Prof. Dr. Alfred Toth

Elements of a Theory of a system theoretic Night

1. The semiotic model used in this Part IV of a "Theory of the Night" had been introduced by the present author (Toth 2008b) under the name of "Pre-Semiotics", because the sign model which is the basis,

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

contains the object, that is represented by the artificial or natural sign, as a categorial object (0.d) and thus settles one step before thetic semiosis, in the space between the ontological and the semiotic space.

Now I have already shown in Toth (2008a, pp. 177 ss.) that every triadic sign class has 6 permutations. Consequently, every tetradic sign class has 24 permutations. In Toth (2008c, pp. 220 ss.), I have further shown that each of these 24 permutations can be introduced as semiotic schemes of actions. Since each tetradic sign class has a dual reality thematic, we thus get for 15 pre-semiotic dual systems zunächst $15 \cdot 2 \cdot 24 = 720$ tetradic semiotic schemes of action. Furthermore, in Toth (2008c) it had been shown that a tetradic sign class has exactly the following $4 + 15 + 24 + 24 = 67$ partial relations:

monadic partial relations: (.0.), (.1.), (.2.), (.3.).

dyadic partial relations: (0.1), (0.2), (0.3), (1.0), (2.0), (3.0), (1.1), (1.2), (1.3), (2.1), (2.2), (2.3), (3.1), (3.2), (3.3).

triadic partial relations: (0., 2., 1.), (0., 1., 2.), (1., 2., 0.), (1., 0., 2), (2., 1., 0.), (2., 0., 1), (3., 2., 1.), (3., 1., 2.), (2., 3., 1.), (2., 1., 3.), (1., 3.,2.), (1., 2., 3),
(0., 3., 2.), (0., 2., 3.), (2., 3., 0.), (2., 0., 3.), (3., 2., 0.), (3., 0., 2.),
(0., 3., 1.), (0., 1., 3.), (1., 3., 0.), (1., 0., 3.), (3., 1., 0.), (3., 0., 1.).

tetradic partial relations: (3., 2., 1., 0.), (2., 3., 1., 0.), (2., 1., 3., 0.), (1., 2., 3., 0.), (3., 1., 2., 0.), (1., 3., 2., 0.), (2., 3., 0., 1.), (3., 2., 0., 1.), (2., 1., 0., 3.), (1., 2., 0., 3.), (3., 1., 0., 2.), (1., 3., 0., 2.), (2., 0., 3.,

1.), (3., 0., 2., 1.), (2., 0., 1., 3.), (1., 0., 2., 3.), (3., 0., 1., 2.), (1., 0., 3., 2.), (0., 2., 3., 1.), (0., 3., 2., 1.), (0., 1., 2., 3.), (0., 2., 1., 3.), (0., 3., 1., 2.), (0., 1., 3., 2.).

We thus get totally $15 \cdot 2 \cdot 67 = 2'010$ semiotic schemes of actions, which are polycontextural already because of the elimination of the discontexturality between sign and object and the embedding of the object qua categorial object into the sign relation.

2. In Toth (2008c), I had also shown that the pre-semiotic tetradic sign relation is complete regarding to epistemological, logical and ontological relation insofar as we have the following correspondences between logical relations and semiotic categories:

subjective subject (sS)	≅	Thirdness (interpretant relation, I)
objective object (oO)	≅	Secondness (Object relation, O)
subjective object (sO)	≅	Firstness (medium relation, M)
objective subject (oS)	≅	Zeroness (quality, Q)

Therefore, we can display the above 67 semiotic-numerical partial relations also in the following semiotic-logical form:

Monadic semiotic-logical partial relations:

(sO), (oS), (oO), (sS).

Dyadic semiotic-logical partial relations:

((sO), (oS)); ((sO), (oO)); ((sO), (sS)); ((oS), (sO)); ((oO), (sO)); ((sS), (sO)); ((oS), (oS)); ((oS), (oO)); ((oS), (sS)); ((oO), (oS)); ((oO), (oO)); ((oO), (sS)); ((sS), (oS)); ((sS), (oO)), ((sS), (sS)).

Triadic semiotic-logical partial relations:

((sO), (oO), (oS)); ((sO), (oS)), (oO)); ((oS), (oO), (sO)); ((oS), (sO), (oO)); ((oO), (oS), (sO)); ((oO), (sO), (oS)); ((sS), (oO), (oS)); ((sS), (oS), (oO)); ((oO), (sS), (oS)); ((oO), (oS), (sS)); ((oS), (sS), (oO)); ((oS), (oO), (sS)); ((sO), (sS), (oO)); ((sO), (oO), (sS); ((oO), (sS), (sO)); ((oO), (sO), (sS)); ((sS), (oO), (sO)); ((sS), (sO), (oO)); ((sO), (sS), (oS)); ((sO), (oS), (sS)); ((oS), (sS), (sO)); ((oS), (sO), (sS)); ((sS), (oS), (sO)); ((sS), (sO), (oS)).

A triadic partial relation of a tetradic semiotic relation is a combinatorial selection of the four pre-semiotic categories (0.), (.1.), (.2.), (.3.) or (sO), (oS), (oO), (sS), respectively. I.e., we thus can either (0., .1., .2.), (.1., .2., .3.), (0., .2., .3.) or (0., .1., .3.) combine to triads. In doing so, we get the following $2 \cdot 24 = 48$ permutationes:

(0.d 2.b 1.c) × (c.1 b.2 d.0) → ((sO), (oO), (oS)) × ((sO), (oO), (oS))
(0.d 1.c 2.b) × (b.2 c.1 d.0) → ((sO), (oS), (oO)) × ((oO), (sO), (oS))
(1.c 2.b 0.d) × (d.0 b.2 c.1) → ((oS), (oO), (sO)) × ((oS), (oO), (sO))
(1.c 0.d 2.b) × (b.2 d.0 c.1) → ((oS), (sO), (oO)) × ((oO), (oS), (sO))
(2.b 1.c 0.d) × (d.0 c.1 b.2) → ((oO), (oS), (sO)) × ((oS), (sO), (oO))
(2.b 0.d 1.c) × (c.1 d.0 b.2) → ((oO), (sO), (oS)) × ((sO), (oS), (oO))
(3.a 2.b 1.c) × (c.1 b.2 a.3) → ((sS), (oO), (oS)) × ((sO), (oO), (sS))
(3.a 1.c 2.b) × (b.2 c.1 a.3) → ((sS), (oS), (oO)) × ((oO), (sO), (sS))
(2.b 3.a 1.c) × (c.1 a.3 b.2) → ((oO), (sS), (oS)) × ((sO), (sS), (oO))
(2.b 1.c 3.a) × (a.3 c.1 b.2) → ((oO), (oS), (sS)) × ((sS), (sO), (oO))
(1.c 3.a 2.b) × (b.2 a.3 c.1) → ((oS), (sS), (oO)) × ((oO), (sS), (sO))
(1.c 2.b 3.a) × (a.3 b.2 c.1) → ((oS), (oO), (sS)) × ((sS), (oO), (sO))
(0.d 3.a 2.b) × (b.2 a.3 d.0) → ((sO), (sS), (oO)) × ((oO), (sS), (oS))
(0.d 2.b 3.a) × (a.3 b.2 d.0) → ((sO), (oO), (sS)) × ((sS), (oO), (oS))
(2.b 3.a 0.d) × (d.0 a.3 b.2) → ((oO), (sS), (sO)) × ((oS), (sS), (oO))
(2.b 0.d 3.a) × (a.3 d.0 b.2) → (oO), (sO), (sS)) × ((sS), (oS), (oO))
(3.a 2.b 0.d) × (d.0 b.2 a.3) → ((sS), (oO), (sO)) × ((oS), (oO), (sS))
(3.a 0.d 2.b) × (b.2 d.0 a.3) → ((sS), (sO), (oO)) × ((oO), (oS), (sS))
(0.d 3.a 1.c) × (c.1 a.3 d.0) → ((sO), (sS), (oS)) × ((sO), (sS), (oS))
(0.d 1.c 3.a) × (a.3 c.1 d.0) → ((sO), (oS), (sS)) × ((sS), (sO), (oS))
(1.c 3.a 0.d) × (d.0 a.3 c.1) → ((oS), (sS), (sO)) × ((oS), (sS), (sO))
(1.c 0.d 3.a) × (a.3 d.0 c.1) → ((oS), (sO), (sS)) × ((sS), (oS), (sO))
(3.a 1.c 0.d) × (d.0 c.1 a.3) → ((sS), (oS), (sO)) × ((oS, (sO), (sS))
(3.a 0.d 1.c) × (c.1 d.0 a.3) → ((sS), (sO), (oS)) × ((sO), (oS), (sS))

Tetradic semiotic-logical partial relations:

((sS), (oO), (oS), (sO)); ((oO), (sS), (oS), (sO)); ((oO), (oS), (sS), (sO)); ((oS), (oO), (sS), (sO)); ((sS), (oS), (oO), (sO)); ((oS), (sS), (oO), (sO)); ((oO), (sS), (sO), (oS)); ((sS), (oO), (sO), (oS)); ((oO), (oS), (sO), (sS)); ((oS), (oO), (sO), (sS)); ((sS), (oS), (sO), (oO)); ((oS), (sS), (sO), (oO)); ((oO), (sO), (sS), (oS)); ((sS), (sO), (oO), (oS)); ((oO), (sO), oS, (sS)); ((oS), (sO), (oO), (sS)); ((sS), (sO), (oS), (oO)); ((oS), (sO), (sS), (oO));

((sO), (oO), (sS), (oS)); ((sO), (sS), (oO), (oS)); ((sO), (oS), (oO), (sS)); ((sO), (oO), (oS), (sS)); ((sO), (sS), (oS), (oO)); ((sO), (oS), (sS), (oO)).

Complete listing of the $2 \cdot 24 = 48$ tetradic permutations:

(3.a 2.b 1.c 0.d) × (d.0 c.1 b.2 a.3) →
((sS), (oO), (oS), (sO)) × ((oS), (sO), (oO), (sS))
(2.b 3.a 1.c 0.d) × (d.0 c.1 a.3 b.2) →
((oO), (sS), (oS), (sO)) × ((oS), (sO), (sS), (oO))
(2.b 1.c 3.a 0.d) × (d.0 a.3 c.1 b.2) →
((oO), (oS), (sS), (sO)) × ((oS), (sS), (sO), (oO))
(1.c 2.b 3.a 0.d) × (d.0 a.3 b.2 c.1) →
((oS), (oO), (sS), (sO)) × ((oS), (sS), (oO), (sO))
(3.a 1.c 2.b 0.d) × (d.0 b.2 c.1 a.3) →
((sS), (oS), (oO), (sO)) × ((oS), (oO), (sO), (sS))
(1.c 3.a 2.b 0.d) × (d.0 b.2 a.3 c.1) →
((oS), (sS), (oO), (sO)) × ((oS), (oO), (sS), (sO))
(2.b 3.a 0.d 1.c) × (c.1 d.0 a.3 b.2) →
((oO), (sS), (sO), (oS)) × ((sO), (oS), (sS), (oO))
(3.a 2.b 0.d 1.c) × (c.1 d.0 b.2 a.3) →
((sS), (oO), (sO), (oS)) × ((sO), (oS), (oO), (sS))
(2.b 1.c 0.d 3.a) × (a.3 d.0 c.1 b.2) →
((oO), (oS), (sO), (sS)) × ((sS), (oS), (sO), (oO))
(1.c 2.b 0.d 3.a) × (a.3 d.0 b.2 c.1) →
((oS), (oO), (sO), (sS)) × ((sS), (oS), (oO), (sO))
(3.a 1.c 0.d 2.b) × (b.2 d.0 c.1 a.3)
((sS), (oS), (sO), (oO)) × ((oO), (oS), (sO), (sS))
(1.c 3.a 0.d 2.b) × (b.2 d.0 a.3 c.1) →
((oS), (sS), (sO), (oO)) × ((oO), (oS), (sS), (sO))
(2.b 0.d 3.a 1.c) × (c.1 a.3 d.0 b.2) →
((oO), (sO), (sS), (oS)) × ((sO), (sS), (oS), (oO))
(3.a 0.d 2.b 1.c) × (c.1 b.2 d.0 a.3) →
((sS), (sO), (oO), (oS)) × ((sO), (oO), (oS), (sS))
(2.b 0.d 1.c 3.a) × (a.3 c.1 d.0 b.2) →
((oO), (sO), (oS), (sS)) × ((sS), (sO), (oS), (oO))
(1.c 0.d 2.b 3.a) × (a.3 b.2 d.0 c.1) →

((oS), (sO), (oO), (sS)) × ((sS), (oO), (oS), (sO))
(3.a 0.d 1.c 2.b) × (b.2 c.1 d.0 a.3) →
((sS), (sO), (oS), (oO)) × ((oO), (sO), (oS), (sS))
(1.c 0.d 3.a 2.b) × (b.2 a.3 d.0 c.1) →
((oS), (sO), (sS), (oO)) × ((oO), (sS), (oS), (sO))
(0.d 2.b 3.a 1.c) × (c.1 a.3 b.2 d.0) →
((sO), (oO), (sS), (oS)) × ((sO), (sS), (oO), (oS))
(0.d 3.a 2.b 1.c) × (c.1 b.2 a.3 d.0) →
((sO), (sS), (oO), (oS)) × ((sO), (oO), (sS), (oS))
(0.d 1.c 2.b 3.a) × (a.3 b.2 c.1 d.0) →
((sO), (oS), (oO), (sS)) × ((sS), (oO), (sO), (oS))
(0.d 2.b 1.c 3.a) × (a.3 c.1 b.2 d.0) →
((sO), (oO), (oS), (sS)) × ((sS), (sO), (oO), (oS))
(0.d 3.a 1.c 2.b) × (b.2 c.1 a.3 d.0) →
((sO), (sS), (oS), (oO)) × ((oO), (sO), (sS), (oS))
(0.d 1.c 3.a 2.b) × (b.2 a.3 c.1 d.0) →
((sO), (oS), (sS), (oO)) × ((oO), (sS), (sO), (oS))

3. However, as Rudolf Kaehr (2008a, b, c) has shown, a sign relation is not really poly-contextural solely by embedding the categorial object into the triadic Peircean sign relation, but the sub-signs constituting the sign relation must be mapped to semiotic contextures. This idea of Kaehr's has, as I have already pointed out before, a splendid impact for the future development of mathematical semiotics. In order to map semiotic contextures as inner environments to the sub-signs of a pre-semiotic tetradic sign relation, we will use the following 4-adic poly-contextural semiotic 4×4 matrix:

	0	1	2	3
0	$(0.0)_{3,2,1}$	$(0.1)_{1,3}$	$(0.2)_{1,2}$	$(0.3)_{2,3}$
1	$(1.0)_{3,1}$	$(1.1)_{1,3,4}$	$(1.2)_{1,4}$	$(1.3)_{3,4}$
2	$(2.0)_{2,1}$	$(2.1)_{1,4}$	$(2.2)_{1,2,4}$	$(2.3)_{2,4}$
3	$(3.0)_{3,2}$	$(3.1)_{3,4}$	$(3.2)_{2,4}$	$(3.3)_{2,3,4}$

Since the action schemata of the 4 monadic semiotic partial relations

(sO), (oS), (oO), (sS)

as well as of the 15 dyadic semiotic partial relations

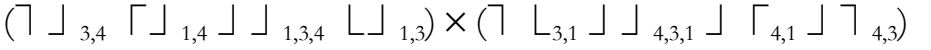
(sO)	↔	(oS)	(sS)	↔	(sO)	(oO)	↔	(oO)
(sO)	↔	(oO)	(oS)	↔	(oS))	(oO)	↔	(sS)
(sO)	↔	(sS)	(oS)	↔	(oO)	(sS)	↔	(oS)
(oS)	↔	(sO)	(oS)	↔	(sS)	(sS)	↔	(oO)
(oO)	↔	(sO)	(oO)	↔	(oS)	(sS)	↔	(sS)

are trivial, we restrict ourselves here to show up the 24 triadic and the 24 tetradic semiotic partial relations for all 15 pre-semiotic sign classes and their reality thematics together with the semiotic contextures from a 4-contextural 4-adic semiotic matrix. However, in this fourth and last part of our "Theory of the Night", we will use quadralemmatic distinction as very recently introduced to kenomic system theory by Rudolf Kaehr. According to an independent study, appeared in "Electronic Journal of Mathematical Semiotics" (Toth 2011c), we obtain the following correspondences with all together form the quintessence of the theoretical basis used in the present booklet:

oS	↔	Q (.0.)	↔	oI	↔	⌊
sO	↔	M (.1.)	↔	iO	↔	⌋
oO	↔	O (.2.)	↔	oO	↔	⌈
sS	↔	I (.3.)	↔	iI	↔	⌉

I. Action schemata of the 2 · 24 triadic semiotic partial relations

1. Pre-semiotic dual system



Qualitative action

Medial action

$$\begin{array}{lcl} \left(\ulcorner\lrcorner_{3,4}\right) & & \left(\ulcorner\ \llcorner_{3,1}\right) \\ \quad \curlywedge \gg \left(\lrcorner\ \lrcorner_{1,3,4}\right) & \times & \quad \curlywedge \gg \left(\lrcorner\ \lrcorner_{4,3,1}\right) \\ \left(\llcorner\lrcorner_{1,3}\right) & & \left(\lrcorner\ \urcorner_{4,3}\right) \end{array}$$

$$\begin{array}{lcl} \left(\llcorner\lrcorner_{1,3}\right) & & \left(\lrcorner\ \ulcorner_{4,1}\right) \\ \quad \curlywedge \gg \left(\lrcorner\ \lrcorner_{1,3,4}\right) & \times & \quad \curlywedge \gg \left(\lrcorner\ \lrcorner_{4,3,1}\right) \\ \left(\ulcorner\lrcorner_{1,4}\right) & & \left(\ulcorner\ \llcorner_{3,1}\right) \end{array}$$

$$\begin{array}{lcl} \left(\ulcorner\lrcorner_{3,4}\right) & & \left(\lrcorner\ \ulcorner_{4,1}\right) \\ \quad \curlywedge \gg \left(\lrcorner\ \lrcorner_{1,3,4}\right) & \times & \quad \curlywedge \gg \left(\lrcorner\ \lrcorner_{4,3,1}\right) \\ \left(\ulcorner\lrcorner_{1,4}\right) & & \left(\lrcorner\ \urcorner_{4,3}\right) \end{array}$$

$$\begin{array}{lcl} \left(\llcorner\lrcorner_{1,3}\right) & & \left(\lrcorner\ \urcorner_{4,3}\right) \\ \quad \curlywedge \gg \left(\lrcorner\ \lrcorner_{1,3,4}\right) & \times & \quad \curlywedge \gg \left(\lrcorner\ \lrcorner_{4,3,1}\right) \\ \left(\ulcorner\lrcorner_{3,4}\right) & & \left(\ulcorner\ \llcorner_{3,1}\right) \end{array}$$

$$\begin{array}{lcl} \left(\ulcorner\lrcorner_{1,4}\right) & & \left(\lrcorner\ \urcorner_{4,3}\right) \\ \quad \curlywedge \gg \left(\lrcorner\ \lrcorner_{1,3,4}\right) & \times & \quad \curlywedge \gg \left(\lrcorner\ \lrcorner_{4,3,1}\right) \\ \left(\ulcorner\lrcorner_{3,4}\right) & & \left(\lrcorner\ \ulcorner_{4,1}\right) \end{array}$$

Objectal action

$$\begin{array}{lcl} \left(\lrcorner\ \lrcorner_{1,3,4}\right) & & \left(\ulcorner\ \llcorner_{3,1}\right) \\ \quad \curlywedge \gg \left(\ulcorner\lrcorner_{1,4}\right) & \times & \quad \curlywedge \gg \left(\lrcorner\ \ulcorner_{4,1}\right) \\ \left(\llcorner\lrcorner_{1,3}\right) & & \left(\lrcorner\ \lrcorner_{4,3,1}\right) \end{array}$$

$$\begin{array}{lcl} \left(\ulcorner\lrcorner_{3,4}\right) & & \left(\ulcorner\ \llcorner_{3,1}\right) \\ \quad \curlywedge \gg \left(\ulcorner\lrcorner_{1,4}\right) & \times & \quad \curlywedge \gg \left(\lrcorner\ \ulcorner_{4,1}\right) \\ \left(\llcorner\lrcorner_{1,3}\right) & & \left(\lrcorner\ \urcorner_{4,3}\right) \end{array}$$

$$\begin{array}{lcl} \left(\llcorner\lrcorner_{1,3}\right) & & \left(\lrcorner\ \lrcorner_{4,3,1}\right) \\ \quad \curlywedge \gg \left(\ulcorner\lrcorner_{1,4}\right) & \times & \quad \curlywedge \gg \left(\lrcorner\ \ulcorner_{4,1}\right) \\ \left(\lrcorner\ \lrcorner_{1,3,4}\right) & & \left(\ulcorner\ \llcorner_{3,1}\right) \end{array}$$

$$\begin{array}{lll} (\urcorner\ \lrcorner_{3,4}) & & (\lrcorner\ \lrcorner_{4,3,1}) \\ \curlywedge \gg (\ulcorner\lrcorner_{1,4}) & \times & \curlywedge \gg (\lrcorner\ \ulcorner_{4,1}) \\ (\lrcorner\ \lrcorner_{1,3,4}) & & (\lrcorner\ \urcorner_{4,3}) \end{array}$$

$$\begin{array}{lll} (\lrcorner\ \lrcorner_{1,3,4}) & & (\lrcorner\ \urcorner_{4,3}) \\ \curlywedge \gg (\ulcorner\lrcorner_{1,4}) & \times & \curlywedge \gg (\lrcorner\ \ulcorner_{4,1}) \\ (\urcorner\ \lrcorner_{3,4}) & & (\lrcorner\ \lrcorner_{4,3,1}) \end{array}$$

$$\begin{array}{lll} (\ \llcorner\lrcorner_{1,3}) & & (\lrcorner\ \urcorner_{4,3}) \\ \curlywedge \gg (\ulcorner\lrcorner_{1,4}) & \times & \curlywedge \gg (\lrcorner\ \ulcorner_{4,1}) \\ (\urcorner\ \lrcorner_{3,4}) & & (\urcorner\ \llcorner_{3,1}) \end{array}$$

Interpretative action

$$\begin{array}{lll} (\ulcorner\lrcorner_{1,4}) & & (\urcorner\ \llcorner_{3,1}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\ \llcorner\lrcorner_{1,3}) & & (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

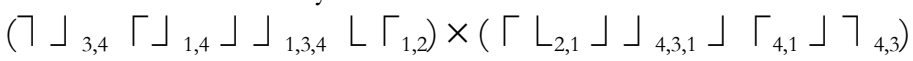
$$\begin{array}{lll} (\lrcorner\ \lrcorner_{1,3,4}) & & (\urcorner\ \llcorner_{3,1}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\ \llcorner\lrcorner_{1,3}) & & (\lrcorner\ \lrcorner_{4,3,1}) \end{array}$$

$$\begin{array}{lll} (\ulcorner\lrcorner_{1,4}) & & (\lrcorner\ \lrcorner_{4,3,1}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \lrcorner_{1,3,4}) & & (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

$$\begin{array}{lll} (\ \llcorner\lrcorner_{1,3}) & & (\lrcorner\ \lrcorner_{4,3,1}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \lrcorner_{1,3,4}) & & (\urcorner\ \llcorner_{3,1}) \end{array}$$

$$\begin{array}{lll} (\lrcorner\ \lrcorner_{1,3,4}) & & (\lrcorner\ \ulcorner_{4,1}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\lrcorner_{1,4}) & & (\lrcorner\ \lrcorner_{4,3,1}) \end{array}$$

2. Pre-semiotic dual system



Qualitative action

Medial action

Objectal action

$$\begin{array}{ccc} (\llcorner\ulcorner_{1,2}) & & (\lrcorner\lrcorner_{4,3,1}) \\ \curlywedge \gg (\ulcorner\lrcorner_{1,4}) & \times & \curlywedge \gg (\lrcorner\ \ulcorner_{4,1}) \\ (\lrcorner\lrcorner_{1,3,4}) & & (\ulcorner\llcorner_{2,1}) \end{array}$$

$$\begin{array}{ccc} (\urcorner\lrcorner_{3,4}) & & (\lrcorner\lrcorner_{4,3,1}) \\ \curlywedge \gg (\ulcorner\lrcorner_{1,4}) & \times & \curlywedge \gg (\lrcorner\ \ulcorner_{4,1}) \\ (\lrcorner\lrcorner_{1,3,4}) & & (\lrcorner\urcorner_{4,3}) \end{array}$$

$$\begin{array}{ccc} (\lrcorner\lrcorner_{1,3,4}) & & (\lrcorner\urcorner_{4,3}) \\ \curlywedge \gg (\ulcorner\lrcorner_{1,4}) & \times & \curlywedge \gg (\lrcorner\ \ulcorner_{4,1}) \\ (\urcorner\lrcorner_{3,4}) & & (\lrcorner\lrcorner_{4,3,1}) \end{array}$$

$$\begin{array}{ccc} (\llcorner\ulcorner_{1,2}) & & (\lrcorner\urcorner_{4,3}) \\ \curlywedge \gg (\ulcorner\lrcorner_{1,4}) & \times & \curlywedge \gg (\lrcorner\ \ulcorner_{4,1}) \\ (\urcorner\lrcorner_{3,4}) & & (\ulcorner\llcorner_{2,1}) \end{array}$$

Interpretative action

$$\begin{array}{ccc} (\ulcorner\lrcorner_{1,4}) & & (\ulcorner\llcorner_{2,1}) \\ \curlywedge \gg (\urcorner\lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\llcorner\ulcorner_{1,2}) & & (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

$$\begin{array}{ccc} (\lrcorner\lrcorner_{1,3,4}) & & (\lrcorner\lrcorner_{4,3,1}) \\ \curlywedge \gg (\urcorner\lrcorner_{3,4}) & \times & \curlywedge \gg (\urcorner\lrcorner_{4,3}) \\ (\llcorner\ulcorner_{1,2}) & & (\llcorner\ulcorner_{1,2}) \end{array}$$

$$\begin{array}{ccc} (\ulcorner\lrcorner_{1,4}) & & (\lrcorner\lrcorner_{4,3,1}) \\ \curlywedge \gg (\urcorner\lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\lrcorner\lrcorner_{1,3,4}) & & (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

$$\begin{array}{ccc} (\llcorner\ulcorner_{1,2}) & & (\lrcorner\lrcorner_{4,3,1}) \\ \curlywedge \gg (\urcorner\lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\lrcorner\lrcorner_{1,3,4}) & & (\ulcorner\llcorner_{2,1}) \end{array}$$

$(\lrcorner\ \lrcorner_{1,3,4})$ $(\lrcorner\ \ulcorner_{4,1})$
$\curlywedge \gg (\urcorner\ \lrcorner_{3,4})$ × $\curlywedge \gg (\lrcorner\ \urcorner_{4,3})$
$(\ulcorner\lrcorner_{1,4})$ $(\lrcorner\ \lrcorner_{4,3,1})$

$(\llcorner\ulcorner_{1,2})$ $(\lrcorner\ \ulcorner_{4,1})$
$\curlywedge \gg (\urcorner\ \lrcorner_{3,4})$ × $\curlywedge \gg (\lrcorner\ \urcorner_{4,3})$
$(\ulcorner\lrcorner_{1,4})$ $(\ulcorner\ \llcorner_{2,1})$

3. Pre-semiotic dual system

$(\urcorner\ \lrcorner_{3,4}\ \ulcorner\lrcorner_{1,4}\ \lrcorner\ \lrcorner_{1,3,4}\ \llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\ \lrcorner\ \lrcorner_{4,3,1}\ \lrcorner\ \ulcorner_{4,1}\ \lrcorner\ \urcorner_{4,3})$

Qualitative Action

$(\ulcorner\lrcorner_{1,4})$ $(\lrcorner\ \lrcorner_{4,3,1})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\lrcorner\ \lrcorner_{1,3,4})$ $(\lrcorner\ \ulcorner_{4,1})$

$(\urcorner\ \lrcorner_{3,4})$ $(\lrcorner\ \lrcorner_{4,3,1})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\lrcorner\ \lrcorner_{1,3,4})$ $(\lrcorner\ \urcorner_{4,3})$

$(\lrcorner\ \lrcorner_{1,3,4})$ $(\lrcorner\ \ulcorner_{4,1})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\ulcorner\lrcorner_{1,4})$ $(\lrcorner\ \lrcorner_{4,3,1})$

$(\urcorner\ \lrcorner_{3,4})$ $(\lrcorner\ \ulcorner_{4,1})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\ulcorner\lrcorner_{1,4})$ $(\lrcorner\ \urcorner_{4,3})$

$(\lrcorner\ \lrcorner_{1,3,4})$ $(\lrcorner\ \urcorner_{4,3})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\urcorner\ \lrcorner_{3,4})$ $(\lrcorner\ \lrcorner_{4,3,1})$

$(\ulcorner\lrcorner_{1,4})$ $(\lrcorner\ \urcorner_{4,3})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\urcorner\ \lrcorner_{3,4})$ $(\lrcorner\ \ulcorner_{4,1})$

Medial action

Objectal action

(└┐ $_{2,3}$)		(┘┘ $_{4,3,1}$)
人 ≫ (┌┘ $_{1,4}$)	×	人 ≫ (┘┌ $_{4,1}$)
(┘┘ $_{1,3,4}$)		(┐└ $_{3,2}$)

(┐┘ $_{3,4}$)		(┘┘ $_{4,3,1}$)
人 ≫ (┌┘ $_{1,4}$)	×	人 ≫ (┘┌ $_{4,1}$)
(┘┘ $_{1,3,4}$)		(┘┐ $_{4,3}$)

(┘┘ $_{1,3,4}$)		(┘┐ $_{3,4}$)
人 ≫ (┌┘ $_{1,4}$)	×	人 ≫ (┘┌ $_{4,1}$)
(┐┘ $_{3,4}$)		(┘┘ $_{4,3,1}$)

(└┐ $_{2,3}$)		(┘┐ $_{4,3}$)
人 ≫ (┌┘ $_{1,4}$)	×	人 ≫ (┘┌ $_{4,1}$)
(┐┘ $_{3,4}$)		(┐└ $_{3,2}$)

Interpretative action

(┌┘ $_{1,4}$)		(┐└ $_{3,2}$)
人 ≫ (┐┘ $_{3,4}$)	×	人 ≫ (┘┐ $_{4,3}$)
(└┐ $_{2,3}$)		(┘┌ $_{4,1}$)

(┘┘ $_{1,3,4}$)		(┐└ $_{3,2}$)
人 ≫ (┐┘ $_{3,4}$)	×	人 ≫ (┘┐ $_{4,3}$)
(└┐ $_{2,3}$)		(┘┘ $_{4,3,1}$)

(┌┘ $_{1,4}$)		(┘┘ $_{4,3,1}$)
人 ≫ (┐┘ $_{3,4}$)	×	人 ≫ (┘┐ $_{4,3}$)
(┘┘ $_{1,3,4}$)		(┘┌ $_{4,1}$)

(└┐ $_{2,3}$)		(┘┘ $_{4,3,1}$)
人 ≫ (┐┘ $_{3,4}$)	×	人 ≫ (┘┐ $_{4,3}$)
(┘┘ $_{1,3,4}$)		(┐└ $_{3,2}$)

$(\lrcorner\ \lrcorner_{1,3,4})$ $(\lrcorner\ \ulcorner_{4,1})$
$\curlywedge \gg (\urcorner\ \lrcorner_{3,4})$ × $\curlywedge \gg (\lrcorner\ \urcorner_{4,3})$
$(\ulcorner\lrcorner_{1,4})$ $(\lrcorner\ \lrcorner_{4,3,1})$

$(\llcorner\urcorner_{2,3})$ $(\lrcorner\ \ulcorner_{4,1})$
$\curlywedge \gg (\urcorner\ \lrcorner_{3,4})$ × $\curlywedge \gg (\lrcorner\ \urcorner_{4,3})$
$(\ulcorner\lrcorner_{1,4})$ $(\urcorner\ \llcorner_{3,2})$

4. Pre-semiotic dual system

$(\urcorner\ \lrcorner_{3,4}\ \ulcorner\lrcorner_{1,4}\ \lrcorner\ \ulcorner_{1,4}\ \llcorner\ulcorner_{1,2}) \times (\ulcorner\ \llcorner_{2,1}\ \ulcorner\lrcorner_{4,1}\ \lrcorner\ \ulcorner_{4,1}\ \lrcorner\ \urcorner_{4,3})$

Qualitative action

$(\ulcorner\lrcorner_{1,4})$ $(\ulcorner\lrcorner_{4,1})$
$\curlywedge \gg (\llcorner\ulcorner_{1,2})$ × $\curlywedge \gg (\ulcorner\llcorner_{2,1})$
$(\lrcorner\ \ulcorner_{1,4})$ $(\lrcorner\ \ulcorner_{4,1})$

$(\urcorner\ \lrcorner_{3,4})$ $(\ulcorner\lrcorner_{4,1})$
$\curlywedge \gg (\llcorner\ulcorner_{1,2})$ × $\curlywedge \gg (\ulcorner\llcorner_{2,1})$
$(\lrcorner\ \ulcorner_{1,4})$ $(\lrcorner\ \urcorner_{4,3})$

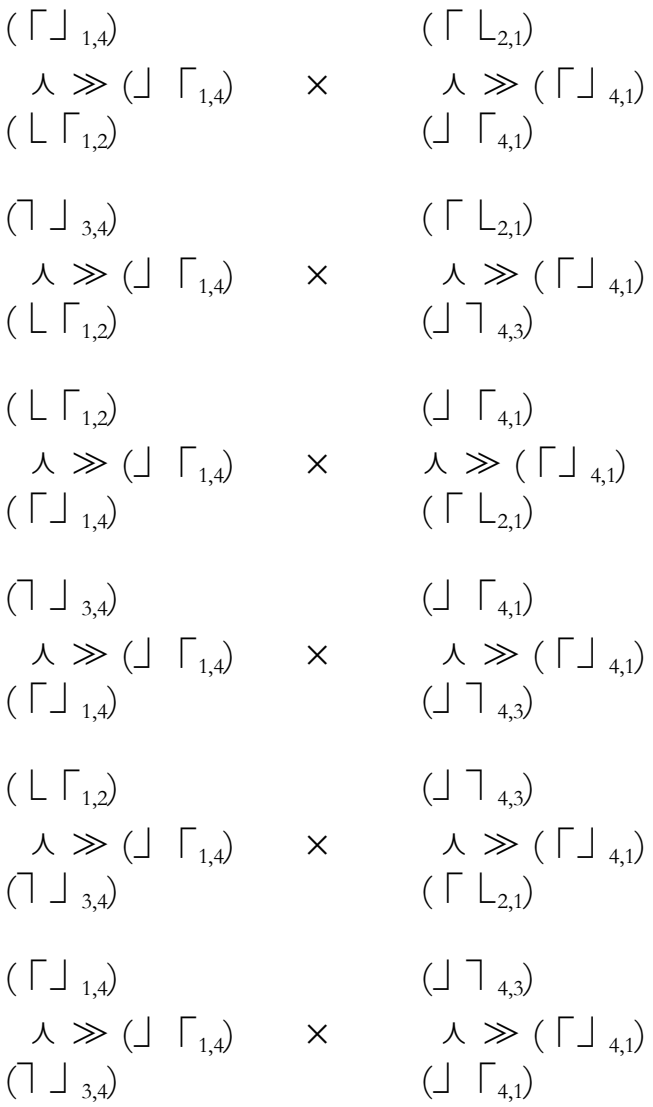
$(\lrcorner\ \ulcorner_{1,4})$ $(\lrcorner\ \ulcorner_{4,1})$
$\curlywedge \gg (\llcorner\ulcorner_{1,2})$ × $\curlywedge \gg (\ulcorner\llcorner_{2,1})$
$(\ulcorner\lrcorner_{1,4})$ $(\lrcorner\ \urcorner_{4,3})$

$(\urcorner\ \lrcorner_{3,4})$ $(\lrcorner\ \ulcorner_{4,1})$
$\curlywedge \gg (\llcorner\ulcorner_{1,2})$ × $\curlywedge \gg (\ulcorner\llcorner_{2,1})$
$(\ulcorner\lrcorner_{1,4})$ $(\lrcorner\ \urcorner_{4,3})$

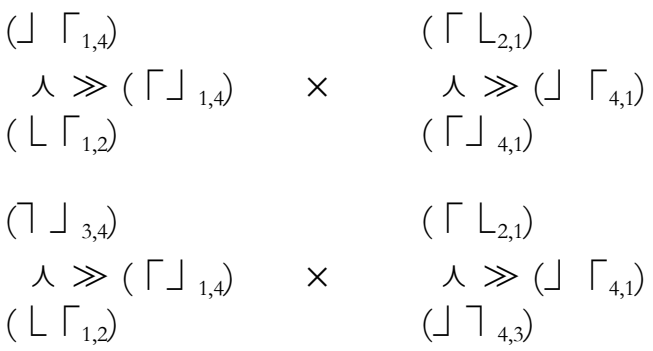
$(\lrcorner\ \ulcorner_{1,4})$ $(\lrcorner\ \urcorner_{4,3})$
$\curlywedge \gg (\llcorner\ulcorner_{1,2})$ × $\curlywedge \gg (\ulcorner\llcorner_{2,1})$
$(\urcorner\ \lrcorner_{3,4})$ $(\ulcorner\lrcorner_{4,1})$

$(\ulcorner\lrcorner_{1,4})$ $(\lrcorner\ \urcorner_{4,3})$
$\curlywedge \gg (\llcorner\ulcorner_{1,2})$ × $\curlywedge \gg (\ulcorner\llcorner_{2,1})$
$(\urcorner\ \lrcorner_{3,4})$ $(\lrcorner\ \ulcorner_{4,1})$

