

# The Natural World in Western Thought

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**Abstract:** The Western approach to the natural world, considering “nature” as an object of scientific scrutiny and of exploitation for economic purposes, results in a separateness and subsequent alienation from nature. The overarching aim of this paper is to emphasize the limitations and consequences of this approach, including how nature is perceived, the value attributed to nature, and the substantial denial of cultural contributions from non-Western philosophical and scientific backgrounds. We also consider the Western attempt at balancing industrial and technological endeavors, aimed at preserving ecological equilibria. In this framework, we argue that the current ever-increasing concern about sustainability cannot be decoupled from the perception of nature and natural values, whether material, aesthetic, or spiritual. Therefore, modern sustainability challenges, mainly attributable to Western overexploitation of nature and natural resources, need to be considered in the context of the limited Western paradigms, which often leave the very definition of nature unanswered. We argue that efforts to ease the anthropogenic pressure on natural ecosystems, leading to their degradation, cannot be uniquely bounded by Western science and its technological appendices.

**Keywords:** ecological equilibria; ecosystem; natural world; Indigenous thought; Western thought

## 1. Introduction

The Western approach to nature has been often regarded as the only one possible in the wider cultural scenario defined by the diversity of world cultures and world philosophical approaches [1]. This article deals with an analysis of the contradictions that the supposed supremacy of Western thought has brought into existence in its endeavor of self-asserting dominance over time (in terms of historical chronology) and overall world cultures (in terms of achievements of human intellect). In particular, this article examines the way Western thinkers understand nature and the consequences of such understanding, when translated from theory to praxis.

First and foremost, modern Western thought envisages nature as an entity separated from culture, assigning ontological priority to the former. This inevitably brings about the separation between environment and organisms, thought of as different entities [1]. Out of all of this comes the importance of the way nature is considered, thought, and perceived in the human–nature interplay from philosophical and practical standpoints.

Rolston, in his seminal 1997 article, argued: “Six words are especially significant in our world-view; they model the world we view: (1) ‘Nature’; (2) ‘Environment’; (3) ‘Wilderness’; (4) ‘Science’; (5) ‘Earth’ and (6) ‘Value’ as found in nature”, acknowledging the importance of those words in describing, interpreting, and philosophically and scientifically framing the concept of nature. In this paper, nature and value, two of the six words listed by Rolston, will be addressed as especially significant. These two terms are profoundly intertwined, and they both underpin all of our relationships with the natural world [2].

In doing so, this paper does not intend to evaluate and judge the Western way in which nature is perceived and described, in either positive or negative terms. Our aim is basically to emphasize that Western and non-Western approaches to nature are irreconcilable and fatally destined to clash, as has been the case throughout the recent history of mankind. We



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will choose two examples that should help to clarify our point of view. The first quote is by Martinez (2003) [3], who argues that the survival of wilderness hot spots—together with their complementary Indigenous people—depends on how we define nature. In order to make explicit his thought and underline the Western-centric cultural approach underpinning our perception of nature, Martinez quotes George Catlin, a famous early-19th-century painter of American natives. Catlin commended the preservation of wilderness together with its inhabitants: “pristine beauty and wildness. . . where the world could see for ages to come, the native Indian in his classic attire, galloping his horse. . . amid the fleeting herds of elks and buffaloes”. Catlin recommended a sort of nature reserve containing humans and animals, or to be more precise, Indigenous people and animals. Directly following from this, as Martinez notes, it should be considered that Native Americans never won a legal case aimed at protecting their sacred sites, as they are not identifiable in churches, mosques, synagogue, or other buildings of worship. Native Americans’ sacred sites occur in natural places, and that peculiar characteristic prevents the application of the First Amendment of the US Constitution, which should guarantee and protect freedom of religion [3].

The following second example seems to instantiate Catlin’s proposal. Whitford and Ruhanen (2010) report how Indigenous tourism is growing worldwide as Indigenous people, including the Aboriginal and Torres Strait Islander people of Australia, are becoming an integral part of the tourism industry. This is seen as a positive trend aimed at assuring Indigenous populations a better economic future. The work of Whitford and Ruhanen seems to suggest that the survival of Indigenous cultures can be achieved only by including them in a Western set of economic drivers and Western economic thought [4].

Mutatis mutandis, the same concept is at work when the highly debated issue of Indigenous data sovereignty is at stake. Again, a sort of patronizing approach aims at including entire Indigenous cultures under the umbrella of Western care. Not by chance, Carrol et al. (2020) invoked the implementation of CARE principles (collective benefit, authority to control, responsibility, ethics) in this context. Quoting these authors, the CARE approach could be useful for “Indigenous data governance, as to provide external data stakeholders with guidance on stewardship responsibilities”. The same authors underline that the FAIR scientific data principles (findable, accessible, interoperable, reusable), seeking to transform data for machine readability and other secondary use applications within open science, should be coupled with CARE in order to protect Indigenous data and, in the meantime, to ensure scientific benefits for those populations [5].

## 2. Nature in Modern Western Thought

This section is dedicated to briefly analyzing some milestones of the modern concept of nature, through the work of some thinkers who have had a major impact on our perception of the natural world. A more detailed analysis of the history of the human perception of nature in the last 500 years can be found in Argyrou (2005), while a review of the Western social scientific appraisals of the meaning of nature is well presented by Inglis et al. (2005) [6,7].

