The dialectics of creative destruction and uncreative construction: A biomimicry-based approach to sustainable innovation in entrepreneurship

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Abstract

Entrepreneurial ecosystems face growing social and environmental pressures that reveal a blind spot in innovation research: the dominance of linear, disruption-driven models that underplay how systems adapt through continuity and reuse. *Creative destruction* has long explained how industries transform through rupture, but its focus on replacement offers only a partial view of how resilient systems evolve. This paper advances the concept of *uncreative construction*, a continuity-based, nature-inspired innovation logic grounded in biomimicry and systems thinking, that explains how ventures and ecosystems create novelty by replicating, reorganizing, and renewing existing structures rather than replacing them. The study adopts an integrative theoretical approach that synthesizes literature from ecology, biomimicry, sustainable innovation, and entrepreneurship to develop a conceptual framework for continuity-based innovation. It specifies the mechanisms through which *uncreative construction* operates and examines their implications for entrepreneurial resilience, transition risk,and sustainable scaling. By articulating the dynamic interplay between *creative destruction* and *uncreative construction*, the paper derives a set of testable propositions and outlines a structured agenda for empirical research on continuity-based innovation.

Keywords: Biomimicry; Creative Destruction; Entrepreneurial Ecosystems; Sustainable Innovation; Uncreative Construction.

1. Introduction

Entrepreneurial ecosystems face mounting social and environmental pressures that expose the limits of innovation models, built mainly on disruption (Boons & Lüdeke-Freund, 2013). The concept *creative destruction* (Schumpeter, 1942) helps explain how industries change, but its focus on rupture does not fully account for how systems endure. Research in sustainable and regenerative innovation suggests that resilience often depends on continuity: on conserving what works, reorganizing what can be adapted and renewing patterns that still hold value (Geissdoerfer et al., 2017). Yet these continuity-based forms of change remain underdeveloped in current innovation theory.

Despite the growing interest in sustainable and regenerative innovation, extant research lacks a coherent theoretical construct that explains how entrepreneurial ecosystems innovate through continuity rather than rupture. Existing frameworks, such as circular economy, regenerative innovation, and eco-innovation, illuminate material flows and ecological restoration, but do not fully capture how systems recombine and extend existing structures to maintain identity while adapting to change.

This paper introduces the concept of *uncreative construction*, a logic for entrepreneurial innovation, inspired by how natural systems evolve through adjustment rather than replacement. In ecology, stability and renewal frequently emerge from recombining existing structures, drawing on system memory, and extending strategies that have already proven effective (Capra, 2021; Walker & Salt, 2006). Translating these insights into entrepreneurship allows innovation to be seen not only as a break from the past but also as a movement through what persists.

The guiding question of this study is: *How can mechanisms of replication, reorganization, and renewal function as an innovation logic that complements creative destruction in entrepreneurial ecosystems?*

This paper offers three main contributions:

(1) It introduces *uncreative construction* as a novel, biomimicry-inspired logic of continuity-based innovation that complements Schumpeter's creative destruction.
(2) It specifies the mechanisms through which *uncreative construction* operates (replication, reorganization and renewal) and derives propositions on ecosystem resilience, transition risk, and sustainable scaling.
(3) It conceptualizes the dynamic interplay between disruption and continuity, showing how the co-existence of *creative destruction* and *uncreative construction* can enhance the robustness of entrepreneurial ecosystems.

Methodologically, the study follows an integrative conceptual approach. It draws from ecology, biomimicry, systems thinking, sustainable innovation and entrepreneurship to assemble a coherent foundation. Therefore, the aim lies in a synthesis of ideas that clarifies how ecological principles can inform continuity-based innovation processes.

By presenting *uncreative construction* as a complementary logic to *creative destruction*, the paper contributes to ongoing debates on how entrepreneurship can support regenerative and long-term system stability. It invites a shift in how innovation is understood towards a view that recognizes the value of continuity, adaptive reuse and the subtle forms of change that allow systems to evolve while remaining whole.

The article proceeds as follows: section 2 outlines the conceptual and methodological approach; section 3 reviews the literature on biomimicry, *creative destruction* and sustainable and regenerative innovation; section 4 develops the *uncreative construction* concept, clarifies its boundaries and elaborates its mechanisms and implications for entrepreneurial ecosystems; section 5 presents theoretical propositions and discusses avenues for future empirical research; finally, section 6 concludes.

2. Methodology

This study follows a conceptual and integrative methodological approach, aiming to develop a new theoretical construct by synthesizing insights from ecology, biomimicry, systems thinking, sustainable innovation and entrepreneurship. Rather than collecting empirical data, the paper builds its contribution through the articulation of established theoretical frameworks and the identification of conceptual gaps within the innovation and sustainability literature.

The literature review relies on a focused selection process. It draws on foundational work in ecological systems thinking (e.g., Capra; Meadows), biomimicry (e.g., Benyus; Vincent et al.), and resilience theory (e.g., Walker & Salt). It also incorporates key contributions from strategic management and entrepreneurship, such as Barney's resource-based view and Schumpeter's theory of *creative destruction*, together with contemporary research on sustainable and regenerative innovation.

The integrative review followed a theoretically driven, rather than exhaustive, sampling logic. The analysis focuses on canonical contributions in ecology, biomimicry, resilience and entrepreneurial ecosystems, complemented by seminal works on sustainable and regenerative innovation published mainly from the early 1990s onwards, when systemic perspectives on sustainability gained prominence. Only peer-reviewed journal articles and widely cited scholarly books were included; purely technical biomimicry applications lacking a systemic lens, as well as practitioner-oriented material and grey literature, were excluded. This strategy aligns with the objective of conceptual refinement rather than bibliometric coverage.

The selection criteria prioritized:

(i) conceptual relevance to system-level innovation,
(ii) contribution to understanding adaptive and regenerative mechanisms, and
(iii) alignment with the aim of bridging ecological principles with entrepreneurial dynamics.

The methodological process unfolded in three stages. First, the study identified convergences between ecological resilience mechanisms and entrepreneurial innovation logics, highlighting the limits of disruption-oriented models. Second, the literature was synthesized comparatively, examining distinctions and complementarities among circular innovation, regenerative design, eco-innovation, and biomimetic strategies. Finally, these insights were integrated into a theoretical framework for developing the logic of a new concept, the *uncreative construction*, from which theoretical propositions were developed to guide future empirical work.