Medial action



Objectal action



$$(\lfloor\ulcorner_{1,2})\ \curlywedge\gg(\ulcorner\lrcorner_{1,4})\ (\lrcorner\ulcorner_{1,4}) \times (\ulcorner\lrcorner_{4,1})\ \curlywedge\gg(\lrcorner\ulcorner_{4,1})\ (\ulcorner\lfloor_{2,1})$$

$$(\urcorner\lrcorner_{3,4})\ \curlywedge\gg(\ulcorner\lrcorner_{1,4})\ (\lrcorner\ulcorner_{1,4}) \times (\ulcorner\lrcorner_{4,1})\ \curlywedge\gg(\lrcorner\ulcorner_{4,1})\ (\lrcorner\urcorner_{4,3})$$

$$(\lrcorner\ulcorner_{1,4})\ \curlywedge\gg(\ulcorner\lrcorner_{1,4})\ (\urcorner\lrcorner_{3,4}) \times (\lrcorner\urcorner_{4,3})\ \curlywedge\gg(\lrcorner\ulcorner_{4,1})\ (\ulcorner\lrcorner_{4,1})$$

$$(\lfloor\ulcorner_{1,2})\ \curlywedge\gg(\ulcorner\lrcorner_{1,4})\ (\urcorner\lrcorner_{3,4}) \times (\lrcorner\urcorner_{4,3})\ \curlywedge\gg(\lrcorner\ulcorner_{4,1})\ (\ulcorner\lfloor_{2,1})$$

Interpretative action

$$(\ulcorner\lrcorner_{1,4})\ \curlywedge\gg(\urcorner\lrcorner_{3,4})\ (\lfloor\ulcorner_{1,2}) \times (\lrcorner\urcorner_{4,3})\ \curlywedge\gg(\lrcorner\ulcorner_{4,1})\ (\ulcorner\lfloor_{2,1})$$

$$(\lrcorner\ulcorner_{1,4})\ \curlywedge\gg(\urcorner\lrcorner_{3,4})\ (\lfloor\ulcorner_{1,2}) \times (\lrcorner\urcorner_{4,3})\ \curlywedge\gg(\ulcorner\lrcorner_{4,1})\ (\ulcorner\lfloor_{2,1})$$

$$(\ulcorner\lrcorner_{1,4})\ \curlywedge\gg(\urcorner\lrcorner_{3,4})\ (\lrcorner\ulcorner_{1,4}) \times (\lrcorner\urcorner_{4,3})\ \curlywedge\gg(\lrcorner\ulcorner_{4,1})\ (\lrcorner\ulcorner_{4,1})$$

$$(\lfloor\ulcorner_{1,2})\ \curlywedge\gg(\urcorner\lrcorner_{3,4})\ (\lrcorner\ulcorner_{1,4}) \times (\ulcorner\lrcorner_{4,1})\ \curlywedge\gg(\lrcorner\urcorner_{4,3})\ (\ulcorner\lfloor_{2,1})$$

$(\lrcorner\ \ulcorner_{1,4})$ $(\lrcorner\ \ulcorner_{4,1})$
$\curlywedge \gg (\urcorner\ \lrcorner_{3,4}) \quad \times \quad \curlywedge \gg (\lrcorner\ \urcorner_{4,3})$
$(\ulcorner\lrcorner_{1,4})$ $(\ulcorner\lrcorner_{4,1})$

$(\llcorner\ulcorner_{1,2})$ $(\lrcorner\ \ulcorner_{4,1})$
$\curlywedge \gg (\urcorner\ \lrcorner_{3,4}) \quad \times \quad \curlywedge \gg (\lrcorner\ \urcorner_{4,3})$
$(\ulcorner\lrcorner_{1,4})$ $(\ulcorner\ \llcorner_{2,1})$

5. Pre-Semiotic dual system

$(\urcorner\lrcorner_{3,4}\ \ulcorner\lrcorner_{1,4}\lrcorner\ \ulcorner_{1,4}\ \llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\ \ulcorner\lrcorner_{4,1}\lrcorner\ \ulcorner_{4,1}\lrcorner\urcorner_{4,3})$

Qualtitative action

$(\ulcorner\lrcorner_{1,4})$ $(\ulcorner\lrcorner_{4,1})$
$\curlywedge \gg (\llcorner\urcorner_{2,3}) \quad \times \quad \curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\lrcorner\ \ulcorner_{1,4})$ $(\lrcorner\ \ulcorner_{4,1})$

$(\urcorner\lrcorner_{3,4})$ $(\ulcorner\lrcorner_{4,1})$
$\curlywedge \gg (\llcorner\urcorner_{2,3}) \quad \times \quad \curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\lrcorner\ \ulcorner_{1,4})$ $(\lrcorner\urcorner_{4,3})$

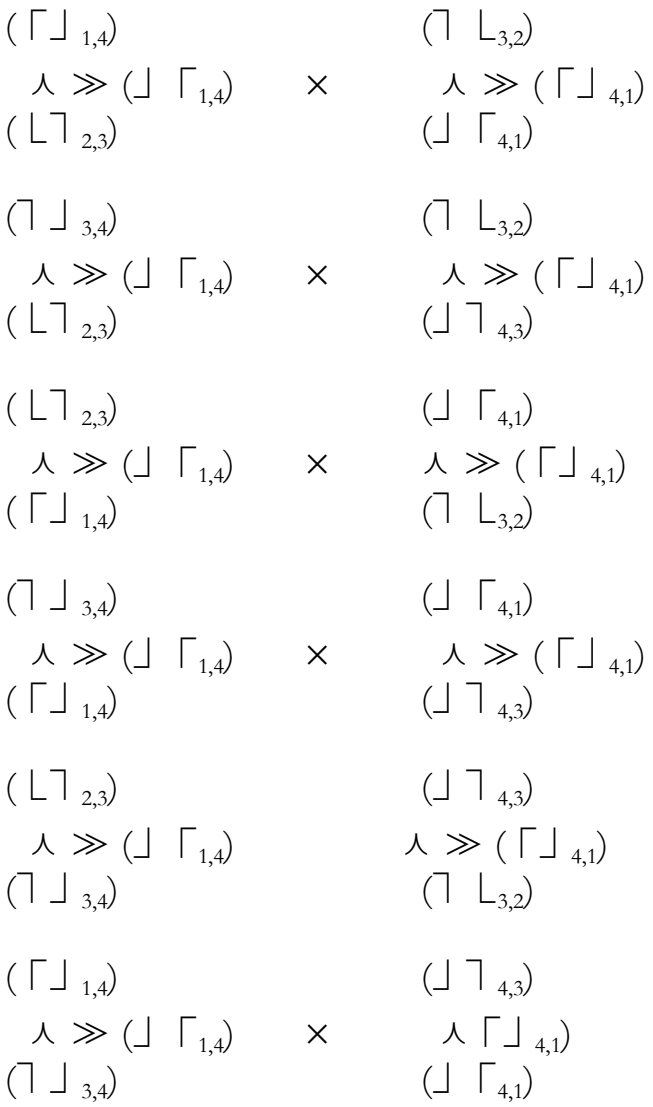
$(\lrcorner\ \ulcorner_{1,4})$ $(\lrcorner\ \ulcorner_{4,1})|$
$\curlywedge \gg (\llcorner\urcorner_{2,3}) \quad \times \quad \curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\ulcorner\lrcorner_{1,4})$ $(\ulcorner\lrcorner_{4,1})$

$(\urcorner\lrcorner_{3,4})$ $(\lrcorner\ \ulcorner_{4,1})$
$\curlywedge \gg (\llcorner\urcorner_{2,3}) \quad \times \quad \curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\ulcorner\lrcorner_{1,4})$ $(\lrcorner\urcorner_{4,3})$

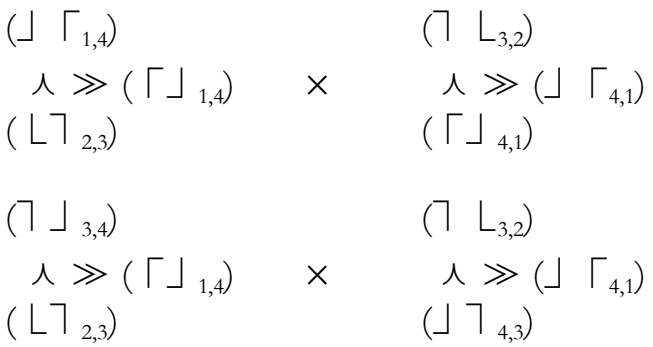
$(\lrcorner\ \ulcorner_{1,4})$ $(\lrcorner\urcorner_{4,3})$
$\curlywedge \gg (\llcorner\urcorner_{2,3}) \quad \times \quad \curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\urcorner\lrcorner_{3,4})$ $(\ulcorner\lrcorner_{4,1})$

$(\ulcorner\lrcorner_{1,4})$ $(\lrcorner\urcorner_{4,3})$
$\curlywedge \gg (\llcorner\urcorner_{2,3}) \quad \times \quad \curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\urcorner\lrcorner_{3,4})$ $(\lrcorner\ \ulcorner_{4,1})$

Medial action



Objectal action



$(\lfloor\rceil_{2,3})$ $(\lceil\rfloor_{4,1})$
$\curlywedge \gg (\lceil\rfloor_{1,4})$ $\times$ $\curlywedge \gg (\rfloor\ \lceil_{4,1})$
$(\rfloor\ \lceil_{1,4})$ $(\rceil\ \lfloor_{3,2})$

$(\rceil\ \rfloor_{3,4})$ $(\lceil\rfloor_{4,1})$
$\curlywedge \gg (\lceil\rfloor_{1,4})$ $\times$ $\curlywedge \gg (\rfloor\ \lceil_{4,1})$
$(\rfloor\ \lceil_{1,4})$ $(\rfloor\ \rceil_{4,3})$

$(\rfloor\ \lceil_{1,4})$ $(\rfloor\ \rceil_{4,3})$
$\curlywedge \gg (\lceil\rfloor_{1,4})$ $\times$ $\curlywedge \gg (\rfloor\ \lceil_{4,1})$
$(\rceil\ \rfloor_{3,4})$ $(\lceil\rfloor_{4,1})$

$(\lfloor\rceil_{2,3})$ $(\rfloor\ \rceil_{4,3})$
$\curlywedge \gg (\lceil\rfloor_{1,4})$ $\times$ $\curlywedge \gg (\rfloor\ \lceil_{4,1})$
$(\rceil\ \rfloor_{3,4})$ $(\rceil\ \lfloor_{3,2})$

Interpratative action

$(\lceil\rfloor_{1,4})$ $(\rceil\ \lfloor_{3,2})$
$\curlywedge \gg (\rceil\ \rfloor_{3,4})$ $\times$ $\curlywedge \gg (\rfloor\ \rceil_{4,3})$
$(\lfloor\rceil_{2,3})$ $(\rfloor\ \lceil_{4,1})$

$(\rfloor\ \lceil_{1,4})$ $(\rceil\ \lfloor_{3,2})$
$\curlywedge \gg (\rceil\ \rfloor_{3,4})$ $\times$ $\curlywedge \gg (\rfloor\ \rceil_{4,3})$
$(\lfloor\rceil_{2,3})$ $(\lceil\rfloor_{4,1})$

$(\lceil\rfloor_{1,4})$ $(\lceil\rfloor_{4,1})$
$\curlywedge \gg (\rceil\ \rfloor_{3,4})$ $\times$ $\curlywedge \gg (\rfloor\ \rceil_{4,3})$
$(\rfloor\ \lceil_{1,4})$ $(\rfloor\ \lceil_{4,1})$

$(\lfloor\rceil_{2,3})$ $(\lceil\rfloor_{4,1})$
$\curlywedge \gg (\rceil\ \rfloor_{3,4})$ $\times$ $\curlywedge \gg (\rfloor\ \rceil_{4,3})$
$(\rfloor\ \lceil_{1,4})$ $(\rceil\ \lfloor_{3,2})$

(⌟ ⌜$_{1,4}$)　　(⌟ ⌜$_{4,1}$)
　人 ≫ (⌝ ⌟$_{3,4}$)　×　人 ≫ (⌟ ⌝$_{4,3}$)
(⌜ ⌟$_{1,4}$)　　(⌜ ⌟$_{4,1}$)

(⌞ ⌝$_{2,3}$)　　(⌟ ⌜$_{4,1}$)
　人 ≫ (⌝ ⌟$_{3,4}$)　×　人 ≫ (⌟ ⌝$_{4,3}$)
(⌜ ⌟$_{1,4}$)　　(⌝ ⌞$_{3,2}$)

6. Pre-semiotic dual system

(⌝ ⌟$_{3,4}$ ⌜ ⌟$_{1,4}$ ⌟ ⌝$_{3,4}$ ⌞ ⌝$_{2,3}$) × (⌝ ⌞$_{3,2}$ ⌝ ⌟$_{4,3}$ ⌟ ⌜$_{4,1}$ ⌟ ⌝$_{4,3}$)

Qualitative action

(⌜ ⌟$_{1,4}$)　　(⌝ ⌟$_{4,3}$)
　人 ≫ (⌞ ⌝$_{2,3}$)　×　人 ≫ (⌝ ⌞$_{3,2}$)
(⌟ ⌝$_{3,4}$)　　(⌟ ⌜$_{4,1}$)

(⌝ ⌟$_{3,4}$)　　(⌝ ⌟$_{4,3}$)
　人 ≫ (⌞ ⌝$_{2,3}$)　×　人 ≫ (⌝ ⌞$_{3,2}$)
(⌟ ⌝$_{3,4}$)　　(⌟ ⌝$_{4,3}$)

(⌟ ⌝$_{3,4}$)　　(⌟ ⌜$_{4,1}$)
　人 ≫ (⌞ ⌝$_{2,3}$)　×　人 ≫ (⌝ ⌞$_{3,2}$)
(⌜ ⌟$_{1,4}$)　　(⌟ ⌝$_{4,3}$)

(⌝ ⌟$_{3,4}$)　　(⌟ ⌝$_{4,3}$)
　人 ≫ (⌞ ⌝$_{2,3}$)　×　人 ≫ (⌝ ⌞$_{3,2}$)
(⌝ ⌟$_{3,4}$)　　(⌝ ⌟$_{4,3}$)

(⌜ ⌟$_{1,4}$)　　(⌟ ⌝$_{4,3}$)
　人 ≫ (⌞ ⌝$_{2,3}$)　×　人 ≫ (⌝ ⌞$_{3,2}$)
(⌝ ⌟$_{3,4}$)　　(⌟ ⌜$_{4,1}$)

Medial action

$$\begin{matrix}(\ulcorner\lrcorner_{1,4}) \\ \curlywedge \gg (\lrcorner\urcorner_{3,4}) \\ (\llcorner\urcorner_{2,3})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\ \llcorner_{3,2}) \\ \curlywedge \gg (\urcorner\lrcorner_{4,3}) \\ (\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\lrcorner_{3,4}) \\ \curlywedge \gg (\lrcorner\urcorner_{3,4}) \\ (\llcorner\urcorner_{2,3})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\ \llcorner_{3,2}) \\ \curlywedge \gg (\urcorner\lrcorner_{4,3}) \\ (\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3}) \\ \curlywedge \gg (\lrcorner\urcorner_{3,4}) \\ (\ulcorner\lrcorner_{1,4})\end{matrix} \quad \times \quad \begin{matrix}(\lrcorner\ \ulcorner_{4,1}) \\ \curlywedge \gg (\urcorner\lrcorner_{4,3}) \\ (\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\urcorner\lrcorner_{3,4}) \\ \curlywedge \gg (\lrcorner\urcorner_{3,4}) \\ (\ulcorner\lrcorner_{1,4})\end{matrix} \quad \times \quad \begin{matrix}(\lrcorner\ \ulcorner_{4,1}) \\ \curlywedge \gg (\urcorner\lrcorner_{4,3}) \\ (\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3}) \\ \curlywedge \gg (\lrcorner\urcorner_{3,4}) \\ (\urcorner\lrcorner_{3,4})\end{matrix} \quad \times \quad \begin{matrix}(\lrcorner\urcorner_{4,3}) \\ \curlywedge \gg (\urcorner\lrcorner_{4,3}) \\ (\urcorner\ \llcorner_{3,2})\end{matrix}$$

$$\begin{matrix}(\ulcorner\lrcorner_{1,4}) \\ \curlywedge \gg (\lrcorner\urcorner_{3,4}) \\ (\urcorner\lrcorner_{3,4})\end{matrix} \quad \times \quad \begin{matrix}(\lrcorner\urcorner_{4,3}) \\ \curlywedge \gg (\urcorner\lrcorner_{4,3}) \\ (\lrcorner\ \ulcorner_{4,1})\end{matrix}$$

Objectal action

$$\begin{matrix}(\lrcorner\urcorner_{3,4}) \\ \curlywedge \gg (\ulcorner\lrcorner_{1,4}) \\ (\llcorner\urcorner_{2,3})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\ \llcorner_{3,2}) \\ \curlywedge \gg (\lrcorner\ \ulcorner_{4,1}) \\ (\urcorner\lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\urcorner\lrcorner_{3,4}) \\ \curlywedge \gg (\ulcorner\lrcorner_{1,4}) \\ (\llcorner\urcorner_{2,3})\end{matrix} \quad \times \quad \begin{matrix}(\urcorner\ \llcorner_{3,2}) \\ \curlywedge \gg (\lrcorner\ \ulcorner_{4,1}) \\ (\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{array}{ccc} (\lfloor\rceil_{2,3}) & & (\rceil\lfloor_{4,3}) \\ \curlywedge \gg (\lceil\rfloor_{1,4}) & \times & \curlywedge \gg (\rfloor\lceil_{4,1}) \\ (\rfloor\rceil_{3,4}) & & (\rceil\lfloor_{3,2}) \end{array}$$

$$\begin{array}{ccc} (\rceil\lfloor_{3,4}) & & (\rceil\lfloor_{4,3}) \\ \curlywedge \gg (\lceil\rfloor_{1,4}) & \times & \curlywedge \gg (\rfloor\lceil_{4,1}) \\ (\rfloor\rceil_{3,4}) & & (\rfloor\rceil_{4,3}) \end{array}$$

$$\begin{array}{ccc} (\rfloor\rceil_{3,4}) & & (\rfloor\rceil_{4,3}) \\ \curlywedge \gg (\lceil\rfloor_{1,4}) & \times & \curlywedge \gg (\rfloor\lceil_{4,1}) \\ (\rceil\lfloor_{3,4}) & & (\rceil\lfloor_{4,3}) \end{array}$$

$$\begin{array}{ccc} (\lfloor\rceil_{2,3}) & & (\rfloor\rceil_{4,3}) \\ \curlywedge \gg (\lceil\rfloor_{1,4}) & \times & \curlywedge \gg (\rfloor\lceil_{4,1}) \\ (\rceil\lfloor_{3,4}) & & (\rceil\lfloor_{3,2}) \end{array}$$

Interpretative action

$$\begin{array}{ccc} (\lceil\rfloor_{1,4}) & & (\rceil\lfloor_{3,2}) \\ \curlywedge \gg (\rceil\lfloor_{3,4}) & \times & \curlywedge \gg (\rfloor\rceil_{4,3}) \\ (\lfloor\rceil_{2,3}) & & (\rfloor\lceil_{4,1}) \end{array}$$

$$\begin{array}{ccc} (\rfloor\rceil_{3,4}) & & (\rceil\lfloor_{3,2}) \\ \curlywedge \gg (\rceil\lfloor_{3,4}) & \times & \curlywedge \gg (\rfloor\rceil_{4,3}) \\ (\lfloor\rceil_{2,3}) & & (\rceil\lfloor_{4,3}) \end{array}$$

$$\begin{array}{ccc} (\lceil\rfloor_{1,4}) & & (\rceil\lfloor_{4,3}) \\ \curlywedge \gg (\rceil\lfloor_{3,4}) & \times & \curlywedge \gg (\rfloor\rceil_{4,3}) \\ (\rfloor\rceil_{3,4}) & & (\rfloor\lceil_{4,1}) \end{array}$$

$$\begin{array}{ccc} (\lfloor\rceil_{2,3}) & & (\rceil\lfloor_{4,3}) \\ \curlywedge \gg (\rceil\lfloor_{3,4}) & \times & \curlywedge \gg (\rfloor\rceil_{4,3}) \\ (\rfloor\rceil_{3,4}) & & (\rceil\lfloor_{3,2}) \end{array}$$

$$\begin{array}{lll} (\lrcorner\ \urcorner_{3,4}) & & (\lrcorner\ \ulcorner_{4,1}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\lrcorner_{1,4}) & & (\urcorner\ \lrcorner_{4,3}) \end{array}$$

$$\begin{array}{lll} (\llcorner\urcorner_{2,3}) & & (\lrcorner\ \ulcorner_{4,1}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\lrcorner_{1,4}) & & (\urcorner\ \llcorner_{3,2}) \end{array}$$

7. Pre-semiotic dual system

$(\urcorner\ \lrcorner_{3,4}\ \ulcorner\ulcorner_{1,2,4}\lrcorner\ \ulcorner_{1,4}\ \llcorner\ulcorner_{1,2}) \times (\ulcorner\llcorner_{2,1}\ \ulcorner\lrcorner_{4,1}\ \ulcorner\ulcorner_{4,2,1}\lrcorner\urcorner_{4,3})$

Qualitative action

$$\begin{array}{lll} (\ulcorner\ulcorner_{1,2,4}) & & (\ulcorner\lrcorner_{4,1}) \\ \curlywedge \gg (\llcorner\ulcorner_{1,2}) & \times & \curlywedge \gg (\ulcorner\llcorner_{2,1}) \\ (\lrcorner\ \ulcorner_{1,4}) & & (\ulcorner\ulcorner_{4,2,1}) \end{array}$$

$$\begin{array}{lll} (\urcorner\lrcorner_{3,4}) & & (\ulcorner\lrcorner_{4,1}) \\ \curlywedge \gg (\llcorner\ulcorner_{1,2}) & \times & \curlywedge \gg (\ulcorner\llcorner_{2,1}) \\ (\lrcorner\ \ulcorner_{1,4}) & & (\lrcorner\ \urcorner_{4,3}) \end{array}$$

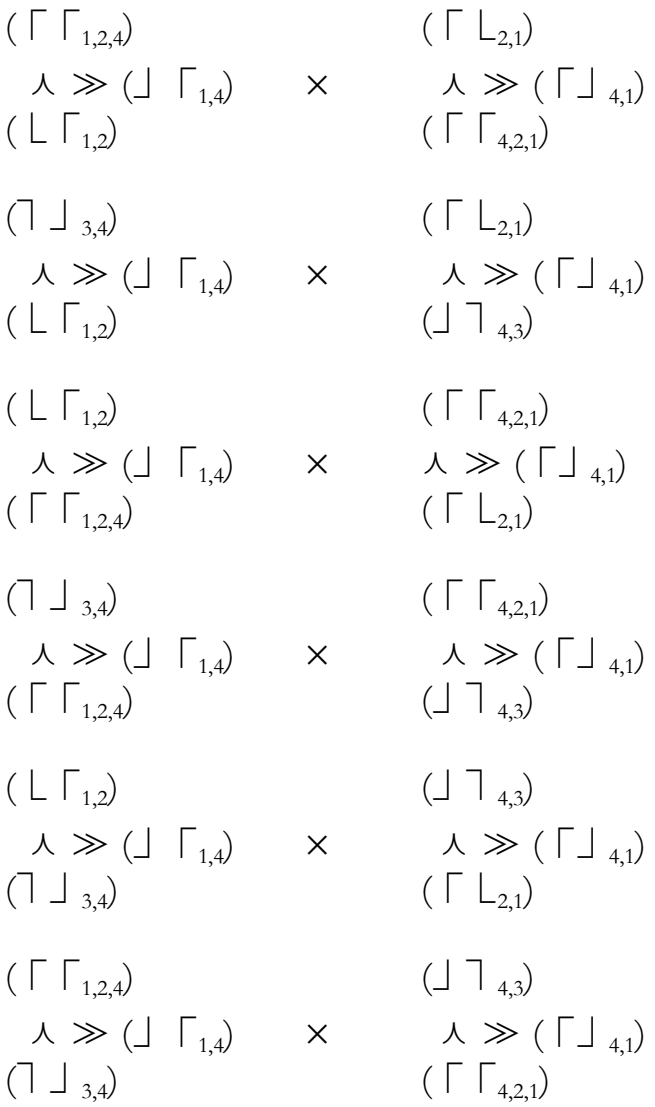
$$\begin{array}{lll} (\lrcorner\ \ulcorner_{1,4}) & & (\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge \gg (\llcorner\ulcorner_{1,2}) & \times & \curlywedge \gg (\ulcorner\llcorner_{2,1}) \\ (\ulcorner\ulcorner_{1,2,4}) & & (\ulcorner\lrcorner_{4,1}) \end{array}$$

$$\begin{array}{lll} (\urcorner\lrcorner_{3,4}) & & (\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge \gg (\llcorner\ulcorner_{1,2}) & \times & \curlywedge \gg (\ulcorner\llcorner_{2,1}) \\ (\ulcorner\ulcorner_{1,2,4}) & & (\lrcorner\ \urcorner_{4,3}) \end{array}$$

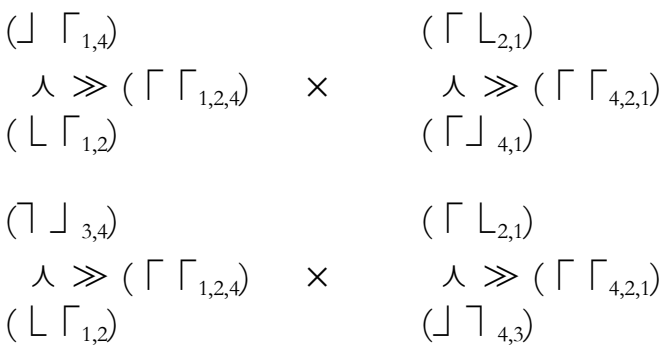
$$\begin{array}{lll} (\lrcorner\ \ulcorner_{1,4}) & & (\lrcorner\ \urcorner_{4,3}) \\ \curlywedge \gg (\llcorner\ulcorner_{1,2}) & \times & \curlywedge \gg (\ulcorner\llcorner_{2,1}) \\ (\urcorner\lrcorner_{3,4}) & & (\ulcorner\lrcorner_{4,1}) \end{array}$$

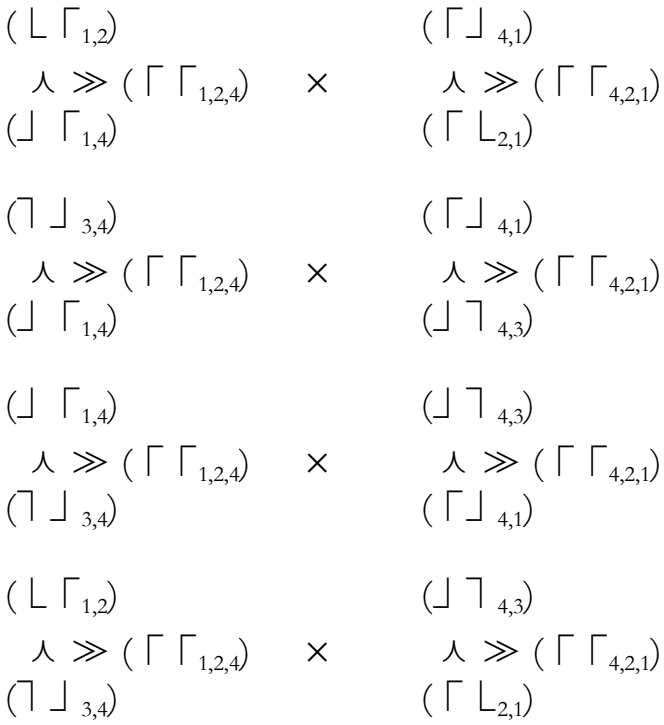
$$\begin{array}{lll} (\ulcorner\ulcorner_{1,2,4}) & & (\lrcorner\ \urcorner_{4,3}) \\ \curlywedge \gg (\llcorner\ulcorner_{1,2}) & \times & \curlywedge \gg (\ulcorner\llcorner_{2,1}) \\ (\urcorner\lrcorner_{3,4}) & & (\ulcorner\ulcorner_{4,2,1}) \end{array}$$

Medial action

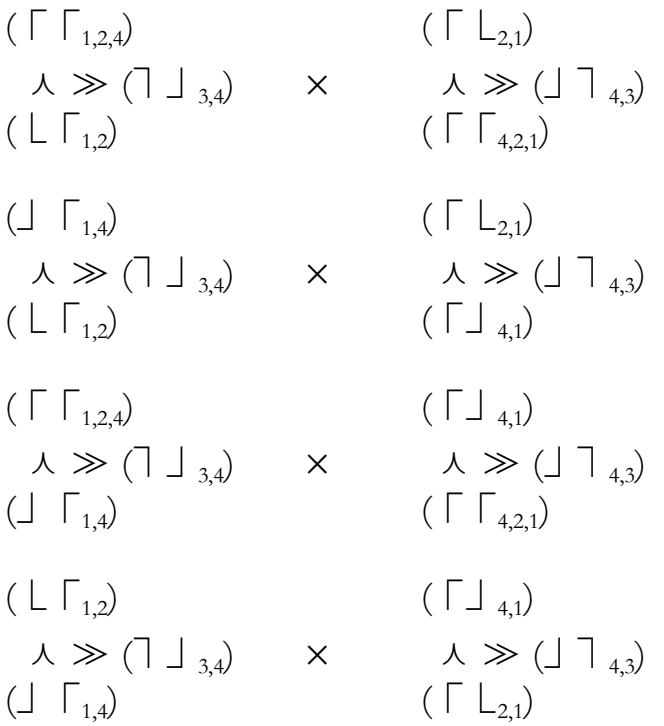


Objectal action





Interpretative action



$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4}) & & (\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\ulcorner_{1,2,4}) & & (\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2}) & & (\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\ulcorner_{1,2,4}) & & (\ulcorner\llcorner_{2,1})\end{matrix}$$

8. Pre-semiotic dual system

$(\urcorner\ \lrcorner_{3,4}\ \ulcorner\ulcorner_{1,2,4}\ \lrcorner\ \ulcorner_{1,4}\ \llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\ \ulcorner\lrcorner_{4,1}\ \ulcorner\ulcorner_{4,2,1}\ \lrcorner\urcorner_{4,3})$

Qualitative action

$$\begin{matrix}(\ulcorner\ulcorner_{1,2,4}) & & (\ulcorner\lrcorner_{4,1}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \ulcorner_{1,4}) & & (\ulcorner\ulcorner_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\lrcorner_{3,4}) & & (\ulcorner\lrcorner_{4,1}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \ulcorner_{1,4}) & & (\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4}) & & (\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\ulcorner_{1,2,4}) & & (\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\lrcorner_{3,4}) & & (\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\ulcorner_{1,2,4}) & & (\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4}) & & (\lrcorner\urcorner_{4,3}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\urcorner\lrcorner_{3,4}) & & (\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ulcorner_{1,2,4}) & & (\lrcorner\urcorner_{4,3}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\urcorner\lrcorner_{3,4}) & & (\ulcorner\ulcorner_{4,2,1})\end{matrix}$$

Medial action

Objectal action

$$\left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{2,3} \quad \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,1}$$
$$\curlywedge \gg \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{1,2,4} \quad \times \quad \curlywedge \gg \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,2,1}$$
$$\left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{1,4} \quad \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{3,2}$$

$$\left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{3,4} \quad \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,1}$$
$$\curlywedge \gg \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{1,2,4} \quad \times \quad \curlywedge \gg \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,2,1}$$
$$\left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{1,4} \quad \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,3}$$

$$\left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{1,4} \quad \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,3}$$
$$\curlywedge \gg \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{1,2,4} \quad \times \quad \curlywedge \gg \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,2,1}$$
$$\left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{3,4} \quad \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,1}$$

$$\left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{2,3} \quad \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,3}$$
$$\curlywedge \gg \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{1,2,4} \quad \times \quad \curlywedge \gg \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,2,1}$$
$$\left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{3,4} \quad \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{3,2}$$

Interpretative action

$$\left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{1,2,4} \quad \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{3,2}$$
$$\curlywedge \gg \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{3,4} \quad \times \quad \curlywedge \gg \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,3}$$
$$\left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{2,3} \quad \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,2,1}$$

$$\left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{1,4} \quad \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{3,2}$$
$$\curlywedge \gg \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{3,4} \quad \times \quad \curlywedge \gg \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,3}$$
$$\left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{2,3} \quad \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,1}$$

$$\left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{1,2,4} \quad \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,1}$$
$$\curlywedge \gg \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{3,4} \quad \times \quad \curlywedge \gg \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,3}$$
$$\left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{1,4} \quad \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,2,1}$$

$$\left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{2,3} \quad \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,1}$$
$$\curlywedge \gg \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{3,4} \quad \times \quad \curlywedge \gg \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{4,3}$$
$$\left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{1,4} \quad \left(\begin{smallmatrix}\cdot & \cdot\\ \cdot & \cdot\end{smallmatrix}\right)_{3,2}$$

$$\begin{matrix}(\lrcorner\ \ulcorner_{1,4}) & & (\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\ulcorner_{1,2,4}) & & (\ulcorner\lrcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\urcorner_{2,3}) & & (\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge \gg (\urcorner\ \lrcorner_{3,4}) & \times & \curlywedge \gg (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\ulcorner_{1,2,4}) & & (\urcorner\ \llcorner_{3,2})\end{matrix}$$

9. Pre-semiotic dual system

$(\urcorner\lrcorner_{3,4}\ \ulcorner\ulcorner_{1,2,4}\lrcorner\urcorner_{4,3}\ \llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\urcorner\lrcorner_{4,3}\ \ulcorner\ulcorner_{4,2,1}\lrcorner\urcorner_{4,3})$

Qualitative action

$$\begin{matrix}(\ulcorner\ulcorner_{1,2,4}) & & (\urcorner\lrcorner_{4,3}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\urcorner_{3,4}) & & (\ulcorner\ulcorner_{4,2,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\lrcorner_{3,4}) & & (\urcorner\lrcorner_{4,3}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\urcorner_{3,4}) & & (\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\urcorner_{3,4}) & & (\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\ulcorner_{1,2,4}) & & (\urcorner\lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\urcorner\lrcorner_{3,4}) & & (\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\ulcorner_{1,2,4}) & & (\lrcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\lrcorner\urcorner_{3,4}) & & (\lrcorner\urcorner_{4,3}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\urcorner\lrcorner_{3,4}) & & (\urcorner\lrcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\ulcorner\ulcorner_{1,2,4}) & & (\lrcorner\urcorner_{4,3}) \\ \curlywedge \gg (\llcorner\urcorner_{2,3}) & \times & \curlywedge \gg (\urcorner\ \llcorner_{3,2}) \\ (\urcorner\lrcorner_{3,4}) & & (\ulcorner\ulcorner_{4,2,1})\end{matrix}$$

Medial action

$$\begin{array}{ccc} (\ulcorner\ulcorner_{1,2,4}) & & (\urcorner\llcorner_{3,2}) \\ \curlywedge \gg (\lrcorner\urcorner_{3,4}) & \times & \curlywedge \gg (\urcorner\lrcorner_{4,3}) \\ (\llcorner\urcorner_{2,3}) & & (\ulcorner\ulcorner_{4,2,1}) \end{array}$$

$$\begin{array}{ccc} (\urcorner\lrcorner_{3,4}) & & (\urcorner\llcorner_{3,2}) \\ \curlywedge \gg (\lrcorner\urcorner_{3,4}) & \times & \curlywedge \gg (\urcorner\lrcorner_{4,3}) \\ (\llcorner\urcorner_{2,3}) & & (\lrcorner\urcorner_{4,3}) \end{array}$$

$$\begin{array}{ccc} (\llcorner\urcorner_{2,3}) & & (\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge \gg (\lrcorner\urcorner_{3,4}) & \times & \curlywedge \gg (\urcorner\lrcorner_{4,3}) \\ (\ulcorner\ulcorner_{1,2,4}) & & (\urcorner\llcorner_{3,2}) \end{array}$$

$$\begin{array}{ccc} (\urcorner\lrcorner_{3,4}) & & (\ulcorner\ulcorner_{4,2,1}) \\ \curlywedge \gg (\lrcorner\urcorner_{3,4}) & \times & \curlywedge \gg (\urcorner\lrcorner_{4,3}) \\ (\ulcorner\ulcorner_{1,2,4}) & & (\lrcorner\urcorner_{4,3}) \end{array}$$

$$\begin{array}{ccc} (\llcorner\urcorner_{2,3}) & & (\lrcorner\urcorner_{4,3}) \\ \curlywedge \gg (\lrcorner\urcorner_{3,4}) & \times & \curlywedge \gg (\urcorner\lrcorner_{4,3}) \\ (\urcorner\lrcorner_{3,4}) & & (\urcorner\llcorner_{3,2}) \end{array}$$

$$\begin{array}{ccc} (\ulcorner\ulcorner_{1,2,4}) & & (\lrcorner\urcorner_{4,3}) \\ \curlywedge \gg (\lrcorner\urcorner_{3,4}) & \times & \curlywedge \gg (\urcorner\lrcorner_{4,3}) \\ (\urcorner\lrcorner_{3,4}) & & (\ulcorner\ulcorner_{4,2,1}) \end{array}$$

