Introduction

The genesis of the concept of sustainable development (SD) holds significant importance, serving as the foundational framework for the UN's Sustainable Development Goals for 2030 (SDG2030) and the broader notion of Education for Sustainable Development (ESD). Understanding this genesis entails delving into the historical trajectory of the concept, particularly the pivotal role played by the United Nations in its evolution. Moreover, an exploration of the genesis reveals that several recurring themes in contemporary discourse, such as sustainability, the three pillars of sustainable development, capability, and the concept of the Anthropocene, can be traced back to this evolutionary process.

This exposition adopts an essay-like approach, weaving together a narrative that elucidates the emergence of sustainable development. It examines key events and intellectual currents that have shaped the concept over time. Central to this narrative is the interplay between the ideals of sustainability and development, where development, primarily understood as economic advancement, became linked to human progress following World War II. This tension has engendered diverse perspectives on sustainable development, reflecting differing interpretations and priorities.

It is important to note that this narrative provides a broad overview of the concept's development, refraining from delving deeply into specific subtopics such as biodiversity or climate change. Furthermore, it is essential to recognize that this narrative represents just one of many possible interpretations of the genesis of sustainable development.

The relationship between sustainability and development before the Brundtland Report

The prominence of the concept of Sustainable Development surged notably with the release of the Brundtland Report in 1987. Since then, it has served as a cornerstone of the United Nations' endeavors toward sustainability, transitioning from a focus on mere sustainability to the broader framework of sustainable development. This transition was crystallized in 2015 with the adoption of the UN's 17 Sustainable Development Goals for 2030, marking a pivotal moment in global efforts towards a more sustainable future.

While the terms "sustainable development" and "sustainability" are often used interchangeably, their historical trajectories reveal nuanced distinctions. Understanding these distinctions becomes pertinent in certain contexts, as it unveils the inherent tension between the notions of economic development and sustainability.

The concept of economic development gained prominence in the post-World War II era as a mechanism for fostering global equality. However, over time, its meaning became increasingly ambiguous and subject to contestation. Concurrently, the notion of sustainability emerged as a multifaceted concept, rooted in various ideologies, all contributing to the modern understanding of sustainability. This crystallization was exemplified in the 1972 publication of the Club of Rome's report, 'Limits to Growth,' which marked a seminal moment in the discourse on sustainability.

In the same year as the publication of 'Limits to Growth,' the inaugural international environmental conference convened under UN auspices in Stockholm. Here, the tension between the ideals of sustainability and economic development took center stage, setting the tone for subsequent dialogues on sustainable development.

The ambiguous concept of sustainability and the longing for a new worldview.

The international political landscape of 1972 marked a pivotal moment in the recognition of sustainability as a concept worthy of global attention. However, as highlighted by Kidd's influential study in 1992, the modern notion of sustainability post-World War II emerged from a tapestry of diverse ideas spanning the 1950s, 1960s, and early 1970s.

Kidd (1992) delineates six somewhat contrasting meanings of the concept of sustainability, contingent upon different focal points: 1) purely quantitative considerations of resource scarcity, which emerged after World War II and was a central theme in the 1950s, 2) more qualitative considerations of "the environment" (the environment itself emerges as an increasingly comprehensive concept in the youth counterculture of the 1960s), 3) concerns related to the entire biosphere and the state of the planet (here, a poignant example would be that of a "Spaceship Earth" metaphor, which became particularly well-known in peace researcher and economist Kenneth Boulding's 1966 version), 4) criticism of irresponsible technological development, 5) no-growth/slow growth criticism of economic development

understood as economic growth (e.g. the Club of Rome report "Limits to Growth", as well as many other critiques of growth economics), and finally 6) an explicit linking of the concepts of "ecology" and "development" in a form of so-called "ecological development" (Kidd, 1992:5-12).

The diverse origins of these sustainability perspectives underscored the complexity of the concept throughout the 1970s, reflecting a multifaceted understanding shaped by various intellectual currents and societal concerns. Through the lens of history, it becomes evident that sustainability is not a monolithic concept but rather a dynamic and evolving discourse that continues to inform global efforts toward a more sustainable future.

In many respects, sustainability emerged as a central theme in the endeavors to redefine humanity's relationship with the natural world and the broader implications of such a reevaluation for worldviews and human society at large. Scholars began to observe the emergence of a new worldview, termed the "New Environmental Paradigm" (NEP), which represented a departure from the prevailing "Dominant Social Paradigm" (DSP).

The NEP distinguished itself from the DSP by emphasizing several key principles, including the recognition of limits to growth, the endorsement of "equilibrium economics," the acknowledgment of the "balance of nature," and the attribution of intrinsic value to nature beyond mere human utility (Dunlap et al., 1978). This paradigm shift signaled a fundamental reorientation towards viewing nature not solely as a resource to be exploited for human ends but as a system deserving of respect and preservation in its own right.

Moreover, during the 1970s, these reflections on sustainability became increasingly intertwined with novel conceptions of politics and economics that transcended the conventional capitalist-communist dichotomy of the era. This evolving discourse underscored the inadequacy of existing ideological frameworks to address the complex environmental challenges facing humanity, paving the way for the exploration of alternative models and approaches that are better aligned with the imperatives of sustainability.

Furthermore, the insights of economists like Kenneth Boulding and Herman Daly regarding peace economics and "environmental economics" were assimilated into these emerging worldviews, often in tandem with a reassessment of political paradigms. Boulding's essay,

The Economics of the Coming Spaceship Earth (1966), offers a poignant illustration of the critique against growth-oriented economic ideologies. Boulding delineates between two contrasting economic paradigms, namely 'cowboy economics' and 'spaceship economics,' which symbolize perspectives of the economy as either an open or closed system. While a cowboy economy, reminiscent of the lawless frontier, perceives material resources as inexhaustible and readily available elsewhere once depleted, a "spaceship economy" acknowledges the finite nature of resources and underscores the imperative of resource recycling to maintain equilibrium within the system, epitomized by "spaceship earth." Boulding's text extends beyond mere economic analysis; drawing inspiration from Teilhard de Chardin, he introduces the notion of the 'noosphere,' rooted in the Greek concept of "nous" or "spirit," which anticipates themes later echoed in discussions surrounding the Anthropocene. This holistic perspective highlights the interconnectedness of ecological, social, and existential considerations within the broader discourse on sustainability.

Also, within the realm of art, certain artists began to forge connections between art, politics, and economics in innovative and environmentally conscious ways. A notable example is the German artist Joseph Beuys, whose influence extended beyond the confines of the art world to shape the political landscape, particularly with his pivotal role in the establishment of the Green Party in West Germany in 1980. Beuys drew inspiration from a diverse array of sources, including Goethe, Schiller, Rudolf Steiner, Japanese esoteric Buddhism, shamanism, and mythology, synthesizing these influences into a unique artistic vision. His work aimed to cultivate an aesthetic-existential expansion of human perception and foster a dynamic relationship between humanity and the natural world. Central to Beuys' philosophy was the concept of society as a social artwork, wherein every individual was regarded as an "artist." This radical reimagining of societal dynamics profoundly influenced his understanding of the interplay between existential meaning, pedagogy, politics, economics, nature, and the spiritual realm.

Through his artistic practice, Beuys sought to challenge conventional boundaries and engender a deeper awareness of humanity's interconnectedness with the broader ecosystem, advocating for a more harmonious and sustainable coexistence with nature. Beuys explored these themes through a multitude of artistic expressions, ranging from large-scale installations that actively engaged viewers in "direct democratic" processes to simultaneous dialogues with bankers and economists, where he cultivated alternative

perspectives on the fundamental concepts of work and money (Beuys, 1984/2010). In Denmark, the perhaps slightly more prosaic but nonetheless visionary book *Oprør fra Midten* ['Rebellion from the Center'] was published in 1978, which, among numerous other things, sought to identify novel means of ruminating about the environment and ecology.

The book co-authored by Professor Niels I. Meyer from the Danish Technical University, along with politician K. Helveg Petersen and author Villy Sørensen, garnered significant attention in Denmark, selling 122,000 copies and being translated into five languages. The authors advocated for a humane equilibrium society, the implementation of a general basic income, and the adoption of an "ecological economy." Referred to as the "rebels from the [political] center," the authors faced criticism from both the right and left ends of the political spectrum. They lambasted liberalism and socialist political-economic ideologies alike, accusing them of fostering a utilitarian and instrumental relationship with nature, despite their differing foundational assumptions. Additionally, they criticized the pervasive emphasis on economic growth espoused by both the political left and right.

