

Prof. Dr. Alfred Toth

Vollständiges trajektisches System triadisch-trichotomischer Relationen

1. Im folgenden stellen wir aufgrund von Vorarbeiten (vgl. Toth 2025a-c) das vollständige System der $3^3 = 27$ ternären (triadisch-trichotomischen) semiotischen Relationen in Form von trajektischen Abbildungen der Form

$$T = (1, 2, 3) \mid (1, 2, 3)$$

mit $\mid = R((1, 2, 3), (1, 2, 3))$

dar und zerlegen semiotische Relationen dazu nach dem Vorschlag Walthers für Zeichenklassen (vgl. Walther 1979, S. 79) in Kompositionen dyadischer Teilrelationen

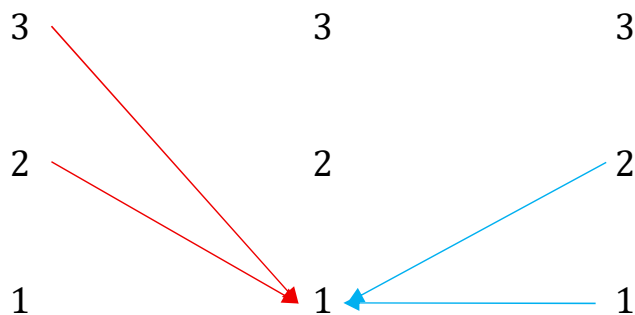
$$(3.x, 2.y, 1.z) = (3.x \rightarrow 2.y) \circ (2.y \rightarrow 1.z)$$

$$(z.1, y.2, x.3) = (z.1 \rightarrow y.2) \circ (y.2 \rightarrow x.3).$$

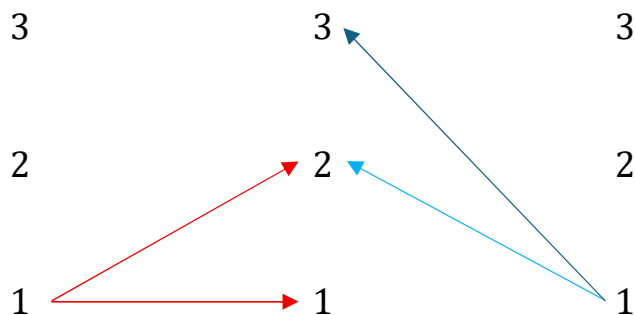
2. Semiotische Relationen

1. Semiotische Relation

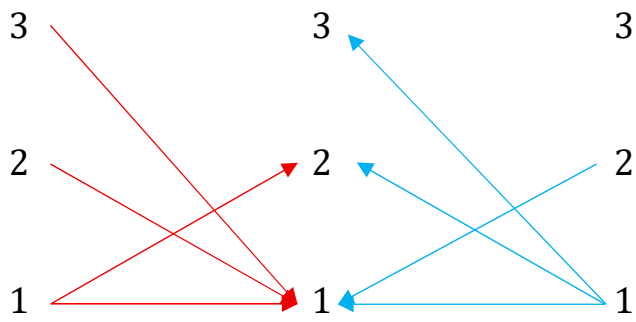
$$ZKl = (3.1, 2.1, 1.1)$$



$$RTh = (1.1, 1.2, 1.3)$$

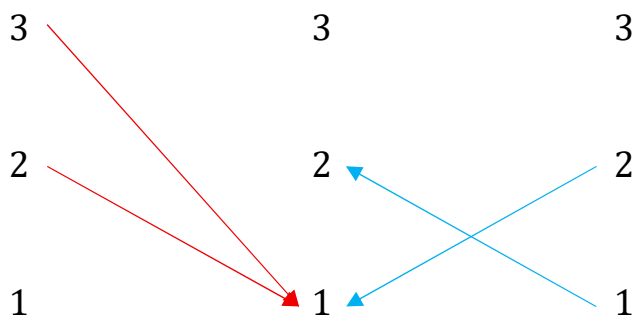


$$DS = [(3.1, 2.1, 1.1) \times (1.1, 1.2, 1.3)]$$

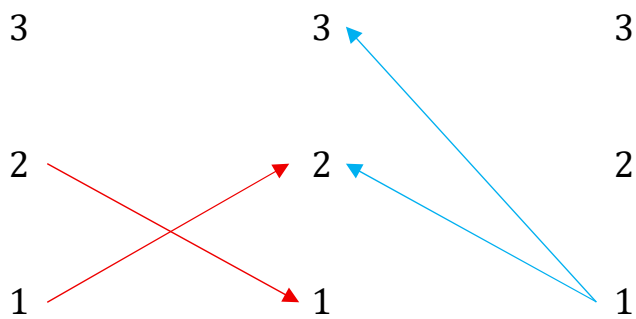


2. Semiotische Relation

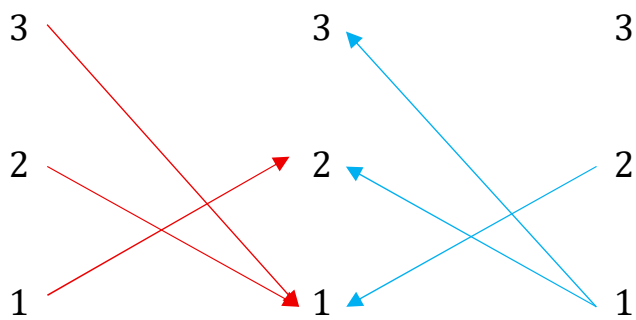
$$ZKI = (3.1, 2.1, 1.2)$$



$$RTh = (2.1, 1.2, 1.3)$$

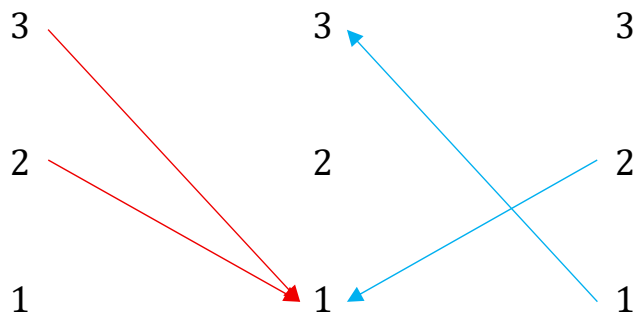


$$DS = [(3.1, 2.1, 1.2) \times (2.1, 1.2, 1.3)]$$

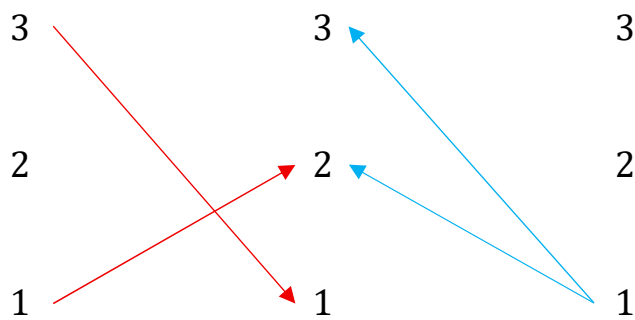


3. Semiotische Relation

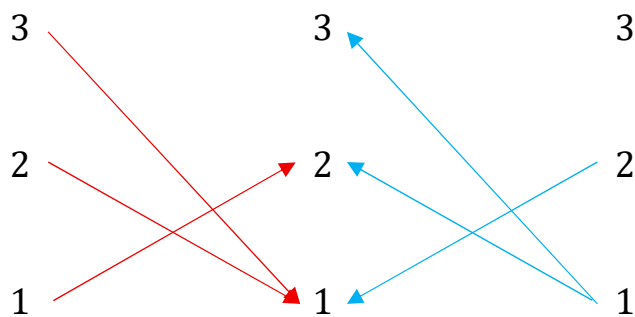
ZKl = (3.1, 2.1, 1.3)