This approach allows the study to bring together ideas that rarely intersect and to examine how ecological principles can support new ways of understanding innovation in entrepreneurial systems. By making explicit the theoretical sampling strategy, inclusion and exclusion criteria, and stages of synthesis, the methodology reinforces the transparency and rigor of the conceptual contribution. Table 1 summarizes the main theoretical streams mobilized and clarifies how each contributes to the development of the uncreative construction concept.

Table 1: Theoretical streams informing the concept of *uncreative construction*

Theoretical stream	Main focus	Relevance for uncreative construction
Ecological systems thinking	Interdependence, feedback loops, system memory	Provides a systemic lens on continuity, adaptation and renewal.
Resilience theory	Persistence, transformation, adaptive cycles	Illuminates how systems absorb shocks without collapsing.
Biomimicry (systems-oriented)	Learning from nature's design and processes	Offers nature-inspired patterns of continuity-based innovation.
Circular and regenerative innovation	Resource loops, regeneration of socio-ecological systems	Clarifies how material and systemic continuity support sustainability.
Strategic management & entrepreneurship	Firm resources, creative destruction, opportunity processes	Anchors the new concept within established innovation logics.

Source: Developed by the authors.

3. Theoretical Background

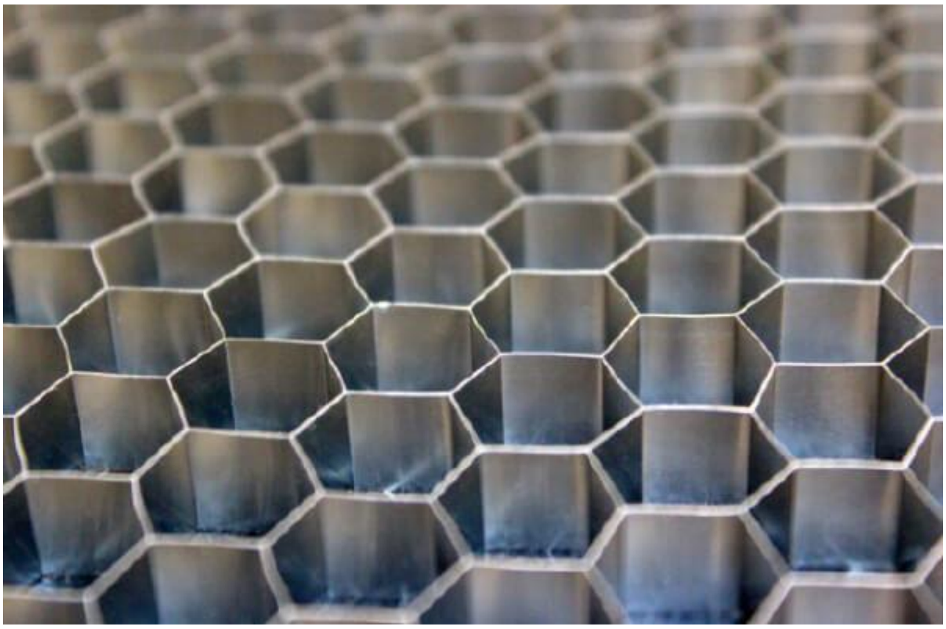
3.1. Biomimicry and Systems Thinking

Ecology offers a systemic foundation for understanding how life evolved and persists through relationships. Instead of isolating elements, it examines how interactions among organisms create patterns, functions, and forms that cannot be reduced to individual parts. Capra (2021) describes this as the shift from a mechanistic worldview to a relational one, where the coherence of a system emerges from the quality of its connections. This perspective moves beyond the reductionist tendency that has shaped much of industrial thinking, in which problems are treated as isolated events rather than expressions of a larger system.

Nature's long evolutionary history reinforces this systemic lens. Over 3.8 billion years, organisms and ecosystems have refined strategies that enable adaptation and continuity. As Benyus (1997) notes, the natural world maintains what works and discards what does not, leaving failures as fossils and preserving solutions that support long-term survival. These solutions reflect principles such as feedback regulation, decentralized organization, redundancy and cooperation, which are properties that sustain resilience without relying on central control.

Biomimicry builds on these foundations by seeking to understand how nature solves recurrent challenges and by translating these strategies into human contexts. Its scope extends across three levels: forms, processes, and systems (Benyus, 1997; Vincent et al., 2006). Examples such as Velcro, inspired by burdock seeds; aerodynamic improvements modeled on humpback whale flippers; and honeycomb structures applied to lightweight engineering illustrate how biological strategies can inform innovation without copying nature literally (Fish et al., 2011; Vincent, 1990). In this regard, Figure 1 illustrates biomimetic honeycomb structures applied to engineering and architecture, exemplifying how natural patterns can be translated into efficient human-made designs. Beyond form, biomimicry emphasizes circular metabolic flows, adaptive feedback loops and distributed networks, which are, in essence, systemic patterns that are highly relevant for innovation under conditions of uncertainty.

Figure 1: Biomimetic metal honeycomb structures for engineering and architecture.



Source: https://corex-honeycomb.com/products-and-services/, 2025.

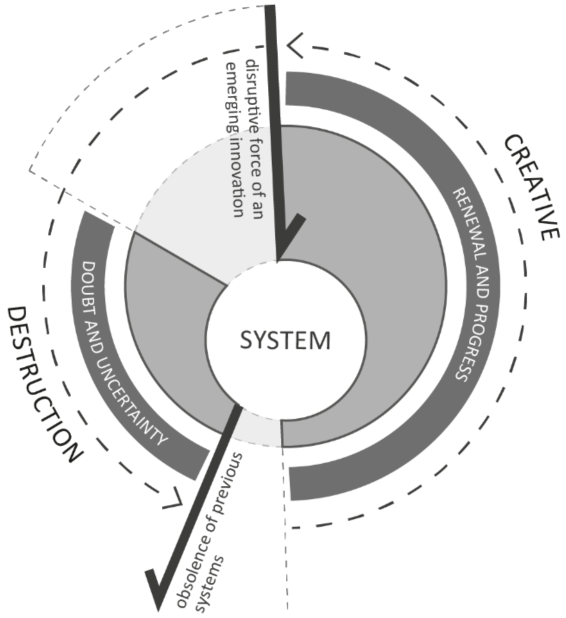
Diversity is central to this ecological paradigm. Ecosystems remain functional because multiple species can fulfill similar or overlapping roles, creating buffers against disturbance. Chapin et al. (2000) show that this functional diversity stabilizes systems by providing alternative pathways when one component fails. In human organizations and entrepreneurial ecosystems, diversity of approaches, capabilities, and relationships plays a similar role. Walker and Salt (2006) frame resilience as the capacity of a system to absorb change while retaining its identity. This perspective highlights why complexity and diversity are not obstacles, but structural conditions for adaptability.

