Prof. Dr. Alfred Toth

Reduzierte Situationsklassen

1. Wir gehen wiederum aus von der allgemeinen Form semiotischer Dualsysteme

DS: ZKl = (3.x, 2.y, 1.z) × RTh = (z.1, y.2, x.3),

bilden sie auf ihre situationalen Trajektklassen, kurz Situationsklassen (vgl. Toth 2025a) genannt, ab

$3_A.x_A \quad \underline{2}_R.\underline{y}_R \quad 1_I.z_I \quad \rightarrow \quad 3_A.\underline{2}_R \quad x_A.\underline{y}_R \quad | \quad \underline{2}_R.1_I \quad \underline{y}_R.z_I$

$z_A.1_A \quad \underline{y}_R.\underline{2}_R \quad x_I.3_I \quad \rightarrow \quad z_A.\underline{y}_R \quad 1_A.\underline{2}_R \quad | \quad \underline{y}_R.x_I \quad \underline{2}_R.3_I$

und erhalten damit folgendes Trajekt-Dualsystem:

DS^T: $ZKl^T = (3_A.\underline{2}_R, x_A.\underline{y}_R \mid \underline{2}_R.1_I, \underline{y}_R.z_I) \times RTh^T = (z_A.\underline{y}_R, 1_A.\underline{2}_R \mid \underline{y}_R.x_I, \underline{2}_R.3_I)$

mit Sit = $(x_A.\underline{y}_R \mid \underline{2}_R.1_I)$, $U^{lo} = (3_A.\underline{2}_R)$ und $U^{ro} = (\underline{y}_R.z_I)$.

Reduzierte Situationsklassen entstehen aus Situationsklassen, indem zusätzlich die Umgebungen U^{lo} und U^{ro} verschränkt werden (vgl. Toth 2025b).

2. Semiotische Klassen, Situationsklassen und reduzierte Situationsklassen im vollständigen ternären semiotischen 27er-System

1. Dualsystem

3.1 2.1 1.1 × 1.1 1.2 1.3 (1.1 ← (1.2, 1.3))

$3_A.\underline{2}_R \quad 1_A.\underline{1}_R \quad | \quad \underline{2}_R.1_I \quad \underline{1}_R.1_I$

$1_A.\underline{1}_R \quad 1_A.\underline{2}_R \quad | \quad \underline{1}_R.1_I \quad \underline{2}_R.3_I$

$((1_A.\ 1_R \mid 2_R.1_I), (3_A.1_R \mid 2_R.1_I)) \times ((1_A.2_R \mid 1_R.1_I), (1_A.2_R \mid 1_R.3_I))$

2. Dualsystem

3.1 2.1 1.2 × 2.1 1.2 1.3 (2.1 ← (1.2, 1.3))

$3_A.\underline{2}_R \quad 1_A.\underline{1}_R \quad | \quad \underline{2}_R.1_I \quad \underline{1}_R.2_I$

$2_A.\underline{1}_R \quad 1_A.\underline{2}_R \quad | \quad \underline{1}_R.1_I \quad \underline{2}_R.3_I$

$((1_A.\ 1_R \mid 2_R.1_I), (3_A.1_R \mid 2_R.2_I)) \times ((1_A.2_R \mid 1_R.1_I), (2_A.2_R \mid 1_R.3_I))$

3. Dualsystem

3.1 2.1 1.3 × 3.1 1.2 1.3 (3.1 ← (1.2, 1.3))

$3_A.\underline{2}_R \quad 1_A.\underline{1}_R \quad | \quad \underline{2}_R.1_I \quad \underline{1}_R.3_I$

$3_A.\underline{1}_R \quad 1_A.\underline{2}_R \quad | \quad \underline{1}_R.1_I \quad \underline{2}_R.3_I$

$((1_A.\, y_R \mid 2_R.1_I), (3_A.1_R \mid 2_R.3_I)) \times ((1_A.2_R \mid 1_R.1_I), (3_A.2_R \mid 1_R.3_I))$