RTh = (3.1, 1.2, 1.3)

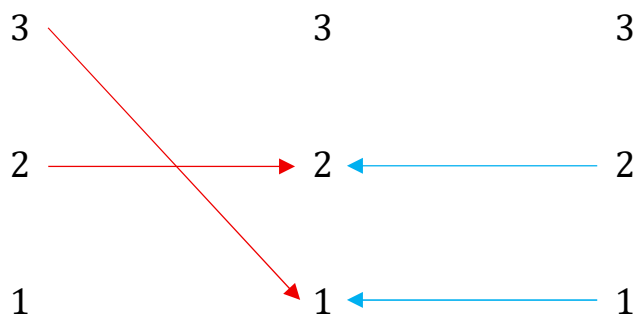


DS = [(3.1, 2.1, 1.3) × (3.1, 1.2, 1.3)]

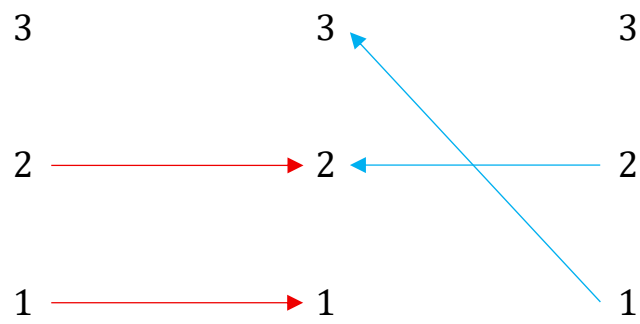


4. Semiotische Relation

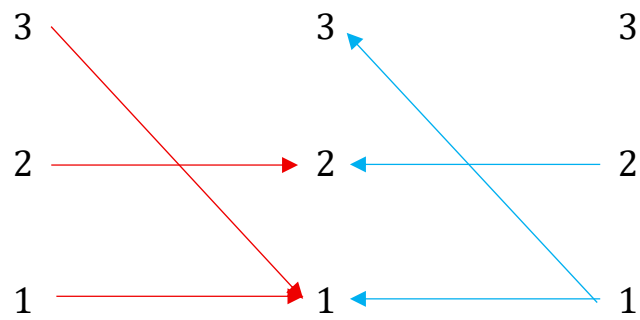
ZKl = (3.1, 2.2, 1.1)



RTh = (1.1, 2.2, 1.3)

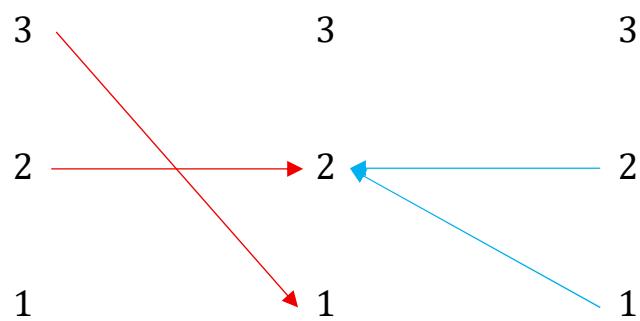


DS = [(3.1, 2.2, 1.1) × (1.1, 2.2, 1.3)]

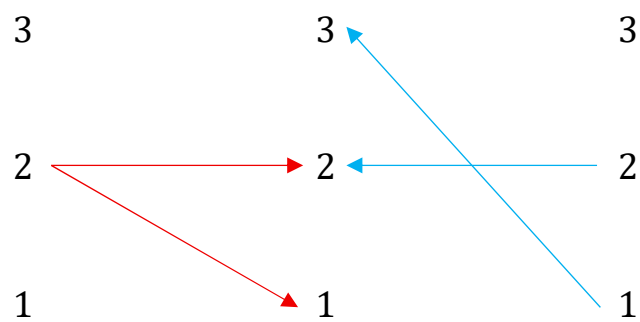


5. Semiotische Relation

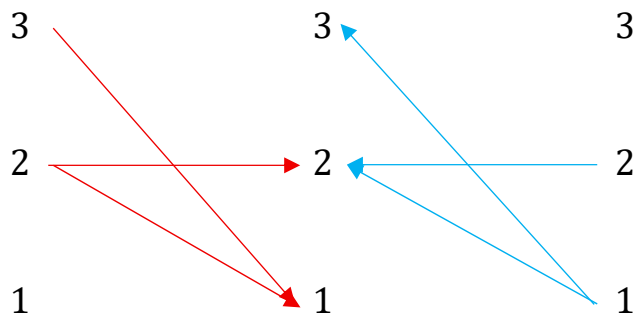
ZKl = (3.1, 2.2, 1.2)



RTh = (2.1, 2.2, 1.3)

