one that two distinct chords sounded before the first fugue entry. Both chords are shown below in Figure 3.17.

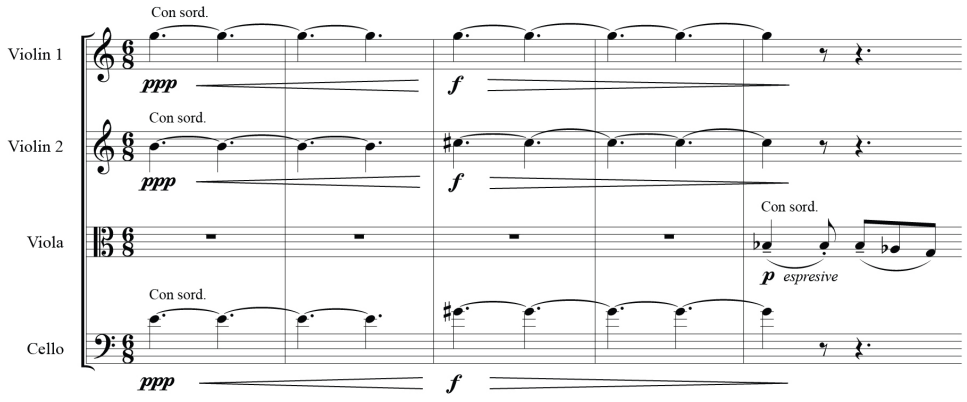



**Figure 3.17** *Two distinct trichords that open the quartet (mm. 1–5)*

[17] This section represents a passionate outburst that, in the context of Cherney's idea of style juxtaposition, is often interpreted as a means of releasing a buildup of tension.

The first chord, {E,G,B} in measures 1–2, sounds an E-minor sonority. However, the second chord {G♯,C♯,G♮} in measures 3–5, sounds an [016] trichord. The structure of this second chord has the intriguing distinction of also being an automorphic mapping between spaces 1 and 2. That is, pcs {G♯,C♯,G♮}, in space 1 produce the same group structure as they do in space 2, and both result in an [016] trichord.

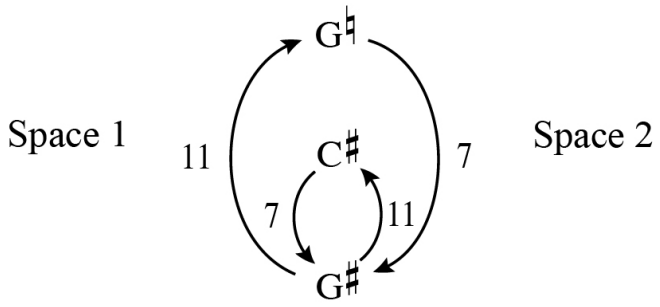



**Figure 3.18** *Network comparison of [016] trichord (mm. 3–5) between spaces 1 and 2*

The network in Figure 3.18 illustrates the connections between pcs in both spaces 1 and 2 that produce an identical network structure. Whether the trichord is analysed in the musical space of 1 or 2, group structure also remains the same and interval content is unaffected. Figure 3.19 shows the relationship of the chord (or group) realised between spaces 1 and 2.

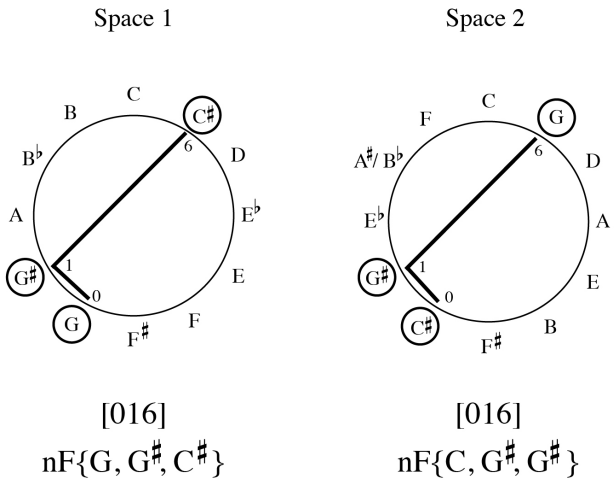



**Figure 3.19** *Symmetry displayed between spaces 1 and 2 with pcs from [016] trichord (mm. 3–5)*

In both spaces the group constitutes a set-type [016]. The structural symmetry of the trichord as a group remains unaffected since the only difference is the change of position between pcs C♯ and G♮ on the clock face, while G♯ remains invariant. Just like in the cello phrase in measures 15–17, the operation $M_7T_0$ maps the group from one space to the other, and vice versa.

The first chord, an E-minor sonority, highlights intervals 5 and 7—what Somers refers to as the "clear" and "uncluttered" sound.[18] Just like in the E-minor cello outburst of the third movement, the chord contains a quality-defining third, pc G, that emphasizes its tonal character. However, the second chord—the [016] trichord—immediately destabilizes any putative tonal centre

[18] Houghton, 1980, p. 43.

that might have been established. This is done by introducing intervals that, as he characterized it, represent a "thrilling sound"[19]: intervals 1 and 11. It is as though Somers presents a chord from the past (E-minor) on the one hand, while on the other hand offers the listener a second chord that not only blurs this tonal reference, but that embodies elements of two designs that he sought to unite.

[19] Ibid., p. 43.

