

MTO 15.5 Examples: Traut, Dyadic TC Lattices

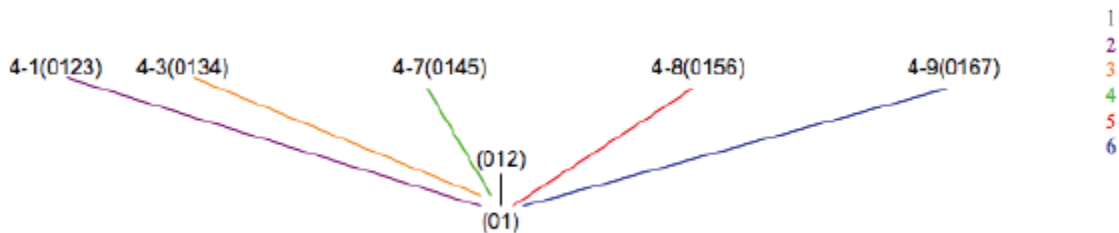
(Note: audio, video, and other interactive examples are only available online)

<http://www.mtosmt.org/issues/mto.09.15.5/mto.09.15.5.traut.php>

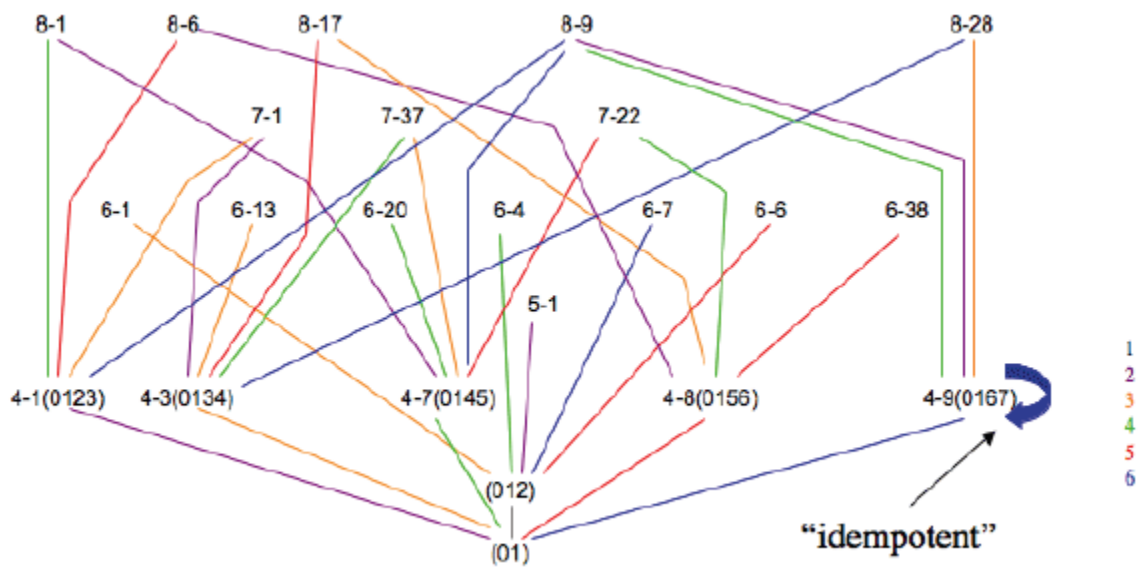
Example 1. Cohn's illustrations of IS and TC collections used in Bartók

