Prof. Dr. Alfred Toth

Die qualitativen polykontextural-semiotischen Funktionen

1. Allgemeines zu polykontextural-semiotischen Funktionen

In Toth (2008b) wurden polykontextural-semiotische Handlungsschemata eingeführt. Sie basieren auf der polykonexturalen Zeichenrelation (PZR)

PZR = (3.a 2.b 1.c 0.d),

die sich von der monokontexturalen Peirce-Benseschen Zeichenrelation (ZR)

ZR = (3.a 2.b 1.c)

durch Einbettung oder Lokalisierung des kategorialen Objektes der Nullheit (0.d) in seiner trichotomischen Ausdifferenzierung als Sekanz (0.1), Semanz (0.2) oder Selektanz (0.3) unterscheidet. PZR ist polykontextural, weil damit die Grenze zwischen Zeichen und Objekt formal aufgehoben ist.

Aufgrund von Toth (2009a, b, c, d) kann ZR in Form einer qualitativen Zeichenrelation geschrieben werden:

ZR = {△, ◭, ▲, □, ◨ , ■, ○, ◑, ●}

Wenn wir vereinbaren, dass ⊓ für (0.1), ⊔ für (0.2) und ⊏ für (0.3) stehe, dann können wir also PZR wie folgt notieren:

PZR = {⊓, ⊔, ⊏, △, ◭ , ▲, □, ◨ , ■, ○, ◑, ●}

Polykontextural-semiotische tetradische Handlungsschemata basieren nun auf semiotischen triadischen Kreationsschemata der allgemeinen Form

$$\begin{pmatrix} (c.d) \\ \curlywedge \gg (e.f) \\ (a.b) \end{pmatrix} \times \begin{pmatrix} (b.a) \\ \curlywedge \gg (f.e) \\ (d.c) \end{pmatrix}$$

wobei also nicht nur die Trichotomien, sondern auch die Triaden verallgemeinert werden, da neben regulären triadischen Zeichenklassen der Form (3.a 2.b 1.c) auch deren 6 Permutationen definiert sind (vgl. Toth 2008a, S. 177 ff.), so dass also von der allgemeinen Form ZR = (a.b c.d e.f) von triadischen Zeichenklassen ausgegangen wird. Da für polykontexturale Zeichenklassen also von der allgemeinen Form PZR = (a.b c.d e.f g.h) für Zeichenklassen ausgegangen wird, haben wir die folgende Form polykontexturaler Handlungsschemata

$$\left((a.b) \gg \begin{matrix} (c.d) \\ \curlyvee \\ (e.f) \end{matrix} \succ (g.h) \right) \times \left((h.g) \gg \begin{matrix} (f.e) \\ \curlyvee \\ (d.c) \end{matrix} \succ (b.a) \right)$$

so dass im tetradischen Falle also alle 24 Permutationen einer polykontexturalen Zeichenklasse definiert sind.

Der semiotische Funktionsbegriff wird nun als Abstraktion des semiotischen Handlungsbegriffs eingeführt, der seinerseits ja als Verallgemeinerung des semiotischen Kreationsbegriffs eingeführt worden war. Wir können nämlich die triadischen semiotischen Zeichenklassen nun wie folgt als monokontextural-semiotische Zeichenfunktionen schreiben

(a.b, c.d, e.f) ≡ (e.f) = f(a.b, c.d),

wobei, wie gesagt, a, b, c, d, e, f alle Werte ∈ {1, 2, 3} annehmen kann. Dasselbe gilt auch für die erweiterte Wertemenge a, ..., h ∈ {0, 1, 2, 3} der tetradischen polykontexturalen Zeichenklassen, die wir nun wie folgt als polykontextural-semiotische Zeichenfunktionen einführen

(a.b, c.d, e.f, g.h) = (g.h) = f(a.b, c.d, e.f).

Ich möchte betonen, dass die Tatsache, dass a, ..., h alle Werte annehmen können, zur Folge hat, dass durch polykontextural-semiotische Funktionen jedes Subzeichen "kreiert" wird, und zwar natürlich auch das kategoriale Objekt (0.d), d ∈ {.1, .2, .3}, so dass also sowohl ein Zeichen ein Objekt wie ein Objekt ein Zeichen erzeugen kann in Übereinstimmung mit der polykontexturalen Einführung der tetradischen Zeichenrelation PZR.

2. Bevor wir uns den 1162 möglichen polykontextural-semiotischen Funktionen, entsprechend der Anzahl der möglichen polykontextural-semiotischen Handlungsschemata, widmen, wollen wir noch auf eine allgemeine Besonderheiten dieser Funktionen hinweisen.

2.1. Es gibt homogene, homogen-heterogene und heterogene Funktionen. Beispiele:

(⊓) = f(△, □)
(□) = f(△, ⊓)
(⊓) = f(△, □, ○)

2.2. Es gibt komplementäre und nicht-komplementäre Funktionen. Beispiele:

(⊓) = f(△, □) vs. (⊔) = f(△, □)
(□) = f(◨, ⊔*) vs. (□) = f(⊔*, ■)
(⊓) = f(△, □, ○) vs. (⊔) = f(◭, ○, ◨)

2.3. Es gibt duale und nicht-duale Funktionen. Beispiele:

[((⊓) = f(△, □)] × [(⊓*) = f(◭, △)]
[(□) = f(⊏, ◭)]× [(◭) = f(□, ⊏*)]
[(⊓) = f(△, □, ○)] × [(⊓*) = f(▲, ◭, △)]

3. Die 1162 polykontextural-semiotischen Funktionen sind also Funktionen über 2 (im Falle von partiellen Funktionen) oder über 3 Variablen:

Minimales Schema: w = (x, y)
Maximales Schema: w = (x, y, z)

3.1. 12 Funktionen mit w = (⊓)

1. (⊓) = f(△, □)
2. (⊓) = f(△, □, ○)
3. (⊓) = f(△, ○)
4. (⊓) = f(△, ○, □)

5. (⊓) = f(□, △)
6. (⊓) = f(□, △, ○)
7. (⊓) = f(□, ○)
8. (⊓) = f(□, ○, △)
9. (⊓) = f(○, △)
10. (⊓) = f(○, △, □)
11. (⊓) = f(○, □)
12. (⊓) = f(○, □, △)

3.2. 41 Funktionen mit w = (⊔)

1. (⊔) = f(△, □)
2. (⊔) = f(△, □, ○)
3. (⊔) = f(△, ○)
4. (⊔) = f(△, ○, □)
5. (⊔) = f(◭, □, ○)
6. (⊔) = f(◭, ◨)
7. (⊔) = f(◭, ◨, ○)
8. (⊔) = f(◭, ◨, ◑)
9. (⊔) = f(◭, ○)
10. (⊔) = f(◭, ○, □)
11. (⊔) = f(◭, ○, ◨)
12. (⊔) = f(◭, ◑)
13. (⊔) = f(◭, ◑, ◨)
14. (⊔) = f(□, △)
15. (⊔) = f(□, △, ○)
16. (⊔) = f(□, ◭)
17. (⊔) = f(□, ◭, ○)
18. (⊔) = f(□, ○)
19. (⊔) = f(□, ○, △)

20. (⊔) = f(□, ○, ◭)
21. (⊔) = f(◨, ◭)
22. (⊔) = f(◨, ◭, ○)
23. (⊔) = f(◨, ◭, ◑)
24. (⊔) = f(◨, ○)
25. (⊔) = f(◨, ○, ◭)
26. (⊔) = f(◨, ◑)
27. (⊔) = f(◨, ◑, ◭)
28. (⊔) = f(○, △)
29. (⊔) = f(○, △, □)
30. (⊔) = f(○, ◭)
31. (⊔) = f(○, ◭, □)
32. (⊔) = f(○, ◭, ◨)
33. (⊔) = f(○, □)
34. (⊔) = f(○, □, △)
35. (⊔) = f(○, □, ◭)
36. (⊔) = f(○, ◨)
37. (⊔) = f(○, ◨, ◭)
38. (⊔) = f(◑, ◭)
39. (⊔) = f(◑, ◭, ◨)
40. (⊔) = f(◑, ◨)
41. (⊔) = f(◑, ◨, ◭)

3.3. 92 Funktionen mit w = (⊏)

1. (⊏) = f(△, □)
2. (⊏) = f(△, □, ○)
3. (⊏) = f(△, ○)
4. (⊏) = f(△, ○, □)
5. (⊏) = f(◭, □)

