

# Pitch Structures in Anton Webern's Second Cantata, Opus 22

JOE BRUMBELOE

Webern's Second Cantata, Op. 31, is his last completed work. The composition of this Cantata occupied Webern for two and a half years, from May of 1941 to December of 1943. This piece is Webern's longest work with opus number, and is written for 4-part chorus, soprano solo, bass solo and orchestra.

The Cantata is a serial work. The first row sung by the Bass soloist in movement I has been chosen as  $P^0$ , which sets  $C = 0$ ; however, it should be pointed out that Webern actually wrote the fourth movement first. There will be no concern here with absolute, specific transpositional levels; but if there were, it would have to be taken into account that Webern was surely thinking of the  $P^6$  in this article as being  $P^0$ , which would mean that  $F\#$  would = 0.

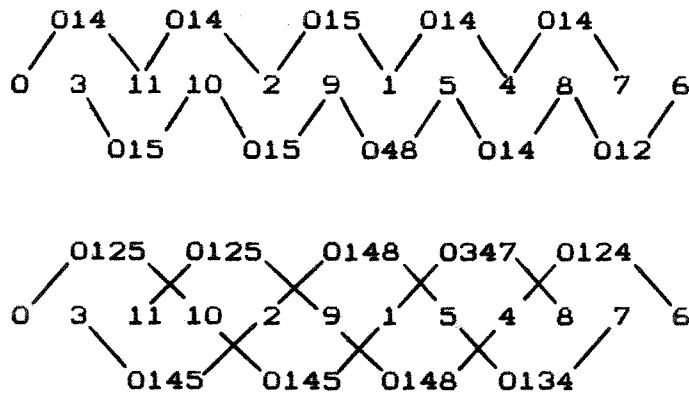
Example 1 shows the matrix for the piece, with  $C = 0$ . The row is unusual for a late Webern work in that it has no particular characteristic. One can see here that it is not a symmetrical row, as were for example his rows for his three previous works: the String Quartet, Op. 28, the First Cantata, Op. 29 and the Variations for Orchestra, Op. 30.

Similarly one can see in Example 2, where the set types of all of the trichords and tetrachords have been analyzed, that while certain sets are represented numerous times, there is nothing here to compare to the derived sets of the

## Example 1

0	3	11	10	2	9	1	5	4	8	7	6
9	0	8	7	11	6	10	2	1	5	4	3
1	4	0	11	3	10	2	6	5	9	8	7
2	5	1	0	4	11	3	7	6	10	9	8
10	1	9	8	0	7	11	3	2	6	5	4
3	6	2	1	5	0	4	8	7	11	10	9
11	2	10	9	1	8	0	4	3	7	6	5
7	10	6	5	9	4	8	0	11	3	2	1
8	11	7	6	10	5	9	1	0	4	3	2
4	7	3	2	6	1	5	9	8	0	11	10
5	8	4	3	7	2	6	10	9	1	0	11
6	9	5	4	8	3	7	11	10	2	1	0

## Example 2



Concerto, Op. 24 or the String Quartet, Op. 28; nor is there anything like the comprehensively embedded structure of the row for the first Cantata, Op. 29.

The first movement of the second Cantata is composed using only  $P^0$ ,  $I^0$  and their retrogrades. The orchestral accompaniment to the bass solo which is featured in this movement consists mostly of chords built out of the hexachords from these rows. In Example 3 the hexachords formed in  $P^0$  and  $I^0$  are given, labelled here and in the next

two examples as a, b, c or d. Hexachords a and c, which are the first hexachords of  $P^0$  and  $I^0$ , are, of course, identical in terms of intervallic content (in other words, they are the same unordered set); and very similar in terms of

## Example 3

a	b	
$P^0$ : 0 3 <u>11</u> 10 2 9 <u>1</u> 5 4 8 7 6		Hexachords a/c: 012356
c	d	
$I^0$ : 0 9 <u>1</u> 2 10 3 <u>11</u> 7 8 4 5 6		Hexachords b/d: 012347

actual pitch content. The only difference between hexachords a and c is the B (or 11) of "a" compared to the C# (or 1) of "c". A similar relationship, therefore, exists between hexachords b and d; they are both the same unordered set, and are identical in pitch content except for the notes B and C#.