Despite the initial fervor surrounding the book, its messages faded in significance towards the end of the century. This decline can be attributed, in part, to a broader societal shift in the 1980s towards a more economically oriented discourse. This shift, observed in Denmark and globally, reflects a larger trend in economic thinking during the 1980s and 1990s, which also influenced the evolution of the concept of sustainable development.

Before 1980, discussions concerning humanity's relationship with nature and the environment often centered around sustainability, which contributed to the emergence of new worldviews. However, as Kidd argued, the term "sustainability" remained ambiguous and lacked a clear definition. Some scholars even questioned its coherence, citing its complex and contradictory nature. Despite this ambiguity, there was a consensus among researchers that sustainability encompassed a critique of traditional notions of economic development.

Indeed, the literature on sustainability reflects this complexity, spanning a broad spectrum and occasionally causing confusion. Nevertheless, amidst this diversity, a common thread emerges: a critical stance towards the concept of "economic development," whether through environmental considerations or the pursuit of human well-being beyond economic

metrics. This critical perspective laid the groundwork for the integration of environmental, social, and economic dimensions within the framework of Sustainable Development, a concept that gained prominence following the 1992 UN Rio Conference (Purvis et al., 2019). Thus, while the roots of the sustainability concept lie in a critique of economic development, the exact nature of this critique warrants further examination.

Economic development: economic growth – human welfare?

The concept of economic development finds its roots in the post-World War II era, characterized by a fervent desire for a new world order. Following the war, while European colonial powers sought to maintain their colonial holdings, both the United States and the Soviet Union opposed this stance. Notably, among the 51 countries instrumental in founding the United Nations in 1945, 27 were former colonies. The establishment of the UN stemmed from a profound aspiration to forge a novel framework for international politics, one that departed from the prevailing paradigm of state self-interest dominating international relations. In essence, the aim was to construct an "idealistic" alternative to the "realist" view of international politics, underpinned by shared global values and a network of international agreements and organizations. This idealistic vision envisioned a world order focused on fostering mutually beneficial and egalitarian interactions among nations while upholding human rights.

Central to this vision was the notion of economic development, which became intricately linked with the concept of "human welfare." However, the UN swiftly found itself navigating the complex terrain between capitalist and communist social systems, and later, between the Global North and the Global South as decolonization gained momentum. Consequently, the UN evolved into an organization tasked with reconciling idealistic aspirations for a better world with the pragmatic realities of global politics—a dynamic worth considering when contemplating the evolution of the sustainable development concept.

This idealistic pursuit of a new world order also resonated within American foreign policy during this period. In his 1949 inaugural address, US President Truman articulated four points guiding US foreign policy, including a commitment to implementing a "bold new program" aimed at leveraging American scientific and industrial advancements to foster the growth and development of underdeveloped regions (Truman, 1949).

The program known as Point 4, distinct from the Marshall Aid initiative announced the prior year, diverged in its primary focus. Instead of primarily bolstering Europe's economy and fostering economic growth, Point 4 aimed at the modernization and advancement of notably "underdeveloped" regions across the globe. Rooted in a modernist conception of linear progression, these regions were perceived as "not yet" in terms of their development compared to industrialized nations. The remedy to this perceived lag in development lay in trade and the infusion of various forms of American expertise. The overarching objective was to alleviate hunger, enhance healthcare, and establish "modern economies" in these targeted regions. Truman underscored the distinction between the exploitative colonial practices of former colonial powers and the ethos of the new program. The Point 4 initiative aimed for all parties involved to benefit from a "fair and democratic" exchange. Thus, Truman's presentation of the concept of economic development encapsulated not only the notion of economic "modernization" (wherein the Marshall Plan implicitly implied a notion of economic growth) but also the belief that such modernization would engender greater human well-being and prosperity on a global scale.

Over the ensuing decades, it became evident that the situation was more nuanced than initially perceived. Firstly, during the 1950s and 1960s, economic development, often equated with human prosperity, was frequently conflated with economic growth. Economic growth was viewed as a prerequisite for achieving human "well-being," with the means being conflated with the ends. Secondly, elucidating a clear understanding of the emergent world order and the aspiration for global equality proved challenging. Until 1989, two competing visions of modernization and economic development existed: the "capitalist Western Bloc" and the "communist Eastern Bloc." These contrasting perspectives underscored the divergent interpretations of how to achieve progress and prosperity on a global scale. Thirdly, the notion of promoting global economic development through the transfer of knowledge and equitable trade, as advocated by modernization theories, faced challenges from the emergence of dependency theories. These theories, which gained traction in the 1960s, particularly in Latin America but also in the analysis of African countries throughout the 1970s, contested the efficacy of modernization theories in practice. Instead, they posited that the implementation of such theories could exacerbate dependency and economic underdevelopment.

Dependency theories highlighted structural issues underlying global trade dynamics,

arguing that trade between the industrialized and the "developing world" inherently favored the former. Specifically, they contended that the prices of raw materials, exported by non-industrialized nations, failed to keep pace with the rising prices of manufactured goods, perpetuating an unequal exchange. This unequal trade relationship contributed to the uneven development between industrialized and non-industrialized nations (Sørensen, 2020). In this brief overview, we refrain from delving into the intricacies of these theories and subsequent developments. However, it is crucial to acknowledge that both modernization and dependency theories recognize global inequality as a pressing issue. Furthermore, economic development was not solely discussed in the context of environmental sustainability but also in pursuit of greater equality among nations and regions, ultimately aiming to enhance human "welfare." Nevertheless, as will be explored, the divergent concepts of economic development would not only clash with one another but also conflict with the principles of sustainability, particularly regarding environmental protection. This tension came to the forefront of the political agenda during the UN Conference on Sustainability in Stockholm in 1972.

The first beginnings of the concept of sustainable development in the 70s and 80s

The Stockholm Conference, initiated by Sweden, marked the first major gathering under the auspices of the UN to address mounting environmental concerns. Despite political tensions of the time—illustrated by the absence of Warsaw Pact countries, including East Germany—the conference held significant importance on several fronts.

Firstly, alongside politicians, two additional groups participated in the conference with a shared objective of ensuring that the conference did not "end in nothing." A smaller contingent of concerned scientists and a larger assembly of diverse grassroots organizations convened a "Peoples Forum" in conjunction with the conference, thereby establishing a precedent for UN gatherings to incorporate both political and NGO tracks. Secondly, the conference underscored a fundamental tension between the so-called IC countries (mainly representing the "Industrialized countries," predominantly from the "first world" with scant representation from the "second world") and the DC countries (primarily hailing from the "Developing countries," largely from the "third world") regarding the nexus between sustainable environmental protection and economic development. It is noteworthy that the classification into 1st, 2nd, and 3rd worlds originated from early UN discussions in 1946,

although the terminology, including terms like "developed" and "developing" countries, and "the global south" and "the global north," has since been subject to debate. While these terms are employed here in their historical contexts, no stance is taken on their general applicability.

In essence, the divergence between the priorities of 'first world' nations, primarily focused on forging international agreements to address global environmental challenges, and the concerns of 'third world' countries, apprehensive that expanded environmental protection measures under the guise of sustainability would perpetuate structural global inequality vis-à-vis economic development, emerged as a pivotal theme. This dichotomy would subsequently underpin the UN's continued endeavors in the realm of sustainable development. The outcomes of the Stockholm Conference included the adoption of a joint declaration, which catapulted environmental concerns onto the global agenda, and the subsequent establishment, in December 1972 by the UN General Assembly, of a novel UN program tasked with coordinating environmental protection efforts and aiding developing nations in formulating "environmentally sound policies and practices." This initiative materialized as the United Nations Environment Program (UNEP). Notably, as a concession to the "Global South," the headquarters of UNEP were sited in Nairobi, despite vigorous advocacy by "developed" countries for Geneva, where several other UN agencies were headquartered. UNEP emerged as the pioneering UN entity dedicated to the pursuit of sustainable development and has wielded substantial influence across multiple domains, including spearheading efforts to advance the circular economy and collaborating with UNESCO to advance the concept of education for sustainability and environmental education (EE). Nevertheless, the fluctuating significance and impact of UNEP over time, owing to multifaceted factors beyond the purview of this discourse, merit acknowledgment. Noteworthy in our context is UNEP's proposal, during 1981-82, for the establishment of an autonomous commission comprised of "eminent persons" tasked with formulating and propagating a vision for post-2000 global environmental policy. This initiative laid the groundwork for the formation of the World Commission on Environment and Development (WCED), colloquially known as the Brundtland Commission, in honor of its chairperson, former Norwegian Prime Minister Gro Harlem Brundtland.