# Conclusion

The rich integration of diverse musical elements presented in Somers' music creates a sound world that is emphatically modernist and yet connected to the common store of a historical musical past. It was especially in early compositions of the 1940s and 1950s that Somers endeavoured to make use of many wide-ranging compositional techniques—a dynamic that is suggestive of a historical syncretism. Although current scholarly work has addressed this eclectic character of Somers' music, is does so through a framework that primarily draws on contrast and distinguishes differences of style and content, such as those studies that focus on juxtaposition of elements and neoclassical discourses, both

of which result from the analytical separation of stylistic elements. Although these investigations point to an indubitably true aspect of Somers' music—namely that different stylistic influences are manifest in his works—my guiding methodology for this thesis has been to investigate whether the idea of unification of a musical past and present could be articulated on more neutral grounds, specifically in terms of a music-theoretical underpinning.

Whereas previous studies of Somers' music typically examine the musical past as a distinguishable stylistic element or form embedded in the foreground, my analysis has pursued a music-theoretical methodology that serves two primary purposes: to differentiate between elements representing either past musical traditions or the present innovations which I have called a musical past and present; and to interpret how the characteristic elements of these two sound-worlds which have definite, quantifiable set-theoretical properties, are brought into contact. Indeed, Somers himself expresses his compositional practice of achieving musical unity as a technical struggle of shaping sound. In 1955 Somers writes:

> My technical struggle through the years has been to develop as wide a technical knowledge of my craft as possible in order to shape into sound as wide an experience as possible. I'm a romantic, though I certainly wish each composition to be constructed in the logical premise. I wish above all, that it somehow convey something to, and join with, the human emotions, and not just the brain and senses. I want the three to combine in a total experience.
>
> European art is the intellectual, American the physical. Must be room for a unity of the two.[1]

[1] Somers, 2009, p. 23.

From a music-analytical point of view, a focus on intervals understood in terms of integers provides an appropriate method through which to investigate this shaping principle, and to track the ways in which elements from disparate sound-worlds interact in Somers' compositions. As I pursued this idea in the context of Somers' musical output during the 1940s and 1950s, I found a certain referential consistency involving the same intervals: 1, 5, 7 and 11. I drew on music-theoretical ideas grounded in mathematical modeling inspired by the precedents in the work of theorists Herbert Eimert, Hubert Howe, and Godfrey Winham. In the context of *String Quartet No. 2,* I explored the four characteristic intervals and their associated isomorphic transformations in terms of their compositional application as devices that, as Somers himself had intimated, evoke a musical past (intervals 5 and 7), and a musical present (intervals 1 and 11).

Bearing in mind the transformational relationships derived from this guiding set of intervals, along with network structures arising from their interactions, I was able to explore key passages from the first movement of the Second String Quartet in order to demonstrate the configuration of these intervals, vertically and especially temporally to create thematic, formal, and harmonic continuities. In the context of the second interlude I explored the application of the intervals as dichotomous elements functioning to serve organizational purposes in the fugal form. The small self-contained movement

revealed the intervals as a distinguishing design element of either the fugue subject (intervals 5/7) or countersubject (intervals 1/11). A fusion of both design elements was considered in a third 'inverted statement' that deviated from a direct inversion of the initial fugue subject. Finally, in my analysis of excerpts from the third movement of the quartet, I uncovered a structural parallel between the four intervals considered in two musical spaces that provided an interesting avenue for group-theoretical morphisms, which can be conceived, also, as an aspect of the synthesis of the characteristic intervals. Multiplicative operations, which produce two transformations of the chromatic scale (i.e. the cycle-of-fourths-transform, and cycle-of-fourths-transform), allowed me to show how certain collections of pcs—i.e. those that incorporated both designs of ic1 and ic5—in the third movement and elsewhere could be considered structurally invariant under mapping from one space to another. Network structures of the collections were also re-arranged to show the symmetrical properties that such pc collections produce within the given spaces.

Besides providing a new insight into the workings of Somers' music, the mathematical modeling approach that I have adopted and developed in this study is significant in terms of its ability to characterize elements of Somers' music – chords and collections built through a combination of perfect intervals and semitones – that were previously left relatively undefined with respect to their active formal and compositional dynamics. This approach enables a form of close reading of a musical work on the basis of style, or a poetics understood in

the stringent sense of the emergence of an artistic product out of the application of a distinct and identifiable set of design principles.

Somers' compositional procedures in the music I have analyzed carries clear affinities with twelve-tone compositional procedures, which likewise depend, though in stricter form, on what Schoenberg called the *Grundgestalt*, or "the endless reshaping of the basic shape."[2] Indeed the use of row forms also provided Somers with a more formalized approach to organizing pitch around this same set of four intervals. For instance, they are used as primary building blocks for twelve-tone rows found in works such as *12 X 12, Fugues for Piano* (1951), and *Passacaglia and Fugue for Orchestra* (1954). The application of these intervals for row derivation and formal organization of serial works has received little attention in the past. There is also great potential for studying pc sets derived from intervals 1, 5, 7, and 11 in the context of harmonic and melodic organization in much of Somers' music, whether serial or non-serial. As such, identifying and tracing various combinations of operators (such as $T_x$, $I_x$, $M_x$) between pc sets has the potential to provide structural insight into Somers' music, which often surpasses conventional analytical methodologies.

