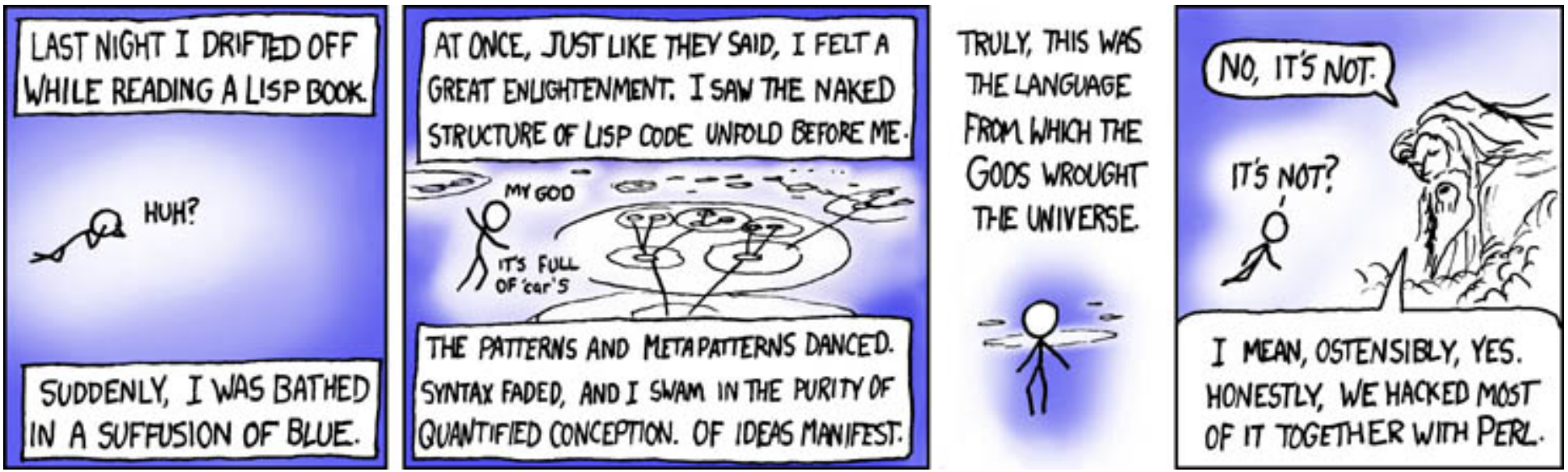
Revisiting the LISP Curse

Robert Winslow

The Lisp Curse



XKCD 224, “Lisp” by Randall Munroe. CC BY-NC 2.5.

The Lisp Curse

> Lisp is so powerful that problems which are technical issues in other programming languages are social issues in Lisp.

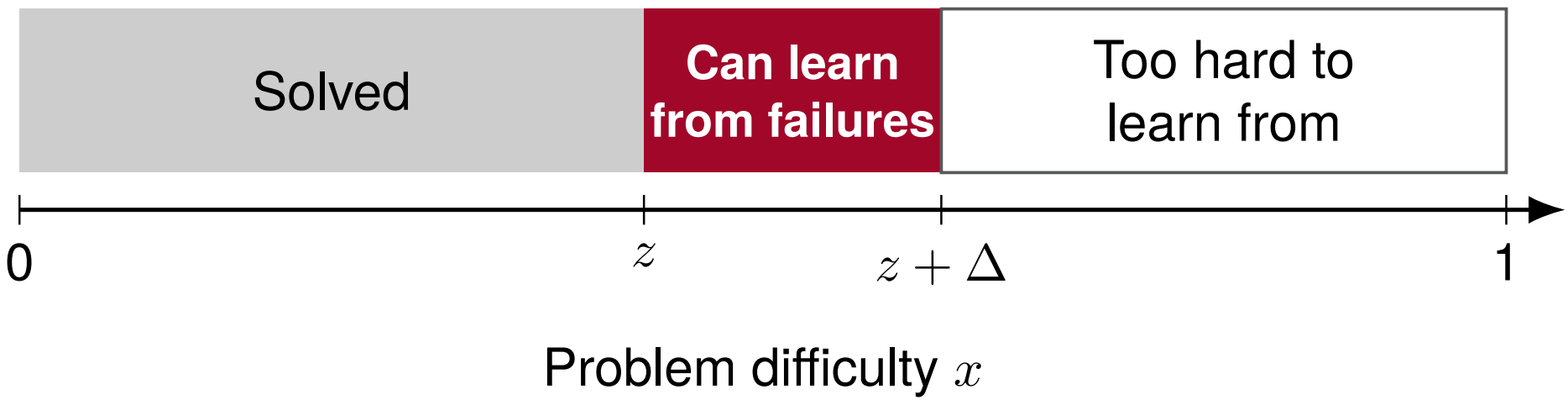
Rudolf Winestock, *The Lisp Curse*.

