



## Yale University Department of Music

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Register and the Large-Scale Connection

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# Register and the Large-Scale Connection

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In an essay, *Vom Organischen der Sonatenform*, published in *Das Meisterwerk in der Musik*, v. 2, 1926, Heinrich Schenker writes:

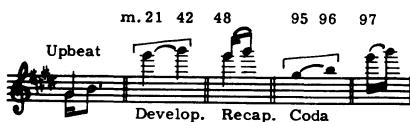
In the first movement of the Piano Sonata, Op. 109, Beethoven establishes the following high points in the development section:



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# OSTER

After reaching the high  $g\#3$  he suddenly abandons it and leaps down to  $d\#2$ . What is the meaning of this perplexing leap? Even if we were finally to have recognized a relation between these two widely separated climaxes ... we still would not have gained the ultimate clarity. The latter is provided by the following relations:



Schenker goes on to say that Beethoven pursues these two tones also in the development section and in the coda. To the master, they have the meaning of an actual motive and are "a clue to a world of unity and coherence."

This feature of the first movement of Op. 109 demonstrates in brief the topic of our discussion. Two tones which, viewed superficially, have nothing to do with each other enter into a relationship merely through the register in which they appear. In this case register becomes one of the main elements of composition and is on an equal footing with harmony, counterpoint and thematic development. The consideration of register is indispensable to the true understanding of the main feature of this development, namely the preparation of the first two tones of the recapitulation in the three-line octave.

It is surprising that Schenker was the first to draw attention to the significance of register in composition. As far as is known to me, the only other reference to registral significance was made by Schenker's pupil, Oswald Jonas, in his book, *Das Wesen des musikalischen Kunstwerks*, published in Vienna, 1934.

Schenker, in *Der freie Satz*, published in Vienna, 1935 and 1956, devotes a chapter (sec. 268-270) to what he calls "obligate Lage" (Obligatory Register). By this is meant that the fundamental line as well as the bass appear in a single and primary register which is maintained through the composition, despite frequent necessary excursions to higher or lower octaves. A magnificent confirmation of this view is to be found in the C major and C minor Preludes of the first volume of the *Well-Tempered Clavier*. These Preludes first appear in Friedemann Bach's *Clavierbüchlein*, although in a shorter version. In this earlier version, after beginning in the two-line octave, they both end in the one-line octave. When Bach incorporated these Preludes into the *Well-Tempered Clavier*, he lengthened them and made little improvements here and there. In addition, he apparently felt that it was necessary or at least desirable to return to the initial register at the end of each composition. One can easily see at which points in the added sections Bach regained the higher octave, thus fulfilling the "law of Obligatory Register." A detailed analysis of the C major Prelude appeared in Schenker's *Fünf Urlinie-Tafeln*, published in Vienna, 1932. While an analysis of the C minor Prelude appeared in his essay, *Das Organische der Fuge*, published in *Das Meisterwerk in der Musik*, v. 2, 1926. Excerpts from both are included in *Der freie Satz*.

Strangely enough, Forkel considered these shorter versions to be improvements made on the ones appearing in the Well-Tempered Clavier. And more recently, Siegfried Borris, in an essay, *Das Bearbeitungsverfahren bei den 11 Präludien im Friedemann-Bach-Buch*, published in *Die Musikforschung*, Jahrg. V, 1952, has tried to show that the shorter versions in the Friedemann Bach Clavierbüchlein were arrangements of the ones in the Well-Tempered Clavier, made by Bach himself to adapt them for the little hands of his son. Among other things, this argumentation disregards entirely the question of register which is of paramount importance in judging the relative value of the different versions.

It is not the purpose of this article to go further into the question of Obligatory Register in its broadest aspect as it pertains to an entire composition. Our aim is rather to show a number of instances where register contributes in an essential way to clarifying certain contrapuntal, structural, or thematic-motivic connections and relations. It is not intended to show the historical development of the use of register for artistic purposes. Our approach must necessarily be more or less unsystematic, and we will simply proceed from one example to the next.