The consistent and idiosyncratic use of intervals 1, 5, 7, and 11 offers a degree of continuity in the sound-world that Somers' music creates. Indeed, his music often reaches back to the sound-world(s) of the past for guidance, formal

[2] Arnold Schoenberg, "Linear Counterpoint," in *Style and idea: Selected writings of Arnold Schoenberg*, ed. Leonard Stein, trans. Leo Black (New York, 1950), pp. 289–95.

structure, and inspiration. However, a backward-looking direction of composition was not Somers' intention, and despite his stylistic approach to composition during his early years, he clearly always sought to remain relevant in his own present time. Yet, for Somers, avoiding or rejecting the musical past had nothing to do with being relevant or significant with regard to his own time. Even with all of the references to the past, Somers never thought of his assimilative technique as direct borrowing from a past literature. Instead, he embraced as wide a technical knowledge as possible in order to create something unique and new to his own ear—a sound-world indicative of his own peculiar environment that he could call his own. For that reason, his music is less a product of past musical convention than it is an original and innovative contribution to the contemporary Canadian musical literature. As Somers wrote in 1948:

> To me significant music is that music which is an individual expression, music which contributes to, rather than borrows from, the literature of music; which speaks in a way I haven't heard before; which interprets life in such a way as to broaden my experience and see things as I haven't seen them before. (Somers, 2009, p. 9).

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# Appendices

Appendix I

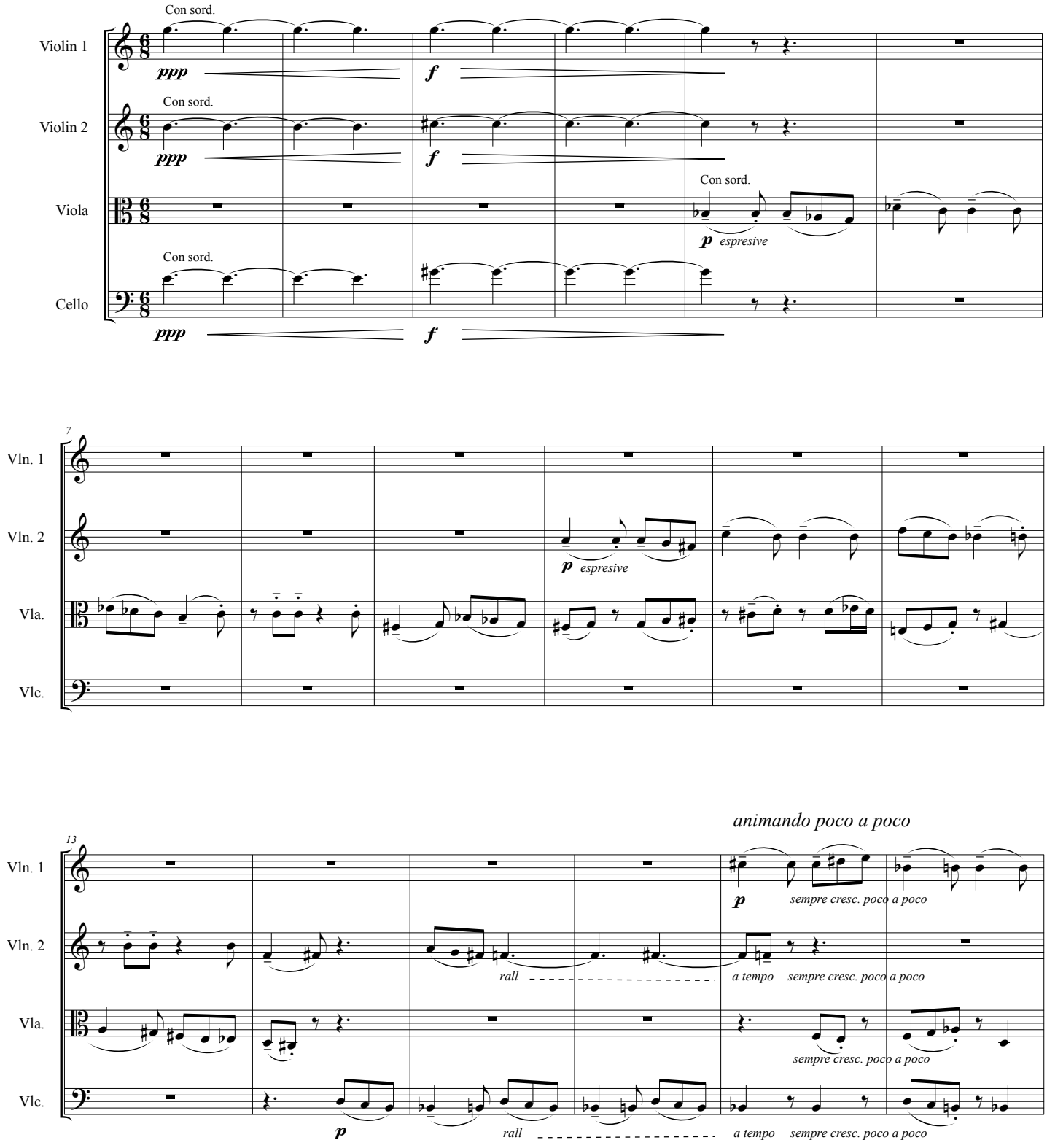
(String Quartet No. 2, 1st Movement, mm. 1–40)