The return of the Lisp curse?

- AI makes it cheaper to build and cheaper to learn.
- Could this prevent us from developing shared systems and knowledge?

A Model of Tacit Knowledge

- A protocol has capability z.
- Tasks have difficulty x, drawn uniformly from $[0, 1]$.
- If $x \leq z$, the task succeeds and produces one unit of value.
- If $z < x \leq z + \Delta$, capability increases by $x - z$.



A Model of Tacit Knowledge

You can build your own protocol or defer to a specialist.

- If you build your own:
  - You pay fixed cost F to start at baseline $z = b$.
  - You learn from your failures.
- If you defer to a specialist:
  - You benefit from their capability.
  - The specialist learns from your failures instead of you.
  - There is a real cost of service c.

A Model of Tacit Knowledge

- Knowledge becomes obsolete at rate δ.
- Cases arrive at rate N (1 for your own system; N for a specialist with N users).

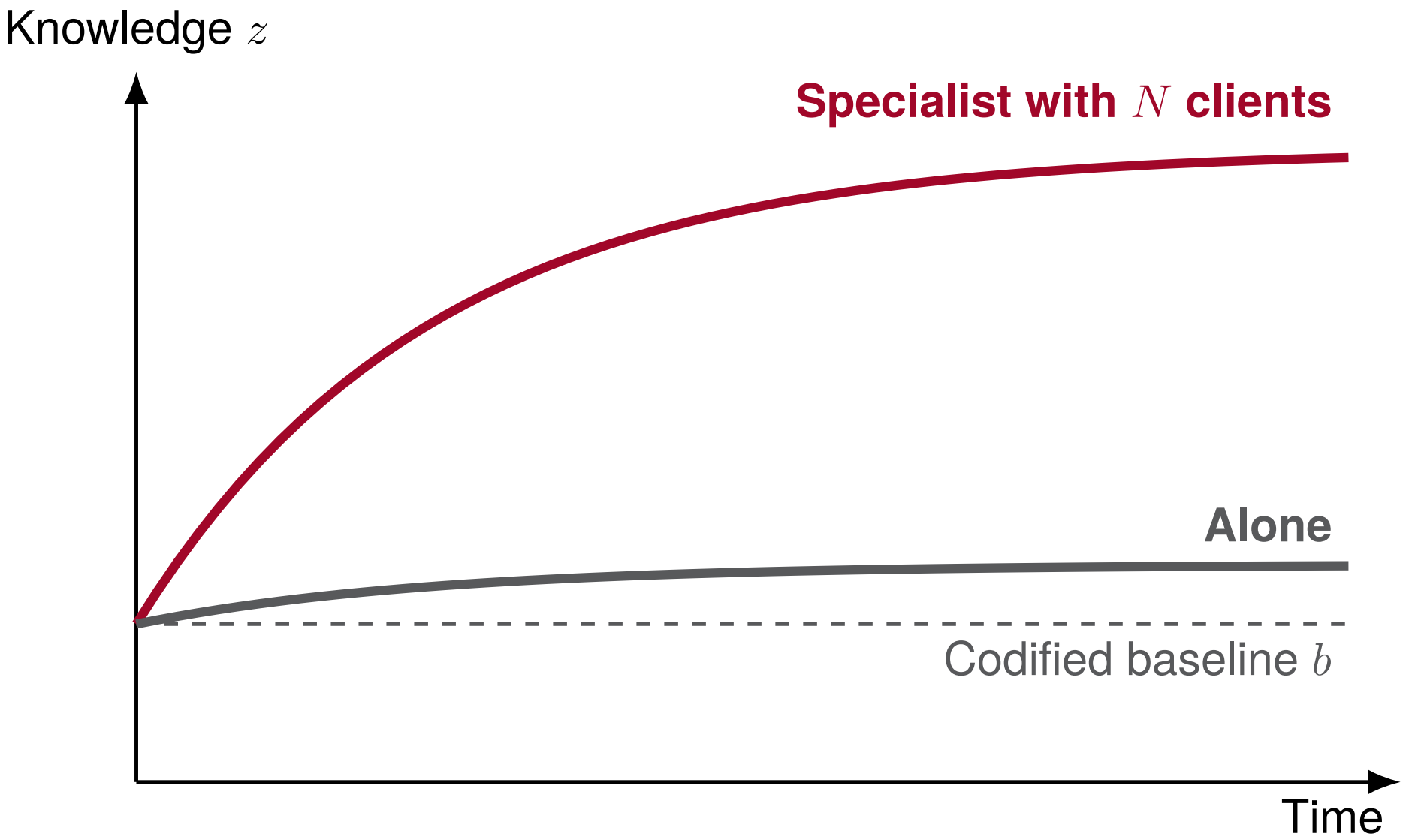
If $z \leq 1 - \Delta$, the net learning rate is:

$$\dot{z} = \underbrace{\frac{N\Delta^2}{2}}_{\text{learning from failures}} - \underbrace{\delta(z-b)}_{\text{obsolescence}} .$$

The steady state is:

$$z^* = b + \frac{N\Delta^2}{2\delta}.$$

A Model of Tacit Knowledge



When is pooling efficient?

Starting from scratch with N potential users, a shared knowledge protocol is more efficient than bespoke knowledge protocols if:

$$F \geq F_{\text{eff}} \equiv \frac{c}{r} - \frac{N\Delta^2}{2r(r+\delta)}.$$

When is pooling efficient?

$$W_{\text{private}} = \frac{Nb}{r} + \frac{N\Delta^2}{2r(r+\delta)} - NF.$$

$$W_{\text{shared}} = \frac{Nb}{r} + \frac{N^2\Delta^2}{2r(r+\delta)} - F - \frac{(N-1)c}{r}.$$

$$W_{\text{shared}} - W_{\text{private}} = (N-1)\left[F + \frac{N\Delta^2}{2r(r+\delta)} - \frac{c}{r}\right].$$

Can we build a shared system?

Let V_{build} be the present discounted value of building your own system from scratch.

$$V_{\text{build}} = \int_0^{\infty} e^{-rt} \left[b + \frac{\Delta^2}{2\delta}(1 - e^{-\delta t}) \right] dt - F.$$

$$V_{\text{build}} = \frac{b}{r} + \frac{\Delta^2}{2r(r+\delta)} - F.$$

If you haven't built your own system yet, the maximum you're willing to pay for a specialist with quality z_S is:

$$p = z_S - rV_{\text{build}}.$$

Can we build a shared system?

For a brand new specialist:

$$p_0 = b - rV_{\text{build}} = rF - \frac{\Delta^2}{2(r+\delta)}.$$

Suppose the specialist can offer services for free but cannot pay users or commit to future prices, then:

$$p_0 \geq 0 \quad \iff \quad F \geq F_{\text{adopt}} \equiv \frac{\Delta^2}{2r(r+\delta)}.$$

Three regimes

$$F_{\text{eff}} = \frac{c}{r} - \frac{N\Delta^2}{2r(r+\delta)}, \qquad F_{\text{adopt}} = \frac{\Delta^2}{2r(r+\delta)}.$$

If $F < F_{\text{eff}}$:

- Separate bespoke protocols are efficient.

If $F_{\text{eff}} \leq F < F_{\text{adopt}}$:

- A shared protocol is efficient.
- It cannot be created with non-negative spot prices.

If $F \geq \max\{F_{\text{eff}}, F_{\text{adopt}}\}$:

- Efficient shared protocols can easily arise.

