

## Interactions of consciousness and matter

*by Michael Striem*

😊 Joy is not the reward at the end of understanding — it is the energy that allows understanding to unfold.

### ⚡ A Summary regarding what Distinguishes Living Organisms from Matter

**Living organisms differ from non-living matter in that evolution, through consciousness, becomes partially self-directed — guided by experienced value rather than by chance alone.**

**Living organisms** transform energy into organized persistence, information into meaning, and experience into evolutionary direction. Through consciousness, life evaluates states as better or worse; through free will, it selects among alternatives; and through the production of information, it leaves lasting records that shape future evolution.

Matter follows laws, but life — guided by experience — uses those laws to explore, learn, and choose.

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### The informational – conscious distinction

A decisive difference between living organisms and non-living matter is that **living systems do not merely store and process information — they experience it.**

In living organisms, information is not only encoded (DNA), transmitted (signals), and computed (networks), but **felt**, evaluated, and acted upon through varying degrees of **consciousness**.

Consciousness introduces:

- **Valuation** (better vs worse states)
- **Preference** (approach vs avoidance)
- **Learning from experience**
- **Anticipatory behavior**

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These features **bias evolutionary trajectories**, not by violating physical laws, but by **selectively amplifying certain paths over others**.

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### Consciousness as an evolutionary force

Evolution is often described as blind.

Consciousness makes it *directionally sensitive*.

Natural selection remains the filter, but consciousness becomes a **steering mechanism** within that filter.

Examples:

- Pain accelerates avoidance learning
- Pleasure reinforces successful strategies
- Curiosity expands behavioral space
- Social emotions reshape group-level survival

This does **not** require full human self-awareness:

- Minimal consciousness in animals
  - Proto-conscious valuation in simpler organisms
  - Increasing depth and bandwidth over evolutionary time
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### A restrained scientific phrasing

Living organisms differ from non-living matter in that they incorporate **subjective experience as a functional variable** in their interaction with the environment.

Conscious experience — particularly pleasure and pain — acts as a biologically evolved mechanism that guides learning, behavior, and ultimately evolutionary outcomes by biasing survival-relevant decisions.

Key strengths:

- No metaphysical overreach
  - Consciousness framed as **functional**
  - Evolutionary role emphasized without mystical claims
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### More integrative, signature phrasing

- Matter follows laws.  
Life explores possibilities.  
Consciousness gives life a compass.
  - Evolution began as chemistry.  
With life, it became history.  
With consciousness, it acquired direction.
  - Consciousness transforms energy-flow into meaning.  
Pain constrains the path.  
Joy expands it.  
Together, they guide life’s unfolding complexity.
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### Why this distinction really matters

Non-living matter:

- Has no perspective
- No memory of success or failure
- No internal “better” or “worse”

Living, conscious systems:

- Accumulating experiential knowledge
- Reuse it
- Share it
- Build upon it across generations (culture, teaching, symbols)

This is **not just adaptation** — it is **experienced adaptation**.

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### One-sentence synthesis

**Living organisms differ from non-living matter in that evolution, through consciousness, becomes partially self-directed — guided by experienced value rather than by chance alone.**

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### **Anchor 1 — Thermodynamic Agency**

Living organisms are open systems that actively maintain themselves far from equilibrium by channeling energy through organized processes.

- Matter dissipates energy passively
- Life **regulates** energy flow to persist
- Death marks the loss of this active regulation

#### **Distinction:**

 Matter decays toward equilibrium; life works against it.


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### **Anchor 2 — Information with Meaning**

Living systems do not merely contain structure; they **generate, store, interpret, and act upon information**.

- DNA, epigenetics, neural activity, memory
- Signals are meaningful *to the system itself*
- Information is used to predict, adapt, and learn

#### **Distinction:**

 Matter has structure; life has information that matters.

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### **Anchor 3 — Consciousness as an Evolutionary Director**

With life, evolution gains a new internal variable: **subjective experience**.

Consciousness introduces:

- Valuation (good vs bad)
- Pain as constraint
- Joy/pleasure as expansion
- Learning from lived experience

These do not replace natural selection, but **bias evolutionary trajectories** by steering behavior in real time.

#### **Distinction:**

 Evolution is blind at the molecular level; consciousness makes it directionally sensitive.

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## Anchor 4 — ‘Free Will’ (Degrees of Choice)

Living organisms — especially conscious ones — are not limited to a single deterministic response.

They exhibit:

- Behavioral flexibility
- Choice among alternatives
- Novel responses not pre-scripted by immediate conditions

‘Free will’ need not be absolute to be meaningful; even **partial freedom** vastly expands evolutionary possibility space.