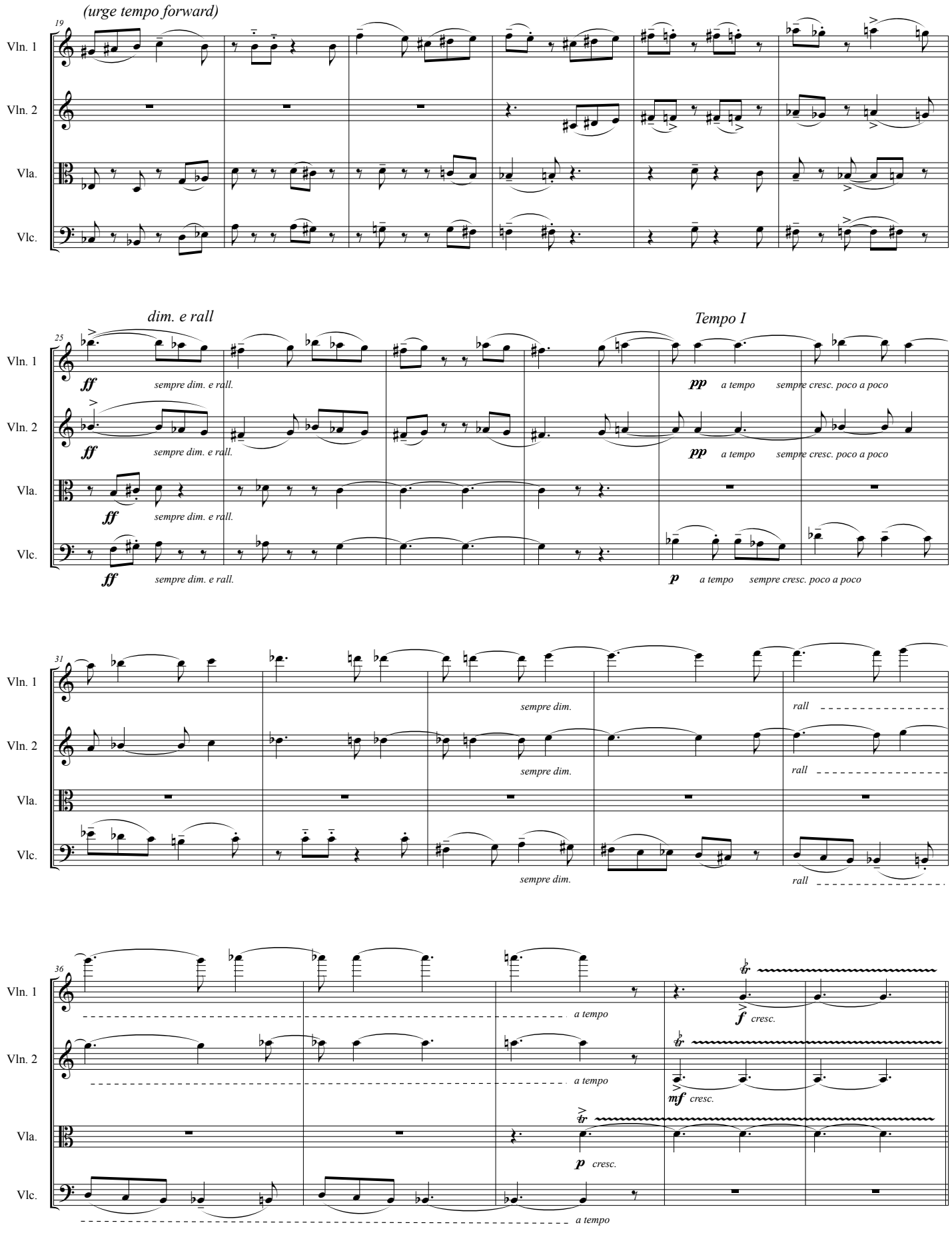
# 2nd String Quartet

1st movement

Harry Somers

**Andante** ♪ = 116



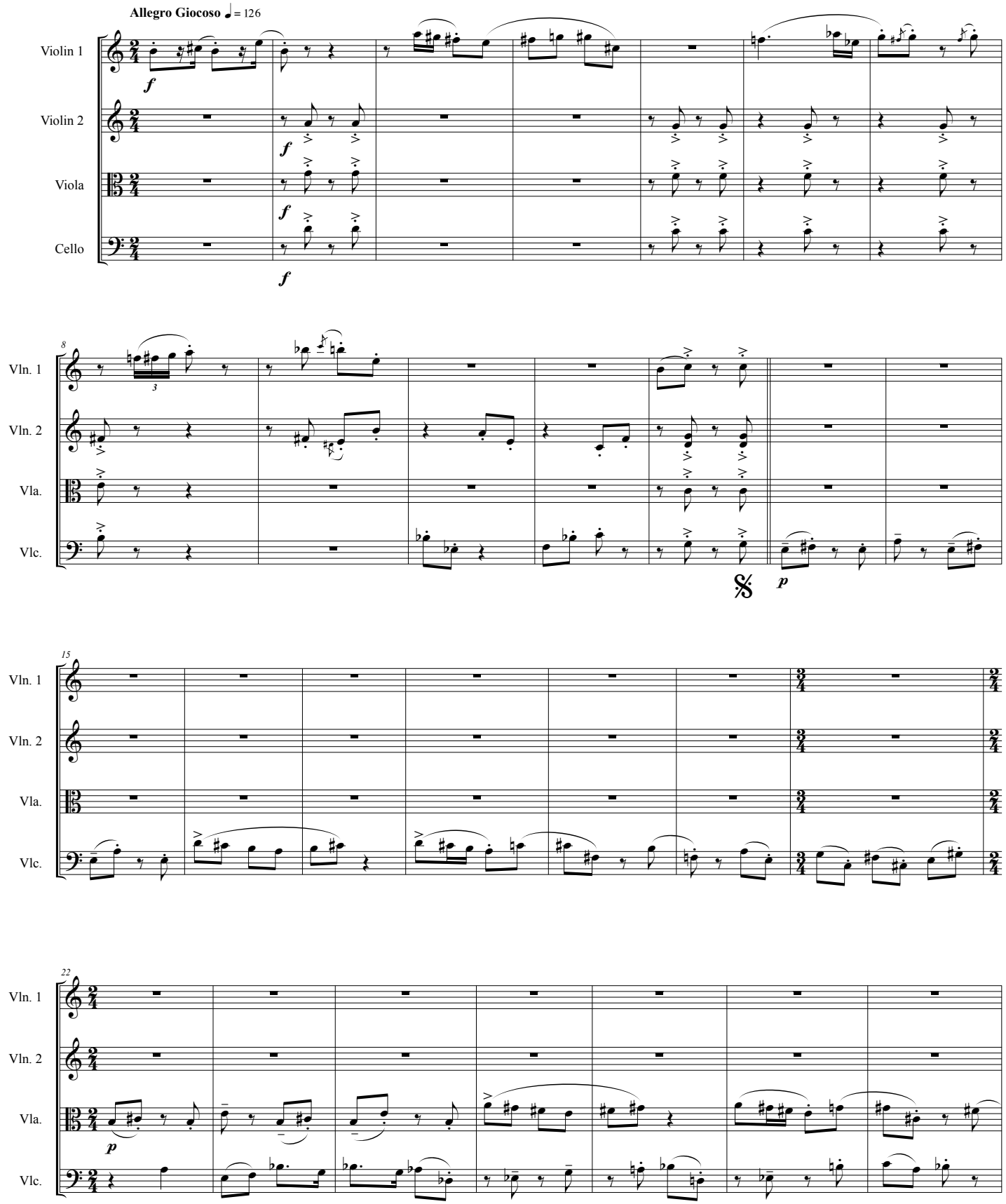

(urge tempo forward)
19
Vln. 1
Vln. 2
Vla.
Vlc.
dim. e rall
Tempo I
25
ff
sempre dim. e rall.
pp
a tempo
sempre cresc. poco a poco
p
31
sempre dim.
rall
36
a tempo
f
cresc.
mf
tr

