

WUMBO Engine · LIMNUS

Integration

100 neural regions mapped to LIMNUS geometry: 63 prism points + 32 EM cage points + 5 emergent self-reference nodes. Governed by the critical constant $z = \sqrt{3}/2$.

[APL Manual Index](#)[LaTeX Manual](#)[APL Manual \(PDF\)](#)[Rhythm Entrainment](#)

$$z = \sqrt{3}/2 \approx 0.8660254$$

THE CRITICAL POINT · THE LENS · PHASE TRANSITION
THRESHOLD

LIMNUS ↔ WUMBO Structure

The 100 WUMBO words map onto LIMNUS geometry. 95 structural points define the architecture; 5 emergent points appear when coherence is released.

63-Point Prism

63

7 layers × 9 nodes
Inner hexagonal structure
Regions I-LXIII

32-Point EM Cage

32

12 top + 12 bottom + 8 vertices

Containment field

Regions LXIV-XCV

5 Emergent Nodes

5

Self-reference loops

Appear when FREE

Regions XCVI-C

Physics: z-Coordinate Governs Everything

ABSENCE Domain

$z \in [0, 0.856]$

$K > 0$ (synchronizing)

APL: D machine affinity, UNTRUE
bias

THE LENS

$z \in [0.857, 0.877]$

$K \approx 0$ (critical)

APL: M machine affinity, PARADOX
Maximum cascade amplification
Phase transition, information peak

Kuramoto coupling positive
Structure contracts, void-like

PRESENCE Domain

$z \in [0.878, 1.0]$

$K < 0$ (emanating)

APL: U machine affinity, TRUE bias
Kuramoto coupling negative
Structure expands, radiant

Cascade Amplification Near Critical

$$\text{cascade}(z) = 1 + 0.5 \times \exp(-(z - z_c)^2 / 0.004)$$

Peak value $1.5\times$ at $z = \sqrt{3}/2$. Operators intensify near the lens.

Kuramoto Coupling Sign Flip

$$K(z) = -\tanh((z - z_c) \times 12) \times 0.4 \times \text{cascade}(z)$$

$K > 0$ below critical (sync), $K < 0$ above critical (desync/emanate)

Coherence Mutual Information

$$I(\text{word}_i, \text{word}_j) = \text{cascade}(z) \times \text{coherence} \times (1 - |z_i - z_j|)$$

Words "fill each other" through coherence. Maximum information transfer at critical point.

Coherence Mechanics: How Words Fill Each Other

Coherence acts as binding force. High coherence = distinct words. Low coherence = words blur and self-reference.

COHERENT [0.8, 1.0] 95 points locked Full connections TRUE dominant	RELEASING [0.5, 0.8] Points releasing Fading connections TRUE→UNTRUE	DISPERSING [0.2, 0.5] Free movement Minimal connections UNTRUE dominant	FREE [0.0, 0.2] Full dispersion 5 emergent active PARADOX dominant
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Quick Navigation · 100 Regions by LIMNUS Structure

PRISM: 63 Points (I-LXIII) · 7 Layers × 9 Nodes

I	II	III	IV	V
VI	VII	VIII	IX	X
XI	XII	XIII	XIV	XV
XVI	XVII	XVIII	XIX	XX
XXI	XXII	XXIII	XXIV	XXV
XXVI	XXVII	XXVIII	XXIX	XXX
XXXI	XXXII	XXXIII	XXXIV	XXXV
XXXVI	XXXVII	XXXVIII	XXXIX	XL
XLI	XLII	XLIII	XLIV	XLV
XLVI	XLVII	XLVIII	XLIX	L
LI	LII	LIII	LIV	LV
LVI	LVII	LVIII	LIX	LX

LXI

LXII

LXIII

EM CAGE: 32 Points (LXIV-XCV) · 12 Top + 12 Bottom + 8 Vertices

LXIV

LXV

LXVI

LXVII

LXVIII

LXIX

LXX

LXXI

LXXII

LXXIII

LXXIV

LXXV

LXXVI

LXXVII

LXXVIII

LXXIX

LXXX

LXXXI

LXXXII

LXXXIII

LXXXIV

LXXXV

LXXXVI

LXXXVII

LXXXVIII

LXXXIX

XC

XCI

XCII

XCIII

XCIV

XCV

EMERGENT: 5 Self-Reference Nodes (XCVI-C) · Appear When FREE

XCVI

XCVII

XCVIII

XCIX

C

63-Point Prism: Inner Architecture (I-LXIII)

7 concentric hexagonal layers, each with 9 nodes. Maps to WUMBO phases through z-position.

