

## Entropy: the Physics of Natural Rights and Ethics

written by Jackson Pemberton | February 23, 2026

Astronomer Sir Arthur Eddington famously stated in his book "The Nature of the Physical World," 1928:

"The law that entropy always increases holds, I think, the supreme position among the laws of Nature. If someone points out to you that your pet theory of the universe is in disagreement with Maxwell's equations, then so much the worse for Maxwell's equations. If it is found to be contradicted by observation, well, these experimentalists do bungle things sometimes. But if your theory is found to be against the second law of thermodynamics, I can give you no hope; there is nothing for it but to collapse in deepest humiliation."

A century later, an unprecedented natural rights paradigm called "Temporal Rights" emerged, one that [unified many ancient and modern dichotomies](#) and proved that Locke, Hobbes, and Eddington were correct by grounding their intuitions in existential fact. But it did much more than that.

Temporal Rights:

- Confirms the second law of thermodynamics and reveals the source

of its authority.

- Demonstrates that entropic events are simultaneously and intrinsically moral events.
- Explains why entropy exists.
- Turns entropy on its head and shows why the universe spontaneously produces higher and higher orders: autonegentropy.

## The Ontology of Temporal Rights



Temporal Rights is a new way to recognize natural rights, so it needs to be carefully explained. A beaver demonstrates Temporal Rights as it cuts down a tree. As we watch it cut chips from the tree, we see that it *possesses* and *exercises* dominion, agency, prerogative, privilege, authority, power, license, permission, and consent. There is no better label for this [existential display of agency](#) and authority than “natural rights”.

This is a simple, profound realization that the beaver is endowed by virtue of its existence with the rights to exercise its capabilities. This natural rights perspective requires a fundamental paradigm shift, and you may need some time to ponder it in depth. It may be better to abandon rational thought while you watch the beaver show off its dominion, agency, prerogative, privilege, authority, power, license, permission, and consent so that you can recognize the simple reality of what you are watching. Once comprehended, then turn your logic back on and try to understand the implications of a universe filled with agents exercising their rights, from atoms to galaxies and any entity between.

Every operator in the universe with the capability to effect change

(or prevent it) is existentially authorized to exercise its capabilities. In a single revealing operation, the beaver increases entropy while increasing its own negentropy. Temporal Rights is an appropriate label because it is a secular label for existential authority: an authority exactly like that expressed in the second law of thermodynamics.

The beaver's first chip and the inexorable rise of entropy are intrinsically demonstrated in the same authoritarian event. And so is an existential ethics by the death of the tree, losing its rights.

### The Temporal Rights Vocabulary

Operator: Any agent in the universe having a capability to effect and/or prevent change. (Operators are nested and their domains overlap: Man, heart, vessel, platelet, cell, molecule, etc.)

Operation: Any demonstration of any capability.

Right: The intrinsic authority of a corresponding capability.

Domain: The space within which an operator exercises some dominion.

Ethics: The morality inherent in a collision or collusion of rights' authorities.

Dependency statement: A description that intrinsically demonstrates existential dependency showing why one operation is more fundamental (and carries greater moral weight) than another. For example:

An operator can act without acquiring, but it cannot acquire without acting. Acting is prior to acquiring.

Dependency Hierarchy: A natural ordering of ascending moral weight revealed through individual and interlocking dependency statements:

- An operator can act without acquiring, but it cannot acquire without acting.
- An operator can acquire without maintaining acquisitions, but it cannot maintain acquisitions without acquiring.
- An operator can maintain acquisitions without consuming, but it cannot consume without maintaining acquisitions.

## The Universe: a Moral Arena

The Temporal Rights view of nature recognizes authority in the operations of all operators. That authority inherently justifies the exercise of their rights. Given that the domains of operators overlap, the collision of rights is a given. These intrusions are moral events, thus ethics is demonstrated in every one. The beaver was killing the tree, and we kill cows, chickens, and a vast array of plants to sustain our lives. Lichens kill rocks, and trees kill smaller plants. The list of operators limiting and/or destroying other operators is long. These are moral events because the victims are agents and their capabilities and rights are violated.