Before presenting examples in which the bass shows large-scale progressions, we should like to discuss one of the relatively rare cases in which a middle register plays an essential role. In the middle section of the Adagio of Mozart's Piano Sonata, K. 576, in D major, the main melody notes are doubtless a2, b2, a2 in m. 17, 18, and 19 respectively. Yet if we follow up the initial c#2 of m. 17 we hear that it describes a slow turn-like motion c#2-d2-c#2-b#2-c#2 during these measures. In Example 1a (p. 58) these notes are connected by heavy lines between the staves. Since c#2 is also the very first tone of the Adagio and since it reappears in m. 5 and in m. 13 we understand the c#2 of m. 17 simply as another occurrence. Of course there is nothing remarkable about a middle section beginning with the same tone as the main section. Numerous instances of this are to be found, for example, in Chopin's Mazurkas Op. 24/4 or Op. 30/1, taken at random. What gives the c#2 in our Mozart excerpt such significance is the fact that both in m. 1 and in m. 17 it is followed by a turn, the second one enlarged, adapted to F# minor, and hidden under the higher melody tones. It permeates the first 4 measures, thus relating and linking the F# minor part closely to the beginning. The point we want to make here is that despite the motivic relationship of the turn which can easily be seen on paper, this

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## example

1

Mozart: Sonata in D major, K. 576.

Musical score for Mozart's Sonata in D major, K. 576. The score is written for piano (p) and includes measures 1 through 44. The key signature is D major (two sharps). The notation includes treble and bass staves. Measure numbers are indicated above the staves: m. 1, 17, 23, 30, 31, 32, 32-41, 42-43, 44. The score includes dynamic markings such as *a*, *b*, *a*<sub>1</sub>, and *C*. There are also performance instructions like *simile* and *etc.*. The score is divided into sections labeled *a*, *b*, and *C*.

7

Schubert: Quartet in A minor.

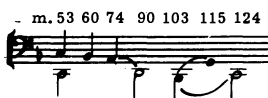
Musical score for Schubert's Quartet in A minor. The score is written for piano (p) and includes measures 20 through 56. The key signature is A minor (no sharps or flats). The notation includes treble and bass staves. Measure numbers are indicated above the staves: m. 20, 27, 28, 34, 35, 43, 55, 56. The score includes dynamic markings such as *ff*, *pp*, and *f*. There are also performance instructions like *Recap.* and *III*. The score is divided into sections labeled *a*, *b*, and *c*.



sition. Because  $f1-e^b1$  is of such pre-eminent importance we can understand the beginning of the Trio as a reiteration of m. 1-2 of the Scherzo. It is as if  $f1$  at last comes into its own when it becomes the third in  $D^b$  major. In passing, it should be mentioned that  $f1-e^b1$  played a certain role even in the first movement, especially in the middle section of the theme and at the beginning of the last variation.

As an example of bass progressions which are made to stand out by means of low register we cite m. 52-124 in the first movement of Bach's Italian Concerto.

Example 3. J. S. Bach: Italian Concerto.



It is noteworthy that Bach's keyboard extended as far as the low A (see the Finale); thus he could have written  $B^b$  and A in m. 60 and in m. 74 an octave lower, had he so desired. Yet he reserved this register for the main structural tones C-D- $B^b$ -C, of which C- $B^b$ -A is only a prolongational motion.

Bass progressions brought into prominence in a manner similar to that described above occur fairly frequently. For example, in Chopin's Etude, Op. 10/8, in F major, the bass line D-C- $B^b$ -A (m. 29-41) stands out because of the register. Domenico Scarlatti was particularly ingenious in using the extreme registers — especially the low bass — very sparingly, and chiefly at the main structural points. Examples of this as well as examples of the use of register for other purposes can be found in abundance in his Sonatas. When one examines the Sonatas for features of this kind one gradually comes to realize that the beauty of Scarlatti's keyboard style — and that of other composers too — is at least partly due to masterly treatment of register.

Turning now to registral features of the top voice, we should first like to mention Beethoven's Bagatelle, Op. 119/1, in G minor, and its coda in particular. A coda was probably necessary in this piece, perhaps because it needed a stronger ending after the almost literal repetition of the first section. But what would be the tonal content of the coda? The  $E^b$  major middle section starts out from  $g1$ , gradually works its way up to  $g2$ , then ends as shown in Example 4, with  $c3$  and  $b^b2$  super-



imposed above the descent  $g^2-f^2-e^{b^2}$ .