To begin with definitions, Raymond Williams, considered the founder of ecocultural studies, stated in a celebrated sentence that “[nature] is perhaps the most complex word in the English language” [8]. The Oxford Dictionary refers to nature as “the phenomena of the physical world collectively including plants, animals, the landscape, and other features and products of the earth, as opposed to humans or human creations”. This definition makes a sharp distinction between humans and non-human nature, the leitmotif of the Western perception of the natural world, where humans and human artifacts are split and disconnected from nature. From a physical point of view, humans become progressively detached from nature by means of technology and because they live more and more in totally artificial spaces, such as cities, leading to a reduction in their intimate connection with other components of nature. Fewer and fewer human beings are sharing rural spaces with the rest of the natural world [9]. The United Nations Department of Economic and Social Affairs released the World Urbanization Prospects report illustrating the growing

trend in urbanization: in 1960, the global urban population was 34% of the total, by 2050 it is expected that about 66% of the human population will live in urban areas, with a steady acceleration in Africa and Asia [10].

According to Hailwood (2012), the main senses of nature are: (1) the natural world (the encompassing nature of which humanity is a part but not the whole); (2) nonhuman nature (the natural world that is not human or shaped by humanity for human ends); and (3) the humanized environment (the world shaped by human activities) [11]. This view is partially shared by Williams, as reported by Franklin Ginn and David Demeritt (2009), who defined nature as: (1) intrinsic nature (the essential characteristics of a thing), (2) external nature (the external, unmediated material world), and (3) universal nature (the all-encompassing force controlling things in the world) [12].

All these ideas, with different nuances, are indebted to the positivist assumption that nature exists somewhere out there [2], as an entity separate from humans. It represents an outer world to which we can have truthful access through science, opening the way to a sort of cognitive appropriation [13], which desacralizes nature, the way we perceive nature, and the way we perceive ourselves [14]. As is well known, this dichotomy, splitting human and nature, found its modern expression in the thought of René Descartes. As reported by Tulloch (2015), “in Cartesian logic ‘nature’ is seen as passive, as an object that is separate from man, just as the body is separate from the mind” [14]. Francis Bacon, considered one of the founders of Western modernity, reformed the scientific method and expressed a still-seminal point of view on nature and the human–nature relationship, as he underlined that scientific knowledge means technological power over nature. The classic interpretation of Bacon’s thought claims that scientists have to torture nature, which must be hounded in its wanderings and put into constraints to unveil its secrets, and then “bound into service making her a slave” [15]. Pestic (1999) argued that this point of view is contradicted by a close study of Bacon’s work. As a matter of fact, he concludes that Bacon intended to portray the human–nature relationship as a heroic mutual struggle. Considering the mighty force triggered by the combined array of science, technique, and economic powers, there is little doubt of the outcome of such a struggle today [16].

Natural entities, hypothesized as ontologically real and placed outside human nature, rapidly become the object of the ontic research of the positive sciences, in the sense Heidegger (1962) gave to the ontological/ontic dichotomy [17]. That way, according to Castree (1995), nature is not a value-free category, but rather a cornered (in the sense of enclosing or encircling) structure, made of different and complex arrays of entities entangling and networking with each other, that becomes the object of our scrutiny [13].

In this regard, Nielsen (2004) conveniently remarked that the idea of nature is not reducible to an array of simple concepts, as it was elaborated and re-elaborated along an extended timespan of historical and philosophical traditions [18]. In addition, the author reaffirms that the concept of nature cannot be analyzed apart from its cultural context. If this last sentence is true, then modern Western views of nature are ideologically constructed theories framing the idea of human and non-human nature as divided entities [14]. From this stems the possibility of knowing non-human nature through scientific exploration, a way of thinking that has its roots in the Enlightenment.

Paradoxically, nature, perceived as an external system, seems to be internalized by the economic forces that are driving the world today. In this regard, Richard Walker observed:

*“Nature isn’t being ruined or destroyed by being outside of the capitalist system, it’s when it is incorporated within the capitalist system, exploited, extracted, destroyed, manipulated, transformed, [...] the point is not that its outside or its externality, but its internality is the way capitalism works, and ultimately its exploitation and accumulation that are devouring the potential of labour and nature and all forms of work” [19]*

Bill McKibben, back in 1989, remarked that we live in a post-natural world [20]. This was interpreted by Rolston (1999) as the end of nature, a concept that seems to be the logical consequence of the overturn of Western philosophy in the second half of the nineteenth century, summarized in the statement *Keine Metaphysik mehr!* Such a declaration was the

flag of the great empiricist and positivistic era, when researchers and experimenters felt a strong aversion to everything that seemed a remnant of dogmatism and theology [21].

“What people do about their ecology depends on what they think about themselves in relation to things around them”. This statement, made by White (1967), recalls how ecology is deeply and fully subjected to specific cultural tenets influencing our perceptions of nature. White does not hesitate in conveying the idea that religion molds what we think about ourselves, in relation to the things around us. In addition, he affirms that “Christianity is the most anthropocentric religion the world has seen”. White’s reasoning places Christianity and Western science on the same evolutionary path, as modern science can be considered an extrapolation of natural theology. That way, technology becomes the opportunity to advance the fulfilment of the Christian dogma of human mastery over nature [22].