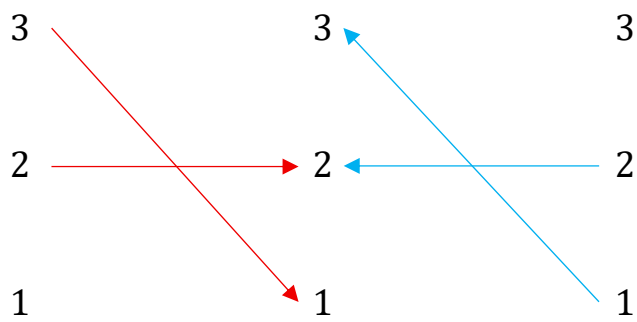


$$DS = [(3.1, 2.2, 1.2) \times (2.1, 2.2, 1.3)]$$

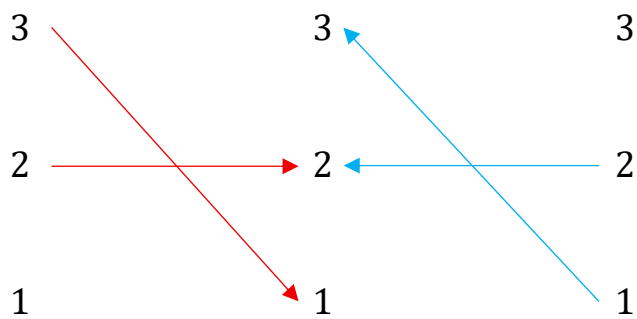


6. Semiotische Relation

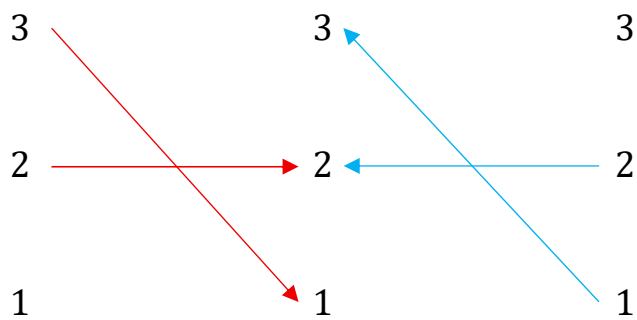
$$ZKl = (3.1, 2.2, 1.3)$$



$$RTh = (3.1, 2.2, 1.3)$$

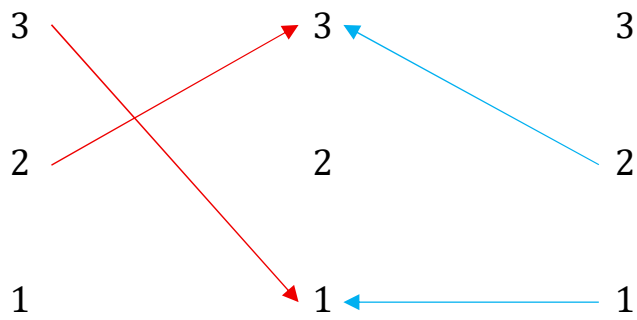


$$DS = [(3.1, 2.2, 1.3) \times (3.1, 2.2, 1.3)]$$

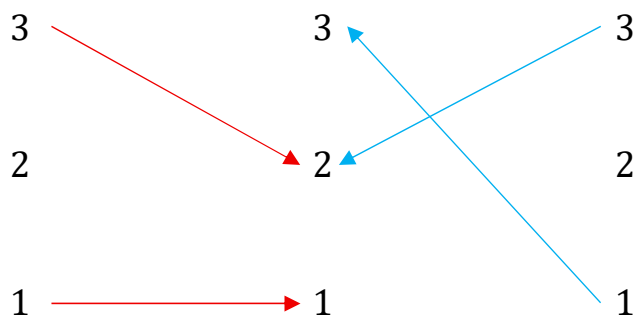


7. Semiotische Relation

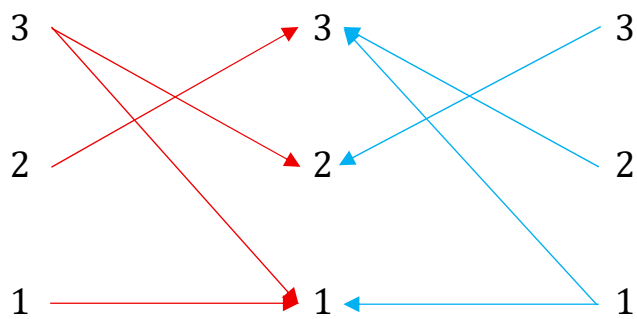
ZKl = (3.1, 2.3, 1.1)



RTh = (1.1, 3.2, 1.3)

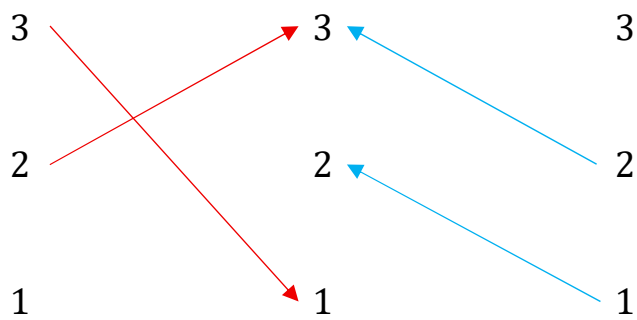


DS = [(3.1, 2.3, 1.1) × (1.1, 3.2, 1.3)]

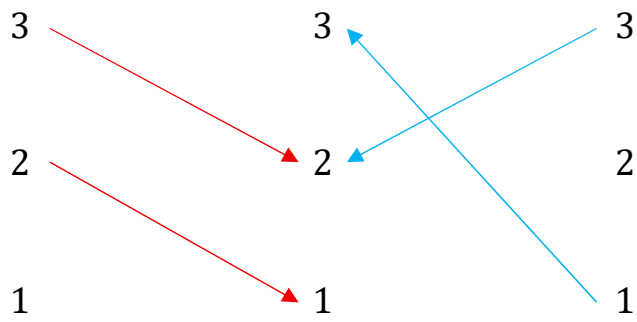


8. Semiotische Relation

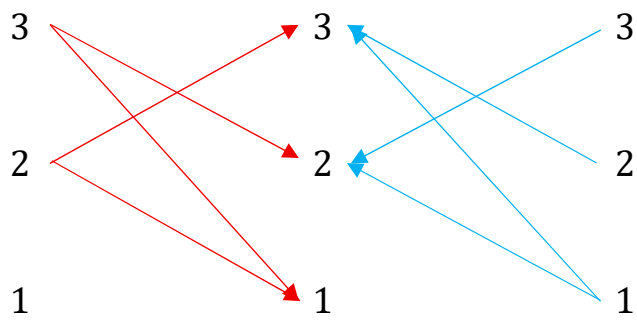
ZKl = (3.1, 2.3, 1.2)



RTh = (2.1, 3.2, 1.3)

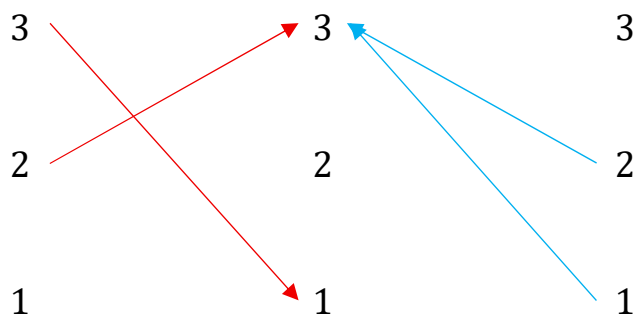


DS = [(3.1, 2.3, 1.2) × (2.1, 3.2, 1.3)]

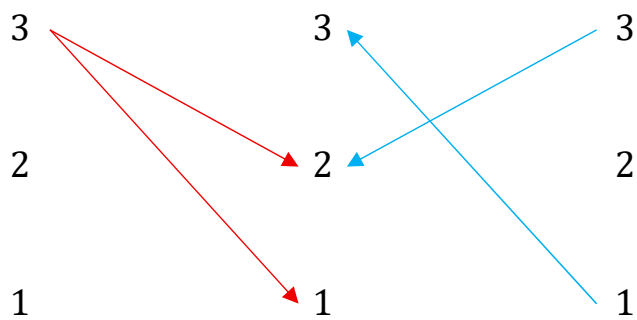


9. Semiotische Relation

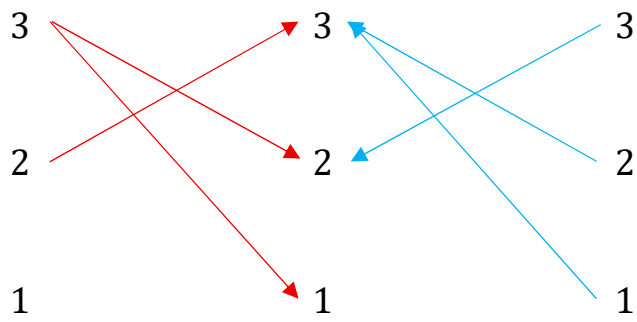
ZKl = (3.1, 2.3, 1.3)