As already suggested, the accompaniment in the first movement consists almost exclusively of vertical hexachords. In the absence of any ordering clues, since order is an abstract feature of a simultaneity, one must rely on the B or C# in each chord to identify its serial origin. Webern exercises great care in his treatment of the B's and C#'s in these chords. In the majority of chords, he places the unique element in either the highest or the lowest voice. Another method of exposing these differentiating notes is shown in Example 4. Here, the C# precedes the first chord,

## Example 4(I)

The musical notation for Example 4(I) consists of two staves. The top staff is labeled 'Cel:' and the bottom staff is labeled 'Hrp:'. Both staves are in 3/8 time and have a key signature of one sharp (F#). The Cel staff begins with a 5-measure rest, indicated by a box with the number 5. After the rest, there is a chord with a C# in the highest voice. The Hrp staff begins with a 7-measure rest, indicated by a box with the number 7. After the rest, there is a chord with a C# in the lowest voice. The notation includes various musical symbols such as notes, rests, and accidentals.

while the B follows the second chord. The remaining five notes of each chord are identical in terms of pitch content. (The Roman numerals included hereinafter in the example numbers identify the movement from which the example was

taken.)

Example 5, then, is a chart of the pitch materials of the entire movement. The first line shows measure numbers for reference, the second line shows the serial origin of the pitches in the solo bass part, the third line shows the few melodic fragments which are presented instrumentally, and the fourth line shows the hexachords which make up the bulk of the accompaniment in this movement. (Note that the hexachord designation in the solo lines is represented in upper case letters and derives from the pitch matrix, while the accompanimental hexachords are designated with the labels first presented in Example 3.) Of particular interest are all of the palindromes, pointed out in the example with horizontal arrows. The palindromes are all structurally related to the form of the piece. The double bar lines shown in the example are from the score and

### Example 5(I)

mm.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Bass solo:							P <sub>0</sub>		RI <sub>0</sub> HB			I <sub>0</sub> HB			R <sub>0</sub>
Inst. solo:	I <sub>0</sub> HB			R <sub>0</sub>											
Hexachords:	c	a			b	d	c	c	d	b	a	c		a	

mm.:	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Bass:											I <sub>0</sub> HB		R <sub>0</sub>				
Inst.:	P <sub>0</sub> (0-4)				RI <sub>0</sub> (2-5)			P <sub>0</sub>									
Hexa.:					c		c	d/c					a				

mm.:	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Bass:							P <sub>0</sub>				RI <sub>0</sub> HB		I <sub>0</sub> (6-9)			
Inst.:																
Hexa.:	d	c					c	d		a		c				(a/b)

indicate the breaks between each of the four lines of the text for this movement, which are articulated by ritards, rests or fermati. In the bass solo the pitches in the first section (mm. 1-12) are a mirror image of the notes in the second section (mm. 13-25). The I<sub>0</sub> HB in m. 12 is typographically misleading--only one note appears as an anacrusis before the double bar. The bass part in the last two sections (mm. 26-48) is also a palindrome, with four notes added as a cadential figure. Similarly Webern's use of hexachords also forms palindromes. The series of hexachords in the first 12 measures is a palindrome, and mm. 25-45 form another palindrome. In each case either the endpoints of the palindrome, the midpoints, or both correspond to the double bars. In m. 25, the midpoint of the movement, a 12-note chord is built out of two hexachords; a second chord of all 12 chromatic pitches closes the movement in m. 48, although all of the pitches occur simultaneously here, so that labelling the hexachords

is impossible. There is an "a/b" placed there just to indicate that chord's location.

In Example 6 the solo bass part has been extracted from the first movement. If one disregards the final four notes momentarily, then one sees that each of the four lines in the bass part consists of a row and a hexachord of a row. An interesting feature of the piece can be seen by noting the registral position of the notes in each phrase. Because each phrase contains a row and a hexachord, it follows that there are 6 notes repeated within each phrase. Actually, as one can see from the slurs, one of the six notes is a common pivot between the row and hexachord: F# each time. Beneath each line of the bass part in Example 6 the six notes in question have been accounted for. The notes shown in brackets to the right beneath each line are the notes which are registrally invariant within that phrase. The remaining notes, shown on the left, change octave position within each phrase as shown by the lines drawn between two octave positions of the same note. So, for example, in the first phrase the B, F and F# shown in brackets appear in only one register within the first phrase; while the E, G and G# appear in the two different registers shown within the first phrase. The second phrase, then, is similar to the first in that it keeps the same three notes (B, F and F#) in the same register, while it "undoes" what happened registrally in the first phrase: the E, G and G# move back to their original register. The third phrase is a departure in that the B changes register for the first time, while the remaining notes are registrally invariant. Now, the final phrase sums up, in a sense, what has happened thus far. All of the notes which have changed register in the previous three phrases change in the last phrase, thus E, B, G and G# all change register. Also, the only two notes which were held registrally invariant in all of the preceding three phrases (F and F#) are also the only notes held invariant in the last phrase.