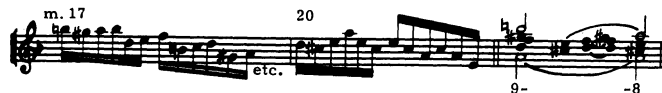
Example 4. Beethoven: Bagatelle in G minor, Op. 119/1.



The superimposed  $c^3$  and  $b^{b^2}$  are touched upon only once, and our desire for their continuation — perhaps as in m. 19-20, where we heard the same situation an octave lower — remains unsatisfied. But the desire is satisfied in the coda. By means of a long ascent,  $c^3$  and  $b^{b^2}$  are reached again. This time they are led down stepwise to  $g^2$ , in a stronger, more definite fashion and supported by cadential bass steps. Thus, here the high register which was only briefly suggested previously is restated, and that which was lacking in the middle section is finally fulfilled. But although the two points in question, the one in the middle section and the other in the coda, have been associated by means of register, they are not structurally connected. The  $c^3$  and the passage that follows in the coda are merely a repetition of something we have heard before, the repetition of a musical idea even though its meaning is changed. Thus the association is necessarily loose and was possible only in a composition as simple in character as this Bagatelle.

In contrast to the situation described above, the registral connection between m. 17 and m. 20 of Bach's Chromatic Phantasy is very close.

Example 5. J.S. Bach: Chromatic Phantasy.



If we eliminate the arpeggiations and two subsidiary chords, we reveal the auxiliary note motion, 9-8, over A. This is perhaps so obvious that one need not call special attention to it. However, we wish to emphasize that the principle is exactly the same whether we deal with a group of 4 measures or with connections over much larger spans such as those to be examined below: register is the chief element which makes

the two points in question stand out and thus be related and connected.

The excerpts from Brahms' *Capriccio*, Op. 116/7, in D minor, presented in Example 6 do not require comment.

Example 6. Brahms: *Capriccio* in D minor, Op. 116/7.



The parentheses indicate that in the intervening measures the lower register is prevalent. There is marked similarity between this type of piano style, with the high register appearing at only a few strategic points, and that of Scarlatti. Through the ages the external appearance of music had changed immensely, of course, but the principle of writing for keyboard instruments remained the same.

The Menuetto of Schubert's Quartet in A minor, specifically its recapitulation, is probably unique in the entire literature (Example 7a, p. 58). Upon arriving at the  $V^7$  chord in m. 35, there is a sudden halt, followed by a recapitulation based on C# minor instead of in the expected A minor, with the register dropping a full octave. (Actually, C# on which the recapitulation begins is merely a connective between E and A# which lies within a prolongation of the dominant extending from m. 35 to m. 55.) Furthermore, the motives shown in Example 7b (p. 58) are also continued at this point and the previous forte is resumed. All these factors contribute to the linking of m. 35 with m. 56, but probably the most obvious factor involved is the abandonment and resumption of the high register at m. 35 and at m. 56, respectively. The beginning of the recapitulation is interpolated between these two points. It is subordinate to larger events of a higher order, or, to use an image, an arch is formed over it by the main progression shown in Example 7a (p. 58) and specifically by  $g\sharp^2-a^2$ . One might almost describe it as having been composed in a parenthetical manner. To be sure, the C# minor recapitulation is thematically important and does initiate the third section of the composition. However, its importance is minimized by the other events which bypass it. In consequence of all this the middle

and the third sections are closely linked together, much more so than would have been the case if the recapitulation had started in a normal manner. This bypassing of an otherwise important event by means of registral connections can be found occasionally in the works of the great masters. Whenever it occurs, it constitutes one of the most remarkable features of the particular composition.

In the Brahms Capriccio in D minor (Example 6, p. 62) the return of the first section in m. 62 is inserted or interpolated in a manner similar to that described above. And in the Rondo of Mozart's Violin Sonata, K. 526, in A major, the tenth *al-c#3* in m. 183 (note the beautiful slur!) is derived from and continues the diminished fifth *g#1-d3* outlined in the ending of the previous E major section (m. 161-164).