IS: "x" "z" 4-23 8-1
 TC: diatonic whole-tone octatonic 6-20

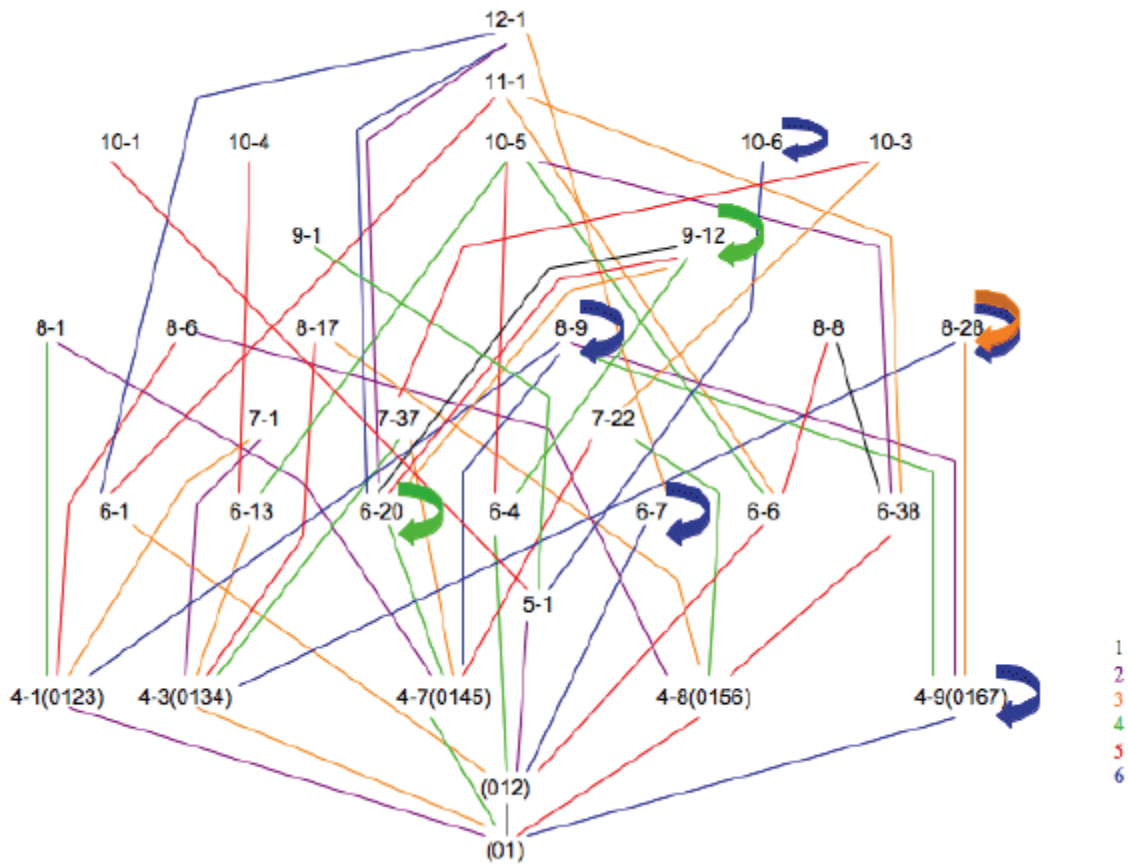
Example 2. Beginning of Lattice 1



