

Perspective

# The COVID-19 Pandemic and the Climate Crisis: A Call to Question the Mindset of Modernity

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**Abstract:** Drawing a parallel between the COVID-19 pandemic and climate change, the article explores what can be learned from these crises using two axes of analysis. First, such events show some noteworthy structural analogies, being both typified by nonlinear dynamics. They exhibit latency periods and tipping points: at the beginning, things go slowly, but once a critical threshold is exceeded, suddenly escalate quickly; as a result, *when* we respond to them will make the difference. Second, it is crucial how complex crises are framed. It would be deceptive to concentrate only on their contingent aspects. Both cases should instead be seen as the symptom of a broader imbalance, i.e., a ‘crisis of modernity’. Consequently, the article investigates their possible common roots: not only their socioeconomic determinants, but also worldview assumptions, particularly a long-lasting dualism that contributed to generate an overall sense of separateness. It argues that this situation cannot be addressed through some superficial changes. Rather, it urges us to move toward some deeper shifts, regarding both our way of thinking and behaving.

**Keywords:** COVID-19 pandemic; climate change; nonlinearity; tipping points; crisis of modernity; worldviews; dualism; interconnectedness



**Citation:** Mazzocchi, F. The COVID-19 Pandemic and the Climate Crisis: A Call to Question the Mindset of Modernity. *Challenges* **2022**, *13*, 33. <https://doi.org/10.3390/challe13020033>

Academic Editor: Susan L. Prescott

Received: 14 April 2022

Accepted: 21 July 2022

Published: 25 July 2022

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## 1. Introduction

The world has faced a dramatic crisis prompted by the SARS-CoV-2 outbreak, which caused the death of millions of people everywhere, also having harmful social and economic consequences. Unfortunately, this is not the only global systemic crisis we have to face. The other major crisis, i.e., climate change, is expected to be even more disturbing and lasting. In this paper, drawing a parallel between the COVID-19 pandemic and climate change, I scrutinize what can be learned from these events, focusing on two axes of analysis.

First, the pandemic and climate change exhibit remarkable structural analogies: they both feature complex forms of interconnectivity and nonlinear dynamics. They exhibit tipping points, with sudden escalations following a latency phase: when certain thresholds are crossed, apparently continuous processes can turn into rapid and dangerous changes; thus, *when* we respond to them will likely make the difference.

Second, the framing of complex crises is crucial. Depending on which factors are considered, the search for responses and strategies will be different. It would be misleading to only focus on contingent and proximate aspects. Focusing on the deeper reasons makes it possible to understand that the pandemic and climate change are the symptoms of an overall imbalance, i.e., a ‘crisis of modernity’, which is manifesting in a series of specific yet interrelated crises.

I discuss the possible common roots of the two events: not only their socioeconomic determinants, but also worldview assumptions, especially a deeply rooted dualism that contributed to create an overall sense of separateness. I argue that this situation cannot be addressed through some superficial changes. It instead requires transformations touching the deeper level of our thought and way of behaving. For instance, rediscovering and revitalizing the disrupted networks of (natural and social) interconnections and interdependencies. In this respect, insights might be gained from other cultural traditions, like the indigenous ones, whose cosmologies have been permeated by these features for millennia.

## 2. Understanding the Crises as Nonlinear Phenomena

The COVID-19 pandemic has been a reality check. It has demonstrated that shattering situations are not arbitrary hypotheses, but are truly possible. There is enough evidence to foreshadow even more distressing and long-lasting events due to climate change.

The rate of ice loss in Greenland and Antarctica is rapidly increasing [1], mirroring the worst-case climate warming scenario foreseen by the Intergovernmental Panel on Climate Change (IPCC). The melting of the polar ice caps is occurring six times faster than in the 1990s. Due to climate change, the loss of ecosystems and biodiversity will also be massive in the near future [2,3].

COVID-19 has caused millions of deaths, and yet deaths from the chronic pandemic of noncommunicable diseases (NCDs—as a result of large-scale environmental degradation with mass urbanization—have been far greater and likely to be exacerbated by climate change [4]. Hundred thousand of people could die in the next decades depending on climate change-induced phenomena, e.g., extreme heat waves, and food and water shortages, which will likely cause an increase in infectious diseases as well [5].

### 2.1. Structural Analogies between the COVID-19 Pandemic and Climate Change

The COVID-19 outbreak has underscored the fact that delays or inaction can have dangerous consequences. A crisis may build slowly, initially unrecognized, but accelerate very quickly once it crosses a certain threshold. Climate change is typified by similar dynamics. Their structural similarity resides in the fact that they both involve nonlinear mechanisms and tipping points: two interrelated features of complex systems [6,7].