6. (⊏) = f(◭, □, ○)
7. (⊏) = f(◭, ◨)
8. (⊏) = f(◭, ◨, ○)
9. (⊏) = f(◭, ◨, ◑)
10. (⊏) = f(◭, ○)
11. (⊏) = f(◭, ○, □)
12. (⊏) = f(◭, ○, ◨)
13. (⊏) = f(◭, ◑)
14. (⊏) = f(◭, ◑, ◨)
15. (⊏) = f(▲, □)
16. (⊏) = f(▲, □, ○)
17. (⊏) = f(▲, ◨)
18. (⊏) = f(▲, ◨, ○)
19. (⊏) = f(▲, ◨, ◑)
20. (⊏) = f(▲, ■)
21. (⊏) = f(▲, ■, ○)
22. (⊏) = f(▲, ■, ◑)
23. (⊏) = f(▲, ■, ●)
24. (⊏) = f(▲, ○)
25. (⊏) = f(▲, ○, □)
26. (⊏) = f(▲, ○, ◨)
27. (⊏) = f(▲, ○, ■)
28. (⊏) = f(▲, ◑)
29. (⊏) = f(▲, ◑, ◨)
30. (⊏) = f(▲, ◑, ■)
31. (⊏) = f(▲,●)
32. (⊏) = f(▲, ●, ■)
33. (⊏) = f(□, △)
34. (⊏) = f(□, △, ○)
35. (⊏) = f(□, ◭, ○)

36. (⊏) = f(□, ▲)
37. (⊏) = f(□, ▲, ○)
38. (⊏) = f(□, ○)
39. (⊏) = f(□, ○, △)
40. (⊏) = f(□, ○, ◭)
41. (⊏) = f(□, ○, ▲)
42. (⊏) = f(◨, ◭)
43. (⊏) = f(◨, ◭, ○)
44. (⊏) = f(◨, ◭, ◑)
45. (⊏) = f(◨, ▲)
46. (⊏) = f(◨, ▲, ○)
47. (⊏) = f(◨, ▲, ◑)
48. (⊏) = f(◨, ○)
49. (⊏) = f(◨, ○, ◭)
50. (⊏) = f(◨, ○, ▲)
51. (⊏) = f(◨, ◑)
52. (⊏) = f(◨, ◑, ◭)
53. (⊏) = f(◨, ◑, ▲)
54. (⊏) = f(■, ▲)
55. (⊏) = f(■, ▲, ○)
56. (⊏) = f(■, ▲, ◑)
57. (⊏) = f(■, ▲, ●)
58. (⊏) = f(■, ○)
59. (⊏) = f(■, ○, ▲)
60. (⊏) = f(■, ◑)
61. (⊏) = f(■, ◑, ▲)
62. (⊏) = f(■, ●, ▲)
63. (⊏) = f(○, △)
64. (⊏) = f(○, △, □)
65. (⊏) = f(○, ◭)

66. (⊏) = f(○, ◭, □)
67. (⊏) = f(○, ◭, ◨)
68. (⊏) = f(○, ▲)
69. (⊏) = f(○, ▲, □)
70. (⊏) = f(○, ▲, ◨)
71. (⊏) = f(○, ▲, ■)
72. (⊏) = f(○, □)
73. (⊏) = f(○, □, △)
74. (⊏) = f(○, □, ◭)
75. (⊏) = f(○, □, ▲)
76. (⊏) = f(○, ◨)
77. (⊏) = f(○, ◨, ◭)
78. (⊏) = f(○, ◨, ▲)
79. (⊏) = f(○, ■)
80. (⊏) = f(○, ■, ▲)
81. (⊏) = f(◑, ◭)
82. (⊏) = f(◑, ◭, ◨)
83. (⊏) = f(◑, ▲)
84. (⊏) = f(◑, ▲, ◨)
85. (⊏) = f(◑, ▲, ■)
86. (⊏) = f(◑, ◨)
87. (⊏) = f(◑, ◨, ◭)
88. (⊏) = f(◑, ◨, ▲)
89. (⊏) = f(◑, ■)
90. (⊏) = f(◑, ■, ▲)
91. (⊏) = f(●, ▲, ■)
92. (⊏) = f(●, ■, ▲)

3.4. 12 Funktionen mit w = (⊓*)

1. (⊓*) = f(△, ◭)
2. (⊓*) = f(△, ◭, ▲)
3. (⊓*) = f(△, ▲)
4. (⊓*) = f(△, ▲, ◭)
5. (⊓*) = f(◭, △)
6. (⊓*) = f(◭, △, ▲)
7. (⊓*) = f(◭, ▲)
8. (⊓*) = f(◭, ▲, △)
9. (⊓*) = f(▲, △)
10. (⊓*) = f(▲, △, ◭)
11. (⊓*) = f(▲, ◭)
12. (⊓*) = f(▲, ◭, △)

3.5. 64 Funktionen mit w = (△)

1. (△) = f(⊓, □)
2. (△) = f(⊓, □, ○)
3. (△) = f(⊓, ○)
4. (△) = f(⊓, ○, □)
5. (△) = f(⊔, □)
6. (△) = f(⊔, □, ○)
7. (△) = f(⊔, ○)
8. (△) = f(⊔, ○, □)
9. (△) = f(⊏, □)
10. (△) = f(⊏, □, ○)
11. (△) = f(⊏, ○)
12. (△) = f(⊏, ○, □)
13. (△) = f(⊓*, ◭)

14. (△) = f(⊓*, ◭, ▲)
15. (△) = f(⊓*, ▲)
16. (△) = f(⊓*, ▲, ◭)
17. (△) = f(◭, ⊓*)
18. (△) = f(◭, ⊓*, ▲)
19. (△) = f(◭, ▲)
20. (△) = f(◭, ▲, ⊓*)
21. (△) = f(◭, ▲, ⊔*)
22. (△) = f(◭, ▲, ⊏*)
23. (△) = f(◭, ⊔*)
24. (△) = f(◭, ⊔*, ▲)
25. (△) = f(◭, ⊏*)
26. (△) = f(◭, ⊏*, ▲)
27. (△) = f(▲, ⊓*)
28. (△) = f(▲, ⊓*, ◭)
29. (△) = f(▲, ◭)
30. (△) = f(▲, ◭, ⊓*)
31. (△) = f(▲, ◭, ⊔*)
32. (△) = f(▲, ◭, ⊏*)
33. (△) = f(▲, ⊔*)
34. (△) = f(▲, ⊔*, ◭)
35. (△) = f(▲, ⊏*)
36. (△) = f(▲, ⊏*, ◭)
37. (△) = f(⊔*, ◭)
38. (△) = f(⊔*, ◭, ▲)
39. (△) = f(⊔*, ▲)
40. (△) = f(⊔*, ▲, ◭)
41. (△) = f(□, ⊓)
42. (△) = f(□, ⊓, ○)
43. (△) = f(□, ⊔)

44. (△) = f(□, ⊔, ○)
45. (△) = f(□, ⊏)
46. (△) = f(□, ⊏, ○)
47. (△) = f(□, ○)
48. (△) = f(□, ○, ⊓)
49. (△) = f(□, ○, ⊔)
50. (△) = f(□, ○, ⊏)
51. (△) = f(⊏*, ◭)
52. (△) = f(⊏*, ◭, ▲)
53. (△) = f(⊏*, ▲)
54. (△) = f(⊏*, ▲, ◭)
55. (△) = f(○, ⊓)
56. (△) = f(○, ⊓, □)
57. (△) = f(○, ⊔)
58. (△) = f(○, ⊔, □)
59. (△) = f(○, ⊏)
60. (△) = f(○, ⊏, □)
61. (△) = f(○, □)
62. (△) = f(○, □, ⊓)
63. (△) = f(○, □, ⊔)
64. (△) = f(○, □, ⊏)

3.6. 115 Funktionen mit w = (◭)

1. (◭) = f(⊔, □)
2. (◭) = f(⊔, □, ○)
3. (◭) = f(⊔, ◨)
4. (◭) = f(⊔, ◨, ○)
5. (◭) = f(⊔, ◨, ◑)
6. (◭) = f(⊔, ○)

7. (◭) = f(⊔, ○, □)
8. (◭) = f(⊔, ○, ◨)
9. (◭) = f(⊔, ◑)
10. (◭) = f(⊔, ◑, ◨)
11. (◭) = f(⊏, □)
12. (◭) = f(⊏, □, ○)
13. (◭) = f(⊏, ◨)
14. (◭) = f(⊏, ◨, ○)
15. (◭) = f(⊏, ◨, ◑)
16. (◭) = f(⊏, ○)
17. (◭) = f(⊏, ○, □)
18. (◭) = f(⊏, ○, ◨)
19. (◭) = f(⊏, ◑)
20. (◭) = f(⊏, ◑, ◨)
21. (◭) = f(⊓*, △)
22. (◭) = f(⊓*, △, ▲)
23. (◭) = f(⊓*, ▲)
24. (◭) = f(⊓*, ▲, △)
25. (◭) = f(△, ⊓*)
26. (◭) = f(△, ⊓*, ▲)
27. (◭) = f(△, ▲)
28. (◭) = f(△, ▲, ⊓*)
29. (◭) = f(△, ▲, ⊔*)
30. (◭) = f(△, ▲, ⊏*)
31. (◭) = f(△, ⊔*)
32. (◭) = f(△, ⊔*, ▲)
33. (◭) = f(△, ⊏*)
34. (◭) = f(△, ⊏*, ▲)
35. (◭) = f(▲, ⊓*)
36. (◭) = f(▲, ⊓*, △)