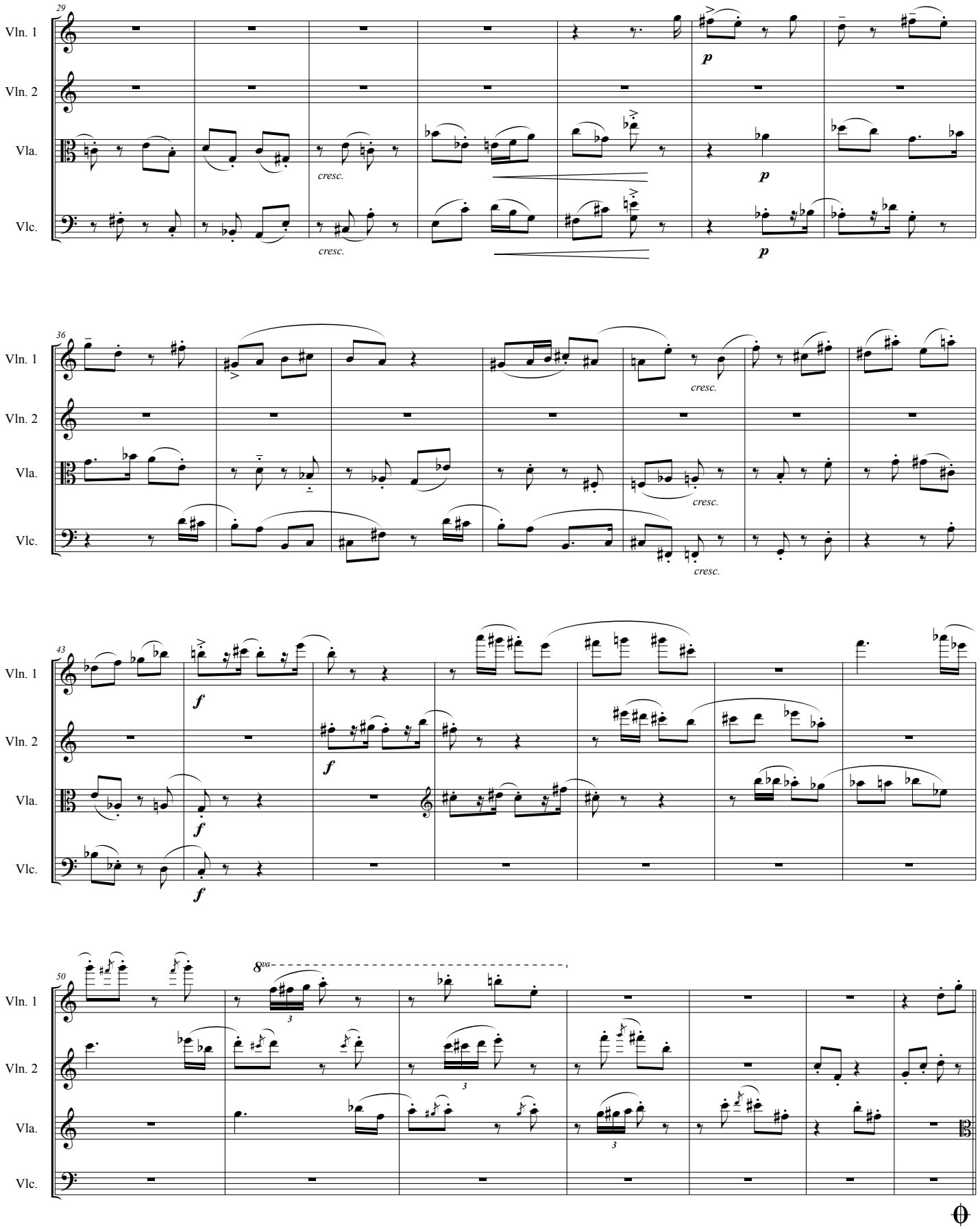
Appendix II

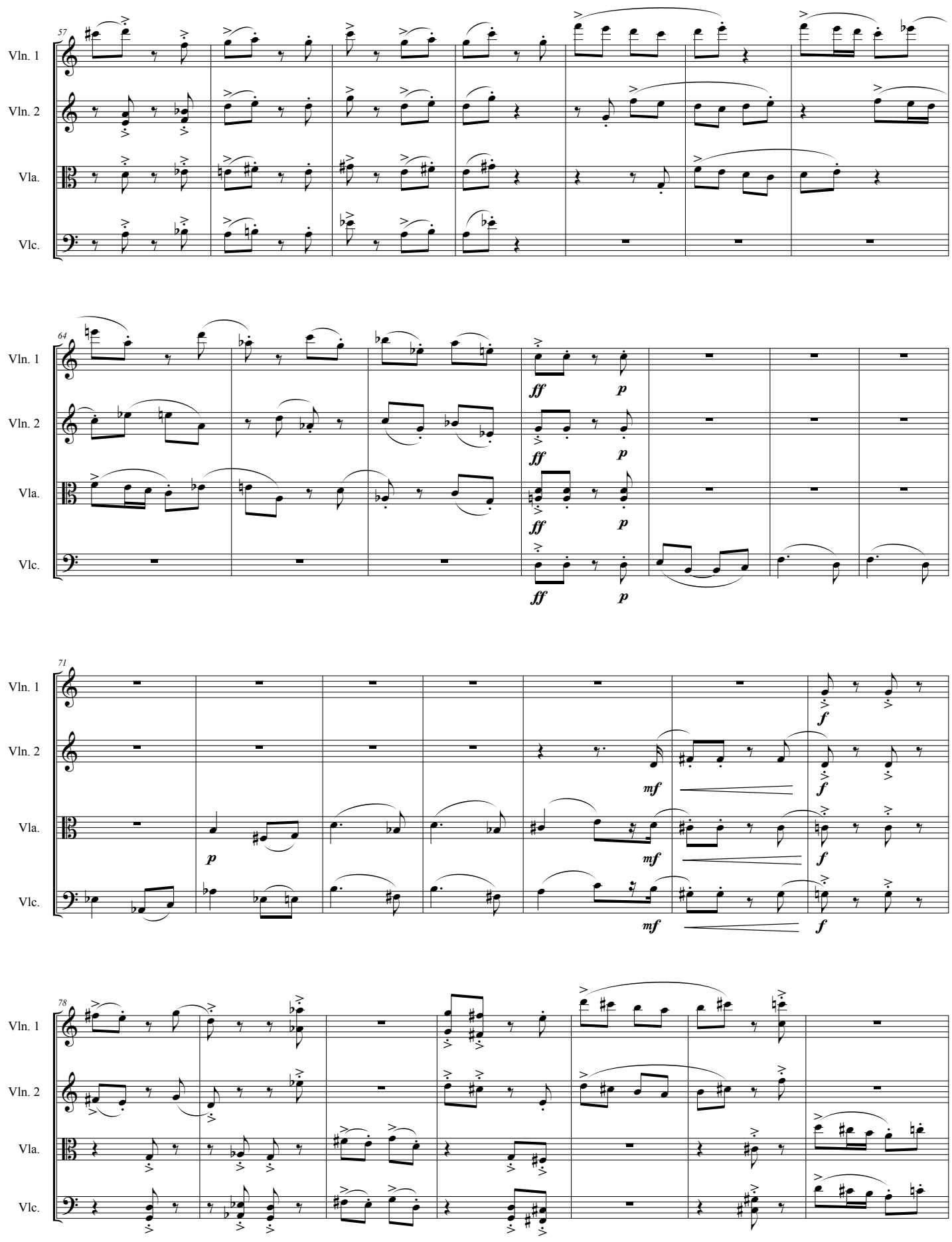
(String Quartet No. 2, Interlude #2)