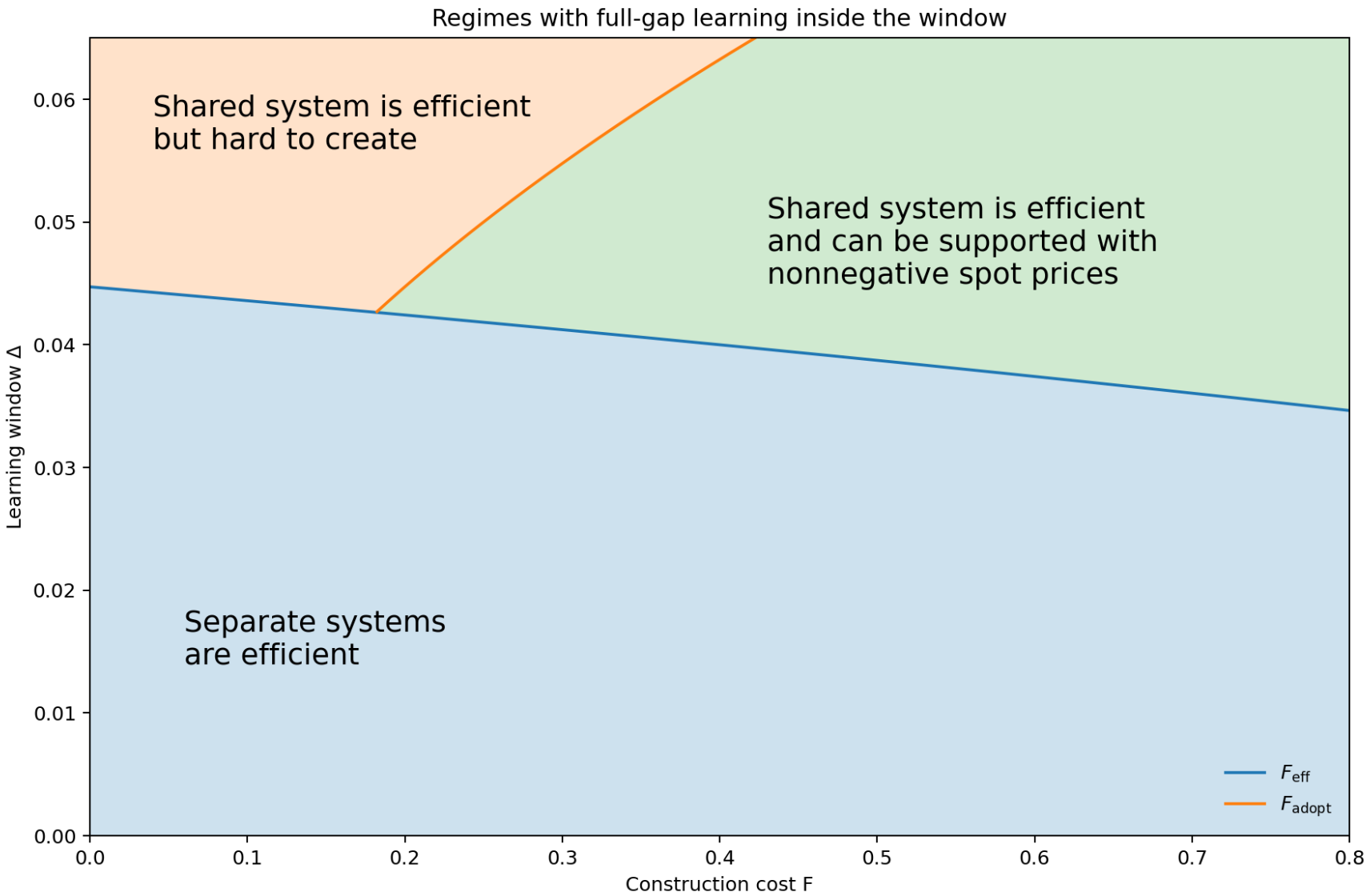
Three regimes

AI can move us between regimes in three ways.

$$F_{\text{eff}} = \frac{c}{r} - \frac{N\Delta^2}{2r(r+\delta)}, \qquad F_{\text{adopt}} = \frac{\Delta^2}{2r(r+\delta)}.$$