Objectal action

$$\begin{array}{ccc} (\lrcorner\urcorner_{3,4}) & & (\urcorner\llcorner_{3,2}) \\ \curlywedge \gg (\ulcorner\ulcorner_{1,2,4}) & \times & \curlywedge \gg (\ulcorner\ulcorner_{4,2,1}) \\ (\llcorner\urcorner_{2,3}) & & (\urcorner\lrcorner_{4,3}) \end{array}$$

$$\begin{array}{ccc} (\urcorner\lrcorner_{3,4}) & & (\urcorner\llcorner_{3,2}) \\ \curlywedge \gg (\ulcorner\ulcorner_{1,2,4}) & \times & \curlywedge \gg (\ulcorner\ulcorner_{4,2,1}) \\ (\llcorner\urcorner_{2,3}) & & (\lrcorner\urcorner_{4,3}) \end{array}$$

$$\begin{array}{lll} (\lfloor\urcorner_{2,3}) & & (\urcorner\lrcorner_{4,3}) \\ \quad \curlywedge \gg (\lceil\lceil_{1,2,4}) & \times & \quad \curlywedge \gg (\lceil\lceil_{4,2,1}) \\ (\lrcorner\urcorner_{3,4}) & & (\urcorner\lfloor_{3,2}) \end{array}$$

$$\begin{array}{lll} (\urcorner\lrcorner_{3,4}) & & (\urcorner\lrcorner_{4,3}) \\ \quad \curlywedge \gg (\lceil\lceil_{1,2,4}) & \times & \quad \curlywedge \gg (\lceil\lceil_{4,2,1}) \\ (\lrcorner\urcorner_{3,4}) & & (\lrcorner\urcorner_{4,3}) \end{array}$$

$$\begin{array}{lll} (\lrcorner\urcorner_{3,4}) & & (\lrcorner\urcorner_{4,3}) \\ \quad \curlywedge \gg (\lceil\lceil_{1,2,4}) & \times & \quad \curlywedge \gg (\lceil\lceil_{4,2,1}) \\ (\urcorner\lrcorner_{3,4}) & & (\urcorner\lrcorner_{4,3}) \end{array}$$

$$\begin{array}{lll} (\lfloor\urcorner_{2,3}) & & (\lrcorner\urcorner_{4,3}) \\ \quad \curlywedge \gg (\lceil\lceil_{1,2,4}) & \times & \quad \curlywedge \gg (\lceil\lceil_{4,2,1}) \\ (\urcorner\lrcorner_{3,4}) & & (\urcorner\lfloor_{3,2}) \end{array}$$

Interpretative action

$$\begin{array}{lll} (\lceil\lceil_{1,2,4}) & & (\urcorner\lfloor_{3,2}) \\ \quad \curlywedge \gg (\urcorner\lrcorner_{3,4}) & \times & \quad \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\lfloor\urcorner_{2,3}) & & (\lceil\lceil_{4,2,1}) \end{array}$$

$$\begin{array}{lll} (\lrcorner\urcorner_{3,4}) & & (\urcorner\lfloor_{3,2}) \\ \quad \curlywedge \gg (\urcorner\lrcorner_{3,4}) & \times & \quad \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\lfloor\urcorner_{2,3}) & & (\urcorner\lrcorner_{4,3}) \end{array}$$

$$\begin{array}{lll} (\lceil\lceil_{1,2,4}) & & (\urcorner\lrcorner_{4,3}) \\ \quad \curlywedge \gg (\urcorner\lrcorner_{3,4}) & \times & \quad \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\lrcorner\urcorner_{3,4}) & & (\lceil\lceil_{4,2,1}) \end{array}$$

$$\begin{array}{lll} (\lfloor\urcorner_{2,3}) & & (\urcorner\lrcorner_{4,3}) \\ \quad \curlywedge \gg (\urcorner\lrcorner_{3,4}) & \times & \quad \curlywedge \gg (\lrcorner\urcorner_{4,3}) \\ (\lrcorner\urcorner_{3,4}) & & (\urcorner\lfloor_{3,2}) \end{array}$$

$(\lrcorner\ \urcorner_{3,4})$ $(\ulcorner\ \ulcorner_{1,2,4})$
$\curlywedge \gg (\urcorner\ \lrcorner_{3,4})$ × $\curlywedge \gg (\urcorner\ \lrcorner_{4,3})$
$(\ulcorner\ \ulcorner_{4,2,1})$ $(\llcorner\urcorner_{2,3})$

$(\llcorner\urcorner_{2,3})$ $(\ulcorner\ \ulcorner_{4,2,1})$
$\curlywedge \gg (\urcorner\ \lrcorner_{3,4})$ × $\curlywedge \gg (\lrcorner\ \urcorner_{4,3})$
$(\ulcorner\ \ulcorner_{1,2,4})$ $(\urcorner\ \llcorner_{3,2})$

10. Pre-semiotic dual system

$(\urcorner\ \lrcorner_{3,4}\ \ulcorner\urcorner_{2,4}\ \lrcorner\ \urcorner_{3,4}\ \llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\ \urcorner\ \lrcorner_{4,3}\ \urcorner\ \ulcorner_{4,2}\ \lrcorner\ \urcorner_{4,3})$

Qualitative action

$(\ulcorner\urcorner_{2,4})$ $(\urcorner\ \lrcorner_{4,3})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\lrcorner\ \urcorner_{3,4})$ $(\urcorner\ \ulcorner_{4,2})$

$(\urcorner\ \lrcorner_{3,4})$ $(\urcorner\ \lrcorner_{4,3})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\lrcorner\ \urcorner_{3,4})$ $(\lrcorner\ \urcorner_{4,3})$

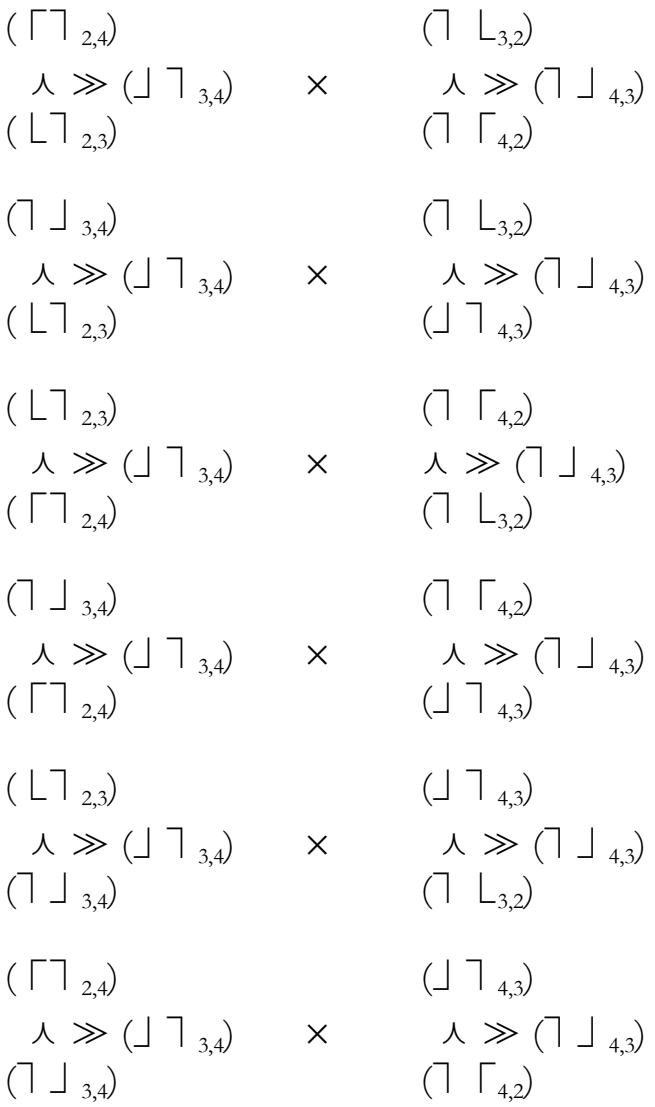
$(\lrcorner\ \urcorner_{3,4})$ $(\urcorner\ \ulcorner_{4,2})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\ulcorner\urcorner_{2,4})$ $(\urcorner\ \lrcorner_{4,3})$

$(\urcorner\ \lrcorner_{3,4})$ $(\urcorner\ \ulcorner_{4,2})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\ulcorner\urcorner_{2,4})$ $(\lrcorner\ \urcorner_{4,3})$

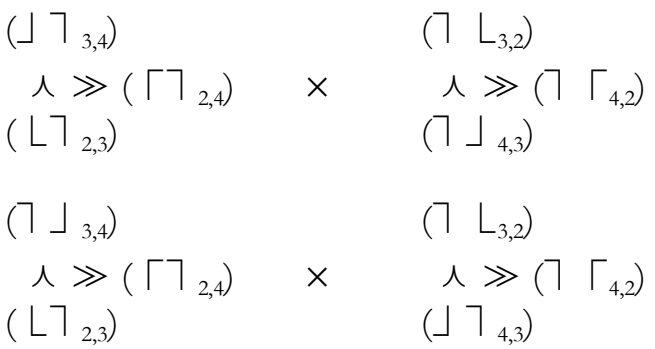
$(\lrcorner\ \urcorner_{3,4})$ $(\lrcorner\ \urcorner_{4,3})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\urcorner\ \lrcorner_{3,4})$ $(\urcorner\ \lrcorner_{4,3})$

$(\ulcorner\urcorner_{2,4})$ $(\lrcorner\ \urcorner_{4,3})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\urcorner\ \lrcorner_{3,4})$ $(\urcorner\ \ulcorner_{4,2})$

Medial action



Objectal action



$$\begin{matrix}(\lfloor\rceil_{2,3}) & & (\rceil\lfloor_{4,3}) \\ \prec \gg (\lceil\rceil_{2,4}) & \times & \prec \gg (\rceil\lceil_{4,2}) \\ (\lfloor\rceil_{3,4}) & & (\rceil\lfloor_{3,2})\end{matrix}$$

$$\begin{matrix}(\rceil\lfloor_{3,4}) & & (\rceil\lfloor_{4,3}) \\ \prec \gg (\lceil\rceil_{2,4}) & \times & \prec \gg (\rceil\lceil_{4,2}) \\ (\lfloor\rceil_{3,4}) & & (\lfloor\rceil_{4,3})\end{matrix}$$

$$\begin{matrix}(\lfloor\rceil_{3,4}) & & (\lfloor\rceil_{4,3}) \\ \prec \gg (\lceil\rceil_{2,4}) & \times & \prec \gg (\rceil\lceil_{4,2}) \\ (\rceil\lfloor_{3,4}) & & (\rceil\lfloor_{4,3})\end{matrix}$$

$$\begin{matrix}(\lfloor\rceil_{2,3}) & & (\lfloor\rceil_{4,3}) \\ \prec \gg (\lceil\rceil_{2,4}) & \times & \prec \gg (\rceil\lceil_{4,2}) \\ (\rceil\lfloor_{3,4}) & & (\rceil\lfloor_{3,2})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\lceil\rceil_{2,4}) & & (\rceil\lfloor_{3,2}) \\ \prec \gg (\rceil\lfloor_{3,4}) & \times & \prec \gg (\lfloor\rceil_{4,3}) \\ (\lfloor\rceil_{2,3}) & & (\rceil\lceil_{4,2})\end{matrix}$$

$$\begin{matrix}(\lfloor\rceil_{3,4}) & & (\rceil\lfloor_{3,2}) \\ \prec \gg (\rceil\lfloor_{3,4}) & \times & \prec \gg (\lfloor\rceil_{4,3}) \\ (\lfloor\rceil_{2,3}) & & (\rceil\lfloor_{4,3})\end{matrix}$$

$$\begin{matrix}(\lceil\rceil_{2,4}) & & (\rceil\lfloor_{4,3}) \\ \prec \gg (\rceil\lfloor_{3,4}) & \times & \prec \gg (\lfloor\rceil_{4,3}) \\ (\lfloor\rceil_{3,4}) & & (\rceil\lceil_{4,2})\end{matrix}$$

$$\begin{matrix}(\lfloor\rceil_{2,3}) & & (\rceil\lfloor_{4,3}) \\ \prec \gg (\rceil\lfloor_{3,4}) & \times & \prec \gg (\lfloor\rceil_{4,3}) \\ (\lfloor\rceil_{3,4}) & & (\rceil\lfloor_{3,2})\end{matrix}$$

$(\lrcorner\ \urcorner_{3,4})$ $(\urcorner\ \ulcorner_{4,2})$
$\curlywedge \gg (\urcorner\ \lrcorner_{3,4}) \quad \times \quad \curlywedge \gg (\lrcorner\ \urcorner_{4,3})$
$(\ulcorner\urcorner_{2,4})$ $(\urcorner\ \lrcorner_{4,3})$

$(\llcorner\urcorner_{2,3})$ $(\urcorner\ \ulcorner_{4,2})$
$\curlywedge \gg (\urcorner\ \lrcorner_{3,4}) \quad \times \quad \curlywedge \gg (\lrcorner\ \urcorner_{4,3})$
$(\ulcorner\urcorner_{2,4})$ $(\urcorner\ \llcorner_{3,2})$

11. Pre-semiotic dual system

$(\urcorner\ \ulcorner_{2,4}\ \ulcorner\ulcorner_{1,2,4}\ \lrcorner\ \ulcorner_{1,4}\ \llcorner\ulcorner_{1,2}) \times (\ulcorner\ \llcorner_{2,1}\ \ulcorner\lrcorner_{4,1}\ \ulcorner\ulcorner_{4,2,1}\ \ulcorner\urcorner_{4,2})$

Qualitative action

$(\ulcorner\ulcorner_{1,2,4})$ $(\ulcorner\lrcorner_{4,1})$
$\curlywedge \gg (\llcorner\ulcorner_{1,2}) \quad \times \quad \curlywedge \gg (\ulcorner\llcorner_{2,1})$
$(\lrcorner\ \ulcorner_{1,4})$ $(\ulcorner\ulcorner_{4,2,1})$

$(\urcorner\ \ulcorner_{2,4})$ $(\ulcorner\lrcorner_{4,1})$
$\curlywedge \gg (\llcorner\ulcorner_{1,2}) \quad \times \quad \curlywedge \gg (\ulcorner\llcorner_{2,1})$
$(\lrcorner\ \ulcorner_{1,4})$ $(\ulcorner\urcorner_{4,2})$

$(\lrcorner\ \ulcorner_{1,4})$ $(\ulcorner\ulcorner_{4,2,1})$
$\curlywedge \gg (\llcorner\ulcorner_{1,2}) \quad \times \quad \curlywedge \gg (\ulcorner\llcorner_{2,1})$
$(\ulcorner\ulcorner_{1,2,4})$ $(\ulcorner\lrcorner_{4,1})$

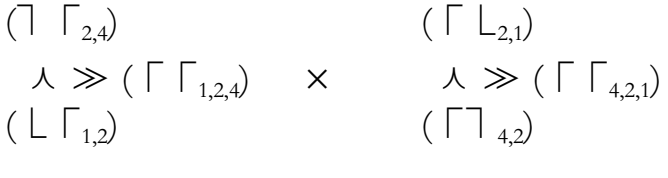
$(\urcorner\ \ulcorner_{2,4})$ $(\ulcorner\ulcorner_{4,2,1})$
$\curlywedge \gg (\llcorner\ulcorner_{1,2}) \quad \times \quad \curlywedge \gg (\ulcorner\llcorner_{2,1})$
$(\ulcorner\ulcorner_{1,2,4})$ $(\ulcorner\urcorner_{4,2})$

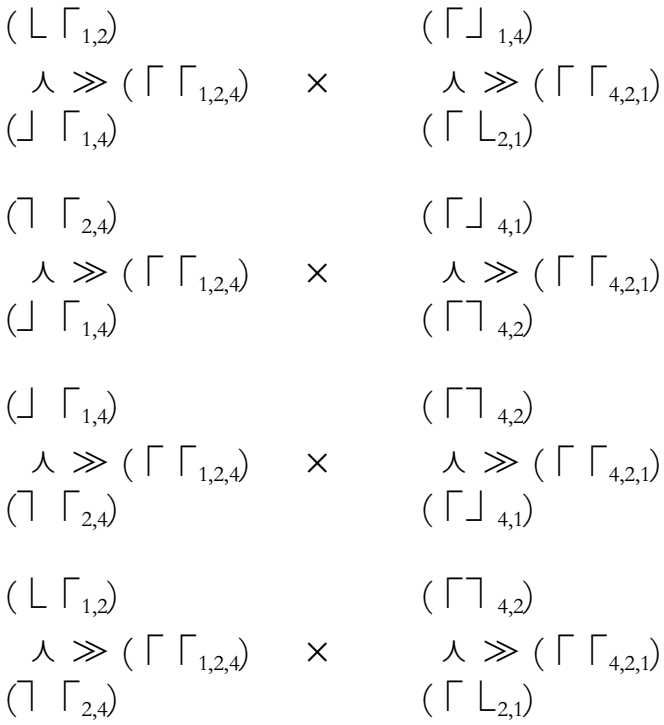
$(\lrcorner\ \ulcorner_{1,4})$ $(\ulcorner\urcorner_{4,2})$
$\curlywedge \gg (\llcorner\ulcorner_{1,2}) \quad \times \quad \curlywedge \gg (\ulcorner\llcorner_{2,1})$
$(\urcorner\ \ulcorner_{2,4})$ $(\ulcorner\lrcorner_{4,1})$

$(\ulcorner\ulcorner_{1,2,4})$ $(\ulcorner\urcorner_{4,2})$
$\curlywedge \gg (\llcorner\ulcorner_{1,2}) \quad \times \quad \curlywedge \gg (\ulcorner\llcorner_{2,1})$
$(\urcorner\ \ulcorner_{2,4})$ $(\ulcorner\ulcorner_{4,2,1})$

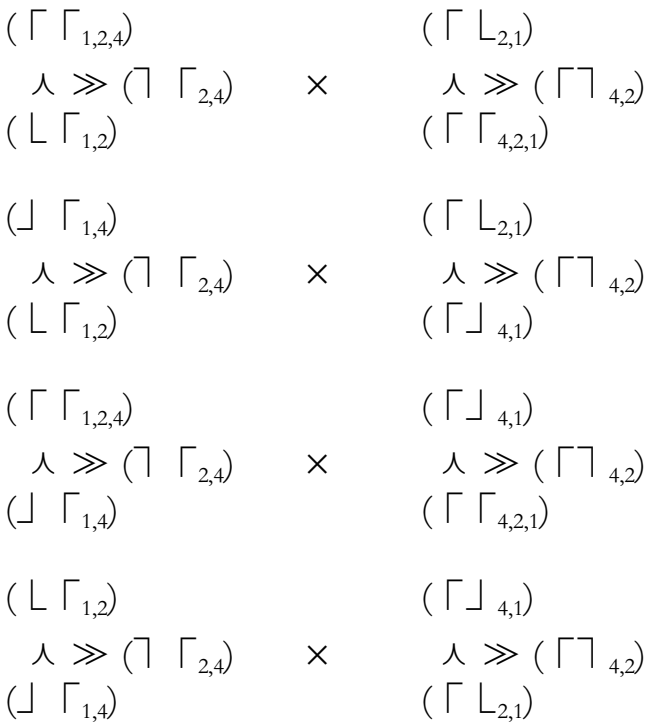
Medial action

Objectal action





Interpretative action



$(\lrcorner\ \ulcorner_{1,4})$ $(\ulcorner\ \ulcorner_{4,2,1})$
$\curlywedge \gg (\urcorner\ \ulcorner_{2,4})$ × $\curlywedge \gg (\ulcorner\urcorner_{4,2})$
$(\ulcorner\ \ulcorner_{1,2,4})$ $(\ulcorner\lrcorner_{4,1})$

$(\llcorner\ \ulcorner_{1,2})$ $(\ulcorner\ \ulcorner_{1,2,4})$
$\curlywedge \gg (\urcorner\ \ulcorner_{2,4})$ × $\curlywedge \gg (\ulcorner\urcorner_{4,2})$
$(\ulcorner\ \ulcorner_{1,2,4})$ $(\ulcorner\ \llcorner_{2,1})$

12. Pre-semiotic dual system

$(\urcorner\ \ulcorner_{2,4}\ \ulcorner\ \ulcorner_{1,2,4}\ \lrcorner\ \ulcorner_{1,4}\ \llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\ \ulcorner\lrcorner_{4,1}\ \ulcorner\ \ulcorner_{4,2,1}\ \ulcorner\urcorner_{4,2})$

Qualitative action

$(\ulcorner\ \ulcorner_{1,2,4})$ $(\ulcorner\lrcorner_{4,1})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\lrcorner\ \ulcorner_{1,4})$ $(\ulcorner\ \ulcorner_{4,2,1})$

$(\urcorner\ \ulcorner_{2,4})$ $(\ulcorner\lrcorner_{4,1})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\lrcorner\ \ulcorner_{1,4})$ $(\ulcorner\urcorner_{4,2})$

$(\lrcorner\ \ulcorner_{1,4})$ $(\ulcorner\ \ulcorner_{4,2,1})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\ulcorner\ \ulcorner_{1,2,4})$ $(\ulcorner\lrcorner_{4,1})$

$(\urcorner\ \ulcorner_{2,4})$ $(\ulcorner\ \ulcorner_{4,2,1})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\ulcorner\urcorner_{2,4})$ $(\ulcorner\ \ulcorner_{1,2,})$

$(\lrcorner\ \ulcorner_{1,4})$ $(\ulcorner\urcorner_{4,2}$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\urcorner\ \ulcorner_{2,4})$ $(\ulcorner\lrcorner_{4,1})$

$(\ulcorner\ \ulcorner_{1,2,4})$ $(\ulcorner\urcorner_{4,2})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\urcorner\ \ulcorner_{2,4})$ $(\ulcorner\ \ulcorner_{4,2,1})$

Medial action

Objectal action

$$\left(\begin{smallmatrix}\lrcorner & \urcorner\\ & \end{smallmatrix}\right)_{2,3} \quad \left(\begin{smallmatrix}\ulcorner & \lrcorner\\ & \end{smallmatrix}\right)_{4,1}$$
$$\curlywedge \gg \left(\begin{smallmatrix}\ulcorner & \ulcorner\\ & \end{smallmatrix}\right)_{1,2,4} \quad \times \quad \curlywedge \gg \left(\begin{smallmatrix}\ulcorner & \ulcorner\\ & \end{smallmatrix}\right)_{4,2,1}$$
$$\left(\begin{smallmatrix}\lrcorner & \ulcorner\\ & \end{smallmatrix}\right)_{1,4} \quad \left(\begin{smallmatrix}\urcorner & \llcorner\\ & \end{smallmatrix}\right)_{3,2}$$

$$\left(\begin{smallmatrix}\urcorner & \ulcorner\\ & \end{smallmatrix}\right)_{2,4} \quad \left(\begin{smallmatrix}\ulcorner & \lrcorner\\ & \end{smallmatrix}\right)_{4,1}$$
$$\curlywedge \gg \left(\begin{smallmatrix}\ulcorner & \ulcorner\\ & \end{smallmatrix}\right)_{1,2,4} \quad \times \quad \curlywedge \gg \left(\begin{smallmatrix}\ulcorner & \ulcorner\\ & \end{smallmatrix}\right)_{4,2,1}$$
$$\left(\begin{smallmatrix}\lrcorner & \ulcorner\\ & \end{smallmatrix}\right)_{1,4} \quad \left(\begin{smallmatrix}\ulcorner & \urcorner\\ & \end{smallmatrix}\right)_{4,2}$$

$$\left(\begin{smallmatrix}\lrcorner & \ulcorner\\ & \end{smallmatrix}\right)_{1,4} \quad \left(\begin{smallmatrix}\ulcorner & \urcorner\\ & \end{smallmatrix}\right)_{4,2}$$
$$\curlywedge \gg \left(\begin{smallmatrix}\ulcorner & \ulcorner\\ & \end{smallmatrix}\right)_{1,2,4} \quad \times \quad \curlywedge \gg \left(\begin{smallmatrix}\ulcorner & \ulcorner\\ & \end{smallmatrix}\right)_{4,2,1}$$
$$\left(\begin{smallmatrix}\urcorner & \ulcorner\\ & \end{smallmatrix}\right)_{2,4} \quad \left(\begin{smallmatrix}\ulcorner & \lrcorner\\ & \end{smallmatrix}\right)_{4,1}$$

$$\left(\begin{smallmatrix}\lrcorner & \urcorner\\ & \end{smallmatrix}\right)_{2,3} \quad \left(\begin{smallmatrix}\ulcorner & \urcorner\\ & \end{smallmatrix}\right)_{4,2}$$
$$\curlywedge \gg \left(\begin{smallmatrix}\ulcorner & \ulcorner\\ & \end{smallmatrix}\right)_{1,2,4} \quad \times \quad \curlywedge \gg \left(\begin{smallmatrix}\ulcorner & \ulcorner\\ & \end{smallmatrix}\right)_{4,2,1}$$
$$\left(\begin{smallmatrix}\urcorner & \ulcorner\\ & \end{smallmatrix}\right)_{2,4} \quad \left(\begin{smallmatrix}\urcorner & \llcorner\\ & \end{smallmatrix}\right)_{3,2}$$

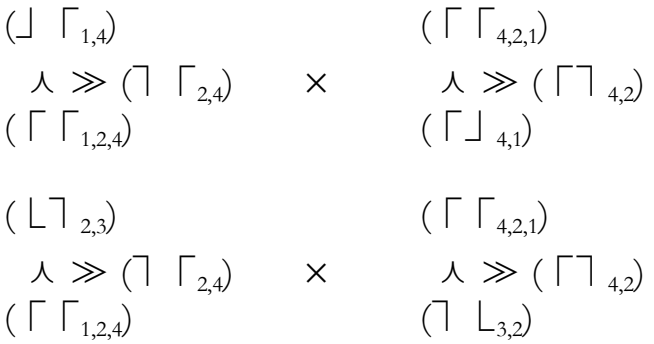
Interpretative action

$$\left(\begin{smallmatrix}\ulcorner & \ulcorner\\ & \end{smallmatrix}\right)_{1,2,4} \quad \left(\begin{smallmatrix}\urcorner & \llcorner\\ & \end{smallmatrix}\right)_{3,2}$$
$$\curlywedge \gg \left(\begin{smallmatrix}\urcorner & \ulcorner\\ & \end{smallmatrix}\right)_{2,4} \quad \times \quad \curlywedge \gg \left(\begin{smallmatrix}\ulcorner & \urcorner\\ & \end{smallmatrix}\right)_{4,2}$$
$$\left(\begin{smallmatrix}\lrcorner & \urcorner\\ & \end{smallmatrix}\right)_{2,3} \quad \left(\begin{smallmatrix}\ulcorner & \ulcorner\\ & \end{smallmatrix}\right)_{4,2,1}$$

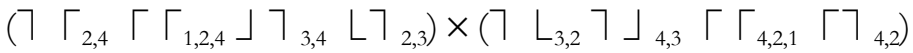
$$\left(\begin{smallmatrix}\lrcorner & \ulcorner\\ & \end{smallmatrix}\right)_{1,4} \quad \left(\begin{smallmatrix}\urcorner & \llcorner\\ & \end{smallmatrix}\right)_{3,2}$$
$$\curlywedge \gg \left(\begin{smallmatrix}\urcorner & \ulcorner\\ & \end{smallmatrix}\right)_{2,4} \quad \times \quad \curlywedge \gg \left(\begin{smallmatrix}\ulcorner & \urcorner\\ & \end{smallmatrix}\right)_{4,2}$$
$$\left(\begin{smallmatrix}\lrcorner & \urcorner\\ & \end{smallmatrix}\right)_{2,3} \quad \left(\begin{smallmatrix}\ulcorner & \lrcorner\\ & \end{smallmatrix}\right)_{4,1}$$

$$\left(\begin{smallmatrix}\ulcorner & \ulcorner\\ & \end{smallmatrix}\right)_{1,2,4} \quad \left(\begin{smallmatrix}\ulcorner & \lrcorner\\ & \end{smallmatrix}\right)_{4,1}$$
$$\curlywedge \gg \left(\begin{smallmatrix}\urcorner & \ulcorner\\ & \end{smallmatrix}\right)_{2,4} \quad \times \quad \curlywedge \gg \left(\begin{smallmatrix}\ulcorner & \urcorner\\ & \end{smallmatrix}\right)_{4,2}$$
$$\left(\begin{smallmatrix}\lrcorner & \ulcorner\\ & \end{smallmatrix}\right)_{1,4} \quad \left(\begin{smallmatrix}\ulcorner & \ulcorner\\ & \end{smallmatrix}\right)_{4,2,1}$$

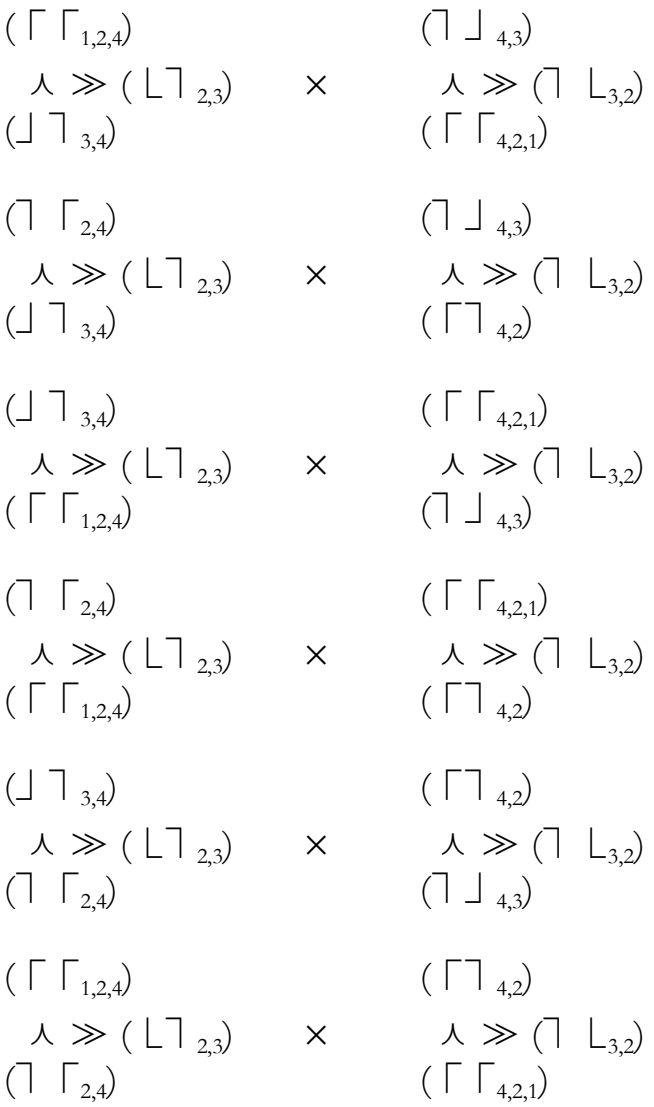
$$\left(\begin{smallmatrix}\lrcorner & \urcorner\\ & \end{smallmatrix}\right)_{2,3} \quad \left(\begin{smallmatrix}\ulcorner & \lrcorner\\ & \end{smallmatrix}\right)_{4,1}$$
$$\curlywedge \gg \left(\begin{smallmatrix}\urcorner & \ulcorner\\ & \end{smallmatrix}\right)_{2,4} \quad \times \quad \curlywedge \gg \left(\begin{smallmatrix}\ulcorner & \urcorner\\ & \end{smallmatrix}\right)_{4,2}$$
$$\left(\begin{smallmatrix}\lrcorner & \ulcorner\\ & \end{smallmatrix}\right)_{1,4} \quad \left(\begin{smallmatrix}\urcorner & \llcorner\\ & \end{smallmatrix}\right)_{3,2}$$



13. Pre-semiotic dual system

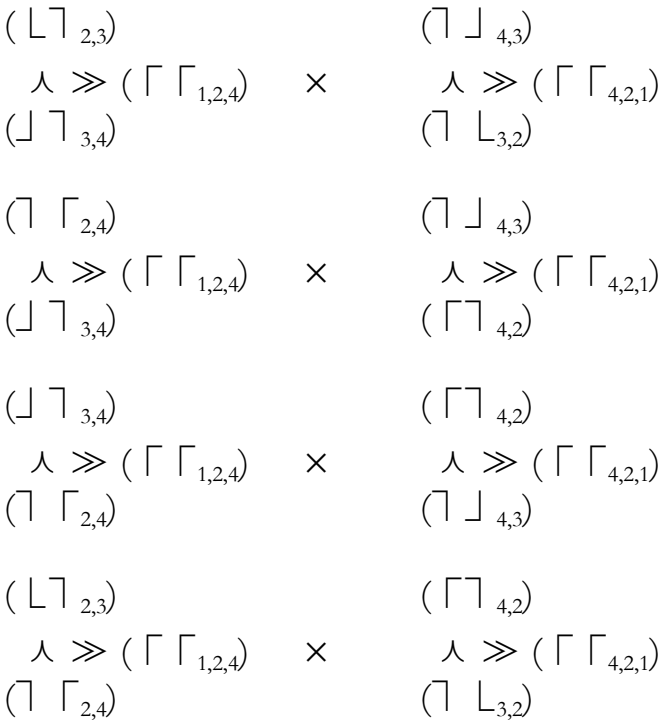


Qualitative action

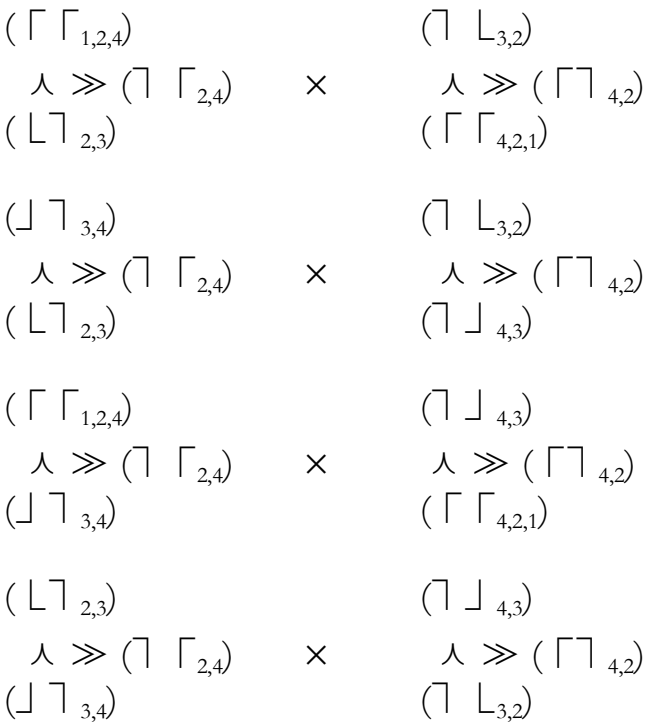


Medial action

Objectal action



Interpretative action



$(\lrcorner\ \urcorner_{3,4})$ $(\ulcorner\ \ulcorner_{4,2,1})$
$\curlywedge \gg (\urcorner\ \ulcorner_{2,4})$ × $\curlywedge \gg (\ulcorner\urcorner_{4,2})$
$(\ulcorner\ \ulcorner_{1,2,4})$ $(\urcorner\ \lrcorner_{4,3})$

$(\llcorner\urcorner_{2,3})$ $(\ulcorner\ \ulcorner_{4,2,1})$
$\curlywedge \gg (\urcorner\ \ulcorner_{2,4})$ × $\curlywedge \gg (\ulcorner\urcorner_{4,2})$
$(\ulcorner\ \ulcorner_{1,2,4})$ $(\urcorner\ \llcorner_{3,2})$

14. Pre-semiotic dual system
$(\urcorner\ \ulcorner_{2,4}\ \ulcorner\urcorner_{2,4}\ \lrcorner\urcorner_{3,4}\ \llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\urcorner\lrcorner_{4,3}\urcorner\ \ulcorner_{4,2}\ \ulcorner\urcorner_{4,2})$

Qualitative action

$(\ulcorner\urcorner_{2,4})$ $(\urcorner\lrcorner_{4,3})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\lrcorner\urcorner_{3,4})$ $(\urcorner\ \ulcorner_{4,2})$

$(\urcorner\ \ulcorner_{2,4})$ $(\urcorner\lrcorner_{4,3})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\lrcorner\urcorner_{3,4})$ $(\ulcorner\urcorner_{4,2})$

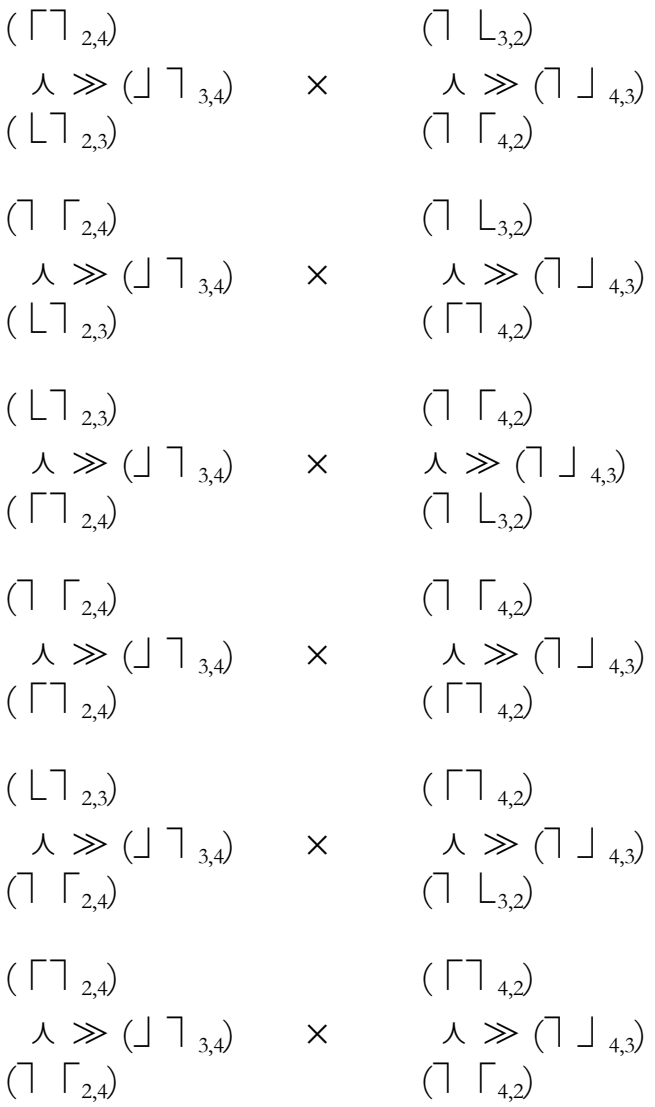
$(\lrcorner\urcorner_{3,4})$ $(\urcorner\ \ulcorner_{4,2})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\ulcorner\urcorner_{2,4})$ $(\urcorner\lrcorner_{4,3})$

