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Hungar Chapter

Berg, Lyric Suite III (Allegro misterioso)

[Notation shows three tetrachords at opening, bar 1, and three tetrachords at close, bar 137]

The set-name is 4-5.

	Integer notation for pc set	Cyclic notation	Permutation Number (see list of elements)	Bip
	10 9 5 11			
a	10 9 5 11	(0)(1)(2)(3)	p1	0 order inversions 146
b	9 10 11 5	(01)(23)	p22	2 order inversions 116
c	9 10 5 11	(01)	p8	1 order inversion 156
d	11 5 10 9	(0312) (1302)	[p6]	5 order inversions 156
e	5 11 10 9	(02)(13)	p23	4 order inversions 116
f	11 5 9 10	(03)(12)	p24	6 order inversions (max) 146

In a,b,c the dyads 9 10 and 5 11 are held fixed.
In d,e,f the same are held fixed but the order-
position of the dyads are reversed.

f is the reverse of a, e the reverse of b, d the
reverse of c. The sum of order inversions in each case is 6 (inverse pairs)

Here the bips show the correspondence of retrogrades.

When the retrograde is regarded as the extreme case of
reversal, the bip remains the same. The same relation
holds between any equivalent ~~1302~~
bips.

Bar 1

pc set 4-5

Musical notation for Bar 1: A treble clef staff with a key signature of one flat (B-flat). The notes are B-flat, D, F, A-flat, B-flat, D, F, A-flat, B-flat, D, F, A-flat. Fingerings are indicated below the notes: 1-4-6 for the first three notes, 1-1-6 for the next three, and 1-5-6 for the last three.

three tips
 116 (2)
 146 (4)
 156 (2)

Bar 137

Musical notation for Bar 137: A treble clef staff with a key signature of one flat (B-flat). The notes are B-flat, D, F, A-flat, B-flat, D, F, A-flat, B-flat, D, F, A-flat. Fingerings are indicated below the notes: 6-5-1 for the first three notes, 6-1-1 for the next three, and 6-4-1 for the last three. Blue arrows connect notes between Bar 1 and Bar 137: from the 4th note of Bar 1 to the 1st note of Bar 137, from the 6th note of Bar 1 to the 4th note of Bar 137, from the 8th note of Bar 1 to the 6th note of Bar 137, and from the 10th note of Bar 1 to the 8th note of Bar 137.

Analysis of Berg Lyric Suite example in terms of permutation theory (group)

p22, p23, and p24 comprise the set of even permutations in class (2)(2)

They form a subgroup with the identity p1 as shown in the group table below:

1	22	23	24
22	1	24	23
23	24	1	22
24	23	22	1

Both p6 and ~~p8~~ belong ^{to} ~~the~~ the subgroup generated by powers of p6

1	4	6	22
4	22	1	6
6	1	22	4
22	6	4	1

Each of the following is its own ~~an~~ inverse: p8, p22, p23, p24 (shown in table above).