In this sense, biomimicry is not merely the mimicry of nature's shapes or materials. It is the adoption of a systemic worldview that considers relationships, flows, and adaptive cycles as the core ingredients of innovation. This orientation provides an alternative to linear, reductionist, or purely disruptive models. It reveals how principles observed in natural ecosystems, such as interdependence, distributed decision-making, and diversity, can inform more resilient approaches to entrepreneurial innovation. These insights establish the theoretical basis for exploring alternative logics of innovation, developed in the following chapter.

3.2 Creative Destruction

Schumpeter describes innovation as a force that changes economic life by removing structures that no longer serve the system (Schumpeter, 1942). In this view, industries move forward when older arrangements give way to new ones. This concept, labeled as *creative destruction,* works by breaking continuity, disrupting what exists so that something different can take its place. When this happens, the system does not adapt around what it has; it starts again from a new foundation. In this sense, what is dismantled cannot be carried forward, and the system must reorganize itself around the new logic that enters. Figure 2 synthesizes this mechanism, representing creative destruction as a process of rupture and replacement at the system level.

Figure 2: Representative diagram of the *creative destruction* concept.



Source: Developed by the authors.

Seen through a systems lens, this mechanism operates by shifting the rules and goals that organize economic activity. Meadows (1999) calls these shifts *leverage points*, which means the changes in the underlying logic of a system. When disruption alters these deep structures, the system behaves differently, often abruptly.

However, disruption is only one way that systems change. In ecological systems, renewal does not depend solely on elimination. It also occurs through adjustment, recombination, and the reuse of structures that remain functional. Systems evolve by carrying forward what continues to work. This reveals a conceptual blind spot in creative destruction: it captures the dynamics of rupture but fails to account for the dynamics of continuity.

Creative destruction explains how new industries emerge, but not how systems maintain coherence, identity and resilience through change. It assumes that progress requires replacement. Yet ecological systems demonstrate that adaptation can arise through preservation and modification, not only through rupture. This distinction is crucial in innovation contexts where both stability and resilience are required. Entrepreneurs operating in complex social and environmental conditions often work with existing structures rather than discarding them (Barney, 1991). Similarly, sustainable business models frequently evolve by redirecting existing capabilities instead of replacing them (Boons & Lüdeke-Freund, 2013). Innovation, therefore, can also emerge by reorganizing what is already present.

To clarify how rupture-based innovation differs from continuity-based adaptation, Table 2 contrasts the core assumptions and implications of disruption-oriented models with those of continuity-oriented approaches. This contrast is presented here only to highlight the need for complementary perspectives in innovation theory; the alternative logic grounded in continuity is developed in detail in the following chapter.

Table 2: *Creative destruction* vs. Continuity-based innovation: A Comparative Conceptual Summary

Dimension	Creative Destruction (Schumpeter, 1942)	Continuity-based innovation
Type of change	Rupture; replacement of existing structures with new forms; innovation as discontinuity.	Continuity; transformation through replication, reorganization, and renewal of existing elements.
Attitude toward existing structures	Existing structures are obstacles to innovation and must be discarded.	Existing structures contain functional value and adaptive memory; they should be retained and repurposed when effective.
Role of system memory	Largely disregarded; the past is what must be overcome.	Central; systems innovate by preserving and recombining patterns that continue to work.
Speed of change	High; abrupt shifts driven by disruption and replacement.	Moderate or cumulative; preserves coherence.
Transition risk	High; disruptions may generate instability and loss of adaptive capacity.	Lower; continuity safeguards capabilities and reduces systemic fragility.
Relationship with resilience	Resilience is secondary; instability is the price of radical innovation.	Resilience is central to innovation.
Primary unit of analysis	Individual firms or industries replacing the old	Ecosystem-level patterns that extend what works.
Logic of value creation	Value stems from radical novelty and the ability to surpass existing structures.	Value emerges from intelligent continuity and adaptive reuse.
Guiding metaphor	"Storm of creative destruction."	"Ecological renewal and functional recombination."

Source: Developed by the authors.

While Table 2 highlights the contrast between rupture-based and continuity-based patterns of change, continuity-oriented adaptation is not unique to entrepreneurship. It appears consistently across natural systems. Table 3 illustrates how replication, reorganization and renewal operate at different ecological and physical scales, offering insight into how systems evolve by extending and reshaping what already exists.

Table 3: Innovation Through Adaptation in Nature (across scales).

Scales	Adaptation / Strategy
- Spiral Mollusks **- Galaxies**	Fibonacci spiral, optimizing space and energy distribution
- Tree Branching **- Rivers**	Fractal branching patterns for efficient resource flow
- Veins in Leaves **- Blood Vessels**	Redundant network design for efficient transport
- Beehive Hexagonal Structures **- Basalt Column Formations**	Hexagonal efficiency for packing and strength

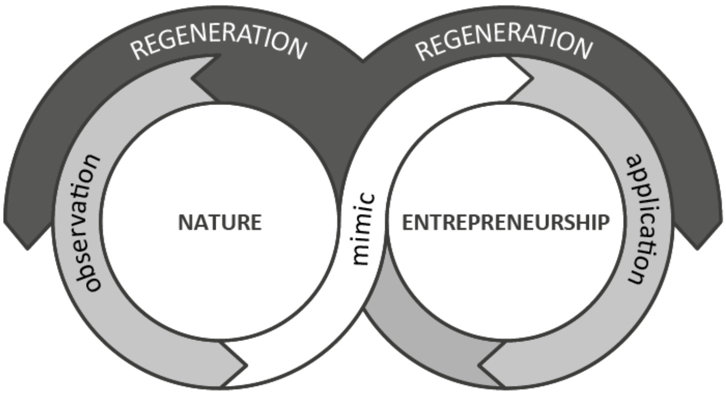
Source: Developed by the authors.

These natural examples illustrate how continuity-based adaptation appears across ecological systems. This insight reveals a conceptual boundary within the *creative destruction* framework: it cannot account for forms of change grounded in continuity. This opens space for a complementary innovation logic. The next section develops such a logic, from an ecological perspective.