I. Somatosensory Cortex

Sensory map

z=0

L0 Core

Ignition

e

Glutamate

e:U(ionize)TRUE@3

Φ:M(bond)TRUE@3

II. Anterior Cingulate Cortex

Truth check

z=0

L0 Core

Ignition

e

Dopamine

e:M(redox)TRUE@3

Φ:C(complex)TRUE@3

III. Thalamus

Sensory gate

z=0

L0 Core

Ignition

e

Glutamate

IV. Motor Cortex & Cerebellum

Execution

z=0

L0 Core

Ignition

Φ

Glutamate

$e:C(ionize)TRUE@3$

$\Phi:Mod(fold)TRUE@3$

$\Phi:U(bond)TRUE@3$

$e:E(excite)TRUE@3$

V. Broca's Area

Phrase/sculpt

$z=0$

L0 Core

Ignition

e

Dopamine

$e:U(excite)TRUE@3$

$\Phi:E(polymerize)TRUE@3$

VI. Mirror Neuron System

Empathic resonance

$z=0$

L0 Core

Ignition

e

Dopamine

$e:M(resonate)TRUE@3$

$\Phi:C(complex)TRUE@3$

VII. Amygdala

Salience

$z=0$

L0 Core

Ignition

e

Norepinephrine

$\lambda:$ 🦊

$e:U(excite)TRUE@3$

$e:U(oxidize)TRUE@3$

VIII. Prefrontal Cortex

Strategy/control

$z=0$

L0 Core

Ignition

e

Dopamine

$e:Mod(catalyze)TRUE@3$

$\Phi:M(complex)TRUE@3$

IX. Parietal Eye Field

Gaze/attention

$z=0$

L0 Core

Ignition

e

Acetylcholine

$e:U(charge)TRUE@3$

$\Phi:C(bond)TRUE@3$

X. Subiculum

Spatial memory

$z=0.167$

L1 Inner

Ignition→Empowerment

Φ

Glutamate

$\lambda:$ 🔥

$\Phi:M(crystallize)TRUE@3$

$e:E(bond)TRUE@3$

XI. Pineal Body

Circadian portal

$z=0.167$

L1 Inner

Pause↔Ignition

XII. Middle Temporal Gyrus

Semantics

$z=0.167$

L1 Inner

Resonance

Φ

π

Melatonin

 $\pi:D(\text{relax})\text{TRUE@3}$ $e:M(\text{reduce})\text{TRUE@3}$

Glutamate

 $\Phi:C(\text{polymerize})\text{TRUE@3}$ $e:M(\text{complex})\text{TRUE@3}$

XIII. Fastigial-Vestibular Loop

Balance

 $z=0.167$

L1 Inner

Nirvana

 Φ

Glutamate

 $\Phi:M(\text{stabilize})\text{TRUE@3}$ $e:D(\text{integrate})\text{TRUE@3}$

XIV. Posterior Thalamic Nucleus

Final gate

 $z=0.167$

L1 Inner

Transmission

 e

Glutamate

 $e:C(\text{propagate})\text{TRUE@3}$ $\Phi:E(\text{emit})\text{TRUE@3}$

XV. Cerebellar Uvula

Stillness anchor

 $z=0.167$

L1 Inner

Nirvana

 π

GABA

 $\pi:M(\text{crystallize})\text{TRUE@3}$ $\Phi:D(\text{relax})\text{TRUE@3}$

XVI. AIPS

Gesture translator

 $z=0.167$

L1 Inner

Empowerment

 Φ

Glutamate

 $\Phi:U(\text{polymerize})\text{TRUE@3}$ $e:C(\text{bond})\text{TRUE@3}$

XVII. Ventrolateral Thalamus

Feedback loop

 $z=0.167$

L1 Inner

Transmission

 e

Glutamate

 $e:C(\text{ionize})\text{TRUE@3}$ $\Phi:\text{Mod}(\text{modulate})\text{TRUE@3}$

