# Life-Serving Protocols

To keep protocols alive we need to measure their life-serving benefits.

**Life Fingerprint (LFP)** is a decision support tool for serving life by scoring the stewardship and evolution of cooperative systems.

=> A Pareto frontier of long-term viability.

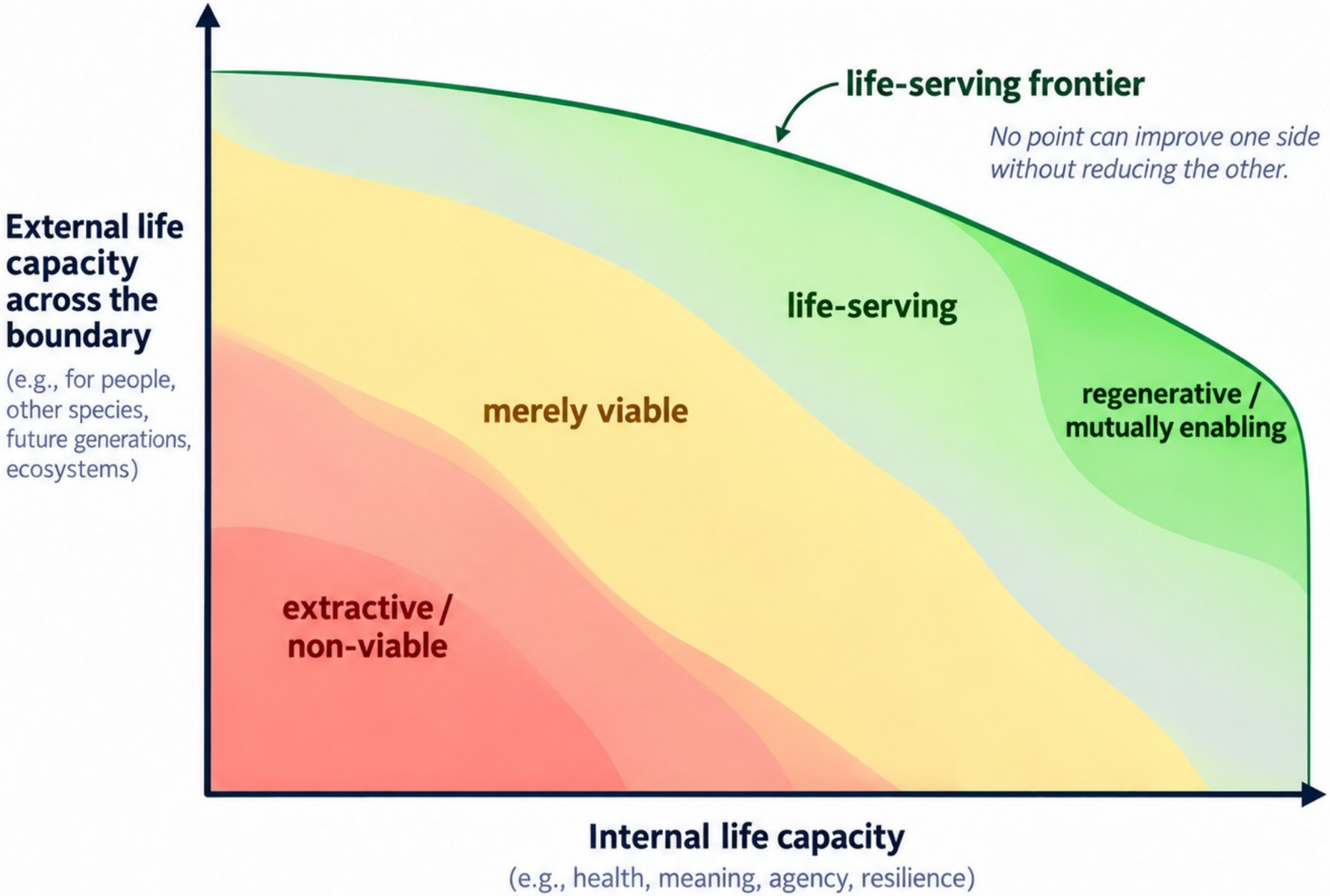
**Life**
organized capacity to function, adapt, and renew over time.