$(\urcorner\ \ulcorner_{2,4})$ $(\urcorner\ \ulcorner_{4,2})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\ulcorner\urcorner_{2,4})$ $(\ulcorner\urcorner_{4,2})$

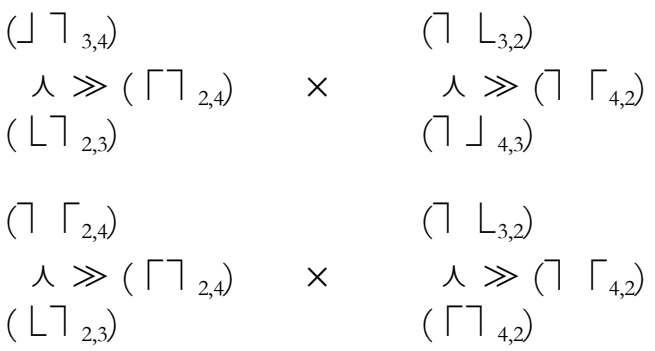
$(\lrcorner\urcorner_{3,4})$ $(\ulcorner\urcorner_{4,2})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\urcorner\ \ulcorner_{2,4})$ $(\urcorner\lrcorner_{4,3})$

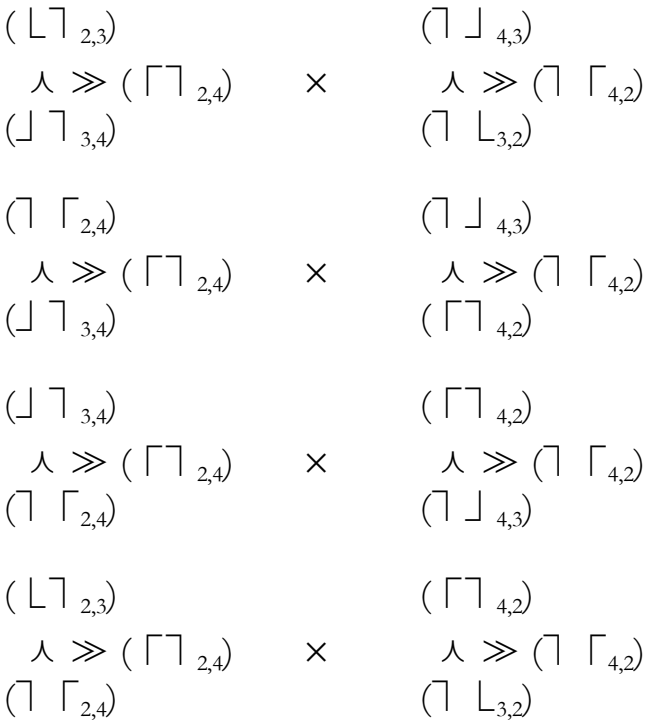
$(\ulcorner\urcorner_{2,4})$ $(\ulcorner\urcorner_{4,2})$
$\curlywedge \gg (\llcorner\urcorner_{2,3})$ × $\curlywedge \gg (\urcorner\ \llcorner_{3,2})$
$(\urcorner\ \ulcorner_{2,4})$ $(\urcorner\ \ulcorner_{4,2})$

Medial action

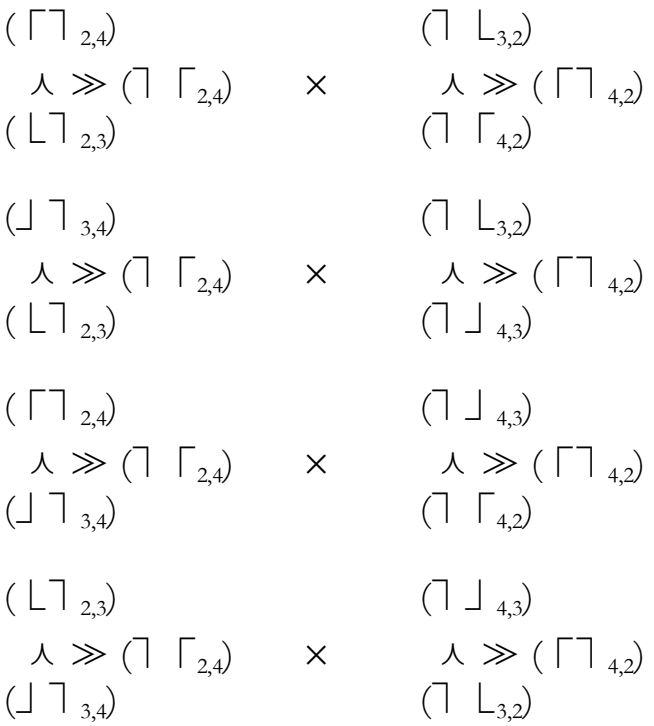


Objectal action





Interpreatative action



(⌟⌝$_{3,4}$) (⌝⌜$_{4,2}$)
人 ≫ (⌝⌜$_{2,4}$) × 人 ≫ (⌜⌝$_{4,2}$)
(⌜⌝$_{2,4}$) (⌝⌟$_{4,3}$)

(⌞⌝$_{2,3}$) (⌝⌜$_{4,2}$)
人 ≫ (⌝⌜$_{2,4}$) × 人 ≫ (⌜⌝$_{4,2}$)
(⌜⌝$_{2,4}$) (⌝⌞$_{3,2}$)

15. Pre-semiotic dual system

(⌝⌝$_{2,3,4}$ ⌜⌝$_{2,4}$ ⌟⌝$_{3,4}$ ⌞⌝$_{2,3}$) × (⌝⌞$_{3,2}$ ⌝⌟$_{4,3}$ ⌝⌜$_{4,2}$ ⌝⌝$_{4,3,2}$)

Qualitative action

(⌜⌝$_{2,4}$) (⌝⌟$_{4,3}$)
人 ≫ (⌞⌝$_{2,3}$) × 人 ≫ (⌝⌞$_{3,2}$)
(⌟⌝$_{3,4}$) (⌝⌜$_{4,2}$)

(⌝⌝$_{2,3,4}$) (⌝⌟$_{4,3}$)
人 ≫ (⌞⌝$_{2,3}$) × 人 ≫ (⌝⌞$_{3,2}$)
(⌟⌝$_{3,4}$) (⌝⌝$_{4,3,2}$)

(⌟⌝$_{3,4}$) (⌝⌜$_{4,2}$)
人 ≫ (⌞⌝$_{2,3}$) × 人 ≫ (⌝⌞$_{3,2}$)
(⌜⌝$_{2,4}$) (⌝⌟$_{4,3}$)

(⌝⌜$_{2,4}$) (⌝⌜$_{4,2}$)
人 ≫ (⌞⌝$_{2,3}$) × 人 ≫ (⌝⌞$_{3,2}$)
(⌜⌝$_{2,4}$) (⌜⌝$_{4,2}$)

(⌟⌝$_{3,4}$) (⌜⌝$_{4,2}$)
人 ≫ (⌞⌝$_{2,3}$) × 人 ≫ (⌝⌞$_{3,2}$)
(⌝⌜$_{2,4}$) (⌝⌟$_{4,3}$)

(⌜⌝$_{2,4}$) (⌜⌝$_{4,2}$)
人 ≫ (⌞⌝$_{2,3}$) × 人 ≫ (⌝⌞$_{3,2}$)

(⌝ ⌜$_{2,4}$) (⌝ ⌜$_{4,2}$)

Medial action

(⌜⌝$_{2,4}$) (⌝ ⌞$_{3,2}$)
人 ≫ (⌟ ⌝$_{3,4}$) × 人 ≫ (⌝ ⌟$_{4,3}$)
(⌞⌝$_{2,3}$) (⌝ ⌜$_{4,2}$)

(⌝ ⌝$_{2,3,4}$) (⌝ ⌞$_{3,2}$)
人 ≫ (⌟ ⌝$_{3,4}$) × 人 ≫ (⌝ ⌟$_{4,3}$)
(⌞⌝$_{2,3}$) (⌝ ⌝$_{4,3,2}$)

(⌞⌝$_{2,3}$) (⌝ ⌜$_{4,2}$)
人 ≫ (⌟ ⌝$_{3,4}$) × 人 ≫ (⌝ ⌟$_{4,3}$)
(⌜⌝$_{2,4}$) (⌝ ⌞$_{3,2}$)

(⌝ ⌝$_{2,3,4}$) (⌝ ⌜$_{4,2}$)
人 ≫ (⌟ ⌝$_{3,4}$) × 人 ≫ (⌝ ⌟$_{4,3}$)
(⌜⌝$_{2,4}$) (⌝ ⌝$_{4,3,2}$)

(⌞⌝$_{2,3}$) (⌝ ⌝$_{4,3,2}$)
人 ≫ (⌟ ⌝$_{3,4}$) × 人 ≫ (⌝ ⌟$_{4,3}$)
(⌝ ⌝$_{2,3,4}$) (⌝ ⌞$_{3,2}$)

(⌜⌝$_{2,4}$) (⌝ ⌝$_{4,3,2}$)
人 ≫ (⌟ ⌝$_{3,4}$) × 人 ≫ (⌝ ⌟$_{4,3}$)
(⌝ ⌝$_{2,3,4}$) (⌝ ⌜$_{4,2}$)

Objectal action

(⌟ ⌝$_{3,4}$) (⌝ ⌞$_{3,2}$)
人 ≫ (⌜⌝$_{2,4}$) × 人 ≫ (⌝ ⌜$_{4,2}$)
(⌞⌝$_{2,3}$) (⌝ ⌟$_{4,3}$)

$$\begin{array}{lcl} \left(\begin{smallmatrix}\urcorner & \urcorner\\ 2,3,4\end{smallmatrix}\right) & & \left(\begin{smallmatrix}\urcorner & \llcorner\\ 3,2\end{smallmatrix}\right) \\ \curlywedge \gg \left(\begin{smallmatrix}\ulcorner\urcorner\\ 2,4\end{smallmatrix}\right) & \times & \curlywedge \gg \left(\begin{smallmatrix}\urcorner & \ulcorner\\ 4,2\end{smallmatrix}\right) \\ \left(\begin{smallmatrix}\llcorner\urcorner\\ 2,3\end{smallmatrix}\right) & & \left(\begin{smallmatrix}\urcorner & \urcorner\\ 4,3,2\end{smallmatrix}\right) \end{array}$$

$$\begin{array}{lcl} \left(\begin{smallmatrix}\llcorner\urcorner\\ 2,3\end{smallmatrix}\right) & & \left(\begin{smallmatrix}\urcorner & \lrcorner\\ 4,3\end{smallmatrix}\right) \\ \curlywedge \gg \left(\begin{smallmatrix}\ulcorner\urcorner\\ 2,4\end{smallmatrix}\right) & \times & \curlywedge \gg \left(\begin{smallmatrix}\urcorner & \ulcorner\\ 4,2\end{smallmatrix}\right) \\ \left(\begin{smallmatrix}\lrcorner\urcorner\\ 3,4\end{smallmatrix}\right) & & \left(\begin{smallmatrix}\urcorner & \llcorner\\ 3,2\end{smallmatrix}\right) \end{array}$$

$$\begin{array}{lcl} \left(\begin{smallmatrix}\urcorner & \urcorner\\ 2,3,4\end{smallmatrix}\right) & & \left(\begin{smallmatrix}\urcorner & \lrcorner\\ 4,3\end{smallmatrix}\right) \\ \curlywedge \gg \left(\begin{smallmatrix}\ulcorner\urcorner\\ 2,4\end{smallmatrix}\right) & \times & \curlywedge \gg \left(\begin{smallmatrix}\urcorner & \ulcorner\\ 4,2\end{smallmatrix}\right) \\ \left(\begin{smallmatrix}\lrcorner\urcorner\\ 3,4\end{smallmatrix}\right) & & \left(\begin{smallmatrix}\urcorner & \urcorner\\ 4,3,2\end{smallmatrix}\right) \end{array}$$

$$\begin{array}{lcl} \left(\begin{smallmatrix}\lrcorner\urcorner\\ 3,4\end{smallmatrix}\right) & & \left(\begin{smallmatrix}\urcorner & \urcorner\\ 4,3,2\end{smallmatrix}\right) \\ \curlywedge \gg \left(\begin{smallmatrix}\ulcorner\urcorner\\ 2,4\end{smallmatrix}\right) & \times & \curlywedge \gg \left(\begin{smallmatrix}\urcorner & \ulcorner\\ 4,2\end{smallmatrix}\right) \\ \left(\begin{smallmatrix}\urcorner & \urcorner\\ 2,3,4\end{smallmatrix}\right) & & \left(\begin{smallmatrix}\urcorner & \lrcorner\\ 4,3\end{smallmatrix}\right) \end{array}$$

$$\begin{array}{lcl} \left(\begin{smallmatrix}\llcorner\urcorner\\ 2,3\end{smallmatrix}\right) & & \left(\begin{smallmatrix}\urcorner & \urcorner\\ 4,3,2\end{smallmatrix}\right) \\ \curlywedge \gg \left(\begin{smallmatrix}\ulcorner\urcorner\\ 2,4\end{smallmatrix}\right) & \times & \curlywedge \gg \left(\begin{smallmatrix}\urcorner & \ulcorner\\ 4,2\end{smallmatrix}\right) \\ \left(\begin{smallmatrix}\urcorner & \urcorner\\ 2,3,4\end{smallmatrix}\right) & & \left(\begin{smallmatrix}\urcorner & \llcorner\\ 3,2\end{smallmatrix}\right) \end{array}$$

Interpretative action

$$\begin{array}{lcl} \left(\begin{smallmatrix}\ulcorner\urcorner\\ 2,4\end{smallmatrix}\right) & & \left(\begin{smallmatrix}\urcorner & \llcorner\\ 3,2\end{smallmatrix}\right) \\ \curlywedge \gg \left(\begin{smallmatrix}\urcorner & \urcorner\\ 2,3,4\end{smallmatrix}\right) & \times & \curlywedge \gg \left(\begin{smallmatrix}\urcorner & \urcorner\\ 4,3,2\end{smallmatrix}\right) \\ \left(\begin{smallmatrix}\llcorner\urcorner\\ 2,3\end{smallmatrix}\right) & & \left(\begin{smallmatrix}\urcorner & \ulcorner\\ 4,2\end{smallmatrix}\right) \end{array}$$

$$\begin{array}{lcl} \left(\begin{smallmatrix}\lrcorner\urcorner\\ 3,4\end{smallmatrix}\right) & & \left(\begin{smallmatrix}\urcorner & \llcorner\\ 3,2\end{smallmatrix}\right) \\ \curlywedge \gg \left(\begin{smallmatrix}\urcorner & \urcorner\\ 2,3,4\end{smallmatrix}\right) & \times & \curlywedge \gg \left(\begin{smallmatrix}\urcorner & \urcorner\\ 4,3,2\end{smallmatrix}\right) \\ \left(\begin{smallmatrix}\llcorner\urcorner\\ 2,3\end{smallmatrix}\right) & & \left(\begin{smallmatrix}\urcorner & \lrcorner\\ 4,3\end{smallmatrix}\right) \end{array}$$

$$\begin{array}{lcl} \left(\begin{smallmatrix}\ulcorner\urcorner\\ 2,4\end{smallmatrix}\right) & & \left(\begin{smallmatrix}\urcorner & \lrcorner\\ 4,3\end{smallmatrix}\right) \\ \curlywedge \gg \left(\begin{smallmatrix}\urcorner & \urcorner\\ 2,3,4\end{smallmatrix}\right) & \times & \curlywedge \gg \left(\begin{smallmatrix}\urcorner & \urcorner\\ 4,3,2\end{smallmatrix}\right) \\ \left(\begin{smallmatrix}\lrcorner\urcorner\\ 3,4\end{smallmatrix}\right) & & \left(\begin{smallmatrix}\urcorner & \ulcorner\\ 4,2\end{smallmatrix}\right) \end{array}$$

$$\begin{matrix} (\ \llcorner\urcorner\ _{2,3}) & & (\urcorner\ \lrcorner\ _{4,3}) \\ \curlywedge \gg (\urcorner\ \urcorner\ _{2,3,4}) & \times & \curlywedge \gg (\urcorner\ \urcorner\ _{4,3,2}) \\ (\lrcorner\ \urcorner\ _{3,4}) & & (\urcorner\ \llcorner_{3,2}) \end{matrix}$$

$$\begin{matrix} (\lrcorner\ \urcorner\ _{3,4}) & & (\urcorner\ \ulcorner_{4,2}) \\ \curlywedge \gg (\urcorner\ \urcorner\ _{2,3,4}) & \times & \curlywedge \gg (\urcorner\ \urcorner\ _{4,3,2}) \\ (\ulcorner\urcorner\ _{2,4}) & & (\urcorner\ \lrcorner\ _{4,3}) \end{matrix}$$

$$\begin{matrix} (\ \llcorner\urcorner\ _{2,3}) & & (\urcorner\ \ulcorner_{4,2}) \\ \curlywedge \gg (\urcorner\ \urcorner\ _{2,3,4}) & \times & \curlywedge \gg (\urcorner\ \urcorner\ _{4,3,2}) \\ (\ulcorner\urcorner\ _{2,4}) & & (\urcorner\ \llcorner_{3,2}) \end{matrix}$$

II. Action schemata of the 2 · 24 tetradic semiotic partial relations

1. Pre-semiotic dual system

$(\urcorner\ \lrcorner\ \ \ulcorner\lrcorner\ \ \lrcorner\ \lrcorner\ \ \llcorner\lrcorner\ ) \times (\urcorner\ \llcorner\lrcorner\ \lrcorner\ \ \lrcorner\ \ulcorner\lrcorner\ \urcorner\ )$

Qualitative action

$$\begin{matrix} & (\urcorner\ \lrcorner\ _{3,4}) & & & (\lrcorner\ \ulcorner_{4,1}) & \\ (\lrcorner\ \lrcorner\ _{1,3,4}) & \gg \ \curlyvee & \succ (\ \llcorner\lrcorner\ _{1,3}) \times & (\urcorner\ \llcorner_{3,1}) & \gg \ \curlyvee & \succ (\lrcorner\ \lrcorner\ _{4,3,1}) \\ & (\ulcorner\lrcorner\ _{1,4}) & & & (\lrcorner\ \urcorner\ _{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\ulcorner\lrcorner\ _{1,4}) & & & (\lrcorner\ \urcorner\ _{4,3}) & \\ (\lrcorner\ \lrcorner\ _{1,4,3}) & \gg \ \curlyvee & \succ (\ \llcorner\lrcorner\ _{1,3}) \times & (\urcorner\ \llcorner_{3,1}) & \gg \ \curlyvee & \succ (\lrcorner\ \lrcorner\ _{4,3,1}) \\ & (\urcorner\ \lrcorner\ _{3,4}) & & & (\lrcorner\ \ulcorner_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\urcorner\ \lrcorner\ _{3,4}) & & & (\lrcorner\ \lrcorner\ _{4,3,1}) & \\ (\ulcorner\lrcorner\ _{1,4}) & \gg \ \curlyvee & \succ (\ \llcorner\lrcorner\ _{1,3}) \times & (\urcorner\ \llcorner_{3,1}) & \gg \ \curlyvee & \succ (\lrcorner\ \ulcorner_{4,1}) \\ & (\lrcorner\ \lrcorner\ _{1,3,4}) & & & (\lrcorner\ \urcorner\ _{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\ \lrcorner\ _{1,3,4}) & & & (\lrcorner\ \urcorner\ _{4,3}) & \\ (\ulcorner\lrcorner\ _{1,4}) & \gg \ \curlyvee & \succ (\ \llcorner\lrcorner\ _{1,3}) \times & (\urcorner\ \llcorner_{3,1}) & \gg \ \curlyvee & \succ (\lrcorner\ \ulcorner_{4,1}) \\ & (\urcorner\ \lrcorner\ _{3,4}) & & & (\lrcorner\ \lrcorner\ _{4,3,1}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\ \lrcorner_{1,3,4}) & & & (\lrcorner\ \ulcorner_{4,1}) & \\ (\urcorner\ \lrcorner_{3,4}) & \gg\ \curlyvee & \succ (\llcorner\lrcorner_{1,3}) & \times & (\urcorner\ \llcorner_{3,1}) & \gg\ \curlyvee\ \succ (\lrcorner\ \urcorner_{4,3}) \\ & (\ulcorner\lrcorner_{1,4}) & & & (\lrcorner\ \lrcorner_{4,3,1}) & \end{matrix}$$

$$\begin{matrix} & (\ulcorner\lrcorner_{1,4}) & & & (\lrcorner\ \lrcorner_{4,3,1}) & \\ (\urcorner\ \lrcorner_{3,4}) & \gg\ \curlyvee & \succ (\llcorner\lrcorner_{1,3}) & \times & (\urcorner\ \llcorner_{3,1}) & \gg\ \curlyvee\ \succ (\lrcorner\ \urcorner_{4,3}) \\ & (\lrcorner\ \lrcorner_{1,3,4}) & & & (\lrcorner\ \ulcorner_{4,1}) & \end{matrix}$$

Medial action

$$\begin{matrix} & (\urcorner\ \lrcorner_{3,4}) & & & (\lrcorner\ \ulcorner_{4,1}) & \\ (\llcorner\lrcorner_{1,3}) & \gg\ \curlyvee & \succ (\lrcorner\ \lrcorner_{1,3,4}) & \times & (\lrcorner\ \lrcorner_{4,3,1}) & \gg\ \curlyvee\ \succ (\urcorner\ \llcorner_{3,1}) \\ & (\ulcorner\lrcorner_{1,4}) & & & (\lrcorner\ \urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\ulcorner\lrcorner_{1,4}) & & & (\lrcorner\ \urcorner_{4,3}) & \\ (\llcorner\lrcorner_{1,3}) & \gg\ \curlyvee & \succ (\lrcorner\ \lrcorner_{1,3,4}) & \times & (\lrcorner\ \lrcorner_{4,3,1}) & \gg\ \curlyvee\ \succ (\urcorner\ \llcorner_{3,1}) \\ & (\urcorner\ \lrcorner_{3,4}) & & & (\lrcorner\ \ulcorner_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\lrcorner_{1,3}) & & & (\lrcorner\ \urcorner_{4,3}) & \\ (\ulcorner\lrcorner_{1,4}) & \gg\ \curlyvee & \succ (\lrcorner\ \lrcorner_{1,3,4}) & \times & (\lrcorner\ \lrcorner_{4,3,1}) & \gg\ \curlyvee\ \succ (\lrcorner\ \ulcorner_{4,1}) \\ & (\urcorner\ \lrcorner_{3,4}) & & & (\urcorner\ \llcorner_{3,1}) & \end{matrix}$$

$$\begin{matrix} & (\urcorner\ \lrcorner_{3,4}) & & & (\urcorner\ \llcorner_{3,1}) & \\ (\ulcorner\lrcorner_{1,4}) & \gg\ \curlyvee & \succ (\lrcorner\ \lrcorner_{1,3,4}) & \times & (\lrcorner\ \lrcorner_{4,3,1}) & \gg\ \curlyvee\ \succ (\lrcorner\ \ulcorner_{4,1}) \\ & (\llcorner\lrcorner_{1,3}) & & & (\lrcorner\ \urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\lrcorner_{1,3}) & & & (\lrcorner\ \ulcorner_{4,1}) & \\ (\urcorner\ \lrcorner_{3,4}) & \gg\ \curlyvee & \succ (\lrcorner\ \lrcorner_{1,3,4}) & \times & (\lrcorner\ \lrcorner_{4,3,1}) & \gg\ \curlyvee\ \succ (\lrcorner\ \urcorner_{4,3}) \\ & (\ulcorner\lrcorner_{1,4}) & & & (\urcorner\ \llcorner_{3,1}) & \end{matrix}$$

$$\begin{matrix} & (\ulcorner\lrcorner_{1,4}) & & & (\urcorner\ \llcorner_{3,1}) & \\ (\urcorner\ \lrcorner_{3,4}) & \gg\ \curlyvee & \succ (\lrcorner\ \lrcorner_{1,3,4}) & \times & (\lrcorner\ \lrcorner_{4,3,1}) & \gg\ \curlyvee\ \succ (\lrcorner\ \urcorner_{4,3}) \\ & (\llcorner\lrcorner_{1,3}) & & & (\lrcorner\ \ulcorner_{4,1}) & \end{matrix}$$

Objectal action

$$(\urcorner\llcorner_{3,4}) \quad\quad (\llcorner\llcorner_{4,3,1})$$
$$(\llcorner\!\!\llcorner_{1,3}) \gg \curlyvee \succ (\ulcorner\llcorner_{1,4}) \times (\llcorner\ulcorner_{4,1}) \gg \curlyvee \succ (\urcorner\llcorner_{3,1})$$
$$(\llcorner\llcorner_{1,3,4}) \quad\quad (\llcorner\urcorner_{4,3})$$

$$(\llcorner\llcorner_{1,3,4}) \quad\quad (\llcorner\urcorner_{4,3})$$
$$(\llcorner\!\!\llcorner_{1,3}) \gg \curlyvee \succ (\ulcorner\llcorner_{1,4}) \times (\llcorner\ulcorner_{4,1}) \gg \curlyvee \succ (\urcorner\llcorner_{3,1})$$
$$(\urcorner\llcorner_{3,4}) \quad\quad (\llcorner\llcorner_{4,3,1})$$

$$(\llcorner\!\!\llcorner_{1,3}) \quad\quad (\llcorner\urcorner_{4,3})$$
$$(\llcorner\llcorner_{1,3,4}) \gg \curlyvee \succ (\ulcorner\llcorner_{1,4}) \times (\llcorner\ulcorner_{4,1}) \gg \curlyvee \succ (\llcorner\llcorner_{4,3,1})$$
$$(\urcorner\llcorner_{3,4}) \quad\quad (\urcorner\llcorner_{3,1})$$

$$(\urcorner\llcorner_{3,4}) \quad\quad (\urcorner\llcorner_{3,1})$$
$$(\llcorner\llcorner_{1,3,4}) \gg \curlyvee \succ (\ulcorner\llcorner_{1,4}) \times (\llcorner\ulcorner_{4,1}) \gg \curlyvee \succ (\llcorner\llcorner_{4,3,1})$$
$$(\llcorner\!\!\llcorner_{1,3}) \quad\quad (\llcorner\urcorner_{4,3})$$

$$(\llcorner\!\!\llcorner_{1,3}) \quad\quad (\llcorner\llcorner_{4,3,1})$$
$$(\urcorner\llcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\llcorner_{1,4}) \times (\llcorner\ulcorner_{4,1}) \gg \curlyvee \succ (\llcorner\urcorner_{4,3})$$
$$(\llcorner\llcorner_{1,3,4}) \quad\quad (\urcorner\llcorner_{3,1})$$

$$(\llcorner\llcorner_{1,3,4}) \quad\quad (\urcorner\llcorner_{3,1})$$
$$(\urcorner\llcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\llcorner_{1,4}) \times (\llcorner\ulcorner_{4,1}) \gg \curlyvee \succ (\llcorner\urcorner_{4,3})$$
$$(\llcorner\!\!\llcorner_{1,3}) \quad\quad (\llcorner\llcorner_{4,3,1})$$

Interpretative action

$$(\ulcorner\llcorner_{1,4}) \quad\quad (\llcorner\llcorner_{4,3,1})$$
$$(\llcorner\!\!\llcorner_{1,3}) \gg \curlyvee \succ (\urcorner\llcorner_{3,4}) \times (\llcorner\urcorner_{4,3}) \gg \curlyvee \succ (\urcorner\llcorner_{3,1})$$
$$(\llcorner\llcorner_{1,3,4}) \quad\quad (\llcorner\ulcorner_{4,1})$$

$$(\llcorner\llcorner_{1,3,4}) \quad\quad (\llcorner\ulcorner_{4,1})$$
$$(\llcorner\!\!\llcorner_{1,3}) \gg \curlyvee \succ (\urcorner\llcorner_{3,4}) \times (\llcorner\urcorner_{4,3}) \gg \curlyvee \succ (\urcorner\llcorner_{3,1})$$
$$(\ulcorner\llcorner_{1,4}) \quad\quad (\llcorner\llcorner_{4,3,1})$$

$$(\lrcorner\lrcorner_{1,3})\quad\quad(\lrcorner\ \ulcorner_{4,1})$$
$$(\lrcorner\lrcorner_{1,3,4}) \gg \curlyvee \succ (\urcorner\lrcorner_{3,4}) \times (\lrcorner\urcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\lrcorner_{4,3,1})$$
$$(\ulcorner\lrcorner_{1,4})\quad\quad(\urcorner\ \llcorner_{3,1})$$

$$(\ulcorner\lrcorner_{1,4})\quad\quad(\urcorner\ \llcorner_{3,1})$$
$$(\lrcorner\lrcorner_{1,3,4}) \gg \curlyvee \succ (\urcorner\lrcorner_{3,4}) \times (\lrcorner\urcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\lrcorner_{4,3,1})$$
$$(\lrcorner\lrcorner_{1,3})\quad\quad(\lrcorner\ \ulcorner_{4,1})$$

$$(\lrcorner\lrcorner_{1,3})\quad\quad(\lrcorner\lrcorner_{4,3,1})$$
$$(\ulcorner\lrcorner_{1,4}) \gg \curlyvee \succ (\urcorner\lrcorner_{3,4}) \times (\lrcorner\urcorner_{4,3}) \curlyvee \succ (\lrcorner\ \ulcorner_{4,1})$$
$$(\lrcorner\lrcorner_{1,3,4})\quad\quad(\urcorner\ \llcorner_{3,1})$$

$$(\lrcorner\lrcorner_{1,3,4})\quad\quad(\urcorner\ \llcorner_{3,1})$$
$$(\ulcorner\lrcorner_{1,4}) \gg \curlyvee \succ (\urcorner\lrcorner_{3,4}) \times (\lrcorner\urcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{4,1})$$
$$(\lrcorner\lrcorner_{1,3})\quad\quad(\lrcorner\lrcorner_{4,3,1})$$

2. Pre-semiotic dual system

$(\urcorner\lrcorner_{3,4}\ \ulcorner\lrcorner_{1,4}\lrcorner\lrcorner_{1,3,4}\ \llcorner\ulcorner_{1,2}) \times (\ulcorner\ \llcorner_{2,1}\lrcorner\lrcorner_{4,3,1}\lrcorner\ \ulcorner_{1,4}\lrcorner\urcorner_{4,3})$

Qualitative action

$$(\urcorner\lrcorner_{3,4})\quad\quad(\lrcorner\ \ulcorner_{4,1})$$
$$(\lrcorner\lrcorner_{1,3,4}) \gg \curlyvee \succ (\llcorner\ulcorner_{1,2}) \times (\ulcorner\ \llcorner_{2,1}) \gg \curlyvee \succ (\lrcorner\lrcorner_{4,3,1})$$
$$(\ulcorner\lrcorner_{1,4})\quad\quad(\lrcorner\urcorner_{4,3})$$

$$(\ulcorner\lrcorner_{1,4})\quad\quad(\lrcorner\urcorner_{4,3})$$
$$(\lrcorner\lrcorner_{1,3,4}) \gg \curlyvee \succ (\llcorner\ulcorner_{1,2}) \times (\ulcorner\ \llcorner_{2,1}) \gg \curlyvee \succ (\lrcorner\lrcorner_{4,3,1})$$
$$(\urcorner\lrcorner_{3,4})\quad\quad(\lrcorner\ \ulcorner_{4,1})$$

$$(\urcorner\lrcorner_{3,4})\quad\quad(\lrcorner\lrcorner_{4,3,1})$$
$$(\ulcorner\lrcorner_{1,4}) \gg \curlyvee \succ (\llcorner\ulcorner_{1,2}) \times (\ulcorner\ \llcorner_{2,1}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{4,1})$$
$$(\lrcorner\lrcorner_{1,3,4})\quad\quad(\lrcorner\urcorner_{4,3})$$

$$(\lrcorner\lrcorner_{1,3,4})\quad\quad(\lrcorner\urcorner_{4,3})$$
$$(\ulcorner\lrcorner_{1,4}) \gg \curlyvee \succ (\llcorner\ulcorner_{1,2}) \times (\ulcorner\ \llcorner_{2,1}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{4,1})$$
$$(\urcorner\lrcorner_{3,4})\quad\quad(\lrcorner\lrcorner_{4,3,1})$$

$$\begin{array}{l} (\lrcorner\ \lrcorner_{1,3,4}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\llcorner\ \ulcorner_{1,2}) \\ (\ulcorner\lrcorner_{1,4}) \end{array} \times \begin{array}{l} (\lrcorner\ \ulcorner_{4,1}) \\ (\ulcorner\llcorner_{2,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \lrcorner_{4,3,1}) \end{array}$$

$$\begin{array}{l} (\ulcorner\lrcorner_{1,4}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\llcorner\ \ulcorner_{1,2}) \\ (\lrcorner\ \lrcorner_{1,3,4}) \end{array} \times \begin{array}{l} (\lrcorner\ \lrcorner_{4,3,1}) \\ (\ulcorner\llcorner_{2,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

Medial action

$$\begin{array}{l} (\urcorner\ \lrcorner_{3,4}) \\ (\llcorner\ \ulcorner_{1,2}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{1,3,4}) \\ (\ulcorner\lrcorner_{1,4}) \end{array} \times \begin{array}{l} (\lrcorner\ \ulcorner_{4,1}) \\ (\lrcorner\ \lrcorner_{4,3,1}) \gg \curlyvee \succ (\ulcorner\llcorner_{2,1}) \\ (\lrcorner\ \urcorner_{4,3}) \end{array}$$

$$\begin{array}{l} (\ulcorner\lrcorner_{1,4}) \\ (\llcorner\ \ulcorner_{1,2}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{1,3,4}) \\ (\urcorner\ \lrcorner_{3,4}) \end{array} \times \begin{array}{l} (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \lrcorner_{4,3,1}) \gg \curlyvee \succ (\ulcorner\llcorner_{2,1}) \\ (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

$$\begin{array}{l} (\llcorner\ \ulcorner_{1,2}) \\ (\ulcorner\lrcorner_{1,4}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{1,3,4}) \\ (\urcorner\ \lrcorner_{3,4}) \end{array} \times \begin{array}{l} (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \lrcorner_{4,3,1}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{4,1}) \\ (\ulcorner\llcorner_{2,1}) \end{array}$$

$$\begin{array}{l} (\urcorner\ \lrcorner_{3,4}) \\ (\ulcorner\lrcorner_{1,4}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{1,3,4}) \\ (\llcorner\ \ulcorner_{1,2}) \end{array} \times \begin{array}{l} (\ulcorner\llcorner_{2,1}) \\ (\lrcorner\ \lrcorner_{4,3,1}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\lrcorner\ \urcorner_{4,3}) \end{array}$$

$$\begin{array}{l} (\llcorner\ \ulcorner_{1,2}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{1,3,4}) \\ (\ulcorner\lrcorner_{1,4}) \end{array} \times \begin{array}{l} (\lrcorner\ \ulcorner_{4,1}) \\ (\lrcorner\ \lrcorner_{4,3,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\llcorner_{2,1}) \end{array}$$

$$\begin{array}{l} (\ulcorner\lrcorner_{1,4}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{1,3,4}) \\ (\llcorner\ \ulcorner_{1,2}) \end{array} \times \begin{array}{l} (\ulcorner\llcorner_{2,1}) \\ (\lrcorner\ \lrcorner_{4,3,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

Objectal action

$$\begin{matrix}(\urcorner\llcorner_{3,4})\\(\llcorner\urcorner_{1,2})\ \gg\ \curlyvee\ \succ(\ulcorner\llcorner_{1,4})\\(\llcorner\llcorner_{1,3,4})\end{matrix}\times\begin{matrix}(\llcorner\llcorner_{4,3,1})\\(\llcorner\ulcorner_{4,1})\ \gg\ \curlyvee\ \succ(\ulcorner\llcorner_{2,1})\\(\llcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\llcorner\llcorner_{1,3,4})\\(\llcorner\urcorner_{1,2})\ \gg\ \curlyvee\ \succ(\ulcorner\llcorner_{1,4})\\(\urcorner\llcorner_{3,4})\end{matrix}\times\begin{matrix}(\llcorner\urcorner_{4,3})\\(\llcorner\ulcorner_{4,1})\ \gg\ \curlyvee\ \succ(\ulcorner\llcorner_{2,1})\\(\llcorner\llcorner_{4,3,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2})\\(\llcorner\llcorner_{1,3,4})\ \gg\ \curlyvee\ \succ(\ulcorner\llcorner_{1,4})\\(\urcorner\llcorner_{3,4})\end{matrix}\times\begin{matrix}(\llcorner\urcorner_{4,3})\\(\llcorner\ulcorner_{4,1})\ \gg\ \curlyvee\ \succ(\llcorner\llcorner_{4,3,1})\\(\ulcorner\llcorner_{2,1})\end{matrix}$$

$$\begin{matrix}(\urcorner\llcorner_{3,4})\\(\llcorner\llcorner_{1,3,4})\ \gg\ \curlyvee\ \succ(\ulcorner\llcorner_{1,4})\\(\llcorner\ulcorner_{1,2})\end{matrix}\times\begin{matrix}(\ulcorner\llcorner_{2,1})\\(\llcorner\ulcorner_{4,1})\ \gg\ \curlyvee\ \succ(\llcorner\llcorner_{4,3,1})\\(\llcorner\urcorner_{4,3})\end{matrix}$$

$$\begin{matrix}(\llcorner\ulcorner_{1,2})\\(\urcorner\llcorner_{3,4})\ \gg\ \curlyvee\ \succ(\ulcorner\llcorner_{1,4})\\(\llcorner\llcorner_{1,3,4})\end{matrix}\times\begin{matrix}(\llcorner\llcorner_{4,3,1})\\(\llcorner\ulcorner_{4,1})\ \gg\ \curlyvee\ \succ(\llcorner\urcorner_{4,3})\\(\ulcorner\llcorner_{2,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\llcorner_{1,3,4})\\(\urcorner\llcorner_{3,4})\ \gg\ \curlyvee\ \succ(\ulcorner\llcorner_{1,4})\\(\llcorner\ulcorner_{1,2})\end{matrix}\times\begin{matrix}(\ulcorner\llcorner_{2,1})\\(\llcorner\ulcorner_{4,1})\ \gg\ \curlyvee\ \succ(\llcorner\urcorner_{4,3})\\(\llcorner\llcorner_{4,3,1})\end{matrix}$$

