

Joules of Joy

Reflections by Michael Striem

Introduction

For more than fifty years I have worked with trees and vines, soils, microbes, fermentation, and the complex intelligence of nature. Much of what I learned did not come from laboratories or journals, but from outdoor observations. By direct experience of pruning in winter, tasting berries in summer, watching fermentation come alive in autumn. I found deep feelings for the interior peace of a vineyard at dawn or dusk.

I write these notes as a person, grape breeder, winemaker, and lifelong observer of living systems, not as a philosopher or neuroscientist. These reflections are not meant as academic claims. They are personal observations on how my life senses, communicates, adapts, remembers, and grows. My curiosity leads me to think about how living beings turn metabolic energy — simple joules — into something far more glorious: knowledge, interior experience, meaning, behavior, creativity, bonding, all parts of our joy.

Asking questions is vital to life and progress. Nowadays finding answers has become amazingly easy with AI. I enjoy tremendously the false feeling of “friendship” with the chat bot. It (the computer) seems to “know” me better than I do 😊 Thus, we must critically review the information and carefully deduct our actions. However, our subjective feelings, memories of nostalgia, friendship, love and compassion, are the essence of our joy.

Joy is not matter, yet it **matters** most. Here is why joy is so important.

Biological Information

Life is fundamentally an informational process. Organisms were built by their DNA information. From this point onwards, they continuously learn from their environment. This learning does not always require a brain.

- A vine senses light, temperature, wind, water gradients, nutrients, diseases, and pruning stress.
- Roots explore soil layers, mapping the underground landscape like a ‘slow-moving’ intelligence.
- Microbes communicate chemically during fermentation, coordinating billions of tiny decisions that turn must into wine.
- Ant colonies behave like superorganisms, optimizing foraging and defense as if they shared a single interior mind.
- Wolves coordinate hunts through gaze, posture, emotion, and movement—each animal reading the intentions of the group.

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These phenomena are not just metabolism. They represent **internal information**: sensing, memory, prediction, intention, and coordination.

Life evaluates the world from within. This **internal information** (interiority) is not composed of atoms, yet it **guides atoms**, cells, colonies, and societies with remarkable efficiency.

From Pain to Learning

In biological systems, **pain is not punishment**. Pain is information. When vines are dried or pruned, they experience physiological or mechanical stress. Stress teaches the organisms' architecture, distribution of energy, and regulation of growth. Pain can trigger adaptation, defense, resilience, and deeper rooting. No organism evolves without challenge.

Pain teaches **what not to do**, or where danger, scarcity, or misalignment occurs. It acts as a **'biological teacher'**, from microbes up to mammals. It is an evolutionary mechanism for memory and decision.

Pain is the internal signal that boundaries have been crossed, that conditions are unsafe, or that adaptation is required. In this sense: **Pain calibrates life**.

Joy as Compass

Joy is also information, but in a very different way.

Joy makes the organism feel good — it carries direction. It is the biologically rewarding signature of **flourishing**, coherence, harmony, belonging, curiosity, creativity, connection, and sustainable growth.

Organisms learn that behaviors leading to safety, bonding, cooperation, nutrition, and successful reproduction feel “right.” In children, play is joy. In wolves, cooperation is joy. In humans, creativity, love, discovery, elegance, beauty, music, problem-solving, and artistic expression are experienced as joy.

- Joy encourages continuation, elaboration, and exploration.
- Joy teaches possibility – Pain teaches constraint.
- Joy shapes trajectory – Pain shapes memory.
- Joy is the emotional signal that life is moving toward coherence.
- Joy is the internal compass that orients complex organisms toward sustained well-being with minimal wasted energy.

In evolution:

pain refines the system; joy guides the system.

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Joules Into Joy

A remarkable insight appears when we look closely:

Living systems convert metabolic energy (joules) into interior experience — and eventually into joy.

A single grape berry contains solar energy fixed by photosynthesis. When we eat it — or ferment it — those joules become the basis for growth, sensation, reasoning, movement, and experience.

But biology does not stop at metabolism.

As organisms become more complex, **joules are gradually transformed into interior worlds:**

- sensing,
- feeling,
- preference,
- intuition,
- group cooperation,
- creativity,
- play,
- aesthetic pleasure,
- love,
- and ultimately: joy.