At tipping points, minor quantitative increases can unexpectedly give rise to massive qualitative change in the overall system. Whereas the system was able beforehand to preserve its stability by means of negative feedbacks, as soon as the critical threshold is reached, self-reinforcing amplification mechanisms are activated, which can lead to sudden escalation and trigger a transition into an alternative stable state [8].

In the case of COVID-19, allegedly, the virus started to infect a restricted group of people in the city of Wuhan (China). Over time, taking advantage of worldwide hyper-connectedness, the outbreak spread to much more remote people, sickening millions of people everywhere [9].

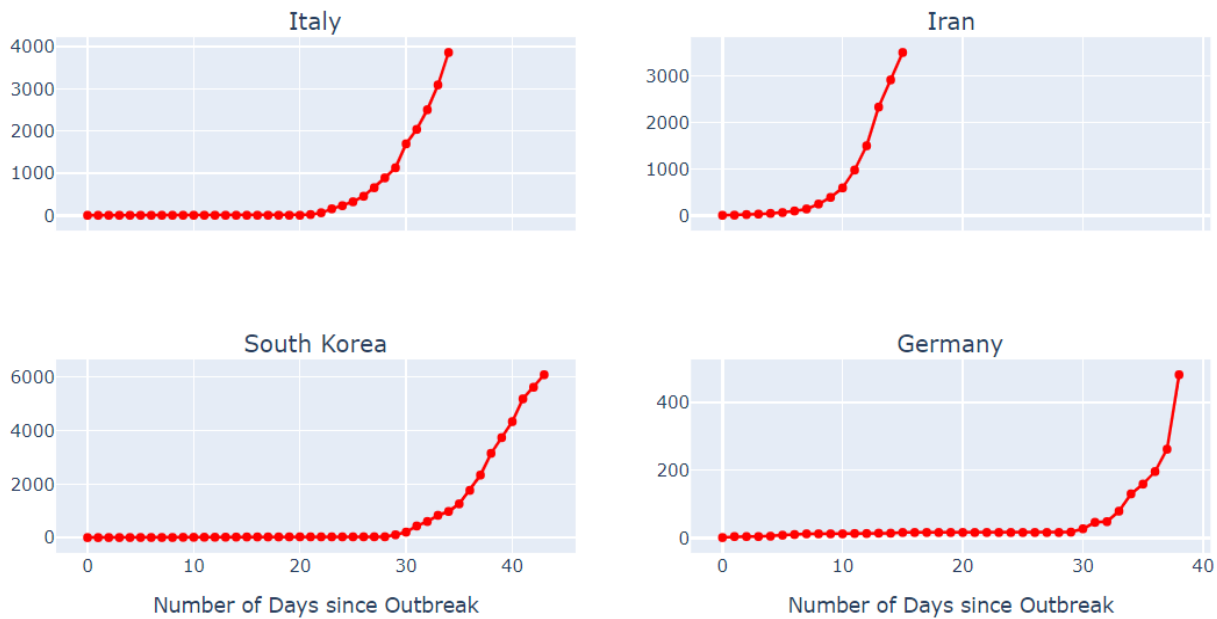
The dynamics of contagion, i.e., each infected person can spread the virus to more than one person, caused a rapid acceleration of the infection rate. In many countries, after a flat latency phase, at given times the outbreak advanced exponentially, becoming suddenly explosive and getting increasingly faster as time passes (Figure 1). There was, then, the need to flatten the curve (i.e., slowing its growth rate), acting as soon as possible to break the ‘chains of transmission’ [10]. In fact, with exponential growth, even one day or a week before could make a huge difference, preventing a large number of cases, as well as many deaths.

In the case of climate change, there is a danger of even greater global threat. The greenhouse gas effect was already described in the nineteenth century by scientists like John Tyndall and Svante Arrhenius. Over the years, the ever-increasing burning of fossil fuels has resulted in an unprecedented rise of the atmospheric carbon dioxide (CO<sub>2</sub>) [11].

