A Discussion of Compositional Choices in Webern's Fünf Sätze für Streichquartett, *Op. 5, First Movement*

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Webern's twelve-tone pieces have long been admired as models of compositional craft. The lucid presentation of ideas in these pieces is rarely equalled in the works of Berg and Schoenberg. Abstract ideas about the properties of sets under the operations of the twelve-tone system are given a musical exposition by such a wealth of articulative devices that they serve as awe-inspiring models for students of compositional craftsmanship.

However, the lucidity of Webern's twelve-tone style is counterbalanced by the enigmatic elusiveness of many of his most impressive pre-twelve-tone works. I will try to formulate a rationale for pitch choice in one of these works, the first movement of the *Fünf Sätze für Streichquartett*, Op. 5.

Part of the problem of analyzing pitch choice in a work like this may be the analyst's predisposition toward a particular analytical method. For example, the success the analyst may have with Webern's twelve-tone music by using a method for determining the literal sequence of pitches (or intervals), the transposition of a set, and even, in some cases, the total transpositional plan of a piece is seductive enough that one may ask for similar results in the pre-twelve-tone work. But one is apt to forget that, although one may find many isolated instances of precursors to twelve-tone thought, before the "method of composing with twelve tones" had become clear (to the extent that it was clear) to Schoenberg, there was no such general method, not even the theory of such a method. In order to understand the pieces of this period, one should understand the traditional organizational procedures on which composers relied and try to extrapolate from these procedures the innovations that Webern was able to produce.

Among the more common techniques representative of this period and found in this piece are: a formal plan of the 19th century mixed with ideas about variation from Debussy and early Schoenberg; the use of operations from geometry in order to preserve an intervallic succession while providing pitch differentiation; the exploration of pitch intersection between transposed collections. It is from the concern with intervals and intersection that the most interesting choices in this movement are made. Although these particular selections and their compositional ramifications do not constitute a central position in Webern's technique, they do find a home in the techniques of such diverse composers as Debussy, Berg, and Bartók. The technique alluded to concerns the use of intervallic content as variable during the course of the composition. This will be treated at greater length after a discussion of intervallic invariance and intersection.

The first pitch succession is C–C♯ followed by F–E. These two dyads are separated by instrumentation (cello plus second violin at two octaves, viola

plus first violin at one octave) and mode of sound production (arco vs. pizzicato). The intervals for the presentation of these pitches are a minor ninth and a major seventh. The total content of this tetrachord is two minor seconds, one minor third, two major thirds, and one perfect fourth. Among the ideas that Webern extracts from this tetrachord are: (1) inversion, (2) symmetry, (3) transposition a major third, (4) transposition a perfect fourth, (5) two major thirds at the interval of a minor second, (6) two minor seconds, (7) the trichord C, C♯, E, (8) the trichord C, C♯, F, and (9) imitation.

The idea of symmetry is combined with inversion in the symmetrical chord in mm. 5 and 6. George Perle mentions this chord in *Serial Composition and Atonality*;[1] however, he is concerned with neither the context in which this chord occurs nor its content. The chord is (reading up) C, E♭, G♯, B♭, B, C♯, F♯, A. Each instrument plays a double stopped minor sixth or inverted major third (cello, C–G♯; viola, E♭–B; second violin, B♭–F♯; first violin, C♯–A). Webern immediately extracts the cello and first violin dyads for a chord in harmonics (A♭, A, C, C♯) that provides the cadential chord for the first section. These extracted pitches constitute a transposition down a major third of the opening tetrachord (point 3 above) or an inversion at a minor second. This transposition provides an intersection of C–C♯ with the opening tetrachord while completing the symmetrical hexachord A♭, A, C, C♯, E, F. The hexachord thus formed is given a literal presentation at m. 47. (Let no one misinterpret my earlier remarks to mean that this third-order combinatorial hexachord does not occupy a prominent position in Webern's compositional thought!) Looking back at the symmetrical chord, one can now interpret it as two identical symmetrical tetrachords transposed a major second. Each tetrachord is composed of two major thirds at the interval of a minor third and is thereby related to the opening tetrachord (see point 5 above). Perhaps more important is the identification of this tetrachord as part of the series that produces the hexachord referred to as appearing in m. 47. That series (as presented in m. 47) is composed of minor seconds transposed a major third (as in the opening tetrachord—point 5 above), and the opening tetrachord and the tetrachord from the symmetrical chord are now related by their association with the derived hexachord. I will return to the major second transposition between the tetrachords in the symmetrical chord later.