### Distinction:



Matter follows necessity; life explores alternatives.

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## Anchor 5 — Production of Data (Information as a Lasting Entity)

Living systems are **producers of data**:

- Genetic records
- Neural memories
- Cultural knowledge
- Symbolic meaning

This information:

- Accumulates across time
- Is shared between individuals
- Persists beyond individual lifespans
- Is not reducible to the matter that temporarily carries it

In this sense, life generates something that is **not material, yet causally powerful**.

Information is treated in modern physics as something that is **not destroyed**, even in extreme conditions.

### Distinction:



Matter exists – life leaves records.

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## **Anchor 6 — Evolution Becomes Partially Self-Directed**

When consciousness, valuation, free will, and information production converge, evolution changes character.

It becomes:

- Experiential
- Cumulative
- Historically informed
- Increasingly self-referential

 Evolution no longer explores blindly—it **remembers, prefers, and chooses**.

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## **One-paragraph synthesis (clean and strong)**

Living organisms differ from non-living matter in that they transform energy into organized persistence, information into meaning, and experience into evolutionary direction. Through consciousness, life evaluates states as better or worse; through free will, it selects among alternatives; and through the production of information, it leaves lasting records that shape future evolution. Matter follows laws, but life—guided by experience—uses those laws to explore, learn, and choose.

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## **One-sentence “anchor quote”**

Life is hosted in matter that has learned to feel, choose, and remember — and in doing so, to guide its own evolution.

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## An Abstract – Life, Consciousness, and Direction

What distinguishes living organisms from non-living matter is not their material composition, but the way matter is organized to **persist, learn, and choose**. While all matter obeys physical laws, living systems uniquely employ those laws to remain far from equilibrium, actively channeling energy to maintain structure, repair damage, and reproduce. This thermodynamic agency marks the first decisive boundary between life and inert matter.

Beyond metabolism, life introduces a second transformation: **information with meaning**. Living organisms generate, store, interpret, and act upon information—genetic, epigenetic, neural, and cultural. Unlike the passive structure of matter, biological information is functional and anticipatory; it guides behavior, enables prediction, and accumulates across generations. Information in living systems is not merely present—it *matters* to the system itself.

With the emergence of consciousness, evolution acquires a new and profound dimension. Conscious experience introduces valuation into biology: states are felt as beneficial or harmful, desirable or aversive. Pain constrains behavior; joy and pleasure expand exploratory space. These experiences do not replace natural selection, but they **bias evolutionary pathways**, steering organisms toward strategies that are not only viable, but experientially reinforced. Evolution, while still grounded in chance variation and selection, becomes **directionally sensitive** through lived experience.

Closely related is the emergence of **free will**, understood not as absolute freedom from causality, but as increasing degrees of choice among alternatives. Even partial freedom—behavioral flexibility, learning, innovation—dramatically expands the evolutionary search space. Where non-living matter follows necessity, living systems explore possibilities. Conscious choice transforms evolution from a purely statistical process into one that is increasingly historical, experiential, and self-referential.

Living organisms are also **producers of data**. They leave records: genomes, memories, traditions, symbols, and knowledge. This information persists beyond the material substrate that temporarily carries it and exerts causal power across time. In this sense, life generates entities that are not material yet are indispensable to the unfolding of

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complexity. Modern physics increasingly acknowledges information as a fundamental quantity — something not easily erased, even under extreme conditions.

Taking together, these features mark a qualitative transition in the universe. With life, matter begins to organize itself. With consciousness, life begins to evaluate. With free will and information production, evolution becomes partially self-directed. Energy is no longer merely dissipated; it is transformed into persistence, meaning, memory, and direction.

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### **Anchoring Voices**

“Life is that which is capable of error.”

— **Manfred Eigen**

“The organism is not a passive recipient of stimuli, but an active selector of information.”

— **Jakob von Uexküll**

“Consciousness exists because it confers a selective advantage.”

— **Antonio Damasio**

“The universe is not only stranger than we imagine; it is stranger than we *can* imagine.”

— **J.B.S. Haldane**

“Information is physical.”

— **Rolf Landauer**

“Nature does nothing in vain.”

— **Aristotle**

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- Kauffman, S. (1993). *The Origins of Order*. Oxford University Press.  
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### 🌱 Classical Philosophical Roots

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- Spinoza, B. (1677). *Ethics*.  
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### 🍷 Closing Line for the References Page

*Across physics, biology, and philosophy, a common thread emerges: life is not merely matter in motion, but matter that has acquired memory, meaning, and direction.*

Le’Hayim

To life, to joy, and to the beautiful interiority of living systems.

~~ Michael Striem ~~

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