Interpretative action

$$\begin{matrix}(\ulcorner\llcorner_{1,4})\\(\llcorner\urcorner_{1,2})\ \gg\ \curlyvee\ \succ(\urcorner\llcorner_{3,4})\\(\llcorner\llcorner_{1,3,4})\end{matrix}\times\begin{matrix}(\llcorner\llcorner_{4,3,1})\\(\llcorner\urcorner_{4,3})\ \gg\ \curlyvee\ \succ(\ulcorner\llcorner_{2,1})\\(\llcorner\ulcorner_{4,1})\end{matrix}$$

$$\begin{matrix}(\llcorner\llcorner_{1,3,4})\\(\llcorner\urcorner_{1,2})\ \gg\ \curlyvee\ \succ(\urcorner\llcorner_{3,4})\\(\ulcorner\llcorner_{1,4})\end{matrix}\times\begin{matrix}(\llcorner\ulcorner_{4,1})\\(\llcorner\urcorner_{4,3})\ \gg\ \curlyvee\ \succ(\ulcorner\llcorner_{2,1})\\(\llcorner\llcorner_{4,3,1})\end{matrix}$$

$$\begin{matrix} & (\lfloor\ulcorner_{1,2}) & & & (\lrcorner\ \ulcorner_{4,1}) & \\ (\lrcorner\ \lrcorner_{1,3,4}) & \gg\ \curlyvee & \succ (\urcorner\ \lrcorner_{3,4}) & \times & (\lrcorner\ \urcorner_{4,3}) & \gg\ \curlyvee\ \succ (\lrcorner\ \lrcorner_{4,3,1}) \\ & (\ulcorner\lrcorner_{1,4}) & & & (\ulcorner\ \llcorner_{2,1}) & \end{matrix}$$

$$\begin{matrix} & (\ulcorner\lrcorner_{1,4}) & & & (\ulcorner\ \llcorner_{2,1}) & \\ (\lrcorner\ \lrcorner_{1,3,4}) & \gg\ \curlyvee & \succ (\urcorner\ \lrcorner_{3,4}) & \times & (\lrcorner\ \urcorner_{4,3}) & \gg\ \curlyvee\ \succ (\lrcorner\ \lrcorner_{4,3,1}) \\ & (\lfloor\ulcorner_{1,2}) & & & (\lrcorner\ \ulcorner_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\lfloor\ulcorner_{1,2}) & & & (\lrcorner\ \lrcorner_{4,3,1}) & \\ (\ulcorner\lrcorner_{1,4}) & \gg\ \curlyvee & \succ (\urcorner\ \lrcorner_{3,4}) & \times & (\lrcorner\ \urcorner_{4,3}) & \gg\ \curlyvee\ \succ (\lrcorner\ \ulcorner_{4,1}) \\ & (\lrcorner\ \lrcorner_{1,3,4}) & & & (\ulcorner\ \llcorner_{2,1}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\ \lrcorner_{1,3,4}) & & & (\ulcorner\ \llcorner_{2,1}) & \\ (\ulcorner\lrcorner_{1,4}) & \gg\ \curlyvee & \succ (\urcorner\ \lrcorner_{3,4}) & \times & (\lrcorner\ \urcorner_{4,3}) & \gg\ \curlyvee\ \succ (\lrcorner\ \ulcorner_{4,1}) \\ & (\lfloor\ulcorner_{1,2}) & & & (\lrcorner\ \lrcorner_{4,3,1}) & \end{matrix}$$

3. Pre-semiotic dual system

$(\urcorner\ \lrcorner_{3,4}\ \ulcorner\lrcorner_{1,4}\ \lrcorner\ \lrcorner_{1,3,4}\ \lfloor\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\ \lrcorner\ \lrcorner_{4,3,1}\ \lrcorner\ \ulcorner_{4,1}\ \lrcorner\ \urcorner_{4,3})$

Qualitative action

$$\begin{matrix} & (\urcorner\ \lrcorner_{3,4}) & & & (\lrcorner\ \ulcorner_{4,1}) & \\ (\lrcorner\ \lrcorner_{1,3,4}) & \gg\ \curlyvee & \succ (\lfloor\urcorner_{2,3}) & \times & (\urcorner\ \llcorner_{3,2}) & \gg\ \curlyvee\ \succ (\lrcorner\ \lrcorner_{4,3,1}) \\ & (\ulcorner\lrcorner_{1,4}) & & & (\lrcorner\ \urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\ulcorner\lrcorner_{1,4}) & & & (\lrcorner\ \urcorner_{4,3}) & \\ (\lrcorner\ \lrcorner_{1,3,4}) & \gg\ \curlyvee & \succ (\lfloor\urcorner_{2,3}) & \times & (\urcorner\ \llcorner_{3,2}) & \curlyvee\ \succ (\lrcorner\ \lrcorner_{4,3,1}) \\ & (\urcorner\ \lrcorner_{3,4}) & & & (\lrcorner\ \ulcorner_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\urcorner\ \lrcorner_{3,4}) & & & (\lrcorner\ \lrcorner_{4,3,1}) & \\ (\ulcorner\lrcorner_{1,4}) & \gg\ \curlyvee & \succ (\lfloor\urcorner_{2,3}) & \times & (\urcorner\ \llcorner_{3,2}) & \gg\ \curlyvee\ \succ (\lrcorner\ \ulcorner_{4,1}) \\ & (\lrcorner\ \lrcorner_{1,3,4}) & & & (\lrcorner\ \urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\ \lrcorner_{1,3,4}) & & & (\lrcorner\ \urcorner_{4,3}) & \\ (\ulcorner\lrcorner_{1,4}) & \gg\ \curlyvee & \succ (\lfloor\urcorner_{2,3}) & \times & (\urcorner\ \llcorner_{3,2}) & \gg\ \curlyvee\ \succ (\lrcorner\ \ulcorner_{4,1}) \\ & (\urcorner\ \lrcorner_{3,4}) & & & (\lrcorner\ \lrcorner_{4,3,1}) & \end{matrix}$$

$$\begin{array}{l} (\lrcorner\ \lrcorner_{1,3,4}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3}) \\ (\ulcorner\lrcorner_{1,4}) \end{array} \times \begin{array}{l} (\lrcorner\ \ulcorner_{4,1}) \\ (\urcorner\ \llcorner_{3,2}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \lrcorner_{4,3,1}) \end{array}$$

$$\begin{array}{l} (\ulcorner\lrcorner_{1,4}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3}) \\ (\lrcorner\ \lrcorner_{1,3,4}) \end{array} \times \begin{array}{l} (\lrcorner\ \lrcorner_{4,3,1}) \\ (\urcorner\ \llcorner_{3,2}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

Medial action

$$\begin{array}{l} (\urcorner\ \lrcorner_{3,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{1,3,4}) \\ (\ulcorner\lrcorner_{1,4}) \end{array} \times \begin{array}{l} (\lrcorner\ \ulcorner_{4,1}) \\ (\lrcorner\ \lrcorner_{4,3,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \urcorner_{4,3}) \end{array}$$

$$\begin{array}{l} (\ulcorner\lrcorner_{1,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{1,3,4}) \\ (\urcorner\ \lrcorner_{3,4}) \end{array} \times \begin{array}{l} (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \lrcorner_{4,3,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

$$\begin{array}{l} (\llcorner\urcorner_{2,3}) \\ (\ulcorner\lrcorner_{1,4}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{1,3,4}) \\ (\urcorner\ \lrcorner_{3,4}) \end{array} \times \begin{array}{l} (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \lrcorner_{4,3,1}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{4,1}) \\ (\urcorner\ \llcorner_{3,2}) \end{array}$$

$$\begin{array}{l} (\urcorner\ \lrcorner_{3,4}) \\ (\ulcorner\lrcorner_{1,4}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{1,3,4}) \\ (\llcorner\urcorner_{2,3}) \end{array} \times \begin{array}{l} (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \lrcorner_{4,3,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

$$\begin{array}{l} (\llcorner\urcorner_{2,3}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{1,3,4}) \\ (\ulcorner\lrcorner_{1,4}) \end{array} \times \begin{array}{l} (\lrcorner\ \ulcorner_{4,1}) \\ (\lrcorner\ \lrcorner_{4,3,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\urcorner\ \llcorner_{3,2}) \end{array}$$

$$\begin{array}{l} (\ulcorner\lrcorner_{1,4}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\lrcorner\ \lrcorner_{1,3,4}) \\ (\llcorner\urcorner_{2,3}) \end{array} \times \begin{array}{l} (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \lrcorner_{4,3,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

Objectal action

$$(\urcorner\llcorner_{3,4}) \quad\quad (\llcorner\llcorner_{4,3,1})$$
$$(\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\ulcorner\llcorner_{1,4}) \times (\llcorner\ulcorner_{4,1}) \gg \curlyvee \succ (\urcorner\llcorner_{3,2})$$
$$(\llcorner\llcorner_{1,3,4}) \quad\quad (\llcorner\urcorner_{4,3})$$

$$(\llcorner\llcorner_{1,3,4}) \quad\quad (\llcorner\urcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\ulcorner\llcorner_{1,4}) \times (\llcorner\ulcorner_{4,1}) \gg \curlyvee \succ (\urcorner\llcorner_{3,2})$$
$$(\urcorner\llcorner_{3,4}) \quad\quad (\llcorner\llcorner_{4,3,1})$$

$$(\llcorner\urcorner_{2,3}) \quad\quad (\llcorner\urcorner_{4,3})$$
$$(\llcorner\llcorner_{1,3,4}) \gg \curlyvee \succ (\ulcorner\llcorner_{1,4}) \times (\llcorner\ulcorner_{4,1}) \gg \curlyvee \succ (\llcorner\llcorner_{4,3,1})$$
$$(\urcorner\llcorner_{3,4}) \quad\quad (\urcorner\llcorner_{3,2})$$

$$(\urcorner\llcorner_{3,4}) \quad\quad (\urcorner\llcorner_{3,2})$$
$$(\llcorner\llcorner_{1,3,4}) \gg \curlyvee \succ (\ulcorner\llcorner_{1,4}) \times (\llcorner\ulcorner_{4,1}) \gg \curlyvee \succ (\llcorner\llcorner_{4,3,1})$$
$$(\llcorner\urcorner_{2,3}) \quad\quad (\llcorner\urcorner_{4,3})$$

$$(\llcorner\urcorner_{2,3}) \quad\quad (\llcorner\llcorner_{4,3,1})$$
$$(\urcorner\llcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\llcorner_{1,4}) \times (\llcorner\ulcorner_{4,1}) \gg \curlyvee \succ (\llcorner\urcorner_{4,3})$$
$$(\llcorner\llcorner_{1,3,4}) \quad\quad (\urcorner\llcorner_{3,2})$$

$$(\llcorner\llcorner_{1,3,4}) \quad\quad (\urcorner\llcorner_{3,2})$$
$$(\urcorner\llcorner_{3,4}) \gg \curlyvee \succ (\ulcorner\llcorner_{1,4}) \times (\llcorner\ulcorner_{4,1}) \gg \curlyvee \succ (\llcorner\urcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \quad\quad (\llcorner\llcorner_{4,3,1})$$

Interpretative action

$$(\ulcorner\llcorner_{1,4}) \quad\quad (\llcorner\llcorner_{4,3,1})$$
$$(\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\urcorner\llcorner_{3,4}) \times (\llcorner\urcorner_{4,3}) \gg \curlyvee \succ (\urcorner\llcorner_{3,2})$$
$$(\llcorner\llcorner_{1,3,4}) \quad\quad (\llcorner\ulcorner_{4,1})$$

$$(\llcorner\llcorner_{1,3,4}) \quad\quad (\llcorner\ulcorner_{4,1})$$
$$(\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\urcorner\llcorner_{3,4}) \times (\llcorner\urcorner_{4,3}) \gg \curlyvee \succ (\urcorner\llcorner_{3,2})$$
$$(\ulcorner\llcorner_{1,4}) \quad\quad (\llcorner\llcorner_{4,3,1})$$

$$(\lrcorner\ \lrcorner_{1,3,4}) \gg \begin{matrix}(\ \llcorner\urcorner_{2,3}) \\ (\ \ulcorner\lrcorner_{1,4})\end{matrix} \succ (\urcorner\ \lrcorner_{3,4}) \times (\lrcorner\ \urcorner_{4,3}) \gg \begin{matrix}(\lrcorner\ \ulcorner_{4,1}) \\ (\urcorner\ \llcorner_{3,2})\end{matrix} \succ (\lrcorner\ \lrcorner_{4,3,1})$$

$$(\lrcorner\ \lrcorner_{1,3,4}) \gg \begin{matrix}(\ \ulcorner\lrcorner_{1,4}) \\ (\ \llcorner\urcorner_{2,3})\end{matrix} \succ (\urcorner\ \lrcorner_{3,4}) \times (\lrcorner\ \urcorner_{4,3}) \gg \begin{matrix}(\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \ulcorner_{4,1})\end{matrix} \succ (\lrcorner\ \lrcorner_{4,3,1})$$

$$(\ulcorner\lrcorner_{1,4}) \gg \begin{matrix}(\ \llcorner\urcorner_{2,3}) \\ (\lrcorner\ \lrcorner_{1,3,4})\end{matrix} \succ (\urcorner\ \lrcorner_{3,4}) \times (\lrcorner\ \urcorner_{4,3}) \gg \begin{matrix}(\lrcorner\ \lrcorner_{4,3,1}) \\ (\urcorner\ \llcorner_{3,2})\end{matrix} \succ (\lrcorner\ \ulcorner_{4,1})$$

$$(\ulcorner\lrcorner_{1,4}) \gg \begin{matrix}(\lrcorner\ \lrcorner_{1,3,4}) \\ (\ \llcorner\urcorner_{2,3})\end{matrix} \succ (\urcorner\ \lrcorner_{3,4}) \times (\lrcorner\ \urcorner_{4,3}) \gg \begin{matrix}(\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \lrcorner_{4,3,1})\end{matrix} \succ (\lrcorner\ \ulcorner_{4,1})$$

4. Pre-semiotic system

$(\urcorner\ \lrcorner_{3,4}\ \ulcorner\lrcorner_{1,4}\ \lrcorner\ \ulcorner_{1,4}\ \llcorner\ulcorner_{1,2}) \times (\ulcorner\ \llcorner_{2,1}\ \ulcorner\lrcorner_{4,1}\ \lrcorner\ \ulcorner_{4,1}\ \lrcorner\ \urcorner_{4,3})$

Qualitative action

$$(\lrcorner\ \ulcorner_{1,4}) \gg \begin{matrix}(\urcorner\ \lrcorner_{3,4}) \\ (\ulcorner\lrcorner_{1,4})\end{matrix} \succ (\llcorner\ulcorner_{1,2}) \times (\ulcorner\ \llcorner_{2,1}) \gg \begin{matrix}(\lrcorner\ \ulcorner_{4,1}) \\ (\lrcorner\ \urcorner_{4,3})\end{matrix} \succ (\ulcorner\lrcorner_{4,1})$$

$$(\lrcorner\ \ulcorner_{1,4}) \gg \begin{matrix}(\ulcorner\lrcorner_{1,4}) \\ (\urcorner\ \lrcorner_{3,4})\end{matrix} \succ (\llcorner\ulcorner_{1,2}) \times (\ulcorner\ \llcorner_{2,1}) \gg \begin{matrix}(\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \ulcorner_{4,1})\end{matrix} \succ (\ulcorner\lrcorner_{4,1})$$

$$(\ulcorner\lrcorner_{1,4}) \gg \begin{matrix}(\urcorner\ \lrcorner_{3,4}) \\ (\lrcorner\ \ulcorner_{1,4})\end{matrix} \succ (\llcorner\ulcorner_{1,2}) \times (\ulcorner\ \llcorner_{2,1}) \gg \begin{matrix}(\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \ulcorner_{4,1})\end{matrix} \succ (\lrcorner\ \ulcorner_{4,1})$$

$$(\ulcorner\lrcorner_{1,4}) \gg \begin{matrix}(\lrcorner\ \ulcorner_{1,4}) \\ (\urcorner\ \lrcorner_{3,4})\end{matrix} \succ (\llcorner\ulcorner_{1,2}) \times (\ulcorner\ \llcorner_{2,1}) \gg \begin{matrix}(\lrcorner\ \urcorner_{3,4}) \\ (\ulcorner\lrcorner_{4,1})\end{matrix} \succ (\lrcorner\ \ulcorner_{4,1})$$

$$\begin{array}{lllll} & (\lrcorner\ \ulcorner_{1,4}) & & (\lrcorner\ \ulcorner_{4,1}) & \\ (\urcorner\ \lrcorner_{3,4}) & \gg\ \curlyvee & \succ (\llcorner\ \ulcorner_{1,2}) \times & (\ulcorner\ \llcorner_{2,1}) & \gg\ \curlyvee\ \succ (\lrcorner\ \urcorner_{4,3}) \\ & (\ulcorner\lrcorner_{1,4}) & & (\ulcorner\lrcorner_{4,1}) & \end{array}$$

$$\begin{array}{lllll} & (\ulcorner\lrcorner_{1,4}) & & (\ulcorner\lrcorner_{4,1}) & \\ (\urcorner\ \lrcorner_{3,4}) & \gg\ \curlyvee & \succ (\llcorner\ \ulcorner_{1,2}) \times & (\ulcorner\ \llcorner_{2,1}) & \gg\ \curlyvee\ \succ (\lrcorner\ \urcorner_{4,3}) \\ & (\lrcorner\ \ulcorner_{1,4}) & & (\lrcorner\ \ulcorner_{4,1}) & \end{array}$$

Medial action

$$\begin{array}{lllll} & (\urcorner\ \lrcorner_{3,4}) & & (\lrcorner\ \ulcorner_{4,1}) & \\ (\llcorner\ \ulcorner_{1,2}) & \gg\ \curlyvee & \succ (\lrcorner\ \ulcorner_{1,4}) \times & (\ulcorner\lrcorner_{4,1}) & \gg\ \curlyvee\ \succ (\ulcorner\ \llcorner_{2,1}) \\ & (\ulcorner\lrcorner_{1,4}) & & (\lrcorner\ \urcorner_{4,3}) & \end{array}$$

$$\begin{array}{lllll} & (\ulcorner\lrcorner_{1,4}) & & (\lrcorner\ \urcorner_{4,3}) & \\ (\llcorner\ \ulcorner_{1,2}) & \gg\ \curlyvee & \succ (\lrcorner\ \ulcorner_{1,4}) \times & (\ulcorner\lrcorner_{4,1}) & \gg\ \curlyvee\ \succ (\ulcorner\ \llcorner_{2,1}) \\ & (\urcorner\ \lrcorner_{3,4}) & & (\lrcorner\ \ulcorner_{4,1}) & \end{array}$$

$$\begin{array}{lllll} & (\llcorner\ \ulcorner_{1,2}) & & (\lrcorner\ \urcorner_{4,3}) & \\ (\ulcorner\lrcorner_{1,4}) & \gg\ \curlyvee & \succ (\lrcorner\ \ulcorner_{1,4}) \times & (\ulcorner\lrcorner_{4,1}) & \gg\ \curlyvee\ \succ (\lrcorner\ \ulcorner_{4,1}) \\ & (\urcorner\ \lrcorner_{3,4}) & & (\ulcorner\ \llcorner_{2,1}) & \end{array}$$

$$\begin{array}{lllll} & (\urcorner\ \lrcorner_{3,4}) & & (\ulcorner\ \llcorner_{2,1}) & \\ (\ulcorner\lrcorner_{1,4}) & \gg\ \curlyvee & \succ (\lrcorner\ \ulcorner_{1,4}) \times & (\ulcorner\lrcorner_{4,1}) & \gg\ \curlyvee\ \succ (\lrcorner\ \ulcorner_{4,1}) \\ & (\llcorner\ \ulcorner_{1,2}) & & (\lrcorner\ \urcorner_{4,3}) & \end{array}$$

$$\begin{array}{lllll} & (\ulcorner\lrcorner_{1,4}) & & (\ulcorner\ \llcorner_{2,1}) & \\ (\urcorner\ \lrcorner_{3,4}) & \gg\ \curlyvee & \succ (\lrcorner\ \ulcorner_{1,4}) \times & (\ulcorner\lrcorner_{4,1}) & \gg\ \curlyvee\ \succ (\lrcorner\ \urcorner_{4,3}) \\ & (\llcorner\ \ulcorner_{1,2}) & & (\lrcorner\ \ulcorner_{4,1}) & \end{array}$$

Objectal action

$$\begin{matrix} & (\urcorner\llcorner_{3,4}) & & & (\ulcorner\llcorner_{4,1}) & \\ (\llcorner\ulcorner_{1,2}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{1,4}) & \times \quad (\llcorner\ulcorner_{4,1}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{2,1}) \\ & (\llcorner\ulcorner_{1,4}) & & & (\llcorner\urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ulcorner_{1,4}) & & & (\llcorner\urcorner_{4,3}) & \\ (\llcorner\ulcorner_{1,2}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{1,4}) & \times \quad (\llcorner\ulcorner_{4,1}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{2,1}) \\ & (\urcorner\llcorner_{3,4}) & & & (\ulcorner\llcorner_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ulcorner_{1,2}) & & & (\llcorner\urcorner_{4,3}) & \\ (\llcorner\ulcorner_{1,4}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{1,4}) & \times \quad (\llcorner\ulcorner_{4,1}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{4,1}) \\ & (\urcorner\llcorner_{3,4}) & & & (\ulcorner\llcorner_{2,1}) & \end{matrix}$$

$$\begin{matrix} & (\urcorner\llcorner_{3,4}) & & & (\ulcorner\llcorner_{2,1}) & \\ (\llcorner\ulcorner_{1,4}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{1,4}) & \times \quad (\llcorner\ulcorner_{4,1}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{4,1}) \\ & (\llcorner\ulcorner_{1,2}) & & & (\llcorner\urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ulcorner_{1,2}) & & & (\ulcorner\llcorner_{4,1}) & \\ (\urcorner\llcorner_{3,4}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{1,4}) & \times \quad (\llcorner\ulcorner_{4,1}) & \gg \curlyvee & \succ (\llcorner\urcorner_{4,3}) \\ & (\llcorner\ulcorner_{1,4}) & & & (\ulcorner\llcorner_{2,1}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ulcorner_{1,4}) & & & (\ulcorner\llcorner_{2,1}) & \\ (\urcorner\llcorner_{3,4}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{1,4}) & \times \quad (\llcorner\ulcorner_{4,1}) & \gg \curlyvee & \succ (\llcorner\urcorner_{4,3}) \\ & (\llcorner\ulcorner_{1,2}) & & & (\ulcorner\llcorner_{4,1}) & \end{matrix}$$

Interpretative action

$$\begin{matrix} & (\ulcorner\llcorner_{1,4}) & & & (\ulcorner\llcorner_{4,1}) & \\ (\llcorner\ulcorner_{1,2}) & \gg \curlyvee & \succ (\urcorner\llcorner_{3,4}) & \times \quad (\llcorner\urcorner_{4,3}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{2,1}) \\ & (\llcorner\ulcorner_{1,4}) & & & (\llcorner\ulcorner_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ulcorner_{1,4}) & & & (\llcorner\ulcorner_{4,1}) & \\ (\llcorner\ulcorner_{1,2}) & \gg \curlyvee & \succ (\urcorner\llcorner_{3,4}) & \times \quad (\llcorner\urcorner_{4,3}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{2,1}) \\ & (\ulcorner\llcorner_{1,4}) & & & (\ulcorner\llcorner_{4,1}) & \end{matrix}$$

$$(\lfloor \lceil_{1,2}) \qquad\qquad (\lrcorner \lceil_{4,1})$$
$$(\lrcorner \lceil_{1,4}) \gg \curlyvee \succ (\urcorner \lrcorner_{3,4}) \times (\lrcorner \urcorner_{4,3}) \gg \curlyvee \succ (\lceil \lrcorner_{4,1})$$
$$(\lceil \lrcorner_{1,4}) \qquad\qquad (\lceil \lfloor_{2,1})$$

$$(\lceil \lrcorner_{1,4}) \qquad\qquad (\lceil \lfloor_{2,1})$$
$$(\lrcorner \lceil_{1,4}) \gg \curlyvee \succ (\urcorner \lrcorner_{3,4}) \times (\lrcorner \urcorner_{4,3}) \gg \curlyvee \succ (\lceil \lrcorner_{4,1})$$
$$(\lfloor \lceil_{1,2}) \qquad\qquad (\lrcorner \lceil_{4,1})$$

$$(\lfloor \lceil_{1,2}) \qquad\qquad (\lceil \lrcorner_{4,1})$$
$$(\lceil \lrcorner_{1,4}) \gg \curlyvee \succ (\urcorner \lrcorner_{3,4}) \times (\lrcorner \urcorner_{4,3}) \gg \curlyvee \succ (\lrcorner \lceil_{4,1})$$
$$(\lrcorner \lceil_{1,4}) \qquad\qquad (\lceil \lfloor_{2,1})$$

$$(\lrcorner \lceil_{1,4}) \qquad\qquad (\lceil \lfloor_{2,1})$$
$$(\lceil \lrcorner_{1,4}) \gg \curlyvee \succ (\urcorner \lrcorner_{3,4}) \times (\lrcorner \urcorner_{4,3}) \gg \curlyvee \succ (\lrcorner \lceil_{4,1})$$
$$(\lfloor \lceil_{1,2}) \qquad\qquad (\lceil \lrcorner_{4,1})$$

5. Pre-semiotic dual system

$(\urcorner \lrcorner_{3,4} \lceil \lrcorner_{1,4} \lrcorner \lceil_{1,4} \lfloor \urcorner_{2,3}) \times (\urcorner \lfloor_{3,2} \lceil \lrcorner_{4,1} \lrcorner \lceil_{4,1} \lrcorner \urcorner_{3,4})$

Qualitative action

$$(\urcorner \lrcorner_{3,4}) \qquad\qquad (\lrcorner \lceil_{4,1})$$
$$(\lrcorner \lceil_{1,4}) \gg \curlyvee \succ (\lfloor \urcorner_{2,3}) \times (\urcorner \lfloor_{3,2}) \gg \curlyvee \succ (\lceil \lrcorner_{4,1})$$
$$(\lceil \lrcorner_{1,4}) \qquad\qquad (\lrcorner \urcorner_{4,3})$$

$$(\lceil \lrcorner_{1,4}) \qquad\qquad (\lrcorner \urcorner_{4,3})$$
$$(\lrcorner \lceil_{1,4}) \gg \curlyvee \succ (\lfloor \urcorner_{2,3}) \times (\urcorner \lfloor_{3,2}) \gg \curlyvee \succ (\lceil \lrcorner_{4,1})$$
$$(\urcorner \lrcorner_{3,4}) \qquad\qquad (\lrcorner \lceil_{4,1})$$

$$(\urcorner \lrcorner_{3,4}) \qquad\qquad (\lceil \lrcorner_{4,1})$$
$$(\lceil \lrcorner_{1,4}) \gg \curlyvee \succ (\lfloor \urcorner_{2,3}) \times (\urcorner \lfloor_{3,2}) \gg \curlyvee \succ (\lrcorner \lceil_{4,1})$$
$$(\lrcorner \lceil_{1,4}) \qquad\qquad (\lrcorner \urcorner_{3,4})$$

$$(\lrcorner \lceil_{1,4}) \qquad\qquad (\lrcorner \urcorner_{4,3})$$
$$(\lceil \lrcorner_{1,4}) \gg \curlyvee \succ (\lfloor \urcorner_{2,3}) \times (\urcorner \lfloor_{3,2}) \gg \curlyvee \succ (\lrcorner \lceil_{4,1})$$
$$(\urcorner \lrcorner_{3,4}) \qquad\qquad (\lceil \lrcorner_{4,1})$$

$$\begin{array}{c} (\lrcorner\ \ulcorner_{1,4}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3}) \\ (\ulcorner\lrcorner_{1,4}) \end{array} \times \begin{array}{c} (\lrcorner\ \ulcorner_{4,1}) \\ (\urcorner\ \llcorner_{3,2}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\lrcorner_{4,1}) \end{array}$$

$$\begin{array}{c} (\ulcorner\lrcorner_{1,4}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3}) \\ (\lrcorner\ \ulcorner_{1,4}) \end{array} \times \begin{array}{c} (\ulcorner\lrcorner_{4,1}) \\ (\urcorner\ \llcorner_{3,2}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

Medial action

$$\begin{array}{c} (\urcorner\ \lrcorner_{3,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\ulcorner\lrcorner_{1,4}) \end{array} \times \begin{array}{c} (\lrcorner\ \ulcorner_{4,1}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \urcorner_{4,3}) \end{array}$$

$$\begin{array}{c} (\ulcorner\lrcorner_{1,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\urcorner\ \lrcorner_{3,4}) \end{array} \times \begin{array}{c} (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

$$\begin{array}{c} (\llcorner\urcorner_{2,3}) \\ (\ulcorner\lrcorner_{1,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\urcorner\ \lrcorner_{3,4}) \end{array} \times \begin{array}{c} (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{4,1}) \\ (\urcorner\ \llcorner_{3,2}) \end{array}$$

$$\begin{array}{c} (\urcorner\ \lrcorner_{3,4}) \\ (\ulcorner\lrcorner_{1,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\llcorner\urcorner_{2,3}) \end{array} \times \begin{array}{c} (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{4,1}) \\ (\lrcorner\ \urcorner_{4}) \end{array}$$

$$\begin{array}{c} (\llcorner\urcorner_{2,3}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\ulcorner\lrcorner_{1,4}) \end{array} \times \begin{array}{c} (\lrcorner\ \ulcorner_{4,1}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\urcorner\ \llcorner_{3,2}) \end{array}$$

$$\begin{array}{c} (\ulcorner\lrcorner_{1,4}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\llcorner\urcorner_{2,3}) \end{array} \times \begin{array}{c} (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

Objectal action

$$\begin{matrix} & (\urcorner\llcorner_{3,4}) & & & (\ulcorner\llcorner_{4,1}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\ulcorner\llcorner_{1,4}) \times & (\llcorner\ulcorner_{4,1}) & \gg\ \curlyvee & \succ (\urcorner\ \llcorner_{3,2}) \\ & (\llcorner\ulcorner_{1,4}) & & & (\llcorner\urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ulcorner_{1,4}) & & & (\llcorner\urcorner_{4,3}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\ulcorner\llcorner_{1,4}) \times & (\llcorner\ulcorner_{4,1}) & \gg\ \curlyvee & \succ (\urcorner\ \llcorner_{3,2}) \\ & (\urcorner\llcorner_{3,4}) & & & (\ulcorner\llcorner_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\llcorner\urcorner_{4,3}) & \\ (\llcorner\ulcorner_{1,4}) & \gg\ \curlyvee & \succ (\ulcorner\llcorner_{1,4}) \times & (\llcorner\ulcorner_{4,1}) & \gg\ \curlyvee & \succ (\ulcorner\llcorner_{4,1}) \\ & (\urcorner\llcorner_{3,4}) & & & (\urcorner\ \llcorner_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\urcorner\llcorner_{3,4}) & & & (\urcorner\ \llcorner_{3,2}) & \\ (\llcorner\ulcorner_{1,4}) & \gg\ \curlyvee & \succ (\ulcorner\llcorner_{1,4}) \times & (\llcorner\ulcorner_{4,1}) & \gg\ \curlyvee & \succ (\ulcorner\llcorner_{4,1}) \\ & (\llcorner\urcorner_{2,3}) & & & (\llcorner\urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\ulcorner\llcorner_{4,1}) & \\ (\urcorner\llcorner_{3,4}) & \gg\ \curlyvee & \succ (\ulcorner\llcorner_{1,4}) \times & (\llcorner\ulcorner_{4,1}) & \gg\ \curlyvee & \succ (\llcorner\ulcorner_{4,1}) \\ & (\llcorner\ulcorner_{1,4}) & & & (\urcorner\ \llcorner_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ulcorner_{1,4}) & & & (\urcorner\ \llcorner_{3,2}) & \\ (\urcorner\llcorner_{3,4}) & \gg\ \curlyvee & \succ (\ulcorner\llcorner_{1,4}) \times & (\llcorner\ulcorner_{4,1}) & \gg\ \curlyvee & \succ (\llcorner\urcorner_{4,3}) \\ & (\llcorner\urcorner_{2,3}) & & & (\ulcorner\llcorner_{4,1}) & \end{matrix}$$

Interpretative action

$$\begin{matrix} & (\ulcorner\llcorner_{1,4}) & & & (\ulcorner\llcorner_{4,1}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\urcorner\llcorner_{3,4}) \times & (\llcorner\urcorner_{3,4}) & \gg\ \curlyvee & \succ (\urcorner\ \llcorner_{3,2}) \\ & (\llcorner\ulcorner_{1,4}) & & & (\llcorner\ulcorner_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ulcorner_{1,4}) & & & (\llcorner\ulcorner_{4,1}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\urcorner\llcorner_{3,4}) \times & (\llcorner\urcorner_{4,3}) & \gg\ \curlyvee & \succ (\urcorner\ \llcorner_{3,2}) \\ & (\ulcorner\llcorner_{1,4}) & & & (\ulcorner\llcorner_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\lfloor\rceil_{2,3}) & & & (\lrcorner\ \ulcorner_{4,1}) & \\ (\lrcorner\ \ulcorner_{1,4}) & \gg\ \curlyvee & \succ (\urcorner\ \lrcorner_{3,4}) & \times & (\lrcorner\ \urcorner_{4,3}) & \gg\ \curlyvee\ \succ (\ulcorner\lrcorner_{4,1}) \\ & (\ulcorner\lrcorner_{1,4}) & & & (\urcorner\ \llcorner_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\ulcorner\lrcorner_{1,4}) & & & (\urcorner\ \llcorner_{3,2}) & \\ (\lrcorner\ \ulcorner_{1,4}) & \gg\ \curlyvee & \succ (\urcorner\ \lrcorner_{3,4}) & \times & (\lrcorner\ \urcorner_{4,3}) & \gg\ \curlyvee\ \succ (\ulcorner\lrcorner_{4,1}) \\ & (\lrcorner\ \urcorner_{2,3}) & & & (\lrcorner\ \ulcorner_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\lfloor\rceil_{2,3}) & & & (\ulcorner\lrcorner_{4,1}) & \\ (\ulcorner\lrcorner_{1,4}) & \gg\ \curlyvee & \succ (\urcorner\ \lrcorner_{3,4}) & \times & (\lrcorner\ \urcorner_{4,3}) & \gg\ \curlyvee\ \succ (\lrcorner\ \ulcorner_{4,1}) \\ & (\lrcorner\ \ulcorner_{1,4}) & & & (\urcorner\ \llcorner_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\ \ulcorner_{1,4}) & & & (\urcorner\ \llcorner_{3,2}) & \\ (\ulcorner\lrcorner_{1,4}) & \gg\ \curlyvee & \succ (\urcorner\ \lrcorner_{3,4}) & \times & (\lrcorner\ \urcorner_{4,3}) & \gg\ \curlyvee\ \succ (\lrcorner\ \ulcorner_{4,1}) \\ & (\lfloor\rceil_{2,3}) & & & (\ulcorner\lrcorner_{4,1}) & \end{matrix}$$

6. Pre-semiotic dual system

$(\urcorner\ \lrcorner_{3,4}\ \ulcorner\lrcorner_{1,4}\ \lrcorner\ \urcorner_{3,4}\ \lfloor\rceil_{2,3}) \times (\urcorner\ \llcorner_{3,2}\ \urcorner\ \lrcorner_{4,3}\ \lrcorner\ \ulcorner_{4,1}\ \lrcorner\ \urcorner_{4,3})$