The Brundtland Report in 1987 and the first Global Summit in Rio 1992

In 1987, the WCED published the report "Our Common Future," commonly known as the Brundtland Report, which had a major impact on the global spread of the idea of sustainable development. This report introduced the concept of sustainable development in the following manner:

"Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their needs."

The Brundtland Report, though widely recognized for popularizing the concept of sustainable development, was not the inaugural publication to introduce this paradigm. As early as 1980, the UNEP released a report that laid the groundwork for the notion of sustainable development. Yet, the genesis of this concept predates even this milestone. In 1978, UNEP was already engaged in discussions surrounding the concept of "ecological development." This notion, identified by Kidd as one of the six paradigms underpinning the concept of sustainability, was initially articulated by Ignacy Sachs in 1977. Sachs delineated "ecological development" as "an approach to development that aims to harmonize social and economic goals with ecologically sound management in a spirit of solidarity with future generations" (Kidd: 12). Notably, the definition of ecological development not only underscores the importance of inter-generational relations, a concept later central to the Brundtland Report's articulation of sustainable development, but also serves as a precursor to the notion of the three pillars of sustainable development. These pillars, emphasizing environmental, social, and economic sustainability, gained significant traction in the discourse following the Rio Conference in 1992. Furthermore, while the Brundtland Commission's work garnered greater visibility compared to UNEP's efforts, its conception of sustainable development diverged from that of UNEP in several respects. Primarily, the Brundtland Commission sought to embed sustainability within a framework that prioritized the sustainability of inter-generational relations by addressing human needs fulfillment. This framework, as articulated in the definition above, underscores the imperative of "meeting basic needs," encompassing essentials such as food, water, shelter, and clothing, necessary for maintaining a certain standard of living. Notably, the notion of basic needs was first introduced by the International Labor Organization (ILO) in 1976.

Secondly, the Brundtland Report marked a definitive departure from the prevalent trend of technological skepticism and the notion of limits to growth, sentiments pervasive in much of

the sustainability discourse during the 1960s and 1970s. These ideas also featured prominently in UNEP's reports on ecological development and sustainable development, which primarily focused on nature preservation. In the Brundtland Report, environmental limitations were contextualized relative to technological advancements, particularly within the framework of "environmentally friendly technology," which, in turn, was interlinked with sustainable economic advancement. This perspective enabled the Brundtland Report to outline a vision demonstrating, at least in principle, how the two agendas that had emerged from the Stockholm Conference could be harmonized without negating economic growth. This approach considered both environmental concerns and global (in)equality issues. Additionally, the Brundtland Report advocated for a new conference to explore the nexus between environment and development. Two years later, in December 1989, the United Nations Assembly endorsed this proposition, a decision catalyzed by the fall of the Berlin Wall in November 1989 and buoyed by the emergent concept of sustainable development.

Follow-up and institutionalization of sustainable development – the Rio Conference 1992

This led to the inaugural Earth Summit, convened in Rio de Janeiro in 1992, marking two decades since the Stockholm Conference and occurring in the year after the dissolution of the USSR and the end of the so-called "second world." Mirroring the structure of the Stockholm Conference, the Rio Summit comprised an official conference alongside a "global public forum," wherein NGOs and grassroots organizations were represented. This landmark event was subsequently succeeded by two additional Earth Summits centered on sustainable development: Johannesburg in 2002 and Rio in 2012, colloquially termed Rio+10 and Rio+20, respectively. The 1992 conference assumed pivotal significance in fostering a new paradigm of "global governance" and institutionalizing the concept of sustainable development. Resulting from the Rio Conference were the adoption of the Rio Declaration, Agenda 21, and several binding conventions, notably the "Convention on Biological Diversity" and the "Climate Convention," aimed at curbing greenhouse gas emissions. Subsequent summits and conventions, including climate summits such as the Kyoto Agreement (1997), the Copenhagen Climate Summit (2009), and the Paris Agreement (2015), have expanded upon these foundational frameworks, underscoring the multifaceted nature of sustainable development beyond climate considerations.

The Rio Declaration introduced fundamental principles for sustainable development, including the concept of "the polluter pays." Complementing this, Agenda 21 emerged as a comprehensive, albeit non-binding, action plan delineating avenues for diverse stakeholders to engage in advancing sustainable development. Fostering grassroots participation, Agenda 21 targeted involvement from various sectors, encompassing local governments, NGOs, businesses, organizations, and indigenous communities, thus serving as a bridge between business and civil society. Notably, Agenda 21 laid the groundwork for the UN SDGs, colloquially known as SDG2030, which evolved from Agenda for Sustainable Development 2030, or Agenda2030. Post-Rio, in December 2002, the establishment of the Commission on Sustainable Development (CSD) ensued to oversee the Rio Summit's resolutions. The CSD played a pivotal role in organizing Rio+10 in Johannesburg in 2002 and served as the UN's focal entity for advancing sustainable development, particularly Agenda 21, until the Rio+20 summit in 2012. Subsequently, in 2013, the High-level Political Forum on Sustainable Development (HLPF) superseded the CSD, assuming a prominent role in steering global sustainable development initiatives.

Also, the field of education is explicitly discussed in Agenda 21. Here, what later became known as ESD, Education for Sustainable Development (emphasizing Sustainable Development, rather than "only" the Environment in Education) was introduced. ESD is Agenda 21 presented from a normative policy perspective as aiming at promoting Sustainable Development through also Education by 'raising awareness,' and not least through 'training' (Agenda 21, Chapter 36). It is important to note that the idea of ESD in Agenda 21 was formulated from a general policy perspective outside of education, even though UNESCO after 1992 became the UN organ responsible for developing ESD. We will later briefly return to some of the criticism this has led to from inside the field of education.

Economic – and Human Development

Neoliberal perspectives on economic development and sustainability after Brundtland
In essence, both the Brundtland Report and the Rio Conference elevated the concept of sustainable development to the forefront of international political discourse. However, the subsequent period witnessed significant shifts in prevailing global political-economic ideologies, leading to new fault lines regarding sustainable development. While this article does not delve deeper into these transformations, it is noteworthy that the 1990s witnessed

a departure from the sustainability ideals of the 1960s and 1970s, particularly in terms of critiquing economic growth.

The Brundtland Report notably departed from the notion of limits to economic growth, advocating instead for "sustainable economic growth." This emphasis on sustainable economic growth persisted throughout the 1990s, reflecting a broader trend towards neoliberal economic perspectives. This shift entailed a move away from critiques of structural inequalities, as articulated in dependency theories of economic development during the 1950s and 1960s. Instead, there emerged approaches in the 1980s and 1990s that emphasized the liberation of individual choices within a deregulated free market, positing that such liberalization would foster long-term economic growth conducive to human welfare, including social welfare.

This neoliberal self-understanding marked a departure from planned economies and state interventionism, advocating instead for deregulation, privatization, and efficiency enhancements within the public sector. Consequently, perceptions of economic development evolved, with development aid increasingly falling under the purview of international financial institutions rather than the UN. However, development aid from entities such as the World Bank or the International Monetary Fund was often followed by demands regarding recipient countries' adherence to "structural adjustment programs" (SAPs), which frequently entailed deregulation and privatization measures. Thus, the discourse surrounding economic development witnessed a rekindling of debates akin to those between modernization and dependency theories (see, for example, Babb, 2005).

The evolution of economic and environmental ideologies during this period significantly impacted discussions surrounding global environmental resources, commonly referred to as "global commons," such as water, land, and forests. Beginning in the late 1960s, these discussions evolved into debates centered around two main principles: the Common Heritage Principle (CHP) and the Polluter Pays Principle (PPP). The CHP emphasized the concept of a "common heritage," advocating for the collective management and ownership of environmental resources. Conversely, the PPP asserted that those responsible for pollution should bear the associated costs.

In alignment with neoliberal economic agendas, the PPP gained prominence, particularly

due to its compatibility with market mechanisms and free trade. Originating from the OECD in the early 1970s, the PPP aimed to minimize interference from environmental regulations that could impede economic growth and market dynamics. This principle found favor among proponents of neoliberalism throughout the 1980s and 1990s, aligning with the notion that sustainable economic growth was both feasible and desirable. Under this framework, recognizing and internalizing environmental costs into market prices became the preferred method for regulating the relationship between the environment and the economy.