Rolston (1999), in this line of thought, critically argued that humans are moving toward consciously managing the Earth. Humans, acting as planetary managers, put the Earth in a post-evolutionary phase, as science, technology, and culture are shaping the world far more than nature [21]. All this is perfectly in line with Latour’s claim (1983): “Give me a laboratory and I will raise the world” [23]. The focus on mastery over or domination of nature appears to be deeply rooted in Western thought, leading to a human-dominated planet [24].

Noss (1996) observed that “Scientists in particular are uncomfortable with the wilderness idea because it seems so subjective, soft, and non-quantifiable”. As a necessary outcome of the preceding sentence, there is abundant evidence of an ideological point of view about nature, encompassing different times, disciplines, and topics [25]. A good example is the point of view of Robert Troup, a renowned English forestry expert who spent the first part of his career in colonial India: “In order to obtain a normal forest, starting from the abnormal conditions of natural forests, we have to make some sacrifices for some time. The problem of minimizing indispensable sacrifices to replace chaos with order will take up our minds for a long time” [26]. Other remarkable cases are those reported by Rolston (1999), such as the declaration of Daniel Botkin: “Nature in the twenty-first century will be a nature that we make” and “We have the power to mould nature into what we want it to” [21]. Again, we can refer to the claims of David Baltimore, a 1975 Nobel laureate: “We can outdo evolution” and “The living world can now be viewed as a vast organic Lego kit inviting combination, hybridization and continual rebuilding. Life is manipulability”. Overstating such points of view, Soulé (1989) stated: “In 2100, entire biotas will have been assembled from (1) remnant and reintroduced natives, (2) partly or completely engineered species, and (3) introduced (exotic) species. The term natural will disappear from our working vocabulary. The term is already meaningless in most parts of the world because anthropogenic [activities] have been changing the physical and biological environment for centuries, if not millennia” [27]. Another point of view worthy of note was expressed by Richard Dawkins, in his open letter addressed to Prince Charles of England: “It may sound paradoxical, but if we want to sustain the planet into the future, the first thing we must do is stop taking advice from nature. Nature is a short-term Darwinian profiteer. Darwin himself said it: ‘What a book a devil’s chaplain might write on the clumsy, wasteful, blundering, low, and horribly cruel works of nature’” [28].

All of this brings us to the actual Western scientific conceptualization of nature. The current debate opposing the concept of nature’s contributions to people (NCP) to an allegedly more scientific and non-political point of view [29–31], mainly based on the concept of natural capital and ecosystem services and the theory of ecological economics, is a fine example of the scientific controversy regarding how we should approach and study the natural world, who is entitled to carry out such a study, and which theoretical and practical instruments have to be used [32,33].

First and foremost, the NCP approach points out the central and pervasive role that culture plays in defining all links between people and nature [29]. In this way, the authors show the pervasive role of culture in our perception of nature, and in some ways also in

science, the discipline committed to unveiling nature's secrets. This assumption implicitly tells us that the interpretation of natural phenomena is not value-free (in the sense of epistemologically neutral), since it is voluntarily, or involuntarily, entrenched in the cultural background of a specific historical time, geographic location, political government, religious backgrounds, and philosophical theories. If science must be considered in relationship to a specific cultural context, the notion of nature also falls into the same conceptual framework. If this is true, then the modern Western views of nature can be consequently included among ideologically constructed theories, in the sense defined by Knight (2006): "the way a system—a single individual or even a whole society—rationalizes itself" [34].

The second focal point dealt with by Diaz et al. (2018) is related to the shift of perspective from an ecosystem services approach to an ecosystem contributions standpoint [29]. Costanza et al. (1997) define ecosystem services as "... the benefits human populations derive, directly or indirectly, from ecosystem ... ." [32] while a comprehensive classification of them (provisional, supporting, regulating, and cultural services) can be found in de Groot (2011) [35]. The shifting from services to contributions is intended both to outline "the positive contributions, losses or detriments, that people obtain from nature" and to incorporate into such a definition Indigenous and local knowledge (ILK), which the ecosystem services approach has failed to engage [36].

The authors call for a more comprehensive approach to evaluating nature and nature's contribution to humans, one that is more realistic and complete than ecological production's functions and services interpreted in the light of neoclassical economics. The stock (of natural capital) and flow (of ecosystem services) conceptual framework is not, according to Diaz et al. (2018), able to consider the cultural forces that contribute to shaping our perception of nature, and as a consequence, it brings back a partial picture of the human–nature interplay. The ecological, biophysical, and economic assessments, underpinning the ecological production function theory, seem then in need of being completed with a further set of indicators, which are not necessarily quantitative [29].

de Groot's concern about the NCP approach focuses on a possible paralyzing debate that the NCP point of view could engender, reaffirming that way the superiority of the Western scientific approach in this and in all possible contexts [30].