**Life-serving**
supports that capacity **inside and outside a chosen boundary**.

**Protocol**
a reusable and configurable proposal for a repeatable interaction structure intended to serve a need.

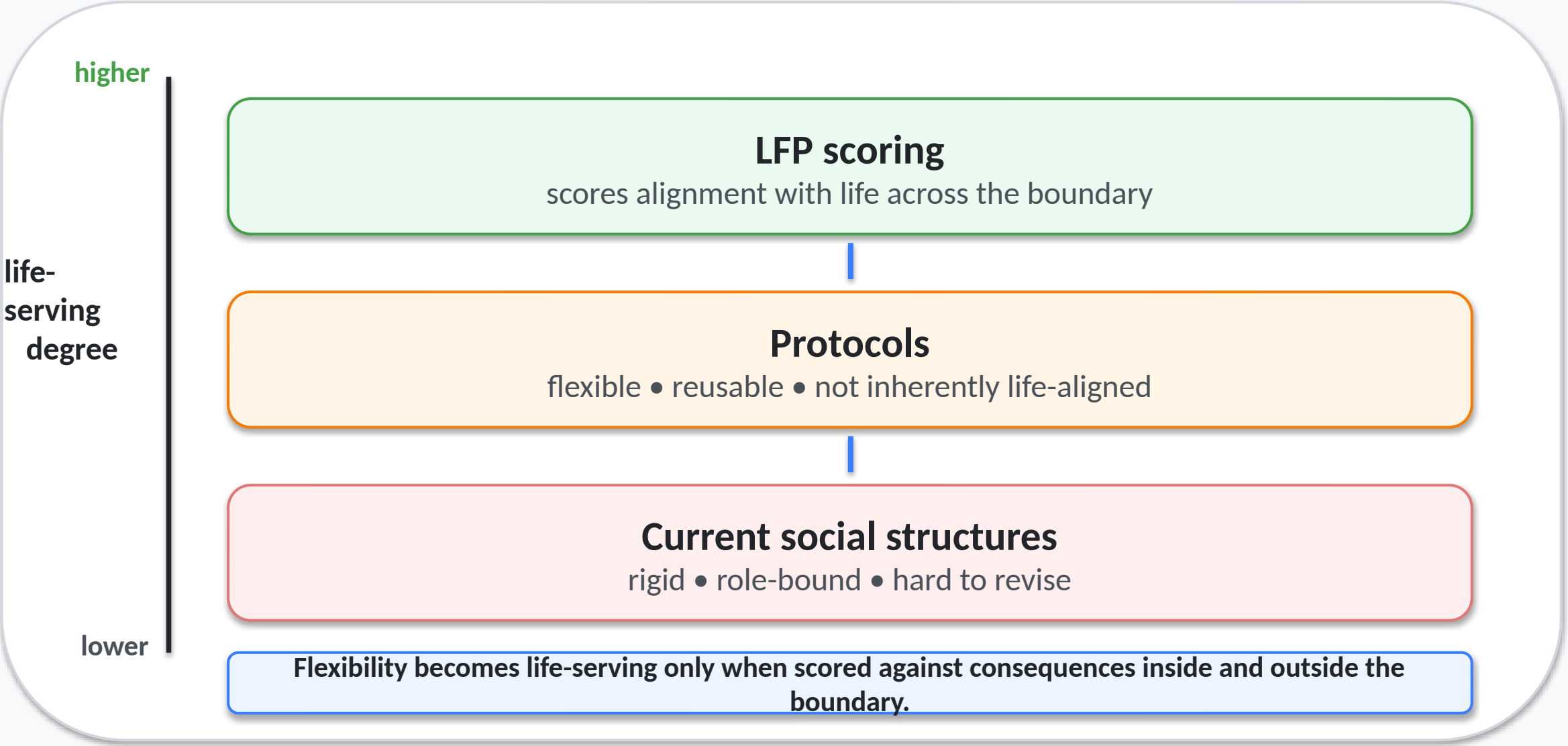
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Made with the assistance of ChatGPT 5.5
and reviewed by the authors who are
solely responsible for its content.

# Life-Serving Pareto Frontier



# From rigidity to life-serving alignment

Protocols add flexibility; LFP scoring connects that flexibility to life-serving consequences.




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# Life Fingerprint (LFP): L, F, C, D, R

L, F, and C locate life capacity; D and R evaluate constraint fit and recurrent motifs.