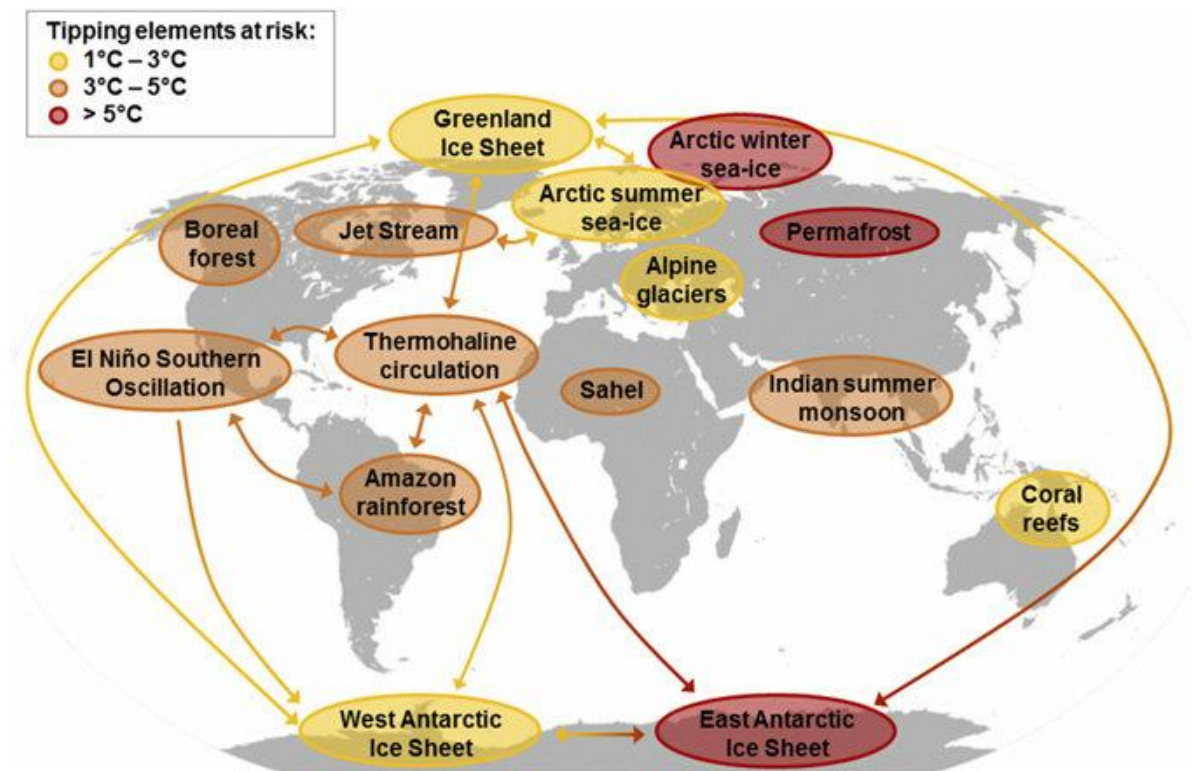
At present, we are experiencing about 1.1 degrees of warming. Nonetheless, the risk is that the planet will be propelled toward a continuing warming pathway that could not be “reversed, steered, or substantially slowed” [12], p. 8257. By approaching and exceeding a critical threshold in the global average temperature,<sup>1</sup> there is the possibility of starting a chain reaction of self-reinforcing feedback loops in the Earth system, which would drive such a pathway and would not be easily influenced by human interventions.

A domino cascade would, in fact, be activated (Figure 2), with various tipping elements firstly triggered, which cause a further warming that, in turn, triggers additional tipping elements [13]. The likely overall result would be an increase, perhaps within a century or two, in the global average temperatures of much beyond 2 °C, something that would have

massive consequences at multiple levels, from the raise of the sea-level of tens of meters higher than today, to ecosystem loss and disruptions to society and economies [12].<sup>2</sup>



**Figure 1.** Exponential growth in different countries during the first wave of the pandemic (2020). Accessed 28 February 2022. <https://towardsdatascience.com/analyzing-coronavirus-covid-19-data-using-pandas-and-plotly-2e34fe2c4edc> (accessed on 1 July 2020).



**Figure 2.** A map showing the risk of tipping cascades: The color of the tipping elements depends on the expected thresholds in global average surface temperature; arrows display the possible interactions between the tipping elements that might cause cascades (Reprinted with permission from Ref. [12]. Copyright 2018, Steffen et al.).

Therefore, to avoid the risk of crossing the critical threshold, immediate and coordinated actions are required: not only reducing greenhouse gas emissions, but also creating and enhancing negative feedbacks (e.g., preserving, expanding and generating carbon sinks, and managing solar radiation), which can help to stabilize the climate [12,14,15]. Climate scientists, however, warned that meaningful results could not be obtained through only incremental changes. There is instead the need for wide-ranging decisions, such as decarbonizing the global economy [16], together with technological and social transformations.