37. (◭) = f(▲, △)
38. (◭) = f(▲, △, ⊓*)
39. (◭) = f(▲, △, ⊔*)
40. (◭) = f(▲, △, ⊏*)
41. (◭) = f(▲, ⊔*)
42. (◭) = f(▲, ⊔*, △)
43. (◭) = f(▲, □)
44. (◭) = f(▲, □, ⊔*)
45. (◭) = f(▲, ⊏*)
46. (◭) = f(▲, ⊏*, △)
47. (◭) = f(▲, ⊏*, □)
48. (◭) = f(▲, ⊏*, ○)
49. (◭) = f(▲, ○)
50. (◭) = f(▲, ○, ⊏*)
51. (◭) = f(⊔*, △)
52. (◭) = f(⊔*, ▲ □)
53. (◭) = f(⊔*, ▲)
54. (◭) = f(⊔*, ▲, △)
55. (◭) = f(⊔*, □)
56. (◭) = f(⊔*, □, ▲)
57. (◭) = f(□, ⊔)
58. (◭) = f(□, ⊔, ○)
59. (◭) = f(□, ⊏)
60. (◭) = f(□, ⊏, ○)
61. (◭) = f(□, ▲)
62. (◭) = f(□, ▲, ⊔*)
63. (◭) = f(□, ▲, ⊏*)
64. (◭) = f(□, ⊔*)
65. (◭) = f(□, ⊔*, ▲)
66. (◭) = f(□, ⊏*)

67. (◭) = f(□, ⊏*, ▲)
68. (◭) = f(□, ○)
69. (◭) = f(□, ○, ⊔)
70. (◭) = f(□, ○, ⊏)
71. (◭) = f(◨, ⊔)
72. (◭) = f(◨, ⊔, ○)
73. (◭) = f(◨, ⊔, ◑)
74. (◭) = f(◨, ⊏)
75. (◭) = f(◨, ⊏, ○)
76. (◭) = f(◨, ⊏, ◑)
77. (◭) = f(◨, ○)
78. (◭) = f(◨, ○, ⊔)
79. (◭) = f(◨, ○, ⊏)
80. (◭) = f(◨, ◑)
81. (◭) = f(◨, ◑, ⊔)
82. (◭) = f(◨, ◑, ⊏)
83. (◭) = f(⊏*, △)
84. (◭) = f(⊏*, △, ▲)
85. (◭) = f(⊏*, ▲)
86. (◭) = f(⊏*, ▲, △)
87. (◭) = f(⊏*, ▲, □)
88. (◭) = f(⊏*, ▲, ○)
89. (◭) = f(⊏*, □)
90. (◭) = f(⊏*, □, ▲)
91. (◭) = f(⊏*, ○)
92. (◭) = f(⊏*, ○, ▲)
93. (◭) = f(○, ⊔)
94. (◭) = f(○, ⊔, □)
95. (◭) = f(○, ⊔, ◨)
96. (◭) = f(○, ⊏)

97. (◭) = f(○, ⊏, □)
98. (◭) = f(○, ⊏, ◨)
99. (◭) = f(○, ▲)
100. (◭) = f(○, ▲, ⊏*)
101. (◭) = f(○, □)
102. (◭) = f(○, □, ⊔)
103. (◭) = f(○, □, ⊏)
104. (◭) = f(○, ◨)
105. (◭) = f(○, ◨, ⊔)
106. (◭) = f(○, ◨, ⊏)
107. (◭) = f(○, ⊏*)
108. (◭) = f(○, ⊏*, ▲)
109. (◭) = f(◑, ⊔)
110. (◭) = f(◑, ⊔, ◨)
111. (◭) = f(◑, ⊏)
112. (◭) = f(◑, ⊏, ◨)
113. (◭) = f(◑, ◨)
114. (◭) = f(◑, ◨, ⊔)
115. (◭) = f(◑, ◨, ⊏)

3.7. 154 Funktionen mit w = (▲)

1. (▲) = f(⊏, □)
2. (▲) = f(⊏, □, ○)
3. (▲) = f(⊏, ◨)
4. (▲) = f(⊏, ◨, ○)
5. (▲) = f(⊏, ◨, ◑)
6. (▲) = f(⊏, ■)
7. (▲) = f(⊏, ■, ○)
8. (▲) = f(⊏, ■, ◑)

9. (▲) = f(⊏, ■, ●)
10. (▲) = f(⊏, ○)
11. (▲) = f(⊏, ○, □)
12. (▲) = f(⊏, ○, ◨)
13. (▲) = f(⊏, ○, ■)
14. (▲) = f(⊏, ◑)
15. (▲) = f(⊏, ◑, ◨)
16. (▲) = f(⊏, ◑, ■)
17. (▲) = f(⊏, ●)
18. (▲) = f(⊏, ●, ■)
19. (▲) = f(⊓*, △)
20. (▲) = f(⊓*, △, ◭)
21. (▲) = f(⊓*, ◭)
22. (▲) = f(⊓*, ◭, △)
23. (▲) = f(△, ⊓*)
24. (▲) = f(△, ⊓*, ◭)
25. (▲) = f(△, ◭)
26. (▲) = f(△, ◭, ⊓*)
27. (▲) = f(△, ◭, ⊔*)
28. (▲) = f(△, ◭, ⊏*)
29. (▲) = f(△, ⊏*)
30. (▲) = f(△, ⊏*, ◭)
31. (▲) = f(◭, ⊓*)
32. (▲) = f(◭, ⊓*, △)
33. (▲) = f(◭, △)
34. (▲) = f(◭, △, ⊓*)
35. (▲) = f(◭, △, ⊔*)
36. (▲) = f(◭, △, ⊏*)
37. (▲) = f(◭, ⊔*)
38. (▲) = f(◭, ⊔*, △)

39. (▲) = f(◭, ⊔*, □)
40. (▲) = f(◭, □)
41. (▲) = f(◭, □, ⊔*)
42. (▲) = f(◭, □, ⊏*)
43. (▲) = f(◭, ⊏*)
44. (▲) = f(◭, ⊏*, △)
45. (▲) = f(◭, ⊏*, □)
46. (▲) = f(◭, ⊏*, ○)
47. (▲) = f(◭, ○)
48. (▲) = f(◭, ○, ⊏*)
49. (▲) = f(⊔*, △)
50. (▲) = f(⊔*, △, ◭)
51. (▲) = f(⊔*, ◭)
52. (▲) = f(⊔*, ◭, △)
53. (▲) = f(⊔*, ◭, □)
54. (▲) = f(⊔*, □)
55. (▲) = f(⊔*, □, ◭)
56. (▲) = f(⊔*, □, ◨)
57. (▲) = f(⊔*, ◨)
58. (▲) = f(⊔*, ◨, □)
59. (▲) = f(□, ⊏)
60. (▲) = f(□, ⊏, ○)
61. (▲) = f(□, ◭)
62. (▲) = f(□, ◭, ⊔*)
63. (▲) = f(□, ◭, ⊏*)
64. (▲) = f(□, ⊔*)
65. (▲) = f(□, ⊔*, ◭)
66. (▲) = f(□, ⊔*, ◨)
67. (▲) = f(□, ◨)
68. (▲) = f(□, ◨, ⊔*)

69. (▲) = f(□, ◨, ⊏*)
70. (▲) = f(□, ⊏*)
71. (▲) = f(□, ⊏*, ◭)
72. (▲) = f(□, ⊏*, ◨)
73. (▲) = f(□, ○)
74. (▲) = f(□, ○, ⊏)
75. (▲) = f(◨, ⊏)
76. (▲) = f(◨, ⊏, ○)
77. (▲) = f(◨, ⊏, ◑)
78. (▲) = f(◨, ⊔*)
79. (▲) = f(◨, ⊔*, □)
80. (▲) = f(◨, □)
81. (▲) = f(◨, □, ⊔*)
82. (▲) = f(◨, □, ⊏*)
83. (▲) = f(◨, ⊏*)
84. (▲) = f(◨, ⊏*, □)
85. (▲) = f(◨, ⊏*, ○)
86. (▲) = f(◨, ○)
87. (▲) = f(◨, ○, ⊏)
88. (▲) = f(◨, ○, ⊏*)
89. (▲) = f(◨, ◑)
90. (▲) = f(◨, ◑, ⊏)
91. (▲) = f(■, ⊏)
92. (▲) = f(■, ⊏, ○)
93. (▲) = f(■, ⊏, ◑)
94. (▲) = f(■, ⊏, ●)
95. (▲) = f(■, ○)
96. (▲) = f(■, ○, ⊏)
97. (▲) = f(■, ◑)
98. (▲) = f(■, ◑, ⊏)