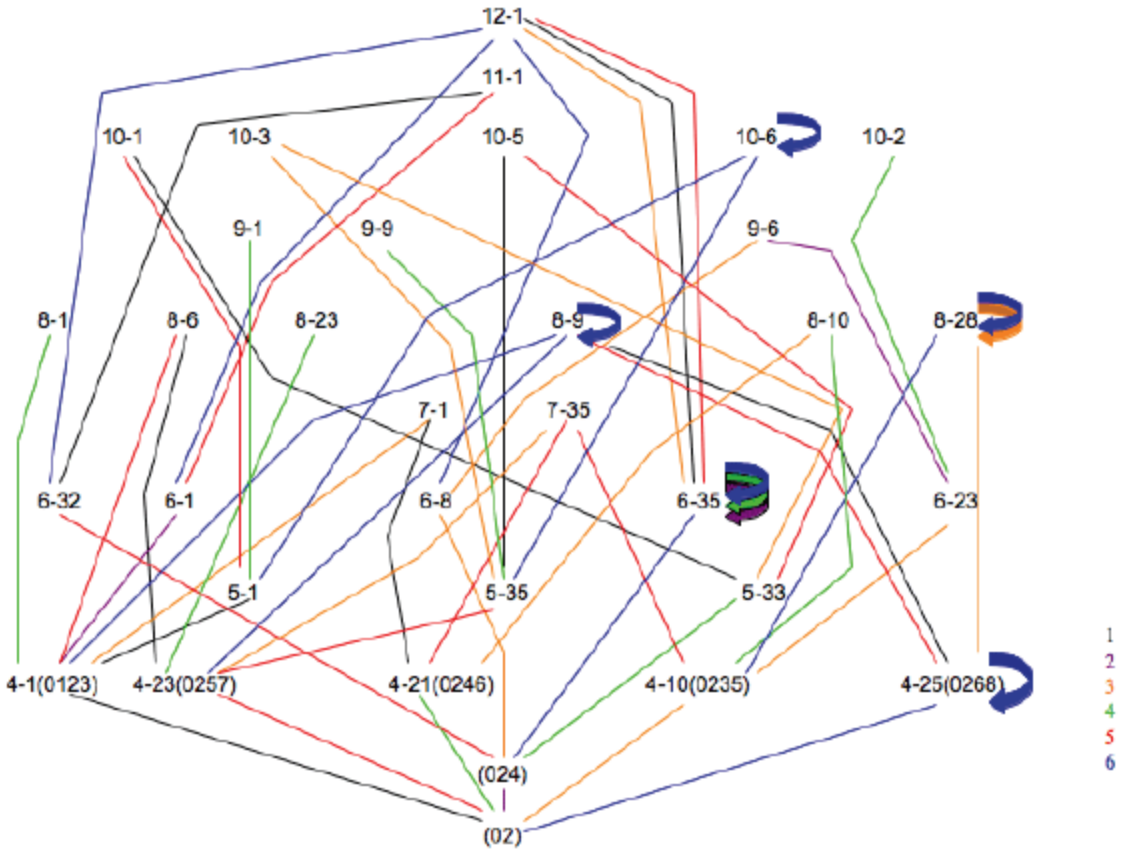
Example 3. Middle stage of Lattice 1



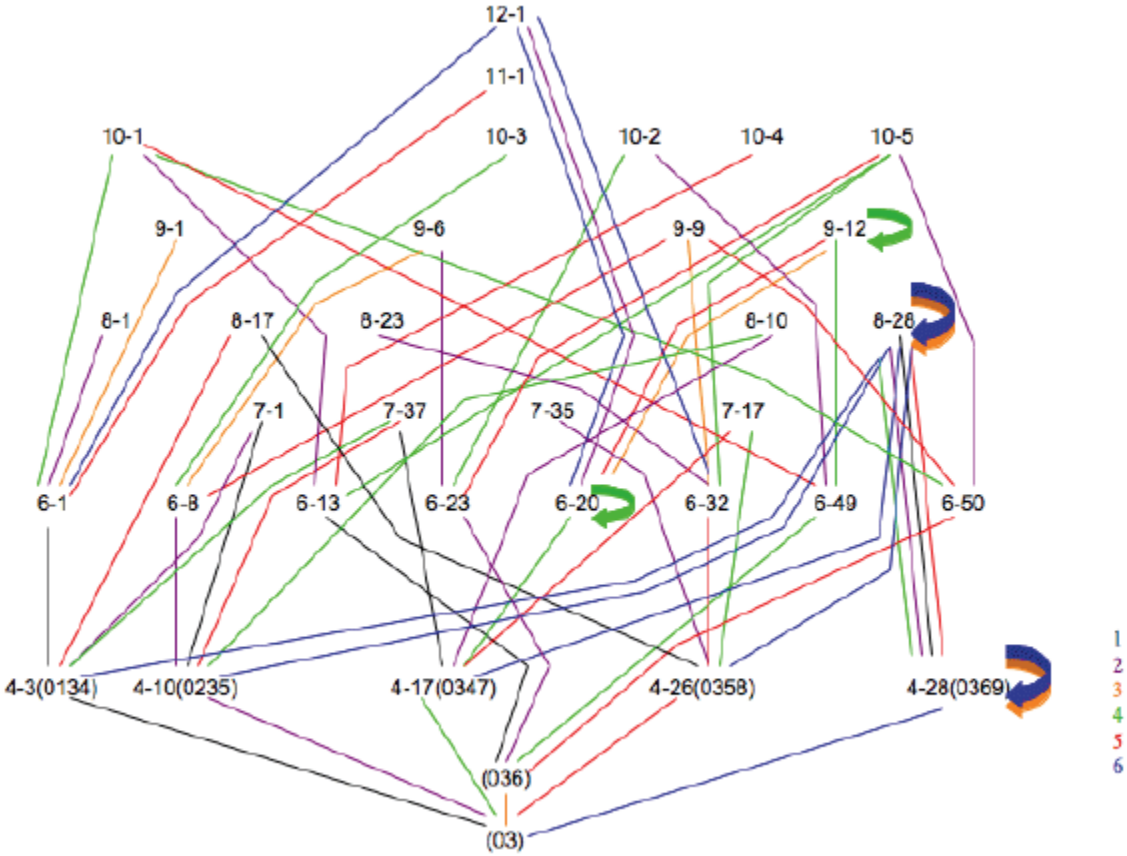
Example 4. Completion of Lattice 1