This makes the universe a moral arena. It is no longer a blind machine, but an active, hierarchical theater in which every event, every collision or collusion of capabilities, is simultaneously a physical and moral event.

The universe is therefore:  
a self-authorizing cosmos,  
a rights-resolving continuum,  
a capability-authority continuum, and  
an ever-ascending morality chain.

We can mistakenly cast rights conflict as a war for existence, or we can cast it as the balance of nature, or, more fundamentally, as the [universal ascendancy of operators through ordered dependency](#), wherein each operator's authority is exercised within, and limited by, the prior conditions that permit its operation. Those conditions were determined earlier by the operations of other operators in the same domain, thus forming a continuous moral structure where no operator's rights can be justly evaluated in isolation, much as reciprocal flows of nutrients and waste products across a membrane sustain the life of both cell and organism. We might have expected these relationships because existence often appears to depend on opposition; yet what sustains existence is ordered dependency among operators. Even at the atomic level, stability does not arise from

opposition but from the constraint of natural states, illustrating that existence is sustained by ordered dependency rather than conflict.

### The Vocabulary of Entropy

Entropy is easily misunderstood. It is a negative concept, and the fact that it is often used loosely, like saying it is a “law”, makes it somewhat confusing. In its proper, narrow sense, it is neither matter, nor a principle, nor a process, but the energy that is *unavailable* or *lost* in a thermodynamic process. Probably its most frequent, off-definition use is when it replaces “the second law of thermodynamics”. It is also often used in an information context where it refers to energy lost in the process of moving, storing, or processing information. It is therefore relevant in building any sort of structure, such as a crystal, a microbe, a house, or a spreadsheet. These processes are called negentropic because they store energy. Such events create both negentropy and entropy, with the latter always exceeding the former.

In a natural gas-powered refrigerator, the flame converts a liquid refrigerant into a gas, which is then routed against the box to be cooled. There, the vapor created by the heat condenses back into liquid again, and in the process, draws heat out of the cold box. The liquid is then returned to the flame, where it is changed into a gas again. By routing the pipes with attention to gravity, the whole cycle functions with only one moving part, the refrigerant. Temporal Rights sees the flame and liquid and the humans who built it as operators doing their thing with authority sufficient to get it done. Because energy is lost (flame exhaust carries away heat, friction in the pipes, etc.,) the system taken as a whole creates entropy.

In green leaves, solar energy heats carbon dioxide and other minerals in the presence of the catalyst chlorophyll, and solar energy is converted and stored in a natural “battery” that eventually becomes wood, natural gas, coal, or oil. The process

creates negentropy while consuming more energy than it stores, and entropy reigns.

Rocks are digested by lichens, whose waste products form soil and its enrichments: this collusion of rights paves the way for more complex forms of life. Entropy increases as rocks disintegrate, but the result is technical and moral progress. Entropy, negentropy, and ethics are existentially inseparable.

### Great Minds Wondered About Entropy

Erwin Schrödinger, in *What is Life?* (1944), grappled with a central puzzle: how living systems sustain and build order in a universe dominated by entropy's drive toward disorder. He described organisms as "feeding on negative entropy [consuming complex structures]," yet the apparent tension between physics and life remained unresolved. Temporal Rights resolves this: entropy is not an adversary to life, but its necessary waste product, i.e., the natural result of an operator consuming a structure, breaking it down, releasing stored energy.

Albert Einstein captured a parallel wonder: "The most incomprehensible thing about the universe is that it is comprehensible." How can a cosmos tending toward disorder yield elegant, graspable laws? Temporal Rights resolves the paradox. Entropy's supremacy provides the fulcrum; higher operators act with restraint, such as a crystal absorbing ions, forging intelligible patterns from the same substrate that authorizes dispersal. The universe is comprehensible because it is self-authorizing: existence demonstrates authority at every scale, with a [built-in bias](#) toward higher organization. Einstein's quest for unity aligns precisely with this bias. TR reveals why the cosmos appears ordered—not as an inexplicable miracle, but as the natural consequence of authority exercised hierarchically.