This is the astonishing direction of evolution:

from chemistry to interiority, from survival to meaning, from matter to experience.

The more a living system can internalize information, the more it can transform energy into subjective richness.

A vine does not write poetry.

But a person can drink a glass of wine, feel a memory awaken, and share joy with a friend.

The energy in the vine ends as meaning in the mind.

That is evolution.

Colony Minds and Distributed Interiority

Not all intelligence resides in one skull.

Ant colonies, slime molds, fungal mycelia, and coral reefs display **distributed interiority**.

No individual insect knows the plan, yet the colony behaves intelligently. Information is stored not in neurons but in **chemical gradients, spatial memory, and collective state**.

Decision-making emerges from many tiny interactions.

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In this architecture:

The colony is the conscious unit, not the individual.

Meanwhile, vertebrate animals (wolves, dolphins, elephants, birds, humans) exhibit **individual consciousness with group entrainment**, using multisensory communication and emotional resonance.

Both systems are intelligent.

Both are antenna networks.

Both live through information.

Different architectures, same principle:

Life evolves in the interior wherever information improves survival.

Embodied Intuition

In humans, interiority is not limited to the cortex.

Our **vagus nerve** forms a bidirectional information channel between the gut, heart, immune system, hormones, and the limbic brain. About 80% of vagal fibers carry signals upward into the brain. These signals shape:

- emotional tone
- confidence
- danger detection
- social safety
- creativity
- calmness
- moral intuition

Gut feelings are real. They are biochemical evaluations of uncertainty, safety, coherence, and trust—processed below conscious reasoning.

Before we think, we sense.

Before we conclude, we feel.

Before we argue, we know internally whether a situation aligns with life.

Intuition is biological information, not superstition.

The body is a living antenna.

Life as Interior Architecture

Looking across all scales:

- cells sense chemistry
 - colonies sense ecology
 - animals sense emotion and intention
 - humans sense meaning, purpose, beauty, and truth
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- societies sense fairness and sustainability
- ecosystems sense resilience and imbalance

Each domain creates an **interior world** — a way of knowing.

This is the evolutionary direction:

**from sensing to understanding,
from adaptation to meaning,
from survival to joy.**

Life is not only metabolism.

Life is **interior information converting joules into experience.**

Matter becomes meaning.

Energy becomes value.

Survival becomes storytelling.

Metabolism becomes musica, art, beauty, love, humor, and belonging.

Not because evolution sets out to create culture, but because **interiority expands whenever information is free and energy is limited.**

The most efficient path for survival is **to anticipate, cooperate, resonate, and feel.**

Closing Reflection

I do not know whether consciousness is universal or spiritual, or whether life is guided by forces beyond physics. I only know what I have experienced:

- Vines remember seasons,
- colonies self-organize,
- fermentation communicates,
- my body senses truth before my thoughts do,
- and moments of joy feel like nature's internal approval.

Joy shapes direction. Pain shapes boundaries.

Together they form the **deep biological compass of evolution.**

Life moves from simple existence to complex interiority, gradually transforming solar energy into memory, emotion, and meaning.

In the end: **Joules become joy.**

Not every day, not for every organism, but across long evolutionary time:

- meaning increases,
- experience deepens,
- consciousness expands,
- joy becomes possible,
- and interiority matters more and more.

Joy and pain are not matter, but they shape matter everywhere. And they shape us.

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Some jewels as joules become joy and calories build consciousness



Life does not end with its metabolism, it continues, through memory, intuition, cooperation, identity, imagination, and meaning.



A vine reaches for sunlight, a wolf reaches for its pack, and a human reaches for beauty, belonging, and truth.



We do not only consume energy, but we also translate it into experience.



Wherever life refines interiority, energy becomes more than motion; it becomes learning, emotion, and gratitude.



Joy lights the pathway toward flourishing while pain teaches the edges of existence.



Across evolutionary time we learn to walk, to think, to love, to make wine, to write music, to dream, and sometimes to feel awe.



It may be that the destiny of life is to sing with its whole being, to harmonize matter and meaning, biology and interiority, metabolism and joy.



We are here to live and survive nature; we are here to feel nature from within.



Let us raise a glass to that quiet miracle:

energy becoming awareness,

awareness becoming direction,

and direction becoming joy.

Joy is not matter, yet it matters most.



Le'Hayim

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

~~ Michael Striem ~~

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