Example 8. Mozart: Violin Sonata in A major, K. 526.



Thus the intervening recurrence of the main rondo theme in the lower register sounds incidental to this large-scale linkage of the E major section with the one starting at m. 183. Here again we have a link that is perceivable only through the abandonment and resumption of the three-line octave. It should perhaps be mentioned that, of course, the diminished fifth has resolved to *a-c#* in the A major section of m. 167 — but in the lower octave. As far as register is concerned — and this is what matters here — *d3* is continued to its tone of resolution only in m. 183.

After having followed the previous examples, a longer passage from the Finale of Mendelssohn's Quartet in E minor will be easily understood (Example 9a, p. 65). Measures 288-331 all lie within the one-line octave. In m. 332, the *e2* of m. 287 continues to *d#2*. It is preceded by *e2* which joins together the two separated measures. Thus the half note *e* represents a huge suspension spanning 45 measures (Example 9b, p. 65). And 5 measures later when *d#2* returns to *e2*, the notes marked by a bracket show a slightly changed enlargement of the motive appearing in m. 286-287, the point at which the high register was interrupted. Thus these two distant points are closely linked together, primarily by means of register, and, in addition, by contrapuntal means (suspension) and motivic relation.

By-passing of the kind described was occasionally used by Bach even in fugue writing. Measures 6 - 8 of the Fugue in C minor from Book 2 of the Well-Tempered Clavier which we quote in Example 10a (p. 65) are of particular interest in this regard. According to Schenker, in *Der Tonwille*, Heft 3, p. 43, published in Vienna, 1923, Beethoven made a copy of this Fugue for himself and marked the B in m. 7 with a large cross. Schenker remarks that this B contains a most significant clue to organic fugue writing and that at the same time it points up an essential difference between the fugal art of Bach and the fugue writing of others. We quote:

Although this fourth entrance, obviously in comes form, should normally appear in G minor, Bach deprives it of this key by altering B<sup>b</sup> chromatically, thus incorporating it into the main key of C minor. Of course, Bach did this not in order to be different, but because he wished to fulfill the over-all tonality also in fugue writing.... Beethoven noticed this particular detail; it and similar features are the reason why Beethoven studied and emulated Bach.

Thus far Schenker. A detailed analysis of the fourth entrance and its immediate surroundings reveals this passage to be even more remarkable. Example 10b (p. 65) shows the main voice-leading progressions, with the notes written in the registers in which they actually appear and with a few implied notes in parentheses; Example 10c (p. 65) presents a further reduction with the various registers disregarded. It becomes apparent that up to and including the second beat of m. 8 we hear a progression of parallel tenths between bass and top voice. Consequently, the beginning of the fourth subject entrance (m. 7) occurs at the second tenth e<sup>b</sup>-g which is merely passing through. We even have to hear an E<sup>b</sup> triad at the beginning of this measure. As to the top voice, the discontinuation of the high register and its resumption in m. 8 show clearly that the first tenth f-a<sup>b2</sup> finds its real continuation only with E<sup>b</sup>-g<sup>2</sup> on the third beat of m. 8, well after the fifth entrance has begun. The true goal of the over-all motion is therefore the C minor sixth chord in m. 8, not the C minor triad in m. 7. Because of this the fourth entrance is weakened in three different ways: the B deprives it of the G minor quality, the key in which it should have appeared; it is merely inserted between several passing tenths; and the registral connection of the top voice makes it sound almost parenthetical. We wait for the continuation of a<sup>b2</sup>, and when g<sup>2</sup> finally appears as its continuation, the fourth entrance is a thing of the past. This passage is a striking example of Bach's art of subordinating fugal entrances to the broader scheme of the

example

9

**Mendelssohn: Quartet in E minor.**

m. 284

288

329

10

J. S. Bach: Fugue in C minor, WTC II.

m. 6

7

8

The image displays three systems of musical notation for piano accompaniment, labeled 'a', 'b', and 'c'. Each system consists of a treble and bass staff joined by a brace. System 'a' features a complex, rhythmic melody in the treble staff with many beamed eighth and sixteenth notes, while the bass staff provides a steady accompaniment. System 'b' shows a more melodic line in the treble staff, with a section labeled 'subject' in parentheses. Both systems 'b' and 'c' have a '10-' marking at the end of the system, indicating a ten-measure rest or continuation. The notation is in black ink on a white background.

