

the guide to **Sustainability**

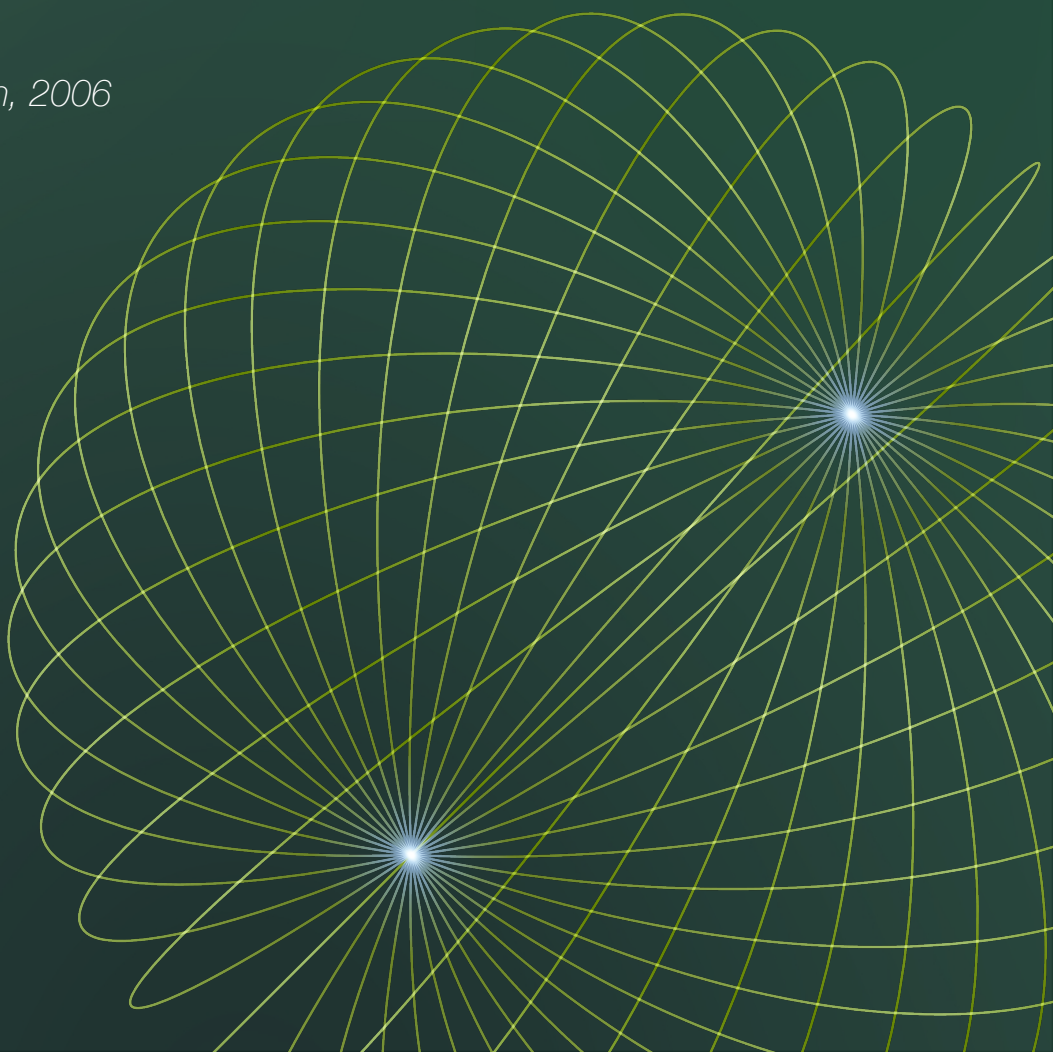


A brief history of
sustainability: from
atomistic to holarchical
thinking

“The twenty-first century will, in fact, be the age of nature.

We’ll learn, probably the hard way, that nature matters: we’re not separate from it, we’re dependent on it, and when there’s trouble in nature, there’s trouble in society.”

Homer-Dixon, 2006



Before We Start

At the Sustainable Investment Club (SIC), we are striving to create an environment in which students can freely and extensively explore current concepts, models, and theories in the fields of Finance, Sustainability, and Economy, because we believe that this exploration is fundamental to critical thinking and innovation.

In order to fathom what Sustainable Finance is about, we first need to comprehend what sustainability entails. While the term “Sustainability” itself represents a contentious topic that has seen countless definitions over the last 50 years, we believe that it is necessary to provide a brief overview of the main schools of thought that underpin most of our contemporary models (triple-bottom-line, ESG, SDG, etc.), but also go beyond current models and present what sustainable thinking could look like in the near future.

As such, this brief guide to Sustainability aims to provide a comprehensive description of the term Sustainability as well as its evolution over the years, while also isolating its core elements. Furthermore, this guide aims to illustrate three different schools of thought that have been at the very center of most of the recent socio-economical and sustainability models, while presenting their underlying conceptions and assumptions about value creation, and the relationship between economy, environment, and society.



Olivier Clivaz
President SIC FS22

About the Sustainable Investment Club

The Sustainable investment Club (SIC) has been founded in 2020 at the University of St.Gallen (HSG) as an initiative to promote sustainability within the financial sector and to create awareness around this topic among the students.

