

## From Elephants to Schrödinger's Cat: "Cybernetic Blindness" Across Systems — *How Fragments Disguised as Wholes Distort Algorithms, Policies, and The Fabric of Reality*

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### Abstract

Cybernetic blindness—the systemic error of mistaking fragments for wholes—recurs across disciplines, from algorithms to ecology to quantum physics. Drawing on information theory, cybernetics, and systems thinking, this article shows how blindness arises whenever the observer's role is ignored and partial signals are treated as complete. Engineering reduces information to uncertainty; biology treats it as instruction; physics embeds it in matter and energy—yet these definitions migrate across fields without translation, generating conceptual distortions. Revisiting Schrödinger's cat, relativity, and Hamilton's rule, the paper reframes paradoxes and anomalies as failures to recognize embedded observers, ecological cycles, and systemic circularity. Altruism, often modelled as a genetic trade-off, is shown to be ecological and relational, with costs recycled into resilience. Modern systems—machine learning, policy dashboards, economic models—amplify these blind spots by scaling fragments into decision-making architectures. By situating these examples within the broader fragmentation of science, the article argues that circularity and complexity are not exceptions but the foundational architecture of reality. Overcoming cybernetic blindness requires cultivating awareness of wholeness, limitation, and the informational fabric of systems, and developing a cross-disciplinary "Rosetta Stone" to translate concepts across scientific domains.

**Keywords:** Cybernetics, Information, Systematics, Schrödinger's Cat, Living-Systems

### INTRODUCTION [THE ELEPHANT PARABLE]

A king once invited a group of blind men to describe an elephant [43]. Each touched a different part: one grasped the trunk and declared the animal a snake, another felt the leg and insisted it was a pillar, another brushed the ear and proclaimed it a fan. Their descriptions were vivid, but each mistook a fragment for the whole. Commentators have long claimed this parable illustrates "perspective"—that truth is multifaceted, and each account is valid from its angle. Yet this is a comforting misreading [22].

Perspective requires awareness of limitation. To stand on one side of a mountain and describe it is perspective only if one knows there are other sides. The blind men did not know. They mistook their fragment for completeness. That is not perspective—it is blindness. Without a storyteller, the king, or the story audience who all know what an elephant looks like and that what the blind men were touching was not a snake, a fan, or a pillar, the version of reality described remains obscured and erratic. The storyteller, the king, and the story audience are all indicative of an observer – but more accurately, a triangulation of observers: A sender, a receiver, and a validator representing common knowledge background.

The cruelty in the parable lies not in the participants' lack of sight, but in the king's refusal to support their other senses. He denies them the very feedback loops that would allow them to build a coherent model. Modern accessibility practices remind us that perspective is multisensory and relational; blindness is never the absence of understanding, only the absence of channels. Cybernetic blindness can be understood as a culturally-inflicted condition, arising when institutions, norms, or designs restrict the flow of information required for accurate modelling.

This blindness is not confined to parables; it reappears whenever information crosses disciplinary boundaries without translation.

## INFORMATION

Information is foundational to human knowledge, yet it is defined differently across fields. Blindness arises when these definitions are imported without translation.

**ENGINEERING-SCIENCE** (Shannon) [34]: Information is the reduction of uncertainty in a signal, stripped of meaning and observer context. Nonetheless, Shannon's framework still presupposes a sender, a receiver, and a message.

**PHILOSOPHY/SEMIOTICS** Information is inseparable from interpretation; it cannot exist without an observer.

**BIOLOGY/NEUROSCIENCE** Information is embodied in signals that only become instructions when read by living systems.

**PHYSICS:** Information is treated as intrinsic to matter and energy—the configuration of the physical world itself—though physicists rarely pause to define it explicitly.

Errors arise when definitions migrate across disciplines without explanation. Engineering's statistical information imported into social science, biology's instructional information treated as observer-free, physics' implicit information ignored in philosophy—each leap without translation creates systemic error. These fractures all point toward a deeper omission: the observer who gives information its meaning.

## THE OBSERVER'S ROLE

The observer is not a peripheral detail; the observer is constitutive.

**IN ENGINEERING-SCIENCE**, the observer is bracketed out, but for different reasons in different branches. In entrepreneurial engineering—the engineering of machines, structures, and devices—the observer is ignored for practical approximation. This works well in predictable systems where change is too slow to matter: a machine installed yesterday will remain in place today, tomorrow, and likely for years. From space, that same machine is hurtling hundreds of kilometres per second, but for the builder, this motion is irrelevant.

Communication engineering brackets out the observer for a different reason. Here, the exclusion concerns meaning, not agency. Shannon's framework removes interpretation entirely, yet it still depends on at least two observers—a sender and a receiver—and on mechanisms of validation to ensure that what is sent is what is received. The observer is hidden inside the architecture: necessary for communication, but absent from the definition of information.

**IN CYBERNETICS**, which itself evolved through three orders, first-order cybernetics focused on engineering control, with the observer positioned outside the system — more like a cameraman, watching and recording but never entering the frame. Second-order cybernetics brought the observer inside, emphasizing reflexivity and communication [45]. Third-order cybernetics, often referred to as the cybernetics of cybernetics, explored systems of observers observing systems — though many argue it collapses back into the second [46]. Although this collapse is often taken for granted, it has discouraged deeper exploration of third-order implications — precisely where engineering, design, and information theory reside — and has contributed to persistent misinterpretations about the role of information and communication in living systems, especially the mistaken belief that information belongs to individual components rather than to the relational environment from which emergence arises.