However, the neoliberal approach to sustainable development, characterized by the PPP, was not without its critiques. Throughout the 1990s, several challenges arose that called into question the effectiveness and fairness of this approach.

Alternatives: Commons and ecological economics; the capability approach
While the neoliberal understanding advocating for free trade, privatization, deregulation, and structural transformation programs as pathways to both maximum prosperity and sustainable economic growth prevailed during the 1990s, alternative perspectives emerged, offering different insights into the relationship between the economy, sustainability, and development. One significant divergence was the continued exploration of the concept of the commons and the risks associated with subjecting shared environmental resources, such as water and land, to market forces and privatization.

American economist Elinor Ostrom led efforts to investigate the governance of a shared "societal legacy" throughout the 1990s and 2000s. Ostrom's research focused on developing economic and social-ecological theories that emphasized democratic governance within a "common pool of resources" framework. This approach challenged the traditional notion of the 'Tragedy of the Commons,' as articulated by ecologist Garrett Hardin, who suggested that shared resources would inevitably be depleted due to individual self-interest.

Ostrom's seminal work illustrated that effective governance mechanisms could mitigate the tragedy of the commons by establishing clear rules and structures for resource management. Her research showcased historical and contemporary examples where communities successfully managed common resources sustainably. Notably, Ostrom's insights countered the prevailing neoliberal narrative by emphasizing the importance of collective action and democratic governance in achieving sustainable resource

management. For her pioneering contributions, Ostrom was awarded the Nobel Prize in Economics in 2009, becoming the first female economist to receive this prestigious honor. Her work laid the groundwork for the development of models in "ecological economics" and "commons", underscoring the significance of community-based approaches to sustainable development.

In the 1980s and 1990s, Indian economist and philosopher Amartya Sen introduced a novel approach to bridging the realms of economics and ethics, centered on the concept of "capabilities." The capability approach posits that individual freedom encompasses more than just the absence of external constraints; it also entails the genuine opportunity to fulfill one's desires and pursue one's aspirations. This requires not only possessing the necessary abilities and competencies but also having access to the resources required to actualize one's choices. Sen refers to this amalgamation of possibilities as capabilities.

Sen's emphasis on individual human freedom incorporates a liberal perspective, acknowledging the diversity of human desires and aspirations. Unlike earlier development theories, which often delineated a universal set of "basic needs," Sen's capability approach diverges by recognizing the subjective nature of human preferences. However, this departure from a one-size-fits-all approach does not signify an endorsement of unfettered market mechanisms or deregulation. Instead, the capability approach underscores the importance of equality and resource distribution in fostering a just society. According to Sen, genuine equality extends beyond the notion of fulfilling abstract "basic needs" uniformly across society. Rather, it involves ensuring equal capabilities, wherein individuals have real opportunities to pursue their aspirations. These opportunities, termed capabilities, are contingent on both internal factors, such as personal abilities, and external conditions, including access to resources. In essence, Sen's framework underscores the multifaceted nature of equality and freedom, emphasizing the importance of enabling individuals to lead lives that align with their inherent capabilities and aspirations.

Sen, alongside the American philosopher Martha Nussbaum, has significantly later expanded the scope of the capability approach, leading to its adoption across various disciplines. This theoretical framework has transcended its origins within the social sciences and has permeated diverse fields including the humanities, education, feminist studies, and peace and conflict research. Moreover, Sen has contributed to a substantial critique of

fundamental tenets of neoliberal economic ideology within the social sciences, further enhancing the breadth and depth of the capability approach's influence.

From capability to HDI as an alternative to GDP as a measure of human development
The capability approach, championed by Sen and Haq, exerted a profound influence on the UNDP, reshaping its methodology for assessing the developmental trajectories of individual nations. Rejecting the narrow view that equated human well-being solely with economic progress, Sen and Haq advocated for a comprehensive framework that embraced diverse dimensions of human welfare. This vision crystallized in the formulation of the Human Development Index (HDI) in 1990, a pioneering metric that amalgamated indicators such as life expectancy, educational attainment, and economic prosperity to offer a holistic portrayal of human flourishing within distinct countries. While Sen initially harbored reservations regarding the quantification of human development, he ultimately conceded to the necessity of such metrics, recognizing their superiority over conventional economic yardsticks like gross domestic product (GDP).

Consequently, the HDI emerged as a pivotal instrument for gauging global human development, catalyzing extensive longitudinal analyses, and inspiring the creation of analogous indices targeting specific domains such as gender equality and poverty alleviation. Crucially, the advent of the HDI heralded a paradigmatic shift in development discourse, elevating human development as the paramount objective for the UNDP and wider development endeavors. Furthermore, the adoption of rigorous mathematical models and salient indicators associated with the HDI aimed to enhance transparency and elucidate the transition away from traditional economic-centric metrics toward a more nuanced understanding of development.

From Economic Development to Human Development: The Millennium Agenda and the Millennium Development Goals
In the year 2000, the United Nations convened a pivotal summit during which the "Millennium Declaration" was endorsed. This declaration, shaped by inputs from various stakeholders including the Organization for Economic Co-operation and Development (OECD), which had by then formulated its sustainability objectives, served as the cornerstone for the establishment of eight goals. These objectives, subsequently recognized as the Millennium Development Goals (MDGs), and occasionally referred to as the Human

Development Goals (HDG), constituted a comprehensive framework aimed at achieving the following objectives: 1) eradication of radical poverty and hunger, 2) education, 3) gender equality and women's rights, 4) reduction of child mortality, 5) reducing maternal mortality, 6) combating diseases, 7) Sustainable Development (focusing on access to clean water and improved living conditions for people living in slums), and 8) Global Partnership for Development.

These goals represented a departure from previous development initiatives by delineating specific targets for each goal, thereby establishing clear benchmarks for achievement within defined timeframes. As the UNDP assumed responsibility for monitoring these goals, it could assess the progress made towards their realization. Despite facing criticism on various fronts, the MDGs have generally been regarded as a notable success story for the UN, evident in the quantifiable changes observed following their expiration in 2015.

Against this backdrop, several key observations merit attention. Firstly, the MDGs primarily addressed developmental challenges within developing countries, contrasting with the later formulation of the SDGs, which encompass global concerns. Secondly, while the MDGs exhibited a limited focus on environmental considerations, the SDGs reflect an enhanced emphasis on sustainability. Thirdly, the SDGs inherit certain principles from the MDGs, notably the recognition of the interconnectedness of individual goals and the imperative of establishing measurable targets to ensure accountability. Lastly, the MDGs omitted or marginalized several themes outlined in the original Millennium Declaration, including endeavors toward democracy, human rights, and peace, all of which bear significance in the broader context of human development.

Concerning the final point, Amartya Sen, in a lecture delivered in Delhi in 2012, emphasized the significance of the Millennium Declaration over the MDGs, attributing greater importance to the former due to its broader conception of human development. While Sen acknowledged the merit of the MDGs, he cautioned against the oversimplification inherent in their formulation, which aimed at facilitating measurability. He cautioned against prioritizing operational efficiency to the extent that fundamental questions, particularly those about value orientation, are overlooked. Sen's stance, underscored by his support for the MDGs and his previous contributions to the development of the HDI, suggests a nuanced perspective that advocates for a balance between practical efficacy and substantive

considerations in the pursuit of human development, especially concerning cultural and educational dimensions.

The new millennium – some takeaways for sustainable development

Some key events in the 00s, which influenced the idea of sustainable development.
At the turn of the millennium, several developments suggested that sustainable development could emerge as a globally unifying agenda. The adoption of the MDGs provided a framework for addressing key global challenges, while the UN's decision in 1998 to designate 2001 as the year of "dialogue among civilizations" responded to Samuel Huntington's thesis on the clash of civilizations. This initiative aimed to foster greater international understanding and cooperation amidst cultural diversity. Additionally, anticipation surrounded the candidacy of Al Gore, then Vice President under Bill Clinton, for the Democratic presidential nomination in 2000. Gore's prior involvement in environmental issues, notably his participation in the Rio Conference of 1992, fueled hopes for a renewed focus on sustainability and environmental stewardship.