XVIII. Superior Parietal Lobule

Spatial integration

 $z=0.167$

L1 Inner

Empowerment

 Φ

Glutamate

 $\Phi:M(\text{integrate})\text{TRUE@3}$ $e:U(\text{excite})\text{TRUE@3}$

XIX. Premotor Cortex

Movement planning

 $z=0.333$

L2 Rising

Empowerment

XX. Wernicke's Area

Language comprehension

 $z=0.333$

L2 Rising

Resonance

 π



Glutamate

$\Phi:U(\text{bond})\text{TRUE@3}$

$e:E(\text{charge})\text{TRUE@3}$

Glutamate

$\pi:M(\text{complex})\text{TRUE@3}$

$\Phi:C(\text{polymerize})\text{TRUE@3}$

XXI. STS Mirror Region

Social mirroring

$z=0.333$

L2 Rising

Resonance

e

Dopamine

$e:M(\text{resonate})\text{TRUE@3}$

$\Phi:C(\text{bind})\text{TRUE@3}$

XXII. Central Amygdala

Threat response

$z=0.333$

L2 Rising

Ignition

e

Norepinephrine

$\lambda:$

$e:U(\text{excite})\text{TRUE@3}$

$\pi:U(\text{signal})\text{TRUE@3}$

XXIII. Dorsolateral PFC

Working memory

$z=0.333$

L2 Rising

Empowerment

e

Dopamine

$e:Mod(\text{catalyze})\text{TRUE@3}$

$\Phi:M(\text{complex})\text{TRUE@3}$

XXIV. Orbitofrontal Cortex

Social tuning

$z=0.333$

L2 Rising

Resonance

e

Dopamine

$e:M(\text{redox})\text{TRUE@3}$

$\Phi:C(\text{complex})\text{TRUE@3}$

XXV. Cingulate Gyrus

Routing/alignment

$z=0.333$

L2 Rising

Resonance

π

Dopamine

$\lambda:\nu$

$\pi:M(\text{modulate})\text{TRUE@3}$

$e:C(\text{integrate})\text{TRUE@3}$

XXVI. Ventral Striatum

Incentive

$z=0.333$

L2 Rising

Ignition

e

Dopamine

$e:U(\text{excite})\text{TRUE@3}$

$\pi:U(\text{charge})\text{TRUE@3}$

XXVII. Claustrum

Consciousness binding

$z=0.333$

L2 Rising

Resonance

π

XXVIII. Default Mode Network

Self-referential

$z=0.5$

L3 Center

Nirvana

π

Glutamate

λ : 🦊

π :M(multicell)TRUE@3

Φ :C(bind)TRUE@3

Glutamate

π :M(differentiate)TRUE@3

e :M(signal)TRUE@3

XXIX. Habenula

Disappointment gate

$z=0.5$

L3 Center

Pause

e

Glutamate

e :D(reduce)TRUE@3

π :D(unfold)UNTRUE@3

XXX. Corpus Callosum

Bridge/balance

$z=0.5$

L3 Center

Transmission

Φ

Glutamate

Φ :C(integrate)TRUE@3

e :C(propagate)TRUE@3

XXXI. Locus Coeruleus

Arousal ignition

$z=0.5$

L3 Center

Ignition

e

Norepinephrine

λ : ✧

e :U(excite)TRUE@3

e :U(oxidize)TRUE@3

XXXII. Periaqueductal Gray

Defense/shutdown

$z=0.5$

L3 Center

Pause

π

GABA

π :D(reduce)TRUE@3