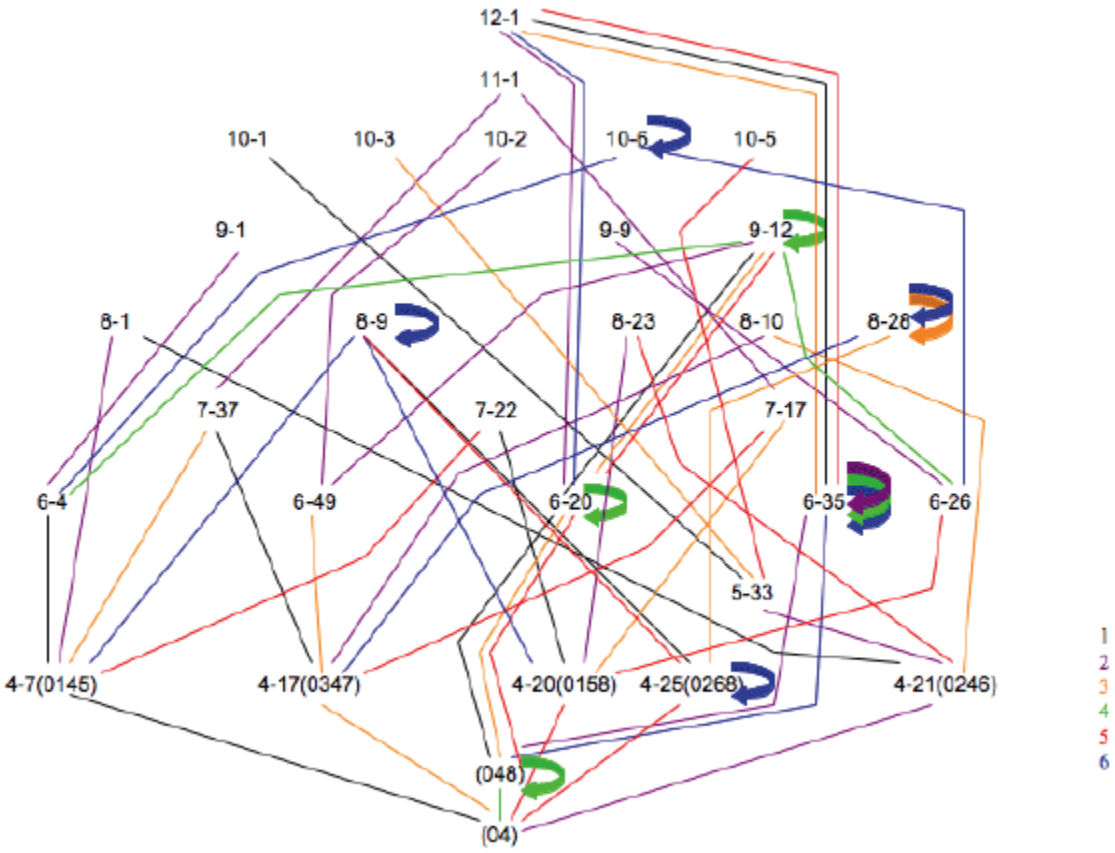
Example 5. Lattice 2



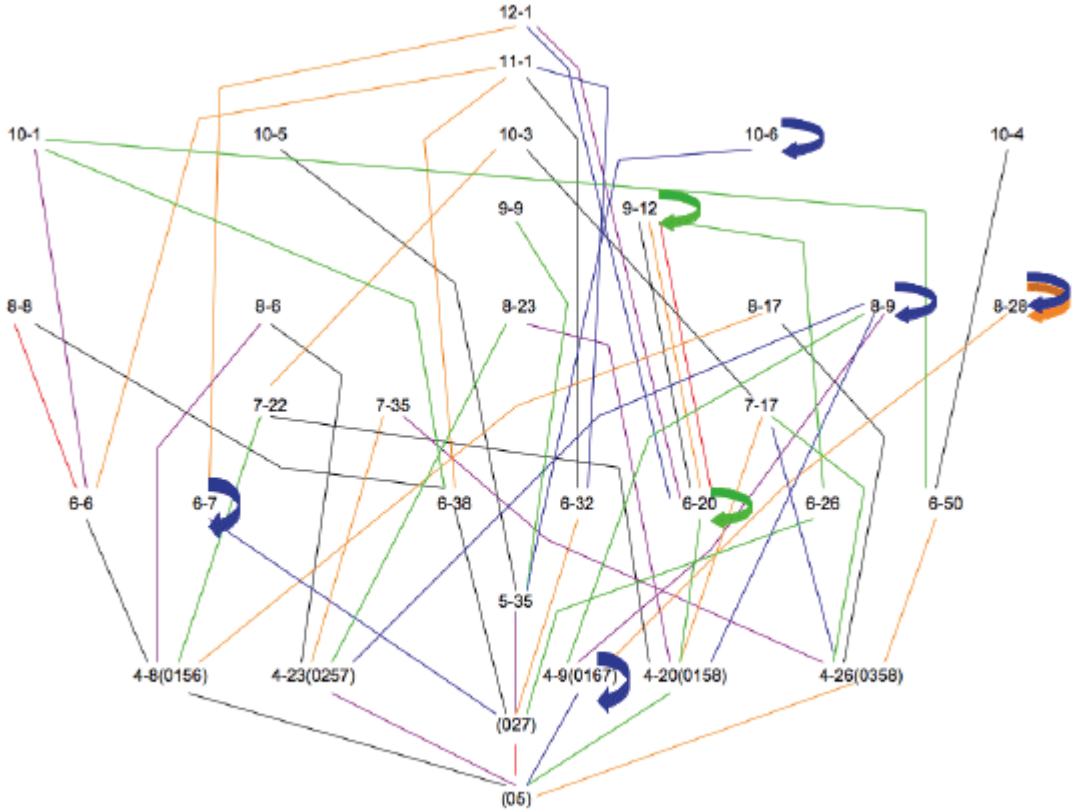
Example 6. Lattice 3



Example 7. Lattice 4