## 2.2. Complex Thinking for Understanding a Complex Reality

The coronavirus pandemic and the climate situation have shown that *when* we respond to the crises matters a lot. When things go slowly there is much more chance to lessen or halt them: the earlier we do something—either to minimize the threat of the virus exponential growth or avoid the crossing of the critical climate threshold—the more chance we have to be successful. Tipping points are, in fact, especially tricky because they are not easy to predict; as mentioned before, they emerge suddenly at the culmination of slow, apparently continuous trends—characterized by minor events—and also cause us to expect the same continuity in the future [17]. One should then be able to grasp the first observable signals of what could become a shattering event.

It is thus essential to comprehend the nonlinear dynamics underlying the phenomena and the risk of cascading hazards. In turn, this would require refining the way we ‘read’ the world: to better understand a complex reality, we should make ‘complex’ our thinking too, going beyond a cognitive approach that today is still accustomed to work, almost exclusively, in a linear and short-term fashion [18,19]. One of the attributes of complex thinking is the ability of reasoning through multiscale and circular causal chains. Such an ability will be also important for dealing with future global crises that, very likely, will be typified by similar nonlinear behavior:

*“Since everything is linked up and networked with everything else, a break down anywhere has a knock on effect, unsettling other parts of the network, even bringing down the whole network. Moreover, the potential for positive feedback, for things to multiply rapidly and dangerously in geometric progression, is enormous. This is where those small, insignificant, initial conditions come in: they can trigger major upheavals, even a small change can lead to collapse with accelerating speed. A computer virus, a strike, a single resignation, can set off a chain reaction that can bring a nation or the whole world to a grinding halt”* [20], p. 438.

## 3. How the Crisis Is Framed Matters: The Case of the COVID-19 Pandemic

Crises also represent opportunities, as they force us to learn something that we might not be willing to learn in ordinary times. Turning once again to the language of complexity, they hold the potential of functioning as ‘bifurcation points’, i.e., singular points of transition where, depending also on our decisions, a system or situation can take one path or another.

To take these opportunities we should not only have the willingness to react to the emergency, but also to pause and think at a deeper level. For instance, it is worth noting that, during the pandemic, an understandable longing to ‘return to normality’ was widespread. This largely depended on framing the pandemic as an isolated and momentary event, i.e., an unprecedented global health crisis caused by an invisible enemy that is ‘outside’. After all, pandemics have always happened. As argued some decades ago by the historian William H. McNeill [21], p. 4, “occasional disastrous outbreaks of infectious disease remained sudden and unpredictable interruptions of the norm”. If that is the case, we should not then mistake what is part of the usual course of history for a disaster.

However, sticking with this view today would mean that we have missed the point. As remarked by Arundhati Roy [22], “nothing could be worse than a return to normality”, if this implies that we should re-embrace the previous unsustainable way of living, that is, refusing to acknowledge that the pandemic is only the last symptom of an overall imbalance, i.e., a ‘crisis of modernity’, which is causing multiple interrelated (e.g., environmental,

political, socioeconomic, even intergenerational) impasses [23]. Pope Francis [24] added his voice to this discussion saying that “anyone who thinks that the only lesson to be learned was the need to improve what we were already doing, or to refine existing systems and regulations, is denying reality”.

COVID-19 vaccines have been, of course, crucial achievements of science. It should be in their power to end the pandemic, but not to prevent future zoonotic diseases progressing into a pandemic, unless we understand the multilevel factors involved.

We tend to attribute events to contingent and *immediate* causes, as they are easier to grasp and comprehend; yet, what is essential, especially regarding complex global crises, is to investigate the deeper and *root* causes.

Beer and Hariman [25] identified a number of steps to properly address such critical moments: (i) recognizing that the crisis has revealed a structural fault; (ii) delineating the epistemic conditions that led to the crisis; (iii) and (iv) recovering lost knowledge resources and establishing connections between multiple ways of knowing; and (v) and (vi) identifying alternative futures and acting differently. The first step is, therefore, to acknowledge that the pandemic has made evident something that is deceptive in the fabric of our societies.

Now, one key issue involved in both the pandemic and climate change is interconnect-edness. Especially as the COVID-19 emergency showed how each element of our society is interlinked: something that allowed the virus spread to impact several aspects of society, such as work and the consumption rate, which in turn impacted national economies, the world’s supply chains and labor markets.