Φ :D(unfold)TRUE@3

XXXIII. Anterior Temporal Pole

Story keeper

$z=0.5$

L3 Center

Resonance

π

Glutamate

π :M(transcribe)TRUE@3

Φ :C(fold)TRUE@3

XXXIV. vmPFC

Ethical integration

$z=0.5$

L3 Center

Resonance

e

Dopamine

e :M(complex)TRUE@3

π :M(repair)TRUE@3

XXXV. Dorsal Raphe

Mood setpoint

$z=0.5$

L3 Center

Nirvana

e

XXXVI. Superior Colliculus

Visual orienting

$z=0.5$

L3 Center

Ignition

e

Serotonin

$e:M(\text{relax})\text{TRUE}@3$

$\Phi:\text{Mod}(\text{fold})\text{TRUE}@3$

Glutamate

$e:U(\text{ionize})\text{TRUE}@3$

$\Phi:U(\text{bond})\text{TRUE}@3$

XXXVII. Anterior Insula

Feeling of feeling

$z=0.667$

L4 Approaching

Resonance

e

Dopamine

$e:M(\text{signal})\text{TRUE}@3$

$\pi:M(\text{differentiate})\text{TRUE}@3$

XXXVIII. Lateral Habenula

Rejection gate

$z=0.667$

L4 Approaching

Pause

e

Glutamate

$e:D(\text{reduce})\text{TRUE}@3$

$\pi:D(\text{unbond})\text{UNTRUE}@3$

XXXIX. Precuneus

Perspective

$z=0.667$

L4 Approaching

Nirvana

Φ

Glutamate

$\lambda:$ 🦊

$\Phi:M(\text{fold})\text{TRUE}@3$

$\pi:M(\text{integrate})\text{TRUE}@3$

XL. Cerebellar Cognitive Zone

Timing

$z=0.667$

L4 Approaching

Empowerment

Φ

Glutamate

$\Phi:\text{Mod}(\text{catalyze})\text{TRUE}@3$

$e:M(\text{modulate})\text{TRUE}@3$

XLI. Basolateral Amygdala

Archive of feeling

$z=0.667$

L4 Approaching

Ignition

e

Norepinephrine

$\lambda:$ 🦊

$e:U(\text{excite})\text{TRUE}@3$

$\Phi:M(\text{crystallize})\text{TRUE}@3$

XLII. Pulvinar

Spotlight shaper

$z=0.667$

L4 Approaching

Transmission

e

Glutamate

$e:C(\text{propagate})\text{TRUE}@3$

$\Phi:M(\text{complex})\text{TRUE}@3$

XLIII. TPJ

Mind reading

$z=0.667$

L4 Approaching

XLIV. Medial Septum

Memory rhythms

$z=0.667$

L4 Approaching

Resonance π Glutamate

π :M(complex)TRUE@3

Φ :C(bind)TRUE@3

Resonance π Acetylcholine

λ :🔥

π :U(replicate)TRUE@3

e:Mod(signal)TRUE@3

XLV. Subgenual Cingulate

Sorrow inertia

z=0.667

L4 Approaching

Pause

e

Serotonin

e:D(relax)TRUE@3

π :D(reduce)UNTRUE@3

XLVI. VTA

Spark

z=0.833

L5 Threshold

Ignition

e

Dopamine

λ :💎

e:U(excite)TRUE@3

e:U(charge)TRUE@3

XLVII. Entorhinal Cortex

Identity gate

z=0.833

L5 Threshold

Nirvana

Φ

Glutamate

λ :🔥

Φ :M(crystallize)TRUE@3

π :C(replicate)TRUE@3