**L — Levels of organization**
grounding • cross-level integration
authority • dependency transparency
constraint alignment • externalities

**F — Life functions**
acquire • transform • inform
coordinate • manage boundary
maintain/repair • learn • replicate

**C — Life-cycle dynamics**
adaptability • feedback speed
learning rate • renewal capacity
resilience • anti-brittleness

**D — Discrepancy**
constraint fit
burden balance
reversibility / recoverability

**R — Recurrence**
regenerative motifs
resilient re-formation after disturbance
extractive motifs as a penalty

**LFP profile and score**
Profile = (LFP_internal, LFP_external, D, R) over the chosen boundary; LFP_score is the weighted sum.

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# How the LFP engine is set up via LLM

**1 Life Fingerprint document**
L/F/C ontology and life lens

**2 Working definitions**
life • life-serving • protocol • boundary

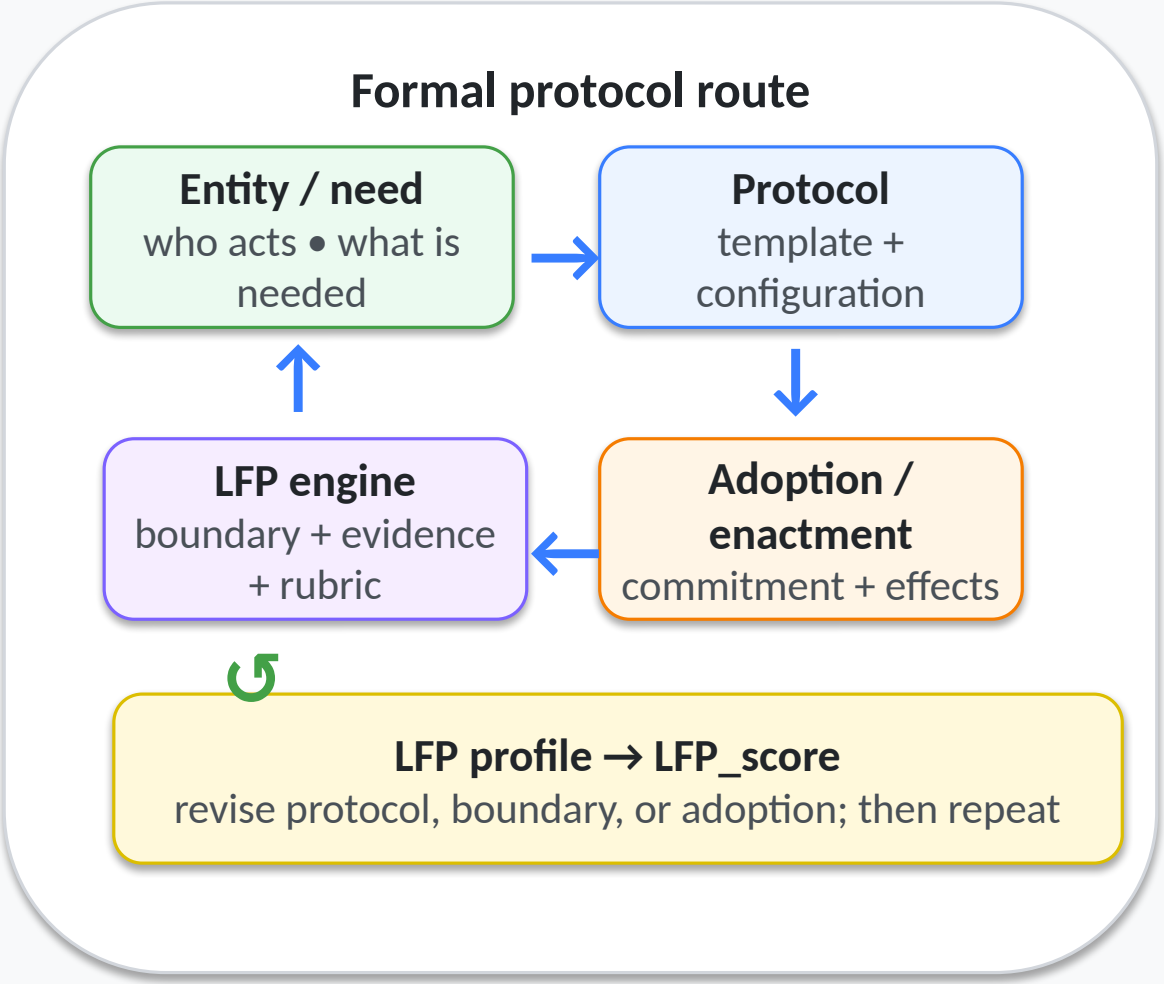
**3 Evaluation structure**
LFP profile = internal, external, D, R

**4 Predefined rubric**
0–100 criteria and LFP_score weights

**Key distinction: the LFP engine scores and advises; it does not itself decide adoption.**

# From entities to LFP score

Formal protocols and evidence-based inference both become feedback loops, not one-way pipelines.