The society we have built is highly interconnected on given aspects, and yet, beneath the surface, it is paradoxically very fragmented, owing to pervasive individualism and particularism [26]. These latter aspects also impacted the development of the pandemic: for instance, if China had acted differently and faster, perhaps the coronavirus may not have spread all over the world; not everyone found it easy to understand how individual behavior can affect the wider community, and short-sighted forms of regionalisms and nationalisms also emerged in the handling of the emergency.

There is an underlying sense of separateness, which regards not only the relationship between human beings, but also between man and nature. Notably, the COVID-19 pan-demic, just like the SARS-CoV-1 (2002) and the MERS-CoV (2012) outbreaks, ultimately results from disruption of nature and unsustainable resource extraction [27,28].

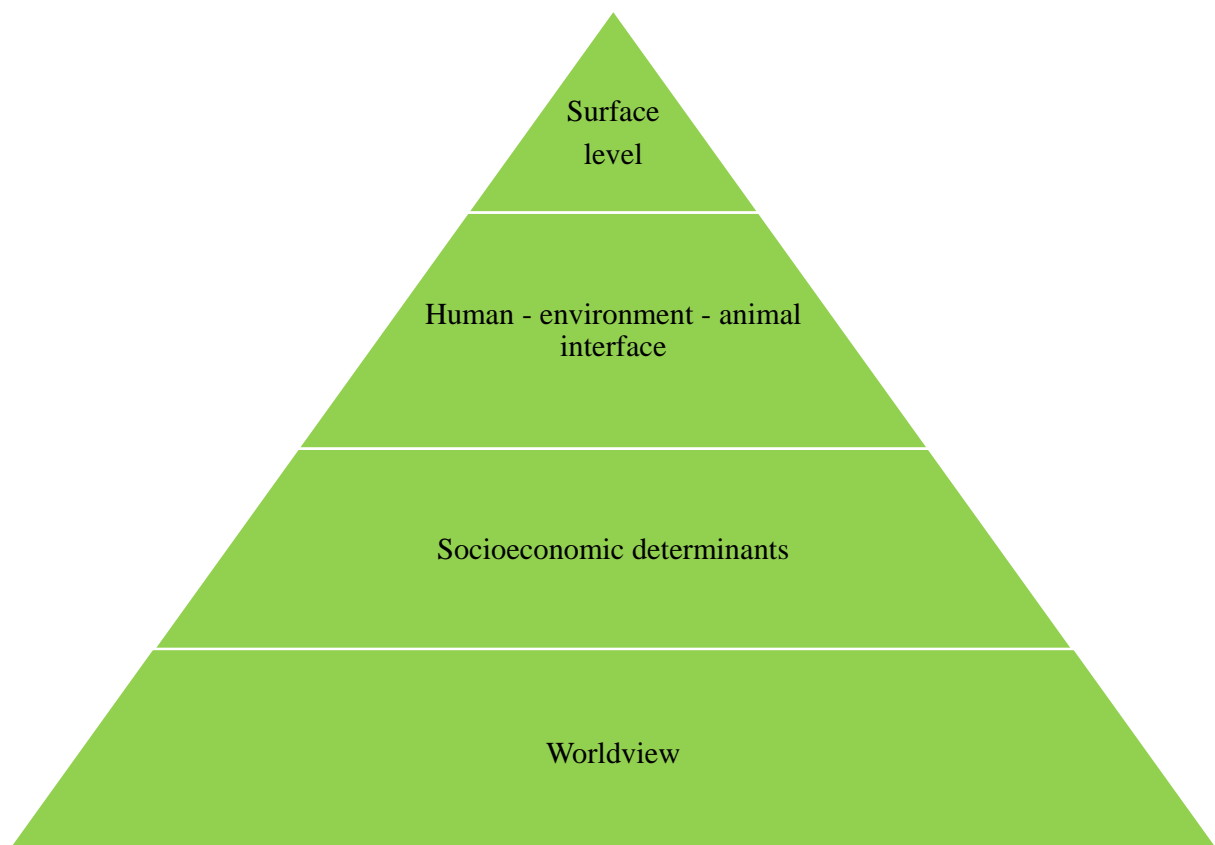
#### *A Multilevel Analysis of the COVID-19 Pandemic*

I suggested [29] an analysis of the coronavirus pandemic focusing on four distinct yet causally interlinked levels (Figure 3).<sup>3</sup>

The first corresponds to the surface of the crisis. It concerns the outbreak dynam-ics, mechanisms of virus pathogenicity and disease transmission, conditions of health structures, measures to control the pandemic, etc. This facet of the crisis has been widely discussed through the media, keeping the focus on the immediacy of the situation, yet diverting attention from its deeper and long-term determinants.