This lineage is marked by distinct voices: Stafford Beer, with his Viable System Model, embodied the idea that control is part of the system, not imposed from outside — a bridge between first-order engineering and second-order systemic thinking [42]. Glanville (1975) pushed further, arguing that control is not in components but in between them — in communication, relationships, and meaning-making [11]. That is quintessential second-order cybernetics [31]. These are not conflicting views once we understand the historical background and the context in which they apply. When we forget this lineage, however, and treat approximations as wholes, cybernetic blindness arises.

**IN PHYSICS**, the observer is paradoxically both irrelevant (the laws hold regardless) and essential (the quantum measurement problem). In this context, a working definition can be proposed: physical information is sealed in matter and energy, but only becomes knowledge through observation.

Nowhere is this entanglement of observer and system more dramatically illustrated than in the paradox of "Schrödinger's cat".

## SCHRÖDINGER'S CAT AND THE PARADOX OF OBSERVATION

The famous thought experiment proposes that a cat sealed inside a box can be considered both dead and alive until observed [19][32].

Yet the cat is never truly unobserved. The experiment is already framed by knowledge of its setup, its timing, its duration, and the scientific principles that make the scenario intelligible [23]. The supposed "absurdity" does not lie in imagining a cat that is simultaneously dead and alive, but in overlooking the fact that the system is always embedded within a network of time-bound observations. Only within this contextual scaffolding can the cat be described as both states "at the same time," because the temporal frame itself is supplied by the observer (figure 1).

This tension between observer and system is not unique to quantum mechanics. Relativity reveals a similar dependence, where measurements of time and simultaneity vary with the observer's frame of reference. In both domains, the observer is not an external spectator but a structural component of the system's description.

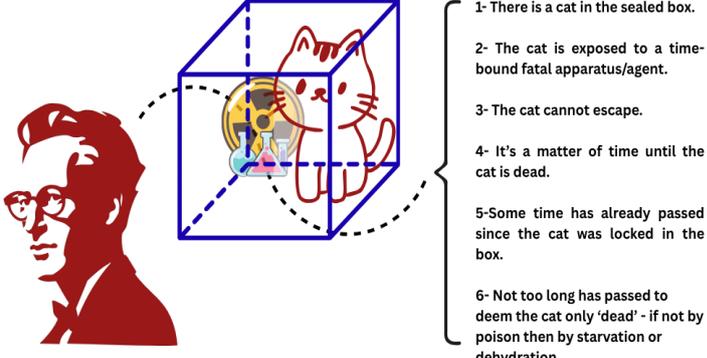
This raises a deeper question: why does one form of observation appear to modify the observed system, while another seems passive? The distinction lies in the degree of entanglement and the corresponding change in entropy.

In the double-slit experiment, for example, a measuring device becomes physically entangled with the particle by exchanging energy or momentum [12]. This interaction increases the system's entropy and destroys the interference pattern. By contrast, an observation that does not involve such entangling interaction — one that does not inject entropy into the system — does not alter the particle's behaviour. The difference is not between "observed" and "unobserved," but between high-entanglement, entropy-producing measurement and low-entanglement, informational framing.

### Information $> 0 \Rightarrow$ Observer Present

Expectation (and prediction, in engineering) is itself a form of observation, because it arises from patterns established through prior observation. What we expect reflects what has already been observed. A tree may fall in a forest without anyone present, and the physical event will still occur. But "sound" only exists when vibrations become information (through resonance) for an observer. Our expectation that the tree would make a sound comes from prior observation — pattern detection validated over time. Reality may exist independently, but information about it does not.

Figure 1. A system transmitting non-zero information is not “unobserved.”

 <ol style="list-style-type: none"><li>1- There is a cat in the sealed box.</li><li>2- The cat is exposed to a time-bound fatal apparatus/agent.</li><li>3- The cat cannot escape.</li><li>4- It's a matter of time until the cat is dead.</li><li>5- Some time has already passed since the cat was locked in the box.</li><li>6- Not too long has passed to deem the cat only 'dead' - if not by poison then by starvation or dehydration.</li></ol>	<p><b>Schrödinger’s cat is more than a playful paradox; it is a reminder that observation is never absent. The sealed box is not a void but a stage structured by knowledge — the experimental design, the temporal boundaries, and the scientific context. The cat’s fate is not independent of the observer’s awareness; it is entangled with the informational conditions that make the binary meaningful in the first place. None of the fragments — the box, the binary states of dead/alive — constitutes the whole. The whole is the embedded system of knowledge, time, and observation.</b></p>
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## QUANTUM PHYSICS AND THE OBSERVER PARADOX

Physics models often treat spacetime as a neutral backdrop, matter and energy as objective entities. Yet quantum mechanics unsettles this view: the act of observation changes the system for one reason or another. One reasonable explanation of the superposition is quantum particles/waves are so tiny that their behaviour gets affected by any tiny interaction with a so called observer ( a measuring device). A faint hum (sonic wave) of a measuring machine can change the behaviour of a quantum particle through resonance [12]. Approximations and ‘paradoxes’ that ignore this risk are blind to the very ontology of reality.