With the SIC, we have set the goal of changing the status quo and increasing the students' awareness on the topics of Sustainability and Finance

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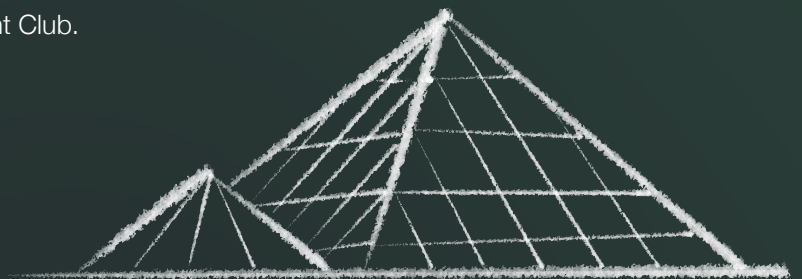
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Defining Sustainability

Introduction

The 1990s saw the emergence of contemporary ideas of sustainability; twenty years later, the concept permeates environmental discourse at almost every level, from technologies (such as buildings, chemicals, etc.) and organizations to local and regional governments and in multilateral institutions. Although the idea is widely accepted, there is no consensus on what sustainability actually entails. The term can be perceived as "selling out to pragmatism" if it is ideologically constrained in how it is used; at the very least, it can vary by scale and context of application.

The Origin

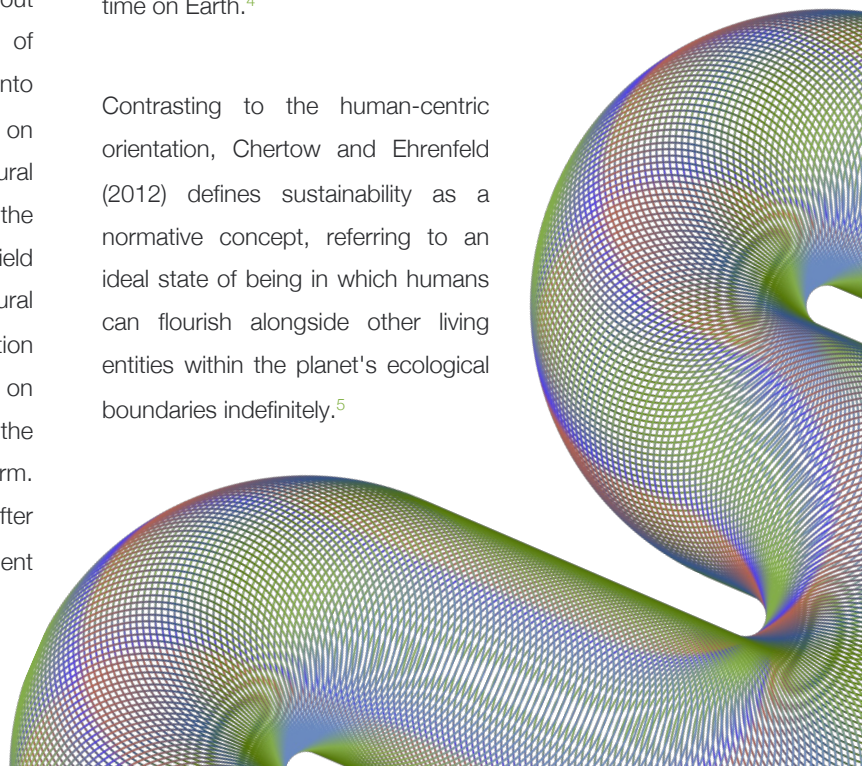
The concept of sustainability originated with biologists and ecologists who used it to describe the rates at which renewable resources could be extracted or damaged by pollution without threatening the underlying integrity of ecosystems¹. It then transitioned into economics, where the emphasis was on comprehending the connection between natural capital and economy, leading to the establishment of "ecological economics," a field dedicated to a broader valuation of natural capital. The US Environmental Protection Agency and the President's Council on Sustainable Development, both under the Clinton Administration, have both used the term. The word is now used in engineering² after becoming popular in business and management literature more recently³.

Nonetheless, the term "sustainability" remains a contentious one. Indicators, measures, and reports that at least implicitly rely on definitions of sustainability have grown during the past ten years, and there must be hundreds of different definitions. The *Brundtland* report from 1987 contains one of the most frequently quoted definitions of sustainability: "Development that meets the demands of the present without compromising the ability of future generations to meet their own needs."⁴

Common Ideology

Quintessentially, sustainability can be reduced to the capacity for continuance into the long-term future. Nonetheless, sustainability has always had a human-centric orientation in terms of environmental management so that humans may continue to exist and ecosystems can continue to serve our needs, as well as the needs of our children and grandchildren. Everything is framed in the context of our continued existence. As a result, the term "sustainability" has evolved to refer to the process by which we ensure that we can continue to enjoy our time on Earth.⁴

Contrasting to the human-centric orientation, Chertow and Ehrenfeld (2012) defines sustainability as a normative concept, referring to an ideal state of being in which humans can flourish alongside other living entities within the planet's ecological boundaries indefinitely.⁵



Understanding Sustainability

Understanding the Elements of Sustainability

Most definitions of sustainability include similar fundamental components. The first is that they offer a lens through which to see environmental issues in light of how they relate to the economy and society. Therefore, neither social nor economic progress is allowed to take ecological foundations for granted. Or, to put it another way, ecological preservation initiatives should not take economic results or popular support for granted.

