Larry Bell's *String Quartet No. 3: Homage to Beethoven*

by

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I. Introduction

In this paper, I examine Larry Bell's 2004 *String Quartet No. 3: Homage to Beethoven*, op. 71, in order to illuminate the detailed compositional approach taken for this major new work. One issue of significance is how new music is shaped by our rich musical heritage. In particular, this work was heavily influenced by the late quartets of Beethoven. Therefore, a major goal of this analysis is to identify the many parallels between Bell's *String Quartet No. 3* and the late Beethoven quartets.

This study is organized into nine parts. Following a brief introduction in this Section I, Sections II and III provide overviews of Bell's quartet and the late Beethoven quartets, respectively. I then consider the harmonic linkages between these works in Section IV and compare the form of Bell's quartet to Beethoven's op. 131 quartet in Section V. Motivic and rhythmic relationships are summarized in Section VI, while tempi and orchestration relationships are covered in Sections VII and VIII, respectively, and concluding comments are given in Section IX. Appendix A contains details relating to the origins and use of the specific pitch materials used by Bell for this work.

Throughout this paper, upper-case letters are used to indicate pitches and major keys, while lower-case letters are used to indicate minor keys. This format is followed except when directly quoting other sources, in which case the format used by the source will be followed. Any ambiguity of key in quoted sources will be clarified within the quotation.

Much of this paper could not have been written without Larry Bell's personal generosity and openness in describing in detail the musical origins of this work, his compositional methods and approach, and the many influences of late Beethoven. His assistance with this project is

therefore very gratefully acknowledged. Of course, any errors or misstatements in this paper are my sole responsibility.

II. Overview of Bell's Quartet

In 1992, Larry Bell discussed the ongoing evolution of his compositional approach over time (1992, 43 – 47). He described a "new interest in an old idea – tonality" on the part of a number of composers which, for him, had its roots in quotation, either actual quotation or style quotation (1992, 43). In his *Homage to Beethoven*, Bell does not use direct quotation. Nevertheless, these pieces are in ways so strikingly similar that they almost feel as if they are cut from the same bolt of cloth. In part, this is achieved by the way Bell has selected and used his specific set of pitch materials which give them a modal (Lydian or Mixolydian) flavor, not unlike the middle movement of op. 132. More important are the many other similarities that exist between Bell's quartet and the late Beethoven quartets. Bell's program notes for his quartet provide an overview and outline some of the parallels to late Beethoven:

> As the subtitle *Homage to Beethoven* suggests, my quartet owes a great debt to Beethoven's last five quartets, in particular Opp. 131 and 132. My seven-movement, arch-like structure, with its opening fugue and central variations flanked by two scherzi, mirrors the structure of Beethoven's Op. 131. The use of double variations and two brief cadenzas, first for 'cello and later for violin, resembles the Lydian-mode movement (III) and the virtuosic solo violin writing in Op. 132. Unlike Beethoven's characteristic

> confrontation with fate, however, a sense of lightness and humor pervades this work. There is no attempt here at quotation. Instead, I wished to pay tribute, in my own way, to the music that has continually sustained me as a listener and that has always inspired me to a higher level of compositional achievement.
>
> The character of the music represents my own particular synthesis of tonality, lyricism, and polyphony that grew out of a love for both string instruments and the human voice (Works: Op. 71).

These remarks only hint at the many linkages to Beethoven. While the form of Bell's quartet is derived from that of op. 131, a careful comparison yields many structural parallels beyond Bell's summary including durations of movements, movement-to-movement transitions, and others. Motivic and rhythmic similarities abound, as do tempi relationships. Furthermore, the two composers use the string instruments of the standard quartet in much the same ways: for example, both use a strikingly similar range of pitches, and neither requires harmonics.

Among the many similarities between the works, the following stand out as providing the greatest sense of unity between Bell's quartet and late Beethoven: Bell's particular use of harmony and lyricism in this work; his pervasive use of polyphony (both Bell's quartet and op. 131 open with a fugue, for example); the way the four voices of the quartet interact; the specific motivic and rhythmic gestures that are used; and the similarities in orchestration or use of the instruments of the quartet. Style quotation is thus the essence of Bell's *Homage to Beethoven* and the source of the affinity between these works.

In one fundamental way, these works differ considerably. Bell's approach to tonality is entirely different from Beethoven's. In his compositional technique, Bell frequently uses a

predefined set of pitches in a particular way. He has illustrated his method of employing a specific hexachord and described his "synthesis of serial techniques, conventional symphonic development, and hexachords used as modes or tonalities" (1992, 45 – 47). His use of predefined material, consisting of a set of scale-like or mode-like hexachords, was expanded significantly for this larger work. The specific origins of Bell's pitch materials are derived from one harmonic progression in Beethoven's *Grosse Fuge,* op. 133 (originally the finale of his op. 130 quartet). These are identified and their use is discussed in Section IV with supporting details provided in Appendix A.

III. Overview of Late Beethoven Quartets

Much has been written about the three creative style periods in Beethoven's life, typically characterized as imitative, heroic, and late (Bonds 2003, 381 – 382). Among the defining factors of Beethoven's style periods "are the significant changes in Beethoven's inner life, in his fundamental modes of patronage, and indeed in the Viennese *Zeitgeist* at large" (Kerman 1994, 8). Solomon claims that there was "what appears to be a striking metamorphosis is Beethoven's systems of beliefs" that "amounted to a sweeping realignment of his understanding of nature, divinity, and human purpose" (2003, 2). Kerman also discusses "developments in the history of the string quartet" that occurred during the course of Beethoven's life (1994, 8). Kerman relates these developments to the differences in the audiences for these works. In the early period when Beethoven composed the six op. 18 quartets, the audience primarily consisted of devoted amateurs who played them. In the middle period Beethoven composed the three quartets of op.

59 as well as opp. 74 and 95. These quartets required professional players of a high caliber and the audience was a public concert audience. The final period quartets include opp. 127, 130, 131, 132, and 135, as well as the *Grosse Fuge,* op. 133. For these, the audience was the composer himself (Kerman 1994, 8 – 27).

In parallel with these evolutions, the audiences' receptions to these works grew increasingly hostile as the music grew in complexity and ambiguity (Kerman 1994, 16; Mason 1947, 85; Solomon 2003, 34 – 35). Even the second-period quartets "breathe in a different world" where "the critic may find himself at sea" (Kerman 1979, 90). The third-period quartets "were so different that they left the original audience quite bewildered and the critics divided, despite a concerted attempt to come to grips with them" (Chua 1995, 3). Kerman discusses the extent of the rejection of these third period quartets and the "subsequent change of attitude toward this body of music" over time as leading to their current position as among the "most admired" (1979, 191 – 192). "The twentieth-century consciousness has been able to respond very directly to something in the expressive content of the late quartets—something overreaching and pure and characteristically indefinable" (Kerman 1979, 192 – 193).

Kerman notes numerous stylistic changes in the late quartets (1979, 193 – 196): a growing importance of motivic and thematic materials; a refinement and sensitiveness in the part-writing; increased importance of form, both within individual movements and among movements linked together in imaginative ways; and a growing preoccupation with formal counterpoint through use of fugue, canon, and chorale. Beethoven explores new ideas in harmony related to modulation, cadence structure, and use of old church modes. According to Kerman,

> an attendant sense of spiritualization . . . has struck all commentators without eliciting from them very much in the way of verbal articulation. Principally, perhaps, it is the whole matter of musical contrast which is treated most radically, and which as a result opens up whole new unexpected areas of consciousness. Since formal principles such as that of sonata form depend first of all upon contrast, these principles too now yield patterns of unprecedented flexibility and expressive force (1979, 194).

Thus one finds "a striking new directness of emotional appeal" and a "songfulness" in the last quartets with "lyricism in all its manifestations" through the use of recitative and aria, lied, hymn, country dance, and theme and variations (Kerman 1979, 194 – 196).