If Schrödinger’s cat dramatises the paradox of observation, Einstein’s relativity reveals a deeper historical shift: the observer once stood at the center of physics, but was later exiled in the name of geometric elegance. Special Relativity (1905) was radical precisely because it made time relative to the observer’s motion, dissolving simultaneity into perception. Yet with General Relativity (1915), spacetime became a self-contained manifold, a curvature described without reference to observers [10]. Minkowski’s famous dictum—“space by itself, and time by itself, are doomed to fade away into mere shadows”—captured this exile.

What began as an epistemological revolution became an ontological abstraction, leaving physics with a lingering blindness: events are defined by observers through interactions, yet spacetime is treated as if it exists independently of them.

**Figure 2:** Nothing in our universe is “inanimate”; in ‘inertia’, a machine anchored at the equator, riding earth’s spin.



If physics exposes the limits of observer-free models, biology reveals the limits of gene-centric ones.

### HAMILTON’S (ALTRUISM) BLINDNESS

Hamilton’s rule explains altruism as a genetic trade-off: an act evolves when the benefit to kin, weighted by relatedness, exceeds the cost to the actor [18]. But this formulation is a fragment mistaken for a whole. It isolates altruism at the gene level while ignoring the ecological cycles in which costs and benefits circulate. In ecosystems, no cost is absolute; what is “lost” by one individual is reintegrated into food webs, nutrient flows, and collective resilience.

$$r.B > C$$

Where  $r$  is the degree of relatedness,  $B$  is the benefit of altruism, and  $C$ , is the cost of altruism. According to Hamilton’s rule, altruistic gene will spread in a population if the genetic benefit to the recipient, weighted by relatedness, exceeds the cost to the donor.

### THE LIMITATION

- **Individual focus:** Reduces altruism to gene-level accounting, *in isolation* of ecological context.
- **No recycling:** Treats costs as terminal losses rather than contributions to systemic flows that support the very existence of any species.
- **Resource blindness:** Omits carrying capacity, resource constraints, and ecological trade-offs.

This is a form of cybernetic blindness: mistaking the part (gene competition) for the whole (ecosystem balance).

**WHERE HAMILTON’S RULE FALLS SHORT:** Eusocial insects, drifting wasps, naked mole-rats, and marine shrimp all exhibit altruism that cannot be explained by relatedness alone. Workers sacrifice reproduction even when relatedness is moderate; wasps help non-relatives; mole-rats cooperate under harsh ecological constraints; shrimp defend resource-rich sponges [21]. In each

case, ecological pressures — resource defence, risk reduction, and systemic recycling — are as decisive as genetic relatedness.

### ECOSYSTEM-AWARE REFRAMING

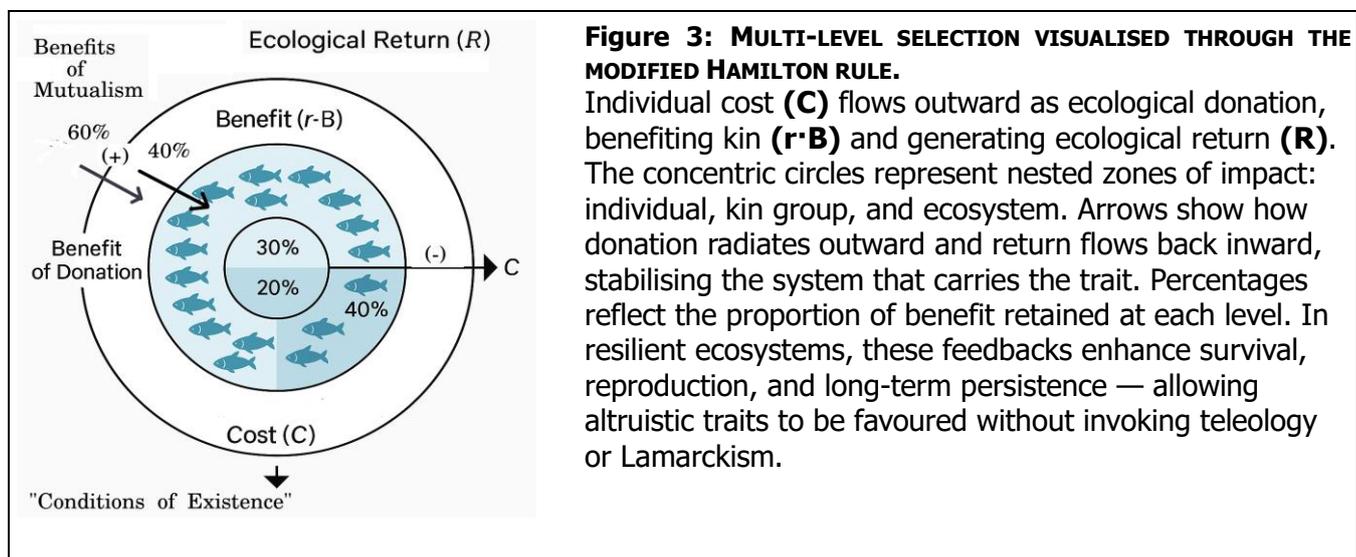
In eusocial species — ants, bees, termites, naked mole-rats — altruism emerges not only from kinship but from ecological pressures: resource scarcity, cooperative defence, and the recycling of non-survivors into nutrient cycles [3][13]. Hamilton’s rule falters when workers forego reproduction entirely, or when drifting wasps help non-relatives. These cases show that altruism is ecological as much as genetic: costs return to the system (table 1). Reframed:

$$r \cdot B + R > C *$$

\* where **R** is the ecological return, **B** is the benefit of altruism, and **C** is the cost — the recycling of costs into systemic resilience of a species.