# Interlude #2

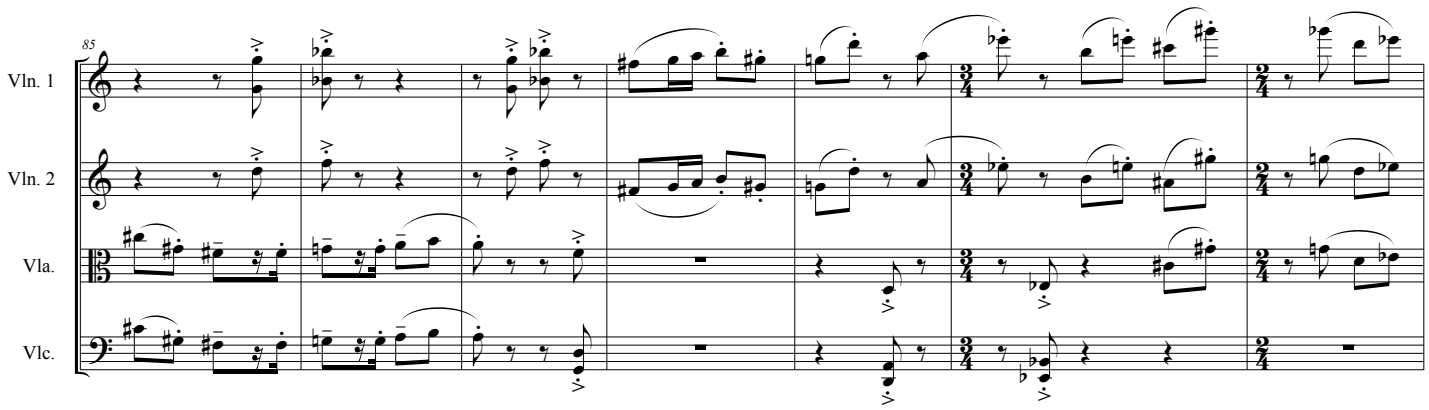
Harry Somers

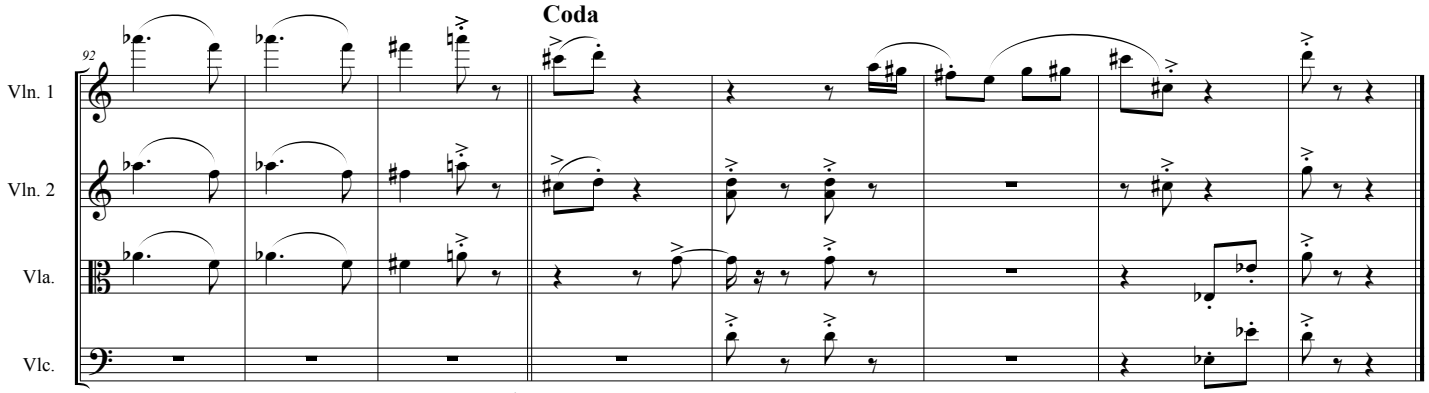



29
Vln. 1
Vln. 2
Vla.
Vlc.
p
cresc.
36
43
f
50
8va
3





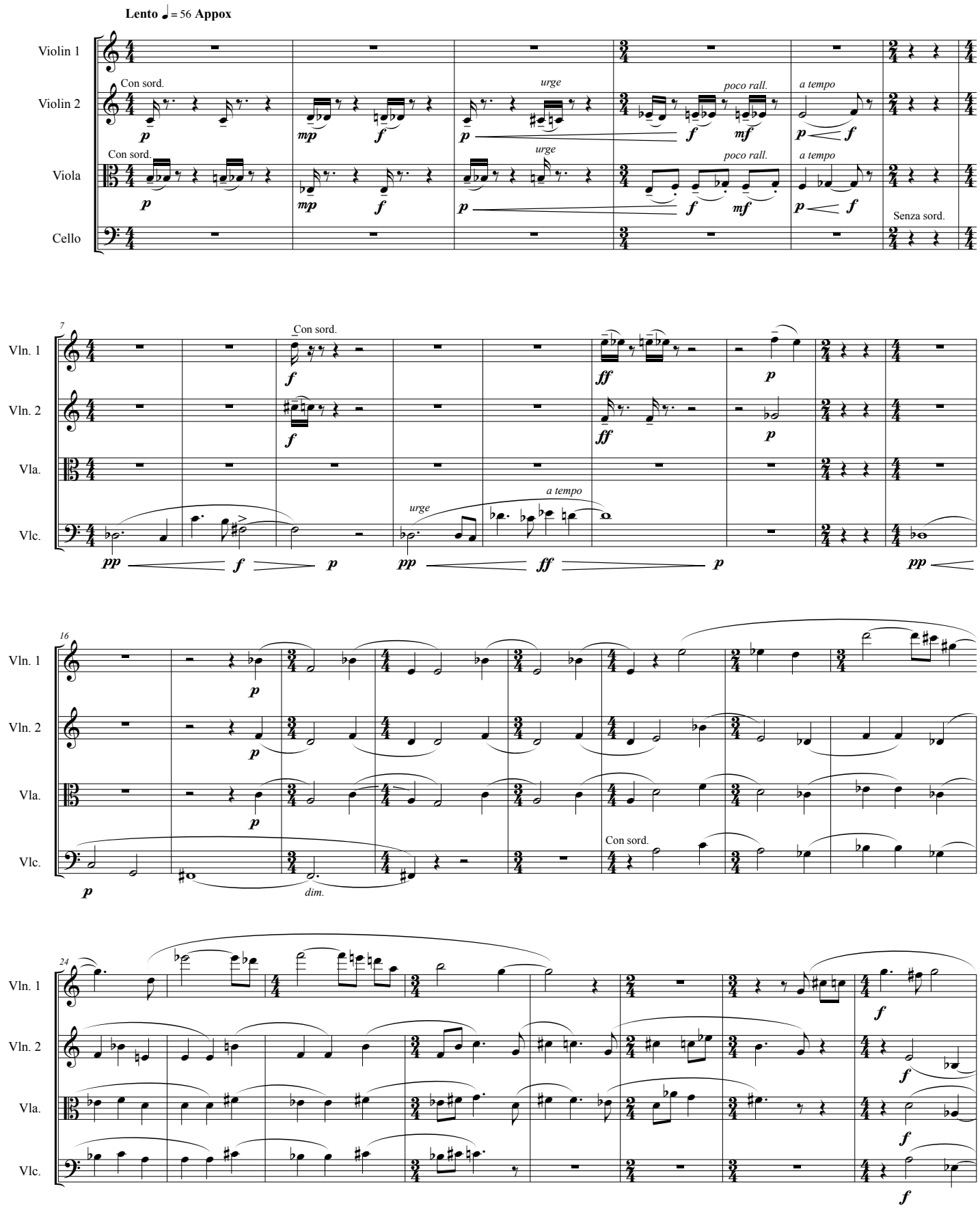

D.S. al Segno