99. (▲) = f(■, ●)
100. (▲) = f(■, ●, ⊏)
101. (▲) = f(⊏*, △)
102. (▲) = f(⊏*, △, ◭)
103. (▲) = f(⊏*, ◭)
104. (▲) = f(⊏*, ◭, △)
105. (▲) = f(⊏*, ◭, □)
106. (▲) = f(⊏*, ◭, ○)
107. (▲) = f(⊏*, □)
108. (▲) = f(⊏*, □, ◭)
109. (▲) = f(⊏*, □, ◨)
110. (▲) = f(⊏*, ◨)
111. (▲) = f(⊏*, ◨, □)
112. (▲) = f(⊏*, ◨, ○)
113. (▲) = f(⊏*, ○)
114. (▲) = f(⊏*, ○, ◭)
115. (▲) = f(⊏*, ○, ◨)
116. (▲) = f(⊏*, ○, ◑)
117. (▲) = f(⊏*, ◑)
118. (▲) = f(⊏*, ◑, ○)
119. (▲) = f(○, ⊏)
120. (▲) = f(○, ⊏, □)
121. (▲) = f(○, ⊏, ◨)
122. (▲) = f(○, ⊏, ■)
123. (▲) = f(○, ◭)
124. (▲) = f(○, ◭, ⊏*)
125. (▲) = f(○, □)
126. (▲) = f(○, □, ⊏)
127. (▲) = f(○, ◨)
128. (▲) = f(○, ◨, ⊏)

129. (▲) = f(○, ◨, ⊏*)
130. (▲) = f(○, ■)
131. (▲) = f(○, ■, ⊏)
132. (▲) = f(○, ⊏*)
133. (▲) = f(○, ⊏*, ◭)
134. (▲) = f(○, ⊏*, ◨)
135. (▲) = f(○, ⊏*, ◑)
136. (▲) = f(○, ◑)
137. (▲) = f(○, ◑, ⊏*)
138. (▲) = f(◑, ⊏)
139. (▲) = f(◑, ⊏, ◨)
140. (▲) = f(◑, ⊏, ■)
141. (▲) = f(◑, ◨)
142. (▲) = f(◑, ◨, ⊏)
143. (▲) = f(◑, ■)
144. (▲) = f(◑, ■, ⊏)
145. (▲) = f(◑, ⊏*)
146. (▲) = f(◑, ⊏*, ○)
147. (▲) = f(◑, ○)
148. (▲) = f(◑, ○, ⊏*)
149. (▲) = f(●, ⊏)
150. (▲) = f(●, ⊏, ■)
151. (▲) = f(●, ■)
152. (▲) = f(●, ■, ⊏)

3.8. 41 Funktionen mit w = (⊔*)

1. (⊔*) = f(△, ◭)
2. (⊔*) = f(△, ◭, ▲)
3. (⊔*) = f(△, ▲)

4. $(\sqcup^*) = f(\triangle, \blacktriangle, \blacktriangleleft)$
5. $(\sqcup^*) = f(\blacktriangleleft, \triangle)$
6. $(\sqcup^*) = f(\blacktriangleleft, \triangle, \blacktriangle)$
7. $(\sqcup^*) = f(\blacktriangleleft, \blacktriangle)$
8. $(\sqcup^*) = f(\blacktriangleleft, \blacktriangle, \triangle)$
9. $(\sqcup^*) = f(\blacktriangleleft, \blacktriangle, \square)$
10. $(\sqcup^*) = f(\blacktriangleleft, \square, \blacktriangle)$
11. $(\sqcup^*) = f(\blacktriangle, \triangle)$
12. $(\sqcup^*) = f(\blacktriangle, \triangle, \blacktriangleleft)$
13. $(\sqcup^*) = f(\blacktriangle, \blacktriangleleft)$
14. $(\sqcup^*) = f(\blacktriangle, \blacktriangleleft, \triangle)$
15. $(\sqcup^*) = f(\blacktriangle, \blacktriangleleft, \square)$
16. $(\sqcup^*) = f(\blacktriangle, \square)$
17. $(\sqcup^*) = f(\blacktriangle, \square, \blacktriangleleft)$
18. $(\sqcup^*) = f(\blacktriangle, \square, \blacksquare)$
19. $(\sqcup^*) = f(\blacktriangle, \blacksquare)$
20. $(\sqcup^*) = f(\blacktriangle, \blacksquare, \square)$
21. $(\sqcup^*) = f(\square, \blacktriangleleft)$
22. $(\sqcup^*) = f(\square, \blacktriangleleft, \blacktriangle)$
23. $(\sqcup^*) = f(\square, \blacktriangle)$
24. $(\sqcup^*) = f(\square, \blacktriangle, \blacktriangleleft)$
25. $(\sqcup^*) = f(\square, \blacktriangle, \blacksquare)$
26. $(\sqcup^*) = f(\square, \blacksquare)$
27. $(\sqcup^*) = f(\square, \blacksquare, \blacktriangle)$
28. $(\sqcup^*) = f(\square, \blacksquare, \blacksquare)$
29. $(\sqcup^*) = f(\square, \blacksquare)$
30. $(\sqcup^*) = f(\square, \blacksquare, \blacksquare)$
31. $(\sqcup^*) = f(\blacksquare, \blacktriangle)$
32. $(\sqcup^*) = f(\blacksquare, \blacktriangle, \square)$
33. $(\sqcup^*) = f(\blacksquare, \square)$

34. (⊔*) = f(◨, □, ▲)
35. (⊔*) = f(◨, □, ■)
36. (⊔*) = f(◨, ■)
37. (⊔*) = f(◨, ■, □)
38. (⊔*) = f(■, □)
39. (⊔*) = f(■, □, ◨)
40. (⊔*) = f(■, ◨)
41. (⊔*) = f(■, ◨, □)

3.9. 116 Funktionen mit w = (□)

1. (□) = f(⊓, △)
2. (□) = f(⊓, △, ○)
3. (□) = f(⊔, △)
4. (□) = f(⊔, △, ○)
5. (□) = f(⊔, ◭)
6. (□) = f(⊔, ◭, ○)
7. (□) = f(⊔, ○)
8. (□) = f(⊔, ○, △)
9. (□) = f(⊔, ○, ◭)
10. (□) = f(⊏, △)
11. (□) = f(⊏, △, ○)
12. (□) = f(⊏, ◭)
13. (□) = f(⊏, ◭, ○)
14. (□) = f(⊏, ▲)
15. (□) = f(⊏, ▲, ○)
16. (□) = f(⊏, ○)
17. (□) = f(⊏, ○, △)
18. (□) = f(⊏, ○, ◭)
19. (□) = f(⊏, ○, ▲)

20. (□) = f(△, ⊓)
21. (□) = f(△, ⊓, ○)
22. (□) = f(△, ⊔)
23. (□) = f(△, ⊔, ○)
24. (□) = f(△, ⊏)
25. (□) = f(△, ⊏, ○)
26. (□) = f(△, ○)
27. (□) = f(△, ○, ⊓)
28. (□) = f(△, ○, ⊔)
29. (□) = f(△, ○, ⊏)
30. (□) = f(◭, ⊔)
31. (□) = f(◭, ⊔, ○)
32. (□) = f(◭, ⊏)
33. (□) = f(◭, ⊏, ○)
34. (□) = f(◭, ▲, ⊏*)
35. (□) = f(◭, ▲)
36. (□) = f(◭, ▲, ⊔*)
37. (□) = f(◭, ⊔*)
38. (□) = f(◭, ⊔*, ▲)
39. (□) = f(◭, ⊏*)
40. (□) = f(◭, ⊏*, ▲)
41. (□) = f(◭, ○)
42. (□) = f(◭, ○, ⊔)
43. (□) = f(◭, ○, ⊏)
44. (□) = f(▲, ⊏)
45. (□) = f(▲, ⊏, ○)
46. (□) = f(▲, ◭)
47. (□) = f(▲, ◭, ⊔*)
48. (□) = f(▲, ◭, ⊏*)
49. (□) = f(▲, ⊔*)

50. (□) = f(▲, ⊔*, ◭)
51. (□) = f(▲, ⊔*, ◨)
52. (□) = f(▲, ◨)
53. (□) = f(▲, ◨, ⊔*)
54. (□) = f(▲, ◨, ⊏*)
55. (□) = f(▲, ⊏*)
56. (□) = f(▲, ⊏*, ◭)
57. (□) = f(▲, ⊏*, ◨)
58. (□) = f(▲, ○)
59. (□) = f(▲, ○, ⊏)
60. (□) = f(⊔*, ◭)
61. (□) = f(⊔*, ◭, ▲)
62. (□) = f(⊔*, ▲)
63. (□) = f(⊔*, ▲, ◭)
64. (□) = f(⊔*, ▲, ◨)
65. (□) = f(⊔*, ◨)
66. (□) = f(⊔*, ◨, ▲)
67. (□) = f(⊔*, ◨, ■)
68. (□) = f(⊔*, ■)
69. (□) = f(⊔*, ■, ◨)
70. (□) = f(◨, ▲)
71. (□) = f(◨, ▲, ⊔*)
72. (□) = f(◨, ▲, ⊏*)
73. (□) = f(◨, ⊔*)
74. (□) = f(◨, ⊔*, ▲)
75. (□) = f(◨, ⊔*, ■)
76. (□) = f(◨, ■)
77. (□) = f(◨, ■, ⊔*)
78. (□) = f(◨, ■, ⊏*)
79. (□) = f(◨, ⊏*)