The prospects for enhanced international cooperation on sustainable development received a further boost with the agreement reached at the UN General Assembly in 2000 to convene a new "Earth Summit" in Johannesburg in 2002. Officially termed the "World Summit on Sustainable Development 2002" (WSSD), this conference marked the first instance of "Sustainable Development" being included in its title. Given its timing, a decade after the Rio Conference, the event was also referred to as Rio+10. The WSSD aimed to forge partnerships for sustainable development, building on the principles outlined in Agenda 21 from 1992 and integrating them with the poverty eradication goals articulated in the MDGs. While the final declaration of the Johannesburg summitt affirmed the linkage between these agendas, challenges arose in translating this commitment into practical action.

Initially, there appeared to be promise on the horizon. By the spring of 2001, discussions surrounding partnerships evolved into a more concrete proposal for the 2002 summit to yield an intergovernmental agreement known as the "Global Deal." This envisioned a collaborative effort between wealthy and impoverished nations, aiming to partly finance the sustainable development agreements established in Rio in 1992 (and subsequent conferences) and partly to secure resources for implementing the MDGs. Denmark, under

the leadership of Svend Auken, the Minister for the Environment at the time, played a pivotal role in advocating for this initiative during the preparatory negotiations for Rio+10. Denmark's significance was further underscored as it was slated to assume the presidency of the EU in July 2002, thereby shaping the EU Council of Ministers' agenda during Rio+10. South Africa, the host nation, also embraced the concept, garnering increased interest throughout the summer of 2001, albeit met with some skepticism from nations like Russia and the USA.

However, the political landscape shifted following Al Gore's defeat in the 2000 presidential election and the subsequent inauguration of Republican George W. Bush. The trajectory took a drastic turn following the terrorist attacks on the World Trade Center on September 11, 2001, prompting the United States to declare a war on terror and intervene in Afghanistan to combat Al-Qaeda. By the spring of 2002, Bush's infamous declaration regarding Iran, Iraq, and North Korea as the "axis of evil" further reshaped priorities. Consequently, the focus veered away from Agenda 21 and the MDGs in the ensuing years, pivoting towards efforts to secure peace, rooted in a heightened sense of security.

Rio+10 in Johannesburg 2002 – The idea of Type 2 partnerships
In the autumn of 2001 and the spring of 2002, the USA made it clear they weren't interested in a comprehensive Global Deal for Rio+10, leading the concept to collapse in the form of a large-scale "deal". This prompted discussions on the next steps, and during the spring 2002 pre-conference meetings, an idea emerged: distinguishing between two types of partnerships, Type 1 and Type 2 partnerships. Type 1 partnerships were traditional state-centric agreements in the form of mutually binding agreements; Type 2 partnerships focused on voluntary arrangements to ensure broader involvement of non-state actors. These arrangements aimed at collaborations on sustainable development among civil society, businesses, and public authorities not only at the state level but also regionally and locally. The rationale was to ensure both legitimacy and practical implementation of sustainable development.

Despite widespread interest in Type 2 partnerships, including from the Bush administration, this didn't deter the US from withdrawing from the conference. This process raised concerns as early as 2002 that Type 2 agreements might allow states to evade responsibilities associated with traditional Type 1 agreements. Therefore, it was emphasized

that Type 2 agreements should complement rather than substitute Type 1 agreements (Type 2 Outcomes-Voluntary Partnerships, 2002). At the conference, several hundred Type 2 partnerships were established. However, doubts persisted regarding whether they would be more effective than traditional partnerships in achieving objectives such as implementing the sustainable development agenda locally, promoting social learning, and enhancing democratic legitimacy (Andonova, L. B. et al., 2003).

In essence, Rio+10 treated Agenda 21 and MDGs as interconnected elements of the same agenda, addressing the lack of opportunities for Type 1 partnerships by prioritizing Type 2 partnerships. However, these partnerships faced implementation challenges, leading Rio+10 to be a disappointment for many participants (Dodds et al., 2012: 93-122).

Agenda 21 Cultura, UCLG and UNESCO: Sustainable Human Development – Culture and Context
While the efficacy of Type 2 partnerships remains a subject of debate, the Johannesburg conference underscored crucial issues. It highlighted the vulnerability of Type 1 partnerships to the willingness of key state actors to engage in binding agreements, a problem not exclusive to Rio+10. Additionally, there's a recognition that spreading and transforming the concept of sustainable development requires anchoring ideas in tangible social practices and value systems. This concern was addressed at a conference in Porto Alegre, Brazil, in September 2002, where Agenda 21 was linked with a cultural dimension, giving rise to Agenda 21 Culture or simply Culture 21.

In 2004, another conference elaborated on this cultural dimension. Its final document outlined principles for decentralized cultural thinking, emphasizing the 'city' as the locus of cultural creation, alongside the importance of cultural diversity and human rights, including cultural rights. Furthermore, it proposed ideas for promoting cultural development in alignment with these values, as well as offering recommendations for local authorities, governments, and various UN agencies (Agenda 21 Culture, 2004).

Following this, two organizations have championed Agenda 21 Culture. Firstly, the UN partner organization "United Cities and Local Governments" (UCLG), boasting over 200,000 members, emerged as the world's largest body for fostering cooperation among local authorities and cities. Although founded in 2004, UCLG traces its origins back to the Union

Internationale des Villes (UIV), established in 1913 during a conference in Ghent, Belgium. Inspired by the peace movement of the time, UIV later evolved into IULA, with a history of collaboration with UNESCO dating back to 1945 when IULA's Secretary-General attended UNESCO's inaugural meeting, fostering a tradition of partnership between the two organizations (Gateau, 2013).

In discussions surrounding sustainable development, there has been a notable emphasis on integrating the cultural dimension into efforts concerning the MDGs and subsequently in the United Nations' early endeavors to formulate the SDGs. This collaboration reflects a shared aspiration to broaden the understanding of sustainable development beyond purely environmental, economic, and social concerns. In 2010, a significant proposal emerged advocating for the integration of culture as the fourth pillar of sustainable development, alongside the existing environmental, economic, and social pillars. Implicit in this proposal is the recognition of the distinct contribution of the cultural dimension. On one hand, it underscores the significance of the social dimension, which encompasses concepts such as social inclusion, cohesion, and equality (and equity), in shaping sustainable development outcomes. On the other hand, it highlights the unique role of culture, emphasizing its capacity to foster creativity, knowledge, diversity, and beauty. These values are seen as closely intertwined with human freedom and development. As such, the proposal argues for the promotion of these cultural values to facilitate dialogue, peace, and progress on a global scale.

Simultaneously, there was a proposal to view the relationship between culture and sustainable development through two distinct lenses. Firstly, by emphasizing the development of the cultural sector within society, encompassing aspects such as cultural heritage, creativity, the cultural industry, crafts, and tourism. Secondly, by advocating for the integration of cultural considerations across various policy domains, particularly in education, economics, science, communication, environmental initiatives, social cohesion, and international cooperation (Culture: Fourth Pillar of Sustainable Development, 2010, Points 3 and 4).

While the notion that concepts of freedom and human development possess a cultural dimension appears plausible, culture itself is notoriously complex and subject to intense debate. Consequently, integrating culture as a fourth pillar or an independent point in the

ongoing evolution of the sustainable development concept proved to be difficult. Instead, cultural considerations were dispersed across several different SDGs within the SDG2030 framework. However, this does not alleviate the challenge of embedding the sustainable development agenda culturally and contextually, particularly given the issues highlighted in connection with Type 2 partnerships.

Overall, while Agenda 21 Culture may not have achieved the level of prominence initially envisioned, its efforts, particularly through the work undertaken by UNESCO and UCLG, have proven more successful than those of the Type 2 partnerships.

Sustainable development, the SDGs, and emerging issues
As we bring this narrative to a close, it is useful to delve deeper into the genesis of the concept of sustainable development. Firstly, let us recap the significant themes and insights we've explored thus far, tracing the historical trajectory and pivotal moments that have shaped our understanding of sustainability. From there, we will embark on an exploration of how the principles of sustainable development are reflected and operationalized within the framework of the SDGs. By examining the specific targets and indicators outlined in the SDGs, we can gain a nuanced understanding of how sustainability is being pursued on a global scale, across various sectors and dimensions of human well-being. Furthermore, we will broaden our perspective to consider the broader socio-environmental context in which sustainable development is situated. This entails a closer examination of the concept of the Anthropocene epoch and related concepts, such as planetary boundaries and ecological resilience. These emerging paradigms challenge traditional notions of development and compel us to rethink our relationship with the Earth system and its finite resources.