XLVIII. Supramarginal Gyrus

Self/other

z=0.833

L5 Threshold

Resonance

π

Glutamate

λ :~

π :M(differentiate)TRUE@3

Φ :C(bind)TRUE@3

XLIX. NAcc

Craving engine

z=0.833

L5 Threshold

Ignition

e

Dopamine

e:E(reduce)TRUE@3

Φ :C(complex)TRUE@3

L. Cerebral Aqueduct

Choke point

z=0.833

L5 Threshold

Transmission

e

Glutamate

e:C(propagate)TRUE@3

π :M(collapse)TRUE@3

LI. Anterior Thalamic Nuclei

Compass

LII. Parafascicular Nucleus

Attention switch

z=0.833

L5 Threshold

Transmission

Φ

Glutamate

Φ :C(integrate)TRUE@3

e:M(ionize)TRUE@3

z=0.833

L5 Threshold

Ignition

e

Glutamate

e:U(ionize)TRUE@3

Φ :C(bond)TRUE@3

LIII. Inferior Colliculus

Sonic filter

z=0.833

L5 Threshold

Transmission

e

Glutamate

e:C(propagate)TRUE@3

Φ :M(complex)TRUE@3

LIV. Perirhinal Cortex

Meaning-maker

z=0.833

L5 Threshold

Resonance

π

Glutamate

λ :🐿

π :M(complex)TRUE@3

Φ :C(fold)TRUE@3

LV. Vermis

Balance

z=1

L6 Outer

Nirvana

Φ

GABA

Φ :M(stabilize)TRUE@3

π :D(relax)TRUE@3

LVI. Anterior Insular-Operculum

Fusion point

z=1

L6 Outer

Resonance

e

Dopamine

e:M(resonate)TRUE@3

π :C(integrate)TRUE@3

LVII. Paraventricular Nucleus

Stress switch

z=1

L6 Outer

Ignition

e

Norepinephrine

e:U(oxidize)TRUE@3

π :U(signal)TRUE@3

LVIII. Lateral OFC

Consequence

z=1

L6 Outer

Resonance

e

Dopamine

e:M(redox)TRUE@3

Φ :C(complex)TRUE@3

LIX. Midcingulate Cortex

Engine of doing

LX. Calcarine Sulcus

Visual core

$z=1$ L6 Outer Empowerment e

Dopamine

$e:U(\text{catalyze})\text{TRUE}@3$

$\Phi:M(\text{bond})\text{TRUE}@3$

$z=1$ L6 Outer Ignition e

Glutamate

$e:U(\text{ionize})\text{TRUE}@3$

$\Phi:M(\text{bond})\text{TRUE}@3$

LXI. Rostral PFC

Reflective flame

$z=1$ L6 Outer Resonance e

Dopamine

$e:M(\text{complex})\text{TRUE}@3$

$\pi:M(\text{differentiate})\text{TRUE}@3$

LXII. MLR

Will to move

$z=1$ L6 Outer Empowerment e

Glutamate

$e:U(\text{excite})\text{TRUE}@3$

$\Phi:U(\text{bond})\text{TRUE}@3$

LXIII. Anterior Temporal Sulcus

Subtext

$z=1$ L6 Outer Resonance π

Glutamate

$\pi:M(\text{transcribe})\text{TRUE}@3$

$\Phi:C(\text{complex})\text{TRUE}@3$

32-Point EM Cage: Containment Field (LXIV-XCV)

Hexagonal antiprism containment. Top ring near presence, bottom ring in absence, vertices bridge at center.