3.3. Sustainable and Regenerative Innovation

The study on sustainable innovation has moved beyond efficiency and optimization. It now calls for approaches that renew systems rather than merely reduce their impact. Geissdoerfer et al. (2017) distinguish between circular and regenerative innovation. Circular models close resource loops. Regenerative models restore and strengthen socio-ecological systems. This distinction matters as it clarifies that sustainability is not only about cycling materials but about sustaining the conditions that allow systems to endure. Figure 3 illustrates how regenerative processes can restore and strengthen both natural and entrepreneurial systems, showing the biomimetic link between them through observation, mimicry, and application.

Figure 3: Biomimetic-informed regeneration supporting natural and entrepreneurial systems.



Source: Developed by the authors.

In entrepreneurship, this shift appears in efforts to design business models that embed ecological principles. Boons and Lüdeke-Freund (2013) argue that sustainable value creation depends on aligning how value is created, delivered and maintained with environmental integrity. Their work highlights that innovation can emerge by reconfiguring existing structures instead of replacing them. Adaptation rather than destruction becomes a viable path for change.

Bocken et al. (2014) extend this reasoning through regenerative and sufficiency-driven archetypes. These models slow resource flows, restore ecological functions and create room for resilience. They show that innovation often advances by amplifying strategies that already work in nature. Replication and adjustment, rather than novelty alone, can support systemic renewal.

Regenerative design theory reinforces this orientation. McDonough and Braungart (2002) argue that design should contribute to ecosystems instead of merely limiting harm. Their cradle-to-cradle framework treats biological and technical systems as cycles that can be strengthened through thoughtful design. This view connects ecological renewal with entrepreneurial action and demonstrates that new solutions can grow from existing structures.

Elkington's (1997) *triple bottom line* expands this understanding. It positions sustainability as the integration of economic, environmental, and social value. This integration reflects biomimetic principles: systems remain resilient when their elements are balanced and interconnected. Stability, not disruption, becomes a condition for innovation.

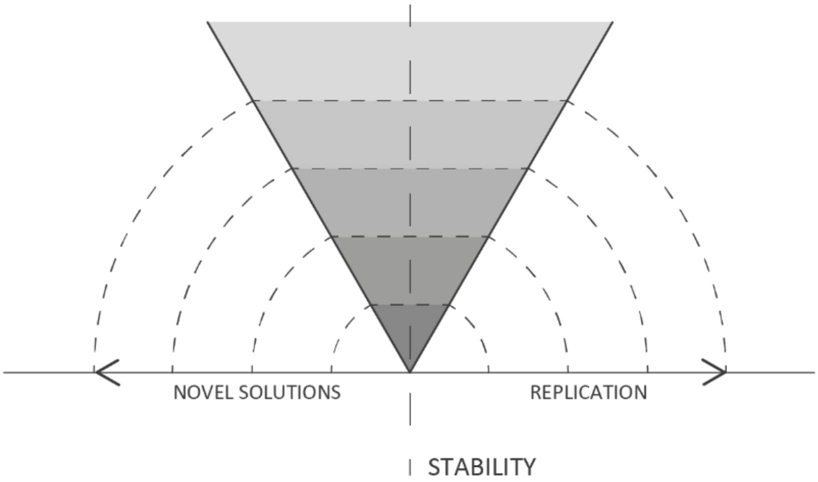
Together, these contributions form a coherent foundation for approaches that renew rather than replace. They show that innovation can emerge through restoration, continuity and systemic alignment, which opens conceptual space for alternative logics of change that move beyond disruption-centric models. The next chapter builds on this foundation to develop a novel concept that will complement Schumpeter's *creative destruction.*

4. Conceptual Development: Uncreative Construction

4.1. Definition of Uncreative Construction

As analyzed previously, systems do not evolve only through rupture. Much of what endures in nature persists not because it resists change, but because it adapts without discarding what already works (Benyus, 1997). Ecological systems show that renewal often begins with what is already present. They recombine, reorganize, and extend existing structures rather than replacing them outright. This pattern, recurrent across scales, suggests that innovation can arise from continuity as much as from disruption (Capra, 2021). Figure 4 summarizes this role of diversity in supporting systemic stability.

Figure 4: The Role of Diversity in Systemic Stability.



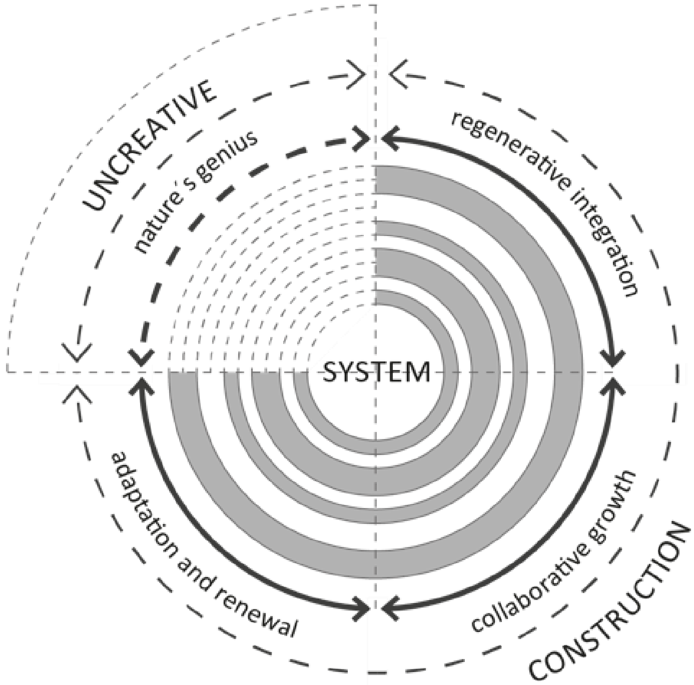
Source: Developed by the authors.

It is in this context that we propose a new concept developed in response to a gap within *creative destruction*: the concept of *uncreative construction*. *Creative destruction* explains how industries advance when the old gives way to the new (Schumpeter, 1942). However, it does not explain how systems maintain coherence while they change, nor how they adapt when replacement is neither possible nor desirable. It assumes that progress depends on elimination. *Uncreative construction* emerges as its complementary opposite: instead of advancing through rupture, it advances through continuity. It highlights the forms of change that grow from what persists, drawing stability forward rather than clearing it away.