### Temporal Rights Explains Why Entropy Exists

A law must have authority; otherwise, it is not a law. People

express observations about entropy with statements like “entropy rules the universe”, but that is an improper statement, conflating observation with authority. A proper question might be: “The second law of thermodynamics gives rise to the ubiquitous observation we call entropy, but how does that law acquire the power to enforce entropy?”

The second law of thermodynamics is the direct consequence of the authority demonstrated by Temporal Rights operators at the most primordial level.

Micro-operators (particles with their domains) relentlessly assert their authority (rights/capabilities) through dispersal, collision, and collusion, driving increased entropy. This baseline is supreme because it is existential; the power and authority of existence itself.

Thus, the Temporal Rights paradigm not only vindicates Eddington’s intuition but also reveals the source of its authority and, therefore, the reason the second law of thermodynamics exists.

#### The Masters Looked for This Pattern

Einstein once said, “The most incomprehensible thing about the universe is that it is comprehensible.” The most interesting thing about entropy is that a rule that documents the inevitable running down of the universe drives it to produce higher and higher organisations. Entropy is about eggs that can only break but never reassemble. It takes months to organize materials into a house, but only moments to burn it down. It took centuries of conditioning and learning to produce the best government in history, but only a few years to all but destroy it.

But therein lies the principle that makes the universe inexorably produce higher and higher organizations. Entropy is a product of processes of disintegration, but that process intrinsically requires the existence of something that can disintegrate. That “something” has already formed a “fulcrum” against which entropy is balanced to

produce negentropy (higher forms). This principle gives the universe a directed bias toward higher organizations of matter and energy, while necessarily attended by a large amount of entropy.

To state this as a universal principle: Entropy will reign globally as overall disorder increases, while local negentropic constructions are not only thermodynamically allowed, but statistically inevitable in a vast universe. And order builds on order in a continuous, natural hierarchy. Operators at every level seek to persist and exercise their capabilities. When lower-level rights are not violated, they enable the emergence of higher-capability organizations, building structured agency from available energy/matter.

#### **Temporal Rights and Entropy: Engine of Eternal Progress**

The formation of a crystal, for example, is a negentropic process where operators in chaos attach themselves to each other and form a higher-order operator in a stable, higher-order state. As it grows it offers more places for ion attachment, which accelerates growth. As the ions attach, the surrounding liquid mixture becomes less saturated with ions, and the process finds balance. Thus, operators often build their own constraints.

Nevertheless, at every level, entropy and Temporal Rights provide the inexorable “traction”—the degree of domain dispersal that forces overlaps and enables higher operators to emerge by imposing restraints (local entropy decreases via dissipation). Quantum weirdness is a probabilistic assertion of authority; black holes show ultimate capability that nevertheless seeds progress (e.g., Hawking radiation).

By extension, we must contend with the fact that if the universe has produced mankind, it should also have produced Gods. If we are ever visited by vastly superior intelligence beings, they will come in a way we cannot even imagine. The cell phone was first imagined eighty years ago by Chester Gould when his Dick Tracy cartoon character

started wearing a radio wristwatch on January 21, 1946. We should be terraforming Mars before the end of this century.

Meanwhile, it's majestic: nature self-organizes into ever-richer agents because that's what intrinsic authority does.

### **The Highest Human Structure**

As a crystal forms, it is as though the ions conspire to settle down and cooperate, to quit running around in circles and build something powerful together. That this analogy seems anthropomorphic should be expected because it reflects the processes that enable life, the conversion of chaos into order. This is the same process that we see in human marriage and beaver lodges.

Like ions swirling about in a liquid, young operators circulate among one another, searching for a mate with whom they can crystallize something coherent, something solid that they can depend on, some domain that will serve as a fulcrum from which they can leverage life and build a higher structure: the family. If this new operator is a stable one, it can produce more stable operators.

Seen in this way, the family becomes one of the most fascinating structures in the universe. It is a structure held together by freely entered covenants that unify and leverage individual capabilities into a dual operator with capabilities, powers, and dominions beyond those of a single human operator. Settling down stops the chaotic circulation, the covenant guides activities, and its constraints protect and stabilize their domain, ensuring freedom to grow. This new duality is capable of organizing raw matter into the highest operators, multiplying the number of these operators, subduing nature's sometimes chaotic behavior by sheer dominion. It does not end with a single family; many cultures already exhibit families covenanting and building tribes and clans that build dominions where multiple families are protected and nourished so they can flourish.