The sharp rebuttal to Diaz et al.'s (2018) article, made by Braat (2018), makes clear that points of view about nature alternative to those dictated by Western science cannot be taken into consideration. Every conceptualization outside the framework of the main scientific paradigms, which are acknowledged by parties of scientists made authoritative by their bibliometric indexes, is likely to be considered not worthy of attention [29,31].

Braat (2018), strongly disagreeing with the NCP approach, made explicit reference to some of the milestones of recent ecological thought [31], including, among others, Costanza et al. (1997) [32], cited in more than 22,000 articles; [37,38]. The latter work can be considered at the very roots of the ecosystem service concept and definition. These works were quoted by Braat to make clear that the long and fruitful scientific history of the ecosystem services theory can be neither questioned nor challenged by a political approach (de Groot, 2018), which would bring only confusion and delay research that aims at being translated into sensible policy decisions [30].

In this debate, what seems to disappear is the very sense of the term nature, a term that should be defined in a multifaceted way, considering "... systems of production and systems of signification, systems of meanings of nature and systems of use of resources, as inextricably bound" [39].

The questions this article wishes to raise are: Can our understanding of nature, together with the drivers shaping the natural world, only be contained in a set of scientific theories? Is it possible to set aside centuries of philosophical thought aimed at understanding nature because it fails to evaluate sustainable processes, being based only on the current Western scientific understanding formalized using English as *lingua franca*? Is it possible to apply to science Fukuyama's (1989) notion of the end of history, putting science itself at the end

of its journey of knowledge, an end where all questions find their ultimate and definitive answers [40]?

### 3. Alienation from Nature

According to Biró (2005), the systematic series of actions causing the progressive alienation of humans from nature can be most basically understood as a self-conscious transformation of the natural environment. Therefore, the ideological construct identified in the previous chapter represents the underpinning social force driving man away from the natural world. This problem has been one of the main concerns of modern philosophers since the eighteenth century, namely Jean Jacques Rousseau, Karl Marx, Theodor Adorno, and Herbert Marcuse [41].

As proposed by Biró (2005), all four of these authors share the idea that the problematic human–nature interplay is interwoven with social concerns. Another basic feature of their thought, expressed with different nuances, is that a return to a natural pristine state, even if it were possible, would be a disaster [41]. Rousseau believed that the return to nature would provoke the destruction of the human species [42], and Edmund Burke reminds us that “In a state of rude nature there is no such thing as a people” (in: Williams, 1976). Even the development of language, so important in shaping human communities, is a move forward in the journey to alienation. Rousseau claimed that alienation from nature, the movement of setting aside the natural object from the human subject, is the distinguishing characteristic of human existence. Freeing ourselves from the underlying constraints of nature brought our history and culture from latency to fulfilment [43].

As is well known, Marx claimed that in capitalism, labor cannot be but alienated [44]. Marx shaped the idea of alienation mainly as a political concept, focusing its concerns on human exploitation [11], whereas Rousseau and the Frankfurt School, namely Adorno and Marcuse, converged on the concept of the dualistic nature of alienation. Olay (2017) argues that in Rousseau, there are “two alienation-claims in his work: first, that human gets alienated from nature, and second that human gets alienated from his- or herself” [45]. Biró (2005) highlights that, in Marcuse, this dualistic feature of alienation became a notion of basic and surplus alienation from nature, being the basic alienation essential for human civilization and the surplus alienation specific to a definite moment in history [41]. As far as Adorno is concerned, this process embodies both the alienation from mere nature and social alienation [46]. The latter causes the gradual disappearance of the individual, who no longer exists as he is merging and sinking into a social dimension in which man loses himself. Adorno interprets these states of alienation in their historical perspective, showing that the attempt to free humans from the constraints of nature has only exacerbated domination instead of softening or eliminating it [41].

Evernden and Neils (1993) quoted, in the epilogue of their book “The Natural Alien: Humankind and Environment”, the following sentence from Rainer Maria Rilke: “The shrewd animals notice that we’re not very much at home in this world we’ve expounded” [47]. In this sentence lies the justification of the writing of this chapter: alienation from nature, even if it is unavoidable and welcome, has made us homeless and natural aliens, a state we cannot overcome. This implies that “overcoming ‘alienation from nature’, in the sense of estrangement from the overall natural world, cannot be equated with becoming fully at home in the world” [11].

### 4. Western Thought at Work: Does Nature Have a Market Value?

The term value, according to Foucault (2004), gained impetus in Western countries from the mid-XVIII century onwards, when the marketplace became the privileged place where the so-called true price of goods was enshrined. The market evolved, then, from the place of distributive justice to the place of truth, in terms of the real price, or natural price, of goods. None of this came to fruition without a profound modification of the Western vision of the natural world [48]. Harcourt (2011), analyzing the thought of the French physiocrat François Quesnay, argued: “The economic domain, Quesnay believed, is

governed by a natural order, and constituted an autonomous, self-regulating system that required no external intervention". This way, the market, together with the way prices are set, ends up including in the pricing system the entire world [49].