RTh = (3.1, 3.2, 1.3)

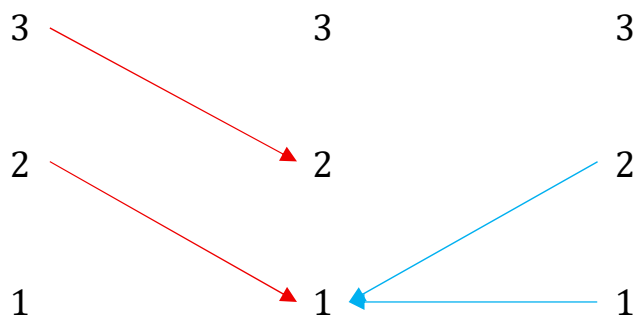


$$DS = [(3.1, 2.3, 1.3) \times (3.1, 3.2, 1.3)]$$

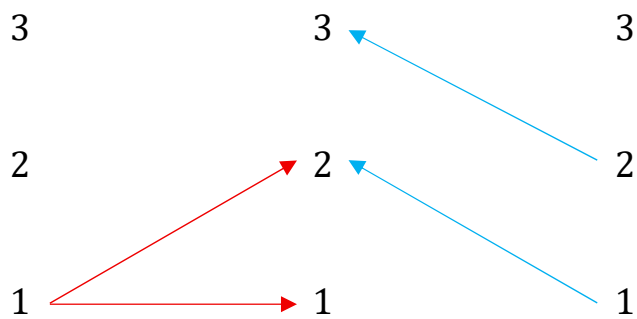


10. Semiotische Relation

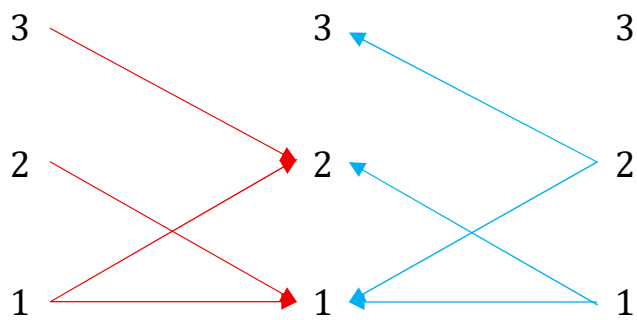
$$ZKl = (3.2, 2.1, 1.1)$$



$$RTh = (1.1, 1.2, 2.3)$$

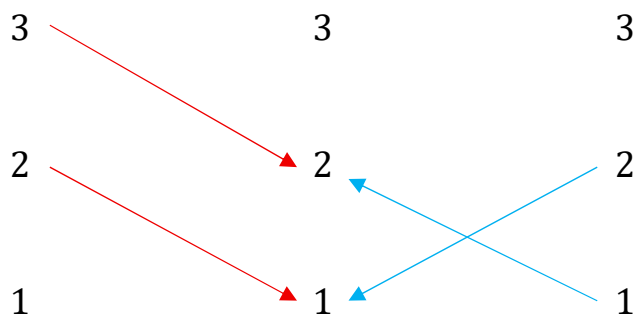


$$DS = [(3.2, 2.1, 1.1) \times (1.1, 1.2, 2.3)]$$

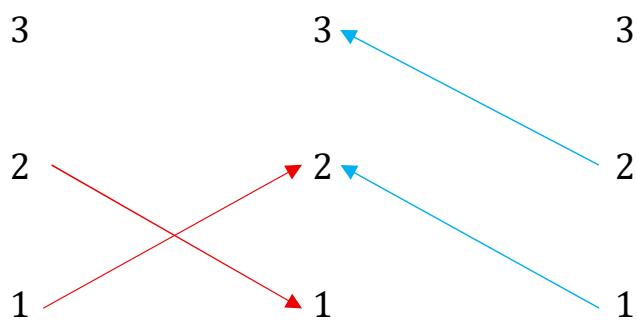


11. Semiotische Relation

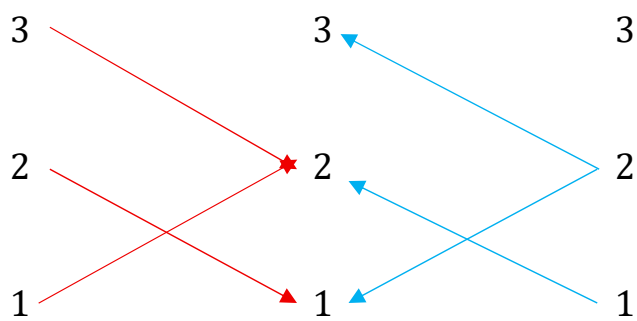
ZKl = (3.2, 2.1, 1.2)



RTh = (2.1, 1.2, 2.3)

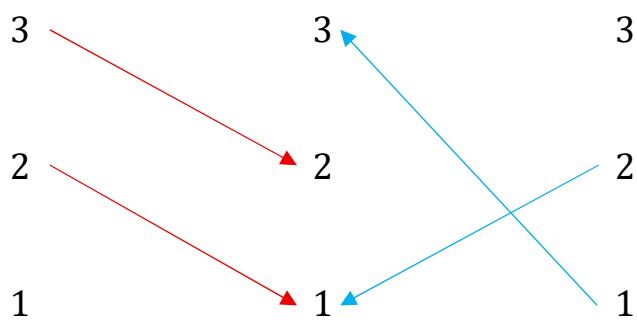


DS = [(3.2, 2.1, 1.2) × (2.1, 1.2, 2.3)]

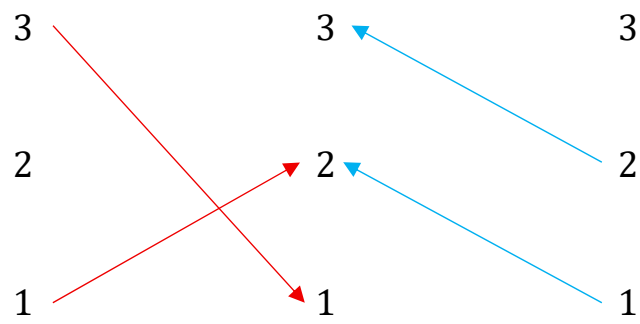


12. Semiotische Relation

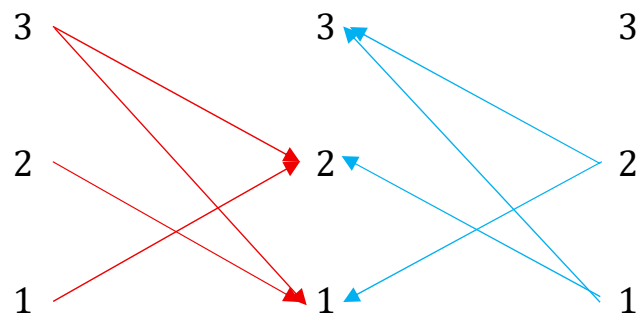
ZKl = (3.2, 2.1, 1.3)



RTh = (3.1, 1.2, 2.3)