80. (□) = f(◨, ⊏*, ▲)
81. (□) = f(◨, ⊏*, ■)
82. (□) = f(■, ⊔*)
83. (□) = f(■, ⊔*, ◨)
84. (□) = f(■, ◨)
85. (□) = f(■, ◨, ⊔*)
86. (□) = f(■, ◨, ⊏*)
87. (□) = f(■, ⊏*)
88. (□) = f(■, ⊏*, ◨)
89. (□) = f(⊏*, ◭)
90. (□) = f(⊏*, ◭, ▲)
91. (□) = f(⊏*, ▲)
92. (□) = f(⊏*, ▲, ◭)
93. (□) = f(⊏*, ▲, ◨)
94. (□) = f(⊏*, ◨)
95. (□) = f(⊏*, ◨, ▲)
96. (□) = f(⊏*, ◨, ■)
97. (□) = f(⊏*, ■)
98. (□) = f(⊏*, ■, ◨)
99. (□) = f(○, ⊓)
100. (□) = f(○, ⊓, △)
101. (□) = f(○, ⊔)
102. (□) = f(○, ⊔, △)
103. (□) = f(○, ⊔, ◭)
104. (□) = f(○, ⊏)
105. (□) = f(○, ⊏, △)
106. (□) = f(○, ⊏, ◭)
107. (□) = f(○, ⊏, ▲)
108. (□) = f(○, △)
109. (□) = f(○, △, ⊓)

110. (□) = f(○, △, ⊔)
111. (□) = f(○, △, ⊏)
112. (□) = f(○, ◭)
113. (□) = f(○, ◭, ⊔)
114. (□) = f(○, ◭, ⊏)
115. (□) = f(○, ▲)
116. (□) = f(○, ▲, ⊏)

3.10. 99 Funktionen mit w = (◨)

1. (◨) = f(⊔, ◭)
2. (◨) = f(⊔, ◭, ○)
3. (◨) = f(⊔, ◭, ◑)
4. (◨) = f(⊔, ○)
5. (◨) = f(⊔, ○, ◭)
6. (◨) = f(⊔, ◑)
7. (◨) = f(⊔, ◑, ◭)
8. (◨) = f(⊏, ◭)
9. (◨) = f(⊏, ◭, ○)
10. (◨) = f(⊏, ◭, ◑)
11. (◨) = f(⊏, ▲)
12. (◨) = f(⊏, ▲, ○)
13. (◨) = f(⊏, ▲, ◑)
14. (◨) = f(⊏, ○)
15. (◨) = f(⊏, ○, ◭)
16. (◨) = f(⊏, ○, ▲)
17. (◨) = f(⊏, ◑)
18. (◨) = f(⊏, ◑, ◭)
19. (◨) = f(⊏, ◑, ▲)
20. (◨) = f(◭, ⊔)

21. (◨) = f(◭, ⊔, ○)
22. (◨) = f(◭, ⊔, ◑)
23. (◨) = f(◭, ⊏)
24. (◨) = f(◭, ⊏, ○)
25. (◨) = f(◭, ⊏, ◑)
26. (◨) = f(◭, ○)
27. (◨) = f(◭, ○, ⊔)
28. (◨) = f(◭, ○, ⊏)
29. (◨) = f(◭, ◑)
30. (◨) = f(◭, ◑, ⊔)
31. (◨) = f(◭, ◑, ⊏)
32. (◨) = f(▲, ⊏)
33. (◨) = f(▲, ⊏, ○)
34. (◨) = f(▲, ⊏, ◑)
35. (◨) = f(▲, ⊔*)
36. (◨) = f(▲, ⊔*, □)
37. (◨) = f(▲, □)
38. (◨) = f(▲, □, ⊔*)
39. (◨) = f(▲, □, ⊏*)
40. (◨) = f(▲, ⊏*)
41. (◨) = f(▲, ⊏*, □)
42. (◨) = f(▲, ⊏*, ○)
43. (◨) = f(▲, ○)
44. (◨) = f(▲, ○, ⊏)
45. (◨) = f(▲, ○, ⊏*)
46. (◨) = f(▲, ◑)
47. (◨) = f(▲, ◑, ⊏)
48. (◨) = f(⊔*, ▲)
49. (◨) = f(⊔*, ▲, □)
50. (◨) = f(⊔*, □)

51. (◨) = f(⊔*, □, ▲)
52. (◨) = f(⊔*, □, ■)
53. (◨) = f(⊔*, ■)
54. (◨) = f(⊔*, ■, □)
55. (◨) = f(□, ▲)
56. (◨) = f(□, ▲, ⊔*)
57. (◨) = f(□, ▲, ⊏*)
58. (◨) = f(□, ⊔*)
59. (◨) = f(□, ⊔*, ▲)
60. (◨) = f(□, ⊔*, ■)
61. (◨) = f(□, ■)
62. (◨) = f(□, ■, ⊔*)
63. (◨) = f(□, ■, ⊏*)
64. (◨) = f(□, ⊏*)
65. (◨) = f(□, ⊏*, ▲)
66. (◨) = f(□, ⊏*, ■)
67. (◨) = f(■, ⊔*)
68. (◨) = f(■, ⊔*, □)
69. (◨) = f(■, □)
70. (◨) = f(■, □, ⊔*)
71. (◨) = f(■, □, ⊏*)
72. (◨) = f(■, ⊏*)
73. (◨) = f(■, ⊏*, □)
74. (◨) = f(■, ⊏*, ○)
75. (◨) = f(■, ○)
76. (◨) = f(■, ○, ⊏*)
77. (◨) = f(⊏*, ▲)
78. (◨) = f(⊏*, ▲, □)
79. (◨) = f(⊏*, ▲, ○)
80. (◨) = f(⊏*, □)

81. (◨) = f(⊏*, □, ▲)
82. (◨) = f(⊏*, □, ■)
83. (◨) = f(⊏*, ■)
84. (◨) = f(⊏*, ■, □)
85. (◨) = f(⊏*, ■, ○)
86. (◨) = f(⊏*, ○)
87. (◨) = f(⊏*, ○, ▲)
88. (◨) = f(⊏*, ○, ■)
89. (◨) = f(○, ⊔)
90. (◨) = f(○, ⊔, ◭)
91. (◨) = f(○, ⊏)
92. (◨) = f(○, ⊏, ◭)
93. (◨) = f(○, ⊏, ▲)
94. (◨) = f(○, ◭)
95. (◨) = f(○, ◭, ⊔)
96. (◨) = f(○, ◭, ⊏)
97. (◨) = f(○, ▲)
98. (◨) = f(○, ▲, ⊏)
99. (◨) = f(○, ▲, ⊏*)
100. (◨) = f(○, ■)
101. (◨) = f(○, ■, ⊏*)
102. (◨) = f(○, ⊏*)
103. (◨) = f(○, ⊏*, ▲)
104. (◨) = f(○, ⊏*, ■)
105. (◨) = f(◑, ⊔)
106. (◨) = f(◑, ⊔, ◭)
107. (◨) = f(◑, ⊏)
108. (◨) = f(◑, ⊏, ◭)
109. (◨) = f(◑, ⊏, ▲)
110. (◨) = f(◑, ◭)

111. (◨) = f(◑, ◭, ⊔)
112. (◨) = f(◑, ◭, ⊏)
113. (◨) = f(◑, ▲)
114. (◨) = f(◑, ▲, ⊏)

3.11. 74 Funktionen mit w = (■)

1. (■) = f(⊏, ▲)
2. (■) = f(⊏, ▲, ○)
3. (■) = f(⊏, ▲, ◑)
4. (■) = f(⊏, ▲, ●)
5. (■) = f(⊏, ○)
6. (■) = f(⊏, ○, ▲)
7. (■) = f(⊏, ◑)
8. (■) = f(⊏, ◑, ▲)
9. (■) = f(⊏,●)
10. (■) = f(⊏,●, ▲)
11. (■) = f(▲, ⊏)
12. (■) = f(▲, ⊏, ○)
13. (■) = f(▲, ⊏, ◑)
14. (■) = f(▲, ⊏, ●)
15. (■) = f(▲, ○)
16. (■) = f(▲, ○, ⊏)
17. (■) = f(▲, ◑)
18. (■) = f(▲, ◑, ⊏)
19. (■) = f(▲, ●)
20. (■) = f(▲, ●, ⊏)
21. (■) = f(⊔*, □)
22. (■) = f(⊔*, □, ◨)
23. (■) = f(⊔*, ◨)