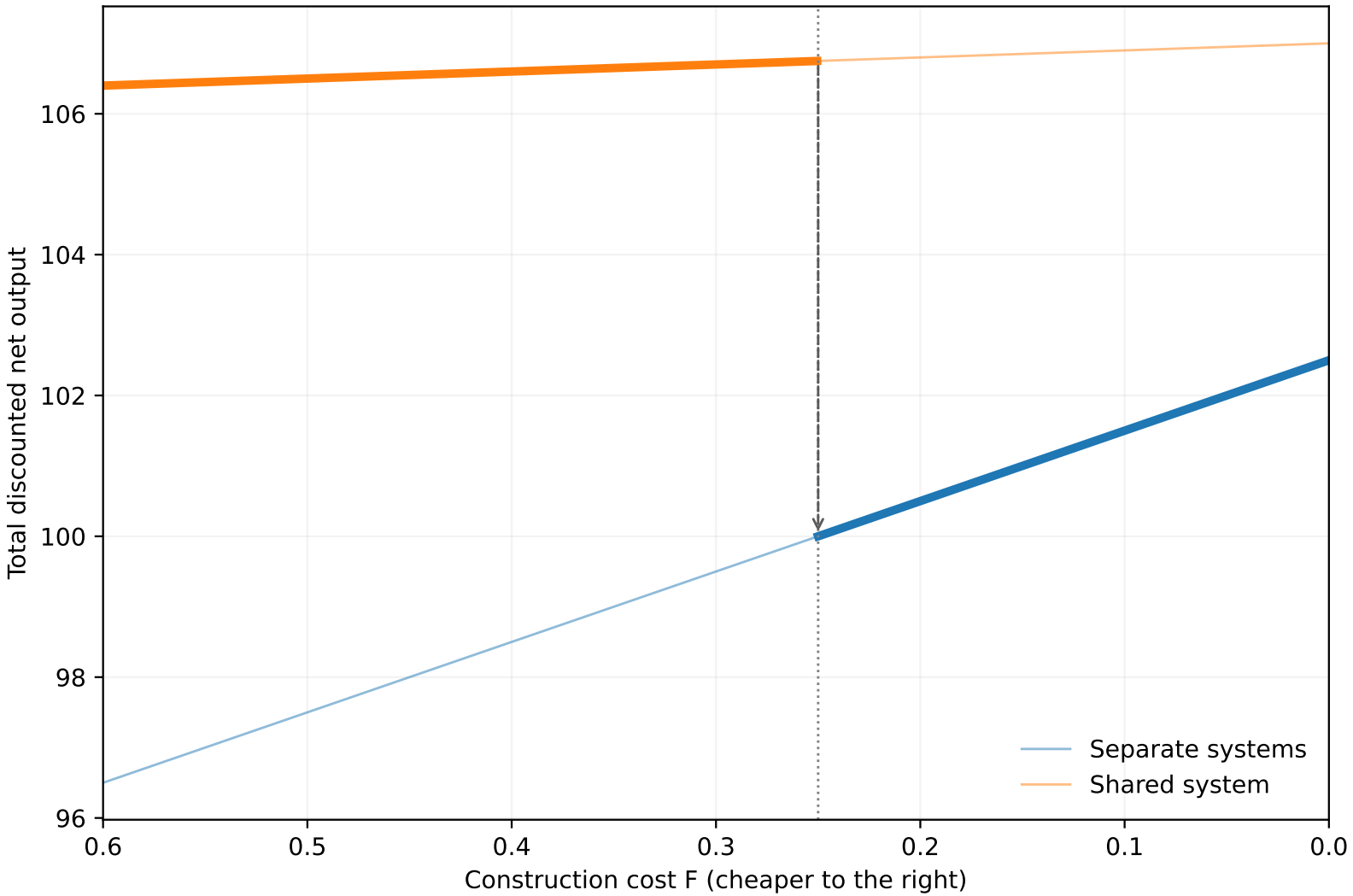
- $F \downarrow$: Construction gets cheaper.
- $c \downarrow$: Service costs fall.
  - F_{eff} falls.
- $\Delta \uparrow$: Learning is enhanced.
  - F_{eff} falls.
  - F_{adopt} rises.

Three regimes



Illustrative parameters: N=10, b=0.5, c=0.1, r=δ=0.05; g=1.