Summing up the idea of sustainable development before the SDG agenda
A fundamental aspect of the sustainable development concept is its fusion of the intricate modern notion of sustainability with that of (human) development, particularly framed within economic progress. Our exploration has traced back to the Stockholm Conference in 1972, which marked the initial instance where the inherent tensions between these two paradigms were openly acknowledged. The subsequent Brundtland Report aimed to reconcile these divergent perspectives under the umbrella of sustainable development, setting the stage for the inaugural Global Summit in Rio in 1992. Here, Agenda 21 was adopted, charting a course for sustainable development in the 21st century.

Furthermore, we've examined how during the 1990s, the concept of sustainable development became intertwined with a neoliberal economic ideology, exerting structural influences on the developmental strategies pursued by emerging economies. Alongside this, we've presented two alternative economic frameworks from this era. Firstly, the ecological, economic framework proposed by Ostrom, advocating for localized decision-making and embracing the concept of Commons as an alternative to the initially introduced polluter pays principle by the OECD. Secondly, we briefly explored UNDP's initiative to develop the HDI as an alternative to GDP, emphasizing human development over purely economic metrics. Inspired by the capability approach pioneered by Amartya Sen and Martha Nussbaum, this approach redefined notions of freedom and equality.

The influence of HDI and the capability approach was profound, shaping the Millennium Declaration and the subsequent eight MDGs, with poverty eradication and gender equality emerging as pivotal objectives. Despite initial reservations, the MDGs proved to be a success, laying the groundwork for what would evolve into the Sustainable Development Goals. However, it's worth noting that Sen himself has expressed ongoing concerns, not just about the quantification of human development but also about the potential pitfalls of overly pragmatic approaches, which risk overlooking deeper issues in human development.

During the Rio+10 conference in Johannesburg, both Agenda 21 and the MDGs were entered into and coalesced into the final document, marking a significant convergence of sustainable development agendas. Following the collapse of the Global Deal concept, a new form of partnership emerged out of necessity, known as Type 2 partnerships. However, their impact was less than stellar. Nonetheless, these partnerships underscored the critical need for anchoring sustainable development initiatives within their specific contexts. We have observed a parallel expression of this need in Agenda 21 Culture and the collaborative efforts between the UCLG and UNESCO. These initiatives advocate for the integration of culture as the fourth pillar of sustainable development, driven by the inherent understanding that human development and freedom are inseparable from cultural considerations. However, this integration poses significant challenges in terms of conceptualization and implementation, highlighting the complexity inherent in fostering a truly holistic approach to sustainable development.

Sustainable development in the SDGs

At this juncture, we opt to forego a detailed examination of the impacts of pivotal events such as the financial crisis, climate summits, the Arab Spring, and the Occupy movement on the discourse surrounding sustainable development. Similarly, we abstain from delving into the Rio+20 summit of 2012, which initiated the trajectory leading to the adoption of the SDGs by the UN General Assembly in 2015, as well as the subsequent changes witnessed within the international community post-2015. These omissions are motivated primarily by the need to constrain the scope of our discourse on sustainable development. Furthermore, they underscore the inherent challenge in discerning the essential from the nonessential amidst contemporary events, a task rendered more arduous by their immediacy.

Nonetheless, our focus pivots towards a closer examination of the 17 SDGs, exploring how they encapsulate various themes and contexts elucidated thus far. It is imperative to recognize that these SDGs, akin to their predecessors, the MDGs, operate synergistically, necessitating a holistic understanding and concerted action across multiple fronts. However, criticism has emerged regarding the expanded scope of the SDGs, transitioning from 8 MDGs to 17 SDGs, potentially fostering confusion. Consequently, there have been propositions advocating for a structured framework to organize the SDGs into coherent groupings, facilitating analytical endeavors.

For instance, within the preamble of the UN document *Transforming our World: the 2030 Agenda for Sustainable Development*, colloquially known as Agenda2030, five fundamental categories are delineated: 'People, Planet, Prosperity, Peace, and Partnership,' often denoted as the 5Ps. These categories serve as linchpins in the framework of sustainable development, as encapsulated by the 17 Sustainable Development Goals (SDGs). The initial trio of 'People, Planet, Prosperity' resonates with the traditional tripartite pillars of sustainable development, encompassing the social, environmental, and economic dimensions. Meanwhile, the emphasis on 'Partnership' underscores the pivotal role of collaborative efforts and the varied forms and strengths of partnerships that have emerged as focal points in post-millennium discussions on sustainable development. Lastly, 'Peace' assumes significance within the context of the preamble's opening statement: 'This Agenda is a plan of action for people, planet and prosperity. *It also seeks to strengthen universal peace in larger freedom*.' (UN, 2015, my italics). Shortly thereafter, it is asserted that sustainable development is inseparable from peace, and vice versa. This underscores the centrality of integrating both theoretical and practical considerations of peace into efforts

aimed at advancing Sustainable Development and the SDGs, an aspect that is often overlooked within the Agenda2030 framework.

One method of categorizing the 17 goals based on the 5Ps framework is to associate "People" with goals 1-5, "Planet" with goals 6 and 12-15, "Prosperity" with goals 7-11, "Peace" with goal 16, and "Partnership" with goal 17. This grouping strategy offers the advantage of emphasizing the significance of peace and partnership within the context of the established dimensions. However, it does not explicitly address how the SDGs aim to reconcile the tension between sustainability and development, a longstanding theme in the discourse since the Stockholm Conference, and one which the Brundtland Report endeavored to tackle by introducing the concept of sustainable development.

To illuminate how the SDGs might navigate this tension, we turn to the insights of Kathrine Richardson, director of the University of Copenhagen's Center for Sustainable Science, who proposes an alternative grouping of the SDGs (Richardson, 2020, pp. 25-47). Richardson's analysis delves into the concept of "the great acceleration," which posits that the rapid escalation of socio-economic human activities has profoundly influenced the Earth's intricate system. Initially conceived as the cumulative interaction of the Earth's physical, chemical, and biological systems, this concept has evolved to encompass human social and economic processes, highlighting the interconnectedness of human activity with the broader environmental dynamics. Over the decades, measurements across various socio-economic and environmental parameters have revealed a staggering increase in human impact on the environment, demonstrating a near-exponential rise since the 1950s. In the context of the SDGs, Richardson draws attention to the inherent tension between the dual objectives of enhancing human socio-economic conditions and mitigating the continued exploitation of the Earth's resources. This tension is palpable between goals 1-6, which are centered on improving human well-being by addressing issues such as poverty, hunger, and health, and goals 13-15, which prioritize environmental conservation and sustainability, focusing on actions to combat climate change, protect ecosystems, and ensure the sustainable use of natural resources. This juxtaposition underscores the complex interplay between human development aspirations and environmental sustainability imperatives within the framework of the SDGs.

As individuals in poorer nations strive for development while exhibiting relatively low

resource consumption, and conversely, those in wealthier nations often exhibit high resource consumption, a principle is needed to balance these contrasting goals. Richardson proposes that this principle is encapsulated in Goal 10, which addresses inequality. This highlights the radical departure of the Sustainable Development Goals (SDGs) from their predecessors, the Millennium Development Goals (MDGs). By intertwining global environmental concerns with notions of human, social, and economic development, the SDGs underscore the imperative of addressing inequality on a global scale.

Regardless of our interpretation of equality as the overarching principle for addressing the inherent tension in sustainable development, a sole emphasis on equality is insufficient. It is imperative to also consider how we navigate this tension. Richardson organizes the remaining goals into four distinct groups aimed at tackling this fundamental challenge. These groups are delineated as follows: A) Science and Technology (encompassing goals 7, 9, 11, and 12), B) Economics and Finance (covering goals 8 and 17), C) Governance (addressing goals 16 and, once more, 17), and finally D) Individual and Collective Action (covering goals 11, 12, and, again, 17).

In addition to illustrating how the tension between environmental preservation and human development must be addressed in principle, grounded in the spirit of global solidarity expressed through equality, Richardson underscores the significance of partnerships. Partnerships feature prominently in three of the four types of tools aimed at resolving this tension, with governance intertwined with peace—an emphasis that is also strongly underscored in the agreement itself.