4. Dualsystem

3.1 2.2 1.1 × 1.1 2.2 1.3 $(1.1 \rightarrow 2.2 \leftarrow 1.3)$

$3_A.\underline{2}_R \quad 1_A.\underline{2}_R \quad | \quad \underline{2}_R.1_I \quad \underline{2}_R.1_I$

$1_A.\underline{2}_R \quad 1_A.\underline{2}_R \quad | \quad \underline{2}_R.1_I \quad \underline{2}_R.3_I$

$((1_A.\, 2_R \mid 2_R.1_I), (3_A.2_R \mid 2_R.1_I)) \times ((1_A.2_R \mid 2_R.1_I), (1_A.2_R \mid 2_R.3_I))$

5. Dualsystem

3.1 2.2 1.2 × 2.1 2.2 1.3 $((2.1, 2.2) \rightarrow 1.3)$

$3_A.\underline{2}_R \quad 1_A.\underline{2}_R \quad | \quad \underline{2}_R.1_I \quad \underline{2}_R.2_I$

$2_A.\underline{2}_R \quad 1_A.\underline{2}_R \quad | \quad \underline{2}_R.1_I \quad \underline{2}_R.3_I$

$((1_A.\, 2_R \mid 2_R.1_I), (3_A.2_R \mid 2_R.2_I)) \times ((1_A.2_R \mid 2_R.1_I), (2_A.2_R \mid 2_R.3_I))$

6. Dualsystem

3.1 2.2 1.3 × 3.1 2.2 1.3 $(3.1 \rightarrow 2.2 \leftarrow 1.3)$

$3_A.\underline{2}_R \quad 1_A.\underline{2}_R \quad | \quad \underline{2}_R.1_I \quad \underline{2}_R.3_I$

$3_A.\underline{2}_R \quad 1_A.\underline{2}_R \quad | \quad \underline{2}_R.1_I \quad \underline{2}_R.3_I$

$((1_A.\, 2_R \mid 2_R.1_I), (3_A.2_R \mid 2_R.3_I)) \times ((1_A.2_R \mid 2_R.1_I), (3_A.2_R \mid 2_R.3_I))$

7. Dualsystem

3.1 2.3 1.1 × 1.1 3.2 1.3 $(1.1 \rightarrow 3.2 \leftarrow 1.3)$

$3_A.\underline{2}_R \quad 1_A.\underline{3}_R \quad | \quad \underline{2}_R.1_I \quad \underline{3}_R.1_I$

$1_A.\underline{3}_R \quad 1_A.\underline{2}_R \quad | \quad \underline{3}_R.1_I \quad \underline{2}_R.3_I$

$((1_A.\, 3_R \mid 2_R.1_I), (3_A.3_R \mid 2_R.1_I)) \times ((1_A.2_R \mid 3_R.1_I), (1_A.2_R \mid 3_R.3_I))$

8. Dualsystem

3.1 2.3 1.2 × 2.1 3.2 1.3 $(2.1 \rightarrow 3.2 \leftarrow 1.3)$

$3_A.\underline{2}_R \quad 1_A.\underline{3}_R \quad | \quad \underline{2}_R.1_I \quad \underline{3}_R.2_I$

$2_A.\underline{3}_R \quad 1_A.\underline{2}_R \quad | \quad \underline{3}_R.1_I \quad \underline{2}_R.3_I$

$((1_A.\, 3_R \mid 2_R.1_I), (3_A.3_R \mid 2_R.2_I)) \times ((1_A.2_R \mid 3_R.1_I), (2_A.2_R \mid 3_R.3_I))$

9. Dualsystem

3.1 2.3 1.3 × 3.1 3.2 1.3 ((3.1, 3.2) → 1.3)

$3_A.\underline{2}_R$ $1_A.\underline{3}_R$ | $\underline{2}_R.1_I$ $\underline{3}_R.3_I$

$3_A.\underline{3}_R$ $1_A.\underline{2}_R$ | $\underline{3}_R.1_I$ $\underline{2}_R.3_I$

