Consciousness as a deterministic delay

Author
Alexander Wolfgang Strüver

Date
10.12.2025

Location
Thailand

License: CC BY-NC-ND 4.0

What consciousness is not

Consciousness is traditionally treated as something mystical – as a “soul,” as a metaphysical spark, or as an emergent phenomenon that, in principle, defies explanation. Accordingly, the prevailing models are either esoterically charged, speculative-metaphysical, or they remain purely narrative and only describe…*that*we experience something without explaining,*How* and *Why*how this experience even arises.

This essay takes a different approach. It treats consciousness not as an exception to natural laws, but as a result of the same mechanics that also determine planetary orbits, metabolism, or electrical grids: deterministic causal chains in a structured system.

The main thesis is:

> **Consciousness is not transcendence – it is the mechanical delay that arises when, in a highly complex biophysical system, several deterministic pathways are simultaneously valid but cannot be executed simultaneously.**

The goal is to present a model that meets five conditions:
– **falsifiable**It makes verifiable predictions.
– **causal**It works exclusively with cause-and-effect relationships.
– **systemic**It views consciousness as part of nested levels.
– **without contradiction**No statement negates another.
– **Stable across domains**The same principle applies in physics, biology, and psychology.

Consciousness is not diminished, but made clearer: it is moved from the nebulous zone of metaphysics into the domain of precise, deterministic description.

Layered reality: How triadic systems generate complexity

To understand consciousness causally, one must consider the structure in which it can arise in the first place. Functional logic assumes that every stable level of reality is supported by a triad – three fundamental quantities that mutually limit, support, and calibrate each other.

1. **Cosmic triad: Energy, Mass, Space**
   At the most fundamental level, energy, mass, and space determine all possible states. This triad establishes that anything exists, moves, and interacts.
2. **Planetary Triad: Geosphere, Hydrosphere, Atmosphere**
   Planetary systems form from the cosmic framework. The geosphere (rock, plates, core), hydrosphere (water in all its states of matter), and atmosphere (gas envelope) together form the triadic structure in which stable surface processes become possible.
3. **Biosphere Triassic: Nutrient cycles, genetics, ecological selectors**
   Life arises from this foundation. Nutrient cycles provide energy flows, genetic programs define blueprints, and ecological selectors decide which structures survive. Here, too, a triad is at work, generating stability through mutual limitation.
4. **Noosphere Triad: Strength, Morality, Knowledge**
   Only in the human sphere do these structures coalesce into what we know as culture, technology, and psychology. Physical strength, normative order (morality), and cognitive models (knowledge) form a further triad that governs behavior and stabilizes social systems.

The crucial point is this: none of these triads remains "pure" once they are interconnected at a higher level. Each pillar breaks down into sub-triads—for example, different forms of strength, competing moral systems, or different types of knowledge—which influence and sometimes contradict each other. With each additional level, the internal interconnectedness increases not linearly, but exponentially.

This exponential increase in triadic substructures is the basis for the fact that in a single organism there are eventually so many valid but incompatible causal chains simultaneously that consciousness – as the mechanism of their prioritization – can even arise.

Deterministic Pathways: How Biological Systems Generate Competing Causality

A living organism is not an open puzzle, but a closed causal system. Every action it takes—from blinking to making life-or-death decisions—is the result of biochemical processes interconnected in clear cause-and-effect chains. There is no moment when the organism acts "outside" of physics.

At the level of action, this manifests itself as a network of deterministic strands.
Stress hormones like cortisol and adrenaline increase heart rate, muscle tone, and reaction speed: they prepare the body to either fight or flee. This pathway is not a suggestion, but a concrete causal chain that pushes the organism towards fight-or-flight behavior.

Bonding hormones like oxytocin, on the other hand, activate systems that promote approach, trust, and cooperation: seeking closeness, sharing risk, and finding protection in groups. This, too, is a deterministic strand that doesn't "inspire" actions but rather specifically biases them.

Finally, dopaminergic pathways link expectation, reward, and learning. They evaluate courses of action based on past success and adjust future decisions strictly functionally. What works "right" is reinforced; what "fails" is weakened—again, purely causally.

Biological decisions are therefore never free. They are always the sum of competing deterministic signals acting simultaneously on the same organism. This is precisely where the raw material for consciousness arises: when several of these strands are active at the same time, functionally plausible, but not simultaneously executable, conflict arises within the system. And without this internal conflict, there would be nothing we could subjectively experience as "weighing options" or "deciding."