Point 4 mentions the transposition of a perfect fourth. It is from this that the total form of the movement is derived. The movement appears to be in classical sonata form with the recapitulation combining both thematic groups from the exposition. It is this kind of combined recapitulation that is so characteristic of Debussy and Schoenberg.

The chord in harmonics (m. 6) ends the first group (Tempo I ♩=100). The second group (Tempo II ♩=88) has the viola playing two major thirds at a minor second (point 5 above), and the transposition of the tetrachord is a perfect fifth from the cadence chord of the first section (A♭, A, C, C♯ transposed to E♭, E, G, G♯). This transposed tetrachord and the rest of the

material of the second group are transposed up a perfect fourth (thereby returning the tetrachord to the original level) in m. 37, the beginning of the recapitulation. Notice should be taken of the *am Steg* timbre to associate these two occurrences of the major thirds at a minor second. At no other place in this movement is there such a coordination.

The idea of two minor seconds is given a literal representation in the second melodic idea of the second group. The pitches phrased together in the first violin part are B, C♯, and high C. The high C is a minor ninth above B and a major seventh above C♯ and thereby refers to the intervals in which the minor seconds are presented in the opening tetrachord. This chromatic trichord is explicitly stated in mm. 43 and 46. More will be said about this climactic place in a different context.

It is the combination of these two minor seconds that provides the only available major second for transposition. This interval is present neither in the opening tetrachord nor in the hexachord derived from it. However, granted that this interpretation is much more unusual than some of the more literally stated intervals in the movement, some very interesting intersections occur from this transposition.

The symmetrical chord occurs three other times in the movement. The chord at m. 17 is repeated for the last chord, which is a transposition up a major second from the original chord in m. 6. Since the original chord contained two tetrachords with the upper tetrachord a major second lower than the lower tetrachord, this transposition places what was originally the lower tetrachord into the upper position. It also reproduces one of the dyads of the missing tetrachord. These six intersections are the largest number that any transposition can produce. There are also six intersections with a minor third transposition; however, neither of the tetrachords is reproduced.

The other occurrence of the symmetrical chord is at m. 49, where it is transposed down a major third (point 3). This transposition produces four intersections and two dyads of the original. These reproduced dyads form a different tetrachord, found in the cello at m. 7. However, the chord at m. 49 is rearranged in its vertical spacing.

The major second transposition is used also for the canon between the first and second violins in mm. 2 and 3 (see point 9). The melody which is imitated has seven pitches which repeat, with one pitch (G) duplicated and transferred an octave. The articulation of these seven pitches is 3+2+2 and in the repeats 4+2+2. (The grouping of 4 has the repeated pitch). The three pitches phrased together are a transposition of a trichord found in the opening tetrachord. The opening tetrachord contains two such trichords (C, C♯, E and F, E, C♯—see point 7) which are related by inversion (point 1) and transposition a perfect fourth (point 4). The trichord that begins the seven-pitch melody in the *dux* is the inverted form of the trichord transposed up a major second. Therefore the *comes*, which is transposed down a major second, reproduces the pitch level of the trichord in the opening tetrachord.

In another canon in m. 14 the major second transposition also produces

some interesting intersections. The four-pitch melody which is imitated is from the cello in mm. 8 and 9. It contains the tritone A♭–D. The transposition up a major second produces the tritone B♭–E. As the entire canon is then transposed a tritone, these two tritones are reproduced. The two dyads are found in the 2+2 phrasing of the first canon in mm. 2 and 3. They are also part of the chord in m. 5, the notes of which are all voice-led a minor second to the symmetrical chord. The E–B♭ is the only dyad reproduced in the reoccurrence of the m. 5 chord in m. 49 because of the major third transposition. The D–A♭ is found first in the tetrachord that accompanies the seven-pitch melody in m. 2 and thus prepares that dyad in the following second violin imitation, and in the ostinato that accompanies the restatement of the beginning minor ninth, C–C♯, at the very end. The C♯–G of that ostinato comes from the transposition of the cello melody in m. 9 up a perfect fourth in the recapitulation at m. 38. The D–A♭ is also part of the bridge between the contrasting themes in the second group (m. 9). The A♭–D of the cello melody is taken over by the viola's countermelody, and the two violins pick up the viola's double stops.