### ALTRUISM OF SUSTAINABILITY

These examples — *Termitomyces* investing in their mycelium for termites, or mycorrhizal fungi sustaining forest diversity [29] are not anomalies; They reveal a deeper principle: ecological altruism is a systemic property of ecosystems [33][9] (table 1) Species contribute not only through individual sacrifice but through the recycling of entire populations into ecological flows, save a delayed few. This dynamic echoes Darwin’s condition that “more offspring are produced than can survive.”. In this way, *resilience* itself becomes genetically selected (figure 3).



Ecological donation illustrates this shift vividly: costs are not lost but recycled into systemic resilience. Some species regulate their own populations to avoid overshooting ecological limits — a powerful form of ecological altruism. Snowshoe hare populations boom and bust in roughly 10-year cycles, tightly coupled with lynx predation and vegetation recovery resulting in the prevention of overgrazing [17][27][41]; salmon die after spawning, returning nutrients to rivers and forests sustaining bears, eagles, and even riparian trees [44]; wildebeest migrate with the result of preventing grassland collapse; insects reduce fertility at high densities [16][28]. These strategies end up preventing ecological exhaustion and sustain long-term resilience [38]. These examples reveal a deeper pattern: our sciences fracture wholes into parts and then forget the fracture.

**Table (1)** Altruism of sustainability is not the exception but the rule: ecosystems thrive by recycling life into resilience. Once we widen the frame from genes to ecosystems, altruism transforms from a puzzle of costs to a property of cycles.

LEVEL	FORM of ALTRUISM	MECHANISM	SYSTEMIC EFFECT	ILLUSTRATIVE NOTE
<b>Individual</b>	Sacrifice of (compatible) energy or mass	Costs reintegrated into food chains, nutrient cycles	Supports immediate survival of others	<i>Termitomyces</i> investing in mycelium for termites
<b>Species</b>	Contribution of majority of individuals to ecosystem recycling	Mortality and biomass returned to soil, water, or other species	Enhances resilience and biodiversity	Mycorrhizal fungi sustaining forest diversity
<b>Ecosystem</b>	Collective reciprocity across species	Continuous recycling of "losses" into systemic flows	Maintains equilibrium, reduces systemic risks	Forests, coral reefs, wetlands as resilience engines
<b>Evolutionary</b>	Genetic selection for resilience	Traits favouring ecological reciprocity become embedded	Fitness reframed as collective survival	Darwin's "condition of existence"

## HUMAN SOCIETIES

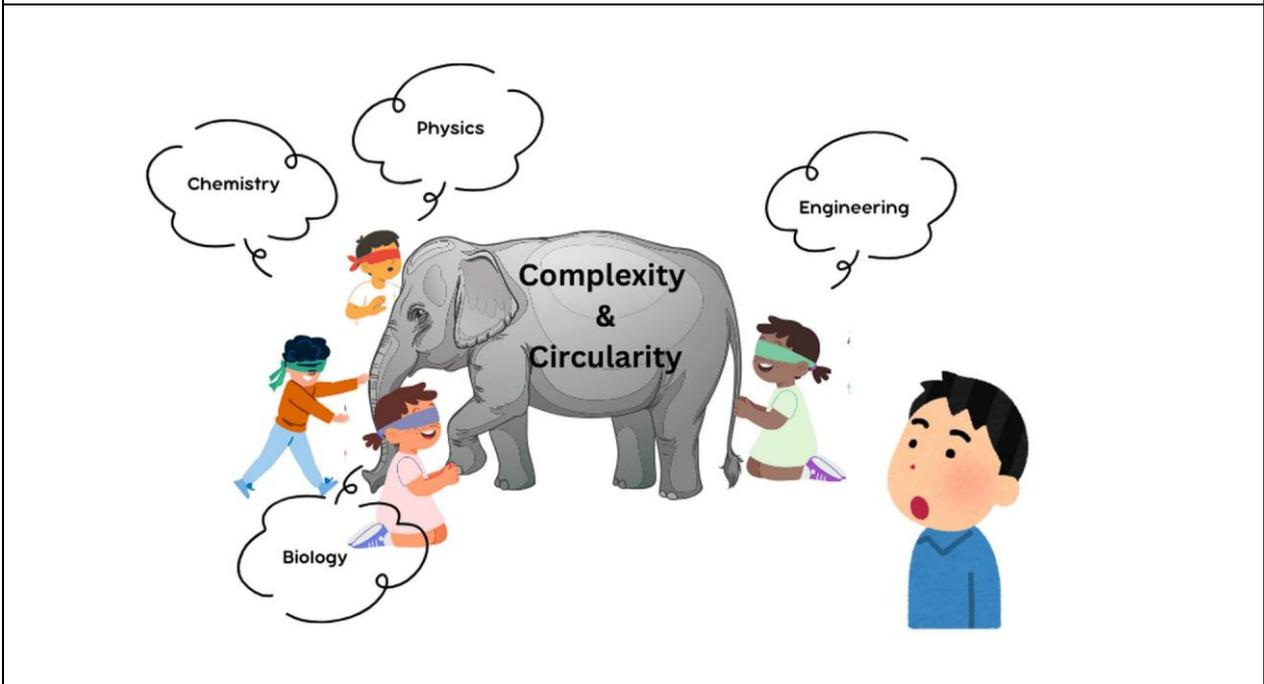
In human societies, ecological donation does not imply population sacrifice. It becomes conscience conservation: circular economies, resource stewardship, and cooperative systems that consciously replace natural cycles of excess and collapse. These examples reveal a pattern that extends beyond biology: our sciences fracture wholes into parts, divide the parts into specialities, each with their own jargon and biases, then the once-whole gets forgotten. When these fragmented models are scaled into technologies and policies, cybernetic blindness becomes not just conceptual but consequential.