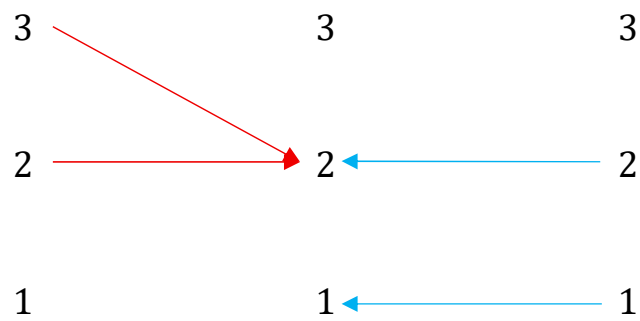


DS = [(3.2, 2.1, 1.3) × (3.1, 1.2, 2.3)]

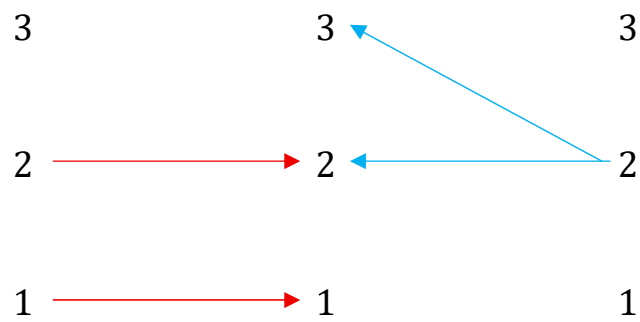


13. Semiotische Relation

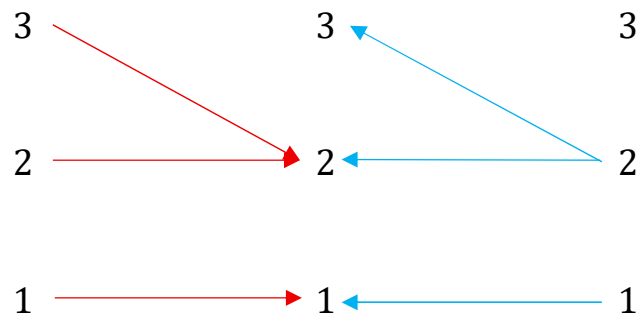
ZKl = (3.2, 2.2, 1.1)



RTh = (1.1, 2.2, 2.3)

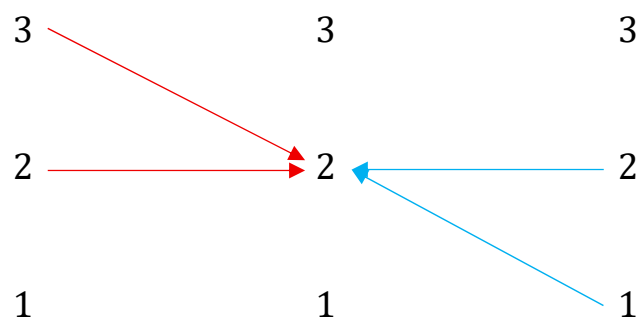


$$DS = [(3.2, 2.2, 1.1) \times (1.1, 2.2, 2.3)]$$

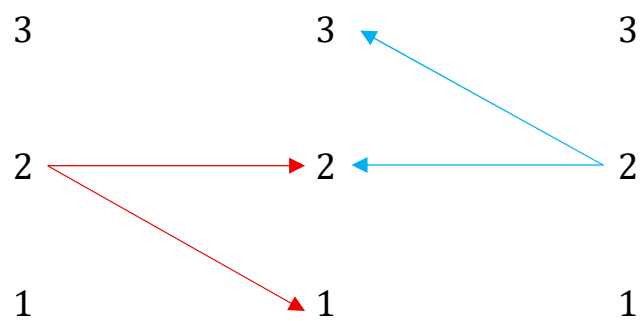


14. Semiotische Relation

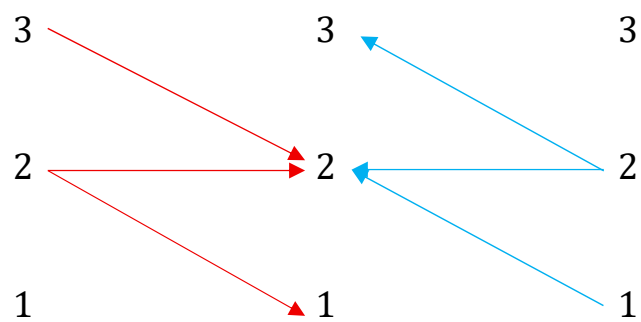
$$ZKl = (3.2, 2.2, 1.2)$$



$$RTh = (2.1, 2.2, 2.3)$$

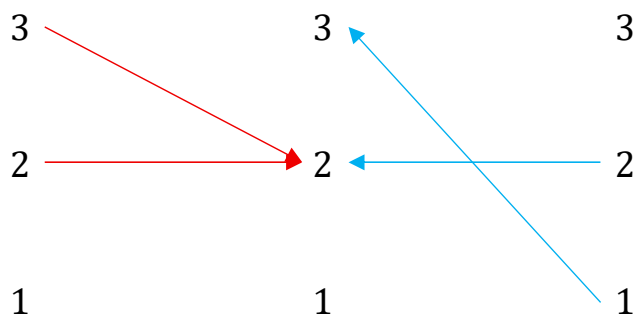


$$DS = [(3.2, 2.2, 1.2) \times (2.1, 2.2, 2.3)]$$

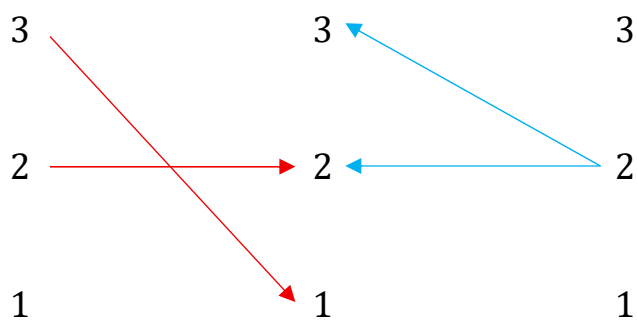


15. Semiotische Relation

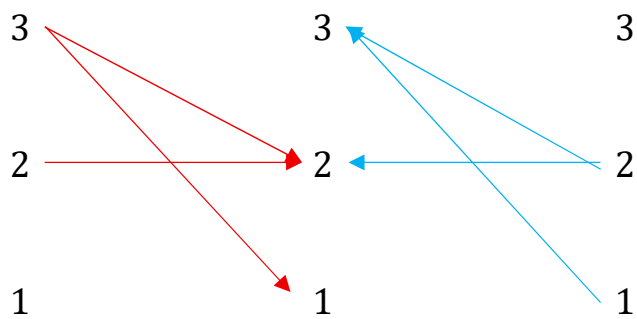
ZKl = (3.2, 2.2, 1.3)



RTh = (3.1, 2.2, 2.3)

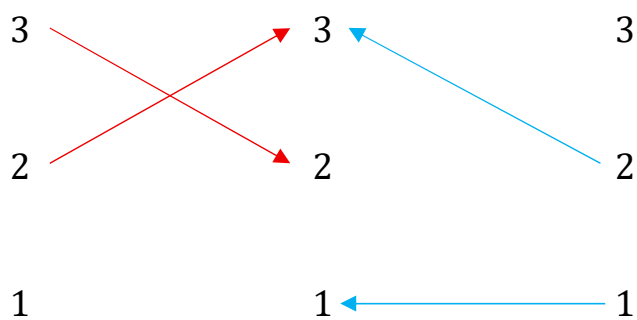


DS = [(3.2, 2.2, 1.3) × (3.1, 2.2, 2.3)]