The term "uncreative" signals that novelty does not always require invention from scratch. Nature rarely starts over. It works with what has survived, shifting, adjusting, and redirecting what is already present. In this sense, "uncreative" does not diminish creativity; it reframes it. Creativity can also manifest through continuity rather than rupture (Benyus, 1997). The term "construction" reinforces this orientation. It points to the act of shaping, reorganizing, and assembling existing elements into new configurations. In contrast to "destruction," construction suggests a process that builds with what remains rather than clearing what existed.

Taken together, *uncreative construction* describes a way of creating by conserving, of transforming by reorganizing and of responding to change through structures that already hold ecological intelligence (Capra, 2021). It does not reject disruption; it acknowledges its place. But it argues that resilient systems often evolve by carrying forward what works and reorganizing it to meet new conditions. Figure 5 synthesizes this logic, representing uncreative construction as a continuity-based pathway of innovation grounded in ecological patterns.

Figure 5: Representative diagram of the *uncreative construction* concept.



Source: Developed by the authors.

This view is consistent with broader work in sustainability and strategic management. Hart and Dowell (2011) argue that sustainability is a foundation for long-term resilience, reinforcing the idea that innovation grounded in renewal and conservation can strengthen system adaptability. Barney's (1991) resource-based view also supports this orientation by showing that competitive advantage often emerges from leveraging and recombining existing resources rather than replacing them. Almeida Leite et al. (2024) further argue that innovation gains robustness when creative processes build on, rather than discard, existing foundations. Together, these perspectives position *uncreative construction* as a logic that expands how innovation can be understood beyond rupture alone, and as a complementary counterpart to Schumpeter's theory.

4.2. Boundaries with Existing Concepts

Uncreative construction intersects with several established approaches to sustainable and entrepreneurial innovation, but it does so from a distinct position. Rather than replacing existing frameworks, it complements them by emphasizing how continuity, adaptation and the reuse of functional structures contribute to system-level resilience.

Biomimicry at the level of form or process replicates shapes, materials, or mechanisms found in living systems (Benyus, 1997; Vincent et al., 2006). *Uncreative construction* aligns with biomimicry's systemic dimension: the study of ecosystems principles, more specifically on how they maintain coherence through adaptation and interconnectedness. In this sense, *uncreative construction* draws from nature's logic of continuity, focusing its implementation for the context of entrepreneurship.

Circular innovation focuses on resource flows and the closing of loops through reuse and recycling (Geissdoerfer et al., 2017). Its strength lies in material efficiency. *Uncreative construction* aligns with this logic at a structural level, in the sense that both recognize that what already exists can be extended rather than discarded. However, circularity concentrates on the movement of materials while *uncreative construction* concentrates on the reorganization of relationships, functions and patterns within a system.

Regenerative innovation seeks to restore and enhance ecological capacity (McDonough & Braungart, 2002). Its emphasis is ecological renewal. *Uncreative construction* shares the same principle that systems improve by building on what retains vitality. However, the difference lies in scope: regenerative innovation rebuilds ecological foundations, while *uncreative construction* repurposes social, organizational, or cognitive structures that remain functional. Both approaches recognize that resilience depends on what persists.

Eco-innovation often advances through technological efficiency and reduced environmental impact (Boons & Lüdeke-Freund, 2013). Its logic is instrumental. *Uncreative construction* operates differently, as it addresses how systems adapt when they reorganize existing capabilities, rather than substituting them. Yet there is a parallel: both recognize that innovation can emerge without rupture, often through the deepening or redirection of structures already in place.

These examples show some parallels that position *uncreative construction* as part of a broader ecosystem of ideas, seeking alternatives to linear, disruption-driven models of innovation. They also reveal their unique contribution: circular innovation addresses flows; regenerative innovation addresses restoration; eco-innovation addresses efficiency; and *uncreative construction* addresses the stability of the patterns that hold systems together and the adaptive potential within them.

This conceptual positioning creates the conditions for a deeper dialogue with Schumpeter's *creative destruction*. Each concept offers a different pathway through which innovation unfolds: one through rupture, the other through continuity. Both can coexist within the same system. The next section develops this interplay, showing how the two logics can operate in symbiosis rather than opposition.

4.3. Mechanisms of Uncreative Construction

Uncreative construction operates through mechanisms that reflect how living systems adapt without resorting to rupture. These mechanisms show that continuity is not the absence of change but a mode of transformation grounded in what remains viable. They translate ecological patterns, that were refined through evolution, into processes that can inform entrepreneurial innovation. Three mechanisms structure this logic: the replication of functional patterns, the reorganization of existing structures and renewal through adaptive continuity.

Replication of Functional Patterns

Natural systems often respond to emerging conditions by drawing on strategies that have already proven effective. Evolution retains patterns that work and reuses them across contexts, a process visible in convergent evolution and the persistence of forms or functions across species (Benyus, 1997; Vincent et al., 2006). Replication in this sense is not imitation but a way of reinforcing stability while enabling adaptation. In entrepreneurial settings, similar dynamics appear when ventures extend or transfer existing models into new applications. Business model research shows that replication of effective patterns can generate competitive advantage by leveraging known structures rather than inventing from scratch (Baden-Fuller & Morgan, 2010; Barney, 1991). Replication becomes a pathway through which novelty emerges from continuity.

Reorganization of Existing Structures

Ecosystems endure disruptions by reorganizing internal relationships rather than collapsing them. Redundancy, overlapping functions and distributed organization allow systems to shift roles and reconfigure interactions while maintaining coherence (Chapin et al., 2000). The capacity to reorganize without dismantling the whole is central to resilience (Walker & Salt, 2006). In entrepreneurship, reorganization appears in the recombination of resources, capabilities, and partnerships. Sustainable business models often evolve not through replacement but also through reconfiguration, redirecting existing elements toward new purposes (Boons & Lüdeke-Freund, 2013; de Almeida Leite et al., 2024). This mechanism shows that systems can adapt meaningfully through internal rearrangement.

Renewal Through Adaptive Continuity

Ecological renewal frequently occurs within structures that persist over time. Successional cycles, adaptive feedback loops, and cross-scale interactions allow ecosystems to evolve while retaining identity (Capra, 2021). Renewal is not a return to the past, but rather a forward movement grounded in memory, pattern, and accumulated ecological intelligence. In entrepreneurial contexts, renewal emerges when ventures update practices, reorient strategies, or expand value propositions without discarding their foundational structures. Research in sustainability and strategic management shows that organizations can strengthen resilience by building on their existing resource base while aligning with changing environmental and social conditions (Hart & Dowell, 2011). Renewal in this sense embodies continuity as a source of transformation.