24. (■) = f(⊔*, ◨, □)
25. (■) = f(□, ⊔*)
26. (■) = f(□, ⊔*, ◨)
27. (■) = f(□, ◨)
28. (■) = f(□, ◨, ⊔*)
29. (■) = f(□, ◨, ⊏*)
30. (■) = f(□, ⊏*)
31. (■) = f(□, ⊏*, ◨)
32. (■) = f(◨, ⊔*)
33. (■) = f(◨, ⊔*, □)
34. (■) = f(◨, □)
35. (■) = f(◨, □, ⊔*)
36. (■) = f(◨, □, ⊏*)
37. (■) = f(◨, ⊏*)
38. (■) = f(◨, ⊏*, □)
39. (■) = f(◨, ⊏*, ○)
40. (■) = f(◨, ○)
41. (■) = f(◨, ○, ⊏*)
42. (■) = f(⊏*, □)
43. (■) = f(⊏*, □, ◨)
44. (■) = f(⊏*, ◨)
45. (■) = f(⊏*, ◨, □)
46. (■) = f(⊏*, ◨, ○)
47. (■) = f(⊏*, ○)
48. (■) = f(⊏*, ○, ◨)
49. (■) = f(⊏*, ○, ◑)
50. (■) = f(⊏*, ◑)
51. (■) = f(⊏*, ◑, ○)
52. (■) = f(○, ⊏)
53. (■) = f(○, ⊏, ▲)

54. (■) = f(○, ▲)
55. (■) = f(○, ▲, ⊏)
56. (■) = f(○, ◨)
57. (■) = f(○, ◨, ⊏*)
58. (■) = f(○, ⊏*)
59. (■) = f(○, ⊏*, ◨)
60. (■) = f(○, ⊏*, ◑)
61. (■) = f(○, ◑)
62. (■) = f(○, ◑, ⊏*)
63. (■) = f(◑, ⊏)
64. (■) = f(◑, ⊏, ▲)
65. (■) = f(◑, ▲)
66. (■) = f(◑, ▲, ⊏)
67. (■) = f(◑, ⊏*)
68. (■) = f(◑, ⊏*, ○)
69. (■) = f(◑, ○)
70. (■) = f(◑, ○, ⊏*)
71. (■) = f(●, ⊏)
72. (■) = f(●, ⊏, ▲)
73. (■) = f(●, ▲)
74. (■) = f(●, ▲, ⊏)

3.12. 92 Funktionen mit w = (⊏*)

1. (⊏*) = f(△, ◭)
2. (⊏*) = f(△, ◭, ▲)
3. (⊏*) = f(△, ▲)
4. (⊏*) = f(△, ▲, ◭)
5. (⊏*) = f(◭, △)
6. (⊏*) = f(◭, △, ▲)

7. $(\sqsubset^*) = f(◭, ▲)$
8. $(\sqsubset^*) = f(◭, ▲, △)$
9. $(\sqsubset^*) = f(◭, ▲, □)$
10. $(\sqsubset^*) = f(◭, ▲, ○)$
11. $(\sqsubset^*) = f(◭, □)$
12. $(\sqsubset^*) = f(◭, □, ▲)$
13. $(\sqsubset^*) = f(◭, ○)$
14. $(\sqsubset^*) = f(◭, ○, ▲)$
15. $(\sqsubset^*) = f(▲, △)$
16. $(\sqsubset^*) = f(▲, △, ◭)$
17. $(\sqsubset^*) = f(▲, ◭)$
18. $(\sqsubset^*) = f(▲, ◭, △)$
19. $(\sqsubset^*) = f(▲, ◭, □)$
20. $(\sqsubset^*) = f(▲, ◭, ○)$
21. $(\sqsubset^*) = f(▲, □)$
22. $(\sqsubset^*) = f(▲, □, ◭)$
23. $(\sqsubset^*) = f(▲, □, ◨)$
24. $(\sqsubset^*) = f(▲, ◨)$
25. $(\sqsubset^*) = f(▲, ◨, □)$
26. $(\sqsubset^*) = f(▲, ◨, ○)$
27. $(\sqsubset^*) = f(▲, ○)$
28. $(\sqsubset^*) = f(▲, ○, ◭)$
29. $(\sqsubset^*) = f(▲, ○, ◨)$
30. $(\sqsubset^*) = f(▲, ○, ◑)$
31. $(\sqsubset^*) = f(▲, ◑)$
32. $(\sqsubset^*) = f(▲, ◑, ○)$
33. $(\sqsubset^*) = f(□, ◭)$
34. $(\sqsubset^*) = f(□, ◭, ▲)$
35. $(\sqsubset^*) = f(□, ▲)$
36. $(\sqsubset^*) = f(□, ▲, ◭)$

37. (⊏*) = f(□, ▲, ◨)
38. (⊏*) = f(□, ◨)
39. (⊏*) = f(□, ◨, ▲)
40. (⊏*) = f(□, ◨, ■)
41. (⊏*) = f(□, ■)
42. (⊏*) = f(□, ■, ◨)
43. (⊏*) = f(◨, ▲)
44. (⊏*) = f(◨, ▲, □)
45. (⊏*) = f(◨, ▲, ○)
46. (⊏*) = f(◨, □)
47. (⊏*) = f(◨, □, ▲)
48. (⊏*) = f(◨, □, ■)
49. (⊏*) = f(◨, ■)
50. (⊏*) = f(◨, ■, □)
51. (⊏*) = f(◨, ■, ○)
52. (⊏*) = f(◨, ○)
53. (⊏*) = f(◨, ○, ▲)
54. (⊏*) = f(◨, ○, ■)
55. (⊏*) = f(■, □)
56. (⊏*) = f(■, □, ◨)
57. (⊏*) = f(■, ◨)
58. (⊏*) = f(■, ◨, □)
59. (⊏*) = f(■, ◨, ○)
60. (⊏*) = f(■, ○)
61. (⊏*) = f(■, ○, ◨)
62. (⊏*) = f(■, ○, ◑)
63. (⊏*) = f(■,(⊏*) = f(○, ◭)
64. (⊏*) = f(○, ◭, ▲)
65. (⊏*) = f(○, ▲)
66. (⊏*) = f(○, ▲, ◭)

67. (⊏*) = f(○, ▲, ◨)
68. (⊏*) = f(○, ▲, ◑)
69. (⊏*) = f(○, ◨)
70. (⊏*) = f(○, ◨, ▲)
71. (⊏*) = f(○, ◨, ■)
72. (⊏*) = f(○, ■)
73. (⊏*) = f(○, ■, ◨)
74. (⊏*) = f(○, ■, ◑)
75. (⊏*) = f(○, ◑)
76. (⊏*) = f(○, ◑, ▲)
77. (⊏*) = f(○, ◑, ■)
78. (⊏*) = f(○, ◑, ●)
79. (⊏*) = f(◑, ▲)
80. (⊏*) = f(◑, ▲, ○)
81. (⊏*) = f(◑, ■)
82. (⊏*) = f(◑, ■, ○)
83. (⊏*) = f(◑, ○, ▲)
84. (⊏*) = f(◑, ○)
85. (⊏*) = f(◑, ○, ■)
86. (⊏*) = f(◑, ○, ●)
87. (⊏*) = f(◑, ●, ○)
88. (⊏*) = f(●, ○)
89. (⊏*) = f(●, ○, ◑)
90. (⊏*) = f(●, ◑, ○)

3.13. 154 Funktionen mit w = (○)

1. (○) = f(⊓, △)
2. (○) = f(⊓, △, □)
3. (○) = f(⊓, □)

4. (○) = f(⊓, □, △)
5. (○) = f(⊔, △)
6. (○) = f(⊔, △, □)
7. (○) = f(⊔, ◭)
8. (○) = f(⊔, ◭, □)
9. (○) = f(⊔, ◭, ◨)
10. (○) = f(⊔, □)
11. (○) = f(⊔, □, △)
12. (○) = f(⊔, □, ◭)
13. (○) = f(⊔, ◨)
14. (○) = f(⊔, ◨, ◭)
15. (○) = f(⊏, △)
16. (○) = f(⊏, △, □)
17. (○) = f(⊏, ◭)
18. (○) = f(⊏, ◭, □)
19. (○) = f(⊏, ◭, ◨)
20. (○) = f(⊏, ▲)
21. (○) = f(⊏, ▲, □)
22. (○) = f(⊏, ▲, ◨)
23. (○) = f(⊏, ▲, ■)
24. (○) = f(⊏, □)
25. (○) = f(⊏, □, △)
26. (○) = f(⊏, □, ◭)
27. (○) = f(⊏, □, ▲)
28. (○) = f(⊏, ◨)
29. (○) = f(⊏, ◨, ◭)
30. (○) = f(⊏, ◨, ▲)
31. (○) = f(⊏, ■)
32. (○) = f(⊏, ■, ▲)
33. (○) = f(△, ⊓)