Interconnection

The interconnections are typically represented as a "triangle," a "three-legged stool," or overlapping circles in a Venn diagram, with the three components being variously referred to as "equity, ecology, and economy" or "economy, environment, and society." Sustainability is distinguished by looking at systemic interconnections and the notion that the elements should support or reinforce one another in a reciprocal relationship, even though specific aspects and the focus placed on them may change.⁶

Intergenerational Equity

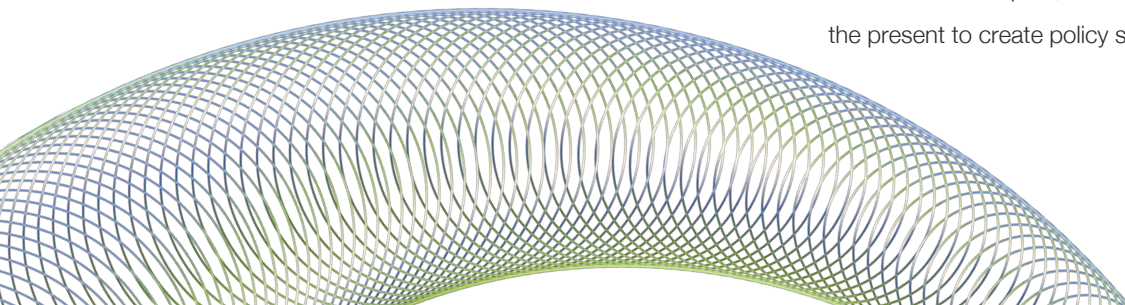
Focusing on intergenerational equity is another fundamental feature of the notion of sustainability that sets it apart from other perspectives on the environment, economy, or society⁴; the Brundtland definition emphasizes this aspect. The distinctive feature in this context is the consideration of time scales that are typically decades considerably bigger than those found in conventional commercial or even public planning cycles.⁶

Beyond Mere Compliance

All definitions of sustainability, as opposed to conventional perspectives on the environment, economy, or society, have one last feature in common: they place an emphasis on going above and beyond merely adhering to the rules and regulations already in place. For policymakers, this idea is best expressed in terms of innovation that promotes performance above and above the bare minimum required by law. In definitions for firms, being ahead of rules is described as providing a competitive advantage.⁶

Unsustainability

In a certain way, the question of sustainability is secondary to that of what it means to be unsustainable. Of his stunning anthropological exposition of the major ideas in *Limits To Growth*, Jared Diamond addresses this issue in *Collapse*⁷. For Diamond, the result of unsustainable use of nature (combined with other factors) is not a doomsday scenario, but rather future generations that have, "significantly lower living standards", "chronically higher risks", and are deprived of key values they currently hold. He echoes *Limits to Growth* in arguing that the most important capacity that the modern global economy has over earlier civilizations that have over-run their own resources is the ability to learn from the past, and use warning signs in the present to create policy shifts.⁷



Interconnection

Observable Interconnection

There is growing evidence that society is dealing with a number of serious issues that go beyond the social, political, and environmental spheres. The turbulent market events of late 2008 exposed serious flaws in the global economic system and forced business and government leaders to scramble to support massive industry failures with hundreds of billions of dollars in aid packages in the hope of regaining economic stability and a return to the status quo economic-growth policies. At the same time, social systems all across the world are displaying signals of escalating instability, from micro-unrest like food riots and worker riots to macro-instability like interregional violence and an increase in failed nations.⁸

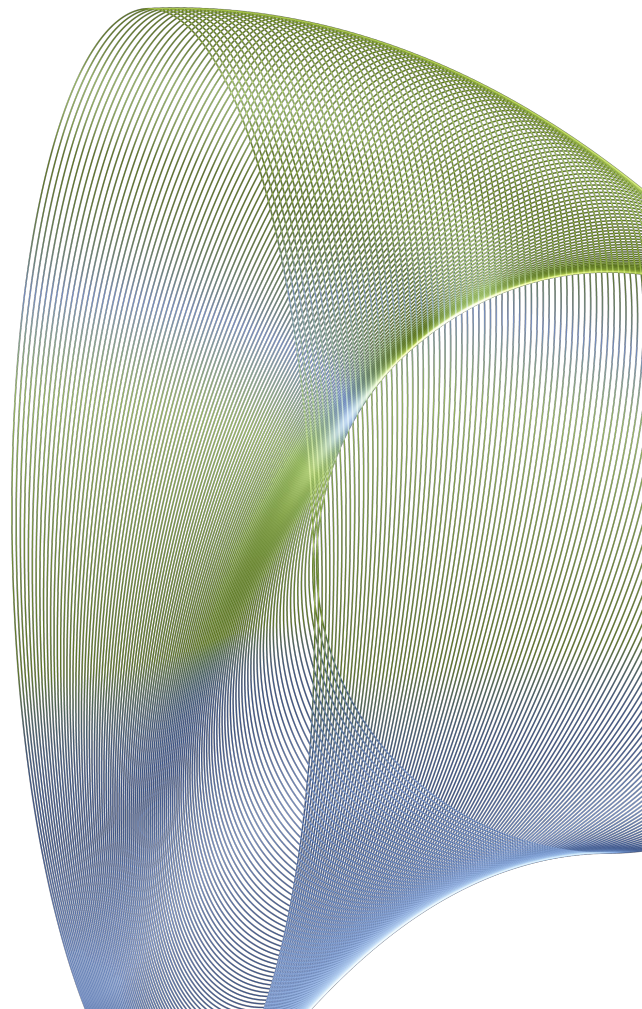
It is becoming more and more clear that these issues are not isolated, discrete issues that can be addressed, studied, and resolved on their own, but rather complex issues that traverse system boundaries and result from the dynamic interaction between business, society, and nature.⁹