The second level shifts the attention to the drivers of potential zoonotic diseases at the human–environment–animal interface, as suggested by the One Health approach whose concern is preventing possible future threats [30]. Here a number of additional factors become apparent. For instance, the fact that complex networks of natural ecosystems are usually able to hold in check potentially threatening pathogens, and that however much of these networks have been disintegrated by aggressive anthropic activities like extensive deforestation [31,32]. Or also the fact that, owing to the expansion into new areas of human settlements, an increasingly large number of people come to live in relatively close proximity with wildlife, delivering more chances for microbial and disease transmission [33]; due to routes of global hyperconnectedness (e.g., global trade and travel routes), what originated as a local spillover may lead to an epidemic or pandemic [34].





**Figure 3.** The multiple different levels entailed in the COVID-19 crisis (adapted from [28]): the deeper the level, the less detectable it is, the more impactful its repercussions.

The third level considers the socioeconomic and political determinants of disease vulnerability. Various research studied the linkages between particular spillover events and socioeconomic models that promote intensive livestock farming or the destruction of wildlife habitats [35]. Others investigated the way in which globalization contributes to the disease spread and persistence [36]. In addition, the impact of neoliberal health policies, which have been enacted in many countries, should be considered [37]. However, all these circumstances are the upshot of the same global capitalism: i.e., a system that relies on the laws of market and whose underlying logic is exploitation; a system that entails a commodification of nature, under a model of development that creates its own necessity and is “blind to its consequences” [38], p. 53.

Finally, the fourth and deeper level focuses on the fact that all the aforementioned issues are ultimately expression of a specific worldview, that of Western modernity, especially the way we conceive the human–nature relationship. The roots of the problems thus reside at the core of our mindset. As a result, ruminations and transformations should start at this scale.

#### **4. The Common Deeper Root of the Crises: The Worldview Level**

In every sociocultural setting, a restricted set of assumptions play a key role in determining the way people experience and understand the world, thus shaping their ‘mind-scape’. In the Western tradition, one of these assumptions takes the form of a fundamental dualism, basically inherited by Descartes’ [39] dichotomy between psychic reality (*res cogitans*) and physical reality (*res extensa*). This dualism combines with an atomist view that, also stimulated by Newtonian physics, depicts everything as composed of indivisible particles that are separated from one another. Even individuals are viewed as social atoms. Not only dualism and atomism both permeate Western thought, but also integrate with

classic bivalent logic, which supports the reading of reality under the lens of multiple irreducible opposites, e.g., subject–object, internal–external, parts–whole, etc. [19].

The crystallization of these conceptions heavily contributed to create an enduring overall sense of separateness, which can be regarded as the root cause of the divide between man and nature. Such a deeply rooted dualism and patterns of disunity continue to shape our perspective of reality, instigating a utilitarian attitude towards the natural world and permeating multiple aspects of social life. Not only they have formed and still form the background condition (say the intellectual inception) for many today’s systemic crises, but also affected the search for their solutions. For instance, they have been incorporated in the mainstream understanding of sustainability that, while recognizing the need of a change, mainly focuses on the ‘enduring wellbeing’ of human societies and communities [40].

However, to think that we can successfully build our life and wellbeing as separate from the rest of the biosphere is deceptive. As insightfully argued by Isabelle Stengers [38], we are entangled with *Gaia* (i.e., the living planet), who sustains and tolerates us; but we have *abused* her tolerance, going beyond her capacity to preserve or regenerate vital ecological processes, to the point that today we are experiencing her threatening side: *Gaia* is also “the one who intrudes” [38], p. 43.

#### 4.1. Revitalizing the Disrupted Interconnections and Interdependencies

The array of researched solutions depends on how the problems are outlined [23] and thus, referring to the scheme illustrated above, on the level on which we focus our attention. We seek short-term measures when the priority is saving lives; more lasting effects would be obtained by preserving tropical forests, changing the agricultural model, or moving lifestyles away from fossil fuels; at a deeper level, the goals could become to decarbonize the economy and build societies centered on human and environmental wellbeing, rather than on the laws of the global market.