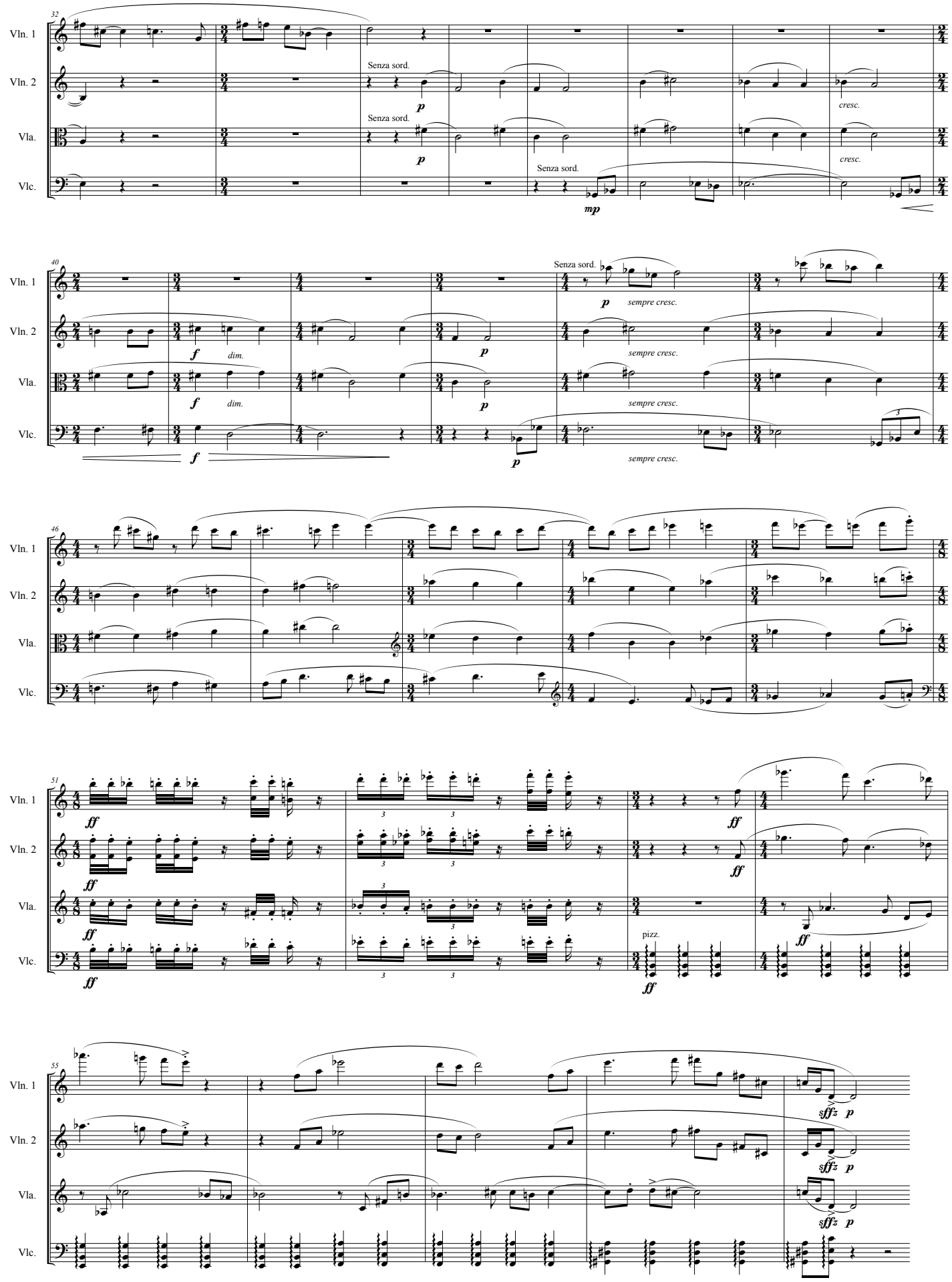
Appendix III

(String Quartet No. 2, 3rd Movement, mm. 1–59)

# 3rd Movement

Harry Somers




32
Vln. 1
Vln. 2
Vla.
Vlc.
Senza sord.
p
cresc.
mp
40
f
dim.
sempre cresc.
46
51
ff
pizz.
55
sffz