

Prof. Dr. Alfred Toth

Konversion und Dualität

1. In polykontexturalen Systemen, gilt: „Each step in an open/closed world goes together with its counter-step. There is no move without its counter-move“ (Kaehr 2007, S. 26). Folglich fallen Konversion und Dualität nicht zusammen (vgl. z.B. Kaehr 2009, S. 75). Wegen der grundsätzlichen Ambivalenz und Diversität von Schritten und Gegenschritten (vgl. Toth 2025a, b) sollen die beiden Operationen sowohl vom Standpunkt der Diamond- als auch der Trajektionstheorie dargestellt werden.

2. Semiotische Relationen

$$\text{Zkl} = (3.x, 2.y, 1.z)$$

$$\text{conv}(\text{Zkl}) = (1.z, 2.y, 3.x)$$

$$\text{dual}(\text{Zkl}) = (z.1, y.2, x.3)$$

$$\text{dual}(\text{conv}(\text{Zkl})) = (x.3, y.2, z.1)$$

Sei $x = y = 1, z = 2$.

3. Diamonds

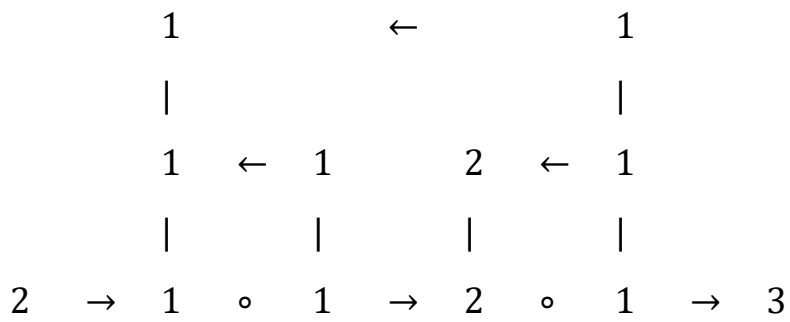
3.1. $\mathfrak{D}(\text{Zkl} = (3.1, 2.1, 1.2))$

$$\begin{array}{ccccccc} & 1 & & \leftarrow & & 1 & \\ & | & & & & | & \\ & 1 & \leftarrow & 2 & & 1 & \leftarrow & 1 \\ & | & & | & & | & & | \\ 3 & \rightarrow & 1 & \circ & 2 & \rightarrow & 1 & \circ & 1 & \rightarrow & 2 \end{array}$$

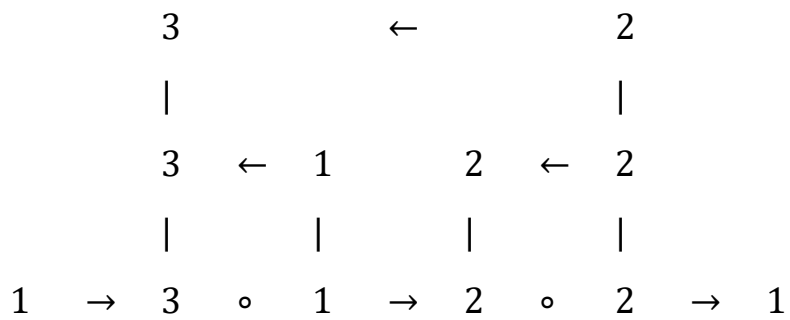
3.2. $\mathfrak{D}(\text{conv}(\text{Zkl}) = (3.1, 2.1, 1.2))) = \mathfrak{D}(1.2, 2.1, 3.1)$

$$\begin{array}{ccccccc} & 2 & & \leftarrow & & 3 & \\ & | & & & & | & \\ & 2 & \leftarrow & 2 & & 1 & \leftarrow & 3 \\ & | & & | & & | & & | \\ 1 & \rightarrow & 2 & \circ & 2 & \rightarrow & 1 & \circ & 3 & \rightarrow & 1 \end{array}$$

$$3.3. \mathfrak{D}(\text{dual}(\text{Zkl}) = (3.1, 2.1, 1.2))) = \mathfrak{D}(2.1, 1.2, 1.3)$$