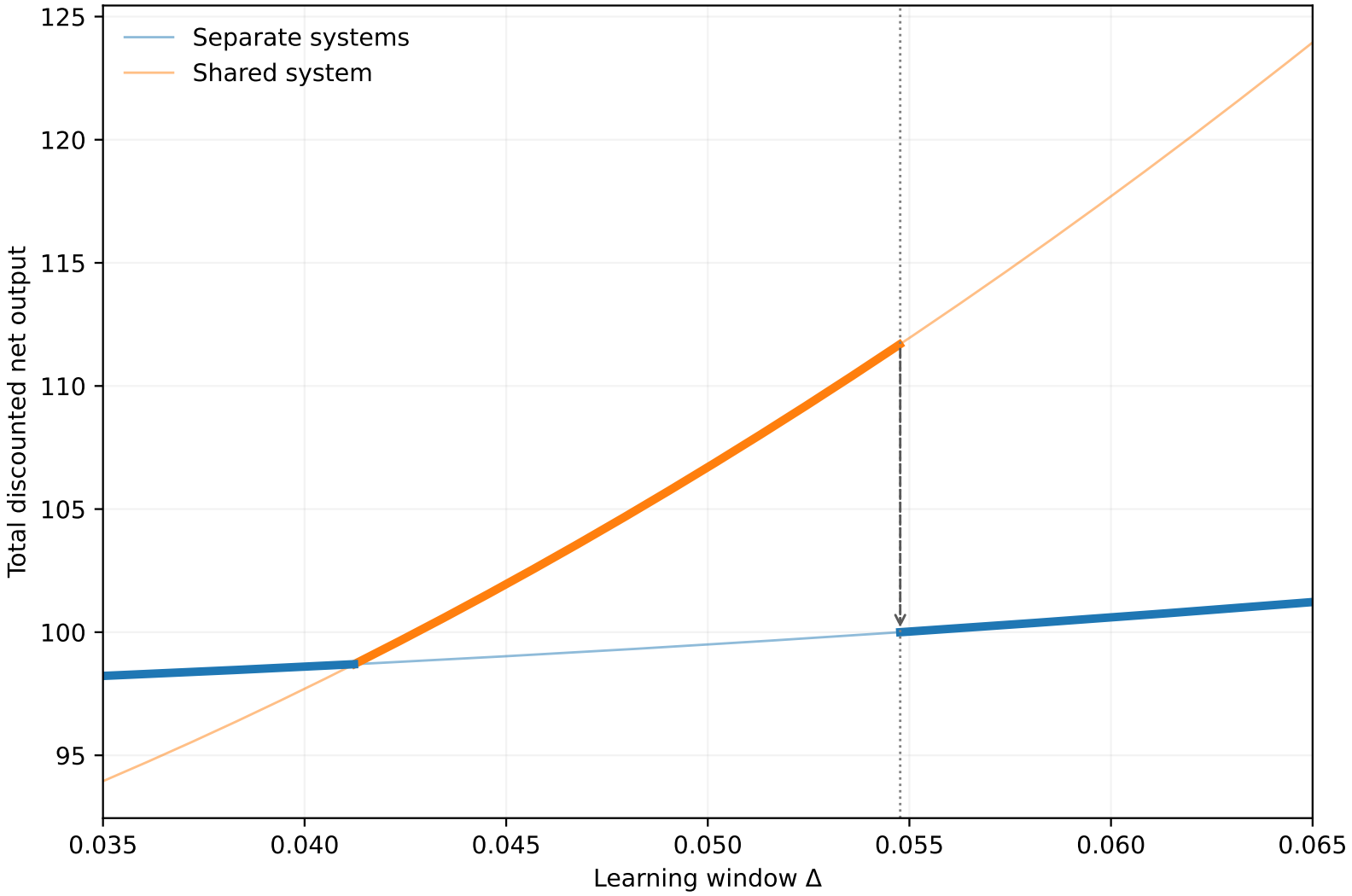
When does cheaper construction reduce welfare?



Thick lines: candidate spot-pricing outcome.

Illustrative parameters: N=10, b=0.5, c=0.1, r=δ=0.05; Δ=0.05.

When does a wider learning window reduce welfare?



Thick lines: candidate spot-pricing outcome.

Illustrative parameters: N=10, b=0.5, c=0.1, r=δ=0.05; F=0.3.

Possible solutions

- Make AI worse?
- Mandate or subsidize shared standards.
- Tax bespoke systems?
- Gatekeeping.
- Abolish data privacy laws?
- Commitment mechanisms.