$((1_A.\ 3_R \mid 2_R.1_I), (3_A.3_R \mid 2_R.3_I)) \times ((1_A.2_R \mid 3_R.1_I), (3_A.2_R \mid 3_R.3_I))$

10. Dualsystem

3.2 2.1 1.1 × 1.1 1.2 2.3 ((1.1, 1.2) → 2.3)

$3_A.\underline{2}_R$ $2_A.\underline{1}_R$ | $\underline{2}_R.1_I$ $\underline{1}_R.1_I$

$1_A.\underline{1}_R$ $1_A.\underline{2}_R$ | $\underline{1}_R.2_I$ $\underline{2}_R.3_I$

$((2_A.\ 1_R \mid 2_R.1_I), (3_A.1_R \mid 2_R.1_I)) \times ((1_A.2_R \mid 1_R.2_I), (1_A.2_R \mid 1_R.3_I))$

11. Dualsystem

3.2 2.1 1.2 × 2.1 1.2 2.3 (2.1 → 1.2 ← 2.3)

$3_A.\underline{2}_R$ $2_A.\underline{1}_R$ | $\underline{2}_R.1_I$ $\underline{1}_R.2_I$

$2_A.\underline{1}_R$ $1_A.\underline{2}_R$ | $\underline{1}_R.2_I$ $\underline{2}_R.3_I$

$((2_A.\ 1_R \mid 2_R.1_I), (3_A.1_R \mid 2_R.2_I)) \times ((1_A.2_R \mid 1_R.2_I), (2_A.2_R \mid 1_R.3_I))$

12. Dualsystem

3.2 2.1 1.3 × 3.1 1.2 2.3 (3.1 → 1.2 ← 2.3)

$3_A.\underline{2}_R$ $2_A.\underline{1}_R$ | $\underline{2}_R.1_I$ $\underline{1}_R.3_I$

$3_A.\underline{1}_R$ $1_A.\underline{2}_R$ | $\underline{1}_R.2_I$ $\underline{2}_R.3_I$

$((2_A.\ 1_R \mid 2_R.1_I), (3_A.y_R \mid 2_R.3_I)) \times ((1_A.2_R \mid 1_R.2_I), (3_A.2_R \mid 1_R.3_I))$

13. Dualsystem

3.2 2.2 1.1 × 1.1 2.2 2.3 (1.1 ← (2.2, 2.3))

$3_A.\underline{2}_R$ $2_A.\underline{2}_R$ | $\underline{2}_R.1_I$ $\underline{2}_R.1_I$

$1_A.\underline{2}_R$ $1_A.\underline{2}_R$ | $\underline{2}_R.2_I$ $\underline{2}_R.3_I$

$((2_A.\ y_R \mid 2_R.1_I), (3_A.2_R \mid 2_R.1_I)) \times ((1_A.2_R \mid 2_R.2_I), (1_A.2_R \mid 2_R.3_I))$

14. Dualsystem

3.2 2.2 1.2 × 2.1 2.2 2.3 (2.1 ← (2.2, 2.3))

$3_A.\underline{2}_R$ $2_A.\underline{2}_R$ | $\underline{2}_R.1_I$ $\underline{2}_R.2_I$

$2_A.\underline{2}_R$ $1_A.\underline{2}_R$ | $\underline{2}_R.2_I$ $\underline{2}_R.3_I$

$((2_A.\ 2_R \mid 2_R.1_I), (3_A.2_R \mid 2_R.2_I)) \times ((1_A.2_R \mid 2_R.2_I), (2_A.2_R \mid 2_R.3_I))$

15. Dualsystem

3.2 2.2 1.3 × 3.1 2.2 2.3 (3.1 ← (2.2, 2.3))

$3_A.\underline{2}_R$ $2_A.\underline{2}_R$ | $\underline{2}_R.1_I$ $\underline{2}_R.3_I$

$3_A.\underline{2}_R$ $1_A.\underline{2}_R$ | $\underline{2}_R.2_I$ $\underline{2}_R.3_I$

$((2_A.\ 2_R \mid 2_R.1_I), (3_A.2_R \mid 2_R.3_I)) \times ((1_A.2_R \mid 2_R.2_I), (3_A.2_R \mid 2_R.3_I))$