Richardson's systematic arrangement of the goals not only sheds light on the underlying dynamics and tensions intrinsic to the notion of sustainable development but also provides valuable insights. While some may argue that her approach does not fully address the inquiry raised by Agenda 21 Culture, UCLG, and UNESCO concerning the significance of culture and education, Richardson's framework offers a significant advantage over alternative representations of sustainable development. By meticulously delineating the inherent tension within this concept and proposing a central principle for its resolution within the framework of the SDGs, Richardson furnishes a commendable suggestion for navigating this multifaceted landscape.

From the great acceleration to the Anthropocene epoch?
The concept of the Great Acceleration, which Richardson employs as a foundational concept, is frequently associated with another notion that has garnered increasing attention since the turn of the millennium: the Anthropocene epoch. Richardson acknowledges this linkage, highlighting how the Anthropocene epoch derives its name from the Greek term "Anthropos," meaning human, as it posits that the primary driver of significant geological change in this epoch is human activity. Consequently, this period was proposed as a new geological epoch succeeding the Holocene, which commenced approximately 11,600 years ago following the last ice age.

Nobel laureate Paul J. Crutzen first introduced the idea of the Anthropocene at a conference in 2000. While it has proven to be a remarkably fertile concept, sparking interest across various disciplines including the humanities, and catalyzing the emergence of the environmental humanities, it has also engendered vigorous debate, criticism, and discussion within the academic community. Various perspectives on the interpretation of the Anthropocene are presented in numerous articles within this thematic issue, underscoring the multifaceted nature of this discourse.

Recently (February 2024), the underlying concept of the Anthropocene as a new geological period has been rejected by the 'International Sub-commission on Quaternary Stratigraphy (SQS)' under the International Commission on Stratigraphy" (ICS), a decision with no possibility of appeal. Therefore, it is not far-fetched to envision that this was 'the end of the Anthropocene.'

However, this assumption may not hold true. Beyond the initial voting result, the legitimacy of the decision has been called into question by a complaint filed by Jan Zalasiewicz, the chair of SQS, and Martin Head, one of the vice-chairs of the Anthropocene Working Group (AWG) under SQS, which submitted the proposal. Moreover, the debate surrounding the Anthropocene extends far beyond geological discourse, delving into existential, cultural, and political dimensions. This expansion of the discourse is particularly intriguing as it offers an avenue to address some of the challenges previously mentioned regarding the integration of sustainable development with culture. By broadening the scope of discussion, these conversations have the potential to shed light on the intricate intersections between human activity, environmental change, and cultural dynamics, providing valuable insights into the

complex relationship between humanity and the planet.

In terms of the strictly geological facets of the Anthropocene debate, some members of SQS who opposed the proposed acceptance of the Anthropocene as a new geological epoch clarified that their dissent did not stem from a denial of human impact on the planet. Rather, their objection centered on the perception that the proposed definition of the start of the geological Anthropocene was too narrow. Indeed, a former member of the group, who initially submitted the proposal in January 2024, departed from the group in 2023 for the same reason. The contention against a narrow interpretation of the Anthropocene hinges on the argument that it should not be characterized as a formal epoch commencing with a singular, abrupt event, as suggested in the proposal. For instance, the proposal set the onset of the Anthropocene to the year 1952, marking the detection of plutonium from hydrogen-bomb tests in the sediment of Crawford Lake, near Toronto (Witze, 2024).

Rather, proponents of a broader understanding assert that the Anthropocene should be regarded as an event in geological history, akin to phenomena such as the Great Oxidation Event over two billion years ago. This perspective aligns with the notion that geological processes unfold gradually over time, encompassing transformations such as human industrialization and environmental pollution, rather than abrupt shifts from one state to another (Walker et al., 2024). This nuanced perspective underscores the need to conceptualize the Anthropocene within the broader context of geological evolution, recognizing the gradual and cumulative nature of human-induced changes to the Earth's systems.

The argument advocating for a broader understanding of the Anthropocene, rather than fixating on specific starting points, is deeply intertwined with the ongoing debate surrounding its inception. Since the inception of the concept of the Anthropocene, there has been ongoing discourse regarding when precisely this epoch began. Various proposals have emerged, each positing different milestones in human activity as the catalyst for the Anthropocene. Paul J. Crutzen, for instance, asserted that the Anthropocene epoch commenced around 1750 with the onset of the Industrial Revolution. Conversely, other perspectives suggest much earlier starting points, tracing the origins of the Anthropocene back to phenomena such as the organization of plantations in the Roman Empire or even the advent of agriculture by early human societies. Under this lens, the Anthropocene period

aligns almost concurrently with the Holocene epoch. Numerous alternative starting points have been put forth in this ongoing discourse, reflecting the complexity and diversity of perspectives within the scientific community. However, due to the scope of our discussion, we will not delve further into these alternative viewpoints at this time.

Jan Zalasiewicz, who advocated for the acceptance of the proposal, posited a more specific commencement for the Anthropocene. Nevertheless, in collaboration with fellow scholars in a comprehensive review article, Zalasiewicz advocated for a broader comprehension of the Anthropocene, albeit from a divergent perspective. The scholars articulated two pivotal assertions. Initially, they delineated between anthropogenic influence on the Earth's systems and the trajectory toward a geological threshold precipitated by this influence, which could potentially pinpoint a more defined geological inception. Secondly, they expanded the concept of the Anthropocene to encompass both analytical dimensions and a consequential meta-level. The analytical level is divided into 1.1. sciences describing the *'Anthropocene as an Epoch'* (among this prominent, geology), and 1.2) the sciences which on various levels elucidate the entanglements in various global systems, that is, *'the Anthropocene as an Earth System*.' The consequential level 2) is referred to as *'the Responsible Anthropocene'*, which concerns the human-influenced state of the Earth System and cultural thresholds associated with the Anthropocene (Zalasiewicz et al, 2021).

Therefore, notwithstanding the disparities between proponents and detractors of the proposal, there exists a collective endeavor to refine the concept of the Anthropocene. The divergence appears to revolve around the geological characterization of the Anthropocene—whether it should be defined as a distinct geological epoch with a fixed commencement or construed as a transformative geological event. These methodological variances are likely to persist as subjects of discourse in the foreseeable future, with the ultimate geological recognition of the Anthropocene yet to be determined. Nevertheless, the notion of the three dimensions of the Anthropocene, particularly the concept of the Responsible Anthropocene, underscores the imperative of contemplating the cultural dimensions of this epoch. This, in turn, necessitates engagement not only from the sciences but also from the social sciences, environmental humanities, future studies, and education. Central to this discourse is the recognition that the ramifications of human influence on the environment extend beyond human-centric perspectives to encompass broader ecological contexts.

It has been argued that acknowledging this interconnectedness will fundamentally alter our understanding of history and our anticipations for the future. This emphasis on the interplay between the human and the non-human realms is reflected in inquiries into the potential culmination of the human "world" and the cultural thresholds that shape our perceptions of space, time, history, and identity. These themes are elucidated within the realm of environmental humanities, which encompasses disciplines such as philosophy, anthropology, history, religion, literature (including climate fiction and Cli-Fi), and art. Furthermore, emerging scientific paradigms seek to reconceptualize the relationship between nature and culture, as evidenced by works such as those by Cook et al. (2015), research conducted under Aarhus University's Research on the Anthropocene (AURA), initiatives like the Center for Environmental Humanities, and publications such as Vetlesen's (2019) work.

Nevertheless, in addition to the aforementioned discourse within the geological realm regarding the Anthropocene, critiques have emerged from the realms of social sciences and humanities, as exemplified by Haraway (2015). One salient criticism pertains to the underlying tension inherent in the concept, reminiscent of the tension observed in discussions surrounding sustainable development, concerning the interplay between developmental equity and the socio-political distribution of resources. Specifically, the Anthropocene has been faulted for its unilateral focus on the relationship between humanity and the environment, thereby obscuring the reality of unequal resource distribution.

Previously, we explored this tension between the pursuit of equitable human development and the utilization of environmental resources. In the context of the Anthropocene, critics argue that the advent of the Industrial Revolution was contingent upon the prior accumulation of capital, a process that gained momentum during the Renaissance. Consequently, designating the Anthropocene epoch as commencing from 1750 or later overlooks what has been termed "the Age of Capital" or the Capitalocene era, spanning from 1450 to 1750 (Moore, 2017, p. 17). This critique underscores the complex socio-economic dynamics that underpin the Anthropocene narrative, as for example articulated in Friberg's analysis within this journal issue.