The trichord C, C♯, E or its inverted form C♯, E, F occurs many times during the course of the movement. I previously mentioned its appearance in the three pitches beginning the seven-pitch melody. It is also part of the chord that accompanies that melody: A♭, B, C, D. A♭, B, C is a perfect fourth transposition of the original inverted form of the trichord. These same pitches represent the transposition levels of this chord in m. 3 as shown by the cello part. The same pitches are also reiterated in the cello in m. 23, although without the chords above them. The melodies above the cello in the second violin and viola in m. 23 are this same trichord. This trichord and its inversion transposed a minor second produce the tetrachord which is the basis for the symmetrical chord and the derived hexachord.

This trichord and its inversion transposed a major third form the tetrachord that is the cello melody marking the second thematic group in m. 7.

The trichord C, C♯, F has a far more limited organizational value in its literal occurrences. It is found across the phrasing of the 2+2 part of the seven-pitch melody in m. 2. However, the additional note and the phrasing seem to nullify the value of that observation. We have not accounted for the final tetrachord of the seven-pitch melody.

In spite of the large amount of material that literally refers to the opening tetrachord by pitch/interval content and ideas extracted from that tetrachord, we are still not able to account for all the thematic material of this piece in terms of an analytic approach that classifies material by its literal content and its transposition, i.e., the twelve-tone analysis method. Besides the seven-note melody, the entire second group with the exception of the viola double stops does not restate the opening tetrachord. The clue to the derivation of variant material is found in the succession of melodic ideas as Webern presents them.

The movement begins with the tetrachord C, C♯, F, E. Its content has

been noted. The seven-pitch melody divided 3+2+2 follows. Then the final three pitches of that melody are separated and imitated by all the instruments at major third intervals.

The seven-pitch melody as divided by the phrasing has the trichord F♯, D♯, G, followed by G♯, E and then A, B♭. The trichord F♯, D♯, G is from the opening tetrachord. The intervals that follow are also from that tetrachord: major third, perfect fourth, and major seventh. The G♯, E, A trichord is from the opening tetrachord, but the partitioned E, A, B♭ is not. Remembering that Webern had treated the opening dyads as a tetrachord with a total interval content and that he had then extracted a trichord to begin the next melodic idea, we can treat the tetrachord in the seven-pitch melody the same way, since he again extracts the last trichord. Dividing the tetrachord into two overlapping trichords, we get G♯, E, A and E, A, B♭. The seven-pitch melody now consists of the following trichords: F♯, D♯, G; G♯, E, A; E, A, B♭. Putting these trichords into a neutral ordering ("normal form") we see an interesting progression: 034, 045, 056. Each trichord is a minor second larger than the one preceding. The trichord 056 (E, A, B♭) is the result of a feature found in the opening tetrachords: namely, that the two trichords of that tetrachord have a minor second difference in interval size.