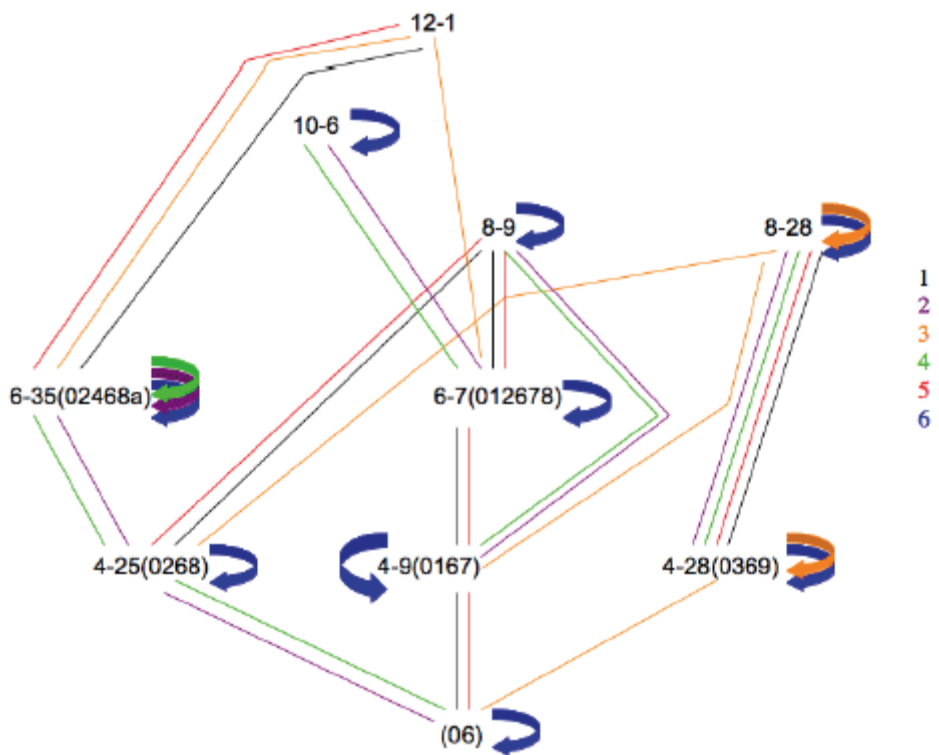


Example 8. Lattice 5



- 1
- 2
- 3
- 4
- 5
- 6

Example 9. Lattice 6



Example 10. Debussy, *String Quartet*, IV

TC 1 (03)