Together Joseph Kerman, Alan Tyson, and Scott Burnham provide a concise description of the late quartets in their discussion of Beethoven's late-period works (2007). Numerous authors give detailed analyses and descriptions of the quartets. Daniel Chua's analyses of the Galitzin quartets (opp. 127, 132, and 130) are exhaustive (1995). In this author's opinion, Joseph Kerman provides the best single reference on the quartets in terms of the thoroughness and insightfulness of the analyses and discussions (1979).

IV. Harmonic Linkages

As previously mentioned, Bell's approach to tonality is very different from Beethoven's. Nevertheless, specific harmonic linkages occur between these works in terms of the precise source of Bell's pitch material and the way in which this material is used. The origin of the pitch materials for Bell's quartet is a certain harmonic progression in Beethoven's *Grosse Fuge*, op. 133 that Bell found particularly appealing. Figure 1 shows an excerpt from the *Grosse Fuge* beginning at m. 49 (Beethoven 1998, 162; Kinsky 1955, 404 – 405). If we examine the fourth beat of m. 50 (eight measures before rehearsal letter A), we find the following pitches: A♭, B♭, C, D, E♭, and F. This forms Bell's first hexachord. Two beats later (including both the second and third beats of m. 51) we have the pitches: B♮, C, D, E♭, F, and G. This is the second hexachord. Note that it has four pitches in common with the first hexachord. Figure 2 shows these first two hexachords with their inversions, arranged so that the quarter notes (black notes) represent the pitches that are common to the previous hexachord when read from left to right. This convention is followed in the presentation of the complete collection of hexachords in Appendix A.

Figure 1. Excerpt from Beethoven's *Grosse Fuge* beginning at m. 49.

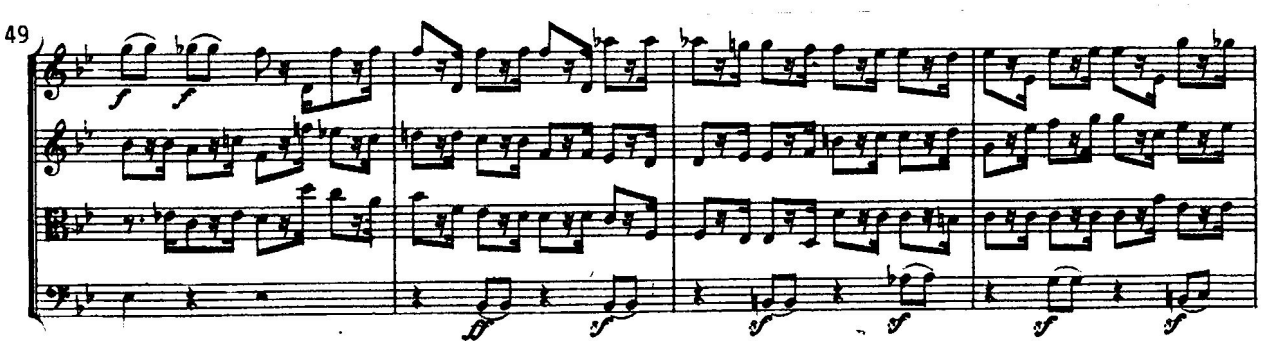
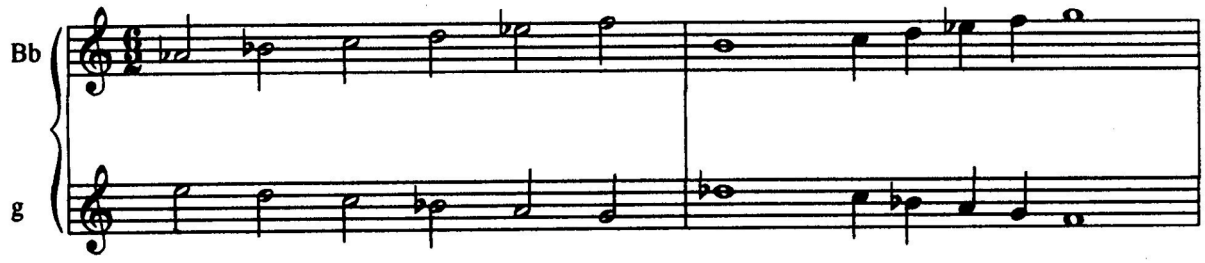


Figure 2. First Two Hexachords Derived from Beethoven's *Grosse Fuge*, With Inversions.



Of the ten hexachords in this set, nine were derived from this region of the *Grosse Fuge*. Once Bell began composing his quartet, however, he realized that a tenth hexachord was needed in order to use all of them as he had intended to create the type of melodic and harmonic musical expression that he wanted. He therefore created a tenth hexachord as a transposition of the first hexachord in order to provide a greater homogeneity of the interval content and to provide more of a sense of return.

Identifying all of the source material for the hexachords is not quite as simple and straightforward as just described. The remaining hexachords require pitches from more than one beat, or there are pitches included in a particular hexachord not available in the examined region of the *Grosse Fuge*. These issues are addressed in Appendix A.

Once the first set of hexachords was determined, it was inverted to create a second set. These two sets were then transposed down by a minor third three times to create a total of eight complete sets having ten hexachords each for a total of eighty hexachords. These are all given in Appendix A.

We can examine the pitches in the first hexachord (B♭, C, D, E♭, F, and A♭) to see if it represents any type of harmonic scale or mode. This set of pitches is similar to B♭ major, but missing the sixth scale degree while having a lowered seventh scale degree. A major scale with

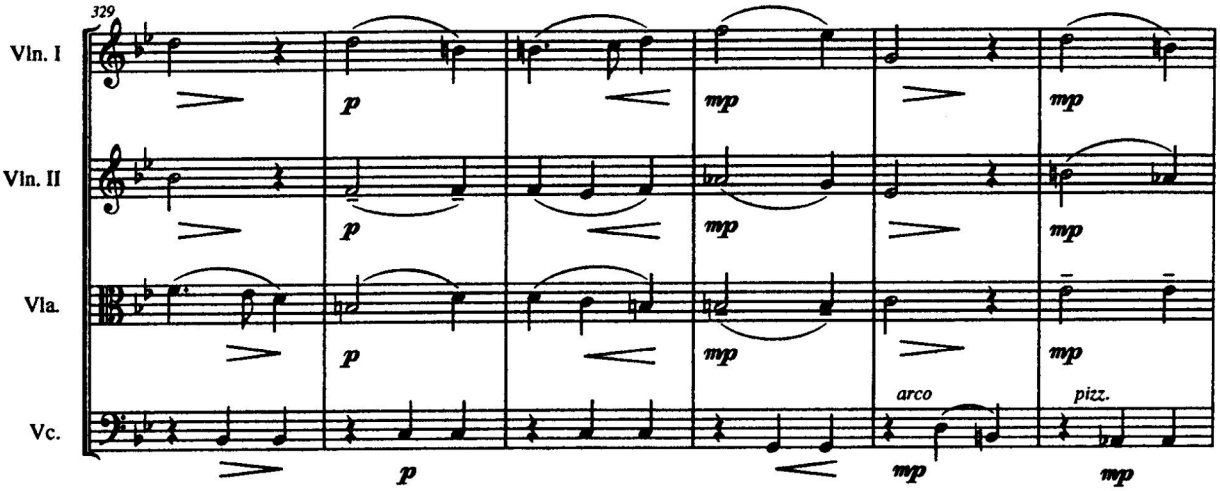
a lowered seventh scale degree is identical to the Mixolydian mode. Recall that Beethoven uses the Lydian mode for the central movement of op. 132. Bell identifies this entire set of hexachords as a B♭ set. The inversion of this set using C as a fulcrum yields the following pitches: G, A, B♭, C, D, and E as shown in Figure 2. This is similar to g minor with a raised sixth scale degree and without the seventh scale degree. The raised sixth degree is the same as the rising melodic form of the minor scale, as well as the Dorian scale. Bell identifies this hexachord as a g set. The C fulcrum was chosen in order to obtain modes resembling a major/minor pair of scales.