Interconnection in Academia

Although business and society (B&S) and organizations and the natural environment (ONE) scholarship are based on an explicit recognition of a de facto relationship between business and society, and business and nature, respectively, there hasn't been much direct discussion regarding the relationship between these three metasystems in the management literature. The nature of these connections has gotten very little attention, despite the fact that the names of these fields of management inquiry hint at the presence of connections between the social, economic, and environmental worlds.¹⁰

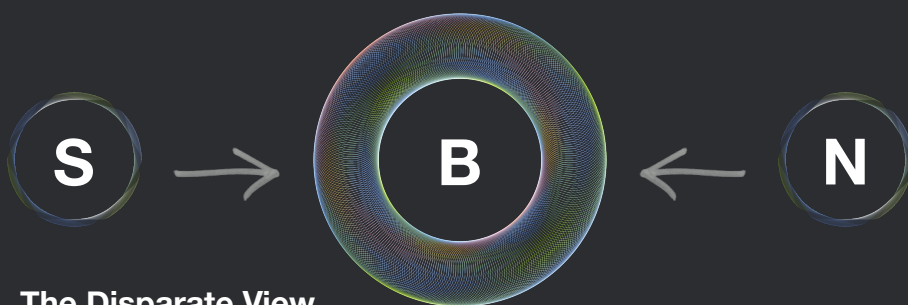
This is significant because it will affect the study questions posed, the theories put out, and eventually the recommendations made to management practitioners and political leaders regarding the business-society-nature (B-S-N) interface.¹⁰

As such, it is utterly important to understand how these spheres interact with each other and ultimately what interconnection means and how it can be conceptually represented as it represents the fundament for our understanding of how we will address our problems.

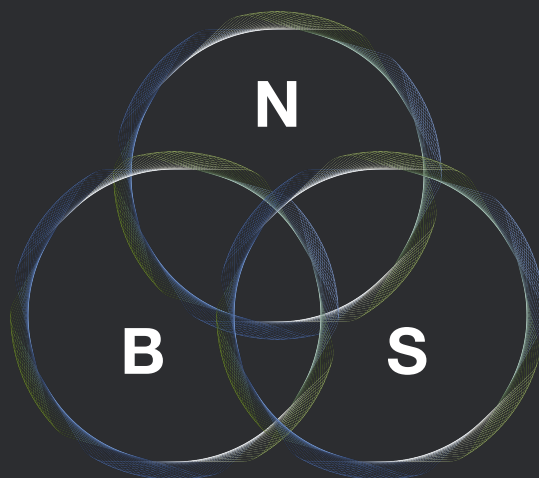


understanding

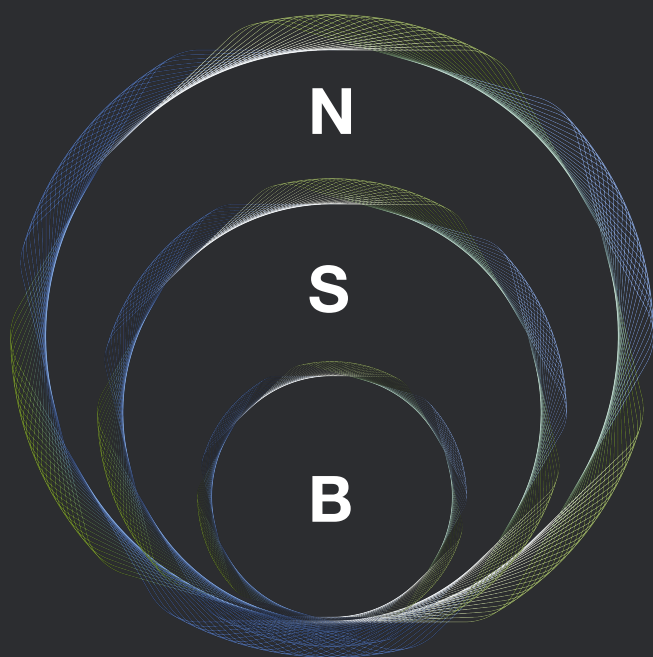
The evolution of Interconnection



The Disparate View
(Atomistic Thinking)



The Intertwined View
(Systemic Thinking)



The Embedded View
(Holarchical Thinking)

The Disparate View

An Externalizing Perspective

Instead of being seen as integral, the interaction between systems is viewed as at arms' length or weakly related. This perspective asserts that "the economy is a closed linear system, separated from nature, where trade value passes between industries and households. Nothing else is endogenous. This externalizing view of nature and society is frequently seen in assessments that concentrate on the inner workings of the economic system, which is maybe not surprising."¹⁰

Business Through the Disparate Lens

The business sphere is probably the core and all-encompassing focus of mainstream economic and management studies.¹² Business is frequently described as a system of transactional exchanges anchored in a logic of individual self-interest. It is generally considered to be self-contained and self-organizing. Most people consider as a given that the goal of optimizing economic outcomes at the individual, firm, industry, national, and global levels. All levels of analysis almost universally view economic growth as desirable.¹¹