**The score is useful only when it closes the loop: evidence → scoring → revision → new evidence.**

# Buurtzorg (Netherlands-based decentralized nursing care) scenario

**Key tension: improve safety without creating dependence or hiding burden outside the boundary**




**Illustrative home-care scene: patient, nurses, daughter, and local support context**

## Why this scenario matters

Baseline care is clinically helpful but too narrow.

The case couples several concerns at once:

- clinical stability
- patient agency and learning
- family burden
- nurse workload and continuity

The protocol question is not simply “more visits or fewer visits.” It is which sequence of actions best improves internal and external scores while preserving reversibility and trust.

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# Protocols made explicit in the Buurtzorg example

The dialogue becomes reusable when it is rewritten as named protocols with triggers, guardrails, fallback, and feedback.

## What makes them formal

**Each protocol is specified by:**

- need / purpose
- chosen boundary and affected parties
- trigger condition
- actions and roles
- thresholds for escalation or de-escalation
- reversible fallback
- feedback to record

## Why this matters

The nurses enact the protocol locally, the LFP engine scores the result, and the protocol is then revised and reused.

## Protocol suite

**P1 Temporary stabilization**
Trigger: wound / glucose instability.
Action: daily visits for five days.
Guardrail: explicitly temporary; review at day five. **57->71**

**P2 Capability transfer**
Trigger: stability improving.
Action: observe → coach → patient performs more.
Guardrail: stop if risk crosses threshold. **71->83**

**P3 Boundary check / consent**
Trigger: family help is relied on.
Action: ask the daughter directly; make burden visible.
Guardrail: do not treat family capacity as free. **83->90**

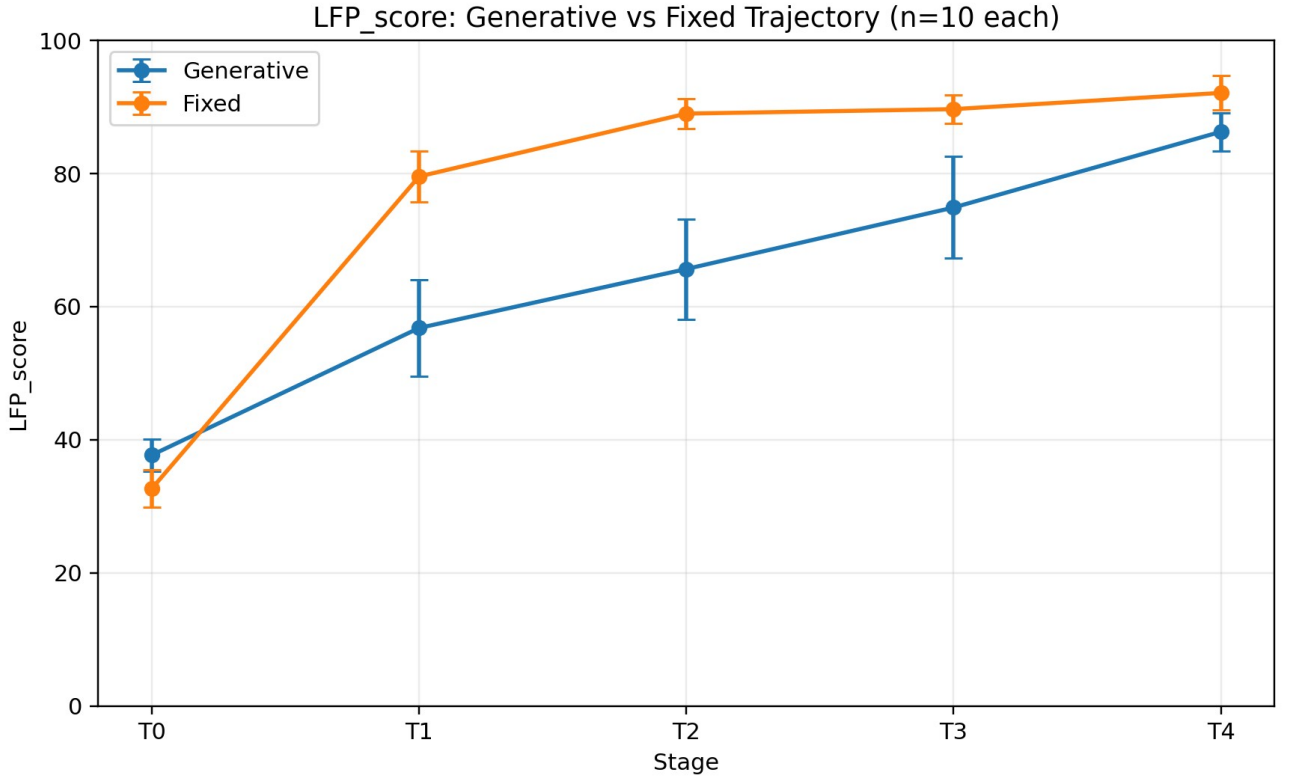
**P4 Resilience test + de-escalation**
Trigger: Elske succeeds safely twice.
Action: nurse becomes safety boundary; reduce visits.
Fallback: restore support if thresholds are crossed. **90->93**