Bell identifies sets that are minor-third transpositions with similar naming conventions. Thus, the eight sets are identified by Bell as follows: B♭ and g, G and e, E and c♯, and D♭ and b♭. Note that the harmony formed when used together as separate pitches (E, G, B♭, and D♭; or c♯, e, g, and b♭) forms a fully-diminished seventh chord. Uses of minor-third key relationships along with relative major/minor pairs are also common for Beethoven. Louis Lockwood discusses Beethoven's use of cycle of thirds key relationships in his late works (2003, 380 and 398), and describes his use of modality inspired principally by Bach but also by Palestrina and others (2003, 366 – 367). Larry Bell's uses of modal allusions are primarily drawn from Lennon and McCartney songs of the 1960s (personal communication).

Bell's compositional approach to using these hexachords was for the most part straightforward. The material he composed first was the fourth movement (Double Variation, beginning at m. 326). He used the pitch material in the first hexachord (the first one in the B♭ set) for four measures, and then used the second hexachord of this set (for two measures), then the third (for four measures) and so on until all ten hexachords had been used. At this point (m. 357) there is a double bar, a change of character, and a new set of hexachords begin.

Shifting from one hexachord to the next can be more complex. In this Double Variation section, for example, the first hexachord in the B♭ set is used strictly in the first four measures and the second hexachord is used in the next two measures. By strictly, I mean that only pitches from a particular hexachord are found. However, in shifting from the second to the third hexachord in m. 332, more than one hexachord is used. Figure 3 shows this region of the score. On the first two beats of this measure, the first violin's half note F is only available in the second hexachord (and not the third) while the second violin's half-note A♭ is only available in the third hexachord (and not the second). The viola's half-note B♮ is available in both, while the cello rests on the first beat and enters on the second with a quarter-note C that is available in both hexachords. Therefore, use of the hexachords is mixed on the first two beats of this measure. On the third beat of this measure, all pitches are available in the third hexachord for all instruments, and we proceed in the subsequent measure using only the third hexachord. Because of the similarity of adjacent hexachords (typically sharing four of the six pitches), the transition

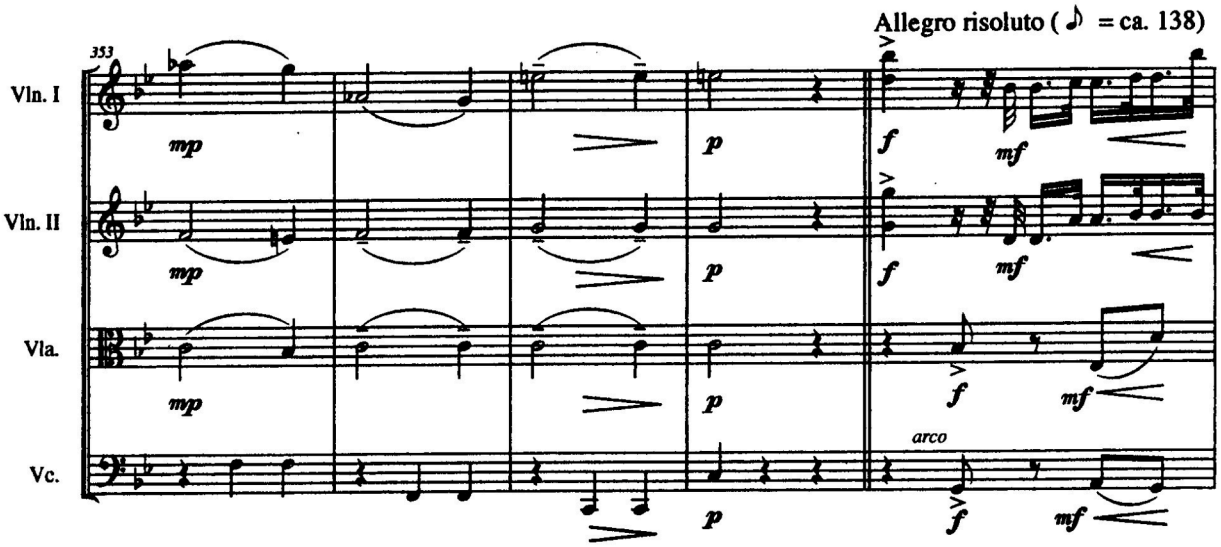
Figure 3. Excerpt from Bell's Quartet at m. 329.



is smooth and not audibly detectable. One of Bell's teachers, Roger Sessions, was also fond of using hexachords in a free, unordered manner.

The transition in m. 347, occurring after the second beat, from the seventh to the eighth hexachord is straightforward. The transition in m. 353 from the ninth to the tenth hexachord is more complex. This portion of the score is shown in Figure 4. The A♭ on the first two beats in the first violin exists only in the tenth hexachord, while the B♭ on the third beat in the viola exists only in the ninth hexachord. Therefore, a mixed use of the two hexachords occurs during this entire measure. Once again, however, the transition occurs smoothly.

Figure 4. Excerpt from Bell's Quartet at m. 353.



I have meticulously studied Bell's entire quartet to analyze his use of these hexachords. This analysis was assisted by Bell's use of key signatures, since the set of hexachords generally (but not always) follows the given key signatures. In many cases, one is uncertain whether the set of hexachords is the "major" set or its "relative minor." These quotation marks indicate that

these are not really tonalities but merely identifiers of a particular set of hexachords, which may resemble a mode or scale. This is further complicated by the fact that application of a set of hexachords may include employing them in retrograde or in any other order. Further, they may shift between the major and relative minor pair within a section; the hexachord set may not match the key signature; and, very importantly, frequently the complete set of pitches in a particular measure may be found in a number of hexachords within a set. Given these challenges, a degree of ambiguity exists in identifying precisely which hexachord obtains. Notwithstanding these uncertainties, Table A1 in Appendix A contains my best assessment of which set of hexachords are employed throughout the course of the work.

The hexachord at the opening of the quartet is ambiguous. If consistent with the key signature of four sharps, it is either c♯ or E. The argument for c♯ is quite strong. This is the opening key (and the home key) of Beethoven's op. 131, after which this work is modeled in a number of ways. In addition, the opening three measures all use the first c♯ hexachord. Then, m. 4 begins using the second c♯ hexachord, which has the pitch B not found in the first hexachord. We encounter trouble with an A♯ that is in the opening and continues to recur, however, because this pitch is not in the second c♯ hexachord. Therefore, to believe that this begins in c♯ requires repeated oscillation (within each measure) between the first two hexachords for at least five measures, or the repeated use of a pitch not in a particular hexachord. If one considers the work to begin in E, the argument begins more weakly as the opening measure uses the eighth E hexachord followed by the ninth E hexachord in the second measure. If one looks at the entire movement, however, there is a fairly logical sequence of working through the E hexachord set in retrograde. E is the first pitch we hear, and the raised fourth scale degree gives a Lydian flavor to the opening reminiscent of the middle movement of Beethoven's op. 132. Further, the entire

work ends unambiguously in E. Therefore, I have indicated E as the opening hexachord of the first movement. One could also interpret the movement as beginning with the c♯ hexachord but quickly shifting to the relative major hexachord of E. This illustrates the difficulty of determining exactly which set of hexachords is employed at any particular point in the work. This mirrors the harmonic ambiguity in the Lydian third movement of Beethoven's op. 132 (Kerman 1979, 255 – 261).

