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Music 201, Theory & Analysis of 20th century music, Assignment 3, due April 30

Anton Webern, *Five Pieces for String Quartet*, Op. 5, No. 3

In this brief work we will follow the unfolding of two trichordal pitch-class sets: (014) and (015) (3-4 and 3-5 in Forte's terminology), as they manifest at various levels as melodic motives, vertical sonorities, and structural elements governing larger spans of the composition. For instance, a set may be prominent in one section as a vertical sonority, but at another as a linear motive. We will also look at interactions between the two sets, which for simplicity's sake we will call X and Y.

- 1) The first occurrence of X (014) is circled in m. 1 Give its normal form.
- 2) The first occurrence of Y (015) is circled in m. 5. Give its normal form.
- 3) Compare and contrast the normal forms of the first appearance of each set.
- 4) What do you notice if you compare the interval vectors of each set:
X = <101100> Y = <100110>?
- 5) Make a T (transposition) and I (inversion) matrix for the first normal form of X and Y*

X T			

X I			

Y T			

Y I			

*T-matrix: Write the normal form of the pc set across the top and down the left side. Subtract each value on the left from the value at the head of its column mod-12, as in the following:

T	1	2	3
1	0	1	2
2	E	0	1
3	T	E	0

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I-matrix: Write the normal form of the pc set across the top and down the left side. Add each value on the left to the value at the head of its column mod-12, as following:

T	1	2	3
1	2	3	4
2	3	4	5
3	4	5	6

6) Now take each number in your T matrix and use it to transpose X and Y (e.g., if the number 2 shows up in your T-matrix for [012], include T2 [234] in your list). Take each number in your I-matrix and use it to invert X and Y (e.g., if the number 5 shows up in your I-matrix for [012], include T2I [345] in your list). This will give you those forms of each that share invariant pcs (common tones) with the original versions.

X T forms

X I forms

Y T forms

Y I forms

7) Identify all of the interlocking forms of X and Y in mm. 1–8 according to the following: T_n, where n = the distance from the original normal form to any subsequent appearances (e.g., given [012], T₁=[123]). T_nI, where n=the inversive index: the sum of each corresponding member (e.g., given [012], T₁I=[124]). (You will probably want to make to copies of the score or make a reduction to plain noteheads, using one for X and another for Y). NB: you may find forms not in list above.

8) Find one of Lewin's RICH structures in m. 7, and draw an arrow from the T- form to its TI form on the score (RICH stands for Retrograde Inversion Chain: the last two elements of an ordered pc set become the first two elements of its transposed retrograde inversion. For instance, [023] → T5I [235].)

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9) Using nodes and arrows, sketch two transformation networks (an X- and Y-network) of the most important appearances of X and Y in mm. 1–8 (you needn't include them all, unless you become fascinated by the possibilities).

10) Are there one or two specific pitch-classes that seem to be especially important in this movement?

11) How are X and Y treated differently in the work as a whole?

12) Add any other observations about the movement you care to make, regarding the function of invariant pcs (common tones), registral connections between important pcs, the vertical spacing of chords, the restatement of particular inversions or transpositions, or rhythmic aspects of the movement.