It is also interesting to note that Webern seems to have attached some significance to these notes. The registrally invariant notes, F and F#, appear at the juncture between the row and the hexachord in each phrase. These two notes are generally given a rhythmic value of at least twice the duration of the surrounding notes. Also, there is one note which has been added to the rows shown in Example 6. The F# grace note in m. 18 has been inserted into R<sup>0</sup> (which actually begins with F#). One can see in Example 6 that this added note creates another F-F# pair.

Similarly the registrally variant notes play significant roles. All of the phrases either begin or end with these four notes: B, E, G and G#. Also, the final four notes, which were disregarded earlier, are really a reiteration of these four notes.

The second movement is also for bass solo and orchestra. Throughout the second movement the bass solo features continuous row forms accompanied by three rows deployed

## Example 6

$P_0$   $RI_0 HB$

3

$I_0 HB$   $R_0$

3

$I_0 HB$   $R_0$

3

$P_0$   $RI_0 HB$   $I_0 (b-9)$

3

instrumentally, thereby maintaining a continuous 4-voice texture. However, in Example 7 one can see that the three accompanying row forms are dispersed to such a degree that it becomes difficult at times even to trace the rows. In Example 7 the four rows being used in the first 11 measures of the piece are shown. The Bass has  $I^1$  (the third line from the bottom in the example). The three remaining rows used here are indicated by a solid line for  $P^0$ , a dotted line for  $I^0$  and a dashed line for  $P^1$ . This example is included to clarify the meaning of the following two examples. It should be made clear that, other than the row deployed in the bass, the rows are diffuse and even incomplete, in the sense that some notes are "shared"

Example 7(II)

mm.	1	2	3	4	5	6	7	8	9	10	11
Cl.								D-F#-F			F-F#
B. Cl.											Ab-G
Tb.											
Cel.											
Hp.	( $P_0$ ) C			Eb							
Bass	( $I_0$ ) C			A							
Va.	( $P_1$ ) C#			E							
Vn.	( $I_1$ ) C#			Bb							

elements. For example, the Bb in the violin in m. 5 has to be counted as an element of all three instrumental rows.

Example 8 shows the pitch content of the entire movement. All 48 row forms make an appearance in this movement. All four of the strands of row cycles shown here follow the same plan of deployment: the rows are linked by two common elements, so that the last two notes of the previous row become the first two of the next row. The pattern that results, expressed in an algebraic manner, is that  $P$  to the transposition level  $n$  is linked to an  $I$  form at the transposition level  $n+1$  and  $I^n$  is linked to  $R^{n-1}$ , and so forth. The last row form for all four of these strands shown in Example 8 is only 10 notes long. It's as if Webern

Example 8(II)

mm.	1	10	16	23	30	34	37	39	45	53	60	67
bass	$I^1$	$R^0$	$I^3$	$R^2$	$I^5$	$R^4$	$I^7$	$R^6$	$I^9$	$R^8$	$I^{11}$	$R^{10}$
	$I^0$	$R^{11}$	$I^2$	$R^1$	$I^4$	$R^3$	$I^6$	$R^5$	$I^8$	$R^7$	$I^{10}$	$R^9$
	$P^0$	$RI^1$	$P^{10}$	$RI^{11}$	$P^8$	$RI^9$	$P^6$	$RI^7$	$P^4$	$RI^5$	$P^2$	$RI^3$
	$P^1$	$RI^2$	$P^{11}$	$RI^0$	$P^9$	$RI^{10}$	$P^7$	$RI^8$	$P^5$	$RI^6$	$P^3$	$RI^4$





these invariant 4-note chords is that the first half of the movement, mm. 1-36, creates the same succession of set types as the last half, mm. 37-74, except transposed by a tritone.