The influence of the market's natural order on the setting up of natural prices, to which every good and service is subjected, is still echoing today in the scientific questioning over the comprehension of nature. Currently, the debate on nature conservation and biodiversity protection is often based on the assessment of natural capital and ecosystem functions and services in terms of a flow and stock approach [37]. The rationale for this would be the willingness to sustain plant and animal productivity, maintain air and water quality, and sustain human life and health through a scientific understanding of the relationships between the natural world and human activities thanks to a new and more comprehensive economic methodology. Natural capital and ecological services—which currently lack prices in today's market of good and services—found themselves, in this way, framed within a scheme that is able to assign a sort of real value to nature.

By extension, the value that can be assigned to nature is mirrored in the market value of the human body. Evernden (1993) reported that some scientists, around the years in which the article was written, calculated the price of the human body, summing up the market value of all its components [47]. The total accounted for a meagre \$12.98. More recently, Data Genetics updated that value to \$160.00. Considering, instead, the various parts and organs as commodities, a body could be worth up to \$45 million, with shocking differences in price between Western and Eastern suppliers [50]. The site "Life Happens" (<https://lifehappens.org/human-life-value-calculator/>, accessed on 2 December 2023) offers a service aimed at pricing human life in accordance with age and social status [51]. Kingsbury (2008), a Time journalist, reported that a group of Stanford economists calculated that the value of a year of quality human life is about \$129,000. All this gives objective economic grounds for sensible decisions by the US National Health Insurance program to cover or not cover new medical technologies if their cost exceeds this threshold [52].

Assigning a price to nature, and consequently human life and the human body, is a direct consequence of the process of alienation described in the preceding chapter. In order to clarify the consequences of giving an intrinsic value to nature, in the broadest sense of this term, philosophy and ethics are needed. The intrinsic value in Western thought is, obviously, a monetary value that underpins the human modification of natural environments, often causing their demise, and putting us in a modified post-natural world [21]. The debate about the value of nature received an important contribution from geographers, who look at this issue from a very interesting point of view. David Harvey argued that today, like it or not, artificialized ecosystems around the world are sustained by the circulation of nature-extracted value connected to money flows. Interrupting this would cause a global collapse, inevitably resulting in an unprecedented ecological crisis: "So we've worked ourselves into a situation where the ecosystem is made up of money as a driving circulatory power and it's destroying other ecosystems which are founded on completely different systems of appropriation" [19]. These systems, for example agriculture, are experiencing a recurring shift of scientific revolutions aimed at improving the extraction of added value by the rationalization of nature. A paradigmatic example is the bio-revolution, which is following the green revolution. In their forward-looking article of 1985, Buttel et al. observed that the yield-enhancing potential derived from agricultural practices, based on the so-called high-yield variety seeds (HYV) and high chemical and mechanical inputs, was rapidly becoming unable to sustain agricultural performance in the long-run. All this called for a paradigm shift from HYV to plant and animal modifications based on genetics and molecular biology [53]. The authors recognized that private capital, the principal agent for technological transfer and development, was shaping the bio-revolution to its own needs and objectives. This way, the added value extracted from nature enhances the process of putting into force legal arrangements protecting plant varieties and patenting novel life. In this regard, Kay and Kenney-Lazar (2017) observed that "humans are creating new species and ecosystems to suit the temporalities and accumulation logic of capital, the long-term

consequences of which are yet to be known". The same applies to genetically modified organisms (GMO) [19].

Spash, in his heartfelt article of 2020, calls for a renewed and courageous commitment of ecological economists aimed at expunging from their analyses the classical economics approach, namely the two main paradigms of growth and the price-making market. Spash (2020) recognizes that the ecological economics theory is meeting with a sort of internal contradiction, as, under this umbrella definition, three different, and somehow conflicting, approaches are confronting each other. These are: (1) new resource economists (mainstream neoclassical economics), (2) new environmental pragmatists (postulating the primacy of basic policy imperatives in theoretical debates), and (3) social ecological economists (relying on scientifically sound theories, like the assertion of the biophysical limit of growth), to which Spash claims allegiance. Spash also underlines that social ecological economics recognizes that a "range of shared, socially relevant, ontological commitments already exist", incorporating in this line of thought the economics of non-measurable items. All of this calls for a multidisciplinary, multicultural, multi-epistemic, multiconfessional, and so on approach that should consider an array of voices such as those theorizing from the steady state, degrowth, post-growth, eco-socialism, and ecofeminism perspectives [33]. To complete this series of alternative thought, it could be advisable to consider deep ecology (as theorized by Bill Devall and George Sessions) [54], integral ecology [55], John Zerzan's primitivism [56], and poststructuralist political ecology [57]. A very special place in this list of thinkers is held by Raymond Williams, the Welsh Marxist theorist who applied the Marxist theory of culture to ecological and environmental issues [58]. Finally, there is also the culturally reflexive stewardship model more recently proposed by Winthrop (2014) to resolve the flaws of the ecosystem services approach, which seems unable to correctly consider ecosystem cultural services (aesthetic, spiritual, recreational, cultural heritage, sense of place, and way of life), identifying them as socially constructed environmental values and practices [59]. It is worth noting that such alternative approaches were all conceptualized within Western thought.