Near the end of the last movement, the key signature changes at m. 1627 to two sharps, implying the key of D or b. There are no hexachords constructed around these keys. At this climactic moment of the work, Bell realized that he had to choose either to continue to adhere to use of the hexachords that he had mapped out for the piece or to abandon them (personal communication). For dramatic purposes he chose the latter. In fact, he shifts to this new tonality at m. 1599, before the key signature change. He returns to the constructed set of hexachords at m. 1655 and ends the work unambiguously in the tonality of E. Note that if we view the hexachord sets as representing a diminished seventh chord with B♭ as its root, then the transition from B♭ to b to E that takes place is similar to [vii^{o7}] to v to I.

This analysis illuminates the manner in which Bell employed these sets of hexachords. They were more of a guide and a source of inspiration and pitch material rather than an ironclad, inflexible system to be blindly followed. In the end, the ear, the mind, and the sensibilities of the composer ruled the day, as they always should.

This analysis also shows that Bell's expression of tonality is very different from Beethoven's. While Bell uses many of the same aspects of tonality such as leading tones, root progressions by fifths, resolutions of tritones, triadic successions, and extended dominant preparations, he has effectively reinterpreted tonality in his own contemporary, idiomatic voice.

V. Comparison of Forms

While the form of Bell's quartet is derived from Beethoven's op. 131, close examination yields many more similarities in the forms of these two works including durations of movements, movement-to-movement transitions, and others. Table 2 gives the overall character designations and form or type of each movement of op. 131 along with those of Bell's quartet. Note the many similarities, both in terms of character and in terms of form or type. Both open with a fugue; their second movements are *vivace* scherzi; the third movements are cadenzas or cadenza-like (*liberamente* means freely); both have *andante* variation fourth movements, *presto* scherzi fifth movements, song-like sixth movements, and *allegro* seventh movements.

Table 2. Form of Beethoven's Op. 131 and Bell's *String Quartet No. 3.*

	Beethoven		Bell	
Movement	Character	Form, Type	Character	Form, Type
1	*Adagio ma non troppo e molto expressivo*	Fugue	*Andante con moto*	Fugue
2	*Allegro molto vivace*	Dance, Scherzo	*Vivace*	Scherzo
3	*Allegro moderato*	Recitative	*Liberamente*	Cello Cadenza
4	*Andante ma non troppo e molto cantabile*	Theme and Var.	*Andante con moto*	Double Var.
5	*Presto*	Scherzo	*Presto*	Scherzo
6	*Adagio quasi un poco andante*	Song, Cavatina	*Liberamente*	Violin Cadenza
7	*Allegro*	Sonata Form	*Allegro grazioso*	Rondo

Another interesting comparison relates to the durations of the individual movements. Table 3 gives the time span of each movement, and each movement's fractional duration relative to the entire work, for selected performances of both works (Beethoven performed by LaSalle Quartet 1997; Bell performed by Borromeo String Quartet 2005). Note that op. 131 contains three short movements (3 minutes or less), three moderate-length movements (6 to 7 minutes in length), and one long movement in the middle. Bell's longest movement is also the middle movement, but it is only slightly longer (by less than a minute) than the other three movements of moderate length (6 to 7 minutes). Bell also has three short movements, each well under 3 minutes in duration. Note that Bell gives more weight to the scherzo second movement than to the opening fugue than does Beethoven. This seems consistent with Bell's desire to achieve a "sense of lightness and humor" rather than "Beethoven's characteristic confrontation with fate"

Table 3. Movement Durations for Beethoven's Op. 131 and Bell's *String Quartet No. 3.*

	Beethoven		Bell	
Movement	Duration	% of Total	Duration	% of Total
1	6'54"	18	2'11"	7
2	2'59"	8	6'51"	20
3	0'45"	2	2'11"	7
4	13'32"	35	7'35"	22
5	6'04"	15	6'40"	20
6	1'56"	5	2'06"	6
7	6'39"	17	6'11"	18
Totals:	38'49"	100	33'45"	100

(Bell Works: Op. 71). Kerman describes the opening of Beethoven's fugue as bleak, while Wagner called it "surely the saddest thing ever said in notes" (Kerman 1979, 331; Wagner 1870, 97). Bell's second movement includes a reprise of the fugue towards the end of the second movement at m. 211. This adds weight to the fugue, making the form of Bell's quartet more like that of op. 131 than might first appear. Aside from the opening two movements and the longer length of Beethoven's fourth movement, the movement durations are remarkably similar.

Another form-related aspect that provides an interesting comparison is the movement-to-movement transitions. According to Kerman, Beethoven's connections are

> an altogether "original" idea—and one that has not been followed much, even in a hundred and fifty years . . . Beethoven carefully avoided writing the customary thick double bar between any two of the movements. To be quite precise about it, the players are required to move in strict rhythm from No. 2 to 3, 3 to 4, and 6 to 7, and are required to move directly after a *fermata* note or a *fermata* rest from No. 1 to 2, 4 to 5, and 5 to 6 (1979, 326).

The various movements of the Bell quartet are connected in exactly the same way. The note- and rest-values are different, but the movement-to-movement connections of Bell's quartet can be described using identical words and the impact of such transitions on the overall work is significant. According to Kerman, part of the uniqueness of op. 131 lies in "the mutual dependence of its contrasted parts, or as some will prefer to put it, their organic interrelation" (1979, 326). By connecting the movements as Beethoven has, the "confrontation between the contrasting members becomes explicit" (Kerman 1979, 327). This small detail, along with the other aspects of form that have been described, help to give Bell's quartet a part of its striking similarity to op. 131.

VI. Motivic and Rhythmic Relationships

One striking similarity between the late Beethoven quartets and Bell's quartet is the use of motives and repeated rhythmic patterns so characteristic of Beethoven. Such an approach was not always well received. Glenn Gould, for example, states that some of Beethoven's music

> is a study in thematic tenacity . . . The themes as such are usually of minimal interest but often of such primal urgency that one wonders why it took a Beethoven to think them up. And the elaboration of these motives is . . . determined, combative, and resistant to concession . . . No one had ever composed with such belligerent an attitude; in some respects, no one has done so since. When it works—when Beethoven's furious onslaughts find their mark—one feels the music's rhetorical demands have been transcended by an affirmation at once personal and universal. But when they do not succeed, these compositions . . . are victimized by that same relentless motivic pursuit (1984, 52 – 53).

An excellent example of this type of repeated rhythmic pattern in Beethoven occurs in the *Grosse Fuge* in precisely the region that provided the pitch material for Bell's quartet. A brief excerpt is given in Figure 1 of Section IV (page 10, above). It shows the repeated pattern of an eighth note followed by a sixteenth rest and sixteenth note, played in the violins and viola above the fugue subject in the cello, which is stated in tied eighth notes. I think this is one of those transcendent passages to which Gould refers.

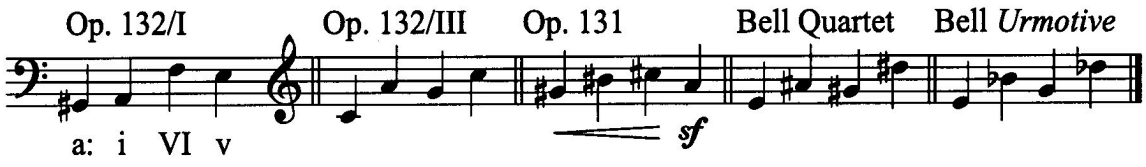
Bell uses a similar approach in his quartet. In his first *scherzo*, beginning at m. 35, a pattern of dotted eighth note followed by a sixteenth and an eighth note is repeated with

Beethovenian insistence. Another such pattern (consisting of a dotted sixteenth followed by a thirty-second note) is repeated in the double variation movement beginning at m. 357 (shown in Figure 4, page 14). These rhythmic style similarities further connect Bell's quartet to Beethoven.

Another similarity in this category may be found in Bell's second *scherzo* at m. 503, which is marked *presto*, in cut time, with a metronome marking of whole note = ca. 138. This rhythmic pattern (mostly quarter notes with half- and whole-notes) and energy relates to the fifth movement of op. 131, also marked *presto* and in cut time with similar rhythmic patterns.