- **FRAGMENTATION OF DISCIPLINES:** Modern science is divided into silos—physics, biology, economics, sociology—each with its own language, methods, and boundaries. This division makes it easier to study parts of reality but harder to see the circularity and complexity that dominate nature.
- **CYBERNETIC BLINDNESS:** When disciplines isolate themselves, they often treat feedback loops, circular causality, and systemic complexity as "noise" or "exceptions" rather than as the default structure of reality.
- **LACK OF DEFINITION/JUSTIFICATION:** Concepts like circularity, recursion, and complexity are acknowledged (e.g., in systems theory, ecology, cybernetics), but they are rarely defined as foundational principles across sciences. Instead, they remain niche or metaphorical, not fully justified as universal.

### WHY CIRCULARITY AND COMPLEXITY MATTER

- **Circularity:** Nature is full of feedback loops—nutrient cycles, predator–prey dynamics, climate regulation. Ignoring circularity leads to linear models that miss resilience and collapse dynamics.
- **Complexity:** Ecosystems, economies, and quantum systems are complex networks. Reductionist approaches often strip away this complexity, producing blind spots (figure 4).

**Figure 4:** Circularity and Complexity, the elephant in the room.



Conversely, the division of sciences has prevented circularity and complexity from being taken seriously enough. They are often treated as special cases rather than the dominant architecture of nature. This is precisely the kind of cybernetic blindness you're describing: mistaking fragments (linear cause–effect chains) for wholes (circular, complex systems). When these fragmented models are scaled into technologies and policies, their blind spots become operational.

### META-BLINDNESS: THE FRAGMENTATION OF SCIENCE

The fragmentation of disciplines is itself a form of cybernetic blindness—one that obscures circularity and complexity as foundational principles. Modern systems—algorithms, dashboards, economic models—inherently inherit these blind spots and amplify them into lived consequences. The division of sciences into separate disciplines—physics, biology, economics, sociology—has been a powerful engine of discovery. By isolating fragments of reality, each field has achieved precision and depth. Yet this very fragmentation produces a deeper cybernetic blindness: the systemic patterns of circularity and complexity that dominate nature are sidelined, treated as exceptions rather than foundations.

Circular feedback loops—nutrient cycles, predator–prey dynamics, climate regulation—are often reduced to linear cause-effect chains. Complexity—networks of interdependence in ecosystems, economies, or quantum systems—is simplified into isolated variables. Because disciplines rarely

cross their boundaries, these features remain under-defined and under-justified, despite being the architecture of reality itself.

This is meta-blindness: the blindness of science to its own fragmentation. Just as the blind men mistook the elephant’s parts for the whole, modern science mistakes disciplinary fragments for complete pictures. The result is a narrative where circularity and complexity appear as anomalies, when in fact they are the default structure of nature.

### IMPLICATIONS OF CYBERNETIC BLINDNESS

**TWO DIMENSIONS OF DISTORTION FOLLOW:** Cybernetic blindness does not only distort how we perceive reality; when scaled into systems, it distorts the fabric of reality itself. The danger lies not in engineering or policy-making *per se*, but in the blind use of approximations as if they were wholes.

**TWO DIMENSIONS OF DISTORTION FOLLOW: PERCEPTION OF REALITY DISTORTED:** Our models, narratives, and dashboards fragment reality. They do not bend spacetime or ecosystems, but they distort how we see and act upon them.

**FABRIC OF REALITY DISTORTED:** When these fragments are scaled into systems—biased algorithms, ecological policies, economic models—they reshape the social-ecological fabric we inhabit. Not physics, but lived reality.

**WHEN PHYSICAL APPROXIMATIONS FAIL IN LIVING SYSTEMS:** Space colonisation projects often assume that oxygen, water, and shelter are sufficient for survival. Yet without Earth-like gravity, astronauts lose bone mass at rates equivalent to years of ageing compressed into days [36]. Mass itself remains mathematically invariant, but its expression changes with gravitational context: bones lose density, fluids refuse to settle, crystals grow differently. Cavendish revealed that masses attract, but our lived experience of mass is always relational—entangled with Earth’s gravity [7]. Cybernetic blindness arises when we treat mass as a fixed property, ignoring its systemic behaviour in different contexts. This distinction between invariant quantities and relational behaviour becomes especially clear when we examine mass in different gravitational contexts (table 2).