TC 2 (0134)

TC 2 (0123456)

TC 3 (06)

TC 5 (0369)

TC 5 8-28

TC 5 12-1

Example 11. Crumb, *Five Pieces For Piano*

I

Quasi improvvisando [♩ = 52] GEORGE CRUMB

Piano

TC 3 3-1

TC 3 6-1

TC 3 9-1

12-1

Table 1. Totals from dyad lattices

Cardinality	2	3	4	5	6	7	8	9	10	11	12	Total
Lattice												
(01)	-	1	5	1	7	3	6	2	5	1	1	32
(02)	-	1	5	3	5	2	6	3	5	1	1	30
(03)	-	1	5	0	8	4	5	4	5	1	1	34
(04)	-	1	5	1	5	3	5	3	5	1	1	30
(05)	-	1	5	1	7	3	6	2	5	1	1	32
(06)	-	0	3	0	2	0	2	0	1	0	1	9
Unique Sets	0	5	13	3	14	5	8	4	6	1	1	60
IS Sets	6	5	15	10	20	10	15	5	6	1	1	94

Table 2. Roster of inversionally symmetric set classes

<u>SET CLASS</u>	<u>LATTICE(S)</u>	<u>COMP/Z-PAIR</u>	<u>LATTICE(S)</u>
3-1 (012).....	1.....	9-1 (012345678).....	1, 2, 3, 4
3-6 (024).....	2.....	9-6 (01234568a).....	2, 3
3-9 (027).....	5.....	9-9 (01235678a).....	2, 3, 4, 5
3-10 (036).....	3.....	9-10 (01234679a).....	none
3-12 (048).....	4.....	9-12 (01245689a).....	1, 3, 4, 5
4-1 (0123)*.....	1, 2.....	8-1 (01234567).....	1, 2, 3, 4
4-3 (0134).....	1, 3.....	8-3 (01234569).....	none
4-6 (0127).....	none.....	8-6 (01235678).....	1, 2, 5
4-7 (0145).....	1, 4.....	8-7 (01234589).....	none
4-8 (0156).....	1, 5.....	8-8 (01234789).....	1, 5
4-9 (0167)*.....	1, 5, 6.....	8-9 (01236789).....	1, 2, 4, 5, 6
4-10 (0235)*.....	2, 3.....	8-10 (02345679).....	2, 3, 4
4-17 (0347).....	3, 4.....	8-17 (01345689).....	1, 3, 5
4-20 (0158).....	4, 5.....	8-20 (01245789).....	none
4-21 (0246).....	2, 4.....	8-21 (0123468a).....	none
4-23 (0257)*.....	2, 5.....	8-23 (0123578a).....	2, 3, 4, 5
4-24 (0248).....	none.....	8-24 (0124568a).....	none
4-25 (0268).....	2, 4, 6.....	8-25 (0124678a).....	none
4-26 (0358).....	3, 5.....	8-26 (0134579a).....	none
4-28 (0369)*.....	3, 6.....	8-28 (0134679a).....	1, 2, 3, 4, 5, 6
5-1 (01234)*.....	1, 2.....	7-1 (0123456).....	1, 2, 3

<u>SET CLASS</u>	<u>LATTICE(S)</u>	<u>COMP/Z-PAIR</u>	<u>LATTICE(S)</u>
5-8 (02346)	none	7-8 (0234568)	none
5-12 (01356)	none	7-12 (0123479)	none
5-15 (01268)	none	7-15 (0124678)	none
5-17 (01348)	none	7-17 (0124569)	3, 4, 5
5-22 (01478)	none	7-22 (0125689)	1, 4, 5
5-33 (0248)	2, 4	7-33 (012468a)	none
5-34 (02469)	none	7-34 (013468a)	none
5-35 (02479)*	2, 5	7-35 (013568a)	2, 3, 5
5-37 (03458)	none	7-37 (0134578)	1, 3, 4
6-1 (012345)	1, 2, 3		
6-4 (012456)	1, 4	6-37 (012348)	none
6-6 (012567)	1, 5	6-38 (012378)	1, 5
6-7 (012678)	1, 5, 6		
6-8 (023457)	2, 3		
6-13 (013467)	1, 3	6-42 (012369)	none
6-20 (014589)	1, 3, 4, 5		
6-23 (023568)	2, 3	6-45 (023469)	none
6-26 (013578)	4, 5	6-48 (012579)	none
6-28 (013569)	none	6-49 (013479)	3, 4
6-29 (023679)	none	6-50 (014679)	3, 5
6-32 (024579)	2, 3, 5		
6-35 (02468a)	2, 4, 6		