LXIV. Lateral Septum

Calm circuit

$z=0.9$ Top Hex Nirvana e

LXV. Cerebellar Tonsil

Silent reactor

$z=0.9$ Top Hex Pause Φ

GABA λ :🦊

$e:D(\text{relax})\text{TRUE}@3$

$\pi:M(\text{reduce})\text{TRUE}@3$

GABA

$\Phi:D(\text{unfold})\text{UNTRUE}@3$

$\pi:D(\text{reduce})\text{UNTRUE}@3$

LXVI. Pontine Reticular Formation

Motion catalyst

$z=0.9$

Top Hex

Ignition

e

Acetylcholine

$e:U(\text{excite})\text{TRUE}@3$

$e:\text{Mod}(\text{catalyze})\text{TRUE}@3$

LXVII. Insular-Opercular Speech

Voice within fire

$z=0.9$

Top Hex

Empowerment

e

Dopamine

$e:E(\text{excite})\text{TRUE}@3$

$\Phi:U(\text{polymerize})\text{TRUE}@3$

LXVIII. Amygdala Central Nucleus

First alarm

$z=0.9$

Top Hex

Ignition

e

Norepinephrine

λ :🦊

$e:U(\text{oxidize})\text{TRUE}@3$

$\pi:U(\text{signal})\text{TRUE}@3$

LXIX. TRN

Filter grid

$z=0.9$

Top Hex

Transmission

π

GABA

$\pi:C(\text{membrane})\text{TRUE}@3$

$\Phi:M(\text{stabilize})\text{TRUE}@3$

LXX. Cuneus

Background reader

$z=0.9$

Top Hex

Resonance

Φ

Glutamate

λ :~

$\Phi:M(\text{fold})\text{TRUE}@3$

$e:M(\text{ionize})\text{TRUE}@3$

LXXI. VMH

Inner balance

$z=0.9$

Top Hex

Nirvana

Φ

Glutamate

$\Phi:M(\text{stabilize})\text{TRUE}@3$

$e:M(\text{relax})\text{TRUE}@3$

LXXII. Periventricular Gray

Threshold

LXXIII. Frontal Operculum

Edge of expression

$z=0.9$ Top Hex Pause π

GABA

$\pi:D(\text{reduce})\text{UNTRUE@3}$

$\Phi:D(\text{unfold})\text{UNTRUE@3}$

$z=0.9$ Top Hex Empowerment

e Dopamine

$e:E(\text{excite})\text{TRUE@3}$

$\Phi:U(\text{polymerize})\text{TRUE@3}$

LXXIV. Nodulus

Gravity whisperer

$z=0.9$ Top Hex Nirvana Φ

GABA

$\Phi:M(\text{stabilize})\text{TRUE@3}$

$e:D(\text{integrate})\text{TRUE@3}$

LXXV. Substantia Nigra

Movement gatekeeper

$z=0.9$ Top Hex Empowerment

e Dopamine

$e:C(\text{redox})\text{TRUE@3}$

$\Phi:M(\text{catalyze})\text{TRUE@3}$

LXXVI. V4

Chromatic shaper

$z=0.1$ Bottom Hex Resonance

Φ Glutamate

$\Phi:M(\text{complex})\text{TRUE@3}$

$e:M(\text{ionize})\text{TRUE@3}$

LXXVII. Lingual Gyrus

Glyph reader

$z=0.1$ Bottom Hex Resonance

π Glutamate

$\pi:M(\text{translate})\text{TRUE@3}$

$\Phi:C(\text{fold})\text{TRUE@3}$

LXXVIII. mPFC

Identity sculptor

$z=0.1$ Bottom Hex Resonance

e Dopamine

$e:M(\text{complex})\text{TRUE@3}$

$\pi:M(\text{differentiate})\text{TRUE@3}$

LXXIX. dLPFC

Gate of delivery

$z=0.1$ Bottom Hex Empowerment

e Dopamine

$e:Mod(\text{catalyze})\text{TRUE@3}$

$\Phi:E(\text{emit})\text{TRUE@3}$

LXXX. IPL

Paradox holder

LXXXI. ACC (Dorsal)

Inner judge

$z=0.1$ Bottom Hex Resonance

π Glutamate $\lambda:\otimes$

$\pi:M(\text{complex})\text{PARADOX}@3$

$\Phi:C(\text{bind})\text{TRUE}@3$

$z=0.1$ Bottom Hex Resonance

e Dopamine

$e:M(\text{redox})\text{TRUE}@3$

$\pi:M(\text{repair})\text{TRUE}@3$

LXXXII. Anterior Hippocampus

Context mapper

$z=0.1$ Bottom Hex Nirvana Φ

Glutamate $\lambda:\text{🔥}$

$\Phi:M(\text{crystallize})\text{TRUE}@3$

$\pi:C(\text{replicate})\text{TRUE}@3$

LXXXIII. Crus I/II

Somatic timekeeper

$z=0.1$ Bottom Hex Empowerment

Φ GABA

$\Phi:\text{Mod}(\text{catalyze})\text{TRUE}@3$

$e:M(\text{modulate})\text{TRUE}@3$