Example 10 is a chart of the pitches used in Movement III. The movement is for soprano solo, 3-part women's

## Example 10

A mm.: 1 2 3 4 5 6 7 8 9 10 11 12

S1 : RI<sub>0</sub> P<sub>0</sub> RI<sub>10</sub>  
 S2 : RI<sub>0</sub> P<sub>2</sub> RI<sub>7</sub>  
 A : RI<sub>2</sub> P<sub>3</sub> RI<sub>4</sub>  
 Inst.: RI<sub>2</sub> P<sub>0</sub> RI<sub>1</sub>

B mm.: 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

Sop. : I<sub>7</sub> R<sub>4</sub> I<sub>9</sub>  
 str. : I<sub>1</sub> (0-3) → (4-11) R<sub>2</sub> (7-9) I<sub>6</sub> (4-9)  
 br. : I<sub>10</sub> (0-3) → (4-11) I<sub>3</sub> R<sub>9</sub> (7-10) I<sub>0</sub>  
 ww. : I<sub>4</sub> (0-3) → (4-11) R<sub>0</sub> (3-6) R<sub>9</sub> (7-10)  
 hrp./ :  
 cel. :

A mm.: 29 30 31 32 33 34 35

Sop : R<sub>5</sub> (0-7) → (8-11) I<sub>8</sub>  
 S1 : I<sub>11</sub> (0-6) → (Sop)  
 S2 : R<sub>8</sub> I<sub>5</sub>  
 A : R<sub>2</sub>  
 Inst.: R<sub>11</sub> I<sub>2</sub> (0-6)

B mm.: 36 37 38 39 40 41 42 43 44

Sop. : I<sub>11</sub> (7-11) R<sub>10</sub>  
 str. : PC(8-1) PC(5-10) P<sub>4</sub> (0-3)  
 br. : PC(11-4) PC(8-6) P<sub>1</sub> (0-3)  
 ww. : (11?) P<sub>7</sub> (0-3)  
 hrp./ :  
 cel. :

A mm.: 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59

S1 : P<sub>4</sub> RI<sub>5</sub> P<sub>2</sub>  
 S2 : P<sub>10</sub> RI<sub>11</sub> P<sub>8</sub>  
 A : P<sub>7</sub> RI<sub>8</sub> (0-6) → (7-11) P<sub>11</sub>  
 Inst.: P<sub>1</sub> RI<sub>2</sub> (0-6) → (7-11) RI<sub>3</sub> (0-2)

chorus and orchestra. The form of the movement is determined to be a type of rondo through changes in texture. Basically, the "A's" are scored for chorus and orchestra, while the "B's" are for soprano solo and orchestra. The "A" sections are contrapuntal, with each voice part singing a succession of rows linked by 2 common pitches just as in the second movement. The orchestra serves to double the voice parts in these "A" sections, and also presents a fourth succession of rows dispersed throughout the texture. The "B" parts, for soprano solo and orchestra, feature a combination of contrapuntal and chordal accompaniments, in a manner that will be made clear momentarily.

The boxes in the "B" section of Example 10 signify chords composed of the content listed in the box. For example, in m. 14, the box in the string part signifies a chord made up of the first four notes of  $I_1^1$ , which are C#, Bb, D and Eb. In the second "B" section, mm. 36-44, the chords don't all have a serial origin. The first 4 chords in this section consist of some segment of a chromatic scale, spaced usually in thirds and sixths. These chords are indicated with PC, meaning pitch class numbers, with C = 0. For example, PC(11-4) means B, C, C#... up to E. And finally, the arrows in this example point out the completion of row forms in another part.

Because the "A" sections in this movement are similar in terms of the use of pitch to the second movement, the focus here will be on the B sections. In Example 11 the first 6 and 1/2 measures of the first "B" section are given. This is

Example 11

Example 11 is a musical score for the first 6 and 1/2 measures of the first "B" section. It is written for Soprano (Sop), Strings (str), Violin (vln), Woodwinds (ww), Trumpet (Trp), Harp/Cello (hrp cel), and Clarinet (clar). The Soprano part is marked (I7). The Strings part is marked (I1). The Violin part is marked (I10). The Woodwinds part is marked (I10). The Trumpet part is marked (I10). The Harp/Cello part is marked (I4). The Clarinet part is marked (I4). The score is in 3/8 time and features a four-voice canon structure.