34. (○) = f(△, ⊓, □)
35. (○) = f(△, ⊔)
36. (○) = f(△, ⊔, □)
37. (○) = f(△, ⊏)
38. (○) = f(△, ⊏, □)
39. (○) = f(△, □)
40. (○) = f(△, □, ⊓)
41. (○) = f(△, □, ⊔)
42. (○) = f(△, □, ⊏)
43. (○) = f(◭, ⊔)
44. (○) = f(◭, ⊔, □)
45. (○) = f(◭, ⊔, ◨)
46. (○) = f(◭, ⊏)
47. (○) = f(◭, ⊏, □)
48. (○) = f(◭, ⊏, ◨)
49. (○) = f(◭, ▲)
50. (○) = f(◭, ▲, ⊏*)
51. (○) = f(◭, □)
52. (○) = f(◭, □, ⊔)
53. (○) = f(◭, □, ⊏)
54. (○) = f(◭, ◨)
55. (○) = f(◭, ◨, ⊔)
56. (○) = f(◭, ◨, ⊏)
57. (○) = f(◭, ⊏*)
58. (○) = f(◭, ⊏*, ▲)
59. (○) = f(▲, ⊏)
60. (○) = f(▲, ⊏, □)
61. (○) = f(▲, ⊏, ◨)
62. (○) = f(▲, ⊏, ■)
63. (○) = f(▲, ◭)

64. (○) = f(▲, ◭, ⊏*)
65. (○) = f(▲, □)
66. (○) = f(▲, □, ⊏)
67. (○) = f(▲, ◨)
68. (○) = f(▲, ◨, ⊏)
69. (○) = f(▲, ◨, ⊏*)
70. (○) = f(▲, ■)
71. (○) = f(▲, ■, ⊏)
72. (○) = f(▲, ⊏*)
73. (○) = f(▲, ⊏*, ◭)
74. (○) = f(▲, ⊏*, ◨)
75. (○) = f(▲, ⊏*, ◑)
76. (○) = f(▲, ◑)
77. (○) = f(▲, ◑, ⊏*)
78. (○) = f(□, ⊓)
79. (○) = f(□, ⊓, △)
80. (○) = f(□, ⊔)
81. (○) = f(□, ⊔, △)
82. (○) = f(□, ⊔, ◭)
83. (○) = f(□, ⊏)
84. (○) = f(□, ⊏, △)
85. (○) = f(□, ⊏, ◭)
86. (○) = f(□, ⊏, ▲)
87. (○) = f(□, △)
88. (○) = f(□, △, ⊓)
89. (○) = f(□, △, ⊔)
90. (○) = f(□, △, ⊏)
91. (○) = f(□, ◭)
92. (○) = f(□, ◭, ⊔)
93. (○) = f(□, ◭, ⊏)

94. (○) = f(□, ▲)
95. (○) = f(□, ▲, ⊏)
96. (○) = f(◨, ⊔)
97. (○) = f(◨, ⊔, ◭)
98. (○) = f(◨, ⊏)
99. (○) = f(◨, ⊏, ◭)
100. (○) = f(◨, ⊏, ▲)
101. (○) = f(◨, ◭)
102. (○) = f(◨, ◭, ⊔)
103. (○) = f(◨, ◭, ⊏)
104. (○) = f(◨, ▲)
105. (○) = f(◨, ▲, ⊏)
106. (○) = f(◨, ▲, ⊏*)
107. (○) = f(◨, ■)
108. (○) = f(◨, ■, ⊏*)
109. (○) = f(◨, ⊏*)
110. (○) = f(◨, ⊏*, ▲)
111. (○) = f(◨, ⊏*, ■)
112. (○) = f(■, ⊏)
113. (○) = f(■, ⊏, ▲)
114. (○) = f(■, ▲)
115. (○) = f(■, ▲, ⊏)
116. (○) = f(■, ◨)
117. (○) = f(■, ◨, ⊏*)
118. (○) = f(■, ⊏*)
119. (○) = f(■, ⊏*, ◨)
120. (○) = f(■, ⊏*, ◑)
121. (○) = f(■, ◑)
122. (○) = f(■, ◑, ⊏*)
123. (○) = f(⊏*, ◭)

124. (○) = f(⊏*, ◭, ▲)
125. (○) = f(⊏*, ▲)
126. (○) = f(⊏*, ▲, ◭)
127. (○) = f(⊏*, ▲, ◨)
128. (○) = f(⊏*, ▲, ◑)
129. (○) = f(⊏*, ◨)
130. (○) = f(⊏*, ◨, ▲)
131. (○) = f(⊏*, ◨, ■)
132. (○) = f(⊏*, ■)
133. (○) = f(⊏*, ■, ◨)
134. (○) = f(⊏*, ■, ◑)
135. (○) = f(⊏*, ◑)
136. (○) = f(⊏*, ◑, ▲)
137. (○) = f(⊏*, ◑, ■)
138. (○) = f(⊏*, ◑, ●)
139. (○) = f(⊏*,●)
140. (○) = f(⊏*, ●, ◑)
141. (○) = f(◑, ▲)
142. (○) = f(◑, ▲, ⊏*)
143. (○) = f(◑, ■)
144. (○) = f(◑, ■, ⊏*)
145. (○) = f(◑, ⊏*)
146. (○) = f(◑, ⊏*, ▲)
147. (○) = f(◑, ⊏*, ■)
148. (○) = f(◑, ⊏*, ●)
149. (○) = f(◑, ●)
150. (○) = f(◑, ●, ⊏*)
151. (○) = f(●, ⊏*)
152. (○) = f(●, ⊏*, ◑)
153. (○) = f(●, ◑)

154. (○) = f(●, ◑, ⊏*)

3.14. 74 Funktionen mit w = (◑)

1. (◑) = f(⊔, ◭)
2. (◑) = f(⊔, ◭, ◨)
3. (◑) = f(⊔, ◨)
4. (◑) = f(⊔, ◨, ◭)
5. (◑) = f(⊏, ◭)
6. (◑) = f(⊏, ◭, ◨)
7. (◑) = f(⊏, ▲)
8. (◑) = f(⊏, ▲, ◨)
9. (◑) = f(⊏, ▲, ■)
10. (◑) = f(⊏, ◨)
11. (◑) = f(⊏, ◨, ◭)
12. (◑) = f(⊏, ◨, ▲)
13. (◑) = f(⊏, ■)
14. (◑) = f(⊏, ■, ▲)
15. (◑) = f(◭, ⊔)
16. (◑) = f(◭, ⊔, ◨)
17. (◑) = f(◭, ⊏)
18. (◑) = f(◭, ⊏, ◨)
19. (◑) = f(◭, ◨)
20. (◑) = f(◭, ◨, ⊔)
21. (◑) = f(◭, ◨, ⊏)
22. (◑) = f(▲, ⊏)
23. (◑) = f(▲, ⊏, ◨)
24. (◑) = f(▲, ⊏, ■)
25. (◑) = f(▲, ◨)
26. (◑) = f(▲, ◨, ⊏)

27. (◑) = f(▲, ■)
28. (◑) = f(▲, ■, ⊏)
29. (◑) = f(▲, ⊏*)
30. (◑) = f(▲, ⊏*, ○)
31. (◑) = f(▲, ○)
32. (◑) = f(▲, ○, ⊏*)
33. (◑) = f(◨, ⊔)
34. (◑) = f(◨, ⊔, ◭)
35. (◑) = f(◨, ⊏)
36. (◑) = f(◨, ⊏, ◭)
37. (◑) = f(◨, ⊏, ▲)
38. (◑) = f(◨, ◭)
39. (◑) = f(◨, ◭, ⊔)
40. (◑) = f(◨, ◭, ⊏)
41. (◑) = f(◨, ▲)
42. (◑) = f(◨, ▲, ⊏)
43. (◑) = f(■, ⊏)
44. (◑) = f(■, ⊏, ▲)
45. (◑) = f(■, ▲)
46. (◑) = f(■, ▲, ⊏)
47. (◑) = f(■, ⊏*)
48. (◑) = f(■, ⊏*, ○)
49. (◑) = f(■, ○)
50. (◑) = f(■, ○, ⊏*)
51. (◑) = f(⊏*, ▲)
52. (◑) = f(⊏*, ▲, ○)
53. (◑) = f(⊏*, ■)
54. (◑) = f(⊏*, ■, ○)
55. (◑) = f(⊏*, ○)
56. (◑) = f(⊏*, ○, ▲)

57. (◑) = f(⊏*, ○, ■)
58. (◑) = f(⊏*, ○, ●)
59. (◑) = f(⊏*,●)
60. (◑) = f(⊏*, ●, ○)
61. (◑) = f(○, ▲)
62. (◑) = f(○, ▲, ⊏*)
63. (◑) = f(○, ■)
64. (◑) = f(○, ■, ⊏*)
65. (◑) = f(○, ⊏*)
66. (◑) = f(○, ⊏*, ▲)
67. (◑) = f(○, ⊏*, ■)
68. (◑) = f(○, ⊏*, ●)
69. (◑) = f(○,●)
70. (◑) = f(○,●, ⊏*)
71. (◑) = f(●, ⊏*)
72. (◑) = f(●, ⊏*, ○)
73. (◑) = f(●3, ○)
74. (◑) = f(●, ○, ⊏*)