A number of authors have commented on the apparent motivic integration of the late Beethoven quartets (Chua 1995, 7 and 11 – 12; Kerman 1979, 226). While I find no direct connection between the opening of Bell's quartet and the motivic material of Beethoven's late quartets, there are striking similarities that can be demonstrated with a few examples. Figure 5 shows the opening of Beethoven's op. 132 (including both the first and third movements) and op. 131, along with the opening of Bell's quartet and its fundamental (or *urmotive*) shape. In all of these, the first four pitches are shown with quarter-note time values for comparison rather than the actual durations given in the works. In both of the Beethoven quartets, the opening pitches of the first movements become harmonically structural during the course of these works. The first movement of op. 132 is in sonata form and opens in the key of a with the second key area in F. The first recapitulation is in the "wrong" keys, opening in e with a second key area in C. This is

Figure 5. Openings of Beethoven's Opp. 132 (I and III) and 131; Bell's Opening and *Urmotive*.



followed by the expected recapitulation with all material presented in the home tonality of a (except for the parallel major key of A being used for the second key area). These principal tonalities of a – F – e – C – a are equivalent to i – VI – v – III – i in the key of a, which is the same as i – VI – (i – VI)/v – i. Notice that the movement opens with the pitches A – F – E, which are identical to these principal tonalities, thus becoming structural. The opening of the Lydian-mode third movement of op. 132 is given for comparison to Bell's quartet, which is strikingly similar. In addition to their similar melodic shape, the tonality of Bell's quartet shares aspects of the modality of this Lydian-mode movement.

In op. 131, the fourth pitch of the fugue subject, A, is emphasized through dynamics (opening *crescendo* to a *sforzando* on A) and through duration (opening with a quarter note followed by two half notes and then the longest duration, a dotted half note, for A). In this quartet, the largest movement is the middle (fourth) movement (as shown in Section V), which is in the key of A. Thus A is a structural pitch.

One motivic aspect of Bell's quartet is certainly Beethovenian: His opening pitch material becomes harmonically structural during the work. The first pitch, E, opens and closes the entire work and represents two of the hexachord sets (E and e). The second pitch, A♯, enharmonically respelled as B♭, is also used for two of the hexachord sets (B♭ and b♭). Further, notice the pitches in the latter half of the second measure, with includes A♯, C♯ and E: Not only are these related to sets of hexachords, but the minor third intervals between them mirror the relationships among all of the hexachord sets. The *urmotive* shape is based on the hexachords: The characteristic, identifying modality of any hexachord set is included in the *urmotive*. Notice that the opening of Bell's fugue is simply a variant of the *urmotive* shape. A similarly shaped motivic fragment dominates the second movement, as well.

VII. Tempo Relationships

One of Bell's musically integrative techniques is an underlying sense of pulse, one that remains consistent throughout the work, or is connected in some way to the other tempi of the piece. His quartet opens in common time, with a metronome marking of a quarter note = ca. 69. The second movement opens (at m. 33) in 6/8 time with a metronome marking of a dotted quarter note = ca. 104. Thus the change in tempo for the second movement (marked *vivace*) is related to the opening (marked *andante con moto*) in the following way: the time required for one measure of the opening movement is equal to the time required for three measures of the second movement. This is because 104 is 50% faster than 69, thus for every four quarter notes of the beginning we hear six dotted quarter notes (equal to three measures) in the second movement. The two-measure *poco adagio* section (first seen at m. 41), which occurs in the second movement several times, is in 6/4 with a metronome marking of a dotted half note = ca. 52. This is half the tempo of the *vivace* and thus would yield three beats (a measure and a half) in the same time duration as one measure (four beats) of the opening of the work. At the other extreme, the *presto* of the fifth movement that begins at m. 503 is in cut time with a metronome marking of a whole note = ca. 138. Thus each measure in this section has a duration equal to an eighth note of the opening of the work (twice the tempo of the opening quarter note = ca. 69). Every tempo in Bell's quartet can be related in this way.

David Epstein has made an extensive study of tempo relationships like the ones in Bell's quartet: He calls it the concept of "proportional tempo" (1995, 101). According to Epstein:

> Otherwise described as the theory of continuous pulse, proportional tempo suggests that in works of multiple movements, or in single-movement works

> with different tempos (a Classical overture, for example, with slow introduction and subsequent allegro), all tempos are intrinsically related via a common pulse. The relationship arises from the organization of the work as a unified and coherent whole in which all movements, all ideas, stem from underlying formative concepts of shape. Thematic contours and rhythmic form are aspects of this shape; so, too, is the inner pulse that gives rise to tempo (1995, 101).

Epstein considers Beethoven's music, and provides a detailed examination of proportional tempo in several Beethoven works including an important late work: the Ninth Symphony (1995, 196 – 240). While he reports that this symphony "raises perhaps the largest number of questions regarding tempo . . . it tends to confirm the sense of proportional relationships among tempos in Beethoven" (1995, 227). In the end, he concludes that proportional tempo clearly

> affected the way Beethoven perceived tempo. Just as clearly, it arose from deeply embedded features of structure within Beethoven's music, adding thereby a temporal dimension of coherence to works that in many other parameters are extensively unified (1995, 239 – 240).

Proportional tempo can also be found in the late Beethoven quartets. Bell reports that when he listens to op. 131, he always hears the sixteenth notes in the *adagio ma non troppo e semplice* portion of the fourth movement (mm. 195 – 219) as having durations equal to the quarter notes in the *presto* fifth movement (personal communication). The performance of the LaSalle Quartet bears this out (Beethoven 1977). While their tempo for the *presto* is somewhat slower than that recommended by Kolisch's research (whole note tempo is approximately 112 per minute compared to the recommended value of 132), their tempo in the specified *adagio*

section is the same value of 112 for the quarter note yielding the proportional tempo as described (Kolisch 1993, 342). Bell sets up the identical relationship in his quartet. In the *andante con moto* section of the double variation fourth movement (m. 462), the metronome marking is a quarter note = ca. 69. The thirty-second notes are thus equal to 552, which is the product of eight and sixty-nine. The immediately following *scherzo* fifth movement (m. 503) is marked *presto* with a metronome marking of a whole note = ca. 138. The quarter notes in this section should also equal 552, which is the product of four and 138. Proportional tempo is therefore one further important element of Beethoven's style that Bell emulated in his quartet and that serves as a link between the two.

VIII. Orchestration Relationships

Another striking similarity between the late Beethoven quartets and Bell's quartet is the way the instruments of the string quartet are treated. I have examined Beethoven's use of the instruments in op. 131 for comparison to Bell's quartet. One area examined is the total pitch space used, from lowest to highest pitches. Both composers use the lowest pitch available on the cello, which is C2. Beethoven uses this pitch relatively soon in m. 47, while Bell does not use this pitch until m. 193. The highest pitch used by Beethoven is C♯7, while the highest pitch used by Bell is one half step higher, D7. Both composers use these highest pitches sparingly and near the ends of their quartets. Bell uses D7 only once, on a quarter note in m. 1609 (out of a total of 1678 measures or 96% of the way through the work), while Beethoven uses C♯7 twice, first on a

quarter note in m. 1465 and again in m. 1469 (out of a total of 1521 measures, which is also 96% of the way through his work).

Both composers generally use all of the string instruments playing normally with the bow, calling for few, if any, coloristic effects. Both use a moderate amount of *pizzicato*. Both use multiple stops, but only sparingly. Both composers score for *sul ponticello* (playing near the bridge to create "an eerie, somewhat glassy timbre"), but only to a highly limited degree (Adler 2002, 32). Beethoven scores for *sul ponticello* in all instruments once near the end of the fifth movement (mm. 469 – 486 in the movement which is mm. 1076 – 1093 in the overall quartet), while Bell uses it twice, first for some of the chords accompanying the cello cadenza in mm. 299 – 316 and later for some of those accompanying the violin cadenza in mm. 1390 – 1407. Neither composer calls for the use of mutes (*con sordino*) at any point, and neither composer asks for any string harmonics, either natural or artificial. This is a remarkably similar use of the instrumental resources available, which further contributes to the close resemblance between these works.