The emergence and subsequent discourse surrounding the Anthropocene concept serve to reignite discussions on the intricate interconnections between nature, economy, social

equity, and inclusivity. This discourse, both directly and indirectly through reactions to the
Anthropocene concept, fosters new avenues for integrating the more "cultural" as well as
humanistic dimensions inherent in the notion of sustainable development. In several ways,
the themes explored in environmental humanities, alongside those echoed in popular
culture, not only echo the inquiries initiated by Agenda 21 Culture but also harken back to
earlier dialogues on "deep history" and "possible futures," prevalent during the 1960s and
1970s.

However, a crucial distinction lies in the contemporary discussions occurring within the
framework of a nuanced understanding of sustainable development, epitomized by the
SDGs. These discussions not only grapple with existential questions about the planet's
future but also strive to translate these inquiries into actionable strategies at an operational
level. Amartya Sen's emphasis on addressing both fundamental and operational levels in
discussions on human development resonates here. Similarly, discussions on sustainable
development necessitate a complementary approach that simultaneously addresses
overarching existential concerns and practical implementation.

Hence, it becomes imperative to maintain a balanced perspective on sustainable
development, the SDGs, and the Anthropocene concept, recognizing their dual role in
addressing fundamental existential queries while also guiding tangible actions at the
operational level. This complementary approach underscores the need for holistic
engagement with the multifaceted challenges posed by the Anthropocene era, aligning with
the ethos embedded within the SDGs to effect tangible change at the grassroots level.

Conclusion: a few remarks concerning Sustainable Development and Education

Hopefully, this narrative has been illuminating in elucidating the concept of sustainable
development, its interconnectedness with sustainability and human development paradigms,
and its further evolution through the SDG2030 agenda, alongside insights into the emerging
discourse surrounding the Anthropocene. Additionally, I have also briefly touched upon the
significance of Education for Sustainable Development (ESD), and as we conclude, it is
pertinent to ponder how the concept of sustainable education intersects with broader
educational frameworks. As mentioned, the initial promotion of ESD was very much ignited
by a normative policy perspective aiming at promoting Education for Sustainable

Development, through 'raising awareness, and not least through 'training.' This prompted concerns from an educational perspective about the integration of sustainable development concepts into educational curricula regarding taxonomic levels, including the cultivation of critical thinking skills necessary for addressing sustainability challenges, as well as pedagogical questions regarding how the promotion of values and behaviors conducive to sustainable living sits not necessarily well with ideas concerning issue related to the student's freedom in the pedagogical process (the pedagogical paradox).

We will start by pointing to the distinction between two dimensions of ESD, namely ESD1 and ESD2. These two dimensions, delineated by Vare and Scott (2007), constitute complementary approaches to ESD. In their seminal article, Vare and Scott offered a critique of UNESCO's prevailing approach to ESD, which they claimed primarily emphasized the transmission of expert knowledge to prompt behavioral change (ESD1). While acknowledging the importance of this directive, Vare and Scott posited that ESD1 must be complemented by an educational paradigm that fosters critical thinking and independent inquiry, thereby enabling learners to grasp the intricacies of sustainable living more profoundly and to autonomously navigate change (termed ESD2). This assertion resonates with broader discussions within educational theory regarding the role of autonomy and critical reflection in pedagogy. Vare and Scott's exposition garnered widespread recognition within the global ESD community, catalyzing further dialogue and scholarship. In essence, ESD2 transcends mere behavioral modification; it engenders a deeper understanding of sustainability, empowering individuals to contemplate diverse perspectives and make informed choices. Indeed, the discourse surrounding ESD2 underscores the importance of cultivating a discerning mindset that interrogates conventional wisdom and the nuances of sustainable practices. For instance, Scott and Vare's examination of Fair Trade exemplifies this approach, reframing it not as an unquestionable ethical imperative but as a subject of critical inquiry. By encouraging learners to scrutinize the complexities and trade-offs inherent in sustainability initiatives, ESD2 fosters a more nuanced understanding of sustainable development and equips individuals with the intellectual tools to navigate its multifaceted terrain.

Given the complexities inherent in integrating culture into the framework of Sustainable Development and setting aside discussions around the term Anthropocene for a moment, it is pertinent to consider the implications of the Responsible Anthropocene, as posited by

Zalasiewicz et al., which underscores the human-influenced state of the Earth System and the associated cultural thresholds. In light of these considerations, one might question whether the existing ideas of Education for Sustainable Development (ESD1 and ESD2) are adequate for preparing present and future generations to navigate the challenges posed by the emerging paradigm. An alternative or complementary approach to the traditional three pillars of sustainable development could involve conceptualizing sustainable development around three poles: the environmental pole, the political-economic pole, and the cultural and existential thresholds that humanity will confront in the foreseeable future. Such an approach emphasizes the interconnectedness of environmental, political-economical, and cultural-existential dimensions and broadens in relevant ways the discourse of both sustainable development and ESD.

Translating the integration of cultural and existential thresholds into the realm of education, one could envision a new dimension of ESD termed ESD3. Unlike its predecessors, ESD3 would incorporate existential depth and cultural critique into the educational framework, thereby broadening the scope of inquiry beyond immediate calls to action (ESD1) and (limited) critical discourse (ESD2). While ESD1 focuses on instilling behavioral changes and ESD2 emphasizes critical thinking but does not necessarily, to paraphrase one of the debates from the 70'ies, represent the possible departure from the prevailing "Dominant Social Paradigm," then ESD3 delves into larger existential questions such as the nature of humanity, societal development, and our relationship with nature and other living beings which in short might lead to deep change in our worldview.

It is important to note that the introduction of ESD3 as it is proposed here does not seek to negate the value of action-oriented education or critical inquiry within established frameworks. Rather, it underscores the significance of addressing broader existential and cultural dimensions in ESD, which have profound implications for shaping worldviews and guiding collective action in the face of unprecedented global challenges. By engaging with these deeper existential questions, ESD3 offers an approach to education that is attuned to the complex interplay between human societies and the natural world.

Perhaps the point could be explicated crudely (and rather uninhibitedly) by referring to levels I, II, and III in Bateson's theory of learning:
Learning I is change in specificity of response by correction of errors of choice within a set

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of alternatives. Learning II is change in the process of Learning I, e.g., a corrective change in the set of alternatives from which choice is made, or it is a change in how the sequence of experience is punctuated. Learning III is change in the process of Learning II, e.g., a corrective change in the system of sets of alternatives from which choice is made. (Bateson, 2000, 298)

ESD1 could then be likened to "Learning I," which entails acquiring knowledge leading to behavioral changes. In contrast, ESD2 corresponds to "Learning II," involving adaptation to established patterns, developing the capacity for autonomous learning, making choices, and shaping one's character within a given system, as per Bateson's expansive interpretation of systems. According to Bateson, these two levels of learning (along with the foundational "Learning level 0," which we will not discuss here) are the most prevalent forms of learning.

However, experiences such as the loss of a loved one or significant life transitions may prompt individuals to question not only their current way of life within a given system but also the possibility of inhabiting an entirely different system or reality. Bateson describes "Learning III" as a transformative process that entails corrective adjustments to the system of choices made in "Learning II." This level of learning, which might be characterized as pointing to "freedom of spirit," fundamentally alters one's mode of existence in the world. Bateson notes that such profound shifts occur infrequently.

But it is claimed that something of the sort does from time to time occur in psychotherapy, religious conversion, and in other sequences in which there is profound reorganization of character. Zen Buddhists, Occidental mystics, and some psychiatrists assert that these matters are totally beyond the reach of language. But, in spite of this warning, let me begin to speculate about what must (logically) be the case. (Bateson, 2000, 307)

Given the inclusion of cultural-existential thresholds as the third aspect in ESD, ESD3 might perhaps be related to Learning III. Certain emerging theories and practices in Education for the Anthropocene appear to be progressing in this direction (see for example Fettes & Blenkinsop, 2023). However, a question pertains to our readiness and ability to engage in education and learning at this level, considering Bateson's examples of Learning III, and that they occur infrequently.

On one hand, we might envision promising alternative futures at an existential level if we can engage in education and learning at this depth. Nonetheless, these aspirations may be tempered by the environmental and political-economic dimensions and dilemmas inherent in Sustainable Development we have discussed. Moreover, as discussed in various articles, the concept of the Anthropocene may both unveil and obscure realities. Nevertheless, if these three (new) dimensions of Sustainable Development (environmental, political-economic, and cultural-existential thresholds) are integrated into education and ESD, they could herald new ways of conceptualizing the world and education itself.

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