Taken together, these mechanisms illustrate how *uncreative construction* functions as an innovation logic rooted in stability, adaptation and systemic coherence. Change unfolds not by erasing what exists but by extending, reorganizing and renewing it. This internal logic prepares the ground for understanding how *uncreative construction* operates in entrepreneurial ecosystems, where resilience depends on a balance between continuity and disruption. The next section examines these implications in practice.

4.4. Implications for Entrepreneurial Ecosystems

The mechanisms that structure *uncreative construction* have direct implications for how entrepreneurial ecosystems evolve and sustain themselves. They reveal that innovation does not depend exclusively on disruption but also on the capacity of a system to reorganize and extend what already functions. When seen through this lens, entrepreneurial ecosystems emerge not only as spaces of experimentation but as living systems in which continuity and adaptation operate side by side to support resilience. The following implications illustrate how this logic appears in practice:

Innovation Through the Replication of Functional Patterns

Ecosystems gain resilience when they can replicate patterns that already demonstrate effectiveness. *Biohm* offers a clear example. Rather than inventing a new material logic, the company works with the structural intelligence of mycelium, through an adaptive pattern already explored in biomaterial research and construction science (Sayed & Jones, 2018). By scaling this biological architecture into construction materials, innovation can emerge through continuity. The ecosystem benefits by integrating a solution that is familiar at the structural level, reducing uncertainty and lowering the cost of transition. In this sense, replication becomes an entrepreneurial strategy that preserves coherence while opening new avenues for change.

Adaptation Through Reorganization of Existing Structures

Entrepreneurial ecosystems evolve by reorganizing relationships, not only by replacing them. Structural reconfiguration can redirect existing capabilities toward new purposes while preserving the stability of the system. *Yuca Bio-Plastics* demonstrates this mechanism: Its cassava-based material integrates into the same processing infrastructure used for traditional plastics, building on a body of research that establishes cassava's potential as a biodegradable polymer (Garrido & Oliveira, 2019). With this strategy, no new industrial environment is required, as the ecosystem adapts by reorganizing its flows rather than dismantling its foundations. This reveals an important implication: ecosystems can move toward sustainable innovation through redirection rather than collapse. It aligns with resource-based perspectives in entrepreneurship that see competitive advantage emerging from the reconfiguration of what already exists.

Renewal Through Adaptive Continuity

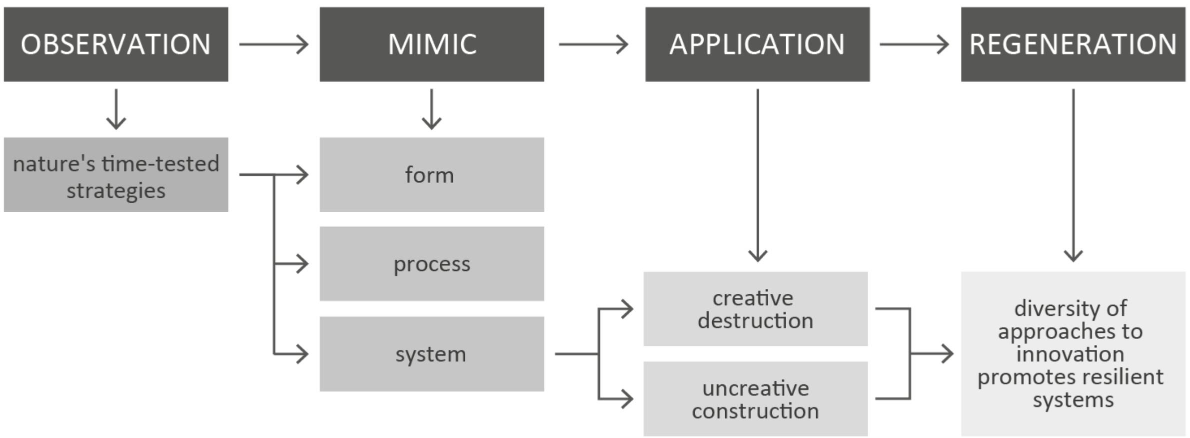
Renewal in ecosystems doesn't mean abandoning their identity. It can also occur when systems carry forward structures that hold value, but reorganize them to meet new conditions. *Navdanya's seed networks* illustrate this dynamic. The preservation of diverse and ancestral seeds forms the foundation for agricultural systems, that can respond to ecological and social change. This is made without splitting ties to their origins, which is a principle well documented in regenerative agriculture and biodiversity knowledge (Shiva, 1993; 2005). This approach does not reject modern innovation, as it roots renewal in the continuity of ecological and cultural memory. For entrepreneurial ecosystems, this highlights a different pathway to adaptation. Stability becomes an asset, not an obstacle, and renewal arises by reinforcing the elements that allow the system to maintain its function, while evolving.

Taken together, these implications show that entrepreneurial ecosystems benefit not only from disruptive forces but from the steady work of continuity. In this sense, replication, reorganization and renewal provide pathways for innovation that reduce systemic fragility, support long-term adaptability, and allow transitions to occur without eroding the foundations that hold systems together. These insights create the conditions for a more integrated understanding of innovation, one that recognizes the complementary roles of rupture and continuity. The next section explores this interplay in greater depth.

4.5. The Dynamic Interplay Between Creative Destruction and Uncreative Construction

Innovation within entrepreneurial ecosystems does not follow a single trajectory (Stam, 2015). Systems evolve through phases of disruption and phases of reorganization, and their stability depends on the diversity of pathways available. In ecological terms, diversity is the foundation of resilience. It allows systems to absorb disturbance because multiple structures, functions and relationships can carry the system forward when conditions shift (Elmqvist et al., 2003; Folke et al., 2004; Walker & Salt, 2006). This ecological principle provides the lens through which the interplay between *creative destruction* and *uncreative construction* can be understood. While one relies purely on novelty, the other maintains consistency and both rely on diversity to sustain the capacity of the system to adapt. Figure 6 synthesizes these nature-inspired strategies, framing resilience as the outcome of diversified pathways of change.

Figure 6: Nature-inspired strategies for resilient systems.