IX. Conclusion

The late Beethoven string quartets occupy a position of high standing among the world's great works of art. They have provided "inspiration for such diverse composers as Schoenberg, Bartók, Stravinsky, and Carter" (Bonds 2003, 383). Nearly two hundred years after their composition, they are as fresh and as inspiring as they have ever been—perhaps even more so. I have examined their influence on a major recent work, Larry Bell's *String Quartet No. 3: Homage to Beethoven*. What I have discovered is that these works not only share elementary similarities such as overall form, but they also are alike in many detailed ways. Although Bell's approach to tonality is completely different from Beethoven's, this distinction becomes practically irrelevant. They seem to share some much larger common ground, as if emanating from the same source of musical expression. But Bell's piece is no counterfeit imitation of a great original. Rather, what is conveyed is what it means to state that one work of art is inspired by another—the highest compliment one can give.

Appendix A. Bell's Hexachords and Their Origins

This Appendix provides details related to the origins of Bell's pitch materials, presents all eighty hexachords, and lists how they are used in his quartet.

As discussed in Section IV, the source of Bell's pitch materials is a particular harmonic progression in Beethoven's *Grosse Fuge*, op. 133, that Bell found appealing, beginning eight measures before rehearsal letter A. This portion of the *Grosse Fuge* is reproduced in Figure A1 (Beethoven 1998, 162 – 163). Each hexachord in the set that Bell labels as the B♭ set is circled in Figure A1 and numbered corresponding to Bell's ordering of the hexachords. This shows clearly that the first hexachord consists of all the pitches contained within a certain beat, while the next three require either two beats or pitches adjacent to a particular beat to be used. The same is true of hexachords 6, 8, and 9, which also select adjacent pitches. For numbers 5, 7 and 10, note that one pitch in each of these hexachords is not present in this localized region of the *Grosse Fuge*. The fifth hexachord has an added A♭, while the seventh has an added A♮ and the tenth has an added E♮. As noted in Section IV, one of these hexachords was created without reference to the *Grosse Fuge*, as Bell felt that it was needed in order for him to create the type of melodic and harmonic musical expression that he wanted. This is the eighth hexachord, which is the same as the first hexachord transposed up by a whole step. Note that this eighth hexachord is sufficiently similar to the materials of the *Grosse Fuge* so that one can identify a location from which it could have been derived.

The generation of the remaining seven sets of hexachords from the first set is discussed in Section IV. The complete collection of all of the eight sets of hexachords is presented in Figures

A2 through A5. The hexachords are arranged so that the quarter notes (black notes) represent the pitches that are common to the previous hexachord when read from left to right.

Figure A1. Excerpt from Beethoven's *Grosse Fuge* and Source of Bell's Hexachords.

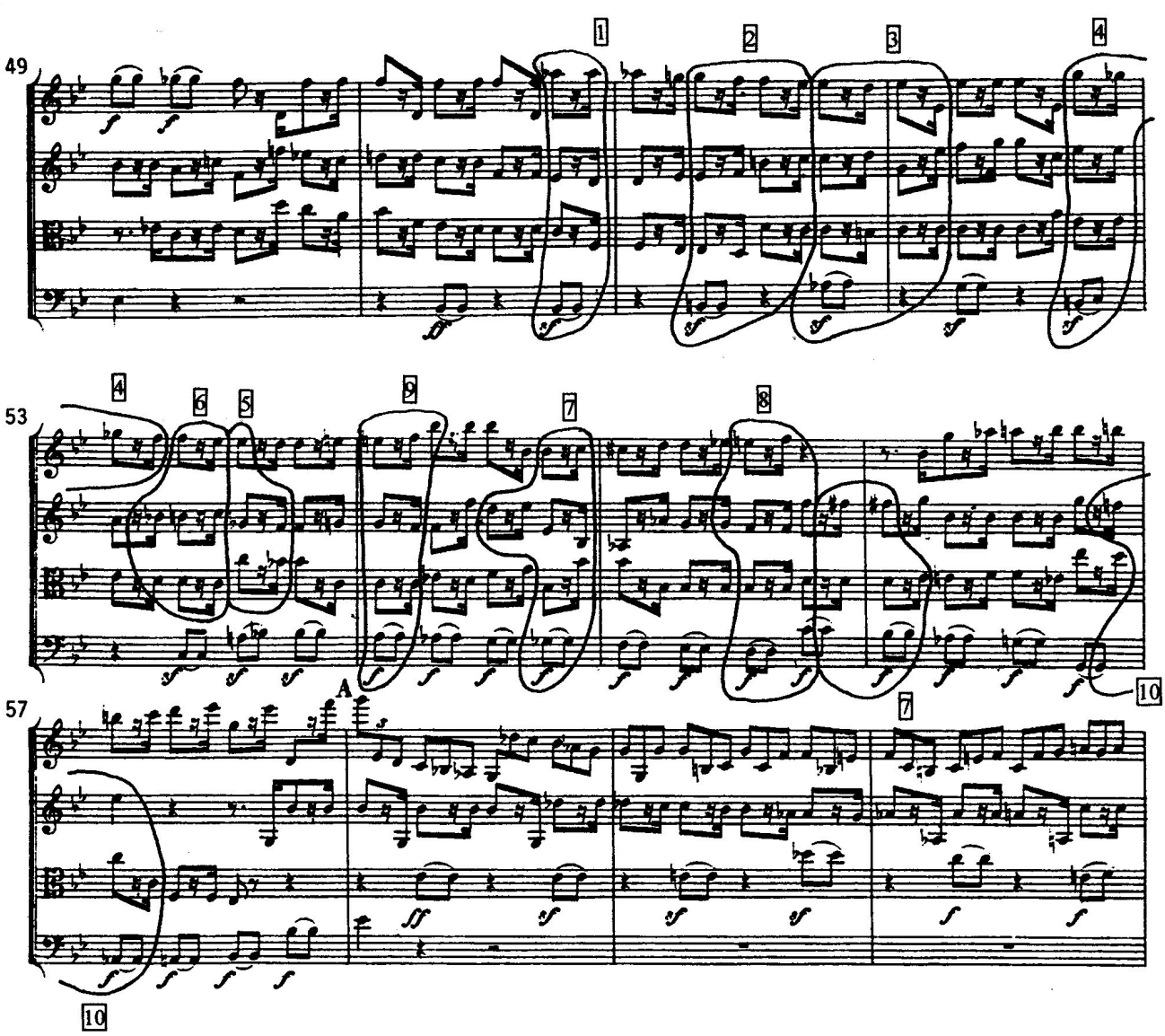


Figure A2. Bell's B♭ and g Sets of Hexachords.