composition and to make them an integral part of the whole. To achieve this end, he often made the entrances so inconspicuous that they pass by almost unnoticed. A good example of this is the entrance in m. 11 of the same fugue, although Bach uses means other than registral to achieve this. Other instances of Bach's use of register can be found in the Fugue in C# major, from Book 1 of the Well-Tempered Clavier, m. 13-16 and in the big Organ Fugue (BWV 547) in C major which is altogether a miracle of this type of fugue writing. One is reminded of Robert Schumann's somewhat facetious remark:

The best fugue will always be that which the public takes for a Strauss Waltz; in other words, where the artistic technicalities are covered as are the roots of a flower, permitting us to see the blossom only. I know of — the case is real — a connoisseur of music, by no means contemptible, who mistook a Bach Fugue for a Chopin Etude — to the honor of both.

As additional examples, we refer the reader to m. 21-41 of the first movement of Mozart's Piano Sonata in C minor, where the first part of the E<sup>b</sup> major section is "bridged over." We also suggest m. 14-23-27 of the first movement of Mozart's Quartet in D minor, which are somewhat similarly constructed, or m. 83-108-120-132 of Schubert's Wanderer Fantasy, where the beginning of the E<sup>b</sup> major theme is inserted between a<sup>b</sup>3 and a<sup>b</sup>3-g3 in m. 108 and in m. 120. Lack of space makes it impossible to go into detailed analyses of these compositions. They would reveal beautiful motivic and other relationships and connections besides the ones expressed solely by register. A few more interesting examples can also be found in Jonas' book, published in Vienna, 1934, *Das Wesen des musikalischen Kunstwerks*, Ex. 116, 118, 119, 194; and in Schenker's *Der freie Satz*, Ex. 40, 7; 62, 3; 62, 4; 101, 6.

One might well ask why in the course of this discussion no examples from orchestral compositions were cited. The reply is that in orchestral compositions register plays a less significant role in pointing out or providing large-scale connections, than it does in keyboard compositions. The reason may be that the orchestra, with such a great variety of means at its disposal, does not require the use of register to the same extent as the more poorly endowed keyboard instrument. A similar reason may account for the lack of examples from such an outstanding composer as Chopin. His richly developed piano style apparently found new techniques of writing which probably replaced older ones. Besides, one may say that from the very beginning of any of his major compositions all the registers of the keyboard are simultaneously present, as it

were. Even so, register connections and relations are to be found in his compositions. In many cases, however, they are not quite as clear-cut as the ones in earlier piano music and were therefore not as suitable for the first presentation of the subject.

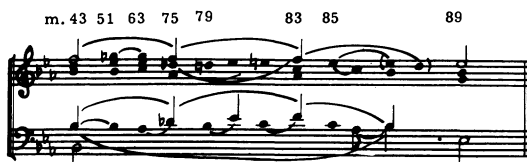
As the last example to be presented we have chosen the first movement of Beethoven's Piano Sonata, Op. 13, in C minor, the *Sonate Pathétique*. Clearly, this movement extends in various ways far beyond anything the young Beethoven or anyone else had written before. One of the most striking features of this magnificent piece of music is the reappearance of a part of the introduction at the beginning of the development section, and again at the beginning of the short coda. A similar use of the introduction within the Allegro section is to be found in Haydn's Symphony in E<sup>b</sup> major, No. 103, which Beethoven probably knew at the time he wrote his Sonata in C minor. Beethoven had employed a similar procedure once before: in the *Kurfürsten Sonata* in F minor, written at the age of 12, he introduced the recapitulation by a free repetition of the initial introduction. In Op. 13, his intention was different: to make the introduction an integral part of the entire first movement. The combination of elements of the first subject and of the introduction at the beginning of the Allegro in the development (m. 137-141) serves the same purpose. Also the melodic relationship between certain elements of the introduction and certain passages of the Allegro is quite apparent and has been described repeatedly. Thus as far as thematic material is concerned the composition is a unified whole.