A wide and multifaceted approach is always promising, and fruitful, as theoretical models should nourish themselves with holistic views. However, all of this does not help, in the short or medium term, to build a unifying theory able to dictate the agenda of new cultural and economic relationships with nature, provided we are able to correctly define this word. At present, neoliberalism addresses and dictates the agenda, as it benefits from a well-consolidated and widely shared theory. The end of history, theorized by Fukuyama (1989), means exactly this: liberal democracy, together with its corollary of classical economics, must be considered the end point of all forms of government in all nations and the culmination of humankind's journey through history. This set of statements and principles will not be easily overturned before it is too late [40].

As pointed out by Winthrop (2014), some authors, like de Groot et al. (2018), see in the stock-flow model the best way to describe the concept of ecological services. Natural capital and ecosystem services are compared to a flow of interests or dividends moving from stocks to final recipients. In addition, environmental value is framed in a utilitarian perspective that identifies individuals as subjects naturally oriented towards the maximization of their states of utility [30,59].

As highlighted by Spash (2020), classical economics permeates a great deal of research carried out under the flag of ecological economics [33]. In addition, the pioneering works of Costanza are embedded with a sort of unavoidable price-making market approach. One of his most widely appreciated articles priced the value of the entire biosphere in the range of US \$16–54 trillion per year [32]. Even though these authors recognize that ecosystems contribute to human welfare through services that are outside the money economy (such as purification of air and water, climate regulation, aesthetic values, and so on), the calculation of nature's value was made by converting each estimate into 1994 USD/ biomes ha/year "using the USA consumer price index and other conversion factors as needed".

## 5. Nature from the Indigenous Perspective

The *Anima mundi*, the idea of a vital principle spreading throughout the universe explaining motion and life, was already being speculated among pre-Socratic thinkers [60]. Gregory (1955) observed that this doctrine of the soul of the world was fully articulated within a cosmological discourse in Plato's *Timaeus*. The same author speculated that the story of animistic naturalism coincides with the Greek history of thought in its various attempts to explain the rationality of the world through an immanent principle. Such a line of thought was alive up to the works of the Renaissance nature philosophers, such as Bernardino Telesio, Giordano Bruno, Marsilio Ficino, and Tommaso Campanella, who believed that the universe and all beings were vitalized by a common soul of the world [61].

The *Anima mundi*, in its meaning of a unifying and vitalizing principle of the complexity of the cosmos [62], gained new impetus in the cosmotheandric vision of Panikkar (1991), which was aimed at reconsidering the Western process of emancipation of humanity, driven by modern science and modern philosophy, backed by the radical rejection of the cosmovision [63]. The emergence of the Western scientific myth and mechanistic vision of the natural world demote to the rank of superstition any attempt to reconnect modern thought to this long-lasting unifying conception of nature.

Such a cosmovision is very closed to the Indigenous worldviews within the pluriverse perspective of nature perception, as the cosmological interconnection of materials and immaterial entities [57]. Multiple Indigenous worldviews are characterized by human and non-human dimensions, considered as an inseparable unit. The material, the spiritual, the physical, and the temporal dimensions cannot be either severed from each other nor conceived as singularities to be addressed in a unique dimension [64].

In 2001, Indigenous people accounted for about 300 million, inhabiting practically all biomes [65]. Most of the world's biodiversity, both wild and domesticated, pertains to areas occupied by Indigenous communities. The relationship between these populations and their surrounding world is significantly different and incompatible with Western thought.

In Indigenous cultures, there is nothing that looks like alienation in human–nature interplay, in all the meanings summarized here in the section “Alienation from Nature”. Indigenous people are, on the contrary, affected by a process of cultural alienation, a process that ends up devaluing and abandoning their cultures or cultural backgrounds for the sake of the culture imposed by the colonizers [66].

Indigenous people, all around the world, worship every component, animate or inanimate, of their environment. They also personify their environments, as they consider all the objects populating the hearth as cognizant and communicative subjects, continuously interacting with each other and with living organisms [67]. In this way, their place in the natural world is not a matter of interpretation, as it is in Western thought, but rather a matter of consciousness of being “. . . all related to, and play a role in, the complexity of life” [68]. The recurring processes of birth, transformation, death, and rebirth are interconnected in a continual cycle associated with the essence of life, making the natural world a place of familiarity [67].

Turnbull (2002) reported in a position paper on Indigenous people provided on the occasion of the World Summit on the Information Society, held in Geneva in 2003: [69]

*We recall that our collective knowledge is the very foundation of our cultures. It is indivisible from our identities and our laws, institutions, value systems and cosmovision. It derives and develops from our daily interaction with our ancestral territories.*

*We stress that the protection, preservation, and development of our traditional knowledge cannot be separated from our right to maintain and strengthen our distinctive spiritual and material relationship with our lands, territories, inland waters, and coastal seas.*

*We highlight that our cultures provide for rules and regulations on communicating, sharing, using, and applying our knowledge. These rules and regulations are cultural obligations we have to comply with and are part of our own customary laws.*

*Our distinctive spiritual and material relationship with our ancestral territories and their environments contains similar duties and responsibilities we need to attend to when using plants, animals, or other living beings for our own needs.*

This position paper was integrated by the adoption of the United Nations Declaration on the Rights of Indigenous People [70]. In the same article, Turnbull quotes Erica-Irene Daes' description of the fundamental character of the perception of nature by Indigenous people, who