**Learned reusable motif**
sense → stabilize → transfer capability → test resilience → de-escalate
Store with conditions: willingness, learnable task, safety threshold, reversible fallback, and family consent.

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# LFP_score reproducibility experiment

Ten non-personalized Temporary Chat runs compare scoring uncertainty with generation-plus-scoring uncertainty.




**LFP_score = 0.30·LFP_internal + 0.30·LFP_external + 0.20·D + 0.20·R**

## What the two tests separate

**Fixed trajectory**
Same T0–T4 path every run.
Model only scores it.
≈ scoring variability.

**Generative trajectory**
Same T0 only.
Model creates T1–T4 and scores them.
≈ generation + scoring variability.

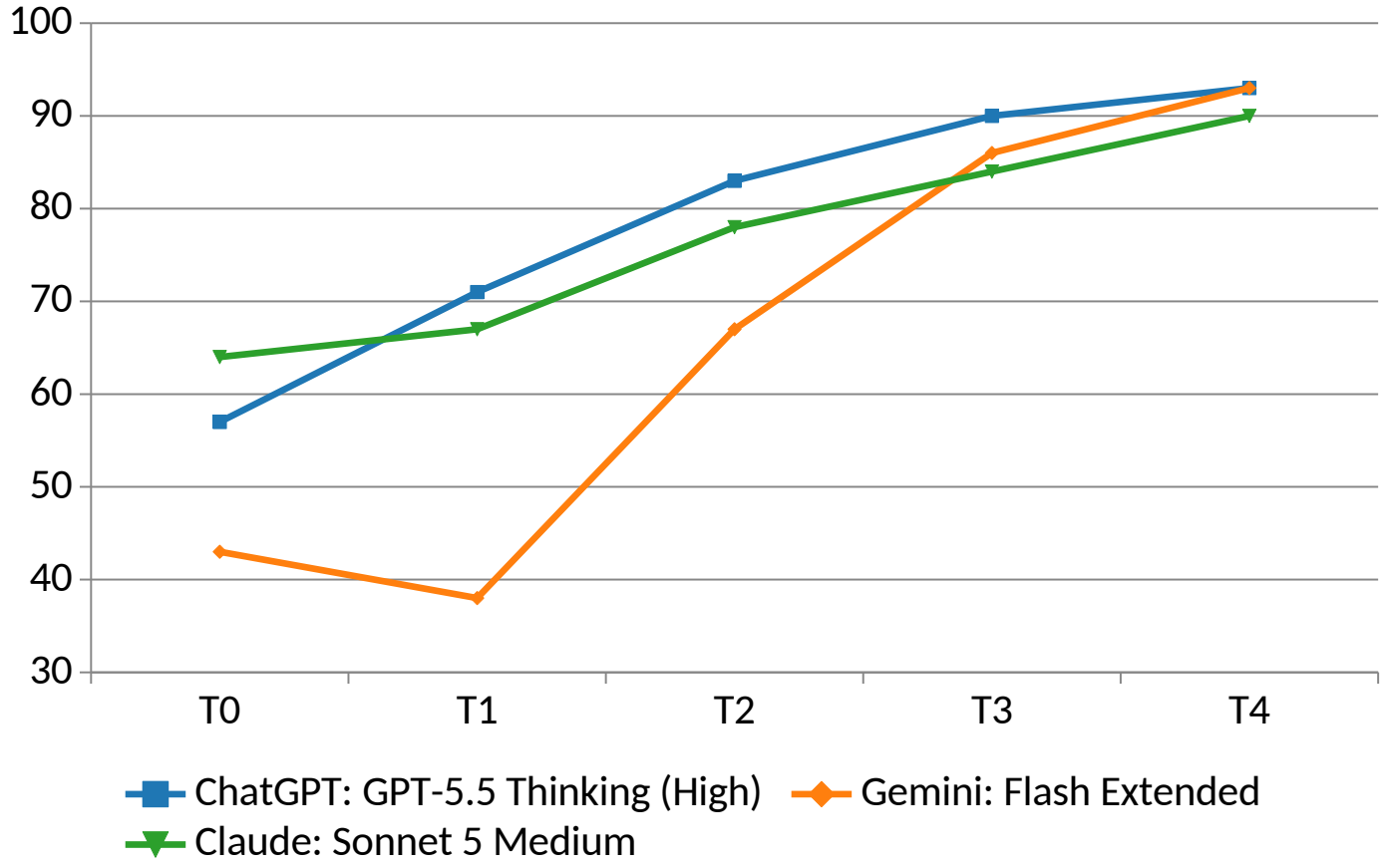
**Main reading**
Middle-stage variation mostly reflects different protocol paths; later stages converge as structure becomes clearer.