On the other hand, if we embrace the idea that both crises are manifestations of an overall crisis of modernity, and more specifically of its worldview assumptions, then the very foundations of *our* world are called into question. What is thus needed is to step away from the sense of separateness in which we are embedded, challenging the dualistic view and bivalent logic on which it grounds. Here, once again, complex thinking and second-order cybernetics might give us insights [18,41].

Conceptual opposites are generally framed by superimposing a scheme of disjunction and yet they might also be regarded as complementary and mutually specifying. For example, the inside cannot exist without the outside, and vice versa; similarly, without the system there is no environment, and there is no environment without the system. At a more basic level: the subject exists only in relation to an object; the object exists only in relation to a subject. All these opposites are distinct but not separated; they co-emerge as part of a recursive, circular unfolding. Here, the suggestion is not to eliminate or reconcile the opposites—whose ‘distinction’ needs to be maintained—but rather to deconstruct their ‘disjuncture’, which crystallizes in dichotomous views of reality [42].

This shift on the logical ground can inspire further improvements. A framework of complementarity and interdependence could apply to the relationship between individual (or a particular society) and the overall social environment (which still includes other individuals or societies), something that is well exemplified by the famous African proverb “I am because we are and therefore we are because I am” [43,44]. Even the relationship between man and nature can be portrayed in a similar fashion. Rather than as segregated into distinct spheres, man and nature can be seen as interweaved and co-evolving together [45].

Overall, we need to rediscover and revitalize disrupted links and interdependencies: between man and nature, between different individuals and societies, and ultimately between everything that is part of this universe.

Conceptions emphasizing especially ecological interconnectedness are, of course, not extraneous to contemporary Western thinking. For example, they can be found in some lines of contemporary environmental thinking, such as Barry Commoner’s [46] first law of

ecology, i.e., ‘everything is connected to everything else’; in Gregory Bateson’s [47] unity of mind and nature and ‘pattern that connects’; in metaphorical extensions of Schrödinger’s notion of quantum entanglement applied to the ecosphere [48]; in the urge of rediscovering an ecosophic awareness [49]; and in Timothy Morton’s [50] environmental philosophy, according to which all living and nonliving things are interdependent and related to each other in a vast cosmic “mesh”, which consists of “infinite connections and infinitesimal differences” [50], p. 30, and where no element has chance to exist by itself. The critique of the man–nature (and subject–object) divide has instead been a common background for feminist epistemologies e.g., [51,52], and a key feature of Bruno Latour’s [53] ecological thinking. In the last decades, a growing number of studies have also underscored the rediscovery of the human–nature interconnectedness as a crucial factor to achieve far-reaching transformations e.g., [54,55].

#### 4.2. Modernists vs. Earthbound People

All the aforementioned ideas can contribute to the erosion of the dualistic and atomist view, but there is the need for a (fully developed) alternative worldview. We need to re-legitimate those types of knowledge and worldviews that headline the interconnectedness of life and the importance of living in balance. In this respect, insights might also be gained by the views and experiences of other (non-Western) cultures.

This would be in line with Beer and Hariman’s advise [25], i.e., to establish connections between multiple ways of knowing; also considering that the current global crises are all expression of a specific “mode of being in the world” [56], p. xii. A mode of being that continues to reproduce itself, reiterating the ideals of modernity (e.g., dualism, individualism, capitalism, etc.). Especially in post-crises times, it is thus essential to involve a plurality of voices and perspectives in knowledge production [23]. We need to look at the experiences of societies that have not followed the same trajectory of modernity, grounding their ways of living by alternative root principles. For example, many native people around the world perceive the universe as a complex network of multiple interrelated and mutually caring parts. Often, they are animated by a sense of deep kinship and intimacy with nature, from which arises a spontaneous attitude of stewardship e.g., [57–59].

It is important to recall Bruno Latour’s [53] distinction between ‘Modernists’ (*Modernes*) and the ‘Earthbound people’ (*Terriens*). One could interpret his argument as follows. The first category corresponds to those who have embraced the modern style of living (thus not only Westerners); these people consider themselves as emancipated from superstition, owing to a ‘disenchantment’ of the world; however, they have progressively lost the feeling of interconnectedness with nature. The second category instead corresponds to those, like indigenous people, who still rely on millennial traditions and seem to have maintained a sense of (non-dualistic) unity with nature. Latour is surely sympathetic with the Earthbound people, but when it comes to establish the real value of indigenous knowledge, he is more than cautious:

*“Would it be possible to accept the candidacy of those people who claim to be assembled, for instance, by Pachamama, the Earth goddess? May be, if only we could be sure that what passes for a respect for the Earth is not due to their small numbers and to the relative weakness of their technology. None of those so called ‘traditional’ people, the wisdom of which we often admire, is being prepared to scale up their ways of life to the size of the giant technical metropolises in which are now corralled more than half of the human race”* [53], p. 128.