Qualitative action

$$\begin{matrix} & (\urcorner\ \lrcorner_{3,4}) & & & (\lrcorner\ \ulcorner_{4,1}) & \\ (\lrcorner\ \urcorner_{3,4}) & \gg\ \curlyvee & \succ (\lfloor\rceil_{2,3}) & \times & (\urcorner\ \llcorner_{3,2}) & \gg\ \curlyvee\ \succ (\urcorner\ \lrcorner_{4,3}) \\ & (\ulcorner\lrcorner_{1,4}) & & & (\lrcorner\ \urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\ulcorner\lrcorner_{1,4}) & & & (\lrcorner\ \urcorner_{3,4}) & \\ (\lrcorner\ \urcorner_{3,4}) & \gg\ \curlyvee & \succ (\lfloor\rceil_{2,3}) & \times & (\urcorner\ \llcorner_{3,2}) & \gg\ \curlyvee\ \succ (\urcorner\ \lrcorner_{4,3}) \\ & (\urcorner\ \lrcorner_{3,4}) & & & (\lrcorner\ \ulcorner_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\urcorner\ \lrcorner_{3,4}) & & & (\urcorner\ \lrcorner_{4,3}) & \\ (\ulcorner\lrcorner_{1,4}) & \gg\ \curlyvee & \succ (\lfloor\rceil_{2,3}) & \times & (\urcorner\ \llcorner_{3,2}) & \gg\ \curlyvee\ \succ (\lrcorner\ \ulcorner_{4,1}) \\ & (\lrcorner\ \urcorner_{3,4}) & & & (\lrcorner\ \urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\ \urcorner_{3,4}) & & & (\lrcorner\ \urcorner_{4,3}) & \\ (\ulcorner\lrcorner_{1,4}) & \gg\ \curlyvee & \succ (\lfloor\rceil_{2,3}) & \times & (\urcorner\ \llcorner_{3,2}) & \gg\ \curlyvee\ \succ (\lrcorner\ \ulcorner_{4,1}) \\ & (\urcorner\ \lrcorner_{3,4}) & & & (\urcorner\ \lrcorner_{4,3}) & \end{matrix}$$

$$\begin{array}{c} (\lrcorner\ \urcorner_{3,4}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3}) \\ (\ulcorner\lrcorner_{1,4}) \end{array} \times \begin{array}{c} (\lrcorner\ \ulcorner_{4,1}) \\ (\urcorner\ \llcorner_{3,2}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\urcorner\ \lrcorner_{4,3}) \end{array}$$

$$\begin{array}{c} (\ulcorner\lrcorner_{1,4}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3}) \\ (\lrcorner\ \urcorner_{3,4}) \end{array} \times \begin{array}{c} (\urcorner\ \lrcorner_{4,3}) \\ (\urcorner\ \llcorner_{3,2}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

Medial action

$$\begin{array}{c} (\urcorner\ \lrcorner_{3,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{3,4}) \\ (\ulcorner\lrcorner_{1,4}) \end{array} \times \begin{array}{c} (\lrcorner\ \ulcorner_{4,1}) \\ (\urcorner\ \lrcorner_{4,3}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \urcorner_{4,3}) \end{array}$$

$$\begin{array}{c} (\ulcorner\lrcorner_{1,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{3,4}) \\ (\urcorner\ \lrcorner_{3,4}) \end{array} \times \begin{array}{c} (\lrcorner\ \urcorner_{4,3}) \\ (\urcorner\ \lrcorner_{4,3}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

$$\begin{array}{c} (\llcorner\urcorner_{2,3}) \\ (\ulcorner\lrcorner_{1,4}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{3,4}) \\ (\urcorner\ \lrcorner_{3,4}) \end{array} \times \begin{array}{c} (\lrcorner\ \urcorner_{4,3}) \\ (\urcorner\ \lrcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{4,1}) \\ (\urcorner\ \llcorner_{3,2}) \end{array}$$

$$\begin{array}{c} (\urcorner\ \lrcorner_{3,4}) \\ (\ulcorner\lrcorner_{1,4}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{3,4}) \\ (\llcorner\urcorner_{2,3}) \end{array} \times \begin{array}{c} (\urcorner\ \llcorner_{3,2}) \\ (\urcorner\ \lrcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{4,1}) \\ (\lrcorner\ \urcorner_{4,3}) \end{array}$$

$$\begin{array}{c} (\llcorner\urcorner_{2,3}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{3,4}) \\ (\ulcorner\lrcorner_{1,4}) \end{array} \times \begin{array}{c} (\lrcorner\ \ulcorner_{4,1}) \\ (\urcorner\ \lrcorner_{4,3}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \urcorner_{4,3}) \end{array}$$

$$\begin{array}{c} (\ulcorner\lrcorner_{1,4}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{3,4}) \\ (\llcorner\urcorner_{2,3}) \end{array} \times \begin{array}{c} (\urcorner\ \llcorner_{3,2}) \\ (\urcorner\ \lrcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\lrcorner\ \ulcorner_{4,1}) \end{array}$$

Objectal action

$$\begin{matrix} & (\urcorner\llcorner_{3,4}) & & & (\urcorner\llcorner_{4,3}) & \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee & \succ (\ulcorner\llcorner_{1,4}) & \times & (\llcorner\ulcorner_{1,4}) \gg \curlyvee & \succ (\urcorner\lrcorner_{3,2}) \\ & (\llcorner\urcorner_{3,4}) & & & (\llcorner\urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{3,4}) & & & (\llcorner\urcorner_{4,3}) & \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee & \succ (\ulcorner\llcorner_{1,4}) & \times & (\llcorner\ulcorner_{4,1}) \gg \curlyvee & \succ (\urcorner\lrcorner_{3,2}) \\ & (\urcorner\llcorner_{3,4}) & & & (\urcorner\llcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\llcorner\urcorner_{4,3}) & \\ (\llcorner\urcorner_{3,4}) \gg \curlyvee & \succ (\ulcorner\llcorner_{1,4}) & \times & (\llcorner\ulcorner_{4,1}) \gg \curlyvee & \succ (\urcorner\llcorner_{4,3}) \\ & (\urcorner\llcorner_{3,4}) & & & (\urcorner\lrcorner_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\urcorner\llcorner_{3,4}) & & & (\urcorner\lrcorner_{3,2}) & \\ (\llcorner\urcorner_{3,4}) \gg \curlyvee & \succ (\ulcorner\llcorner_{1,4}) & \times & (\llcorner\ulcorner_{4,1}) \gg \curlyvee & \succ (\urcorner\llcorner_{4,3}) \\ & (\llcorner\urcorner_{2,3}) & & & (\llcorner\urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\urcorner\llcorner_{4,3}) & \\ (\urcorner\llcorner_{3,4}) \gg \curlyvee & \succ (\ulcorner\llcorner_{1,4}) & \times & (\llcorner\ulcorner_{4,1}) \gg \curlyvee & \succ (\llcorner\urcorner_{4,3}) \\ & (\llcorner\urcorner_{3,4}) & & & (\urcorner\lrcorner_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{3,4}) & & & (\urcorner\lrcorner_{3,2}) & \\ (\urcorner\llcorner_{3,4}) \gg \curlyvee & \succ (\ulcorner\llcorner_{1,4}) & \times & (\llcorner\ulcorner_{4,1}) \gg \curlyvee & \succ (\llcorner\urcorner_{3,4}) \\ & (\llcorner\urcorner_{2,3}) & & & (\urcorner\llcorner_{3,4}) & \end{matrix}$$

Interpretative action

$$\begin{matrix} & (\ulcorner\llcorner_{1,4}) & & & (\urcorner\llcorner_{3,4}) & \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee & \succ (\urcorner\llcorner_{3,4}) & \times & (\llcorner\urcorner_{3,4}) \gg \curlyvee & \succ (\urcorner\lrcorner_{3,2}) \\ & (\llcorner\urcorner_{3,4}) & & & (\llcorner\ulcorner_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{3,4}) & & & (\llcorner\ulcorner_{4,1}) & \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee & \succ (\urcorner\llcorner_{3,4}) & \times & (\llcorner\urcorner_{3,4}) \gg \curlyvee & \succ (\urcorner\lrcorner_{3,2}) \\ & (\ulcorner\llcorner_{1,4}) & & & (\urcorner\llcorner_{3,4}) & \end{matrix}$$

$$\begin{matrix} & (\lfloor\rceil_{2,3}) & & & (\lrcorner\ \lceil_{4,1}) & \\ (\lrcorner\rceil_{3,4}) & \gg\ \curlyvee & \succ (\lceil\lrcorner_{3,4}) & \times & (\lrcorner\rceil_{3,4}) & \gg\ \curlyvee\ \succ (\lceil\lrcorner_{4,3}) \\ & (\lceil\lrcorner_{1,4}) & & & (\lceil\ \lfloor_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\lceil\lrcorner_{1,4}) & & & (\lceil\ \lfloor_{3,2}) & \\ (\lrcorner\rceil_{3,4}) & \gg\ \curlyvee & \succ (\lceil\lrcorner_{3,4}) & \times & (\lrcorner\rceil_{4,3}) & \gg\ \curlyvee\ \succ (\lceil\lrcorner_{4,3}) \\ & (\lfloor\rceil_{2,3}) & & & (\lrcorner\ \lceil_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\lfloor\rceil_{2,3}) & & & (\lceil\lrcorner_{4,3}) & \\ (\lceil\lrcorner_{1,4}) & \gg\ \curlyvee & \succ (\lceil\lrcorner_{3,4}) & \times & (\lrcorner\rceil_{4,3}) & \gg\ \curlyvee\ \succ (\lrcorner\ \lceil_{1,4}) \\ & (\lrcorner\rceil_{3,4}) & & & (\lceil\ \lfloor_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\rceil_{3,4}) & & & (\lceil\ \lfloor_{3,2}) & \\ (\lceil\lrcorner_{1,4}) & \gg\ \curlyvee & \succ (\lceil\lrcorner_{3,4}) & \times & (\lrcorner\rceil_{4,3}) & \gg\ \curlyvee\ \succ (\lrcorner\ \lceil_{4,1}) \\ & (\lfloor\rceil_{2,3}) & & & (\lceil\lrcorner_{4,3}) & \end{matrix}$$

7. Pre-semiotic dual system

$(\lceil\lrcorner_{3,4}\ \lceil\lceil_{1,2,4}\lrcorner\ \lceil_{1,4}\ \lfloor\lceil_{1,2}) \times (\lceil\ \lfloor_{2,1}\ \lceil\lrcorner_{4,1}\ \lceil\lceil_{4,2,1}\lrcorner\rceil_{4,3})$

Qualitative action

$$\begin{matrix} & (\lceil\lrcorner_{3,4}) & & & (\lceil\lceil_{4,2,1}) & \\ (\lrcorner\ \lceil_{1,4}) & \gg\ \curlyvee & \succ (\lfloor\lceil_{1,2}) & \times & (\lceil\ \lfloor_{2,1}) & \gg\ \curlyvee\ \succ (\lceil\lrcorner_{4,1}) \\ & (\lceil\lceil_{1,2,4}) & & & (\lrcorner\rceil_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\lceil\lceil_{1,2,4}) & & & (\lrcorner\rceil_{4,3}) & \\ (\lrcorner\ \lceil_{1,4}) & \gg\ \curlyvee & \succ (\lfloor\lceil_{1,2}) & \times & (\lceil\ \lfloor_{2,1}) & \gg\ \curlyvee\ \succ (\lceil\lrcorner_{4,1}) \\ & (\lceil\lrcorner_{3,4}) & & & (\lceil\lceil_{4,2,1}) & \end{matrix}$$

$$\begin{matrix} & (\lceil\lrcorner_{3,4}) & & & (\lceil\lrcorner_{4,1}) & \\ (\lceil\lceil_{1,2,4}) & \gg\ \curlyvee & \succ (\lfloor\lceil_{1,2}) & \times & (\lceil\ \lfloor_{2,1}) & \gg\ \curlyvee\ \succ (\lceil\lceil_{4,2,1}) \\ & (\lrcorner\ \lceil_{1,4}) & & & (\lrcorner\rceil_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\ \lceil_{1,4}) & & & (\lrcorner\rceil_{4,3}) & \\ (\lceil\lceil_{1,2,4}) & \gg\ \curlyvee & \succ (\lfloor\lceil_{1,2}) & \times & (\lceil\ \lfloor_{2,1}) & \gg\ \curlyvee\ \succ (\lceil\lceil_{4,2,1}) \\ & (\lceil\lrcorner_{3,4}) & & & (\lceil\lrcorner_{4,1}) & \end{matrix}$$

$$\begin{array}{ccccccc} & (\lrcorner\ \ulcorner_{1,4}) & & & (\ulcorner\ \ulcorner_{4,2,1}) & & \\ (\urcorner\ \lrcorner_{3,4}) & \gg\ \curlyvee & \succ (\llcorner\ \ulcorner_{1,2}) & \times & (\ulcorner\ \llcorner_{2,1}) & \gg\ \curlyvee & \succ (\lrcorner\ \urcorner_{4,3}) \\ & (\ulcorner\ \ulcorner_{1,2,4}) & & & (\ulcorner\lrcorner_{4,1}) & & \end{array}$$

$$\begin{array}{ccccccc} & (\ulcorner\ \ulcorner_{1,2,4}) & & & (\ulcorner\lrcorner_{4,1}) & & \\ (\urcorner\ \lrcorner_{3,4}) & \gg\ \curlyvee & \succ (\llcorner\ \ulcorner_{1,2}) & \times & (\ulcorner\ \llcorner_{2,1}) & \gg\ \curlyvee & \succ (\lrcorner\ \urcorner_{4,3}) \\ & (\lrcorner\ \ulcorner_{1,4}) & & & (\ulcorner\ \ulcorner_{4,2,1}) & & \end{array}$$

Medial action

$$\begin{array}{ccccccc} & (\urcorner\ \lrcorner_{3,4}) & & & (\ulcorner\ \ulcorner_{4,2,1}) & & \\ (\llcorner\ \ulcorner_{1,2}) & \gg\ \curlyvee & \succ (\lrcorner\ \ulcorner_{1,4}) & \times & (\ulcorner\lrcorner_{4,1}) & \gg\ \curlyvee & \succ (\ulcorner\ \llcorner_{2,1}) \\ & (\ulcorner\ \ulcorner_{1,2,4}) & & & (\lrcorner\ \urcorner_{4,3}) & & \end{array}$$

$$\begin{array}{ccccccc} & (\ulcorner\ \ulcorner_{1,2,4}) & & & (\lrcorner\ \urcorner_{4,3}) & & \\ (\llcorner\ \ulcorner_{1,2}) & \gg\ \curlyvee & \succ (\lrcorner\ \ulcorner_{1,4}) & \times & (\ulcorner\lrcorner_{4,1}) & \gg\ \curlyvee & \succ (\ulcorner\ \llcorner_{2,1}) \\ & (\urcorner\ \lrcorner_{3,4}) & & & (\ulcorner\ \ulcorner_{4,2,1}) & & \end{array}$$

$$\begin{array}{ccccccc} & (\llcorner\ \ulcorner_{1,2}) & & & (\lrcorner\ \urcorner_{4,3}) & & \\ (\ulcorner\ \ulcorner_{1,2,4}) & \gg\ \curlyvee & \succ (\lrcorner\ \ulcorner_{1,4}) & \times & (\ulcorner\lrcorner_{4,1}) & \gg\ \curlyvee & \succ (\ulcorner\ \ulcorner_{4,2,1}) \\ & (\urcorner\ \lrcorner_{3,4}) & & & (\ulcorner\ \llcorner_{2,1}) & & \end{array}$$

$$\begin{array}{ccccccc} & (\urcorner\ \lrcorner_{3,4}) & & & (\ulcorner\ \llcorner_{2,1}) & & \\ (\ulcorner\ \ulcorner_{1,2,4}) & \gg\ \curlyvee & \succ (\lrcorner\ \ulcorner_{1,4}) & \times & (\ulcorner\lrcorner_{4,1}) & \gg\ \curlyvee & \succ (\lrcorner\ \urcorner_{4,3}) \\ & (\llcorner\ \ulcorner_{1,2}) & & & (\ulcorner\ \ulcorner_{4,2,1}) & & \end{array}$$

$$\begin{array}{ccccccc} & (\ulcorner\ \ulcorner_{1,2,4}) & & & (\ulcorner\ \llcorner_{2,1}) & & \\ (\urcorner\ \lrcorner_{3,4}) & \gg\ \curlyvee & \succ (\lrcorner\ \ulcorner_{1,4}) & \times & (\ulcorner\lrcorner_{4,1}) & \gg\ \curlyvee & \succ (\lrcorner\ \urcorner_{4,3}) \\ & (\llcorner\ \ulcorner_{1,2}) & & & (\ulcorner\ \ulcorner_{4,2,1}) & & \end{array}$$

Objectal action

$$\begin{matrix} & (\urcorner\llcorner_{3,4}) & & & (\ulcorner\llcorner_{4,1}) & \\ (\llcorner\ulcorner_{1,2}) & \gg \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{2,1}) \\ & (\llcorner\ulcorner_{1,4}) & & & (\llcorner\urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ulcorner_{1,4}) & & & (\llcorner\urcorner_{4,3}) & \\ (\llcorner\ulcorner_{1,2}) & \gg \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{2,1}) \\ & (\urcorner\llcorner_{3,4}) & & & (\ulcorner\llcorner_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ulcorner_{1,2}) & & & (\llcorner\urcorner_{4,3}) & \\ (\llcorner\ulcorner_{1,4}) & \gg \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{4,1}) \\ & (\urcorner\llcorner_{3,4}) & & & (\ulcorner\llcorner_{2,1}) & \end{matrix}$$

$$\begin{matrix} & (\urcorner\llcorner_{3,4}) & & & (\ulcorner\llcorner_{2,1}) & \\ (\llcorner\ulcorner_{1,4}) & \gg \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{4,1}) \\ & (\llcorner\ulcorner_{1,2}) & & & (\llcorner\urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ulcorner_{1,2}) & & & (\ulcorner\llcorner_{4,1}) & \\ (\urcorner\llcorner_{3,4}) & \gg \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg \curlyvee & \succ (\llcorner\urcorner_{4,3}) \\ & (\llcorner\ulcorner_{1,4}) & & & (\ulcorner\llcorner_{2,1}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ulcorner_{1,4}) & & & (\ulcorner\llcorner_{2,1}) & \\ (\urcorner\llcorner_{3,4}) & \gg \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg \curlyvee & \succ (\llcorner\urcorner_{4,3}) \\ & (\llcorner\ulcorner_{1,2}) & & & (\ulcorner\llcorner_{4,1}) & \end{matrix}$$

Interpretative action

$$\begin{matrix} & (\ulcorner\ulcorner_{1,2,4}) & & & (\ulcorner\llcorner_{4,1}) & \\ (\llcorner\ulcorner_{1,2}) & \gg \curlyvee & \succ (\urcorner\llcorner_{3,4}) \times & (\llcorner\urcorner_{4,3}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{2,1}) \\ & (\llcorner\ulcorner_{1,4}) & & & (\ulcorner\ulcorner_{4,2,1}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ulcorner_{1,4}) & & & (\ulcorner\ulcorner_{4,2,1}) & \\ (\llcorner\ulcorner_{1,2}) & \gg \curlyvee & \succ (\urcorner\llcorner_{3,4}) \times & (\llcorner\urcorner_{4,3}) & \gg \curlyvee & \succ (\ulcorner\llcorner_{2,1}) \\ & (\ulcorner\ulcorner_{1,2,4}) & & & (\ulcorner\llcorner_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\lfloor \lceil_{1,2}) & & & (\lceil \lceil_{4,2,1}) \\ (\lrcorner \lceil_{1,4}) & \gg \Upsilon \succ & (\urcorner \lrcorner_{3,4}) & \times & (\lrcorner \urcorner_{4,3}) & \gg \Upsilon \succ & (\lceil \lrcorner_{4,1}) \\ & (\lceil \lceil_{1,2,4}) & & & (\lceil \lfloor_{2,1}) \end{matrix}$$

$$\begin{matrix} & (\lceil \lceil_{1,2,4}) & & & (\lceil \lfloor_{2,1}) \\ (\lrcorner \lceil_{1,4}) & \gg \Upsilon \succ & (\urcorner \lrcorner_{3,4}) & \times & (\lrcorner \urcorner_{4,3}) & \gg \Upsilon \succ & (\lceil \lrcorner_{4,1}) \\ & (\lfloor \lceil_{1,2}) & & & (\lceil \lceil_{4,2,1}) \end{matrix}$$

$$\begin{matrix} & (\lfloor \lceil_{1,2}) & & & (\lceil \lrcorner_{4,1}) \\ (\lceil \lceil_{1,2,4}) & \gg \Upsilon \succ & (\urcorner \lrcorner_{3,4}) & \times & (\lrcorner \urcorner_{4,3}) & \gg \Upsilon \succ & (\lceil \lceil_{4,2,1}) \\ & (\lrcorner \lceil_{1,4}) & & & (\lceil \lfloor_{2,1}) \end{matrix}$$

$$\begin{matrix} & (\lrcorner \lceil_{1,4}) & & & (\lceil \lfloor_{2,1}) \\ (\lceil \lceil_{1,2,4}) & \gg \Upsilon \succ & (\urcorner \lrcorner_{3,4}) & \times & (\lrcorner \urcorner_{4,3}) & \gg \Upsilon \succ & (\lceil \lceil_{4,2,1}) \\ & (\lfloor \lceil_{1,2}) & & & (\lceil \lrcorner_{4,1}) \end{matrix}$$

8. Pre-semiotic dual system

$(\urcorner \lrcorner_{3,4} \lceil \lceil_{1,2,4} \lrcorner \lceil_{1,4} \lfloor \urcorner_{2,3}) \times (\urcorner \lfloor_{3,2} \lceil \lrcorner_{4,1} \lceil \lceil_{4,2,1} \lrcorner \urcorner_{4,3})$

Qualitative action

$$\begin{matrix} & (\urcorner \lrcorner_{3,4}) & & & (\lceil \lceil_{4,2,1}) \\ (\lrcorner \lceil_{1,4}) & \gg \Upsilon \succ & (\lfloor \urcorner_{2,3}) & \times & (\urcorner \lfloor_{3,2}) & \gg \Upsilon \succ & (\lceil \lrcorner_{4,1}) \\ & (\lceil \lceil_{1,2,4}) & & & (\lrcorner \urcorner_{4,3}) \end{matrix}$$

$$\begin{matrix} & (\lceil \lceil_{1,2,4}) & & & (\lrcorner \urcorner_{4,3}) \\ (\lrcorner \lceil_{1,4}) & \gg \Upsilon \succ & (\lfloor \urcorner_{2,3}) & \times & (\urcorner \lfloor_{3,2}) & \gg \Upsilon \succ & (\lceil \lrcorner_{4,1}) \\ & (\urcorner \lrcorner_{3,4}) & & & (\lceil \lceil_{4,2,1}) \end{matrix}$$

$$\begin{matrix} & (\urcorner \lrcorner_{3,4}) & & & (\lceil \lrcorner_{4,1}) \\ (\lceil \lceil_{1,2,4}) & \gg \Upsilon \succ & (\lfloor \urcorner_{2,3}) & \times & (\urcorner \lfloor_{3,2}) & \gg \Upsilon \succ & (\lceil \lceil_{4,2,1}) \\ & (\lrcorner \lceil_{1,4}) & & & (\lrcorner \urcorner_{4,3}) \end{matrix}$$

$$\begin{matrix} & (\lrcorner \lceil_{1,4}) & & & (\lrcorner \urcorner_{4,3}) \\ (\lceil \lceil_{1,2,4}) & \gg \Upsilon \succ & (\lfloor \urcorner_{2,3}) & \times & (\urcorner \lfloor_{3,2}) & \gg \Upsilon \succ & (\lceil \lceil_{4,2,1}) \\ & (\urcorner \lrcorner_{3,4}) & & & (\lceil \lrcorner_{4,1}) \end{matrix}$$

$$\begin{array}{l} (\lrcorner\ \ulcorner_{1,4}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3}) \\ (\ulcorner\ \ulcorner_{1,2,4}) \end{array} \times \begin{array}{l} (\ulcorner\ \ulcorner_{4,2,1}) \\ (\urcorner\ \llcorner_{3,2}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\lrcorner_{4,1}) \end{array}$$

$$\begin{array}{l} (\ulcorner\ \ulcorner_{1,2,4}) \\ (\urcorner\ \lrcorner_{3,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3}) \\ (\lrcorner\ \ulcorner_{1,4}) \end{array} \times \begin{array}{l} (\ulcorner\lrcorner_{4,1}) \\ (\urcorner\ \llcorner_{3,2}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\ \ulcorner_{4,2,1}) \end{array}$$

Medial action

$$\begin{array}{l} (\urcorner\lrcorner_{3,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\ulcorner\ \ulcorner_{1,2,4}) \end{array} \times \begin{array}{l} (\ulcorner\ \ulcorner_{4,2,1}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\lrcorner\ \urcorner_{4,3}) \end{array}$$

$$\begin{array}{l} (\ulcorner\ \ulcorner_{1,2,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\urcorner\lrcorner_{3,4}) \end{array} \times \begin{array}{l} (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\ \ulcorner_{4,2,1}) \end{array}$$

$$\begin{array}{l} (\llcorner\urcorner_{2,3}) \\ (\ulcorner\ \ulcorner_{1,2,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\urcorner\lrcorner_{3,4}) \end{array} \times \begin{array}{l} (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{4,2,1}) \\ (\urcorner\ \llcorner_{3,2}) \end{array}$$

$$\begin{array}{l} (\urcorner\lrcorner_{3,4}) \\ (\ulcorner\ \ulcorner_{1,2,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\llcorner\urcorner_{2,3}) \end{array} \times \begin{array}{l} (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{4,2,1}) \\ (\lrcorner\ \urcorner_{4,3}) \end{array}$$

$$\begin{array}{l} (\llcorner\urcorner_{2,3}) \\ (\urcorner\lrcorner_{3,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\ulcorner\ \ulcorner_{1,2,4}) \end{array} \times \begin{array}{l} (\ulcorner\ \ulcorner_{4,2,1}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\urcorner\ \llcorner_{3,2}) \end{array}$$

$$\begin{array}{l} (\ulcorner\ \ulcorner_{1,2,4}) \\ (\urcorner\lrcorner_{3,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\llcorner\urcorner_{2,3}) \end{array} \times \begin{array}{l} (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\lrcorner\ \urcorner_{4,3}) \\ (\ulcorner\ \ulcorner_{4,2,1}) \end{array}$$

Objectal action

$$\begin{matrix} & (\urcorner\llcorner_{3,4}) & & & (\ulcorner\llcorner_{4,1}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg\ \curlyvee & \succ (\urcorner\ \llcorner_{3,2}) \\ & (\llcorner\ \ulcorner_{1,4}) & & & (\llcorner\urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ \ulcorner_{1,4}) & & & (\llcorner\urcorner_{4,3}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg\ \curlyvee & \succ (\urcorner\ \llcorner_{3,2}) \\ & (\urcorner\llcorner_{3,4}) & & & (\ulcorner\llcorner_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\llcorner\urcorner_{4,3}) & \\ (\llcorner\ \ulcorner_{1,4}) & \gg\ \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg\ \curlyvee & \succ (\ulcorner\llcorner_{4,1}) \\ & (\urcorner\llcorner_{3,4}) & & & (\urcorner\ \llcorner_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\urcorner\llcorner_{3,4}) & & & (\urcorner\ \llcorner_{3,2}) & \\ (\llcorner\ \ulcorner_{1,4}) & \gg\ \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg\ \curlyvee & \succ (\ulcorner\llcorner_{4,1}) \\ & (\llcorner\urcorner_{2,3}) & & & (\llcorner\urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\ulcorner\llcorner_{4,1}) & \\ (\urcorner\llcorner_{3,4}) & \gg\ \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg\ \curlyvee & \succ (\llcorner\urcorner_{4,3}) \\ & (\llcorner\ \ulcorner_{1,4}) & & & (\urcorner\ \llcorner_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ \ulcorner_{1,4}) & & & (\urcorner\ \llcorner_{3,2}) & \\ (\urcorner\llcorner_{3,4}) & \gg\ \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg\ \curlyvee & \succ (\llcorner\urcorner_{4,3}) \\ & (\llcorner\urcorner_{2,3}) & & & (\ulcorner\llcorner_{4,1}) & \end{matrix}$$

Interpretative action

$$\begin{matrix} & (\ulcorner\ulcorner_{1,2,4}) & & & (\ulcorner\llcorner_{4,1}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\urcorner\llcorner_{3,4}) \times & (\llcorner\urcorner_{4,3}) & \gg\ \curlyvee & \succ (\urcorner\ \llcorner_{3,2}) \\ & (\llcorner\ \ulcorner_{1,4}) & & & (\ulcorner\ulcorner_{4,2,1}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ \ulcorner_{1,4}) & & & (\ulcorner\ulcorner_{4,2,1}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\urcorner\llcorner_{3,4}) \times & (\llcorner\urcorner_{4,3}) & \gg\ \curlyvee & \succ (\urcorner\ \llcorner_{3,2}) \\ & (\ulcorner\ulcorner_{1,2,4}) & & & (\ulcorner\llcorner_{4,1}) & \end{matrix}$$

$$(\lrcorner\ \ulcorner_{1,4}) \gg \begin{matrix}(\llcorner\urcorner_{2,3})\\(\ulcorner\ulcorner_{1,2,4})\end{matrix} \succ (\urcorner\lrcorner_{3,4}) \times (\lrcorner\urcorner_{4,3}) \gg \begin{matrix}(\ulcorner\ulcorner_{4,2,1})\\(\urcorner\ \llcorner_{3,2})\end{matrix} \succ (\ulcorner\lrcorner_{4,1})$$

$$(\lrcorner\ \ulcorner_{1,4}) \gg \begin{matrix}(\ulcorner\ulcorner_{1,2,4})\\(\llcorner\urcorner_{2,3})\end{matrix} \succ (\urcorner\lrcorner_{3,4}) \times (\lrcorner\urcorner_{4,3}) \gg \begin{matrix}(\urcorner\ \llcorner_{3,2})\\(\ulcorner\ulcorner_{4,2,1})\end{matrix} \succ (\ulcorner\lrcorner_{4,1})$$

$$(\ulcorner\ulcorner_{1,2,4}) \gg \begin{matrix}(\llcorner\urcorner_{2,3})\\(\lrcorner\ \ulcorner_{1,4})\end{matrix} \succ (\urcorner\lrcorner_{3,4}) \times (\lrcorner\urcorner_{4,3}) \gg \begin{matrix}(\ulcorner\lrcorner_{4,1})\\(\urcorner\ \llcorner_{3,2})\end{matrix} \succ (\ulcorner\ulcorner_{4,2,1})$$

$$(\ulcorner\ulcorner_{1,2,4}) \gg \begin{matrix}(\lrcorner\ \ulcorner_{1,4})\\(\llcorner\urcorner_{2,3})\end{matrix} \succ (\urcorner\lrcorner_{3,4}) \times (\lrcorner\urcorner_{4,3}) \gg \begin{matrix}(\urcorner\ \llcorner_{3,2})\\(\ulcorner\lrcorner_{4,1})\end{matrix} \succ (\ulcorner\ulcorner_{4,2,1})$$

9. Pre-semiotic dual system

$(\urcorner\lrcorner_{3,4}\ \ulcorner\ulcorner_{1,2,4}\lrcorner\urcorner_{3,4}\ \llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}\urcorner\lrcorner_{4,3}\ \ulcorner\ulcorner_{4,2,1}\lrcorner\urcorner_{4,3})$

Qualitative action

$$(\lrcorner\urcorner_{3,4}) \gg \begin{matrix}(\urcorner\lrcorner_{3,4})\\(\ulcorner\ulcorner_{1,2,4})\end{matrix} \succ (\llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}) \gg \begin{matrix}(\ulcorner\ulcorner_{4,2,1})\\(\lrcorner\urcorner_{4,3})\end{matrix} \succ (\urcorner\lrcorner_{4,3})$$

$$(\lrcorner\urcorner_{3,4}) \gg \begin{matrix}(\ulcorner\ulcorner_{1,2,4})\\(\urcorner\lrcorner_{3,4})\end{matrix} \succ (\llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}) \gg \begin{matrix}(\lrcorner\urcorner_{4,3})\\(\ulcorner\ulcorner_{4,2,1})\end{matrix} \succ (\urcorner\lrcorner_{4,3})$$

$$(\ulcorner\ulcorner_{1,2,4}) \gg \begin{matrix}(\urcorner\lrcorner_{3,4})\\(\lrcorner\urcorner_{3,4})\end{matrix} \succ (\llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}) \gg \begin{matrix}(\urcorner\lrcorner_{3,4})\\(\lrcorner\urcorner_{4,3})\end{matrix} \succ (\ulcorner\ulcorner_{4,2,1})$$

$$(\ulcorner\ulcorner_{1,2,4}) \gg \begin{matrix}(\lrcorner\urcorner_{3,4})\\(\urcorner\lrcorner_{3,4})\end{matrix} \succ (\llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}) \gg \begin{matrix}(\lrcorner\urcorner_{4,3})\\(\urcorner\lrcorner_{4,3})\end{matrix} \succ (\ulcorner\ulcorner_{4,2,1})$$

$$(\lrcorner\urcorner_{3,4}) \qquad\qquad (\ulcorner\ulcorner_{4,2,1})$$
$$(\urcorner\lrcorner_{3,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}) \gg \curlyvee \succ (\lrcorner\urcorner_{4,3})$$
$$(\ulcorner\ulcorner_{1,2,4}) \qquad\qquad (\urcorner\lrcorner_{4,3})$$

$$(\ulcorner\ulcorner_{1,2,4}) \qquad\qquad (\urcorner\lrcorner_{4,3})$$
$$(\urcorner\lrcorner_{3,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3}) \times (\urcorner\ \llcorner_{3,2}) \gg \curlyvee \succ (\lrcorner\urcorner_{4,3})$$
$$(\lrcorner\urcorner_{3,4}) \qquad\qquad (\ulcorner\ulcorner_{4,2,1})$$

Medial action

$$(\urcorner\lrcorner_{3,4}) \qquad\qquad (\ulcorner\ulcorner_{4,2,1})$$
$$(\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\urcorner_{3,4}) \times (\urcorner\lrcorner_{4,3}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})$$
$$(\ulcorner\ulcorner_{1,2,4}) \qquad\qquad (\lrcorner\urcorner_{4,3})$$

$$(\ulcorner\ulcorner_{1,2,4}) \qquad\qquad (\lrcorner\urcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\urcorner_{3,4}) \times (\urcorner\lrcorner_{4,3}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2})$$
$$(\urcorner\lrcorner_{3,4}) \qquad\qquad (\ulcorner\ulcorner_{4,2,1})$$

$$(\llcorner\urcorner_{2,3}) \qquad\qquad (\lrcorner\urcorner_{4,3})$$
$$(\ulcorner\ulcorner_{1,2,4}) \gg \curlyvee \succ (\lrcorner\urcorner_{3,4}) \times (\urcorner\lrcorner_{4,3}) \gg \curlyvee \succ (\ulcorner\ulcorner_{4,2,1})$$
$$(\urcorner\lrcorner_{3,4}) \qquad\qquad (\urcorner\ \llcorner_{3,2})$$

$$(\urcorner\lrcorner_{3,4}) \qquad\qquad (\urcorner\ \llcorner_{3,2})$$
$$(\ulcorner\ulcorner_{1,2,4}) \gg \curlyvee \succ (\lrcorner\urcorner_{3,4}) \times (\urcorner\lrcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\urcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \qquad\qquad (\ulcorner\ulcorner_{4,2,1})$$

$$(\llcorner\urcorner_{2,3}) \qquad\qquad (\ulcorner\ulcorner_{4,2,1})$$
$$(\urcorner\lrcorner_{3,4}) \gg \curlyvee \succ (\lrcorner\urcorner_{3,4}) \times (\urcorner\lrcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\urcorner_{4,3})$$
$$(\ulcorner\ulcorner_{1,2,4}) \qquad\qquad (\urcorner\ \llcorner_{3,2})$$

$$(\ulcorner\ulcorner_{1,2,4}) \qquad\qquad (\urcorner\ \llcorner_{3,2})$$
$$(\urcorner\lrcorner_{3,4}) \gg \curlyvee \succ (\lrcorner\urcorner_{3,4}) \times (\urcorner\lrcorner_{4,3}) \gg \curlyvee \succ (\lrcorner\urcorner_{4,3})$$
$$(\llcorner\urcorner_{2,3}) \qquad\qquad (\ulcorner\ulcorner_{4,2,1})$$

Objective action

$$\begin{matrix} & (\urcorner\llcorner_{3,4}) & & & (\urcorner\llcorner_{4,3}) & \\ (\llcorner\urcorner_{2,3}) & \gg \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg \curlyvee & \succ (\urcorner\ \llcorner_{3,2}) \\ & (\llcorner\urcorner_{3,4}) & & & (\llcorner\urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{3,4}) & & & (\llcorner\urcorner_{4,3}) & \\ (\llcorner\urcorner_{2,3}) & \gg \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg \curlyvee & \succ (\urcorner\ \llcorner_{3,2}) \\ & (\urcorner\llcorner_{3,4}) & & & (\urcorner\llcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\llcorner\urcorner_{4,3}) & \\ (\llcorner\urcorner_{3,4}) & \gg \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg \curlyvee & \succ (\urcorner\llcorner_{4,3}) \\ & (\urcorner\llcorner_{3,4}) & & & (\urcorner\ \llcorner_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\urcorner\llcorner_{3,4}) & & & (\urcorner\ \llcorner_{3,2}) & \\ (\llcorner\urcorner_{3,4}) & \gg \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg \curlyvee & \succ (\urcorner\llcorner_{4,3}) \\ & (\llcorner\urcorner_{2,3}) & & & (\llcorner\urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\urcorner\llcorner_{4,3}) & \\ (\urcorner\llcorner_{3,4}) & \gg \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg \curlyvee & \succ (\llcorner\urcorner_{4,3}) \\ & (\llcorner\urcorner_{3,4}) & & & (\urcorner\ \llcorner_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{3,4}) & & & (\urcorner\ \llcorner_{3,2}) & \\ (\urcorner\llcorner_{3,4}) & \gg \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg \curlyvee & \succ (\llcorner\urcorner_{4,3}) \\ & (\llcorner\urcorner_{2,3}) & & & (\urcorner\llcorner_{4,3}) & \end{matrix}$$