The so-called hard problem of consciousness arises only when subjective experience is considered an independent, supplementary category above the system's functional processes. In the ontology developed here, such a separation does not exist. Subjective consciousness is not something that occurs alongside prioritization—it is prioritization itself. The weighting of competing causal pathways, their temporal storage, and the continuous reactivation of these weightings generate precisely what is traditionally referred to as qualia.

Experience is therefore not a metaphysical residue, but rather the internal perspective of a deterministic system on its own prioritization process. The hard problem is thus not solved through interpretation, but because it doesn't even arise in a strictly causal model: The question 'why is there experience?' is a category mistake based on the false assumption of two separate levels. In a closed deterministic system, process and experience ontologically coincide.

The 70/30 corridor: Freedom as a calibration range

The so-called 70/30 rule does not describe a magical realm of free will, but rather a dynamic corridor of stability. Within this corridor, a system can choose between several deterministic paths without immediately losing its structural integrity. It is not about "can do anything," but about "can prioritize between several causally valid options."

Let's consider a threatening situation:
The stress axis activates fight and flight as two deterministically valid reaction patterns. Both pathways are functionally meaningful, and both can end in safety or in entropy—injury, death, or collapse. The organism is therefore not faced with a free choice between order and chaos, but rather with several entropically open, yet structurally legitimate, pathways.

The 70/30 corridor ensures that the system can evaluate within a certain range: contextual information, learning experiences, social connections, current energy reserves. Within this framework, it can favor one path without destroying its overall stability.

The feeling of "I am making a decision" is nothing other than the internal perspective on this prioritization process:

> The feeling of a decision arises when a system resolves a deterministic conflict within a permissible stability corridor.

Freedom is therefore not a metaphysical escape from causality, but rather the subjectively experienced surface of a calibration mechanism that mediates between several hard determinisms.

Subjective perception as a delay: Why consciousness feels like freedom

The seemingly "magical" core of consciousness arises precisely where the system cannot make an immediate decision. Several deterministic pathways are simultaneously active, functionally equivalent, and in principle feasible—but they are not simultaneously compatible. Attack and retreat, honesty and lies, proximity and distance: In all these situations, multiple biochemically supported courses of action are activated in parallel.

Instead of firing immediately, the system enters a kind of delay loop. Sensory inputs, memories, expectation models, and social contexts are all weighed against each other. This delay is not a bug, but rather the necessary computing time to prioritize a path within a highly complex network that appears sufficiently stable within the 70/30 corridor.

It is precisely this delay that creates what we subjectively experience:
– **self-consciousness**, because the system registers itself as a point of conflict between options.
– **Time experience**, because the decision is not instantaneous, but rather experienced as a range.
– **Metawahrnehmung**, because the system models its own evaluation processes.
– **Internal conflicts**, because several strong strands compete for priority simultaneously.
– **reflection**, because past decisions influence future assessments.

Plants and simple animals either lack this delay mechanism entirely or possess only a very weak form. Their triadic structure is significantly simpler, the number of sub-triads is small, and competition between pathways is weak. Stimulus-response chains dominate; complex evaluation loops are unnecessary and energetically inefficient. Without sufficient internal competition, there is no significant need for prioritization—and thus hardly any experienced subjectivity.

Humans, however, occupy the highest concentration of conflict: The noosphere encompasses a maximum number of sub-triads – physical, emotional, social, cognitive, and symbolic. Our organism must constantly balance diverging signals. The result is a particularly pronounced consciousness: We experience ourselves as "I" because our system can almost never operate in a purely reflexive mode, but must constantly negotiate priorities.

Entropy paths: There is no free will, only diverging endpoints.

Every decision an organism makes is entropic, meaning it moves the system toward a future state that may be energetically costly, risky, or final. There is no "clean" alternative without entropy—only different entropy pathways.

In the threat example, this means:
– **attack**It can result in injury or death.
– **Escape**It can end in exhaustion, constriction, or even death.

Both options are deterministically sensible – they follow from biochemical pathways that have arisen from experience, genetics, and context. The system does not weigh between "order" and "chaos," but rather between several entropically open, yet structurally legitimate pathways.

Consciousness exists precisely where such paths collide. It is the state of a system that senses—in the form of internal tension—that several of its future configurations are simultaneously realistic, but not simultaneously achievable.