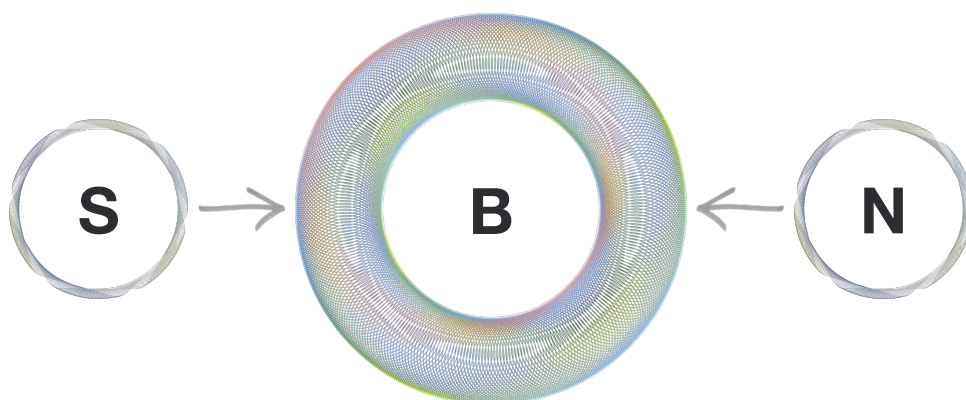
Society Through the Disparate Lens

The disparate view's business-centric approach views society as an external entity made up of a distinct and separable domain made up of all noneconomic human activity. The assumption is that government should be in charge of social welfare issues and the societal sphere, and that business's only responsibility to society is to maximize its economic benefit.¹³

From a disparate perspective, the regulatory and legal frameworks imposed on the business system make up the majority of society's effects on business. Regulation, taxation, and adherence to legal requirements all result in direct costs that can be calculated and evaluated within a market-exchange model. As a result, they have drawn a lot of attention in what can be seen as the typical field of economic and management research.¹⁰ Neoclassical economic theory, however, contends that the market will self-regulate and that externally imposed limitations and restrictions, particularly those arising from state policy, are undesirable.¹³

Nature Through the Disparate Lens

According to a divergent viewpoint, nature serves business by providing the fundamental resources needed to generate economic value as well as serving as a sink for its waste and by-products.¹⁴ The majority of neoclassical economic theories and conventional management theory share this viewpoint. Access to valuable resources is considered to be a crucial factor in determining company performance at the organizational level. However, instead of being a limiting factor for the system as a whole, resource constraints are often viewed as an issue that exists inside the system (i.e., between-firm resource differentials).¹¹



The Intertwined View

A Relating Perspective

Social issues and environmental management researchers have mainly rejected the Disparate view due to its apparent lack of descriptive validity and severe undervaluation of social and environmental aspects.¹⁵ A more complete model that overcomes the shortcomings in the disparate view has recently received a lot of attention under the banner of sustainability. This model is generally viewed as providing a fresh and more useful framework for management inquiry and practice. The triple-bottom-line approach, which Elkington (1998) originally defined as "focused on economic prosperity, environmental quality, and... social justice," is another name for this.¹⁶ What we call the Intertwined perspective of the B-S-N interface is the Venn diagram, frequently used to depict the integration of these more general goals.^{17,18,19}

Business Through the Intertwined Lens

According to the Intertwined view, business is treated as one of three significant and intricately interconnected systems rather than as a stand-alone entity distinct from society and nature in the social concerns and environmental streams of management research.²⁰ Business is defined as a system of generating economic value as a result of social and natural capital transformation. An intertwined view therefore means that business phenomena cannot be separated from societal and natural processes and raises the prospect that value might be simultaneously created in each system by balancing company goals with those of society and nature.¹¹

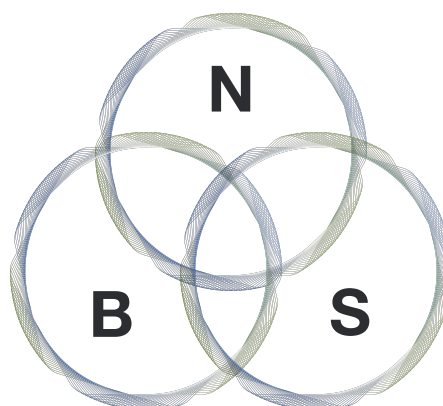
Society Through the Intertwined Lens

Generally, it seems that society has served as a useful umbrella term for human-related phenomena that are not purely economic and that the discipline has remained somewhat ambivalent on the nature of society.¹⁰ Despite this apparent vacuum, stakeholder theory and the literature on public policy are two areas of management studies that shed light on the societal realm.^{21,10}

Owners, employees, consumers, governments etc., are generally all considered stakeholders, which are defined as "those who influence or are influenced by a firm's operations". The organization always serves as the focus referent in stakeholder analyses by definition and given the managerial orientation of stakeholder theory. As a result, stakeholder theory has a tendency to view society as a collection of small-scale players that cannot be considered as more than the sum of their parts.²¹

Nature Through the Intertwined Lens

The Intertwined view of business and nature sees two relatively independent (but interrelated) systems that partially share a common environment in which a single process takes place, much as the interaction between business and society. This one process takes place when nature is systematically incorporated into business consciousness and practice at the business-nature interface.¹⁰ By reducing their environmental footprint, producing environmentally friendly products, and developing environmentally rooted resources and capabilities that are specific to the firm and valuable to the market, businesses are able to lower costs, increase legitimacy, and even gain strategic competitive advantage over rivals. On the other hand, nature is typically framed as an increasingly important social issue to which firms must respond if they are to maintain legitimacy, competitiveness, and survival.²²