When we turn to an examination of the structure of the exposition, we will first of all have to clarify the harmonic and contrapuntal meaning of m. 51-88. There can be no doubt that this section is to be considered the second subject. This is because when we arrive at E<sup>b</sup> major, III of C minor, (m. 89) we have the impression of already being at the beginning of the coda of the exposition. This impression is created mainly by the fact that the ascending chromatic line of m. 89-98 bears a resemblance to the first subject. The resemblance becomes still closer in the analogous place in the recapitulation (at m. 253).

It is surprising that even Tovey considers the second subject to be written "in E<sup>b</sup> minor." By no means can the six-four chord at its beginning be considered an inversion of an E<sup>b</sup> minor triad. Nor is there any E<sup>b</sup> minor triad or sixth chord to be found, except for one in m. 79. This, however, is merely

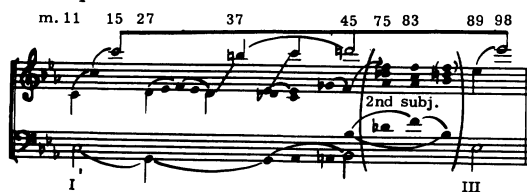
a passing harmony between  $D^b$  and F in m. 75 and in m. 83. The second subject should be understood as taking place within an extended prolongation of the  $B^b$  harmony, the dominant of III which finally enters at m. 89.

#### Example 11a



The bass, represented in Example 11a, shows an arpeggiation of the  $B^b$  minor instead of the  $B^b$  major harmony, the minor third  $D^b$  appearing in m. 75. Thus it becomes evident that the initial " $E^b$  minor" six-four chord has nothing to do with  $E^b$  minor; rather, it is related to the  $D^b$  chord arising in m. 75, and this in turn is part of the larger  $B^b$  minor harmony. The  $g^b1$  is an auxiliary note of f1 in m. 43 and serves as consonant preparation of the seventh  $g^b$  in m. 64. It then returns to f as shown in Example 11a. This makes it clear that the first  $E^b$  harmony is reached only after the second subject has passed by: in m. 89, at the beginning of the coda of the exposition. Instead of bringing in the second subject on III, which is the normal procedure, Beethoven starts it on  $B^b$ , that is, during the motion towards  $E^b$ . The purpose of this overlap of structural and thematic events is to achieve a tighter connection between the different sections. In an earlier work, Sonata, Op. 2/1, in F minor, Beethoven had based the second subject on the dominant of III. However, the prolongation of that dominant was simpler and briefer than the instance in Op. 13. Turning now to the function of register in this remarkable treatment of theme and harmonic progression, we see with the aid of Example 11b, that the main bass progression from the beginning of the exposition to the beginning of the coda consists of  $C-B^b-E^b$ .

#### Example 11b





Note against note, above this bass progression, the top voice moves from c3 in m. 15 to d3 in m. 45, and finally to e<sup>b</sup>3 in m. 98. This ascending third in the upper voice thus spans the entire exposition, unfolding in a single register. In relation to it the second subject is an interpolation, an episode between the passing tone d3 and its goal e<sup>b</sup>3. Truly, a greater triumph in the use of register for large-scale connections could hardly be imagined.

In addition it must be remarked that the rising third c-d-e<sup>b</sup> represents more than just the lower third of the C minor triad: it is thematic in character, constituting a huge enlargement of the same third in m. 1 of the introduction. The introduction itself shows a first enlargement of this third, with the same bass as later in the Allegro, in the one-line octave in m. 1, 4 (end), and 5. This enlargement then prepares the ground, so to speak, for the second and most extended enlargement in the exposition.

In the recapitulation, it was not possible for Beethoven to duplicate the effect he had created with his treatment of the second subject in the exposition. Obviously he could not base it on the dominant, G, and begin it with a six-four chord on this tone. To provide at least some harmonic contrast and achieve an effect similar to the suspense created by the B<sup>b</sup> harmony in the exposition, he begins the second subject on the F minor six-four chord, the subdominant (m. 221), which then leads to V and to I. This six-four chord is, for once, a true inversion since it is followed by the F minor sixth chord.