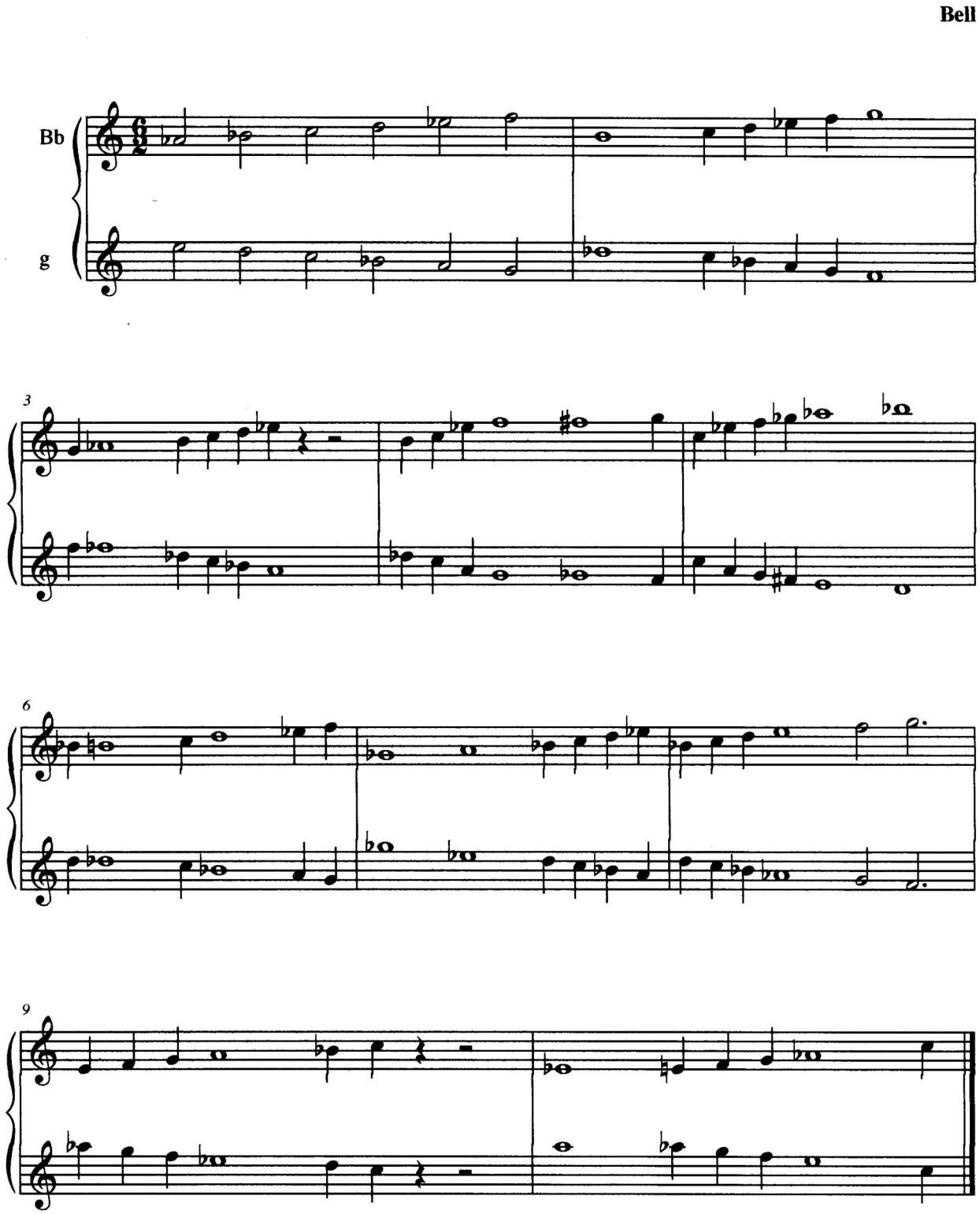


Figure A3. Bell's G and e Sets of Hexachords.

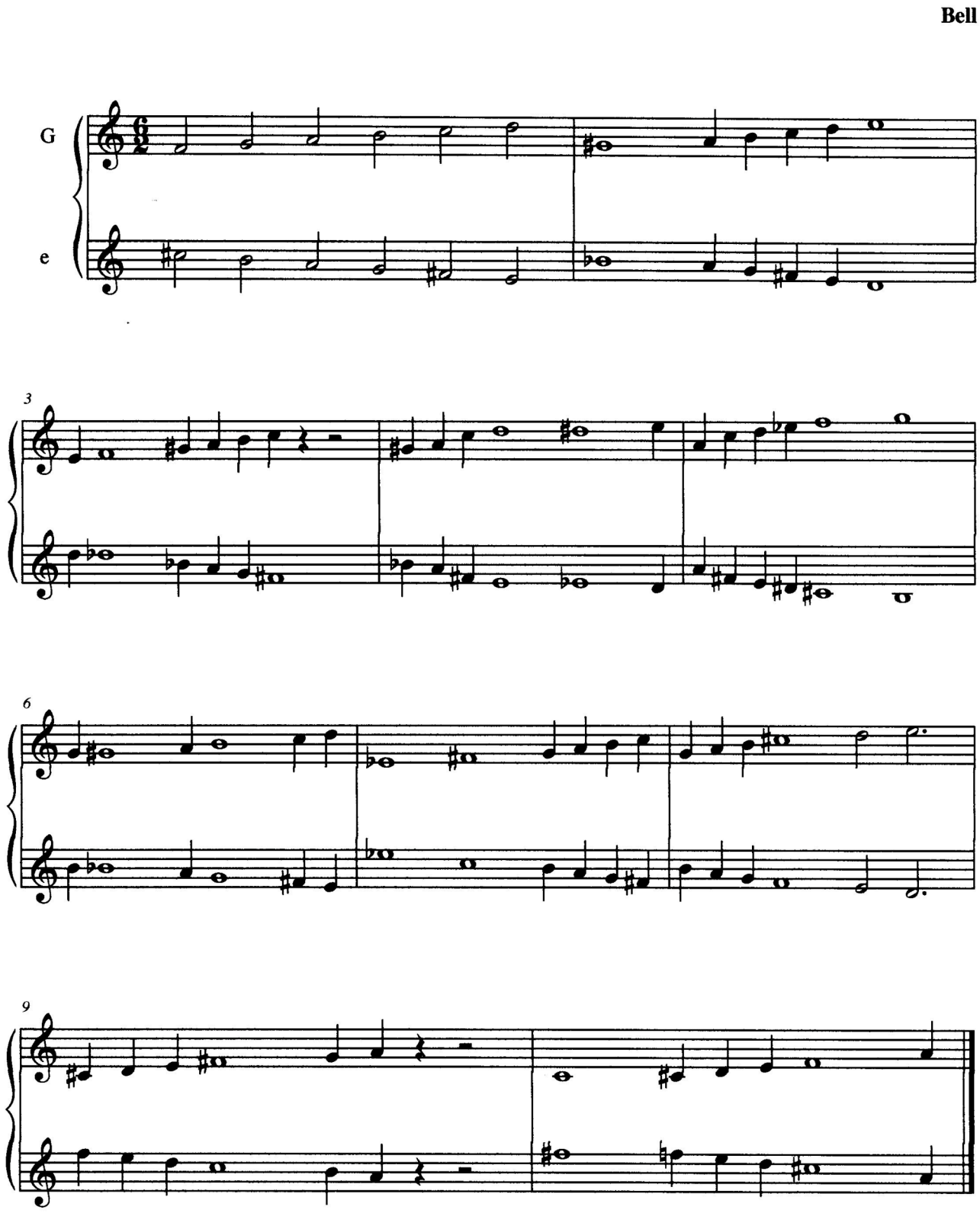


Figure A4. Bell's E and c♯ Sets of Hexachords.