3.15. 24 Funktionen mit w = ●

1. ● = f(⊏, ▲)
2. ● = f(⊏, ▲, ■)
3. ● = f(⊏, ■)
4. ● = f(⊏, ■, ▲)
5. ● = f(▲, ⊏)
6. ● = f(▲, ⊏, ■)
7. ● = f(▲, ■)
8. ● = f(▲, ■, ⊏)
9. ● = f(■, ⊏)

10. ● = f(■, ⊏, ▲)
11. ● = f(■, ▲)
12. ● = f(■, ▲, ⊏)
13. ● = f(⊏*, ○)
14. ● = f(⊏*, ○, ◑)
15. ● = f(⊏*, ◑)
16. ● = f(⊏*, ◑, ○)
17. ● = f(○, ⊏*)
18. ● = f(○, ⊏*, ◑)
19. ● = f(○, ◑)
20. ● = f(○, ◑, ⊏*)
21. ● = f(◑, ⊏*)
22. ● = f(◑, ⊏*, ○)
23. ● = f(◑, ○)
24. ● = f(◑, ○, ⊏*)

4.1. Wir haben somit

3.1. 12 Funktionen mit w = (⊓)
3.2. 41 Funktionen mit w = (⊔)
3.3. 92 Funktionen mit w = (⊏)

3.4. 12 Funktionen mit w = (⊓*)
3.5. 64 Funktionen mit w = (△)
3.6. 115 Funktionen mit w = (◭)
3.7. 152 Funktionen mit w = (▲)

3.8. 41 Funktionen mit w = (⊔*)
3.9. 116 Funktionen mit w = (□)
3.10. 99 Funktionen mit w = (◨)
3.11. 74 Funktionen mit w = (■)

3.12. 92 Funktionen mit w = (⊏*)

3.13. 154 Funktionen mit w = (○)

3.14. 74 Funktionen mit w = (◑)

3.15. 24 Funktionen mit w = ●

4.2. Damit gehört also jede triadische polykontextural-semiotische Funktion zu einer tetradischen, oder, anders ausgedrückt: Partielle polykontextural-semiotische Funktion treten nicht isoliert auf, sondern in einer Familie, die von einer tetradischen polykontextural-semiotischen Funktion "angeführt" wird. Ob eine polykontextural-semiotische Funktion zu einer solchen "Funktionen-Familie" von 2, 3 oder 4 Mitgliedern gehört, bestimmt offensichtlich ganz einfach ihre Struktur, die in den obigen Listen freilich optisch durch die auftretenden Permutationen der "regulären" tetradischen Dualsysteme der abstrakten Form (3.a 2.b 1.c 0.d) × (d.0 c.1 b.2 a.3) etwas verdeckt ist:

PZR = (3.a 2.b 1.c 0.d) mit a ≤ b ≤ c ≤ d, wobei a, b, c, d ∈ {.1, .2, .3}.

Man bedenke, dass wir im realitätstheoretischen Falle also haben

PZR° = (d.0 c.1 b.2 a.3),

wobei also wie im zeichentheoretischen Falle (PZR) wegen des von Bense eingeführten Unterscheides zwischen kategorialen und relationalen Zahlen (Bense 1975, S. 65 f.) d ≠ 0 ist, was ja der Grund für die nicht-quadratische polykontextural-semiotische Matrix ist, denn die genuine, iterierte nullheitliche Kategorie "0.0" würde gerade dem durch die nicht-genuinen trichotomischen Kategorien (0.1), (0.2), (0.3) ausgedrückte Aufhebung der polykontexturalen Grenze zwischen Zeichen und Objekt widersprechen, insofern hier das kategoriale Objekt als "reines", nicht "Zeichen-infiziertes" Objekt erschiene.

Mit anderen Worten: Ausgehend von

PZR = (3.a 2.b 1.c 0.d) und PZR° = (d.0 c.1 b.2 a.3)

finden wir in den Listen die folgenden 2 · 24 Permutationen:

(3.a 2.b 1.c 0.d) × (d.0 c.1 b.2 a.3)
(2.b 3.a 1.c 0.d) × (d.0 c.1 a.3 b.2)

(2.b 1.c 3.a 0.d) × (d.0 a.3 c.1 b.2)
(1.c 2.b 3.a 0.d) × (d.0 a.3 b.2 c.1)
(3.a 1.c 2.b 0.d) × (d.0 b.2 c.1 a.3)
(1.c 3.a 2.b 0.d) × (d.0 b.2 a.3 c.1)

(2.b 3.a 0.d 1.c) × (c.1 d.0 a.3 b.2)
(3.a 2.b 0.d 1.c) × (c.1 d.0 b.2 a.3)
(2.b 1.c 0.d 3.a) × (a.3 d.0 c.1 b.2)
(1.c 2.b 0.d 3.a) × (a.3 d.0 b.2 c.1)
(3.a 1.c 0.d 2.b) × (b.2 d.0 c.1 a.3)
(1.c 3.a 0.d 2.b) × (b.2 d.0 a.3 c.1)

(2.b 0.d 3.a 1.c) × (c.1 a.3 d.0 b.2)
(3.a 0.d 2.b 1.c) × (c.1 b.2 d.0 a.3)
(2.b 0.d 1.c 3.a) × (a.3 c.1 d.0 b.2)
(1.c 0.d 2.b 3.a) × (a.3 b.2 d.0 c.1)
(3.a 0.d 1.c 2.b) × (b.2 c.1 d.0 a.3)
(1.c 0.d 3.a 2.b) × (b.2 a.3 d.0 c.1)

(0.d 2.b 3.a 1.c) × (c.1 a.3 b.2 d.0)
(0.d 3.a 2.b 1.c) × (c.1 b.2 a.3 d.0)
(0.d 1.c 2.b 3.a) × (a.3 b.2 c.1 d.0)
(0.d 2.b 1.c 3.a) × (a.3 c.1 b.2 d.0)
(0.d 3.a 1.c 2.b) × (b.2 c.1 a.3 d.0)
(0.d 1.c 3.a 2.b) × (b.2 a.3 c.1 d.0)

Wegen der trichotomischen Ordnung (a ≤ b ≤ c ≤ d) bestimmen also bei den partiellen Funktionen die "anwesenden" Funktionsglieder die "fehlenden". Wir hatten diese "fehlenden" Funktionsglieder ja weiter oben als "übersprungene" Kategorien bezeichnet, weil sie im polykontexturalen Sinne in eindeutig-mehrmöglicher Weise durch die "anwesenden" Funktionsglieder bestimmt werden. Wenn wir etwa die Nr. 18 aus Liste 3.2. nehmen

(⊔) = f(□, ○),

dann hat also die vollständige tetradische Zeichenrelation die beiden möglichen Formen

(⊔) = f(□, ○ 1.c)
(⊔) = f(1.c, □, ○).

Wegen (○ □) ergibt sich also c= 1 oder c = 2, d.h. 2 Möglichkeiten

(⊔) = f(□, ○, △) / (△, □, ○)
(⊔) = f(□, ○, ◭) / (◭, □, ○),

und die vor dem Schrägstrich stehenden Funktionen sind tatsächlich die Nrn. 19 und 20 in Liste 3.2.

Die 3er-Familie der polykontextural-semiotischen Funktionen

Nr. 18(⊔) = f(□, ○)
Nr. 19(⊔) = f(□, ○, △)
Nr. 20(⊔) = f(□, ○, ◭)

besagt wegen der Äquivalenz der polykontextural-semiotischen Funktionen aber auch, dass diese gegenseitig ersetzbar sind. Man könnte also auch sagen, die triadische polykontextural-semiotische Funktion Nr. 18 impliziere eine doppelte Option ihrer Substitution. Da die tetradische Zeichenklasse der partiellen Funktion Nr. 18 nicht eindeutig rekonstruierbar ist, ergeben sich also bei einer Rekonstruktion die beiden Alternativen Nr. 19 und Nr. 20, d.h. zwei verschiedene tetradische Zeichenklassen, und, da das kategoriale Objekt (⊔) konstant ist, nach der Entfernung der Faserung auch zwei verschiedene triadische, d.h. monokontexturale Zeichenklassen.

4.3. Die 15 Listen mit ihren 1162 qualitativen polykontextural-semiotischen Funktionen besagen also vor allem, dass die 15 polykontexturalen monadischen Subzeichen der tetradischen semiotischen Matrix durch total 1162 dyadische (partielle) und triadische polykontextural-semiotische qualitative Funktionen substituiert werden können, wobei jede "Familie" von Funktionen 2, 3 oder 4 Optionen hat.

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