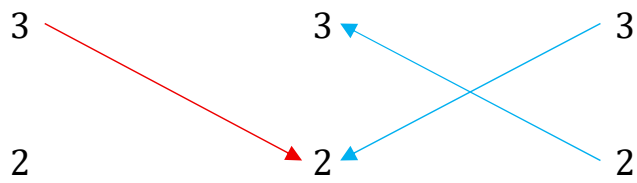


16. Semiotische Relation

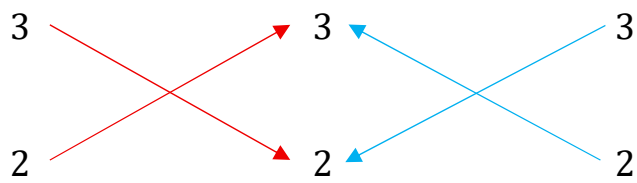
ZKl = (3.2, 2.3, 1.1)



RTh = (1.1, 3.2, 2.3)

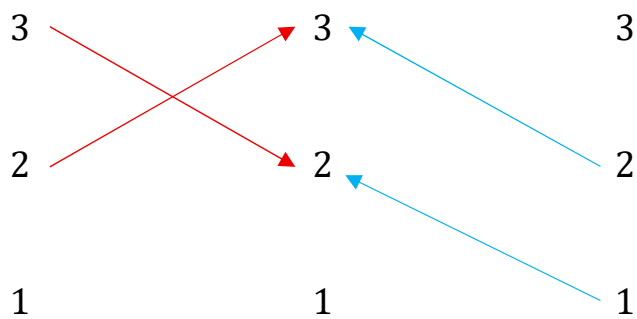


DS = [(3.2, 2.3, 1.1) × (1.1, 3.2, 2.3)]

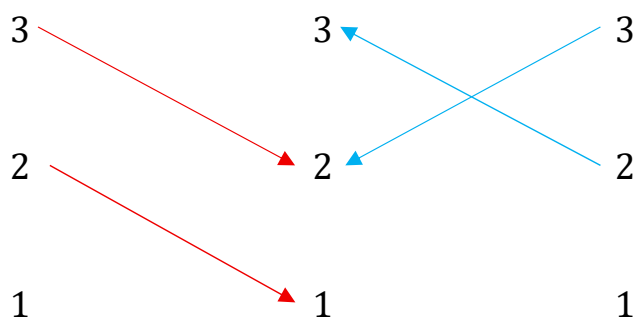


17. Semiotische Relation

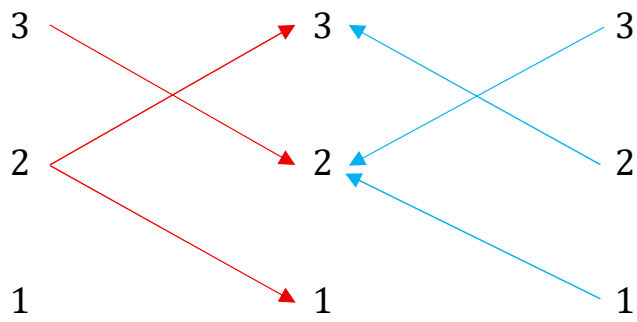
ZKl = (3.2, 2.3, 1.2)



RTh = (2.1, 3.2, 2.3)

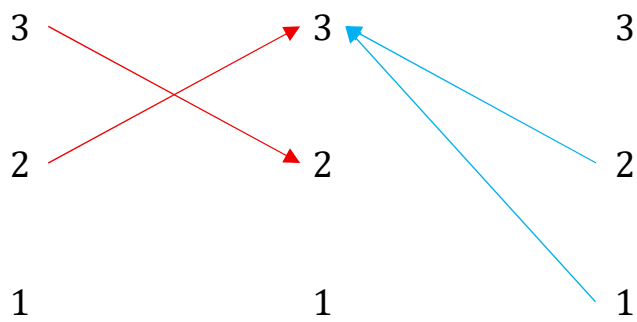


$$DS = [(3.2, 2.3, 1.2) \times (2.1, 3.2, 2.3)]$$

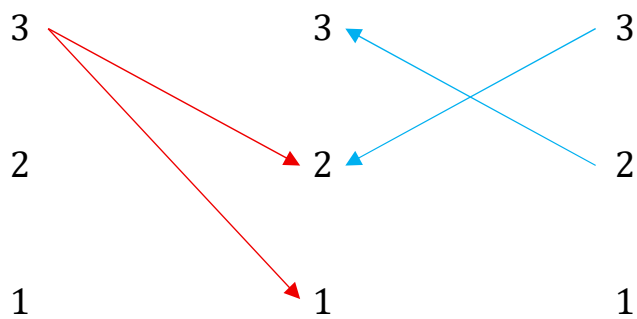


18. Semiotische Relation

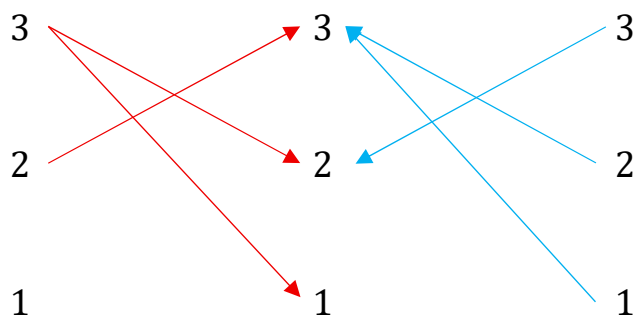
$$ZKI = (3.2, 2.3, 1.3)$$



$$RTh = (3.1, 3.2, 2.3)$$



$$DS = [(3.2, 2.3, 1.3) \times (3.1, 3.2, 2.3)]$$



19. Semiotische Relation

ZKl = (3.3, 2.1, 1.1)

3 $\xrightarrow{\text{red}}$ 3 3

2 2 2
 1 1 1

Detailed description: This diagram shows three columns of numbers. The first column has '2' above '1'. The second column has '2' above '1'. The third column has '2' above '1'. A red arrow points from the '2' in the first column to the '1' in the second column. A blue arrow points from the '2' in the third column to the '1' in the second column. Another blue arrow points from the '1' in the third column to the '1' in the second column.

RTh = (1.1, 1.2, 3.3)

3 3 $\xleftarrow{\text{blue}}$ 3

2 2 2
 1 1 1

Detailed description: This diagram shows three columns of numbers. The first column has '2' above '1'. The second column has '2' above '1'. The third column has '2' above '1'. A red arrow points from the '1' in the first column to the '2' in the second column. Another red arrow points from the '1' in the first column to the '1' in the second column. A blue arrow points from the '2' in the third column to the '2' in the second column. Another blue arrow points from the '1' in the third column to the '1' in the second column.