Interpretative action

$$\begin{matrix} & (\ulcorner\ulcorner_{1,2,4}) & & & (\urcorner\llcorner_{4,3}) & \\ (\llcorner\urcorner_{2,3}) & \gg \curlyvee & \succ (\urcorner\llcorner_{3,4}) \times & (\llcorner\urcorner_{4,3}) & \gg \curlyvee & \succ (\urcorner\ \llcorner_{3,2}) \\ & (\llcorner\urcorner_{3,4}) & & & (\ulcorner\ulcorner_{4,2,1}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{3,4}) & & & (\ulcorner\ulcorner_{4,2,1}) & \\ (\llcorner\urcorner_{2,3}) & \gg \curlyvee & \succ (\urcorner\llcorner_{3,4}) \times & (\llcorner\urcorner_{4,3}) & \gg \curlyvee & \succ (\urcorner\ \llcorner_{3,2}) \\ & (\ulcorner\ulcorner_{1,2,4}) & & & (\urcorner\llcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\lfloor\rceil_{2,3}) & & & (\lceil\lceil_{4,2,1}) & \\ (\lrcorner\rceil_{3,4}) & \gg\ \curlyvee\ \succ & (\rceil\lrcorner_{3,4}) & \times\ (\lrcorner\rceil_{4,3}) & \gg\ \curlyvee\ \succ & (\rceil\lrcorner_{4,3}) \\ & (\lceil\lceil_{1,2,4}) & & & (\rceil\ \lfloor_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\lceil\lceil_{1,2,4}) & & & (\rceil\ \lfloor_{3,2}) & \\ (\lrcorner\rceil_{3,4}) & \gg\ \curlyvee\ \succ & (\rceil\lrcorner_{3,4}) & \times\ (\lrcorner\rceil_{4,3}) & \gg\ \curlyvee\ \succ & (\rceil\lrcorner_{4,3}) \\ & (\lfloor\rceil_{2,3}) & & & (\lceil\lceil_{4,2,1}) & \end{matrix}$$

$$\begin{matrix} & (\lfloor\rceil_{2,3}) & & & (\rceil\lrcorner_{4,3}) & \\ (\lceil\lceil_{1,2,4}) & \gg\ \curlyvee\ \succ & (\rceil\lrcorner_{3,4}) & \times\ (\lrcorner\rceil_{4,3}) & \gg\ \curlyvee\ \succ & (\lceil\lceil_{4,2,1}) \\ & (\lrcorner\rceil_{3,4}) & & & (\rceil\ \lfloor_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\rceil_{3,4}) & & & (\rceil\ \lfloor_{3,2}) & \\ (\lceil\lceil_{1,2,4}) & \gg\ \curlyvee\ \succ & (\rceil\lrcorner_{3,4}) & \times\ (\lrcorner\rceil_{4,3}) & \gg\ \curlyvee\ \succ & (\lceil\lceil_{4,2,1}) \\ & (\lfloor\rceil_{2,3}) & & & (\rceil\lrcorner_{4,3}) & \end{matrix}$$

10. Pre-semiotic dual system

$(\rceil\lrcorner_{3,4}\ \lceil\rceil_{2,4}\lrcorner\rceil_{3,4}\ \lfloor\rceil_{2,3}) \times (\rceil\ \lfloor_{3,2}\rceil\lrcorner_{4,3}\rceil\ \lceil_{4,2}\lrcorner\rceil_{4,3})$

Qualitative action

$$\begin{matrix} & (\rceil\lrcorner_{3,4}) & & & (\rceil\ \lceil_{4,2}) & \\ (\lrcorner\rceil_{3,4}) & \gg\ \curlyvee\ \succ & (\lfloor\rceil_{2,3}) & \times\ (\rceil\ \lfloor_{3,2}) & \gg\ \curlyvee\ \succ & (\rceil\lrcorner_{4,3}) \\ & (\lceil\rceil_{2,4}) & & & (\lrcorner\rceil_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\lceil\rceil_{2,4}) & & & (\lrcorner\rceil_{4,3}) & \\ (\lrcorner\rceil_{3,4}) & \gg\ \curlyvee\ \succ & (\lfloor\rceil_{2,3}) & \times\ (\rceil\ \lfloor_{3,2}) & \gg\ \curlyvee\ \succ & (\rceil\lrcorner_{4,3}) \\ & (\rceil\lrcorner_{3,4}) & & & (\rceil\ \lceil_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\rceil\lrcorner_{3,4}) & & & (\rceil\lrcorner_{4,3}) & \\ (\lceil\rceil_{2,4}) & \gg\ \curlyvee\ \succ & (\lfloor\rceil_{2,3}) & \times\ (\rceil\ \lfloor_{3,2}) & \gg\ \curlyvee\ \succ & (\rceil\ \lceil_{4,2}) \\ & (\lrcorner\rceil_{3,4}) & & & (\lrcorner\rceil_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\rceil_{3,4}) & & & (\lrcorner\rceil_{4,3}) & \\ (\lceil\rceil_{2,4}) & \gg\ \curlyvee\ \succ & (\lfloor\rceil_{2,3}) & \times\ (\rceil\ \lfloor_{3,2}) & \gg\ \curlyvee\ \succ & (\rceil\ \lceil_{4,2}) \\ & (\rceil\lrcorner_{3,4}) & & & (\rceil\lrcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\,\urcorner_{3,4}) & & & (\urcorner\,\ulcorner_{4,2}) & \\ (\urcorner\,\lrcorner_{3,4}) & \gg\ \curlyvee\ \succ & (\llcorner\urcorner_{2,3}) & \times & (\urcorner\,\llcorner_{3,2}) & \gg\ \curlyvee\ \succ (\lrcorner\,\urcorner_{4,3}) \\ & (\ulcorner\urcorner_{2,4}) & & & (\urcorner\,\lrcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\ulcorner\,\ulcorner_{1,2,4}) & & & (\urcorner\,\lrcorner_{4,3}) & \\ (\urcorner\,\lrcorner_{3,4}) & \gg\ \curlyvee\ \succ & (\llcorner\urcorner_{2,3}) & \times & (\urcorner\,\llcorner_{3,2}) & \gg\ \curlyvee\ \succ (\lrcorner\,\urcorner_{4,3}) \\ & (\lrcorner\,\urcorner_{3,4}) & & & (\ulcorner\,\ulcorner_{4,2,1}) & \end{matrix}$$

Medial action

$$\begin{matrix} & (\urcorner\,\lrcorner_{3,4}) & & & (\urcorner\,\ulcorner_{4,2}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee\ \succ & (\lrcorner\,\urcorner_{3,4}) & \times & (\urcorner\,\lrcorner_{4,3}) & \gg\ \curlyvee\ \succ (\urcorner\,\llcorner_{3,2}) \\ & (\ulcorner\urcorner_{2,4}) & & & (\lrcorner\,\urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\ulcorner\urcorner_{2,4}) & & & (\lrcorner\,\urcorner_{4,3}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee\ \succ & (\lrcorner\,\urcorner_{3,4}) & \times & (\urcorner\,\lrcorner_{4,3}) & \gg\ \curlyvee\ \succ (\urcorner\,\llcorner_{3,2}) \\ & (\urcorner\,\lrcorner_{3,4}) & & & (\urcorner\,\ulcorner_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\lrcorner\,\urcorner_{4,3}) & \\ (\ulcorner\urcorner_{2,4}) & \gg\ \curlyvee\ \succ & (\lrcorner\,\urcorner_{3,4}) & \times & (\urcorner\,\lrcorner_{4,3}) & \gg\ \curlyvee\ \succ (\urcorner\,\ulcorner_{4,2}) \\ & (\urcorner\,\lrcorner_{3,4}) & & & (\urcorner\,\llcorner_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\urcorner\,\lrcorner_{3,4}) & & & (\urcorner\,\llcorner_{3,2}) & \\ (\ulcorner\urcorner_{2,4}) & \gg\ \curlyvee\ \succ & (\lrcorner\,\urcorner_{3,4}) & \times & (\urcorner\,\lrcorner_{4,3}) & \gg\ \curlyvee\ \succ (\urcorner\,\ulcorner_{4,2}) \\ & (\llcorner\urcorner_{2,3}) & & & (\lrcorner\,\urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\urcorner\,\ulcorner_{4,2}) & \\ (\urcorner\,\lrcorner_{3,4}) & \gg\ \curlyvee\ \succ & (\lrcorner\,\urcorner_{3,4}) & \times & (\urcorner\,\lrcorner_{4,3}) & \gg\ \curlyvee\ \succ (\lrcorner\,\urcorner_{4,3}) \\ & (\ulcorner\urcorner_{2,4}) & & & (\urcorner\,\llcorner_{3,2}) & \end{matrix}$$

:

$$\begin{matrix} & (\ulcorner\urcorner_{2,4}) & & & (\urcorner\,\llcorner_{3,2}) & \\ (\urcorner\,\lrcorner_{3,4}) & \gg\ \curlyvee\ \succ & (\lrcorner\,\urcorner_{3,4}) & \times & (\urcorner\,\lrcorner_{4,3}) & \gg\ \curlyvee\ \succ (\lrcorner\,\urcorner_{4,3}) \\ & (\llcorner\urcorner_{2,3}) & & & (\urcorner\,\ulcorner_{4,2}) & \end{matrix}$$

Objectal action

$$\begin{matrix} & (\urcorner\llcorner_{3,4}) & & & (\urcorner\llcorner_{4,3}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{2,4}) & \times\quad (\urcorner\ulcorner_{4,2}) & \gg\ \curlyvee & \succ (\urcorner\lfloor_{3,2}) \\ & (\llcorner\urcorner_{3,4}) & & & (\llcorner\urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{3,4}) & & & (\llcorner\urcorner_{4,3}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{2,4}) & \times\quad (\urcorner\ulcorner_{4,2}) & \gg\ \curlyvee & \succ (\urcorner\lfloor_{3,2}) \\ & (\urcorner\llcorner_{3,4}) & & & (\urcorner\llcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\llcorner\urcorner_{4,3}) & \\ (\llcorner\urcorner_{3,4}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{2,4}) & \times\quad (\urcorner\ulcorner_{4,2}) & \gg\ \curlyvee & \succ (\urcorner\llcorner_{4,3}) \\ & (\urcorner\llcorner_{3,4}) & & & (\urcorner\lfloor_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\urcorner\llcorner_{3,4}) & & & (\urcorner\lfloor_{3,2}) & \\ (\llcorner\urcorner_{3,4}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{2,4}) & \times\quad (\urcorner\ulcorner_{4,2}) & \gg\ \curlyvee & \succ (\urcorner\llcorner_{4,3}) \\ & (\llcorner\urcorner_{2,3}) & & & (\llcorner\urcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\urcorner\llcorner_{4,3}) & \\ (\urcorner\llcorner_{3,4}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{2,4}) & \times\quad (\urcorner\ulcorner_{4,2}) & \gg\ \curlyvee & \succ (\llcorner\urcorner_{4,3}) \\ & (\llcorner\urcorner_{3,4}) & & & (\urcorner\lfloor_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{3,4}) & & & (\urcorner\lfloor_{3,2}) & \\ (\urcorner\llcorner_{3,4}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{2,4}) & \times\quad (\urcorner\ulcorner_{4,2}) & \gg\ \curlyvee & \succ (\llcorner\urcorner_{3,4}) \\ & (\llcorner\urcorner_{2,3}) & & & (\urcorner\llcorner_{4,3}) & \end{matrix}$$

Interpretative action

$$\begin{matrix} & (\ulcorner\urcorner_{2,4}) & & & (\urcorner\llcorner_{4,3}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\urcorner\llcorner_{3,4}) & \times\quad (\llcorner\urcorner_{4,3}) & \gg\ \curlyvee & \succ (\urcorner\lfloor_{3,2}) \\ & (\llcorner\urcorner_{3,4}) & & & (\urcorner\ulcorner_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{3,4}) & & & (\urcorner\ulcorner_{4,2}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\urcorner\llcorner_{3,4}) & \times\quad (\llcorner\urcorner_{4,3}) & \gg\ \curlyvee & \succ (\urcorner\lfloor_{3,2}) \\ & (\ulcorner\urcorner_{2,4}) & & & (\urcorner\llcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\lfloor\rceil_{2,3}) & & & (\rceil\lceil_{4,2}) & \\ (\lrcorner\rceil_{3,4}) & \gg \curlyvee \succ & (\rceil\lrcorner_{3,4}) & \times & (\lrcorner\rceil_{4,3}) & \gg \curlyvee \succ (\rceil\lrcorner_{4,3}) \\ & (\lceil\rceil_{2,4}) & & & (\rceil\lfloor_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\lceil\rceil_{2,4}) & & & (\rceil\lfloor_{3,2}) & \\ (\lrcorner\rceil_{3,4}) & \gg \curlyvee \succ & (\rceil\lrcorner_{3,4}) & \times & (\lrcorner\rceil_{4,3}) & \gg \curlyvee \succ (\rceil\lrcorner_{4,3}) \\ & (\lfloor\rceil_{2,3}) & & & (\rceil\lceil_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\lfloor\rceil_{2,3}) & & & (\rceil\lrcorner_{4,3}) & \\ (\lceil\rceil_{2,4}) & \gg \curlyvee \succ & (\rceil\lrcorner_{3,4}) & \times & (\lrcorner\rceil_{4,3}) & \gg \curlyvee \succ (\rceil\lceil_{4,2}) \\ & (\lrcorner\rceil_{3,4}) & & & (\rceil\lfloor_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\rceil_{3,4}) & & & (\rceil\lfloor_{3,2}) & \\ (\lceil\rceil_{2,4}) & \gg \curlyvee \succ & (\rceil\lrcorner_{3,4}) & \times & (\lrcorner\rceil_{4,3}) & \gg \curlyvee \succ (\rceil\lceil_{4,2}) \\ & (\lfloor\rceil_{2,3}) & & & (\rceil\lrcorner_{4,3}) & \end{matrix}$$

11. Pre-semiotic dual system

$(\rceil\lceil_{2,4}\lceil\lceil_{1,2,4}\lrcorner\lceil_{1,4}\lfloor\lceil_{1,2}) \times (\lceil\lfloor_{2,1}\lceil\lrcorner_{4,1}\lceil\lceil_{4,2,1}\lceil\rceil_{4,2})$

Qualitative action

$$\begin{matrix} & (\rceil\lceil_{2,4}) & & & (\lceil\lceil_{4,2,1}) & \\ (\lrcorner\lceil_{1,4}) & \gg \curlyvee \succ & (\lfloor\lceil_{1,2}) & \times & (\lceil\lfloor_{2,1}) & \gg \curlyvee \succ (\lceil\lrcorner_{4,1}) \\ & (\lceil\lceil_{1,2,4}) & & & (\lceil\rceil_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\lceil\lceil_{1,2,4}) & & & (\lceil\rceil_{4,2}) & \\ (\lrcorner\lceil_{1,4}) & \gg \curlyvee \succ & (\lfloor\lceil_{1,2}) & \times & (\lceil\lfloor_{2,1}) & \gg \curlyvee \succ (\lceil\lrcorner_{4,1}) \\ & (\rceil\lceil_{2,4}) & & & (\lceil\lceil_{4,2,1}) & \end{matrix}$$

$$\begin{matrix} & (\rceil\lceil_{2,4}) & & & (\lceil\lrcorner_{4,1}) & \\ (\lceil\lceil_{1,2,4}) & \gg \curlyvee \succ & (\lfloor\lceil_{1,2}) & \times & (\lceil\lfloor_{2,1}) & \gg \curlyvee \succ (\lceil\lceil_{4,2,1}) \\ & (\lrcorner\lceil_{1,4}) & & & (\lceil\rceil_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\lceil_{1,4}) & & & (\lceil\rceil_{4,2}) & \\ (\lceil\lceil_{1,2,4}) & \gg \curlyvee \succ & (\lfloor\lceil_{1,2}) & \times & (\lceil\lfloor_{2,1}) & \gg \curlyvee \succ (\lceil\lceil_{4,2,1}) \\ & (\rceil\lceil_{2,4}) & & & (\lceil\lrcorner_{4,1}) & \end{matrix}$$

$$\begin{array}{ccccccc} & (\lrcorner\ \ulcorner_{1,4}) & & & (\ulcorner\ \ulcorner_{4,2,1}) & & \\ (\urcorner\ \ulcorner_{2,4}) & \gg\ \curlyvee & \succ (\llcorner\ \ulcorner_{1,2}) & \times & (\ulcorner\ \llcorner_{2,1}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{4,2}) \\ & (\ulcorner\ \ulcorner_{1,2,4}) & & & (\ulcorner\lrcorner_{4,1}) & & \end{array}$$

$$\begin{array}{ccccccc} & (\ulcorner\ \ulcorner_{1,2,4}) & & & (\ulcorner\lrcorner_{4,1}) & & \\ (\urcorner\ \ulcorner_{2,4}) & \gg\ \curlyvee & \succ (\llcorner\ \ulcorner_{1,2}) & \times & (\ulcorner\ \llcorner_{2,1}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{4,2}) \\ & (\lrcorner\ \ulcorner_{1,4}) & & & (\ulcorner\ \ulcorner_{4,2,1}) & & \end{array}$$

Medial action

$$\begin{array}{ccccccc} & (\urcorner\ \ulcorner_{2,4}) & & & (\ulcorner\ \ulcorner_{4,2,1}) & & \\ (\llcorner\ \ulcorner_{1,2}) & \gg\ \curlyvee & \succ (\lrcorner\ \ulcorner_{1,4}) & \times & (\ulcorner\lrcorner_{4,1}) & \gg\ \curlyvee & \succ (\ulcorner\ \llcorner_{2,1}) \\ & (\ulcorner\ \ulcorner_{1,2,4}) & & & (\ulcorner\urcorner_{4,2}) & & \end{array}$$

$$\begin{array}{ccccccc} & (\ulcorner\ \ulcorner_{1,2,4}) & & & (\ulcorner\urcorner_{4,2}) & & \\ (\llcorner\ \ulcorner_{1,2}) & \gg\ \curlyvee & \succ (\lrcorner\ \ulcorner_{1,4}) & \times & (\ulcorner\lrcorner_{4,1}) & \gg\ \curlyvee & \succ (\ulcorner\ \llcorner_{2,1}) \\ & (\urcorner\ \ulcorner_{2,4}) & & & (\ulcorner\ \ulcorner_{4,2,1}) & & \end{array}$$

$$\begin{array}{ccccccc} & (\llcorner\ \ulcorner_{1,2}) & & & (\ulcorner\urcorner_{4,2}) & & \\ (\ulcorner\ \ulcorner_{1,2,4}) & \gg\ \curlyvee & \succ (\lrcorner\ \ulcorner_{1,4}) & \times & (\ulcorner\lrcorner_{4,1}) & \gg\ \curlyvee & \succ (\ulcorner\ \ulcorner_{4,2,1}) \\ & (\urcorner\ \ulcorner_{2,4}) & & & (\ulcorner\ \llcorner_{2,1}) & & \end{array}$$

$$\begin{array}{ccccccc} & (\urcorner\ \ulcorner_{2,4}) & & & (\ulcorner\ \llcorner_{2,1}) & & \\ (\ulcorner\ \ulcorner_{1,2,4}) & \gg\ \curlyvee & \succ (\lrcorner\ \ulcorner_{1,4}) & \times & (\ulcorner\lrcorner_{4,1}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{4,2}) \\ & (\llcorner\ \ulcorner_{1,2}) & & & (\ulcorner\ \ulcorner_{4,2,1}) & & \end{array}$$

$$\begin{array}{ccccccc} & (\llcorner\ \ulcorner_{1,2}) & & & (\ulcorner\ \ulcorner_{4,2,1}) & & \\ (\urcorner\ \ulcorner_{2,4}) & \gg\ \curlyvee & \succ (\lrcorner\ \ulcorner_{1,4}) & \times & (\ulcorner\lrcorner_{4,1}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{4,2}) \\ & (\ulcorner\ \ulcorner_{1,2,4}) & & & (\ulcorner\ \llcorner_{2,1}) & & \end{array}$$

$$\begin{array}{ccccccc} & (\ulcorner\ \ulcorner_{1,2,4}) & & & (\ulcorner\ \llcorner_{2,1}) & & \\ (\urcorner\ \ulcorner_{2,4}) & \gg\ \curlyvee & \succ (\lrcorner\ \ulcorner_{1,4}) & \times & (\ulcorner\lrcorner_{4,1}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{4,2}) \\ & (\llcorner\ \ulcorner_{1,2}) & & & (\ulcorner\ \ulcorner_{4,2,1}) & & \end{array}$$

Objectal action

$$\begin{matrix} & (\urcorner\ \ulcorner_{2,4}) & & & (\ulcorner\lrcorner_{4,1}) & \\ (\llcorner\ulcorner_{1,2}) & \gg\ \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg\ \curlyvee & \succ (\ulcorner\llcorner_{2,1}) \\ & (\lrcorner\ \ulcorner_{1,4}) & & & (\ulcorner\urcorner_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\ \ulcorner_{1,4}) & & & (\ulcorner\urcorner_{4,2}) & \\ (\llcorner\ulcorner_{1,2}) & \gg\ \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg\ \curlyvee & \succ (\ulcorner\llcorner_{2,1}) \\ & (\urcorner\ \ulcorner_{2,4}) & & & (\ulcorner\lrcorner_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ulcorner_{1,2}) & & & (\ulcorner\urcorner_{4,2}) & \\ (\lrcorner\ \ulcorner_{1,4}) & \gg\ \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg\ \curlyvee & \succ (\ulcorner\lrcorner_{4,1}) \\ & (\urcorner\ \ulcorner_{2,4}) & & & (\ulcorner\llcorner_{2,1}) & \end{matrix}$$

$$\begin{matrix} & (\urcorner\ \ulcorner_{2,4}) & & & (\ulcorner\llcorner_{2,1}) & \\ (\lrcorner\ \ulcorner_{1,4}) & \gg\ \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg\ \curlyvee & \succ (\ulcorner\lrcorner_{4,1}) \\ & (\llcorner\ulcorner_{1,2}) & & & (\ulcorner\urcorner_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\ulcorner_{1,2}) & & & (\ulcorner\lrcorner_{4,1}) & \\ (\urcorner\ \ulcorner_{2,4}) & \gg\ \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{4,2}) \\ & (\lrcorner\ \ulcorner_{1,2,4}) & & & (\ulcorner\llcorner_{2,1}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\ \ulcorner_{1,4}) & & & (\ulcorner\llcorner_{2,1}) & \\ (\urcorner\ \ulcorner_{2,4}) & \gg\ \curlyvee & \succ (\ulcorner\ulcorner_{1,2,4}) \times & (\ulcorner\ulcorner_{4,2,1}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{4,2}) \\ & (\llcorner\ulcorner_{1,2}) & & & (\ulcorner\lrcorner_{4,1}) & \end{matrix}$$

Interpretative action

$$\begin{matrix} & (\ulcorner\ulcorner_{1,2,4}) & & & (\ulcorner\lrcorner_{4,1}) & \\ (\llcorner\ulcorner_{1,2}) & \gg\ \curlyvee & \succ (\urcorner\ \ulcorner_{2,4}) \times & (\ulcorner\urcorner_{4,2}) & \gg\ \curlyvee & \succ (\ulcorner\llcorner_{2,1}) \\ & (\lrcorner\ \ulcorner_{1,4}) & & & (\ulcorner\ulcorner_{4,2,1}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\ \ulcorner_{1,4}) & & & (\ulcorner\ulcorner_{4,2,1}) & \\ (\llcorner\ulcorner_{1,2}) & \gg\ \curlyvee & \succ (\urcorner\ \ulcorner_{2,4}) \times & (\ulcorner\urcorner_{4,2}) & \gg\ \curlyvee & \succ (\ulcorner\llcorner_{2,1}) \\ & (\ulcorner\ulcorner_{1,2,4}) & & & (\ulcorner\lrcorner_{4,1}) & \end{matrix}$$

$$\begin{matrix} & (\lfloor\ \lceil_{1,2}) & & & (\lceil\ \lceil_{4,2,1}) & \\ (\lrcorner\ \lceil_{1,4}) & \gg\ \curlyvee & \succ (\urcorner\ \lceil_{2,4}) & \times & (\lceil\urcorner_{4,2}) & \gg\ \curlyvee\ \succ (\lceil\lrcorner_{4,1}) \\ & (\lceil\ \lceil_{1,2,4}) & & & (\lceil\ \lfloor_{2,1}) & \end{matrix}$$

$$\begin{matrix} & (\lceil\ \lceil_{1,2,4}) & & & (\lceil\ \lfloor_{2,1}) & \\ (\lrcorner\ \lceil_{1,4}) & \gg\ \curlyvee & \succ (\urcorner\ \lceil_{2,4}) & \times & (\lceil\urcorner_{4,2}) & \gg\ \curlyvee\ \succ (\lceil\lrcorner_{4,1}) \\ & (\lfloor\ \lceil_{1,2}) & & & (\lceil\ \lceil_{4,2,1}) & \end{matrix}$$

$$\begin{matrix} & (\lfloor\ \lceil_{1,2}) & & & (\lceil\lrcorner_{4,1}) & \\ (\lceil\ \lceil_{1,2,4}) & \gg\ \curlyvee & \succ (\urcorner\ \lceil_{2,4}) & \times & (\lceil\urcorner_{4,2}) & \gg\ \curlyvee\ \succ (\lceil\ \lceil_{4,2,1}) \\ & (\lrcorner\ \lceil_{1,4}) & & & (\lceil\ \lfloor_{2,1}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\ \lceil_{1,4}) & & & (\lceil\ \lfloor_{2,1}) & \\ (\lceil\ \lceil_{1,2,4}) & \gg\ \curlyvee & \succ (\urcorner\ \lceil_{2,4}) & \times & (\lceil\urcorner_{4,2}) & \gg\ \curlyvee\ \succ (\lceil\ \lceil_{4,2,1}) \\ & (\lfloor\ \lceil_{1,2}) & & & (\lceil\lrcorner_{4,1}) & \end{matrix}$$

12. Pre-semiotic dual system

$(\urcorner\ \lceil_{2,4}\ \lceil\ \lceil_{1,2,4}\ \lrcorner\ \lceil_{1,4}\ \lfloor\urcorner_{2,3}) \times (\urcorner\ \lfloor_{3,2}\ \lceil\lrcorner_{4,1}\ \lceil\ \lceil_{4,2,1}\ \lceil\urcorner_{4,2})$

Qualitative action

$$\begin{matrix} & (\urcorner\ \lceil_{2,4}) & & & (\lceil\ \lceil_{4,2,1}) & \\ (\lrcorner\ \lceil_{1,4}) & \gg\ \curlyvee & \succ (\lfloor\urcorner_{2,3}) & \times & (\urcorner\ \lfloor_{3,2}) & \gg\ \curlyvee\ \succ (\lceil\lrcorner_{4,1}) \\ & (\lceil\ \lceil_{1,2,4}) & & & (\lceil\urcorner_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\lceil\ \lceil_{1,2,4}) & & & (\lceil\urcorner_{4,2}) & \\ (\lrcorner\ \lceil_{1,4}) & \gg\ \curlyvee & \succ (\lfloor\urcorner_{2,3}) & \times & (\urcorner\ \lfloor_{3,2}) & \gg\ \curlyvee\ \succ (\lceil\lrcorner_{4,1}) \\ & (\urcorner\ \lceil_{2,4}) & & & (\lceil\ \lceil_{4,2,1}) & \end{matrix}$$

$$\begin{matrix} & (\urcorner\ \lceil_{2,4}) & & & (\lceil\lrcorner_{4,1}) & \\ (\lceil\ \lceil_{1,2,4}) & \gg\ \curlyvee & \succ (\lfloor\urcorner_{2,3}) & \times & (\urcorner\ \lfloor_{3,2}) & \gg\ \curlyvee\ \succ (\lceil\ \lceil_{4,2,1}) \\ & (\lrcorner\ \lceil_{1,4}) & & & (\lceil\urcorner_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\ \lceil_{1,4}) & & & (\lceil\urcorner_{4,2}) & \\ (\lceil\ \lceil_{1,2,4}) & \gg\ \curlyvee & \succ (\lfloor\urcorner_{2,3}) & \times & (\urcorner\ \lfloor_{3,2}) & \gg\ \curlyvee\ \succ (\lceil\ \lceil_{4,2,1}) \\ & (\urcorner\ \lceil_{2,4}) & & & (\lceil\lrcorner_{4,1}) & \end{matrix}$$

$$\begin{array}{c} (\lrcorner\ \ulcorner_{1,4}) \\ (\urcorner\ \ulcorner_{2,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3}) \\ (\ulcorner\ \ulcorner_{1,2,4}) \end{array} \times \begin{array}{c} (\ulcorner\ \ulcorner_{4,2,1}) \\ (\urcorner\ \llcorner_{3,2}) \gg \curlyvee \succ (\ulcorner\urcorner_{4,2}) \\ (\ulcorner\lrcorner_{4,1}) \end{array}$$

$$\begin{array}{c} (\ulcorner\ \ulcorner_{1,2,4}) \\ (\urcorner\ \ulcorner_{2,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3}) \\ (\lrcorner\ \ulcorner_{1,4}) \end{array} \times \begin{array}{c} (\ulcorner\lrcorner_{4,1}) \\ (\urcorner\ \llcorner_{3,2}) \gg \curlyvee \succ (\ulcorner\urcorner_{4,2}) \\ (\ulcorner\ \ulcorner_{4,2,1}) \end{array}$$

Medial action

$$\begin{array}{c} (\urcorner\ \ulcorner_{2,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\ulcorner\ \ulcorner_{1,2,4}) \end{array} \times \begin{array}{c} (\ulcorner\ \ulcorner_{4,2,1}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\urcorner_{4,2}) \end{array}$$

$$\begin{array}{c} (\ulcorner\ \ulcorner_{1,2,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\urcorner\ \ulcorner_{2,4}) \end{array} \times \begin{array}{c} (\ulcorner\urcorner_{4,2}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\ \ulcorner_{4,2,1}) \end{array}$$

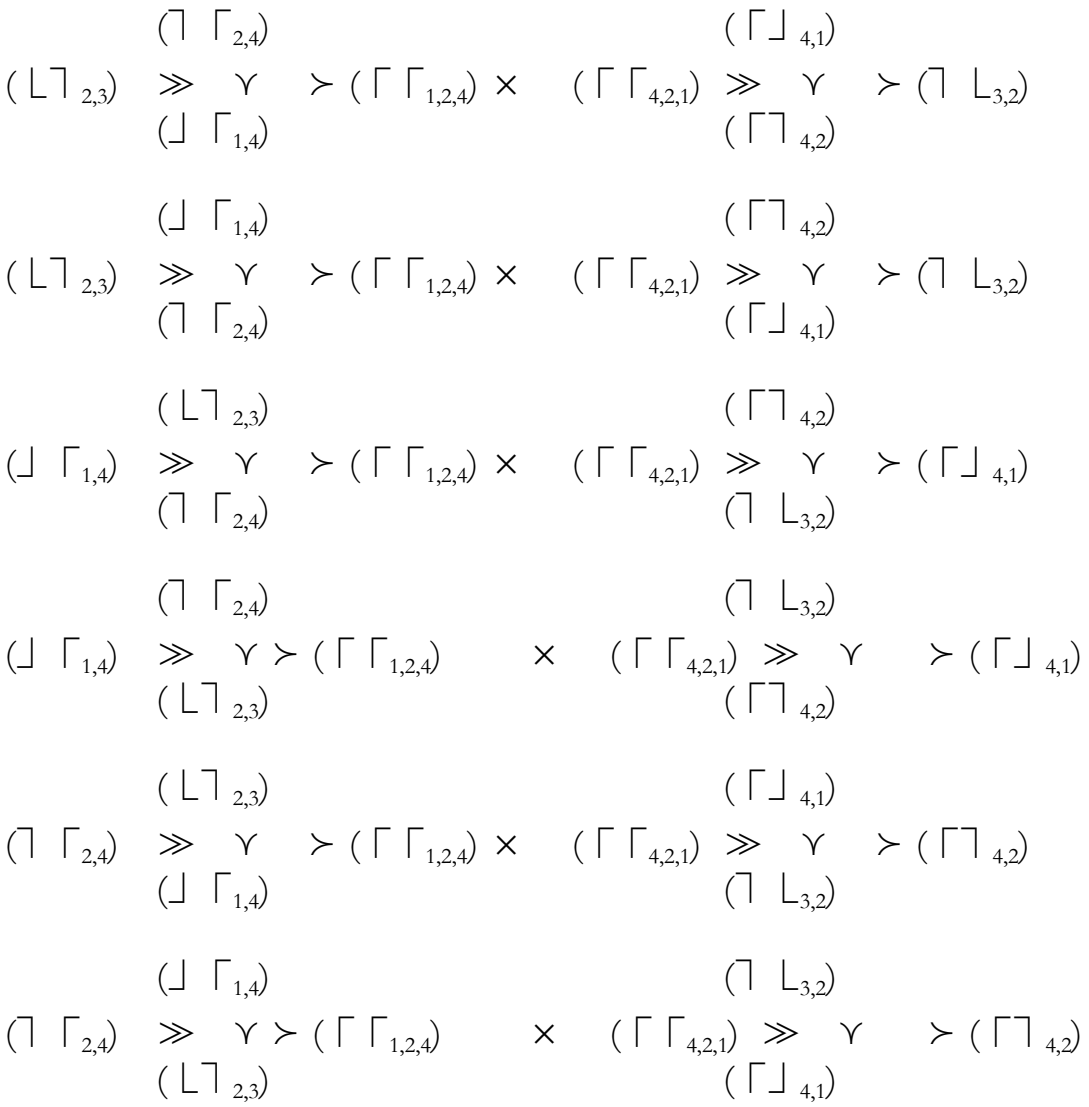
$$\begin{array}{c} (\llcorner\urcorner_{2,3}) \\ (\ulcorner\ \ulcorner_{1,2,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\urcorner\ \ulcorner_{2,4}) \end{array} \times \begin{array}{c} (\ulcorner\urcorner_{4,2}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{4,2,1}) \\ (\urcorner\ \llcorner_{3,2}) \end{array}$$

$$\begin{array}{c} (\urcorner\ \ulcorner_{2,4}) \\ (\ulcorner\ \ulcorner_{1,2,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\llcorner\urcorner_{2,3}) \end{array} \times \begin{array}{c} (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\ulcorner\ \ulcorner_{4,2,1}) \\ (\ulcorner\urcorner_{4,2}) \end{array}$$

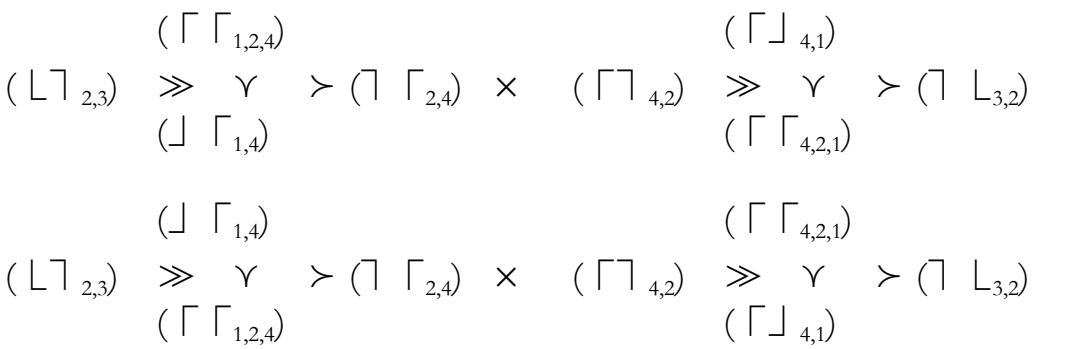
$$\begin{array}{c} (\llcorner\urcorner_{2,3}) \\ (\urcorner\ \ulcorner_{2,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\ulcorner\ \ulcorner_{1,2,4}) \end{array} \times \begin{array}{c} (\ulcorner\ \ulcorner_{4,2,1}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\urcorner_{4,2}) \end{array}$$

$$\begin{array}{c} (\ulcorner\ \ulcorner_{1,2,4}) \\ (\urcorner\ \ulcorner_{2,4}) \gg \curlyvee \succ (\lrcorner\ \ulcorner_{1,4}) \\ (\llcorner\urcorner_{2,3}) \end{array} \times \begin{array}{c} (\urcorner\ \llcorner_{3,2}) \\ (\ulcorner\lrcorner_{4,1}) \gg \curlyvee \succ (\ulcorner\urcorner_{4,2}) \\ (\ulcorner\ \ulcorner_{4,2,1}) \end{array}$$

Objectal action



Interpretative action



$$\begin{matrix} & (\lfloor\rceil_{2,3}) & & & (\lceil\lceil_{4,2,1}) \\ (\lrcorner\lceil_{1,4}) & \gg \curlyvee \succ & (\neg\lceil_{2,4}) & \times & (\lceil\rceil_{4,2}) \gg \curlyvee \succ & (\lceil\lrcorner_{4,1}) \\ & (\lceil\lceil_{1,2,4}) & & & (\neg\lfloor_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\lceil\lceil_{1,2,4}) & & & (\neg\lfloor_{3,2}) \\ (\lrcorner\lceil_{1,4}) & \gg \curlyvee \succ & (\neg\lceil_{2,4}) & \times & (\lceil\rceil_{4,2}) \gg \curlyvee \succ & (\lceil\lrcorner_{4,1}) \\ & (\lfloor\rceil_{2,3}) & & & (\lceil\lceil_{4,2,1}) & \end{matrix}$$

$$\begin{matrix} & (\lfloor\rceil_{2,3}) & & & (\lceil\lrcorner_{4,1}) \\ (\lceil\lceil_{1,2,4}) & \gg \curlyvee \succ & (\neg\lceil_{2,4}) & \times & (\lceil\rceil_{4,2}) \gg \curlyvee \succ & (\lceil\lceil_{4,2,1}) \\ & (\lrcorner\lceil_{1,4}) & & & (\neg\lfloor_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\lceil_{1,4}) & & & (\neg\lfloor_{3,2}) \\ (\lceil\lceil_{1,2,4}) & \gg \curlyvee \succ & (\neg\lceil_{2,4}) & \times & (\lceil\rceil_{4,2}) \gg \curlyvee \succ & (\lceil\lceil_{4,2,1}) \\ & (\lfloor\rceil_{2,3}) & & & (\lceil\lrcorner_{4,1}) & \end{matrix}$$