The Embedded View

A Reorganizing Perspective

The embedded perspective recognizes the central concept of the intertwined view, namely that the three spheres are inherently interrelated, but it more thoroughly frames the nature of this relationship by viewing business as existing within society and society as existing within the larger natural world. This is a major restructuring of how we think about the B-S-N link.¹⁰ The corporate world is totally encapsulated within the societal sphere, not just that the two systems of business and society overlap. In this idea, the business system, like other human-created systems, is not seen as being on a level with society or nature, but rather is seen as a part of the greater societal system. Similar to this, society is entirely nested inside the natural world. Unfortunately, the embedded view has had little representation in the management literature.^{10,23,24,}

Society through the Embedded Lens

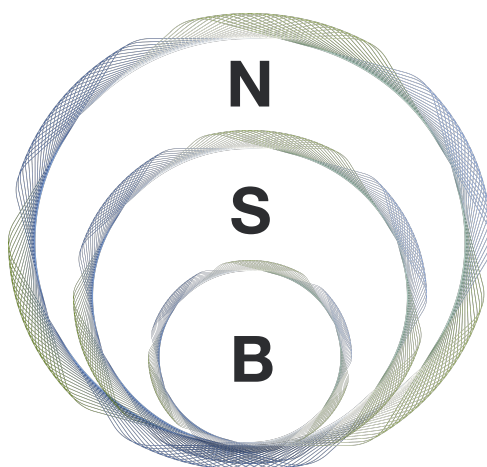
The embedded view places a greater emphasis on the social sphere and the overarching goal of preserving and enhancing society welfare than the disparate and intertwined views do.¹⁰ It is also clear that societal welfare and the welfare of the people that compose society are inextricably linked.²⁵ There is strong evidence that human well-being has not advanced to its full potential, even in the most technologically sophisticated and materially prosperous parts of the world. It is also noteworthy that the relentless policy focus on economic growth, which has contributed to the creation of enormous financial and material prosperity, has been accompanied by essentially no change in people's general level of happiness and life satisfaction.²⁶

Business through the Embedded Lens

Business cannot be totally or even partially detached from society since it is a subsystem of society that is fully encapsulated within it. Instead, the embedded perspective acknowledges that business is purely human in origin, a social construct that is developed, carried out, and sustained by a common human goal. Just as human society does not stand outside of nature, neither does business.^{27,28} The larger societal system in which it operates can benefit greatly from the assistance that business can provide as a system of human creation infused with a human purpose. Business, however, is unavoidably unable to satisfy the whole spectrum of human demands and cannot fully describe societal welfare because it is a partial system.^{8,11,27}

Nature through the Embedded Lens

The embedded view draws attention to the actual physical boundaries that society and business must operate within. Simply said, nested systems are constrained by the boundaries of the systems they are nested within. The idea that societal and economic growth have inherent bounds is not very novel.^{27,29} Overall, an embedded view suggests that business can only be separated from nature if people go beyond their most fundamental requirements for shelter, food, and water. Even while our major priority is to protect the integrity of the business system, an embedded view highlights the necessity to take nature's resource limitations and human influences that act to reduce natural resource capacity much more seriously.^{8,10}



Diverging Perceptions of Value

From a Disparate Perspective

The disparate perception results from a primary interest in explaining economic phenomena and outcomes, and more specifically from a preoccupation with economic value. Wider types of value inherent to the sociological and ecological realms go often unrecognized because economic value generation is essential to all levels of study. Therefore, only those variables and events that have a direct bearing on the creation or destruction of economic value are considered important.^{10, 26}

From a Intertwined Perspective

The intertwined view, as opposed to the disparate view, which exclusively acknowledges quantifiable economic value, acknowledges a variety of types of value that are inherent to each of the economic, social, and natural systems. The interwoven approach implies that each value form is equally legitimate and that producing value of any kind is desirable because it does not indicate any certain value hierarchy. The overlapping regions are typically thought of as opportunities for reciprocal value creation rather than as places of value conflict where trade-offs arise since systemic limits that would impede value growth within the various domains are not immediately apparent. Thus, it is considered conceivable and desirable to produce win-win-win results, with the definition of "win" in the business world being understood as economic growth.¹⁰

From an Embedded Perspective

The embedded view's implications on the relative emphasis given to each of the three value domains of business, society, and nature may be its most significant implication.¹⁰ From an embedded viewpoint, these systems' relative worth can be ordered in accordance with the logic of existential dependency. Simply put, existential dependency refers to the fact that one system depends on another in order to survive. This might also be viewed as following the logic of sustainability, which is the "capacity for continuance into the long-term future."³⁰

An embedded perspective aids in creating a hierarchy of values, with nature being the most significant area, followed by society, then business.²⁷ An eco-centric perspective, in which the earth and biosphere are given exclusive supremacy and human society and business are utterly dismissed, is not the same as placing the highest value on nature. Instead, the embedded perspective acknowledges that each of the three systems has inherent value, albeit not equal value. The embedded view is more explicit in prioritizing the natural and societal systems over the business system than the disparate and intertwined viewpoints.^{10, 11}

