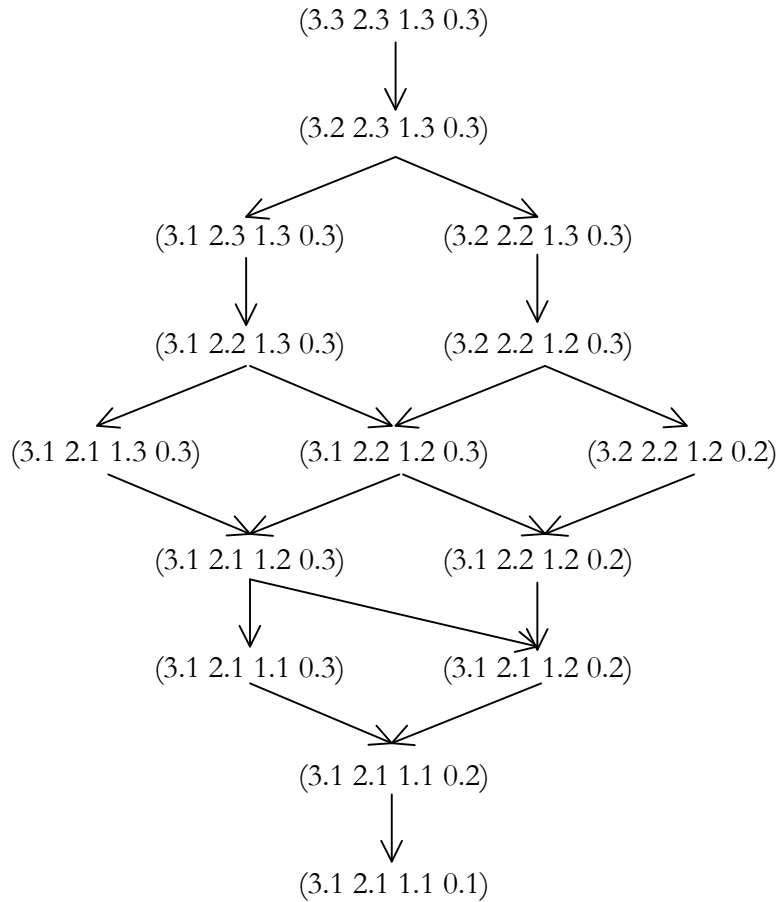**Prof. Dr. Alfred Toth**

A pre-semiotic graph of SR$_{4,3}$

1. In Toth (2008b), I have shown that the system of the 15 pre-semiotic sign classes (SS15) has antimatroidal structure:

(3.3 2.3 1.3 0.3)

↓

(3.2 2.3 1.3 0.3)

(3.1 2.3 1.3 0.3) (3.2 2.2 1.3 0.3)

↓ ↓

(3.1 2.2 1.3 0.3) (3.2 2.2 1.2 0.3)

(3.1 2.1 1.3 0.3) (3.1 2.2 1.2 0.3) (3.2 2.2 1.2 0.2)

(3.1 2.1 1.2 0.3) (3.1 2.2 1.2 0.2)

(3.1 2.1 1.1 0.3) (3.1 2.1 1.2 0.2)

(3.1 2.1 1.1 0.2)

↓

(3.1 2.1 1.1 0.1)

2. In this study, I want to show the internal sign connections between the 15 sign classes of SS15:

1	(3.1 2.1 1.1 0.1)	9	(3.1 2.2 1.3 0.3)
2	(3.1 2.1 1.1 0.2)	10	(3.1 2.3 1.3 0.3)
3	(3.1 2.1 1.1 0.3)	11	(3.2 2.2 1.2 0.2)
4	(3.1 2.1 1.2 0.2)	12	(3.2 2.2 1.2 0.3)
5	(3.1 2.1 1.2 0.3)	13	(3.2 2.2 1.3 0.3)
6	(3.1 2.1 1.3 0.3)	14	(3.2 2.3 1.3 0.3)
7	(3.1 2.2 1.2 0.2)	15	(3.3 2.3 1.3 0.3)
8	(3.1 2.2 1.2 0.3)		

I will use the expression a/b = c in order to point out that sign classes a and b share c sub-signs with one another; cf. (3.1 2.1 1.1 0.1) ∩ (3.1 2.1 1.1 0.2) = (3.1 2.1 1.1); (3.1 2.1 1.1 0.1) ∩ (3.3 2.3 1.3 0.3) = ∅ (cf. Toth 2008a, p. 28). Since the connections between two identical sign classes are trivial, we obtain the following values of binary pre-semiotic sign connections:

1/2 = 3						
1/3 = 3	2/3 = 3					
1/4 = 2	2/4 = 3	3/4 = 2				
1/5 = 2	2/5 = 2	3/5 = 3	4/5 = 3			
1/6 = 2	2/6 = 2	3/6 = 3	4/6 = 2	5/6 = 3		
1/7 = 1	2/7 = 1	3/7 = 1	4/7 = 3	5/7 = 3	6/7 = 1	
1/8 = 1	2/8 = 1	3/8 = 2	4/8 = 2	5/8 = 3	6/8 = 2	7/8 = 3
1/9 = 1	2/9 = 1	3/9 = 2	4/9 = 1	5/9 = 2	6/9 = 3	7/9 = 3
1/10 = 0	2/10 = 0	3/10 = 2	4/10 =1	5/10 = 2	6/10 = 3	7/10 = 1
1/11 = 0	2/11 = 0	3/11 = 0	4/11 = 2	5/11 = 1	6/11 = 0	7/11 = 3
1/12 = 0	2/12 = 0	3/12 = 1	4/12 = 1	5/12 = 2	6/12 = 1	7/12 = 2
1/13 = 0	2/13 = 0	3/13 = 1	4/13 = 0	5/13 = 1	6/13 = 2	7/13 = 1
1/14 = 0	2/14 = 0	3/14 = 1	4/14 = 0	5/14 = 1	6/14 = 2	7/14 = 0
1/15 = 0	2/15 = 0	3/15 = 1	4/15 = 0	5/15 = 1	6/15 = 2	7/15 = 0