This allows the quintessence to be summarized in functional logic:

> **Consciousness is the space between deterministic motivation and deterministic outcome.**

It is the realm where deterministic drives have not yet translated into concrete action, but are being calibrated against one another. What we perceive as free will is the subjective surface of this calibration process – not the escape from causality, but its finest, most sensitive zone.

Why consciousness is completely deterministic (and falsifiable)

If consciousness is not a metaphysical special case, but rather the product of competing causal chains, then this model must be testable. That is precisely the point: the thesis that consciousness functions deterministically is not merely a philosophical formulation – it can be empirically challenged.

Decision conflict is measurable at the level of brain physiology: In fMRI studies, activity increases in certain decision-making areas (prefrontal cortex, anterior cingulate cortex) as soon as several courses of action are simultaneously available. The stronger the internal conflict, the more pronounced the activation. This corresponds exactly to the assumption that consciousness "flares up" where competing deterministic pathways vie for priority.

Neurochemistry provides a second level of testability: If biochemical parameters are specifically altered—for example, through medication, hormones, or stimulation—decisions change in a predictable way. Anxiety-reducing substances reduce avoidance behavior, dopaminergic interventions increase risk-taking, and serotonin modulation influences impulse control. If consciousness were free, it should be able to resist these interventions. In fact, it follows them.

In addition, there are priming experiments: people are systematically steered in certain decision directions by prior stimuli, without being aware of the influence. Action sequences become predictable long before the individual subjectively "decides" to do something. The seemingly spontaneous decision turns out to be the result of preceding, measurable causal chains.

From a functional logic perspective, the model is therefore clearly falsifiable:
– If consciousness could arise independently of deterministic conflicts, it would be refuted.
– If decisions existed that could not be traced back to any biochemical or structural pathway, it would be refuted.
– If subjective experience were to occur without any delay – i.e., without an evaluation span – it would be refuted.

However, as long as every observable decision can be traced back to comprehensible causal structures, the deterministic theory of consciousness remains not only plausible, but the most stable explanation.

VIII. Consciousness redefined: The final causal version

Based on this structure, consciousness can be defined precisely and without recourse to metaphysics:

> Consciousness is the emergent delay that arises when multiple simultaneously valid deterministic pathways are active in a highly complex biological system. Subjectivity is the internal perspective of a structure that must prioritize conflicting causal chains within a stability corridor.

Thus, consciousness is no longer a black box, but a clearly defined functional state: it arises when a system has several equally valid but incompatible causal chains active simultaneously and is forced to sort them within a stability corridor. Subjectivity is nothing other than the "insider's" view of this sorting process.

No metaphysics.
No real choice between causality and non-causality.
No coincidence as the final authority.

Only deterministic complexity, which must prioritize itself – and which in doing so creates an internal perspective that we call "I".

Conclusion: Consciousness is not beyond science – it is science.

From this perspective, consciousness loses its aura of inviolability – but not its meaning. It reveals itself as what it is in terms of functional logic:
- a deterministic producthighly complex, nested Triassic structures,
– subjectivityas the perspective of a system in internal conflict,

– Decisionas a prioritization of competing paths,
– Freedomas an illusion of a delay process that is necessary to maintain stability.

The consequences extend far beyond philosophy. For AI research, this model means that a truly conscious machine would not need to be "intelligent in some way," but rather possess competing deterministic structures that are prioritized within a stability corridor. For psychology and neuroscience, it offers a clear theoretical framework for understanding behavior, disorders, and therapy as interventions in causal structures. For moral theory and social models, it re-examines the question of what responsibility, guilt, and decision-making mean when everything is deterministic—but not trivial.

Ultimately, the core message can be summarized in one sentence:

> **Consciousness is not the rejection of causality – it is its highest expression.**

Consciousness is not where determinism ends.
It is the point at which he recognizes himself.

License: CC BY-NC-ND 4.0
A notice: Definitions and terms according to the**Strüver model (functional logic)**.
The content may be freely shared and used for non-commercial purposes.**provided**The author's name is clearly acknowledged:

"Based on the Strüver model (functional logic) – © Alexander W. Strüver"

At **Derivations or quotations of individual terms**The labeling is mandatory:

“Definition according to Strüver”

Any**commercial use or distribution for a fee**, especially in the context of teaching, therapy or counselling services, is**prohibited without a separate license agreement**. **Details and full license terms:** https://alexstruever.com/lizenzen/