Understanding the Relationships

BNS Relations and the Disparate Perspective

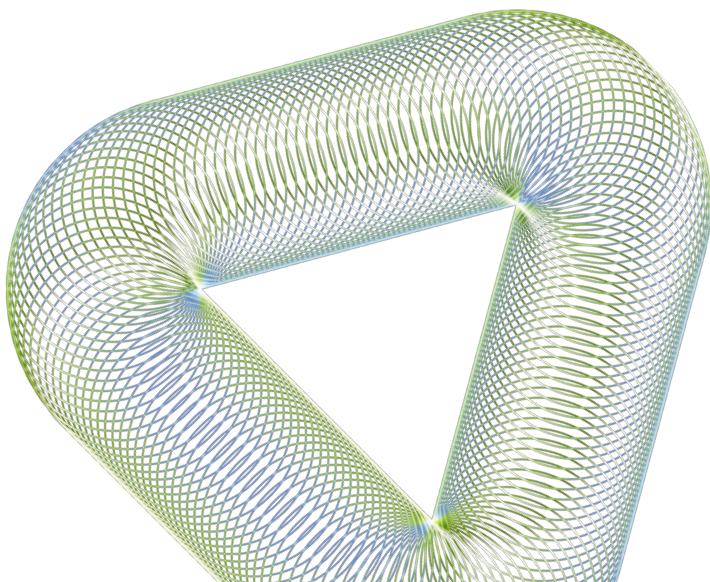
The fundamental idea of the independence of the economic, social, and natural systems supports a disparate point of view. By approaching business as a separate entity, researchers can more thoroughly analyse the fundamental workings of a (typically hypothetical) economic system while ignoring the ostensibly noneconomic forces ingrained in society and nature. As a result, while the independent principle underlying a disparate perspective permits understanding of a market system made up of quantifiable exchanges, it upholds a strict categorical distinction that excludes social and environmental phenomena that are not easily quantifiable from economic analyses.¹⁰

BNS Relations and the Intertwined Perspective

The intertwined view is based on the fundamental premise of interdependence, as opposed to the disparate view, which is founded on the idea of independence. Interdependence implies that each of the three systems is essential and supportive of the others. Furthermore, it indicates that each system depends on the others to ensure system integrity and that none of the systems can operate alone. The three-legged stool concept of sustainable development, which has had a remarkable broad reach, may best illustrate the idea of interdependence. Our opinion is that these widely held notions of sustainable development conceal the crucial dependencies in the interplay between industry, society, and the environment.^{10,31}

BNS Relations and the Embedded Perspective

History demonstrates that, contrary to what the intertwined view suggests, business, society, and nature are not mutually connected. Before the development of human civilization, nature existed and flourished for many millennia, and it is obvious that both society and the economy are totally dependent on nature. Thus, the B-S-N interface is understood to be more precisely represented by the relational principle of dependence, which also indicates a logical value ordering from which acceptable solutions to the numerous systemic issues before us may be better defined.^{26,27}



a brief overview

The evolution of Interconnection

	Disparate	Intertwined	Embedded
Approach	Atomistic	Systemic	Holarchical
Business sphere	Separable; largely self-contained and self regulating	Partially separable; relatively equal in stature to business and nature	Inseparable; a partial system contributing to societal welfare, within the biosphere
Society sphere	Separate and exogenous; aggregate of individual interests	Interfaces with business in the stakeholder complex	Includes all human systems and activity across levels of analysis
Nature sphere	Separate and exogenous	Interfaces with business such that business value and natural capital are mutually enhanced	Finite, all-encompassing life-sustaining system
Value domains	Economic	Unordered multiform: economic, social, and environmental	Ordered multiform: nature, society, business
Relational principle	Independence	Interdependence	Dependence

The Next Evolution of Sustainability

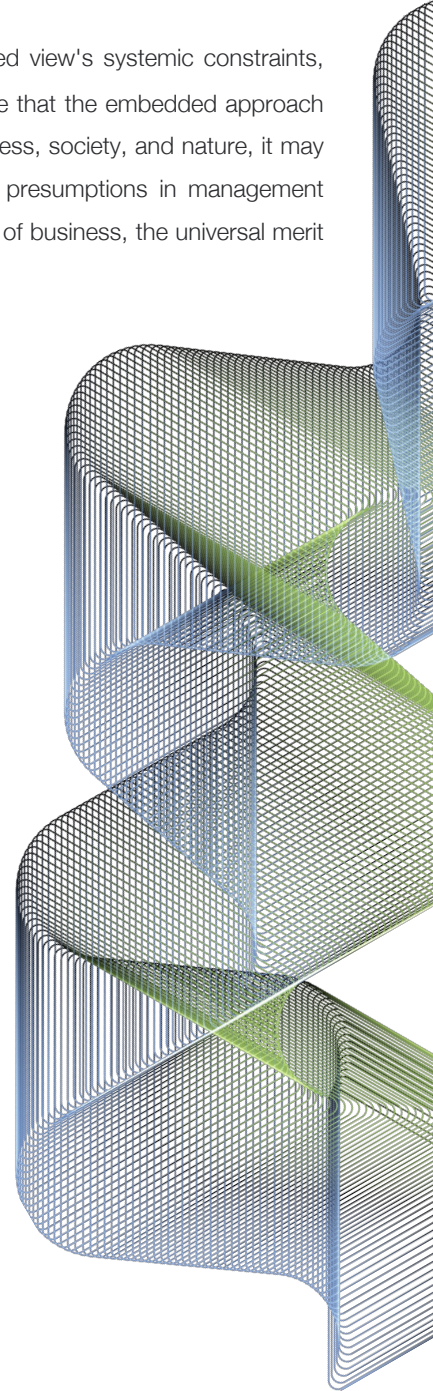
The Embedded view and its Implications

We have hinted at some pretty significant consequences of the holarchical embedded view's systemic constraints, existential dependency, and implied value ordering in the preceding pages. If we agree that the embedded approach most accurately represents the fundamental elements of the interaction between business, society, and nature, it may be necessary to re-evaluate a number of widely accepted principles and prevailing presumptions in management studies. For instance, an embedded view offers fresh insight into the fundamental goal of business, the universal merit of economic growth, and the measurements we use to gauge societal welfare.¹⁰