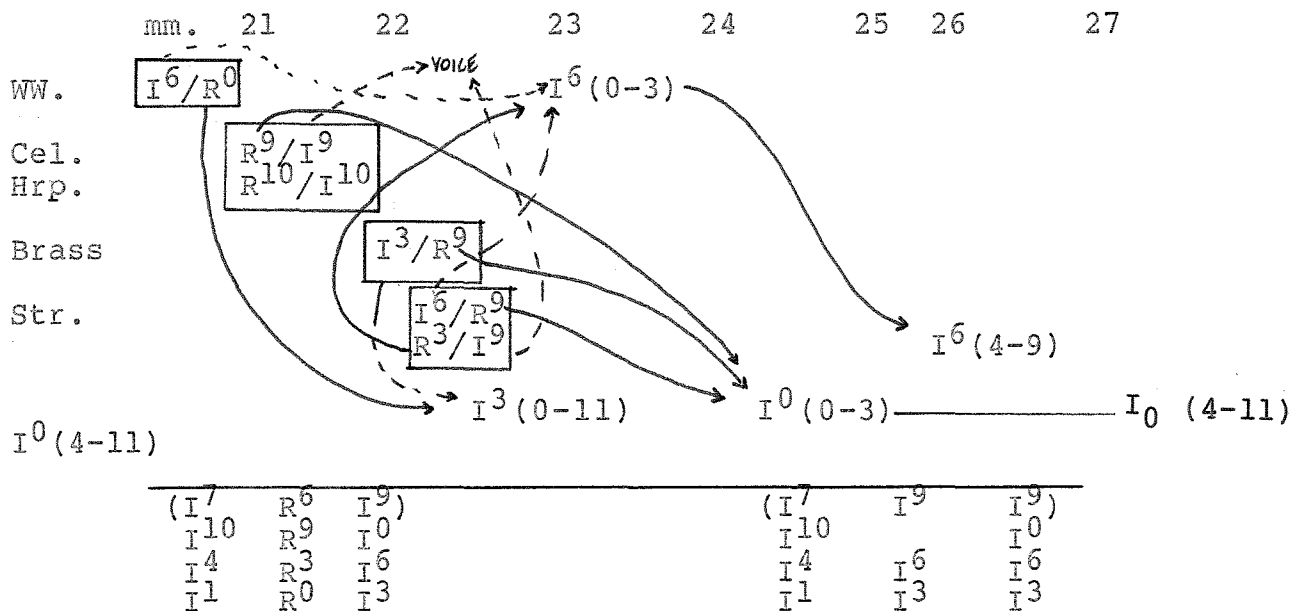
a rather "quirky" condensed score that reveals the contrapuntal structure of this section, which is in fact a four-voice canon. The first voice of the canon is the soprano solo shown in the top line in Example 11. The

remaining three voices answer canonically, but compress the first four notes of the soprano into a chord. As one can see in Example 11, the rhythms of the answering voices are strict, but the contours are altered through octave displacement.

The situation becomes far more complex in the second half of this first "B" section. Again, the soprano solo is answered by chords, but the rows begun with these chords are not completed, as they were in Example 11. In Example 12 a chart of the second half of the first "B" section is shown. The boxes again signify chords, but here the rows listed inside the boxes reflect the possible serial origins of the chords. In other words, the first box stands for the chord formed by the pitches B, G, C and Ab; and these four pitches occur consecutively (in some order) in both  $P^0$  and  $I^6$  or their retrogrades.

The lines in Example 12 indicate two different ways of coming to terms with serial continuity in this section. The solid lines indicate how these chords could "stand for" the rows that one would have expected in keeping with the pattern of linking in the "A" section. Beneath the solid line to the left a synopsis of the rows is given with this view. The problem with this view is that, first of all, there is an extra chord. Since the  $I^7-R^6-I^9$  line occurs in the voice, only three chords are needed to complete the pattern. And second, the content of the segments making up some of these chords appear in more than one retrograde form. For example, the last box shown in Example 12 could be either  $R^3$  or  $R^9$ -- so this chord could link with either  $I^6$  or  $I^0$ .

Example 12(III)



The second view, shown with dotted lines in Example 12, is that the content of the chords anticipates the rows which are about to appear. A synopsis of this view is shown beneath the solid line to the right. The problem with this view is that there would be some repetition of pitches; and, for the sake of completeness, one would probably want a representative of  $I^0$ , which is in fact missing.

It is interesting that with these three- and four-note chords, Webern has set up such complex interrelationships; and further that no single view seems to be adequate to explain the ordering procedures involved here.