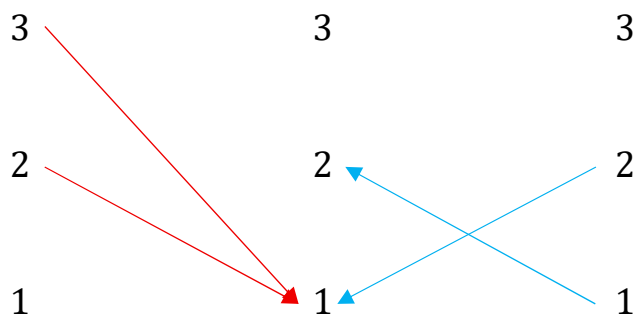


$$3.4. \mathfrak{D}(\text{dual}(\text{conv}(\text{Zkl}) = (3.1, 2.1, 1.2)))) = \mathfrak{D}(1.3, 1.2, 2.1)$$

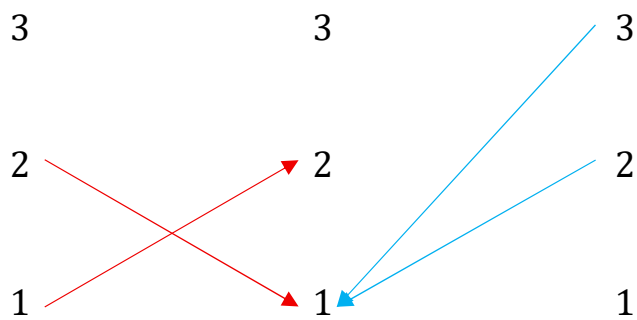


4. Trajekte von Zeichenklassen

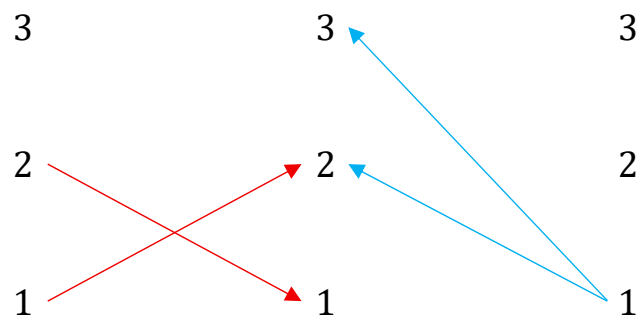
$$4.1. \mathfrak{T}(3.1, 2.1, 1.2)$$



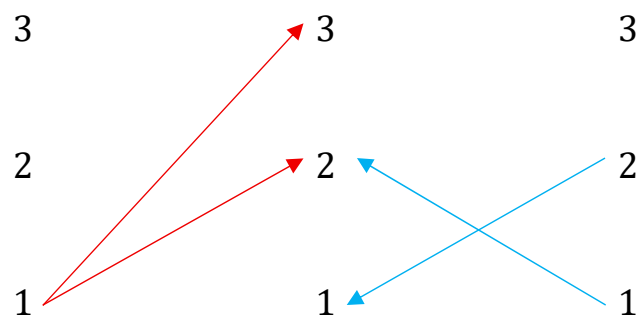
$$4.2. \mathfrak{T}(1.2, 2.1, 3.1)$$



4.3. $\mathfrak{I}(2.1, 1.2, 1.3)$

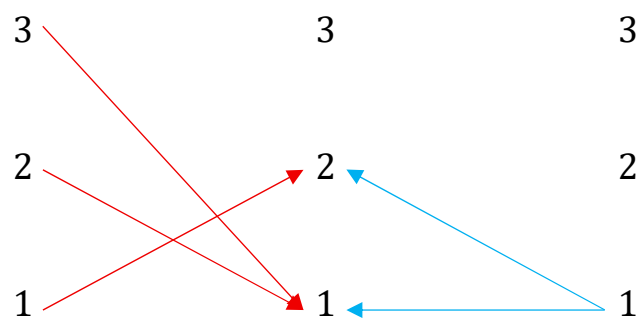


4.4. $\mathfrak{I}(1.3, 1.2, 2.1)$

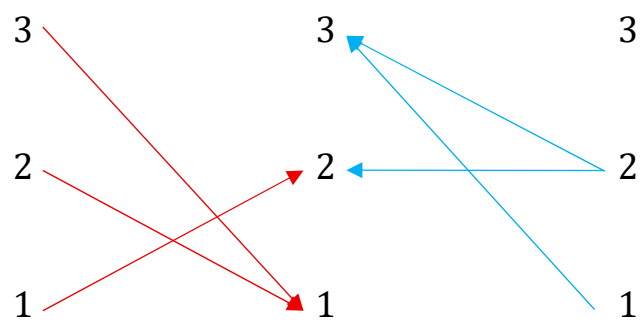


5. Trajekte von Diamonds

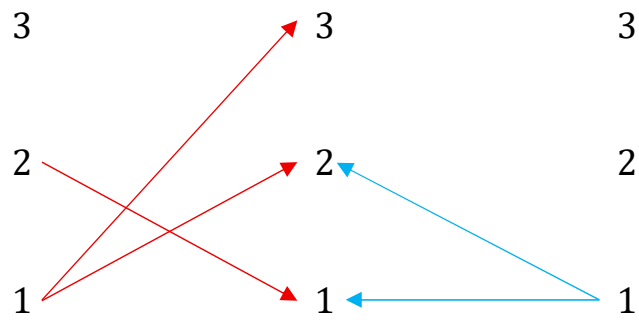