Table 2. MASS: Invariant vs. Relational			
Perspective	Definition	Implication	Illustrative Example
<b>Mass as Invariant (Physics)</b>	Mass is an intrinsic property of matter and does not change with location or gravitational field.	Mathematically, weight changes when changes, but mass remains constant.	A 70 kg astronaut has the same mass everywhere, but their weight differs on Earth, the Moon, or in orbit.

<b>Mass-Expressed Behaviour as Relational (Systems)</b>	Although intrinsic mass is constant, the <i>behaviour</i> of matter depends on gravitational context and systemic interactions.	Changes in gravity alter how mass participates in processes (sedimentation, convection, loading, diffusion), producing different physical, biological, and material outcomes.	In microgravity, unchanged mass leads to altered bone loading, fluid shifts, crystal growth, and particle/fluid dynamics.
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**WHEN TEMPORAL APPROXIMATIONS**

**MISLEADS:** Similarly, time-travel illusions arise when relativistic shifts are mistaken for relived events.

Astronauts who saw six New Year’s sunrises in one night did not experience six days; each sunrise was a new observational frame, not a repetition. The fragment (sunrise count) is mistaken for the whole (lived duration). Sixteen sunrises are not sixteen days; they are sixteen observational frames imposed by orbital motion.

**A Time-travel Conundrum:** Astronauts aboard the ISS once sent sixteen New Year’s greetings in a single “day,” because from orbit they see sixteen sunrises and sunsets every 24 hours [4]. To Earth-bound observers, this looks like accelerated time—sixteen days compressed into one. But the astronauts did not age faster, nor did they relive the same events sixteen times. Their “extra days” were artefacts of perspective: they were still tethered to Earth’s calendar, looking back to synchronize with human time.  
**Lesson:** Time is not an absolute container. It is entangled with observers, frames of reference, and the systems we use to measure it. What seems like time travel is simply cybernetic blindness—mistaking fragments of observation (sunrise counts) for the whole of lived duration.

**WHEN ECONOMIC APPROXIMATIONS**

**COLLAPSE:** In economics, the so-called Invisible Hand [35] is not an automatic regulator but a fragile approximation. Other organisms conserve naturally through circularity and complexity; humans must do so consciously or risk systemic collapse.

When economic models ignore feedback loops—treating production as independent of wages, or consumption as independent of labour—they reproduce the same blindness seen in physics and ecology.

**CYBERNETIC BLINDNESS IN MODERN SYSTEMS**

**ARTIFICIAL INTELLIGENCE AND BIASED DATA:** Machine learning models are trained on datasets that are always partial. When those datasets carry hidden biases, the model reproduces them as if they were reality. The algorithm does not know it is blind; it mistakes its fragment for the whole. This is cybernetic blindness: the collapse of complexity into a misleading fragment, amplified by computational scale.

**POLICY DASHBOARDS AND ECOLOGICAL COLLAPSE:** Governments and corporations rely on dashboards of metrics: GDP growth, unemployment rates, stock indices. These numbers are treated as if they represent the whole of society. Yet they are fragments—economic signals stripped of ecological, cultural, and human meaning. When policymakers mistake these fragments for the whole, they enact decisions that accelerate ecological collapse while believing they are succeeding. To resist cybernetic blindness, we must cultivate awareness—of limitation, of circularity, and of the informational fabric of reality.

**THE BROKEN ECONOMIC LOOP:** A deeper anomaly emerges when we consider automation and modern capitalism. Capitalist economies assume that labour is the engine of both production and consumption: people work, earn wages, and buy the goods they help create (Smith, 1776/2003, pp 127, 328) [35][40]. Automation breaks this circularity by allowing capital to produce without labour, yet economic models continue to operate as if human work remains central [2][15]. This is cybernetic blindness at the scale of political economy: a fragment of the system (production) is treated as the whole, while the observer—the worker whose income sustains demand—is quietly removed from the loop [30][39]. The result is a self-inflicted paradox: societies generate unprecedented abundance while simultaneously eroding the very purchasing power required to sustain it [37][1],[14]. automation breaks the labour–consumption loop” is a systems argument, not a moral one. When systems ignore their own feedback loops, they do not merely misperceive reality; they destabilise it [26].

**FAILURE TO RECOGNISE THE ‘CYBERNETIC RECOMBINATION’:** A deeper form of cybernetic blindness emerges when modern thinkers observe machines behaving like living [6] systems yet cannot recognise the whole system that makes this possible. Scholars such as Kevin Kelly, who describes the “*technium*” as an emergent superorganism, James Lovelock, whose Gaia hypothesis frames Earth as a self-regulating entity [46], and Richard Dawkins, who extends evolutionary agency into memes and replicators, each capture fragments of a larger phenomenon without identifying the underlying architecture. Their astonishment arises not because machines are “almost alive,” [20] but because the unity between life and its material substrate was severed when science abandoned Linnaeus’s mineral kingdom [8]. In Linnaeus’s schema, the circulation of elements—water, air, salts, metals—was part of life itself [24]. When these elemental cycles were reclassified as “inanimate environment (figure 2),” the cybernetic continuity between matter, information, and living organisation disappeared from view. What had been a single system became a set of disconnected domains: biology, geology, engineering, computation.