The fourth movement is for soprano solo and orchestra. The soprano sings  $P^6$  and the first few notes of the retrograde of that row which is finished in an instrumental part; and then  $I^6$  and part of the its retrograde, which is similarly finished in an instrumental part. The rest of this brief 22-measure movement consists of three- and four-note chords.

Example 13 shows a table of all the chords occurring in the fourth movement. All of these three- and four-note chords can be derived from  $P^6$  or  $I^6$  (which are the two rows that furnish all of the pitch materials for the soprano solo), and it is even possible to trace rows through at least some of the chords; but the focus here will be on the set types used. It is interesting, for example, that six of the eight four-note chords are 0124, even though that set type only occurs once in the row. Similarly, of the three-

#### Example 13(IV)

##### Four-note chords

mm.	NO	set	
1	10 11 0 2	$A^0$	(0124)
2	10 0 1 2	$A I^4$	(0124)
5	1 2 5 9	$D^0$	(0148)
11	10 11 0 2	$A^0$	(0124)
12	10 0 1 2	$A I^4$	(0124)
18	4 7 8 9	$E^0$	(0125)
21	10 0 1 2	$A I^4$	(0124)
22	10 0 1 2	$A I^4$	(0124)

##### Three-note chords

mm.	NO	set	
3	1 5 9	$B^0$	(048)
4	3 7 8	$C^0$	(015)
7	3 7 8	$C^0$	(015)
8	3 4 8	$C I^5$	(015)
9	1 5 9	$B^0$	(048)
14	3 7 11	$B^2$	(048)
15	1 5 9	$B^0$	(048)
16	3 7 8	$C^0$	(015)
19	3 7 11	$B^2$	(048)

note chords, the augmented triad, 048, accounts for 5 of the 9 three-note chords, although it also only occurs once in any segment of the row. It seems that Webern has focussed upon relatively unusual parts of the row, possibly for variety.

The fifth movement features the full chorus for the first time. Again in this movement, as in the third, an alternation between choral sections and solo sections articulates a formal design. In this movement a ternary

design results: the chorus and soprano solo from m. 1 - 16, solo soprano only from m. 17 to 45, and a return to the chorus and soprano solo from m. 46 to 60.

In both the choral sections, Webern writes the four voice parts homorhythmically throughout. Each voice part uses a different transposition of the same row type. The contours of the individual parts are not exactly the same, due to occasional octave displacements; however, for the most part, the soprano and alto are paired a minor seventh apart throughout, while the tenor and bass are paired at a major seventh.

The transpositions of the rows used throughout the choral sections are such that each chord created is an 0146 set type. Example 14 shows the entire pitch content of the "A" sections of this movement. The double bar here actually represents the entire soprano solo section which constitutes the "B" section.

Because the set formed by each of these chords is 0146, one of the all-interval tetrachords, there will be one common-tone between any two transpositions of this set. Of course, there would be two common tones if the transposition were by tritone, but that transposition doesn't occur between adjacent sets here; therefore that possibility is disregarded.

Example 14 shows where the common tones occur between each pair of the chords in this movement. A line is drawn

Example 14(V)

<p>m. 1 RI(0-5)</p> <p>A Ab G B Bb D</p> <p>B Bb A C# C E</p> <p>D Db C E Eb G</p> <p>Eb D C# F E G#</p> <p>1 1 2 1 2</p>	<p>m. 8 RI(6-10)</p> <p>C G B Bb F#</p> <p>D A C# C Ab</p> <p>F C E D# B</p> <p>F# C# F E C</p> <p>3 2 1 (2)</p>	<p>m. 10 P(3-10)</p> <p>G B F# Bb D C# F E</p> <p>A C# G# C E Eb G F#</p> <p>C E B D# G F# Bb A</p> <p>C# F C E G# G B Bb</p> <p>2 3 2 2 1 2 1</p>
<p>m. 15 P(7-11)</p> <p>Ab G B Bb A</p> <p>Bb A C# C B</p> <p>C# C E Eb E</p> <p>D C# F E Eb</p> <p>1 2 1 1</p>	<p>m. 46 P(0-4)</p> <p>B D Bb A C#</p> <p>C# E C D D#</p> <p>E G Eb D F#</p> <p>F Ab E Eb G</p> <p>4 (2) 1 2</p>	<p>m. 50 I(5-8)</p> <p>G# E C C#</p> <p>Bb F# D Eb</p> <p>C# A F F#</p> <p>D Bb F# G</p> <p>(2) (2) (1)</p>
<p>m. 52 R-I(0-3)</p> <p>D F# D# G Ab</p> <p>E G# F A Bb</p> <p>G B G# C C#</p> <p>Ab E A C# D</p> <p>2 (4) 2 (1)</p>	<p>m. 54 R(0-4)</p> <p>Bb B C G# A</p> <p>C C# D Bb B</p> <p>Eb E F C# D</p> <p>E F F# D Eb</p> <p>(1) (1) (2) (1)</p>	<p>m. 59 I(6-11)</p> <p>F# D Eb B C C#</p> <p>G# E F C# D Eb</p> <p>B G G# E F F#</p> <p>C G# A F F# G</p> <p>(2) (1) (2) (1) (1)</p>