*“... regard all products of the human mind and heart as interrelated and as flowing from the same source: the relationship between people and their land, their kinship with other living creatures that share the land and with the spirit world. Since the ultimate source of knowledge is the land itself, all of the art and science of a specific people are manifestations of the same underlying relationships and can be considered as manifestations of the people as a whole”.*

This description illustrates very well the sacred character of nature, perceived as intangible cultural heritage by the so-called Indigenous populations. This is a perception of nature that violently clashes with the Western one, as the latter is driven by an epistemological background denying any intrusion of the sacred into the temple of science. Nietzsche's "God's death" [71] and Weber's "disenchantment of the world" [72] are the two main pillars on which the entire Western vision of the world is founded. On the contrary, the Indigenous communities' representation of nature denies the discernment and perception of the natural world as composed of a set of objects and services at human disposal (a typical utilitarian point of view), considering it, instead, vital and sacred [7].

Even though Turnbull, quoted by Johnson and Murton (2007), argued: "there is not just one universal form of knowledge (Western science), but a variety of 'knowledges'", there is little doubt that Indigenous knowledge occupies a very small part of Western thought today, if any [73]. The same authors observed that Western natural science examines culture and history in nature by extracting and studying items both from their natural relations (inorganic, organic or ecological) and from human economies, histories, social and symbolic systems. In this way, Indigenous knowledge becomes a sort of subjugated knowledge, losing both whole parts of its natural surroundings and the cultural and symbolic reference to them.

## 6. Lessons for Sustainability

The actual growing ecological concern is putting under a magnifying lens the human-nature interplay, scrutinizing all the possible effects of human activities on the ecosystem. Albert Arnold Gore, a well-known Western politician, was awarded the 2007 Nobel Prize, together with the Intergovernmental Panel on Climate Change, with the following motivation: "for their efforts to build up and disseminate greater knowledge about human-made climate change, and to lay the foundations for the measures that are needed to counteract such change" (<https://www.nobelprize.org/prizes/peace/2007/gore/facts/>) (accessed on 28 November 2023). Gore's more seminal activities in this regard were the publications of the books "Earth in the Balance: Ecology and the Human Spirit" [74] and "An Inconvenient Truth: The Planetary Emergency of Global Warming and What We Can Do About It" [75], together with an Oscar-winning documentary. Gore provided a tremendous contribution in turning the scientific debate on climate change into an emotional concern shared by billions of people around the world.

Such an emotional concern, nevertheless, is based on a widespread lack of attention to the meaning of the term nature, which seems an essential understanding if we wish to explain nature, the use of natural resources, and how to protect nature from degradation. What is the meaning of the word nature in Western civilization today? Is it possible to put aside the philosophical background underpinning our relationship with that we define as nature, calling for its universal and value-free essential features?

The same applies to the term sustainability, which finds its epistemological foundations in the following definition: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” [76]. Beyond any doubt, the WCED’s seminal sentence is the pillar of any and each successive theoretical formalization of the term sustainability.

The ever-increasing interest being raised in sustainability cannot be decoupled from the perception of nature and the perception of the so-called natural values, whether material, aesthetic, or spiritual [77–81].

The intriguing question that arises from such a definition is: Which generation should be concerned by the struggle for sustainability? The Western generations? The Western generations and those of the under-developed world? Maybe all the generations on our planet? Considering that the Indigenous generations are, and most probably will also be in the future, perfectly able to meet the needs of the present without compromising the ability of future generations to meet their own needs, it seems that the WCDE formalization of sustainability should mainly apply to Western generations. If this is true, Western science, quite clearly, will be called upon to ensure a future for this planet. This patent evidence underlines, once more, the excellent state of health that the evergreen theory of the hegemonic West is enjoying.

Webb and Krasner (1989) attempted to assess the empirical cogency of the hegemonic stability theory, a trendy approach among American political scientists since 1945, which is still in vogue today. According to such a theory, international stability, in terms of economics, is more likely to be assured when a single state plays the role of leading power. Being a leader in the economy translates into being dominant in science, technology, media, and culture; the collective West is aimed, based on all evidence, at ruling the world [82].

It should be borne in mind that the hegemonic West means, in all respects, the hegemonic Anglo-American world. To exercise such prominence, language is an essential tool. First and foremost, English is undoubtedly the dominant language in the world and the sole language of science. Kaplan (1993), in examining the role of different languages over centuries of human history, argues: “. . .but the case of English is unique for several special reasons: it is the most recent case, it is the most extensive case, it is a case which arose largely by accident, it is a case that has been marked by economic rather than by military expansion, and it is a case in which only certain limited domains and registers have come to be dominated” [83].

The widespread dominance of English gives rise to both English hegemony and the English divide [84], as English creates divisions and inequalities between those who speak it and those who do not.

Sustainability is, then, investigated, conceived, written, formalized, diffused, perceived, and carried out using a single idiom among the 45 languages having 40 million or more total speakers [85] and among the 8,324 languages registered in the World Atlas of Languages [86]. The room left for Indigenous knowledge in the process is virtually zero.