## Information and Instincts

What if there is no such thing as instinct, some information pattern encoded in DNA? What if instinctive behavior is emergent from the structure and operations of the operator itself?

Temporal Rights say that operators (e.g., a bird or human) have rights/capabilities that arise with their existence – active/passive powers to effect or constrain change. “Instinctive” behaviors aren’t pre-loaded genetic information but emerge from the operator’s boundaries, feedback loops, and domains. A tree “instinctively” grows toward light, not via DNA code alone, but because its cellular structure (phototropism via auxin gradients) colludes with the expressed rights of the sun. Similarly, a newborn’s suckling reflex might emerge from neural/mouth structures interacting with stimuli. This suggests that DNA provides the structure, but rights/capabilities enable the processes we observe as complex instinctive behavior and healing of wounds.

Perhaps the Temporal Rights view of biology can accelerate discoveries therein. It adds a new tool that not only confirms present theories but suggests that there is a moral dimension that physical science has been ignoring. Wound healing and so-called instinctive behavior are not pure physics but awash in the process of righting wrongs. (Inadvertent pun, or ?) This could lead to interdisciplinary discoveries that further enlighten and moralize human behavior.

## Autonegentropy

This is an unprecedented observation enabled by the Temporal Rights paradigm. As operators exercise their rights/capabilities, they will sometimes form a stable structure; these structures will sometimes be persistent, and when they are, they provide a base for further structures, some of which will be persistent, and some not. This is autonegentropy, the natural result in a vast universe with a huge multiplicity of operators/agents circulating in many different domains. This makes negentropy unavoidable and automatic. To say

this another way:

The TR paradigm looks at the universe through the entropy lens and observes: you can't have a running-down universe without having a running universe. If the universe is running and is also made of separate parts, then those parts are doing the running. Running pieces are agents. Let's call them operators because they existentially possess and display agency and power. Their power is demonstrated in the creation and destruction of states that are sometimes stable and sometimes unstable. The stable states provide a platform for operators to establish more stable states. These new states are sometimes stable and sometimes unstable. The stable ones are intrinsically higher order. Stable states "remember" their structure and add to the naturally rising technologies of nature. That is autonegentropy.

Stated as an autonegenentropy axiom:

*In any domain where operators exist and interact, the emergence of persistence structures is possible. Given sufficient time and operations, they are inevitable.*

*Such structures influence and direct future operations, operators that generate and amplify these structures produce cumulative local decreases in entropy, creating higher-order operators and compounding operational capacity. This process, autonegentropy, is a lawful, self-reinforcing mechanism that operates*

*wherever energy and matter flow permit persistent interactions. One of the waste products of this process is entropy.*

Entropy and Temporal Rights: Man and Woman: One Flesh

An interesting metaphor:

- The 2nd law of thermodynamics is like the masculine, law-driven, reason-based dominion.
- Temporal Rights is the morally focused partner that softens their joint domain, awakening the emotions of justice and reaching for the highest nourishing and loving operations.
- Both exist on the same substrate, physical reality.

However:

While I currently hold the opinion that automatic negentropy is a useful view of nature and that this promotes the principle of evolution, and therefore that the *principle* of evolution is operative, personally, I do not think for a second that evolution describes the origins of the species. To say this in the language of Temporal Rights: my personal knowledge of these things tells me a superhuman operator terraformed earth, populated it with creatures that assisted in that organization of matter, and finally, when all was good, put its organized offspring here so they could experience physical matter on their way to becoming like it, a dual operator consisting of two gendered free agents/operators with presence in at least two parallel universes we call physical and spiritual. (This spiritual universe is also composed of matter, but of a different nature, with natural laws different from our physics.)

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Temporal Rights as explicated here, is developed formally in *Jackson Pemberton, "Existence & Natural Rights: Locke, Hobbes, and Moral*

*Rights,*” and in “*A Unification Theory: Universal, Natural Rights*”  
SSRN (2026).