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# Cross-model reproducibility

Composite S scores, rounded to integers; Gemini & Claude generated their own T1–T4 evolution from T0.

Models: ChatGPT = GPT-5.5 Thinking (High) • Gemini = Flash Extended • Claude = Sonnet 5 Medium



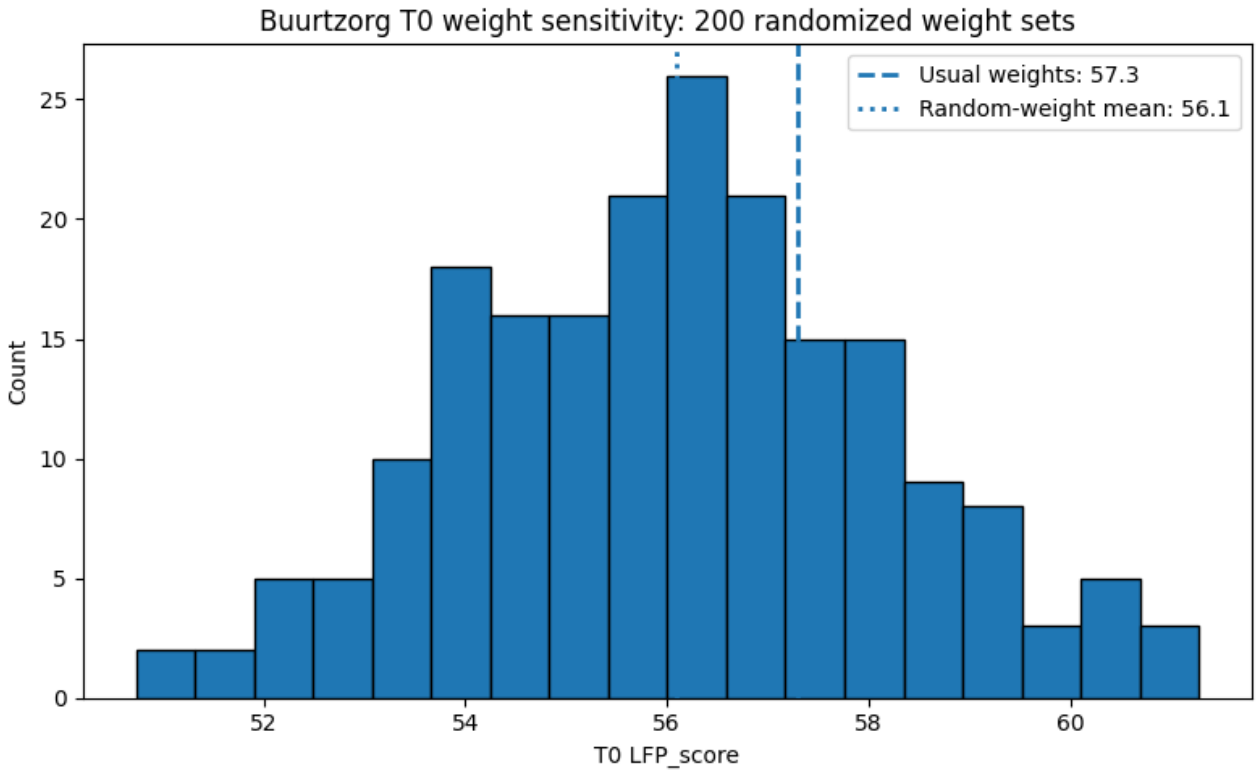

**Gemini path includes a setback:**
**T1 premature automation lowers S to 38**

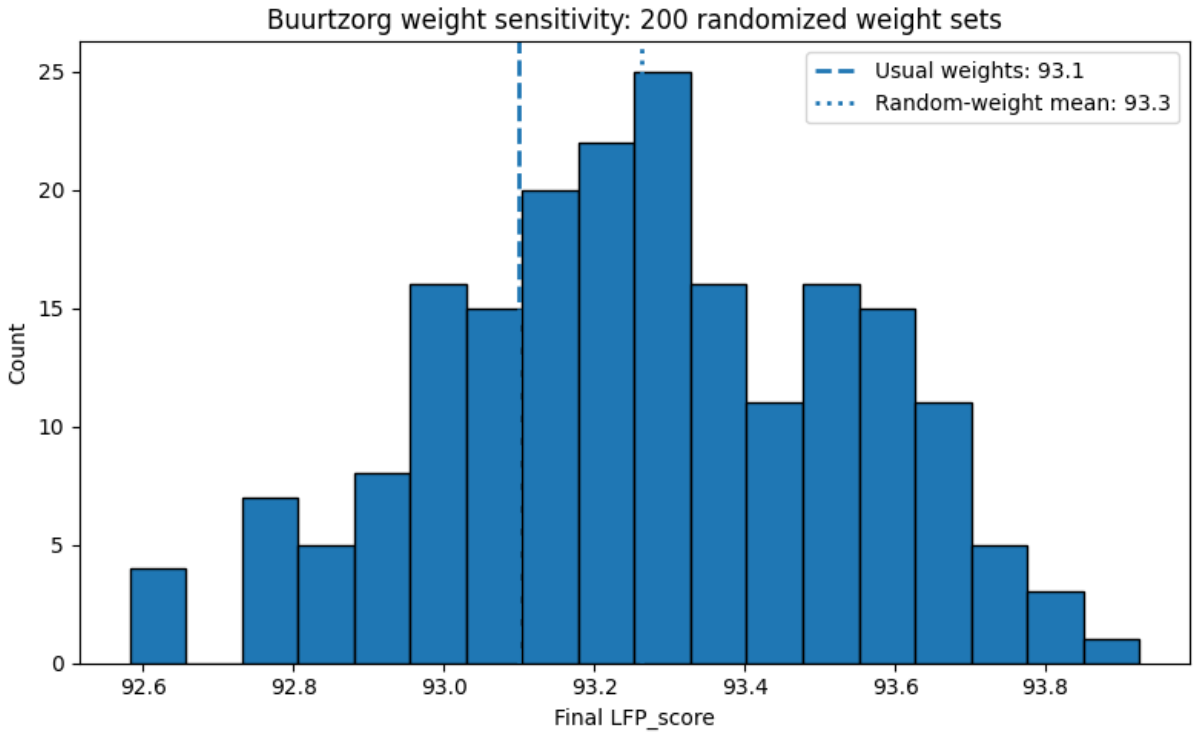
**Then discrepancy correction and peer-assisted co-care restore the trajectory**

**By T4 all models converge upward:**
**S = 90–93 after reusable motif learning**

**Reproducibility is strongest for direction of change, boundary effects, and recovery mechanisms—not exact numeric agreement.**

# Weight Sensitivity Study




Narrow distribution an artifact of high LFP_score at T4

## Conclusion: make life-serving visible

**Life-serving criterion**

LFP is the mechanism for testing protocols that are in alignment with life.

Life Fingerprints turn protocols into evidence about capacity, burden, resilience, and renewal across a boundary.

# Just for fun

| **Entity** | **LFP_score** |
|---|---|
| Buurtzorg | 91 |
| Ant colony | 82 |
| Coral reef | 92 |
| Humanity | 50 |
| Ponzi scheme | 20 |
| Protocol Institute | 79 |