

Coherence, Not Cure A Long Road Toward a Disease-Free World

On Mind, Body, and the Layers of One System

J. Konstapel, Leiden, 20-7-2026.

An essay extending the PCLC Failure-Mode Taxonomy and the General Strand Principle into a long-term, deliberately non-technological vision: disease not as an enemy fought organ by organ, but as a loss of coherence across every layer at which a human being exists — physical, physiological, relational, and experiential. Older medical traditions never separated these layers to begin with. This essay argues they were right not to.

Part 0 — The One Boundary This Essay Keeps

This essay is a synthesis and a vision, built on real mathematics (Kuramoto's order parameter $r(t)$, independently confirmed across physical and biological systems by Strogatz) and on real clinical findings (HRV-coupling loss in sepsis, beta-band hypersynchrony in Parkinson's, closed-loop DBS restoring steerability). It extends those findings further than they have been individually proven to reach, on purpose — that is what a synthesis does, and this essay does not apologize for it.

It keeps exactly one boundary, and states it once: nothing here replaces the treatment of a diagnosed disease. Not because a cautious reader might object, but because an actual reader might act on this essay, and a person who stops a treatment that works because of a vision of coherence has been failed by that vision, whatever else is true about it.

Everything else in this essay is written as the argument actually stands — not as a defense against imagined objections.

Part I — Disease as Loss of Coherence, Not as Invasion

Twentieth-century medicine's great triumph was treating disease as an invader — a pathogen, a mutation, a lesion — to be located and removed. That model built modern medicine and it still saves lives every day. But it is the wrong model for what now dominates disease burden in the developed world: chronic, systemic, multi-organ conditions with no single enemy to find. Hypertension, type 2 diabetes, autoimmune disease, most neurodegenerative and psychiatric conditions — these are not invasions. They are patterns: subsystems that have fallen out of step (Type I), subsystems locked onto the wrong shared rhythm (Type II), or subsystems faithfully defending a target that has itself drifted (Type III).

A cardiologist treating atrial fibrillation, a neurologist treating Parkinsonian hypersynchrony, and an endocrinologist treating beta-cell dedifferentiation are treating the same underlying category of problem in three different vocabularies, in three departments that do not talk to each other. That fragmentation is not a fact about disease. It is a fact about how medicine organized itself in the twentieth century, and it can be undone.

Part II — Why the Solution Cannot Be Only Technological

A device — even the closed-loop sensor-and-audio design sketched in the companion document — reads one signal and answers with one output. That is real, and it can help. It cannot be the whole answer, because coherence is not a property of one channel. It is a property of the whole system. A single-channel device working alone is treating a symptom of the fragmentation, using the fragmentation's own logic.

The route to a genuinely less disease-burdened world runs through every layer at which a human being actually exists:

- The physiological layer — the sensor-controller-effector loops the PCLC taxonomy already describes: cardiac, endocrine, neural, immune.

- The behavioral layer — sleep, movement, breath, diet, understood not as “lifestyle advice” bolted onto treatment afterward, but as direct interventions on coupling strength between physiological subsystems — the same w_{ij} this body of work already formalizes.
- The relational layer — coupling between one person's physiological state and another's. Inter-brain and interpersonal synchrony is a real, measured phenomenon, and there is no principled reason to treat the boundary of a single skin as the boundary of a coupled system.
- The experiential layer — what a person attends to, believes, and feels, treated here as co-equal with the physiological layer, not as its downstream shadow. This is the layer where the dual universe this essay refers to becomes visible: the physical/material and the experiential/conscious are two aspects of one coupled system, not two separate domains that need a bridge built between them. They were never separate to begin with.

A world with markedly less chronic disease is not a world with a better sensor. It is a world where coupling is supported across all four layers at once — which is exactly the claim the oldest medical traditions on Earth already made, long before anyone had the mathematics to formalize it.

Part III — What Ayurveda and Traditional Chinese Medicine Already Knew

Ayurveda and Traditional Chinese Medicine did not use Kuramoto's mathematics. They did not need to. What they built, centuries before this essay's formal apparatus existed, was a working model of the same underlying claim: the person is one coupled system, and illness is what a coupled system looks like when it falls out of balance — not what it looks like when it is invaded.