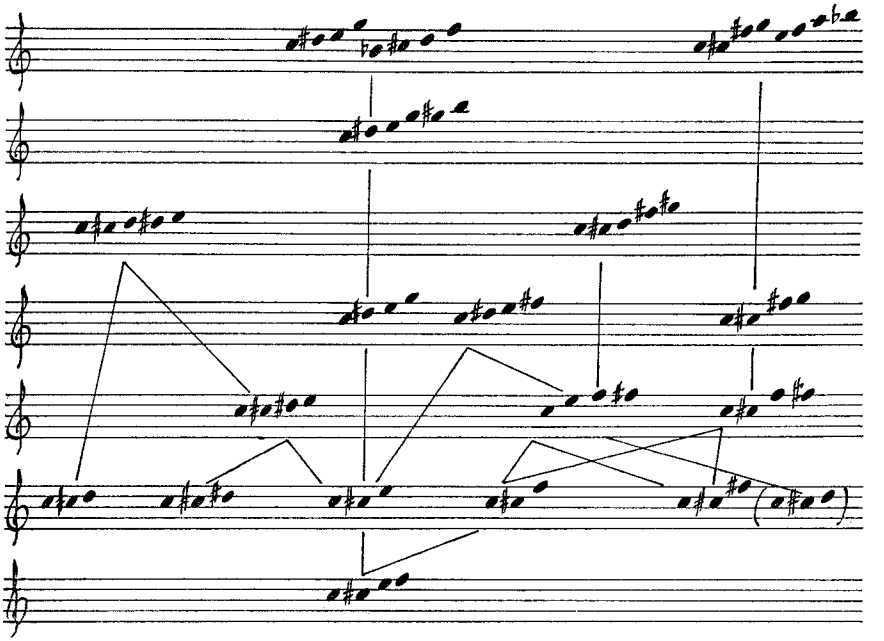
The cello melody that begins the second section (m. 8) is a symmetrical tetrachord, made of the 034 trichord and its inversion transposed a major third. Because of this transposition the tetrachord has an outer interval and middle interval a minor second smaller than the opening tetrachord but maintains the two minor seconds in their same positions. A new trichord 023 and its inversion are produced. The tetrachord can now be analyzed as consisting of two interlocking trichords, 034 and 023, and their inversions. The new trichord is treated in the same manner as before: namely, it is extracted and starts the next melodic idea—another tetrachord phrased 2+2. This last tetrachord does not provide the final reduction in trichord size (a technique that would be comparable to the treatment of the trichords in the seven-pitch melody above). It is the following melody in the first violin (m. 9) that starts with the trichord 012.

This would seem to be the end of the linear progression. Many lesser composers would probably have been satisfied with a design as pretty as this. Not Webern. He now relates one end of the series to the other by the phrase in the first violin part (m. 11). The pitches E♭, A, B♭, B are the inversion of the tetrachord in the seven-note melody, E, G♯, A, B♭, transposed down a minor second. That tetrachord is extracted from the five-pitch phrase before it. As the tetrachord appears in that phrase, it is an inversion of the tetrachord transposed a perfect fourth (m. 2). The use of that tetrachord following the presentation of the trichord 012 refers to the presence of the 012 trichord in the 0456 tetrachord. The remaining trichord of that tetrachord, 046, can be found in the last three notes of the cello's final phrase, m. 9, again cutting across a 2+2 grouping. Because the four-pitch cello phrase (F, F♯, A♭, D) in m. 9 is simply a tritone transposition of the chord in m. 2 (A♭, B, C, D),

because that chord is derived from the tetrachord E, G♯, A, B♭ by the movement of a minor second inside the tetrachord, and because both tetrachords contain the trichords of the opening tetrachord, the cycle is complete. The progression of change is not linear but cyclical, i.e., the end is combined with the beginning (see Example).

Webern uses an interesting device to explicate this diminution in trichord size. There are a few places where the two violins play in octaves. They are mm. 16, 17, 46, and 50. The pitches in these places are, respectively, E, A♭, F; A♭, F, G; B, B♭, A; and F♯, A, F. The first and last trichords are the same, but the first, second, and third show the diminution in interval size.

Derived Collections in Webern's Op. 5, First Movement



The diminution is also stated explicitly in mm. 19 and 20 in the viola part. The pitches are G♯, C, A, B, B♭. The first four pitches are the cello melody in m. 7, but because of the additional minor second a chromatic pentachord is produced.

Earlier in this paper I mentioned that this technique is found also in other composers of the period. Robert Moevs commented on a very similar technique in his 1915 article "Intervallic Procedures in Debussy: Serenade from the Sonata for Cello and Piano, 1915."[2] In that piece cells were also added together until the intervallic limit of a tritone and a fifth was reached.

Of the masterpieces that Webern has produced, I rank this movement among the highest. It is for the listener, finally, to appreciate the succession of

musical ideas, the precision of the compositional choices, the movement forward and back between newly exposed aspects of previously presented material. This appreciation will no doubt earn this piece a place among the finest creations of the human mind.

NOTES

[1] Berkeley and Los Angeles, 1968, p. 26.
[2] *Perspectives of New Music* (1969) 8:82–101.