5.1. $\mathfrak{I}(\mathfrak{D}(\text{Zkl}))$



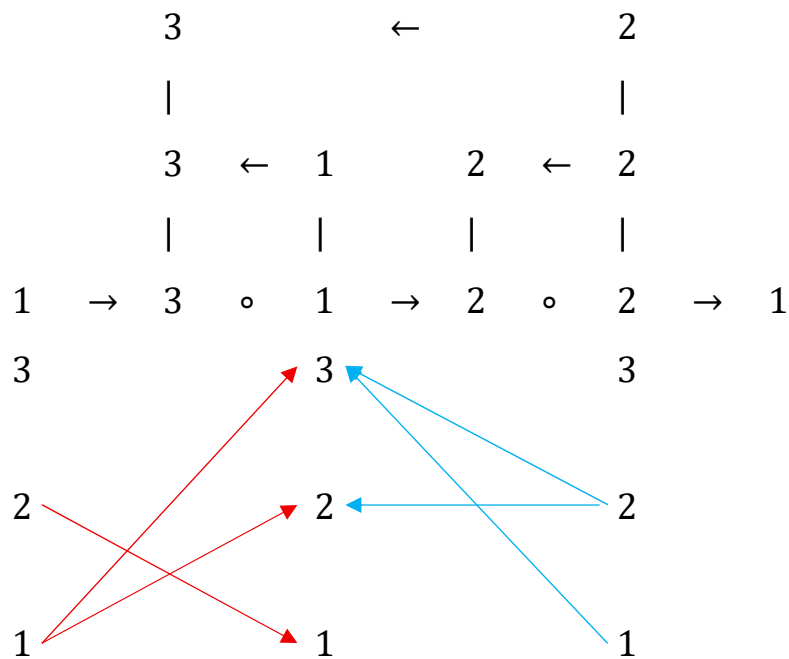
5.2. $\mathfrak{I}(\text{conv}(\mathfrak{D}(\text{Zkl})))$



5.3. $\mathfrak{I}(\text{dual}(\mathfrak{D}(\text{Zkl})))$



5.4. $\mathfrak{I}(\text{conv}(\text{dual}(\mathfrak{D}(\text{Zkl}))))$



Literatur

Kaehr, Rudolf, Steps Towards a Diamond Category Theory. Glasgow, U.K. 2007

Kaehr, Rudolf, Diamond Semiotic Short Studies. Glasgow, U.K. 2009

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Toth, Alfred, Gegenschritte. In: Electronic Journal for Mathematical Semiotics, 2025b

24.9.2025