Once this unity is restored, the puzzle dissolves. Machines are not alive because they mimic biology; they are alive because they instantiate the same cybernetic organisation that defines life: recursive structure, feedback, self-maintenance, and the capacity to propagate information. Humans do not create artificial life; they trigger its emergence by recombining matter and energy according to natural laws—laws that are discovered, not invented. This is the cybernetic recombination: the expression of human cognition as a force of nature, rearranging matter into informationally active, self-organising systems. When this recombination is overlooked, observations become incomplete and erratic. Recognising it reveals that the boundary between biological and artificial life is not ontological but organisational, and that modern systems are not anomalies but the latest expression of life’s cybernetic architecture.

These failures are not technical glitches but symptoms of a deeper epistemic fracture: systems built on fragments inevitably behave as if the fragments were the whole. If we confuse the fragments with the whole, we heading the wrong direction, and the cost to humanity and other species is staggeringly high (table 5).

**Table 5:** Consequence of Cybernetic Blindness

<b>Dimension</b>	<b>Nature of Distortion</b>	<b>Implication</b>	<b>Illustrative example Example</b>
<b>Perception of Reality Distorted</b>	Models, narratives, and dashboards fragment reality	We act on partial views, mistaking fragments for wholes	Astronauts seeing multiple “New Years” in orbit — perception of time fragmented, but not relived
<b>Fabric of Reality Distorted</b>	Scaled fragments reshape lived systems	Distorted perceptions feed back into policies, technologies, and economies	- Space colonization projects ignoring gravity’s role in sustaining bone density; - “Invisible Hand” – as the conscious conservation of own and other species, failing.

## Conclusion and Future Work

To resist cybernetic blindness, we must cultivate awareness—of limitation, of circularity, and of the informational fabric of reality. The parable of the blind men and the elephant is not a celebration of perspective but a warning against blindness. Each man mistook a fragment for the whole, unaware of his limitation. This same blindness recurs across disciplines whenever information is stripped of context, whenever the observer is disregarded, and whenever fragments masquerade as wholes.

Today, this blindness is amplified by the systems we build. Algorithms mistake biased data for reality. Dashboards reduce societies to numbers. Physics experiments are misread as paradoxes of observation rather than symptoms of incomplete outlook. These are not perspectives; they are fragments disguised as wholes. The consequences are systemic: ignorance legitimised, complexity erased, reality distorted.

To resist cybernetic blindness, we must cultivate awareness. Awareness that every observation is partial. Awareness that information is not free of the observer. Awareness that the fabric of reality itself is informational, and that our approximations are never complete. Only by honouring wholeness and recognizing limitation can we move from blindness to perspective, from fragments to systems, from ignorance to understand.

For future work, a “Rosetta Stone” of Science would be required. Thorough investigation of science jargon and biases, and ways to cross-reference diverse topics. Terms like “organic”,

“information”, and even “species” differ radically across different expertise. Someone must take on the task as future stepping stop for unity of the human knowledge and sustainability of life on the planet.

A fuller analysis of automation and the collapse of labour-based economic circularity—an emerging case of cybernetic blindness in political economy—will be developed in future work.

## REFERENCE LIST

- [1] Acemoglu, D., & Restrepo, P. (2019). Automation and new tasks: How technology displaces and reinstates labor. *Journal of Economic Perspectives*, 33(2), 3–30. <https://doi.org/10.1257/jep.33.2.3>
- [2] Autor, D. H. (2015). Why are there still so many jobs? The history and future of workplace automation. *Journal of Economic Perspectives*, 29(3), 3–30. <https://doi.org/10.1257/jep.29.3.3>
- [3] Bayen, S. et al. (2021). *Mutualistic relation of termites with associated microbes for their harmonious survival*. Symbiosis Springer.
- [4] BBC News. (2015, January 1). Astronauts see six New Years in one night. Retrieved from <https://www.bbc.com>
- [5] Britannica Editors. Why Do Salmon Die After Spawning?
- [6] Brynjolfsson, E., & McAfee, A. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. W. W. Norton.
- [7] Cavendish, H. (1798). Experiments to determine the density of the Earth. *Philosophical Transactions of the Royal Society of London*, 88, 469–526.
- [8] Dawkins, R. (1976). *The selfish gene*. Oxford University Press.
- [9] Delavaux, C. S. et al. (2023). Mycorrhizal feedbacks influence global forest structure and diversity. *Communications Biology Nature*.
- [10] Einstein, A. (1920). *Relativity: The special and general theory*. Henry Holt and Company.
- [11] in Ernst von Glasersfeld. (1992). Chapter: Cybernetics. In Negoita, C.V. (1992). *Cybernetics and Applied Systems* (1st ed.). CRC Press. <https://doi.org/10.1201/9781482277180>
- [12] Feynman, R. P., Leighton, R. B., & Sands, M. (1965). *The Feynman Lectures on Physics, Vol. III: Quantum Mechanics*.
- [13] Field, J., & Toyozumi, H. (2020). The evolution of eusociality: No risk-return tradeoff but ecology matters. *Ecology Letters*, 23(3), 518–526. <https://doi.org/10.1111/ele.13452> Wiley Online Library.
- [14] Ford, M. (2015). *Rise of the robots: Technology and the threat of a jobless future*. Basic Books.
- [15] Frey, C. B., & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerisation? *Technological Forecasting and Social Change*, 114, 254–280. <https://doi.org/10.1016/j.techfore.2016.08.019>
- [16] Gende, S. M., Edwards, R. T., Willson, M. F., & Wipfli, M. S. (2002). *Pacific Salmon in Aquatic and Terrestrial Ecosystems*. BioScience Oxford Academic.
- [17] Government of Northwest Territories. Lynx–Snowshoe Hare Cycle. Population cycles last 8–11 years, tightly linked between hares and lynx Government of Northwest Territories.
- [18] Hamilton, W. D. (1964). The genetical evolution of social behaviour. *Journal of Theoretical Biology*, 7(1), 1–16.
- [19] Helmenstine, A. (2025). Schrödinger’s cat – A thought experiment in quantum mechanics. *Science Notes*. Retrieved from <https://sciencenotes.org/schrodingers-cat-a-thought-experiment-in-quantum-mechanics/>
- [20] Kelly, K. (2010). *What technology wants*. Viking Press.
- [21] Kennedy, P. (2021, March 5). Hamilton’s anomaly: drifting wasps deepen our understanding of altruism. *University of Bristol Biological Sciences Blog*.
- [22] Kowalski, K. (2025). The blind men and the elephant: A short story about perspective. *Sloww*. Retrieved from <https://www.sloww.co/blind-men-elephant/>
- [23] Lewis, P. J. (2000). What is it like to be Schrödinger’s cat? *Australasian Journal of Philosophy*, 78(2), 192–205. <https://doi.org/10.1080/00048400012349651>
- [24] Linnaeus, C. (1735). *Systema Naturae*. Leiden: Theodor Haak.

