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Orthogonal transpositions in semiotics

1. In Toth (2008), the semiotic cube has been introduced as a geometric model to show how opposite sides of a cube can be assigned to semiotic transpositions and their mirror-images. Therefore, transpositions require a 3-dimensional semiotic space for sign classes and their dual reality thematics, which had hitherto not been taken into consideration (cf. Toth 2007, pp. 132 ss.).

2. While in Toth (2008), it has also been shown that the following pairs of transpositions are orthogonal to one another:

1 (3.1 2.1 1.3)	3 (1.3 3.1 2.1)	5 (2.1 1.3 3.1)
2 (1.3 2.1 3.1)	4 (2.1 3.1 1.3)	6 (3.1 1.3 2.1),

it is one aim of the present study to show that **all** transpositions are orthogonal to one another, which we show using the sign class (3.1 2.1 1.3):

1.3			1.3				1.3				
2.1	1.3		2.1		1.3	1.3	2.1		1.3		
3.1	**2.1**	**1.3**	**3.1**	**1.3**	**2.1**	**2.1**	**3.1**	**1.3**	**2.1**	**1.3**	**3.1**
	3.1	2.1		2.1	3.1	3.1		2.1	3.1		
		3.1		3.1				3.1			

	1.3				1.3
	2.1	1.3		1.3	2.1
1.3	**3.1**	**2.1**	**1.3**	**2.1**	**3.1**
2.1		3.1	2.1	3.1	
3.1			3.1		

While the first dimension is represented by the transpositions in bold, the other two whole dimensions are represented by those transpositions that have a bold prime-sign at their bottom or top, thus together making up three-dimensional semiotic spaces.

But apparently, further, each transposition has one more orthogonal dimension that is fractal insofar as these transpositions contain a bold prime-sign as their dyadic part-relation. More generally, semiotic transpositions show the following possible orthogonal structures:

e.f			e.f				e.f				e.f
c.d	e.f		c.d		e.f	e.f	c.d		e.f		c.d
a.b	c.d	e.f	a.b	e.f	c.d	c.d	a.b	e.f	c.d	e.f	a.b
	a.b	c.d		c.d	a.b	a.b			a.b	c.d	
		a.b		a.b						a.b	

	e.f				e.f
	c.d	e.f		e.f	c.d
e.f	a.b	c.d	e.f	c.d	a.b
c.d		a.b	c.d	a.b	
a.b			a.b		

We may note the results of this small study in the following semiotic theorems:

Theorem: The transpositions of all sign classes are orthogonal to one another and require a three-dimensional semiotic space whose dimensions are associated with the monadic and triadic part-relation of the whole sign relation. Moreover, all transpositions exhibit one fractal dimension each, which is associated with the dyadic part-relation of the whole sign relation.

Lemma: Each transposition of all sign classes exhibits three topological and one Hausdorff-Besicovitch dimension.

From these theorems, it follows that self-similarity is present in **each** sign class and not only in the eigen-real (dual-invariant) sign class (3.1 2.2 1.3) that had been proposed as the semiotic representation scheme for recursive processes (Bogarin 1986; Bense 1992, pp. 32 s.).

Bibliography

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