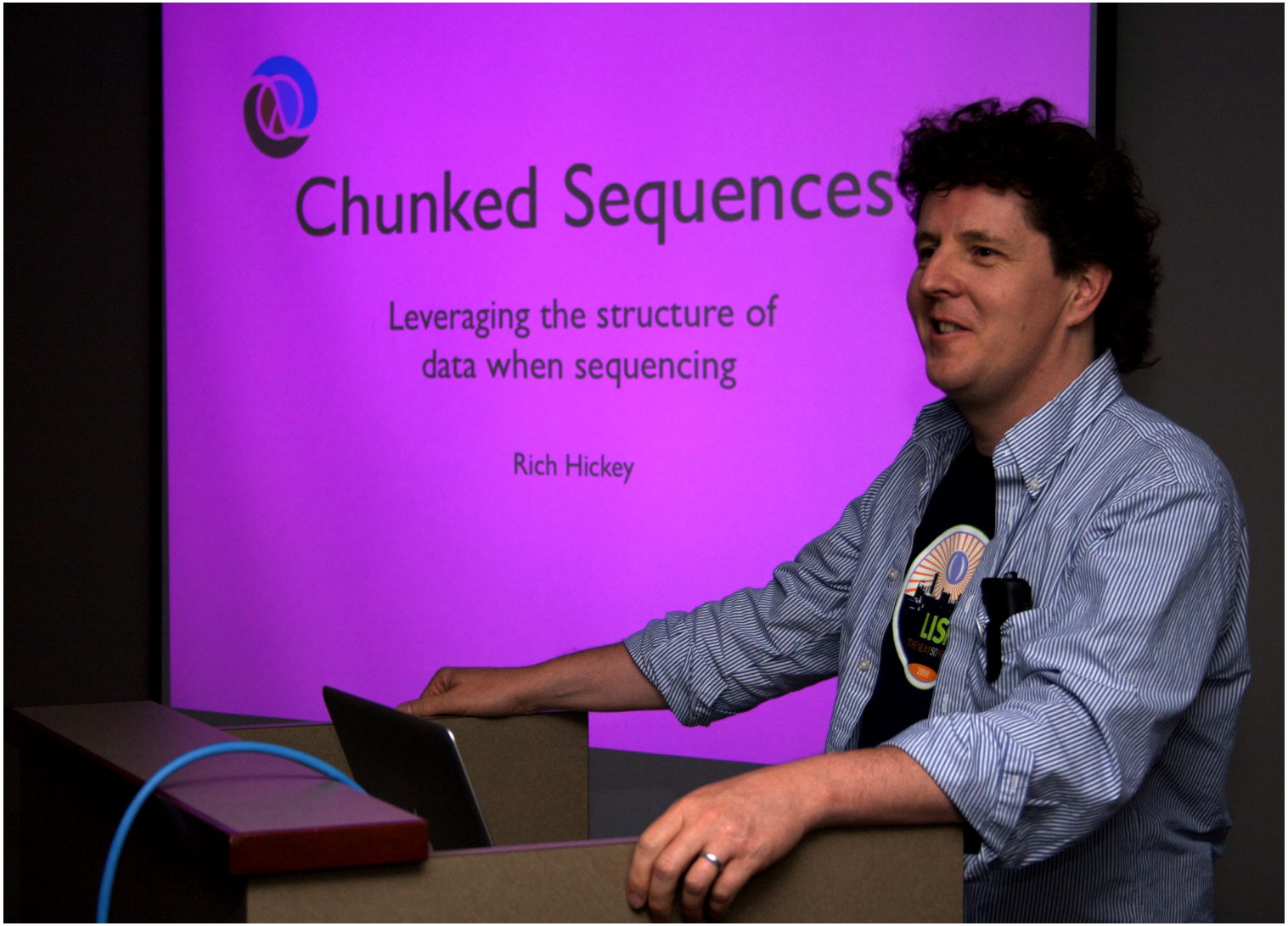
The benefits of big users

A large user's own cases can build expertise before it serves anyone else.

$$z^*_{\text{large}} = b + \frac{L\Delta^2}{2\delta}.$$

A large user with accumulated expertise can charge a higher spot price.

Lisp isn’t actually cursed



Rich Hickey, benevolent dictator for life of Clojure.
Photo: Tapestry Dude / Howard Lewis Ship, CC BY-SA 2.0.

Related work

AI, Human Cognition and Knowledge Collapse
Acemoglu, Kong, and Ozdaglar (2026)

In their model:

- General knowledge and context-specific knowledge are complements.
- Individual learning effort helps build general knowledge.
- Agentic AI recommendations can crowd out individual learning effort.
- The solution: Butlerian Jihad.

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- Individual learning effort helps build general knowledge.
- Agentic AI recommendations can crowd out individual learning effort.
- The solution: ~~Butlerian Jihad~~ Temporary suppression followed by a cap on precision.

Related work

Organizing Intelligence
Imas, Koh, and Legg (2026)

AI systems will only be fundamentally transformative if they also enable superhuman levels of collaboration.

Conclusion

- Cheaper and automated learning can lead to a fragmented knowledge ecosystem.
- This may or may not be efficient.
- But such technology increases the potential of *both* bespoke systems and shared systems of expertise.
- In order to see the gains from such technology, we need systems which allow us to commit to collaboration and specialization, even when they're a hassle in the short term.