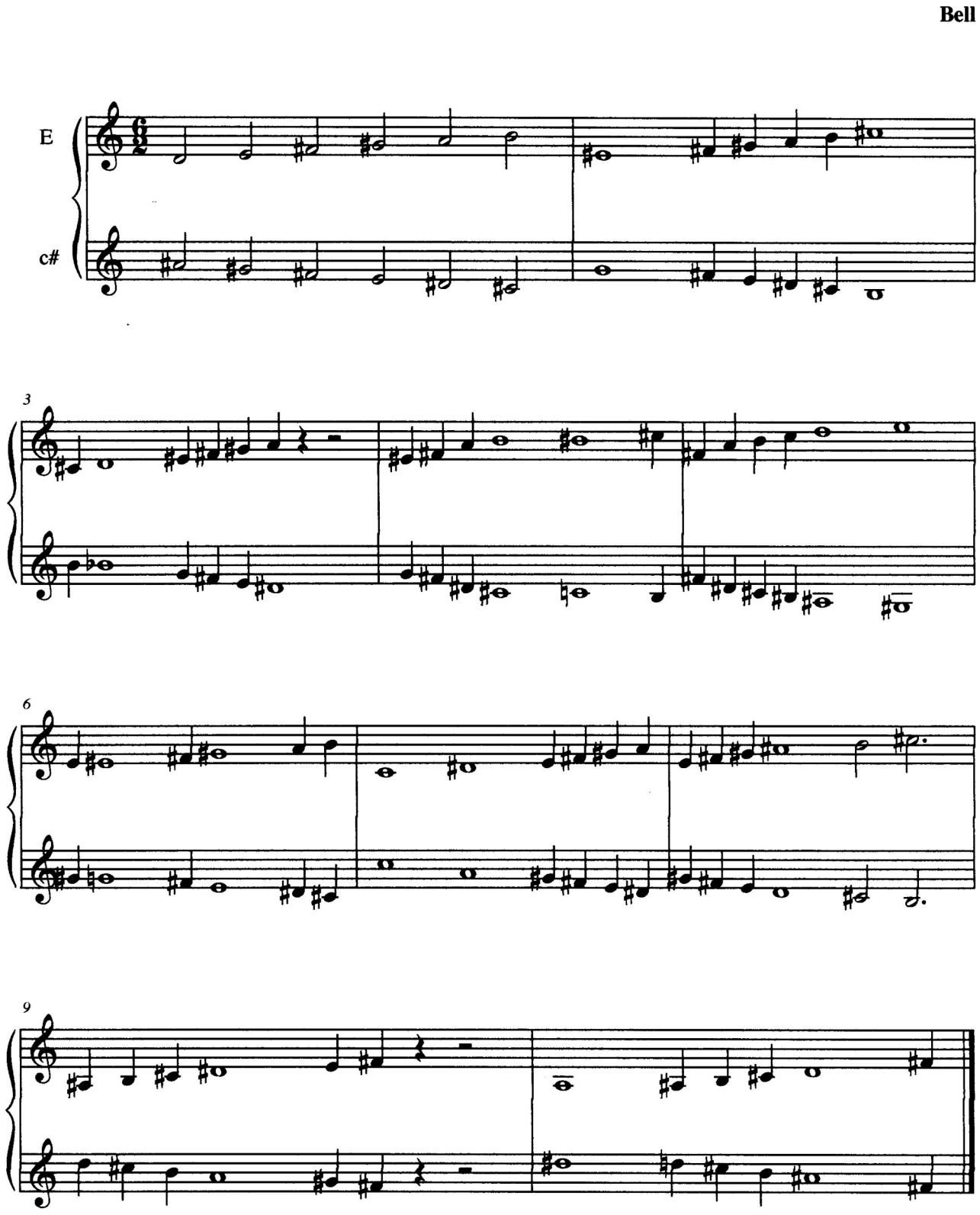
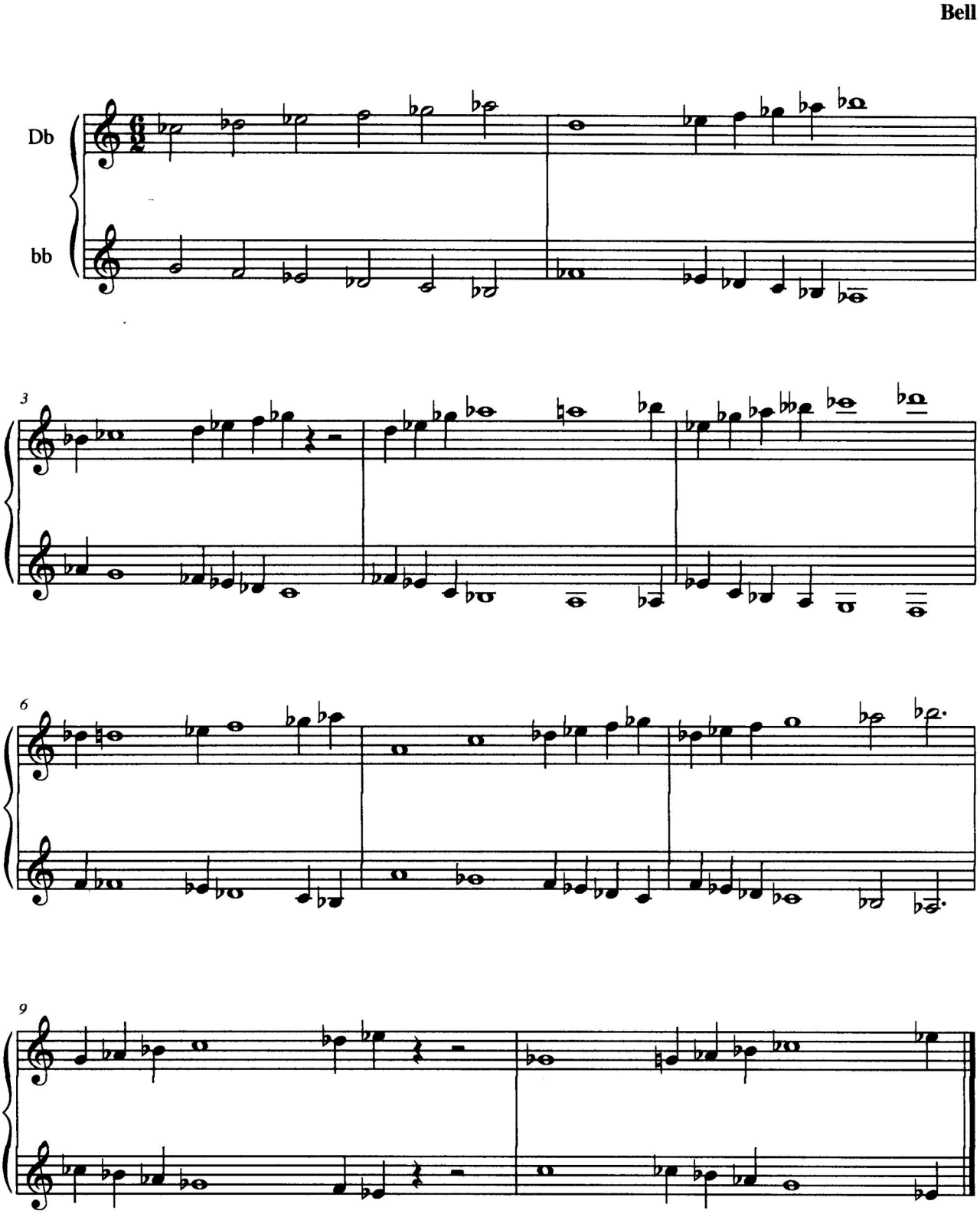


Figure A5. Bell's D♭ and b♭ Sets of Hexachords.



Bell's use of the hexachords in his compositional approach is discussed in detail in Section IV. While there is ambiguity in determining exactly which hexachord is in use at any particular point in the work, my best assessment is detailed in the following table.

Table A1. Bell's Use of Hexachords in *String Quartet No. 3.*

Movement	Measure	Hexachord
I. Fugue	1	E
II. Scherzo	33	G
	50	e
	82	G
	85	e
	91	G
	113	E
	132	c♯
	170	D♭
	192	b♭
	213	D♭
	216	D♭ and b♭
	224	D♭
	242	g
III. Cello Cadenza	289	B♭
IV. Double Variation	326	B♭
	357	g
	392	D♭

Table A1 (continued). Bell's Use of Hexachords in *String Quartet No. 3.*

Movement	Measure	Hexachord
	425	b♭
	460	E
V. Scherzo	503	c♯
	624	G
	759	e
	881	B♭
	1005	g
	1131	D♭
	1151	b♭
	1153	D♭
	1209	b♭
VI. Violin Cadenza	1380	E
VII. Rondo	1417	E
	1455	c♯
	1488	G
	1528	e
	1557	B♭
	1574	g
	1594	B♭
	1599	D or b
	1655	E

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