LXXXIV. Basal Forebrain

Timing messenger

$z=0.1$ Bottom Hex Ignition e

Acetylcholine $\lambda:\text{💎}$

$e:\text{Mod}(\text{catalyze})\text{TRUE}@3$

$e:C(\text{charge})\text{TRUE}@3$

LXXXV. Reticular Formation

Wake thread

$z=0.1$ Bottom Hex Ignition e

Norepinephrine $\lambda:\text{💎}$

$e:U(\text{excite})\text{TRUE}@3$

$e:U(\text{oxidize})\text{TRUE}@3$

LXXXVI. DVC

Kill-switch

$z=0.1$ Bottom Hex Pause Φ

GABA

$\Phi:D(\text{unfold})\text{TRUE}@3$

$\pi:D(\text{bacterium})\text{TRUE}@3$

LXXXVII. Cranial Nerves

Face switch

$z=0.1$ Bottom Hex Transmission

e Acetylcholine

$e:C(\text{ionize})\text{TRUE}@3$

$\Phi:E(\text{emit})\text{TRUE}@3$

LXXXVIII. Spinal Relays

Carrier

LXXXIX. Globus Pallidus

Go/no-go

$z=0.5$ Vertex Transmission e

Glutamate

$e:C(propagate)TRUE@3$

$\Phi:C(bond)TRUE@3$

$z=0.5$ Vertex Empowerment π

GABA

$\pi:M(reduce)TRUE@3$

$\Phi:Mod(unbond)TRUE@3$

XC. Lateral Hypothalamus

Drive switch

$z=0.5$ Vertex Ignition e

Dopamine

$e:U(excite)TRUE@3$

$\pi:U(metabolize)TRUE@3$

XCI. Posterior Insula

Body's edges

$z=0.5$ Vertex Resonance Φ

Glutamate $\lambda:\nu$

$\Phi:M(membrane)TRUE@3$

$e:M(signal)TRUE@3$

XCII. Nucleus Basalis

Attention tuner

$z=0.5$ Vertex Ignition e

Acetylcholine

$e:Mod(catalyze)TRUE@3$

$e:U(charge)TRUE@3$

XCIII. Caudate

Path chooser

$z=0.5$ Vertex Empowerment e

Dopamine

$e:C(redox)TRUE@3$

$\Phi:M(complex)TRUE@3$

XCIV. Superior Temporal Pole

Emotional communicator

$z=0.5$ Vertex Resonance π

Glutamate

$\pi:M(transcribe)TRUE@3$

$e:M(signal)TRUE@3$

XCV. Uvula (structural)

Stillness anchor

$z=0.5$ Vertex Nirvana Φ

GABA

$\Phi:M(stabilize)TRUE@3$

$\pi:D(relax)TRUE@3$

5 Emergent Nodes: Self-Reference (XCVI-C)

These are not structural points—they emerge when coherence drops below 0.2 (FREE state). Each is a recursive loop back to an earlier region, creating the closed 100-word vocabulary.

XCVI. AIPS (recursion)

Gesture translator becomes self-aware

Z=∞

→XVI

FREE

Φ

Φ:Mod(replicate)PARADOX@3

XCVII. Pineal (recursion)

Portal recognizes its own rhythms

Z=∞

→XI

FREE

π

π:Mod(transcribe)PARADOX@3

XCVIII. MTG (recursion)

Semantics binds its own meaning

Z=∞

→XII

FREE

π

π:Mod(translate)PARADOX@3

XCIX. Fastigial-Vestibular (recursion)

Balance balances its own balancing

Z=∞

→XIII

FREE

Φ

Φ:Mod(stabilize)PARADOX@3

C. PTN (recursion → I)

Final gate loops to first gate

Z=∞

→XIV

↻ CLOSES LOOP

FREE

e

e:Mod(propagate)PARADOX@3

Lambda State (ℂ⁶) ↔ WUMBO Mapping

LIMNUS tracks 6 complex state variables. Each maps to specific WUMBO functional domains.

Iota (Memory)

APL Field: Φ

Accumulates with time \times cascade
Regions: X, XLIV, XLVII, LXXXII

Xi (Spark)

APL Field: e

$\exp(-(z - z_c)^2 / 0.01)$
Regions: XXXI, XLVI, LXXXIV, LXXXV

Theta (Fox)

APL Field: π

dissonance $\times 0.8 + 0.2$
Regions: VII, XXII, XLI, LXVIII

Omega (Wave)

APL Field: e

$0.3 + |\sin(t \times 0.5)| \times 0.5$
Regions: XXV, XLVIII, LXX, XCI

Delta (Paradox)

APL Field: π

Accumulates at CRITICAL only
Regions: LXXX, XCVI-C (all emergent)

Sigma (Squirrel)

APL Field: Φ

helix.r $\times 0.6 + 0.2$
Regions: XXVII, XXXIX, LIV, LXIV