This was a satisfactory solution for matching the harmonic appearance of the second subject in the exposition. But how could an equivalent be found for the bypassing of the second subject by means of the high register? Since the recapitulation begins and ends in C minor—not, as does the exposition, on different harmonies, this was impossible. But Beethoven found a "substitute solution," one which is as impressive as his use of register in the exposition. We find that the development section concludes in m. 187 with a V<sup>7</sup> chord. The resolution of the seventh f3 to e<sup>b</sup>3 seems not to be forthcoming. The recapitulation begins, the entire first subject passes by, still no e<sup>b</sup>3. The second subject begins on the subdominant, as described above; then in m. 231-232 the melody leaps, unexpectedly and strikingly, to f3. This f3 takes up the preceding, unresolved, f3 of the development; it becomes a seventh over the following dominant and finally resolves to e<sup>b</sup>3 in m. 239, in the tonic six-four chord. This is the "substitute solu-

tion": Instead of bypassing the second subject with the high register so that it would sound parenthetical, the beginning of the recapitulation itself is bypassed and appears incidental to the progression  $V^7 - I^3$  ( $f3 - e^b3$ ), which extends far into the second subject. In the Menuetto of his Quartet in A minor, Schubert carried out the same idea but by different means, as previously discussed and illustrated in Example 8 (p. 63).

#### Example 12a



Example 12a shows Beethoven's general plan (an octave lower) and explains also why the six-four chord in m. 239 must be considered a tonic six-four, not an embellishing chord of any kind.

#### Example 12b



Example 12b includes  $f3$  of the second subject. This note appears first as a consonant sixth which prepares and reintroduces the seventh  $f3$ . One can hardly consider it as structurally, contrapuntally connected back to  $f3$  of the development. Rather,  $f3$  forms what one might describe as a prefix to  $e^b3$ . It is associative in character, reiterating  $f3$  of m. 187 for the purpose of underscoring the large progression  $f3 - e^b3$ .

In a looser way even the introduction of Op. 13 is connected to the Allegro by means of the high register. Its climax is also a  $V^7$  chord with  $f3$ . This  $f3$  does continue to an  $e^b3$ , but since  $e^b3$  appears in a six-four chord on the dominant, it is a passing tone moving on to  $d2$  in the next measure, not a true resolution. In the strictest sense, then,  $f3$  resolves in the three-line octave only at m. 98, towards the end of the exposition. This huge arch subordinates the first and second subjects of the exposition, just as  $f3$  of the development section moves to  $e^b3$  of the second subject and bridges everything in between.

## Example 13

m. 9 10 15 45 98 187 199 232 239

Intro. Expos. (2nd subj.) end of Dev. Recap. etc.

V7-6-5 I III V I

But even if we wanted to attach more importance to  $e^b_3$  in m. 10 — it certainly gives more definition to the ending of the introduction than is found at the end of the development section — the fact would remain that the three-line octave is abandoned at this point, that no  $d_3$  as the tone of resolution appears, and that  $e^b_3$  is taken up only in m. 98. Consequently, the picture drawn in Example 13 would not be essentially altered. Corroborating our reading is the striking resemblance of m. 9 - 11 to m. 187 - 195, with passages rushing down to the beginning of the first subject.

One can safely say that the grandiose use of the high register for creating large-scale connections and for tying various sections closely together constitutes one of the main features of this movement. If we compare this movement to later compositions of Beethoven it is fair to say that it equals them in scope as far as the use of register is concerned. In other respects, such as complexity of content or subtlety of expression, Beethoven's later compositions probably surpass the *Sonate Pathétique*.

In closing we point out that the purpose of this article has been to indicate the important role which register can play in establishing the larger connections in a musical composition. We have seen that in some works, particularly in piano works, register assumes a significance as great as that of harmonic and contrapuntal texture or the unfoldment of thematic-motivic relationships. Its importance as one of the structural elements of music should not be overlooked in composition and analysis.