A good example of Western thought at work, where Indigenous knowledge is concerned, is given by Rigney [87]. The author, a native Australian Indigenous lecturer at Flinders University in Adelaide, is concerned by the Indigenous Australian participation in science, obviously in Western science. The article, written in English, points out how Indigenous Australians shifted from being scientific objects to investigating scholars of science, recognizing, however, that their accommodation in Western science hinders the emergence of a renaissance in Aboriginal intellectual life and intellectual sovereignty. As Australian science is driven and controlled by Western thought, the Aboriginal scientific contribution is allowed only if it is framed in the mainstream line of thought.

If Indigenous thoughts, perceptions of nature, traditional values, spiritual values, and consciousness have to be set aside to assure a future for our planet, the term sustainability stands to lose its charm.

## 7. Conclusions

Of the 8324 languages currently spoken in the world [86], most are threatened by language shifts, in addition to the extinction of the populations who speak to them [88]. The rate of loss of biodiversity is exceeded by language extinction, which is mainly due to globalization, urbanization, economic migration, and the necessity of choosing a common language of communication by linguistic minorities who must cope with larger and economically stronger populations [88]. Even though the annual loss of biodiversity is occurring very quickly, the disappearance of languages occurs even faster. It has been estimated that the velocity of species extinction is at least 1,000 times greater than historical background rates, and that by the end of this century from 50 to 90% of present spoken languages will disappear [89].

Turnbull (2009) recalls that out of the roughly 200 languages spoken by approximately 600 Australian tribal groups, 50% have already disappeared and only 20 are commonly used. In addition, 80% of Indigenous people speak only English at home. This state of the matter is well summarized in a report by the Australian government that concludes: "Overall, the trend remains towards a decline and eventual loss of perhaps all Indigenous languages, a tragic result for Indigenous people and the heritage of Australia" [69]. It is worth noting that the destruction of cultural diversity comes with the loss of biodiversity [90].

The disappearance of Indigenous languages accelerates the disappearance of the Indigenous way of perceiving nature, as cultural and spiritual backgrounds, framing the way people refer to nature, are vitally interconnected with languages. This is a strong point in arguing that the paradigm shift from an ecosystem services model to an NCP approach is nothing but an illusion. The point of view of Braat (2018), who observes "...all the topics the NCP authors claim need to be addressed, and have done so in a pluralistic, multi-world-view way, in more than 650 papers, many of them in Special Issues focusing on social science topics such as shared values and integrated valuation", is illusory as well [31]. In a few decades, humanity risks the loss of any alternative approach to nature. It is easily foreseen that the Western perception of nature will dominate, making such a debate meaningless. In addition, the powerful economic and technological forces, driven by Western epistemological and scientific thought, cannot be, in any way, redirected toward respecting a perception of nature perceived as declining, expressed by populations perceived as declining, articulating a knowledge perceived as declining. This is knowledge based on presuppositions and foundations that have always been questioned, in their extent and validity, by Western thought.

In our opinion, neither the NCP model nor the ecosystem services approach will be able to stop, reduce, or even mitigate the process of continuous alienation from nature and continuous mastery over nature. In a world deprived of alternative knowledge, the Western approach to nature will pervade and occupy all the possible spaces (mental/cognitive, social, dwelling, communicative, narrative, sacred, geographic, cosmological, etc.) and all the possible conceptualizations of human–nature mutual relationships [69]. This is a tragic consequence of Western political, scientific, and cultural egocentricity, which places itself as the meaning and measure of things.

In addition, no sustainability, neither from a theoretical perspective nor from a practical standpoint, is possible in a uniform world, driven by an uniform thought overriding the plurality of approaches and the host of cultural traditions shaping our societies. As biodiversity is essential for the functioning of all ecosystems on our planet, cultural diversity is essential for addressing each and every problem caused by a developing paradigm based on the overexploitation of natural resources.

The clash between the Western civilization, and the host of still-existing Indigenous ones, appears to be inevitably bound to a fatal outcome for the weakest among those who are confronted. The American Anthropological Association recognized Western economic expansion, military power, and evangelical religious traditions as heralding standardization of cultures all over the world [91]. The first result stemming from the overwhelming Western power is the widespread myth of cultural inferiority of all non-

European people [82]. Ascribing cultural inferiority to Indigenous people justified their tutelage by the allegedly superior Western culture. The expansion of the Western world has come along with the demoralization of human personality, the disintegration of human rights, the misunderstanding of Indigenous values, and the loss of their political autonomy or the literal extermination of whole populations [91].

Even regarding the noble concern about human rights, which prompted the United Nations to enact the Universal Declaration of Human Rights, a worry arose among wiser scholars that the universalization of principles would bear an imbedded potential for erasing cultural diversity [92,93]. In this regard, a document issued by the American Anthropological Association stated: “How can the proposed Declaration be applicable to all human beings, and not be a statement of rights conceived only in terms of the values prevalent in the countries of Western Europe and America?” [91].

Western thought is not ready to put forward a new paradigm aimed at harmonizing the human–nature interplay by taking advantage of the wisdom of Indigenous thought and experience. This path is still unexplored, as Western thought is currently encroaching on any possible available space, both in theory and praxis.

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