8/9 = 3						
8/10 = 2	9/10 = 3					
8/11 = 2	9/11 = 1	10/11 = 0				
8/12 = 3	9/12 = 2	10/12 = 1	11/12 = 3			
8/13 = 2	9/13 = 3	10/13 = 2	11/13 = 2	12/13 = 3		
8/14 = 1	9/14 = 2	10/14 = 3	11/14 = 1	12/14 = 2	13/14= 3	
8/15 = 1	9/15 = 2	10/15 = 3	11/15 = 0	12/15 = 1	13/15 = 2	14/15 = 3

The next page shows one of the possible pre-semiotic graphs for $SR_{4,3}$. It belongs to formerly suggested semiotic graphs (cf. Toth 2008c, d) and to a long overdue semiotic graph theory.
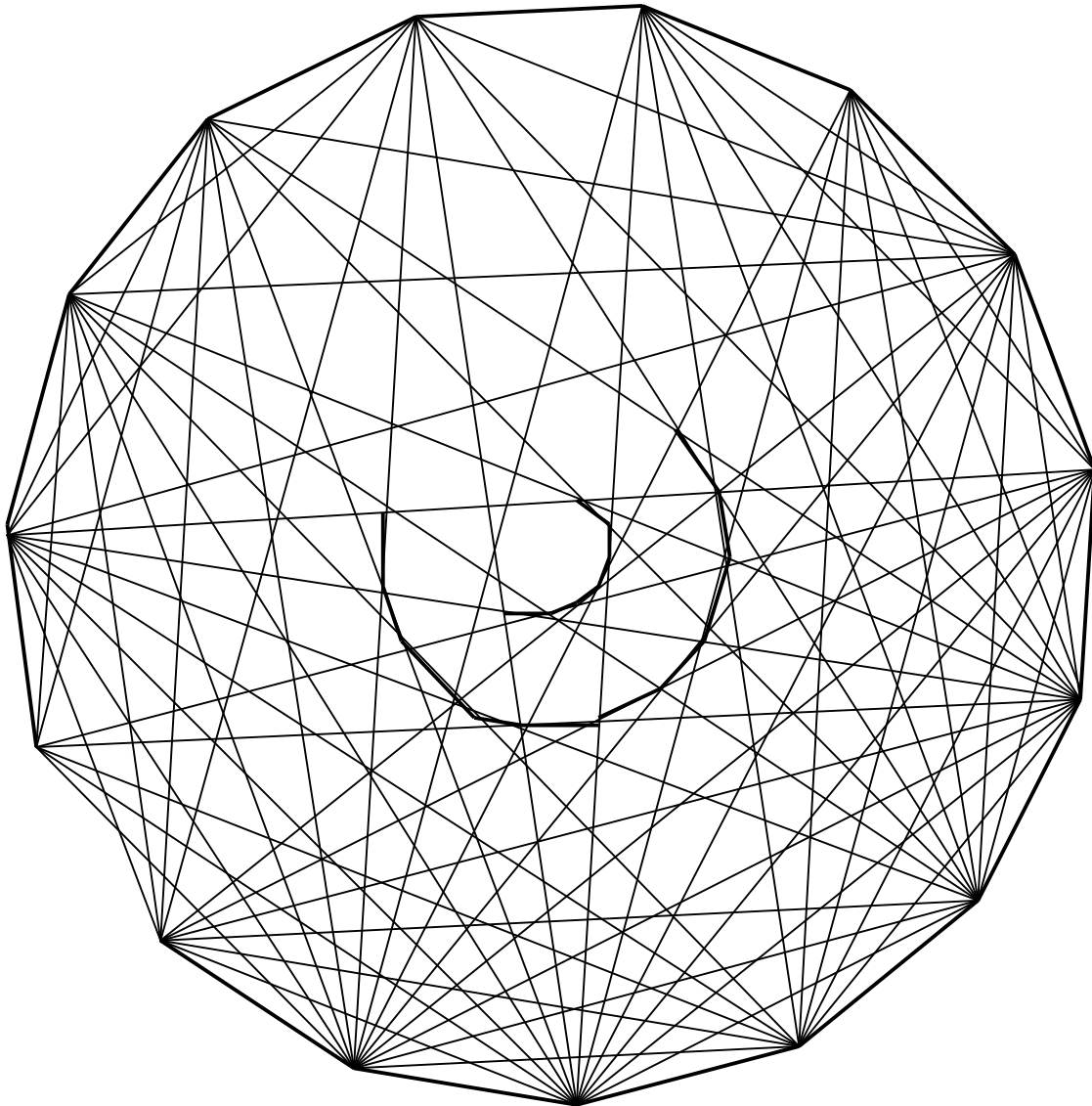
Note the two incomplete circle-approximations around the center of the graph and the non-connected points 10/11 (since (3.1 2.3 1.3 0.3) ∩ (3.2 2.2 1.2 0.2) = ∅).

Bibliography

Toth, Alfred, Semiotic Ghost Trains. Klagenfurt 2008 (2008a)
Toth, Alfred, Semiotic antimatroids. Ch. 80 (2008b)
Toth, Alfred, A semiotic decagonal graph with hexagonal embedding. Ch. 67 (2008c)