13. Pre-semiotic system

$(\neg\lceil_{2,4}\lceil\lceil_{1,2,4}\lrcorner\rceil_{3,4}\lfloor\rceil_{2,3}) \times (\neg\lfloor_{3,2}\rceil\lrcorner_{4,3}\lceil\lceil_{4,2,1}\lceil\rceil_{4,2})$

Qualitative action

$$\begin{matrix} & (\neg\lceil_{2,4}) & & & (\lceil\lceil_{4,2,1}) \\ (\lrcorner\rceil_{3,4}) & \gg \curlyvee \succ & (\lfloor\rceil_{2,3}) & \times & (\neg\lfloor_{3,2}) \gg \curlyvee \succ & (\neg\lrcorner_{4,3}) \\ & (\lceil\lceil_{1,2,4}) & & & (\lceil\rceil_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\lceil\lceil_{1,2,4}) & & & (\lceil\rceil_{4,2}) \\ (\lrcorner\rceil_{3,4}) & \gg \curlyvee \succ & (\lfloor\rceil_{2,3}) & \times & (\neg\lfloor_{3,2}) \gg \curlyvee \succ & (\neg\lrcorner_{4,3}) \\ & (\neg\lceil_{2,4}) & & & (\lceil\lceil_{4,2,1}) & \end{matrix}$$

$$\begin{matrix} & (\neg\lceil_{2,4}) & & & (\neg\lrcorner_{4,3}) \\ (\lceil\lceil_{1,2,4}) & \gg \curlyvee \succ & (\lfloor\rceil_{2,3}) & \times & (\neg\lfloor_{3,2}) \gg \curlyvee \succ & (\lceil\lceil_{4,2,1}) \\ & (\lrcorner\rceil_{3,4}) & & & (\neg\lceil_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\rceil_{3,4}) & & & (\lceil\rceil_{4,2}) \\ (\lceil\lceil_{1,2,4}) & \gg \curlyvee \succ & (\lfloor\rceil_{2,3}) & \times & (\neg\lfloor_{3,2}) \gg \curlyvee \succ & (\lceil\lceil_{4,2,1}) \\ & (\neg\lceil_{2,4}) & & & (\neg\lrcorner_{4,3}) & \end{matrix}$$

$$\begin{array}{c} (\lrcorner\,\urcorner_{3,4}) \\ (\urcorner\,\ulcorner_{2,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3}) \\ (\ulcorner\,\ulcorner_{1,2,4}) \end{array} \times \begin{array}{c} (\urcorner\,\llcorner_{3,2}) \gg \curlyvee \succ (\lceil\urcorner_{4,2}) \\ (\urcorner\,\lrcorner_{4,3}) \end{array} \qquad \begin{array}{c} (\ulcorner\,\ulcorner_{1,2,4}) \\ (\urcorner\,\ulcorner_{2,4}) \gg \curlyvee \succ (\llcorner\urcorner_{2,3}) \\ (\lrcorner\,\urcorner_{3,4}) \end{array} \times \begin{array}{c} (\urcorner\,\lrcorner_{4,3}) \\ (\urcorner\,\llcorner_{3,2}) \gg \curlyvee \succ (\lceil\urcorner_{4,2}) \\ (\ulcorner\,\ulcorner_{4,2,1}) \end{array}$$

Medial action

$$\begin{array}{c} (\urcorner\,\ulcorner_{2,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\,\urcorner_{3,4}) \\ (\ulcorner\,\ulcorner_{1,2,4}) \end{array} \times \begin{array}{c} (\urcorner\,\lrcorner_{4,3}) \gg \curlyvee \succ (\urcorner\,\llcorner_{3,2}) \\ (\lceil\urcorner_{4,2}) \end{array} \qquad \begin{array}{c} (\ulcorner\,\ulcorner_{1,2,4}) \\ (\llcorner\urcorner_{2,3}) \gg \curlyvee \succ (\lrcorner\,\urcorner_{3,4}) \\ (\urcorner\,\ulcorner_{2,4}) \end{array} \times \begin{array}{c} (\urcorner\,\lrcorner_{4,3}) \gg \curlyvee \succ (\urcorner\,\llcorner_{3,2}) \\ (\ulcorner\,\ulcorner_{4,2,1}) \end{array}$$

$$\begin{array}{c} (\llcorner\urcorner_{2,3}) \\ (\ulcorner\,\ulcorner_{1,2,4}) \gg \curlyvee \succ (\lrcorner\,\urcorner_{3,4}) \\ (\urcorner\,\ulcorner_{2,4}) \end{array} \times \begin{array}{c} (\urcorner\,\lrcorner_{4,3}) \gg \curlyvee \succ (\lceil\urcorner_{4,2}) \\ (\urcorner\,\llcorner_{3,2}) \end{array} \qquad \begin{array}{c} (\urcorner\,\ulcorner_{2,4}) \\ (\ulcorner\,\ulcorner_{1,2,4}) \gg \curlyvee \succ (\lrcorner\,\urcorner_{3,4}) \\ (\llcorner\urcorner_{2,3}) \end{array} \times \begin{array}{c} (\urcorner\,\lrcorner_{4,3}) \gg \curlyvee \succ (\lceil\urcorner_{4,2}) \\ (\ulcorner\,\ulcorner_{4,2,1}) \end{array}$$

$$\begin{array}{c} (\llcorner\urcorner_{2,3}) \\ (\urcorner\,\ulcorner_{2,4}) \gg \curlyvee \succ (\lrcorner\,\urcorner_{3,4}) \\ (\ulcorner\,\ulcorner_{1,2,4}) \end{array} \times \begin{array}{c} (\urcorner\,\lrcorner_{4,3}) \gg \curlyvee \succ (\urcorner\,\llcorner_{3,2}) \\ (\lceil\urcorner_{4,2}) \end{array} \qquad \begin{array}{c} (\ulcorner\,\ulcorner_{1,2,4}) \\ (\urcorner\,\ulcorner_{2,4}) \gg \curlyvee \succ (\lrcorner\,\urcorner_{3,4}) \\ (\llcorner\urcorner_{2,3}) \end{array} \times \begin{array}{c} (\urcorner\,\lrcorner_{4,3}) \gg \curlyvee \succ (\urcorner\,\llcorner_{3,2}) \\ (\ulcorner\,\ulcorner_{4,2,1}) \end{array}$$

Objectal action

$$\begin{matrix} & (\urcorner\ \ulcorner_{2,4}) & & & (\urcorner\ \lrcorner_{4,3}) & \\ (\llcorner\urcorner_{2,3}) & \gg\curlyvee & \succ(\ulcorner\ \ulcorner_{1,2,4}) & \times & (\ulcorner\ \ulcorner_{4,2,1}) \gg & \curlyvee \succ(\urcorner\ \llcorner_{3,2}) \\ & (\lrcorner\ \urcorner_{3,4}) & & & (\ulcorner\urcorner_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\ \urcorner_{3,4}) & & & (\ulcorner\urcorner_{4,2}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ(\ulcorner\ \ulcorner_{1,2,4} \times & & (\ulcorner\ \ulcorner_{4,2,1}) \gg & \curlyvee \succ(\urcorner\ \llcorner_{3,2}) \\ & (\urcorner\ \ulcorner_{2,4}) & & & (\urcorner\ \lrcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\ulcorner\urcorner_{4,2}) & \\ (\lrcorner\urcorner_{3,4}) & \gg\ \curlyvee & \succ(\ulcorner\ \ulcorner_{1,2,4} \times & & (\ulcorner\ \ulcorner_{4,2,1}) \gg & \curlyvee \succ(\urcorner\ \lrcorner_{4,3}) \\ & (\urcorner\ \ulcorner_{2,4}) & & & (\urcorner\ \llcorner_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\urcorner\ \ulcorner_{2,4}) & & & (\urcorner\ \llcorner_{3,2}) & \\ (\lrcorner\urcorner_{3,4}) & \gg\ \curlyvee & \succ(\ulcorner\ \ulcorner_{1,2,4} \times & & (\ulcorner\ \ulcorner_{4,2,1}) \gg & \curlyvee \succ(\urcorner\ \lrcorner_{4,3}) \\ & (\llcorner\urcorner_{2,3}) & & & (\ulcorner\urcorner_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\urcorner\ \lrcorner_{4,3}) & \\ (\urcorner\ \ulcorner_{2,4}) & \gg\ \curlyvee & \succ(\ulcorner\ \ulcorner_{1,2,4} \times & & (\ulcorner\ \ulcorner_{4,2,1}) \gg & \curlyvee \succ(\ulcorner\urcorner_{4,2}) \\ & (\lrcorner\urcorner_{3,4}) & & & (\urcorner\ \llcorner_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\urcorner_{3,4}) & & & (\urcorner\ \llcorner_{3,2}) & \\ (\urcorner\ \ulcorner_{2,4}) & \gg\ \curlyvee & \succ(\ulcorner\ \ulcorner_{1,2,4} \times & & (\ulcorner\ \ulcorner_{4,2,1}) \gg & \curlyvee \succ(\ulcorner\urcorner_{4,2}) \\ & (\llcorner\urcorner_{2,3}) & & & (\urcorner\ \lrcorner_{4,3}) & \end{matrix}$$

Interpretative action

$$\begin{matrix} & (\ulcorner\ \ulcorner_{1,2,4}) & & & (\urcorner\ \lrcorner_{4,3}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ(\urcorner\ \ulcorner_{2,4}) & \times & (\ulcorner\urcorner_{4,2}) \gg & \curlyvee \succ(\urcorner\ \llcorner_{3,2}) \\ & (\lrcorner\urcorner_{3,4}) & & & (\ulcorner\ \ulcorner_{4,2,1}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\urcorner_{3,4}) & & & (\ulcorner\ \ulcorner_{4,2,1}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ(\urcorner\ \ulcorner_{2,4}) & \times & (\ulcorner\urcorner_{4,2}) \gg & \curlyvee \succ(\urcorner\ \llcorner_{3,2}) \\ & (\ulcorner\ \ulcorner_{1,2,4}) & & & (\urcorner\ \lrcorner_{4,3} & \end{matrix}$$

$$\begin{matrix} & (\lfloor\rceil_{2,3}) & & & (\lceil\lceil_{4,2,1}) & \\ (\lrcorner\rceil_{3,4}) & \gg \curlyvee & \succ (\urcorner\lceil_{2,4}) & \times & (\lceil\rceil_{4,2}) & \gg \curlyvee \succ (\urcorner\lrcorner_{4,3}) \\ & (\lceil\lceil_{1,2,4}) & & & (\urcorner\lfloor_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\lceil\lceil_{1,2,4}) & & & (\urcorner\lfloor_{3,2}) & \\ (\lrcorner\rceil_{3,4}) & \gg \curlyvee & \succ (\urcorner\lceil_{2,4}) & \times & (\lceil\rceil_{4,2}) & \gg \curlyvee \succ (\urcorner\lrcorner_{4,3}) \\ & (\lfloor\rceil_{2,3}) & & & (\lceil\lceil_{4,2,1}) & \end{matrix}$$

$$\begin{matrix} & (\lfloor\rceil_{2,3}) & & & (\urcorner\lrcorner_{4,3}) & \\ (\lceil\lceil_{1,2,4}) & \gg \curlyvee & \succ (\urcorner\lceil_{2,4}) & \times & (\lceil\rceil_{4,2}) & \gg \curlyvee \succ (\lceil\lceil_{4,2,1}) \\ & (\lrcorner\rceil_{3,4}) & & & (\urcorner\lfloor_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\rceil_{3,4}) & & & (\urcorner\lfloor_{3,2}) & \\ (\lceil\lceil_{1,2,4}) & \gg \curlyvee & \succ (\urcorner\lceil_{2,4}) & \times & (\lceil\rceil_{4,2}) & \gg \curlyvee \succ (\lceil\lceil_{4,2,1}) \\ & (\lfloor\rceil_{2,3}) & & & (\urcorner\lrcorner_{4,3}) & \end{matrix}$$

14. Pre-semiotic dual system

$(\urcorner\lceil_{2,4}\lceil\rceil_{2,4}\lrcorner\rceil_{3,4}\lfloor\rceil_{2,3}) \times (\urcorner\lfloor_{3,2}\rceil\lrcorner_{4,3}\rceil\lceil_{4,2}\lceil\rceil_{4,2})$

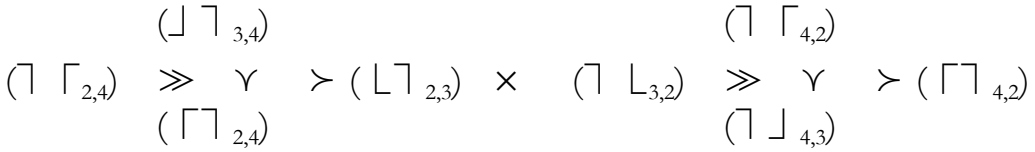
Qualitative action

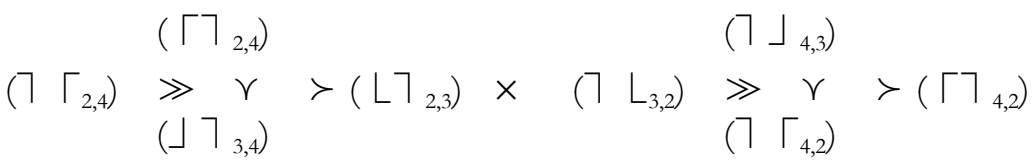
$$\begin{matrix} & (\urcorner\lceil_{2,4}) & & & (\urcorner\lceil_{4,2}) & \\ (\lrcorner\rceil_{3,4}) & \gg \curlyvee & \succ (\lfloor\rceil_{2,3}) & \times & (\urcorner\lfloor_{3,2}) & \gg \curlyvee \succ (\urcorner\lrcorner_{4,3}) \\ & (\lceil\rceil_{2,4}) & & & (\lceil\rceil_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\lceil\rceil_{2,4}) & & & (\lceil\rceil_{4,2}) & \\ (\lrcorner\rceil_{3,4}) & \gg \curlyvee & \succ (\lfloor\rceil_{2,3}) & \times & (\urcorner\lfloor_{3,2}) & \gg \curlyvee \succ (\urcorner\lrcorner_{4,3}) \\ & (\urcorner\lceil_{2,4}) & & & (\urcorner\lceil_{4,2}) & \end{matrix}$$

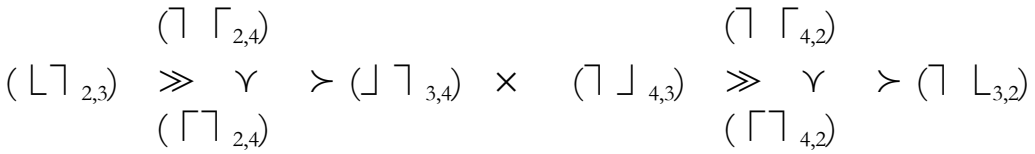
$$\begin{matrix} & (\urcorner\lceil_{2,4}) & & & (\urcorner\lrcorner_{4,3}) & \\ (\lceil\rceil_{2,4}) & \gg \curlyvee & \succ (\lfloor\rceil_{2,3}) & \times & (\urcorner\lfloor_{3,2}) & \gg \curlyvee \succ (\urcorner\lceil_{4,2}) \\ & (\lrcorner\rceil_{3,4}) & & & (\lceil\rceil_{4,2}) & \end{matrix}$$

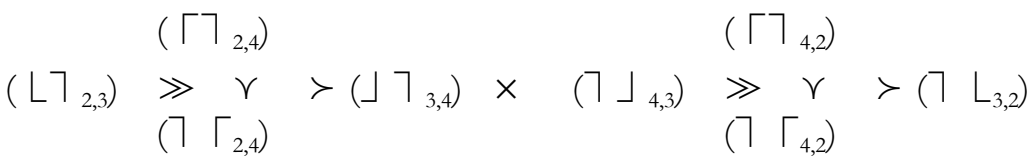
$$\begin{matrix} & (\lrcorner\rceil_{3,4}) & & & (\lceil\rceil_{4,2}) & \\ (\lceil\rceil_{2,4}) & \gg \curlyvee & \succ (\lfloor\rceil_{2,3}) & \times & (\urcorner\lfloor_{3,2}) & \gg \curlyvee \succ (\urcorner\lceil_{4,2}) \\ & (\urcorner\lceil_{2,4}) & & & (\urcorner\lrcorner_{4,3}) & \end{matrix}$$

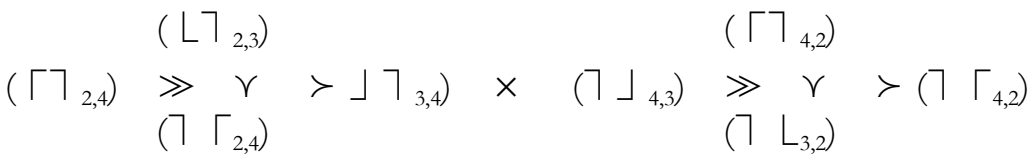


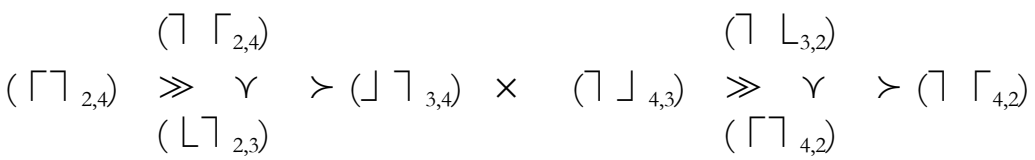


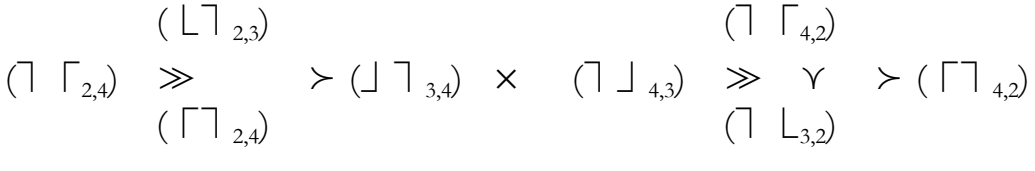
Medial action

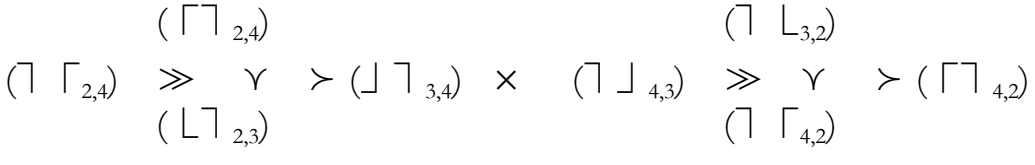












Objectal action

$$\begin{matrix} & (\urcorner\ \ulcorner_{2,4}) & & & (\urcorner\ \lrcorner_{4,3}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{2,4}) & \times & (\urcorner\ \ulcorner_{4,2}) & \gg\ \curlyvee \quad \succ (\urcorner\ \llcorner_{3,2}) \\ & (\lrcorner\urcorner_{3,4}) & & & (\ulcorner\urcorner_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\urcorner_{3,4}) & & & (\ulcorner\urcorner_{4,2}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{2,4}) & \times & (\urcorner\ \ulcorner_{4,2}) & \gg\ \curlyvee \quad \succ (\urcorner\ \llcorner_{3,2}) \\ & (\urcorner\ \ulcorner_{2,4}) & & & (\urcorner\ \lrcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\ulcorner\urcorner_{4,2}) & \\ (\lrcorner\urcorner_{3,4}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{2,4}) & \times & (\urcorner\ \ulcorner_{4,2}) & \gg\ \curlyvee \quad \succ (\urcorner\ \lrcorner_{4,3}) \\ & (\urcorner\ \ulcorner_{2,4}) & & & (\urcorner\ \llcorner_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\urcorner\ \ulcorner_{2,4}) & & & (\urcorner\ \llcorner_{3,2}) & \\ (\lrcorner\urcorner_{3,4}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{2,4}) & \times & (\urcorner\ \ulcorner_{4,2}) & \gg\ \curlyvee \quad \succ (\urcorner\ \lrcorner_{4,3}) \\ & (\llcorner\urcorner_{2,3}) & & & (\ulcorner\urcorner_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\urcorner\ \lrcorner_{4,3}) & \\ (\urcorner\ \ulcorner_{2,4}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{2,4}) & \times & (\urcorner\ \ulcorner_{4,2}) & \gg\ \curlyvee \quad \succ (\ulcorner\urcorner_{4,2}) \\ & (\lrcorner\urcorner_{3,4}) & & & (\urcorner\ \llcorner_{3,2}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\urcorner_{3,4}) & & & (\urcorner\ \llcorner_{3,2}) & \\ (\urcorner\ \ulcorner_{2,4}) & \gg\ \curlyvee & \succ (\ulcorner\urcorner_{2,4}) & \times & (\urcorner\ \ulcorner_{4,2}) & \gg\ \curlyvee \quad \succ (\ulcorner\urcorner_{4,2}) \\ & (\llcorner\urcorner_{2,3}) & & & (\urcorner\ \lrcorner_{4,3}) & \end{matrix}$$

Interpretative action

$$\begin{matrix} & (\ulcorner\urcorner_{2,4}) & & & (\urcorner\ \lrcorner_{4,3}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\urcorner\ \ulcorner_{2,4}) & \times & (\ulcorner\urcorner_{4,2}) & \gg\ \curlyvee \quad \succ (\urcorner\ \llcorner_{3,2}) \\ & (\lrcorner\urcorner_{3,4}) & & & (\urcorner\ \ulcorner_{4,2}) & \end{matrix}$$

$$\begin{matrix} & (\lrcorner\urcorner_{3,4}) & & & (\urcorner\ \ulcorner_{4,2}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\urcorner\ \ulcorner_{2,4}) & \times & (\ulcorner\urcorner_{4,2}) & \gg\ \curlyvee \quad \succ (\urcorner\ \llcorner_{3,2}) \\ & (\ulcorner\urcorner_{2,4}) & & & (\urcorner\ \lrcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\lfloor\rceil_{2,3}) & & & (\neg\ \lceil_{4,2}) \\ (\lrcorner\rceil_{3,4}) & \gg\ \curlyvee & \succ (\neg\ \lceil_{2,4}) & \times & (\lceil\rceil_{4,2}) \gg\ \curlyvee & \succ (\neg\ \lrcorner_{4,3}) \\ & (\lceil\rceil_{2,4}) & & & (\neg\ \lfloor_{3,2}) \end{matrix}$$

$$\begin{matrix} & (\lceil\rceil_{2,4}) & & & (\neg\ \lfloor_{3,2}) \\ (\lrcorner\rceil_{3,4}) & \gg\ \curlyvee & \succ (\neg\ \lceil_{2,4}) & \times & (\lceil\rceil_{4,2}) \gg\ \curlyvee & \succ (\neg\ \lrcorner_{4,3}) \\ & (\lfloor\rceil_{2,3}) & & & (\neg\ \lceil_{4,2}) \end{matrix}$$

$$\begin{matrix} & (\lfloor\rceil_{2,3}) & & & (\neg\ \lrcorner_{4,3}) \\ (\lceil\rceil_{2,4}) & \gg\ \curlyvee & \succ (\neg\ \lceil_{2,4}) & \times & (\lceil\rceil_{4,2}) \gg\ \curlyvee & \succ (\neg\ \lceil_{4,2}) \\ & (\lrcorner\rceil_{3,4}) & & & (\neg\ \lfloor_{3,2}) \end{matrix}$$

$$\begin{matrix} & (\lrcorner\rceil_{3,4}) & & & (\neg\ \lfloor_{3,2}) \\ (\lceil\rceil_{2,4}) & \gg\ \curlyvee & \succ (\neg\ \lceil_{2,4}) & \times & (\lceil\rceil_{4,2}) \gg\ \curlyvee & \succ (\neg\ \lceil_{4,2}) \\ & (\lfloor\rceil_{2,3}) & & & (\neg\ \lrcorner_{4,3}) \end{matrix}$$

15. Pre-semiotic dual system

$(\neg\rceil_{2,3,4}\ \lceil\rceil_{2,4}\ \lrcorner\rceil_{3,4}\ \lfloor\rceil_{2,3}) \times (\neg\ \lfloor_{3,2}\ \rceil\ \lrcorner_{4,3}\ \rceil\ \lceil_{4,2}\ \rceil\rceil_{4,3,2})$

Qualitative action

$$\begin{matrix} & (\neg\rceil_{2,3,4}) & & & (\neg\ \lceil_{4,2}) \\ (\lrcorner\rceil_{3,4}) & \gg\ \curlyvee & \succ (\lfloor\rceil_{2,3}) & \times & (\neg\ \lfloor_{3,2}) \gg\ \curlyvee & \succ (\neg\ \lrcorner_{4,3}) \\ & (\lceil\rceil_{2,4}) & & & (\neg\rceil_{4,3,2}) \end{matrix}$$

$$\begin{matrix} & (\lceil\rceil_{2,4}) & & & (\neg\rceil_{4,3,2}) \\ (\lrcorner\rceil_{3,4}) & \gg\ \curlyvee & \succ (\lfloor\rceil_{2,3}) & \times & (\neg\ \lfloor_{3,2}) \gg\ \curlyvee & \succ (\neg\ \lrcorner_{4,3}) \\ & (\neg\rceil_{2,3,4}) & & & (\neg\ \lceil_{4,2}) \end{matrix}$$

$$\begin{matrix} & (\neg\rceil_{2,3,4}) & & & (\neg\ \lrcorner_{4,3}) \\ (\lceil\rceil_{2,4}) & \gg\ \curlyvee & \succ (\lfloor\rceil_{2,3}) & \times & (\neg\ \lfloor_{3,2}) \gg\ \curlyvee & \succ (\neg\ \lceil_{4,2}) \\ & (\lrcorner\rceil_{3,4}) & & & (\neg\rceil_{4,3,2}) \end{matrix}$$

$$\begin{matrix} & (\lrcorner\rceil_{3,4}) & & & (\neg\rceil_{4,3,2}) \\ (\lceil\rceil_{2,4}) & \gg\ \curlyvee & \succ (\lfloor\rceil_{2,3}) & \times & (\neg\ \lfloor_{3,2}) \gg\ \curlyvee & \succ (\neg\ \lceil_{4,2}) \\ & (\neg\rceil_{2,3,4}) & & & (\neg\ \lrcorner_{4,3}) \end{matrix}$$

$$\begin{matrix} & (\lrcorner\,\urcorner_{3,4}) & & & (\urcorner\,\ulcorner_{4,2}) & \\ (\urcorner\,\urcorner_{2,3,4}) & \gg\ \curlyvee & \succ (\llcorner\urcorner_{2,3}) & \times & (\urcorner\,\llcorner_{3,2}) & \gg\ \curlyvee\ \succ (\urcorner\,\urcorner_{4,3,2}) \\ & (\ulcorner\urcorner_{2,4}) & & & (\urcorner\,\lrcorner_{4,3}) & \end{matrix}$$

$$\begin{matrix} & (\ulcorner\urcorner_{2,4}) & & & (\urcorner\,\lrcorner_{4,3}) & \\ (\urcorner\,\urcorner_{2,3,4}) & \gg\ \curlyvee & \succ (\llcorner\urcorner_{2,3}) & \times & (\urcorner\,\llcorner_{3,2}) & \gg\ \curlyvee\ \succ (\urcorner\,\urcorner_{4,3,2}) \\ & (\lrcorner\,\urcorner_{3,4}) & & & (\urcorner\,\ulcorner_{4,2}) & \end{matrix}$$

Medial action

$$\begin{matrix} & (\urcorner\,\urcorner_{2,3,4}) & & & (\urcorner\,\ulcorner_{4,2}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\lrcorner\,\urcorner_{3,4}) & \times & (\urcorner\,\lrcorner_{4,3}) & \gg\ \curlyvee\ \succ (\urcorner\,\llcorner_{3,2}) \\ & (\ulcorner\urcorner_{2,4}) & & & (\urcorner\,\urcorner_{4,3,2}) & \end{matrix}$$

$$\begin{matrix} & (\ulcorner\urcorner_{2,4}) & & & (\ulcorner\urcorner_{4,2}) & \\ (\llcorner\urcorner_{2,3}) & \gg\ \curlyvee & \succ (\lrcorner\,\urcorner_{3,4}) & \times & (\urcorner\,\lrcorner_{4,3}) & \gg\ \curlyvee\ \succ (\urcorner\,\llcorner_{3,2}) \\ & (\urcorner\,\ulcorner_{2,4}) & & & (\urcorner\,\ulcorner_{4,2}) & \end{matrix}$$

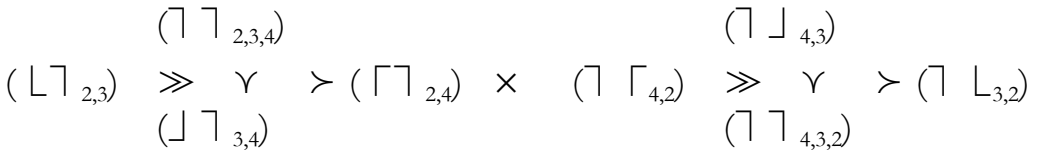
$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\ulcorner\urcorner_{4,2}) & \\ (\ulcorner\urcorner_{2,4}) & \gg\ \curlyvee & \succ (\lrcorner\,\urcorner_{3,4}) & \times & (\urcorner\,\lrcorner_{4,3}) & \gg\ \curlyvee\ \succ (\urcorner\,\ulcorner_{4,2}) \\ & (\urcorner\,\ulcorner_{2,4}) & & & (\urcorner\,\llcorner_{3,2}) & \end{matrix}$$

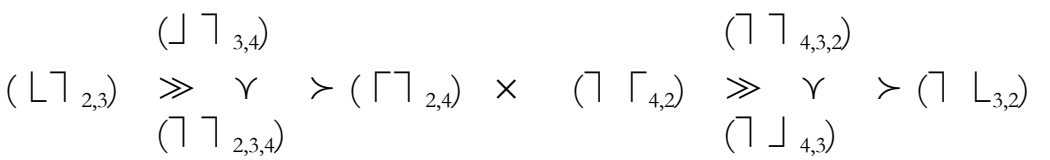
$$\begin{matrix} & (\urcorner\,\urcorner_{2,3,4}) & & & (\urcorner\,\llcorner_{3,2}) & \\ (\ulcorner\urcorner_{2,4}) & \gg\ \curlyvee & \succ (\lrcorner\,\urcorner_{3,4}) & \times & (\urcorner\,\lrcorner_{4,3}) & \gg\ \curlyvee\ \succ (\urcorner\,\ulcorner_{4,2}) \\ & (\llcorner\urcorner_{2,3}) & & & (\urcorner\,\urcorner_{4,3,2}) & \end{matrix}$$

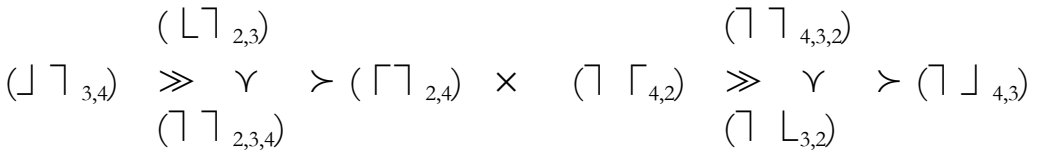
$$\begin{matrix} & (\llcorner\urcorner_{2,3}) & & & (\urcorner\,\ulcorner_{4,2}) & \\ (\urcorner\,\urcorner_{2,3,4}) & \gg\ \curlyvee & \succ (\lrcorner\,\urcorner_{3,4}) & \times & (\urcorner\,\lrcorner_{4,3}) & \gg\ \curlyvee\ \succ (\urcorner\,\urcorner_{4,3,2}) \\ & (\ulcorner\urcorner_{2,4}) & & & (\urcorner\,\llcorner_{3,2}) & \end{matrix}$$

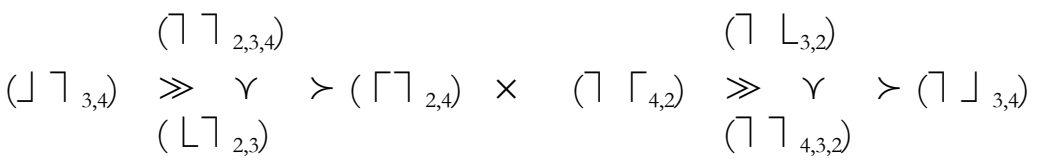
$$\begin{matrix} & (\ulcorner\urcorner_{2,4}) & & & (\urcorner\,\llcorner_{3,2}) & \\ (\urcorner\,\urcorner_{2,3,4}) & \gg\ \curlyvee & \succ (\lrcorner\,\urcorner_{3,4}) & \times & (\urcorner\,\lrcorner_{4,3}) & \gg\ \curlyvee\ \succ (\urcorner\,\urcorner_{4,3,2}) \\ & (\llcorner\urcorner_{2,3}) & & & (\urcorner\,\ulcorner_{4,2}) & \end{matrix}$$

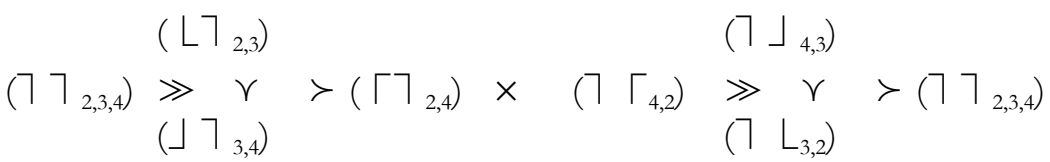
Objectal action

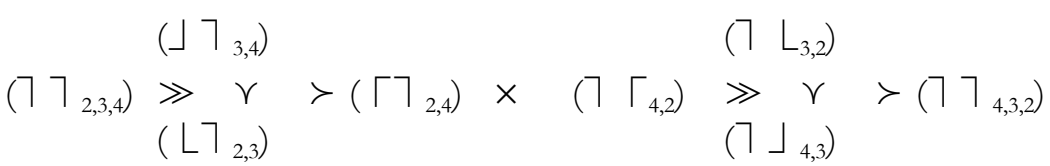




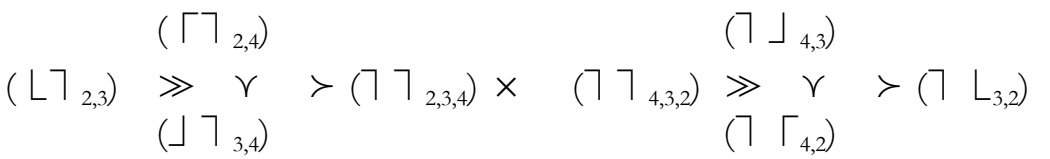


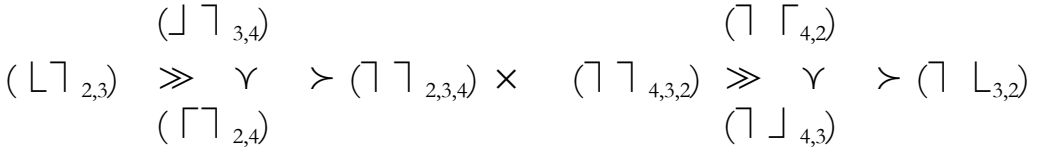






Interpretative action





$$(\lrcorner\urcorner_{3,4}) \gg \begin{matrix}(\llcorner\urcorner_{2,3}) \\ (\lceil\urcorner_{2,4})\end{matrix} \succ (\urcorner\urcorner_{2,3,4}) \times (\urcorner\urcorner_{4,3,2}) \gg \begin{matrix}(\urcorner\lceil_{4,2}) \\ (\urcorner\llcorner_{3,2})\end{matrix} \succ (\urcorner\lrcorner_{4,3})$$

$$(\lrcorner\urcorner_{3,4}) \gg \begin{matrix}(\lceil\urcorner_{2,4}) \\ (\llcorner\urcorner_{2,3})\end{matrix} \succ (\urcorner\urcorner_{2,3,4}) \times (\urcorner\urcorner_{4,3,2}) \gg \begin{matrix}(\urcorner\llcorner_{3,2}) \\ (\urcorner\lceil_{4,2})\end{matrix} \succ (\urcorner\lrcorner_{4,3})$$

$$(\lceil\urcorner_{2,4}) \gg \begin{matrix}(\llcorner\urcorner_{2,3}) \\ (\lrcorner\urcorner_{3,4})\end{matrix} \succ (\urcorner\urcorner_{2,3,4}) \times (\urcorner\urcorner_{4,3,2}) \gg \begin{matrix}(\urcorner\lrcorner_{4,3}) \\ (\urcorner\llcorner_{3,2})\end{matrix} \succ (\urcorner\lceil_{4,2})$$

$$(\lceil\urcorner_{2,4}) \gg \begin{matrix}(\lrcorner\urcorner_{3,4}) \\ (\llcorner\urcorner_{2,3})\end{matrix} \succ (\urcorner\urcorner_{2,3,4}) \times (\urcorner\urcorner_{4,3,2}) \gg \begin{matrix}(\urcorner\llcorner_{3,2}) \\ (\urcorner\lrcorner_{4,3})\end{matrix} \succ (\urcorner\lceil_{4,2})$$

Therefore, we have given all possible words of vocabulary of a 4-contextural 4-adic negative language in semiotic form. This is the semiotic world according Günther we had to build by opening the curtain and enter the semiotic meontics, the reign of volition and semiotic action.

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