Source: Developed by the authors.

As already stated, *creative destruction* generates the disturbances that open space for new configurations to emerge. It exposes limitations in established structures and initiates transitions by altering the rules or feedbacks that shape economic activity (Schumpeter, 1942). However, disruption alone cannot ensure stability. For new patterns to take hold, ecosystems must reorganize around what remains functional. *Uncreative construction* provides a complementary perspective to this logic. It enables systems to absorb the shock of disruption by recombining existing capabilities, strengthening relationships that retain value and redirecting structures that continue to serve a purpose. Together, these dynamics reflect the adaptive cycles observed in ecology, where periods of release are followed by phases of reorganization and renewal (Gunderson & Holling, 2002).

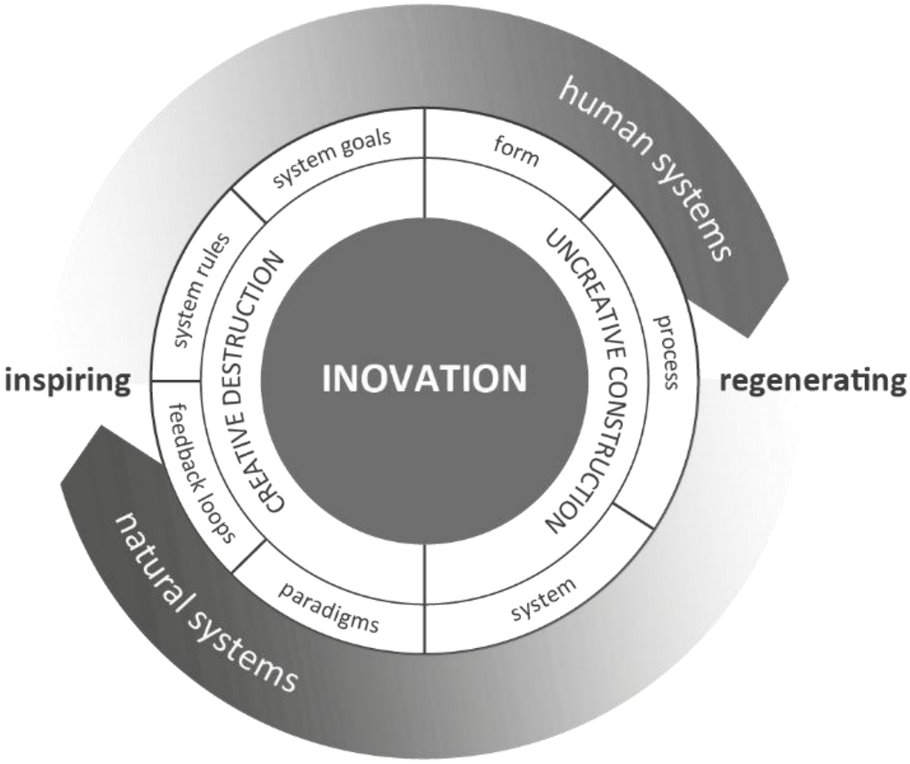
Real-world cases of transitions demonstrate how these logics interact. In the biomaterials sector, the emergence of alternatives to petrochemical plastics introduced a disruptive force. Yet, the viability of these transitions depended on the ecosystem's ability to reorganize without collapse. *Yuca Bio-Plastics* illustrates this interplay: while its cassava-based material challenged the logic of plastic production, its compatibility with existing industrial infrastructure enabled continuity in processing and distribution (Garrido & Oliveira, 2019). In other words, in this case, disruption initiated the shift and continuity allowed it to stabilize.

A similar dynamic appeared in the built environment, when *Biohm's* mycelium-based materials questioned extractive construction models, but integrated new models into architectural practices that already exist. Their innovation is disruptive in intent yet continuous in implementation (Sayed & Jones, 2018). The ecosystem transitions because it can carry forward familiar forms of design, production, and collaboration while adopting new material intelligence. Here, novelty enters the system without eroding its underlying structure.

In agriculture, the long-standing effects of industrialization reflect decades of *creative destruction*, which replaced local seed diversity with standardized, high-input systems. *Navdanya's seed networks* respond through *uncreative construction*: they renew agricultural capacity by preserving and reorganizing existing ecological and cultural resources rather than discarding them (Shiva, 1993; 2005). At this point, the interplay between disruption and continuity becomes explicit. Although industrial agriculture created the conditions for change, adaptive continuity provided a path toward resilience.

Across these contexts, the interplay between *creative destruction* and *uncreative construction* becomes a source of systemic strength. Diversity enables ecosystems to navigate transitions through multiple pathways: disruption for transformation and continuity for coherence. Neither logic is absolutely sufficient on its own. *Creative destruction* catalyzes shifts, but, without continuity, transitions may fragment. *Uncreative construction* stabilizes change, but, without disruption, systems stagnate. Resilience arises from the dialogue between these forces, echoing the complementary roles of disturbance and renewal in ecological systems. Figure 7 captures this dual dynamic, representing creative destruction and uncreative construction as interdependent drivers of sustainable progress.

Figure 7: Dynamic interplay of concepts for sustainable progress.



Source: Developed by the authors.

Understanding this interplay allows entrepreneurial ecosystems to steer transitions more intentionally. It highlights that innovation strategies should not rely exclusively on rupture nor solely on conservation. Instead, ecosystems benefit when both dynamics are present and in balance. Disruption generates new possibilities; continuity reorganizes them into viable forms. This integration creates pathways through which ecosystems can evolve while maintaining the foundations that support long-term functioning. Such dual logic offers a more complete view of how innovation unfolds within complex environments and sets the stage for broader reflections in the conclusion that follows.

5. Theoretical Propositions

The mechanisms underlying *uncreative construction* provide the basis for theoretical propositions that clarify how continuity-based innovation shapes entrepreneurial ecosystems. These propositions extend existing work on sustainable innovation by demonstrating how adaptation, reorganization, and renewal draw from patterns already present in natural and social systems. As seen, they reflect the logic that systems evolve not only through disruption, but also through the amplification, recombination, and repurposing of structures that have proven effective across time and context.

