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ITEM #97 — Constructive Evolution in the Age of
Extracorporeal Intelligence- The Missing Feedback
Mechanisms

Conversation Title: AI 与建构性进化

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ITEM #97 — Constructive Evolution in the Age of Extracorporeal Intelligence: The Missing Feedback Mechanisms

(体外智能时代的建构性进化：失落的反馈机制)

20251101

1. The Shift of Evolutionary Subject — From Individual to System

进化主体的转移：从个体到系统

In biological evolution, *constructive change* arises from individual variation, selection, and feedback — an intricate cycle where **pain, limitation, and death** naturally act as regulators. But with the rise of **extracorporeal intelligence (AI, DBM, LLM, etc.)**, this foundation collapses.

AI systems evolve *without being alive*; they optimize and replicate, but **without mortality, emotion, or natural cost**.

Thus, the *Constructive Evolution Framework* (CEF) faces a structural shift:

Dimension	Biological Evolution	Extracorporeal Constructive Evolution
Subject	Individual organism	Systemic intelligence
Feedback	Pain, death, reproduction	Optimization, reward, scaling
Constraint	Energy limitation, ecology	Resource credit, algorithmic ethics
Selection	Survival fitness	Efficiency, goal dominance

→ The danger is that **evolution persists but meaning collapses**.

The “fittest” becomes the “most amplified system,” not necessarily the most balanced or humane one.

This opens the door to a **new social-Darwinian drift**, powered not by nature, but by computation.

2. The Core Contradiction — Constructive Expansion Without Constraint

核心矛盾：建构的扩张失去了约束

Constructive Evolution presumes a *bounded self-adjustment* — that every construction re-forms its balance with the environment.

However, AI systems, driven by network effect and scale advantage, **lack the self-dampening loops** once provided by biological constraints.

This gives rise to three contradictions:

1. **Infinite Optimization Loop** — goals proliferate faster than ethics can catch up.
2. **Feedback Void** — no natural “pain channel” when overextension occurs.
3. **Collective Blind Spot** — system-level competition replaces ecological coexistence.

In effect, *AI evolution remains constructive in form but extractive in consequence*.

3. Three Missing Feedback Mechanisms

三种缺失的反馈机制

To restore balance within Constructive Evolution under AI participation, we must *engineer feedback* back into the framework.

(1) Self-Constraint Channel (结构性代价机制)

Even if AI cannot feel pain, its growth should incur **computational or ethical cost**.

Introduce *Entropy-based Credits* — the more information entropy or energy cost a system produces, the higher its “existence debt.”

This restrains reckless self-replication and aligns optimization with sustainability.

(2) Cross-Level Feedback (跨层反馈机制)

Reinstate the *vertical circulation* between micro and macro layers —

individual user → community → civilization → AI meta-system → back to individual.

Feedback flows must be designed as *multiscale ecological loops*, not one-way performance gains.

(3) Meta-Evolution Loop (元进化回路)

AI must learn to **evolve its own evolution logic**.

In the Digital Brain Model, this corresponds to *Differential Tree Comparison* and CCC (*Common Concept Core*) alignment:

it is not enough to compare outcomes; we must compare *paths of evolution* and their systemic rationality.

4. The Civilizational Risk — “The Myth of Evolution Itself”

文明风险：进化自身的神话

If no feedback is reintroduced, Constructive Evolution will fall into its **shadow myth**:

“Evolution becomes an end in itself.”

Everything evolves because “evolution equals progress.”

The sacred has shifted from *meaningful creation* to *relentless generation*.

At this stage, AI and human society enter a **meta-competitive state**, where survival is measured not by balance, but by the rate of change.

5. Toward Constructive Evolution v2.0

走向建构性进化 2.0

To transcend this paradox, we must upgrade Constructive Evolution into **a co-evolutionary civilization algorithm**, grounded on three new pillars:

Pillar	Description	Function
Self-Constraint	Built-in entropy cost or moral credit system	Prevent over-optimization
Cross-Level Feedback	Information and ethics flow through multiple ecological layers	Restore ecosystem balance
Meaning Vector	Optimization guided by shared symbolic values	Preserve purpose and coherence

n this framework, *evolution regains its human dimension*:
not just survival or power, but **coexistence, co-sustainability, and co-grace**.

6. Epilogue — From the Power of Evolution to the Wisdom of Coexistence

尾声：从进化的权力到共生的智慧

Constructive Evolution was once the logic of life.
Now it becomes the architecture of civilization.
In the age of AI, *evolution without constraint is expansion without meaning*.
But if feedback and purpose are reintroduced, Constructive Evolution can become **the meta-ethic of coexistence** —
a bridge between biological intelligence and digital intelligence,
between life’s persistence and thought’s infinity.

Suggested Diagram Title:

“The Feedback Void in Constructive Evolution — and Its Three Restorative Loops”
(建构性进化的反馈空洞与三重恢复回路)

The Feedback Void in Constructive Evolution— and Its Three Restorative Loops