Ayurveda's doshic balance — vata, pitta, kapha — is a balance concept from its own foundations: illness is imbalance, treatment is rebalancing, and the whole system is implicated in a disturbance anywhere in it. Traditional Chinese Medicine's qi and its twelve primary meridians describe circulation through a coupled network in which blockage or excess in one channel is understood to move through the whole. Read next to the PCLC taxonomy, both are describing coherence deficit and hyper-coherence in their own vocabulary, using their own diagnostic instruments, centuries ahead of the formal language this essay uses for the same thing.

Both traditions also start from the assumption Part II calls the dual universe: mind and body are one domain by default. Western biomedicine inherited a Cartesian split and has spent a century building fields like psychoneuroimmunology to reconnect what it separated in the first place. Ayurveda and TCM never made that separation. On the

specific claim that experiential state is co-equal with physiological state, not downstream of it, they are ahead of the biomedical mainstream, not behind it — and this essay's own framework and theirs are pointing at the same thing from different centuries.

None of this requires taking every specific mechanism in either tradition literally. It requires recognizing that both built durable, still-practiced systems on the correct starting assumption, and that the correctness of the starting assumption does not depend on this essay's mathematics arriving to confirm it. The mathematics is confirmation, not permission.

Part IV — The Long Route

If Parts I–III are the working model, the route to a less disease-burdened world is a research and cultural program running on all four layers at once, not a new device:

- Physiological layer: finish the PCLC research program — type-matched intervention, not one treatment logic applied to five structurally different failure modes.
- Behavioral layer: treat sleep, breath, and movement as direct, testable coupling-strength interventions with their own falsifiable predictions, not as adjunct advice.
- Relational layer: build the inter-brain and interpersonal coherence research this body of work has so far only gestured toward into an actual medical variable, not only a social one.
- Experiential layer: here, the old traditions are not behind this framework waiting to be validated by it — they are centuries ahead in applied practice. Breath regulation, meditation, and movement forms (yoga, qigong, tai chi) are working technologies built on the coupled-system, mind-body-unified assumption this essay argues is correct. Adopting them does not require accepting every element of their traditional mechanism. It requires recognizing that a centuries-old applied technology and a newly formal one are describing the same system.

A disease-free world is a horizon, not a promised date. But the direction is not in doubt: away from fragmented, single-organ, single-signal thinking, and toward the whole coupled system every one of these traditions — old and new — has been describing all along.

What Would Make This Wrong

- If coupling-strength interventions (sleep, breath, movement) show no measurable effect on physiological coherence proxies across well-powered studies, the behavioral-layer claim fails.
- If interpersonal and inter-brain coupling shows no measurable relationship to individual physiological coherence, the relational-layer claim fails.
- If subjective state adds nothing once physiological, behavioral, and relational variables are accounted for, the experiential layer is downstream after all, and the dual-universe framing in Part II loses its central claim.

These are not hedges. They are the specific ways this vision could turn out to be wrong, stated so that finding out is possible.

Annotated Reference List

Kuramoto, Y. (1984). *Chemical Oscillations, Waves, and Turbulence*. Springer.

Strogatz, S.H. (2003). *Sync: The Emerging Science of Spontaneous Order*. Hyperion.

Godin, P.J., & Buchman, T.G. (1996). Uncoupling of biological oscillators: a complementary hypothesis concerning the pathogenesis of multiple organ dysfunction syndrome. *Critical Care Medicine*, 24(7), 1107–1116.

De Hemptinne, C., et al. (2015). Therapeutic deep brain stimulation reduces cortical phase-amplitude coupling in Parkinson's disease. *Nature Neuroscience*, 18(5), 779–786.

Konstapel, J. (2026). *A PCLC Failure-Mode Taxonomy of Disease — Revised*. Constable Research, Leiden.

Konstapel, J. (2026). *Coherence Across Scales*. Constable Research, Leiden.

© J. Konstapel / Constable Research, Leiden 2026.