* = maps directly to its complement under some TC operation

Table 3. “Prime” SCs with IS

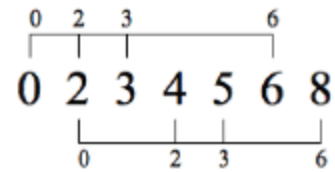
4-6	5-8	6-28	7-15
4-24	5-12	6-29	7-33
	5-15	6-37	
	5-17	6-42	
	5-22	6-45	
	5-34	6-48	
	5-37		

Table 4. “Semi-factorable” SCs with IS

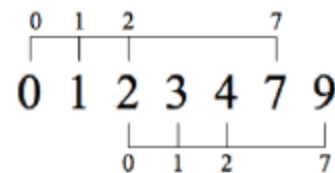
7-8	8-3	9-10
7-12	8-7	
7-34	8-20	
	8-21	
	8-24	
	8-25	
	8-26	

Example 12. Septachord “none” sets

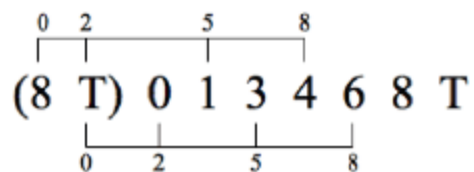
$$7-8(0234568) = \text{TC2}[4-12(0236)]$$



$$7-12(0123479) = \text{TC2}[4-6(0127)]$$

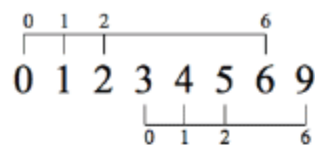


$$7-34(013468T) = \text{TC2}[4-27(0258)]$$

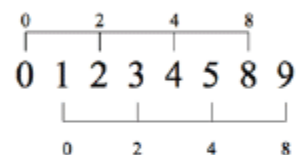


Example 13. Octochord “none” sets

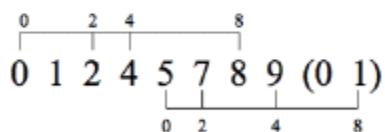
8-3(01234569) = TC3[4-5(0126)]



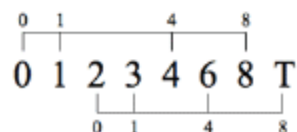
8-7(01234589) = TC1[4-24(0248)]



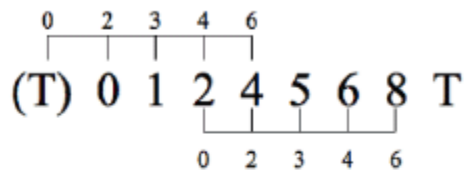
8-20(01245789) = TC5[4-24(0248)]



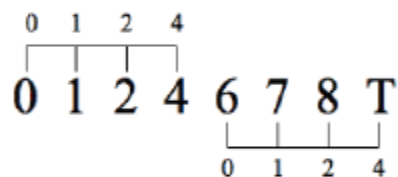
8-21(0123468T) = TC2[4-19(0148)]



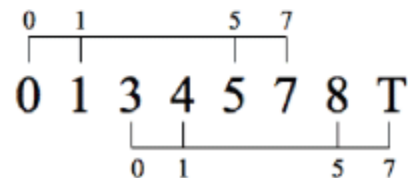
8-24(01245689T) = TC4[5-8(02346)]



8-25(0124678T) = TC6[4-2(0124)]



8-26(0134578T) = TC3[4-16(0157)]



Example 14. Nonchord “none” sets

$$9-10(01234679T) = TC4[5-12(01356)]$$