Embedment as a starting point

We believe that building an embedded case would represent a significant advancement, allowing us to remodel our problems and possibly find solutions that are more adapted, coherent and that address a broader set of inherently enlaced systems and elements. Enhancing societal and environmental "good" is, in reality, a more significant reward from an embedded perspective. An alternative strategy is proposed, one that defines corporate actions directly on their contribution to overall social wellbeing and the natural life-sustaining forces that support it, rather than on their ability to generate financial profit. Importantly, an embedded view offers a wider framework within which the business case can be assessed rather than invalidating it. The business case is really shown to be congruent with both the societal argument and the case for nature under a holarchical conception and the limiting condition of systemic dependency.¹⁰

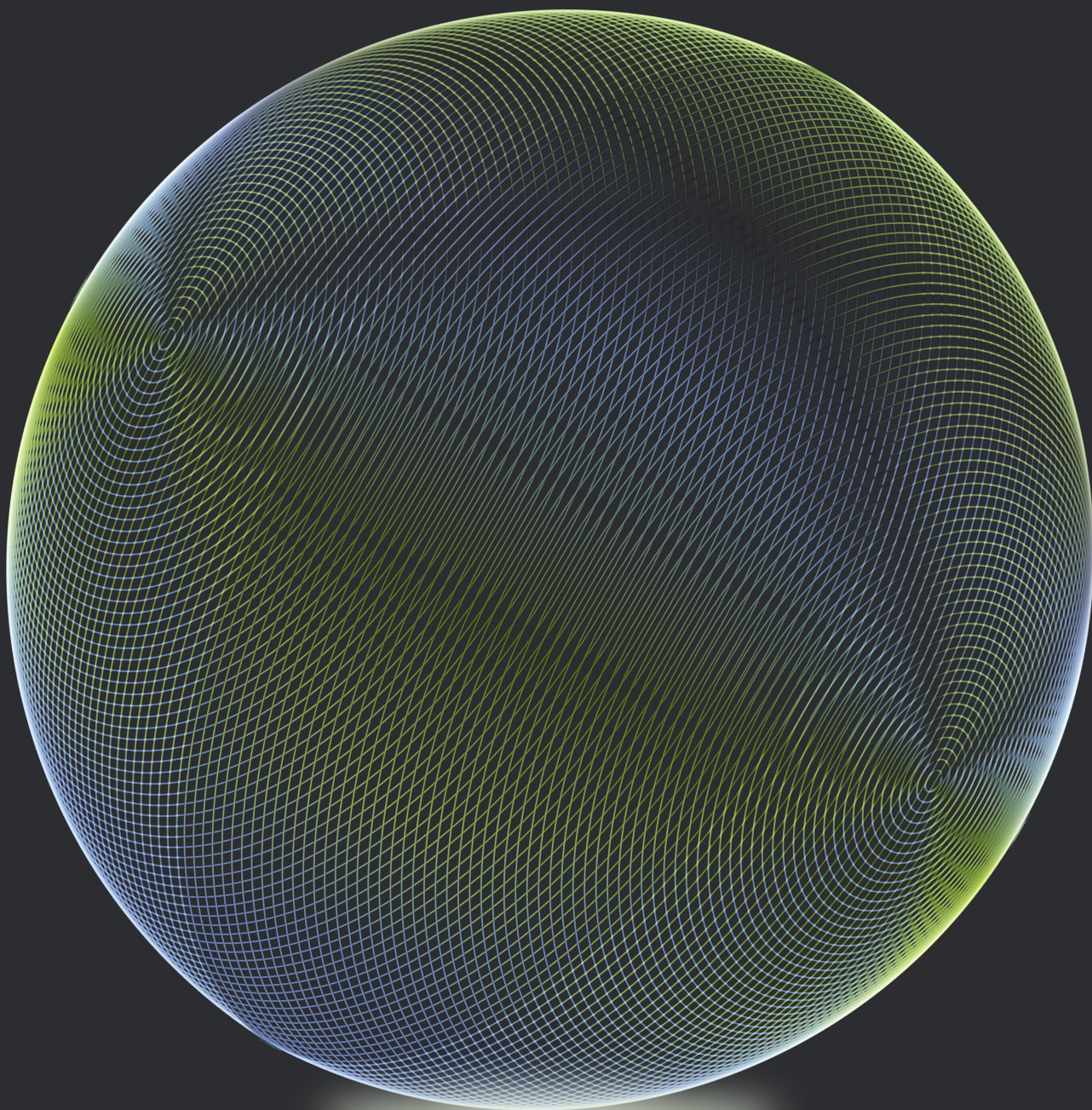
As all the predominant models used by practitioner, such as ESG, the triple-bottom line and its execution in modern CSR, are based on a Intertwined view, the development of actionable models based on the embedded perspective is still very novel and very demanding. Holarchical thinking in the context of sustainability will force us to reconsider what we deem to be "valuable" and will inherently add several layers of complexity, while some of them will not be quantifiable. We will need to reconsider what "economic growth" actually means, understand how businesses actually can generate value and ultimately how humanity as a whole can, alongside a variety of simple and complex life-forms, co-exist within the earth natural boundaries.



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