16. Dualsystem

3.2 2.3 1.1 × 1.1 3.2 2.3 (1.1 → 3.2 ← 2.3)

$3_A.\underline{2}_R$ $2_A.\underline{3}_R$ | $\underline{2}_R.1_I$ $\underline{3}_R.1_I$

$1_A.\underline{3}_R$ $1_A.\underline{2}_R$ | $\underline{3}_R.2_I$ $\underline{2}_R.3_I$

$((2_A.\ 3_R \mid 2_R.1_I), (3_A.3_R \mid 2_R.1_I)) \times ((1_A.2_R \mid 3_R.2_I), (1_A.2_R \mid 3_R.3_I))$

17. Dualsystem

3.2 2.3 1.2 × 2.1 3.2 2.3 (2.1 → 3.2 ← 2.3)

$3_A.\underline{2}_R$ $2_A.\underline{3}_R$ | $\underline{2}_R.1_I$ $\underline{3}_R.2_I$

$2_A.\underline{3}_R$ $1_A.\underline{2}_R$ | $\underline{3}_R.2_I$ $\underline{2}_R.3_I$

$((2_A.\ 3_R \mid 2_R.1_I), (3_A.3_R \mid 2_R.2_I)) \times ((1_A.2_R \mid 3_R.2_I), (2_A.2_R \mid 3_R.3_I))$

18. Dualsystem

3.2 2.3 1.3 × 3.1 3.2 2.3 ((3.1, 3.2) → 2.3)

$3_A.\underline{2}_R$ $2_A.\underline{3}_R$ | $\underline{2}_R.1_I$ $\underline{3}_R.3_I$

$3_A.\underline{3}_R$ $1_A.\underline{2}_R$ | $\underline{3}_R.2_I$ $\underline{2}_R.3_I$

$((2_A.\ 3_R \mid 2_R.1_I), (3_A.3_R \mid 2_R.z_I)) \times ((1_A.2_R \mid 3_R.2_I), (z_A.2_R \mid 3_R.3_I))$

19. Dualsystem

3.3 2.1 1.1 × 1.1 1.2 3.3 ((1.1, 1.2) → 3.3)

$3_A.\underline{2}_R$ $3_A.\underline{1}_R$ | $\underline{2}_R.1_I$ $\underline{1}_R.1_I$

$1_A.\underline{1}_R$ $1_A.\underline{2}_R$ | $\underline{1}_R.3_I$ $\underline{2}_R.3_I$

$((3_A.\ 1_R \mid 2_R.1_I), (3_A.1_R \mid 2_R.1_I)) \times ((1_A.2_R \mid 1_R.3_I), (1_A.2_R \mid 1_R.3_I))$

20. Dualsystem

3.3 2.1 1.2 × 2.1 1.2 3.3 (2.1 → 1.2 ← 3.3)

$3_A.\underline{2}_R$ $3_A.\underline{1}_R$ | $\underline{2}_R.1_I$ $\underline{1}_R.2_I$

$2_A.\underline{1}_R$ $1_A.\underline{2}_R$ | $\underline{1}_R.3_I$ $\underline{2}_R.3_I$

$((3_A.\ 1_R \mid 2_R.1_I), (3_A.1_R \mid 2_R.2_I)) \times ((1_A.2_R \mid 1_R.3_I), (2_A.2_R \mid 1_R.3_I))$

21. Dualsystem

3.3 2.1 1.3 × 3.1 1.2 3.3 (3.1 → 1.2 ← 3.3)

$3_A.\underline{2}_R$ $3_A.\underline{1}_R$ | $\underline{2}_R.1_I$ $\underline{1}_R.3_I$

$3_A.\underline{1}_R$ $1_A.\underline{2}_R$ | $\underline{1}_R.3_I$ $\underline{2}_R.3_I$

$((3_A.\ 1_R \mid 2_R.1_I), (3_A.1_R \mid 2_R.3_I)) \times ((1_A.2_R \mid 1_R.3_I), (3_A.2_R \mid 1_R.3_I))$