DS = [(3.3, 2.1, 1.1) $\times$ (1.1, 1.2, 3.3)]

3 $\xrightarrow{\text{red}}$ 3 $\xleftarrow{\text{blue}}$ 3

2 2 2
 1 1 1

Detailed description: This diagram shows three columns of numbers. The first column has '2' above '1'. The second column has '2' above '1'. The third column has '2' above '1'. Red arrows: from '2' in column 1 to '1' in column 2, and from '1' in column 1 to '2' in column 2. Blue arrows: from '2' in column 3 to '1' in column 2, and from '1' in column 3 to '2' in column 2.

20. Semiotische Relation

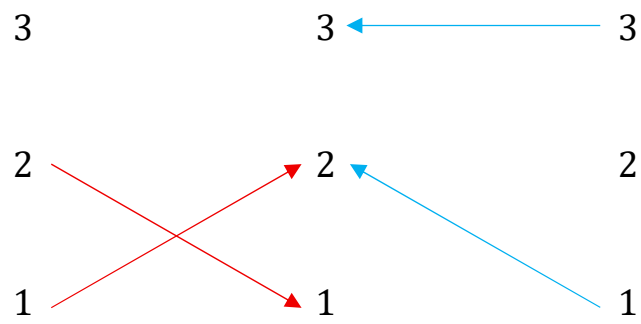
ZKl = (3.3, 2.1, 1.2)

3 $\xrightarrow{\text{red}}$ 3 3

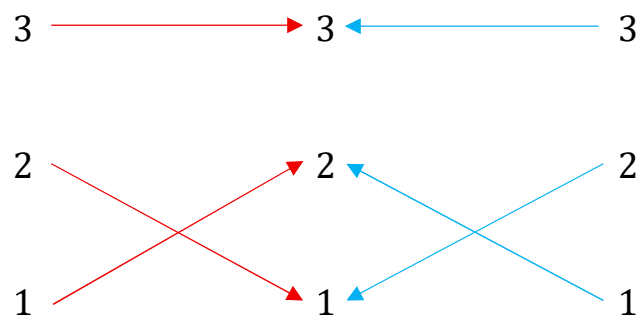
2 2 2
 1 1 1

Detailed description: This diagram shows three columns of numbers. The first column has '2' above '1'. The second column has '2' above '1'. The third column has '2' above '1'. A red arrow points from the '2' in the first column to the '1' in the second column. A blue arrow points from the '2' in the third column to the '1' in the second column. Another blue arrow points from the '1' in the third column to the '2' in the second column.

RTh = (2.1, 1.2, 3.3)

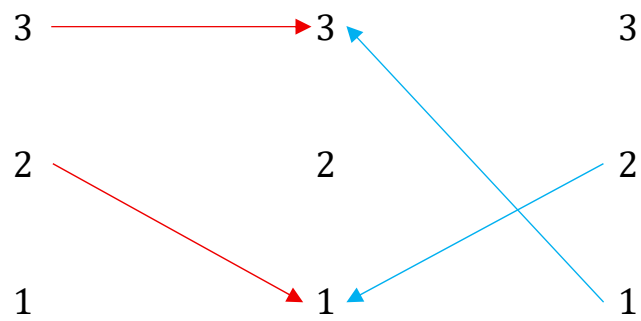


DS = [(3.3, 2.1, 1.2) × (2.1, 1.2, 3.3)]

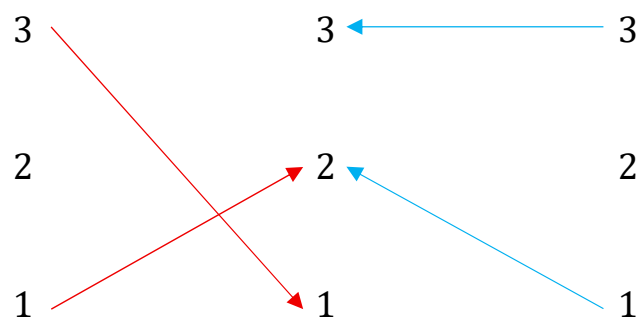


21. Semiotische Relation

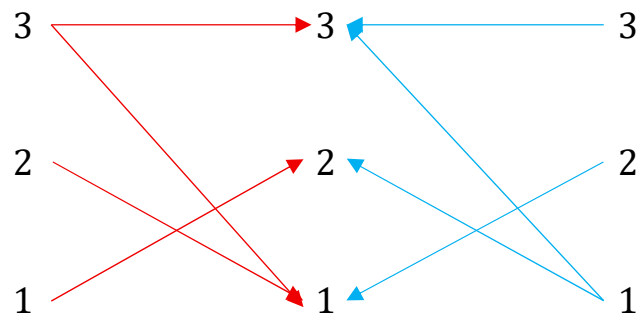
ZKl = (3.3, 2.1, 1.3)



RTh = (3.1, 1.2, 3.3)



$$DS = [(3.3, 2.1, 1.3) \times (3.1, 1.2, 3.3)]$$



22. Semiotische Relation

$$ZKl = (3.3, 2.2, 1.1)$$

$$3 \longrightarrow 3 \quad 3$$

$$2 \longrightarrow 2 \quad 2$$

$$1 \longrightarrow 1 \quad 1$$

$$RTh = (1.1, 2.2, 3.3)$$

$$3 \longrightarrow 3 \quad 3$$

$$2 \longrightarrow 2 \quad 2$$

$$1 \longrightarrow 1 \quad 1$$

$$DS = [(3.3, 2.2, 1.1) \times (1.1, 2.2, 3.3)]$$

$$3 \longrightarrow 3 \quad 3$$

$$2 \longrightarrow 2 \quad 2$$

$$1 \longrightarrow 1 \quad 1$$

23. Semiotische Relation

ZKl = (3.3, 2.2, 1.2)

3 → 3

2 → 2 ← 2

1 1

RTh = (2.1, 2.2, 3.3)

3 3 ← 3

2 → 2 ← 2

1 1 1

DS = [(3.3, 2.2, 1.2) × (2.1, 2.2, 3.3)]

3 → 3 ← 3

2 → 2 ← 2

1 1 1

24. Semiotische Relation

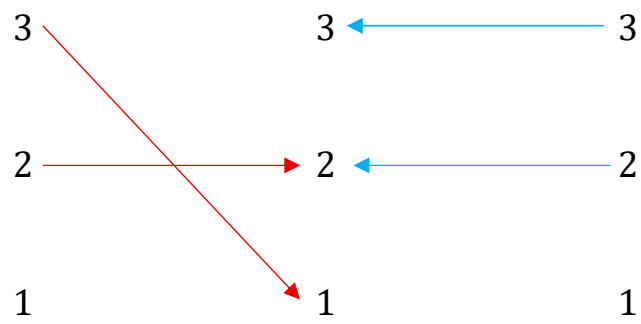
ZKl = (3.3, 2.2, 1.3)

3 → 3

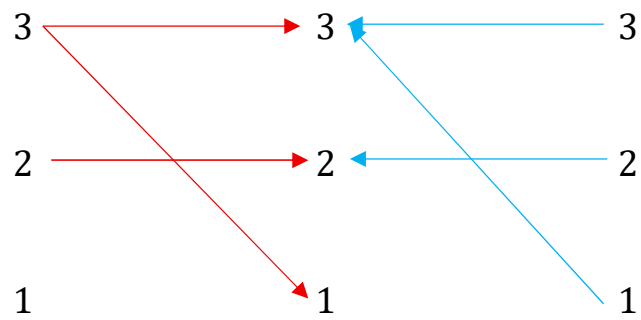
2 → 2

1 1

RTh = (3.1, 2.2, 3.3)