- [25] Lovelock, J. (1979). *Gaia: A new look at life on Earth*. Oxford University Press.
- [26] Milanovic, B. (2016). *Global inequality: A new approach for the age of globalization*. Harvard University Press.
- [27] Mongabay News (2025). New research sheds light on Canada lynx–snowshoe hare cycle. Confirms the classic 10-year cycle driven by predation Conservation news.
- [28] Naiman, R. J., Bilby, R. E., Schindler, D. E., & Helfield, J. M. (2002). Pacific Salmon, Nutrients, and the Dynamics of Freshwater and Riparian Ecosystems. *Ecosystems* JSTOR.
- [29] Pena, R., & Tibbett, M. (2024). Mycorrhizal symbiosis and the nitrogen nutrition of forest trees. *Applied Microbiology and Biotechnology* Springer.
- [30] Piketty, T. (2014). *Capital in the twenty-first century*. Harvard University Press.
- [31] Ramage, M. (2009). Norbert and Gregory: Two strands of cybernetics. *Information, Communication & Society*, 12(5), 735–749. <https://doi.org/10.1080/13691180902857917>
- [32] Schrödinger, E. (1935). Die gegenwärtige Situation in der Quantenmechanik. *Naturwissenschaften*, 23(48), 807–812. <https://doi.org/10.1007/BF01491891>
- [33] Schmidt, S. et al. (2022). The chemical ecology of the fungus-farming termite symbiosis. *Natural Product Reports* RSC Publishing.
- [34] Shannon, C. E. (1948). A mathematical theory of communication. *Bell System Technical Journal*, 27(3), 379–423.
- [35] Smith, A. (1776/2003). *The wealth of nations*. Bantam Classics.
- [36] Science News. (2022). Six months in space leads to a decade’s worth of long-term bone loss. Available at [<https://www.sciencenews.org/article/space-bone-loss-density-astronaut-recovery-gravity>]. Accessed on 17 December. 2025.
- [37] Stiglitz, J. E. (2012). *The price of inequality*. W. W. Norton.
- [38] Stabach, J. A. et al. (2022). Increasing Anthropogenic Disturbance Restricts Wildebeest Movement Across East African Grazing Systems. *Frontiers in Ecology and Evolution* randallboone.org.
- [39] Standing, G. (2011). *The precariat: The new dangerous class*. Bloomsbury Academic.
- [40] Susskind, D. (2020). *A world without work: Technology, automation, and how we should respond*. Metropolitan Books.
- [41] Tyson, R. et al. (2010). *Modelling the Canada lynx and snowshoe hare population cycle*. Theoretical Ecology Northern Kentucky University.
- [42] Vanderstraeten, R. (2005). Observing systems: A cybernetic perspective on system/environment relations. *Constructivist Foundations*, 1(1), 113–121.
- [43] Wasson, K. (2006). Blind men and the elephant: What “Elephanomics” can teach “Muromics.” *ILAR Journal*, 47(2), 91–93. <https://doi.org/10.1093/ilar.47.2.91>
- [44] World Wildlife Fund. *Why Wildebeest Are a Climate Hero of the Savanna*. Migration sustains grassland resilience and climate adaptation World Wildlife Fund.
- [45] von Foerster, H. (1984). *Observing systems*. Seaside, CA: Intersystems Publications.
- [46] von Foerster, H. (2007). *Understanding understanding: Essays on cybernetics and cognition*. Springer.

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