22. Dualsystem

3.3 2.2 1.1 × 1.1 2.2 3.3 (1.1 → 2.2 ← 3.3)

$3_A.\underline{2}_R$ $3_A.\underline{2}_R$ | $\underline{2}_R.1_I$ $\underline{2}_R.1_I$

$1_A.\underline{2}_R$ $1_A.\underline{2}_R$ | $\underline{2}_R.3_I$ $\underline{2}_R.3_I$

$((3_A.\ 2_R \mid 2_R.1_I), (3_A.2_R \mid 2_R.1_I)) \times ((1_A.2_R \mid 2_R.3_I), (1_A.2_R \mid 2_R.3_I))$

23. Dualsystem

3.3 2.2 1.2 × 2.1 2.2 3.3 ((2.1, 2.2) → 3.3)

$3_A.\underline{2}_R$ $3_A.\underline{2}_R$ | $\underline{2}_R.1_I$ $\underline{2}_R.2_I$

$2_A.\underline{2}_R$ $1_A.\underline{2}_R$ | $\underline{2}_R.3_I$ $\underline{2}_R.3_I$

$((3_A.\ 2_R \mid 2_R.1_I), (3_A.2_R \mid 2_R.2_I)) \times ((1_A.2_R \mid 2_R.3_I), (2_A.2_R \mid 2_R.3_I))$

24. Dualsystem

3.3 2.2 1.3 × 3.1 2.2 3.3 (3.1 → 2.2 ← 3.3)

$3_A.\underline{2}_R$ $3_A.\underline{2}_R$ | $\underline{2}_R.1_I$ $\underline{2}_R.3_I$

$3_A.\underline{2}_R$ $1_A.\underline{2}_R$ | $\underline{2}_R.3_I$ $\underline{2}_R.3_I$

$((3_A.\ 2_R \mid 2_R.1_I), (3_A.2_R \mid 2_R.3_I)) \times ((1_A.2_R \mid 2_R.3_I), (3_A.2_R \mid 2_R.3_I))$

25. Dualsystem

3.3 2.3 1.1 × 1.1 3.2 3.3 (1.1 ← (3.2, 3.3))

$3_A.\underline{2}_R$ $3_A.\underline{3}_R$ | $\underline{2}_R.1_I$ $\underline{3}_R.1_I$

$1_A.\underline{3}_R$ $1_A.\underline{2}_R$ | $\underline{3}_R.3_I$ $\underline{2}_R.3_I$

$((x_A.\ y_R \mid 2_R.1_I), (3_A.y_R \mid 2_R.z_I)) \times ((1_A.2_R \mid y_R.x_I), (z_A.2_R \mid y_R.3_I))$

26. Dualsystem

3.3 2.3 1.2 × 2.1 3.2 3.3 (2.1 ← (3.2, 3.3))

$3_A.\underline{2}_R$ $3_A.\underline{3}_R$ | $\underline{2}_R.1_I$ $\underline{3}_R.2_I$

$2_A.\underline{3}_R$ $1_A.\underline{2}_R$ | $\underline{3}_R.3_I$ $\underline{2}_R.3_I$

$((3_A.\ 3_R \mid 2_R.1_I), (3_A.3_R \mid 2_R.2_I)) \times ((1_A.2_R \mid 3_R.3_I), (2_A.2_R \mid 3_R.3_I))$

27. Dualsystem

3.3 2.3 1.3 × 3.1 3.2 3.3 (3.1 ← (3.2, 3.3))

$3_A.\underline{2}_R$ $3_A.\underline{3}_R$ | $\underline{2}_R.1_I$ $\underline{3}_R.3_I$

$3_A.\underline{3}_R$ $1_A.\underline{2}_R$ | $\underline{3}_R.3_I$ $\underline{2}_R.3_I$

$((3_A.\ 3_R \mid 2_R.1_I), (3_A.3_R \mid 2_R.3_I)) \times ((1_A.2_R \mid 3_R.3_I), (3_A.2_R \mid 3_R.3_I))$

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