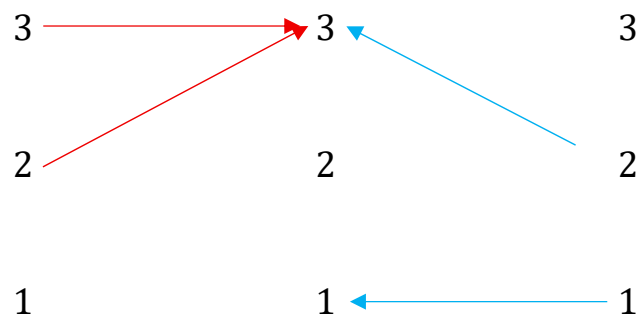


DS = [(3.3, 2.2, 1.3) × (3.1, 2.2, 3.3)]

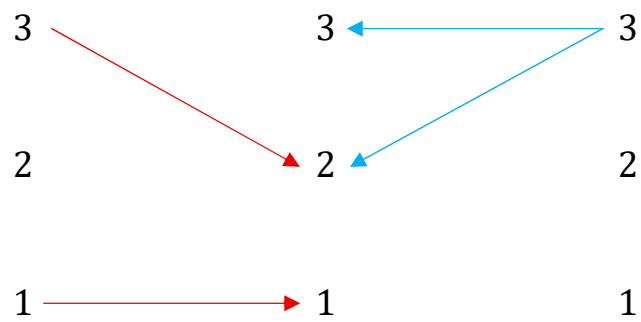


25. Semiotische Relation

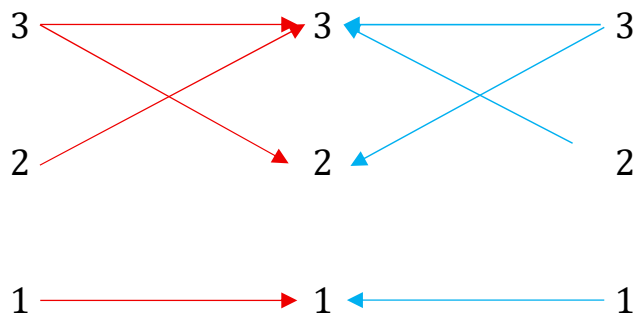
ZKl = (3.3, 2.3, 1.1)



RTh = (1.1, 3.2, 3.3)

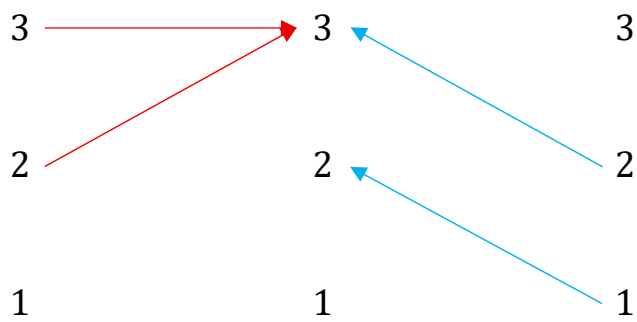


$$DS = [(3.3, 2.3, 1.1) \times (1.1, 3.2, 3.3)]$$

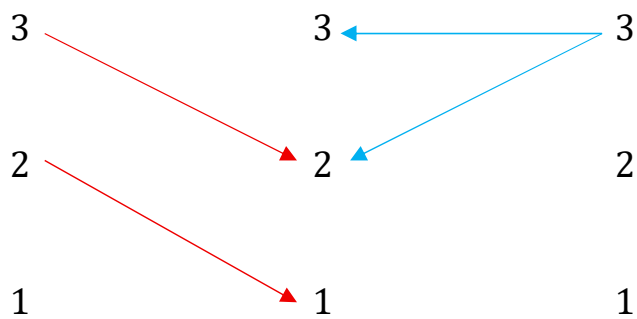


26. Semiotische Relation

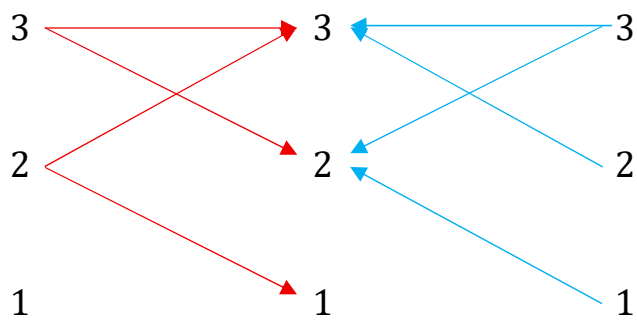
$$ZKI = (3.3, 2.3, 1.2)$$



$$RTh = (2.1, 3.2, 3.3)$$

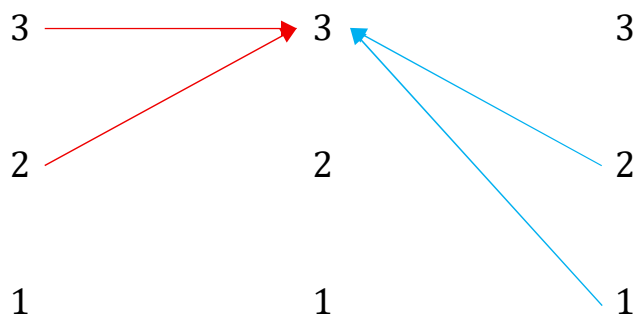


$$DS = [(3.3, 2.3, 1.2) \times (2.1, 3.2, 3.3)]$$

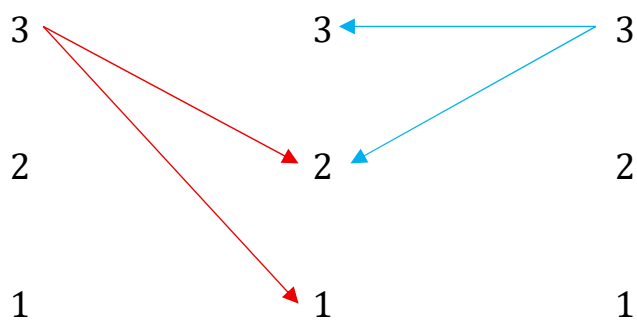


27. Semiotische Relation

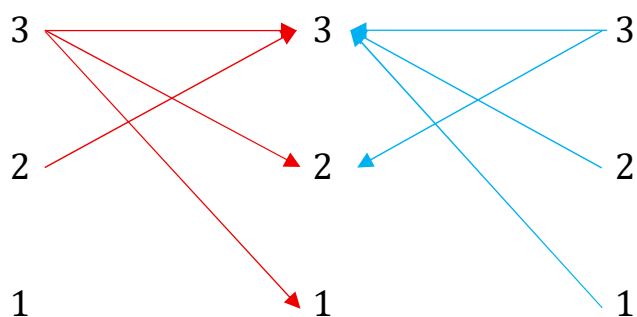
ZKl = (3.3, 2.3, 1.3)



RTh = (3.1, 3.2, 3.3)



DS = [(3.3, 2.3, 1.3) × (3.1, 3.2, 3.3)]



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20.8.2025