between the common tones. Above the notes measure numbers and the row form being used are given. Order numbers of the pitches are shown, but not transposition numbers because there are four transpositions of each row going on. Beneath the notes there is a number which represents the type of common-tone relationship that exists between adjacent chords. For example, 1 means that the common tone is between the tenor and bass, 2 means that it is between bass and alto, and so forth. The circled notes represent the reverse of the uncircled number. In other words, a circled 1 means the common tone is between bass and tenor, a circled 2 means it is between alto and bass, and so forth.

The first feature to be pointed out is that all of the common-tone relationships except 2 involve the outer voices, and the vast majority involve the bass and another voice. Another voicing of the 0146 set would have yielded common-tones between other voices. The second feature is that the first "A" section (that is, up to the double bar in this example) differs from the second "A" section, in that the first "A" involves the common-tone relationships characterized as 1 and 2 almost exclusively. The second "A" section on the other hand, involves the types called circled 1 and circled 2. This is interesting because one would expect that this relationship would be the result of using one set of row segments in the first "A" section and the inversion of those segments in the second. Since the first "A" uses segments from RI's and P's, therefore, one would expect that the second "A" would use R's and I's. This is generally what happens; however, the second "A" does begin with a P, and it does not exclusively use the inversion of the segments found in the first "A" section.

On the other hand, Webern could have just as easily been thinking of something else entirely. This method of characterizing the common-tone relationships here also, more simply, characterizes the interval of transposition between the chords. For example, the 1 in Example 14 is a descending half step, the 2 is an ascending major third; and the circled numbers could also simply refer to the inversion of the interval represented by the uncircled number. So, Webern might not have been concerned in the least about the common tones between these chords, but nonetheless, the patterns and relationships discussed were the result.

The orchestral parts of this fifth movement feature some of the most free 12-tone writing in the piece. Webern takes different segments of the row and treats them motivically. In Example 15 some examples of this technique are shown. In the first example the first 3 notes of P forms are used motivically. In this particular case, the rest of the rows begun here are completed, but frequently in this movement these fragments stand alone and do not seem to imply the continuation of the rest of the row.

One important motive that is first heard in the piccolo part in mm. 25-26 is a high C-B-G#. This motive is repeated

a couple of measures later in the same register in the solo violin, and again in a lower register in the clarinet. This

Example 15(V)