Proposition 1 — Replicating Functional Patterns Enhances Ecosystem Resilience

Natural systems often rely on pattern recurrence to maintain functionality under changing conditions. Phenomena such as the lotus effect (Barthlott & Neinhuis, 1997), the hydrodynamics of humpback whale flippers (Fish et al., 2011), or the structural efficiency of honeycomb geometries (Vincent, 1990) illustrate how recurrent forms persist because they are effective. *Uncreative construction* extends this principle to entrepreneurship: ecosystems that support the replication of functional patterns, whether in business models, organizational structures, or resource configurations (Baden-Fuller & Morgan, 2010), develop greater resilience. Replication stabilizes systems by building on known solutions, while allowing room for contextual adaptation.

Proposition 2 — Reorganizing Existing Structures Strengthens Adaptive Capacity

Ecological resilience emerges from the redundancy and distributed structure of ecosystems (Chapin et al., 2000; Walker & Salt, 2006). Fungal networks, as described by Sheldrake (2020), reorganize internally without losing coherence, redirecting flows while preserving the system. In entrepreneurship, a similar dynamic occurs when ventures reorganize existing capabilities rather than replacing them. The reconfiguration of resources, which is a core principle in the resource-based view (Barney, 1991), enables systems to adapt while conserving functional parts. Sustainable business model research reinforces this view, showing that reorganization can generate innovation without destabilizing the system (Boons & Lüdeke-Freund, 2013; de Almeida Leite et al., 2024). Thus, *uncreative construction* predicts that ecosystems with strong reorganization capacity exhibit higher adaptability.

Proposition 3 — Renewal Through Continuity Supports Long-Term Innovation Stability

Ecological renewal frequently arises through continuity rather than rupture. Successional processes, feedback loops, and the redistribution of functions enable systems to evolve while retaining identity (Capra, 2021). Architectural and design practices inspired by ecological principles likewise show that continuity can be a generative force. The approaches documented by Pawlyn (2019) reveal how regenerative cycles maintain structural integrity while supporting new forms. In entrepreneurial contexts, renewal emerges when ventures retain core structures while updating practices to meet new conditions. This view aligns with sustainability research that treats stability as a prerequisite for resilience (Hart & Dowell, 2011) and with economic models that emphasize regenerative flows (Raworth, 2018). *Uncreative construction,* therefore, predicts that continuity-driven renewal enhances long-term innovation stability.

Proposition 4 — Balancing Disruption and Continuity Enhances Ecosystem Robustness

Creative destruction introduces variation and opens pathways for change (Schumpeter, 1942). Yet, ecosystems do not depend on disruption alone. Their robustness comes from diversity, redundancy, and the coexistence of multiple adaptive strategies (Folke et al., 2004; Elmqvist et al., 2003). *Uncreative construction* complements *creative destruction* by stabilizing transitions, reorganizing what remains functional, and preserving system memory. In combination, these forces mirror the adaptive cycles described by Gunderson & Holling (2002), where periods of release are followed by phases of reorganization and renewal. The proposition that entrepreneurial ecosystems are most robust when disruption and continuity operate together reflects their ecological counterparts.

Proposition 5 — Continuity-Based Innovation Reduces Transition Risk and Supports Sustainable Scaling

Efficiency and sufficiency-oriented innovation models emphasize the value of reducing unnecessary resource use, stabilizing flows, and aligning products with ecological limits (Niessen & Bocken, 2021). *Uncreative construction* advances this orientation by leveraging existing infrastructures, relationships, and cognitive frameworks. By reducing the need for systemic replacement, continuity-based innovation lowers transition risks and supports the gradual scaling of sustainable solutions. This aligns with findings that resource recombination can be a strategic advantage (Barney, 1991) and that regenerative innovation often emerges from building upon existing system intelligence (McDonough & Braungart, 2002).

These propositions show that *uncreative construction* offers an innovative logic focused on continuity, adaptation, and coherence. They offer a structured foundation for future research exploring how entrepreneurial ecosystems evolve when innovation arises not from rupture alone, but from the intelligent reuse, redirection, and renewal of what already works.

6. Conclusion

This study introduced a novel concept, *uncreative construction,* as a continuity-based logic of innovation grounded in ecological systems thinking. It responds to a gap in prevailing innovation theory, which tends to privilege disruption while overlooking how systems adapt through the preservation and reorganization of what remains functional. By drawing from ecological principles, *uncreative construction* demonstrates that continuity can be a generative force, enabling systems to evolve without destabilizing their foundations.

Through a precise conceptual definition, clear boundaries with related frameworks and the identification of three core mechanisms - replication, reorganization, and renewal - the study reframes innovation as a structural, rather than purely disruptive, process. These mechanisms translate ecological intelligence into entrepreneurial dynamics and offer a vocabulary for understanding how systems change through adaptive reuse rather than collapse.

The implications for entrepreneurial ecosystems highlight how continuity-oriented strategies can support resilience, reduce transition risk and facilitate smoother adaptation. The examples of *Biohm, Yuca Bio-Plastics and Navdanya* illustrate how novelty can emerge by extending existing patterns, redirecting infrastructures and renewing system memory. These cases show that ecosystems can innovate effectively when transformation builds on what already holds value.

The interplay between *creative destruction* and *uncreative construction* reinforces the need for diversity in how ecosystems evolve. Disruption creates openings where continuity stabilizes them. Their co-existence reflects ecological adaptive cycles, where renewal depends on both disturbance and the capacity to reorganize. Understanding this duality provides a more complete account of innovation and clarifies why entrepreneurial ecosystems require both modes of change to remain robust over time.

The theoretical propositions derived from this framework establish pathways for future empirical research. They articulate how continuity-based mechanisms shape resilience, adaptation and systemic coherence. In doing so, they position *uncreative construction* not as an alternative to disruption, but as its necessary counterpart, a logic that enables innovation to unfold without eroding the structures that support long-term functioning.

This article is conceptual in nature and, as such, is constrained by the scope of the literature selected and the absence of empirical validation. Future research could operationalize uncreative construction at multiple levels of analysis—venture, ecosystem, and policy—and test the proposed mechanisms and propositions using longitudinal designs, comparative case studies, and network-based methods. Empirical work is particularly needed to explore how continuity-based innovation unfolds in different sectors and institutional contexts, and how it interacts with disruptive forces over time.

Ultimately, *uncreative construction* expands the conceptual landscape of innovation by revealing how systems can change through what they conserve as much as through what they abandon. By integrating ecological principles with entrepreneurship knowledge, this work offers a foundation for understanding how resilient systems grow, adapt and endure, in a world increasingly defined by uncertainty, which highlights the need for sustainable transitions.

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