However, I do not think that we have to ask the Earthbound people “to scale up their ways of life”. Whereas it is true that indigenous systems specifically apply to local settings, the principles upholding them have a broader significance. Their emphasis on interdependence, relationality, and reciprocity stem directly from their worldviews [40,60]. Not only indigenous people have been the caretakers of their own lands for millennia, but they are also living epitomes of different ‘modes of being in the world’. As such, they might help identify alternative futures and a wiser conception of sustainability, which does not



correspond to the enduring wellbeing of any particular part (e.g., species or community) but of the whole.

## 5. Conclusions

In this article, I suggested that our response to complex crises like the COVID-19 pandemic and climate change should be equal to their scale. Rather than some incremental changes, we need a major shift from the onto-epistemic stance of modernity. Unless this occurs, the same overall conditions will be perpetuated, provoking by default similar crises in the future. I argued that this shift should start from the deeper level, involving worldview assumptions and questioning the dualistic scheme in which we are embedded for ages.

We should develop a greater sense of mutual belonging and reciprocity, grounded on the recognition of the ties binding man and nature as well as all humans or societies together, and recognize that a balanced intertwining of all its elements is essential for the functioning of the whole. In fact, there cannot be *enduring* wellbeing for any particular species (human included), community, or individual unless the basis of overall wellbeing is preserved. However utopian it may seem, embracing this post-dualistic view holds the potential to recalibrate the entire scheme of things, leading towards a more equitable future. In the face of the present global challenges, this is what we need.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** Data sharing is not applicable to this article as no new data were created or analyzed in this study.

**Conflicts of Interest:** The author declares no conflict of interest.

## Notes

- <sup>1</sup> Determining this threshold exactly is overly difficult [61], although Steffen et al. [12] suppose a warming increase of  $-2$  °C compared to the preindustrial age, thus unfortunately within the range of Paris Accord temperature targets.
- <sup>2</sup> Scientists' heightened awareness of the magnitude of the environmental crisis is reflected in the 2001 *Amsterdam Declaration on Earth System Science*: "Earth System dynamics are characterized by critical thresholds and abrupt changes. Human activities could inadvertently trigger such changes with severe consequences for Earth's environment and inhabitants. The Earth System has operated in different states over the last half million years, with abrupt transitions (a decade or less) sometimes occurring between them. Human activities have the potential to switch the Earth System to alternative modes of operation that may prove irreversible and less hospitable to humans and other life ( . . . ) In terms of some key environmental parameters, the Earth System has moved well outside the range of the natural variability exhibited over the last half million years at least. The nature of changes now occurring simultaneously in the Earth System, their magnitudes and rates of change are unprecedented. The Earth is currently operating in a no-analogue state" [62].
- <sup>3</sup> A scheme like this is, of course, a simplification. It aims to provide a conceptual standpoint to highlight that the reasons of complex crises reside at multiple levels. A (readjusted) multilayered scheme could be used to frame the climate crisis too. In this case, even situations at the surface level risk not being perceived with the same sense of urgency, due to the much slower moving rate of climate change. More generally speaking, it would be also important to cross-check analyses of this sort with alternative perspectives. For instance, the historian Dipesh Chakrabarty warned about the necessity to distinguish between the point of view of global history and that of deep planetary history: whereas the former refers to the role played by humans, the latter corresponds to the geobiological history of the planet, which has a totally different temporal scale—perhaps millions of years—and exceeds human agency. Chakrabarty specifically focused on climate change [63], arguing that its history cannot be reduced to the impacts of capitalism and globalization, and their intensive use of fossil fuels. We should also frame it with reference to the deep history of the Earth, including the history of the human species and the biological and cultural transformations that have led to its development. He applied a similar reasoning to the COVID-19 pandemic situation too [64]. When we consider the contingent conditions that have led to the pandemic, e.g., invasive anthropic activities, humans as the vector for virus spreading, worldwide interconnectedness, we are using the point of view of global history. When we instead consider the fact that SARS-CoV-2, as well as other coronavirus of mammalian species, could be pre-adapted to human infectivity [65,66]—and that human bodies have become part of its evolutionary pathways—we are using the perspective of planetary history.

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