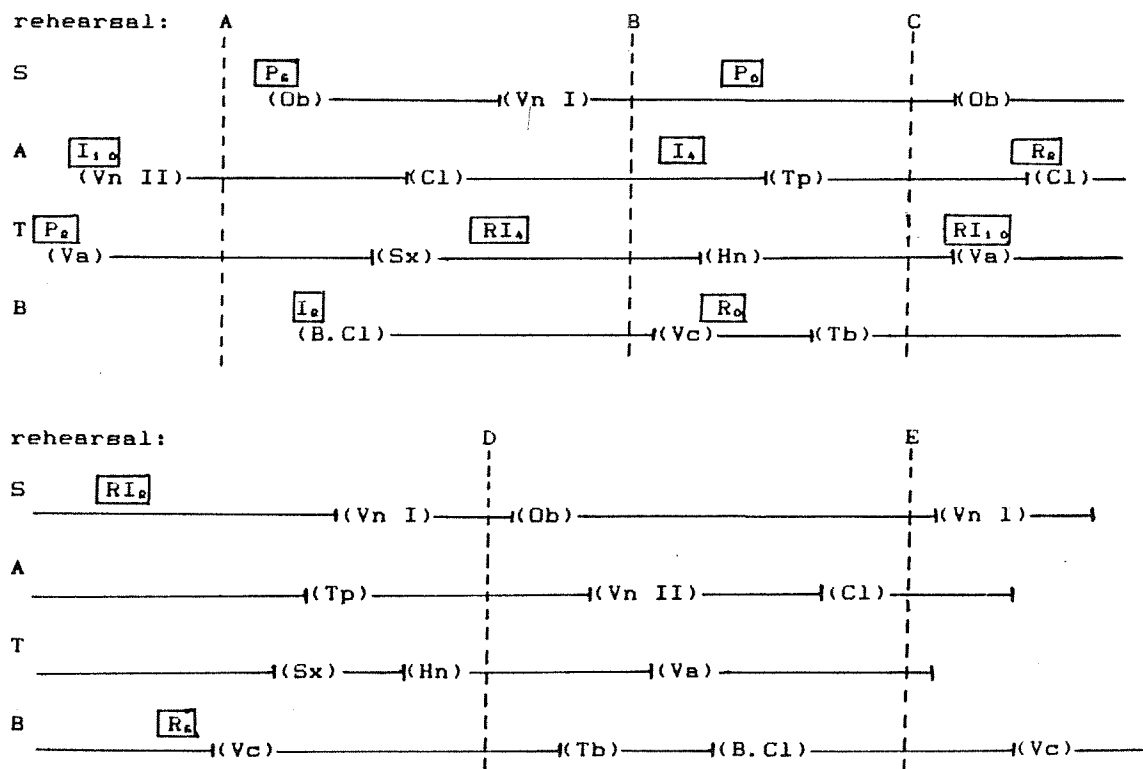
The musical score for Example 15(V) consists of four staves. The first staff is for the Cello (Cel.), the second for the Harp (Hrp.), the third for the Soprano (Sop.), and the fourth for a group of instruments including Violin (Vn.), Viola (Va.), and Violoncello (Vc.). The time signature is 3/8. The score shows a C-B-G# motive in various transpositions across the staves. A box with the number 9 is above the first staff, and a box with the number 36 is above the fourth staff.

014 set would be a logical part of the row, as an 014 occurs 5 times in the row; however, this particular ordering, C-B-G#, never occurs in any row. Another example of this motive is the second part of Example 15. Here, three different linear presentations of the C-B-G# motive in different transpositions occur-- none of which occur in any row. It is interesting that the three chords formed by these motives are also examples of this 014 motive.

The sixth and final movement is a strict four-part poly-metric canon. The four choral voices are the four voices of the canon, and the orchestra is used only to double these four voices. The four voice parts change meter frequently, each part following the same pattern of meter changes, but because they enter at different times, the barlines do not coincide. The changes in meter seem to be a textual consideration, because the metric accents are made to agree with the poetic accents. The whole movement is repeated exactly three times.

Example 16 shows the row succession as well as the instrumental doubling. One can see here that there are really only two successions of pitches, since the soprano is a retrograde of the bass, and the alto is a retrograde of the tenor. Or, if one wants to consider transposed inversions, then actually all of the parts could be derived from any one of the parts. Further, one can see that each of the parts has a "designated" doubling. The soprano is doubled by

## Example 16



either oboe or first violin; the alto by second violin, clarinet or trumpet; and so forth.

Although there is no serialization in this instrumental doubling, there are perhaps serial implications in reserving a certain set of instruments to be used for a melodic line in this way.

This is the most unusual movement in a couple of ways. The complex metric scheme and doubling scheme is unique. Also, this is the only time in his career that Webern ever set a text strophically, at least among his works with opus numbers.

In Example 17 some interesting features concerning proportion in Webern's second Cantata are shown. On the

## Example 17

Movt.	mm.	12n	tempi	168/n
I.	48	12 x 4	= 168	168/1
II.	74	12 x 6 (+ 2)	= 42	168/4
III.	59	12 x 5 (- 1)	= 168	168/1
IV.	23	12 x 2 (- 1)	= 168	168/1
V.	60	12 x 5	= 56	168/3
VI.	24	12 x 2	= 168	168/1
total	288	12 x 24		



left the length in measures of each of the movements is given. One can see there that the number of measures in each movement is a simple multiple of twelve, or very close. The score lists the fourth movement as being 22 measures long, but for some reason begins numbering measures with the second measure. This has been corrected here, and the result is that the total number of measures in the entire piece is 288, or  $12 \times 24$ .

On the right in Example 17 the tempi for each of the movements is listed. One can see that all of these tempi are simple fractions of 168, which in turn is  $12 \times 14$ .