



## Article

# The Global Bystander Effect: Moral Responsibility in Our Age of Ecological Crisis

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## Abstract

*We are facing a planetary ecological crisis due to global warming, despoliation of our natural resources, mass scale industrial pollution, desertification, deforestation, widespread collapse of ecosystems, and extreme climate change. World overpopulation is nearing a record tipping-point, where food and water scarcity will bring about more famine, drought, pestilence, and death. Global catastrophic hazards have escalated due to the environmental crisis, encroachment by man, destabilized markets, hegemonic politics, the ubiquitous dread of nuclear war, terrorism, infectious diseases, techno nihilism, and psychological self-interest driving everything from vain desire to the local economy and international relations, not to mention the anathema of evil, abuse, trauma, greed, and the psychopathology of everyday life. Our recalcitrant dependency on fossil fuel is gradually suffocating the planet. Greenhouse warming, climate catastrophes, and aberrant weather phenomena occur every day throughout the globe and yet we do very little to mitigate it, let alone reverse its course. Moreover, we have caused the Anthropocene. Despite the fact that we see the ruin with our own eyes and do practically nothing to mitigate the ecological crisis, world masses have adopted a global bystander effect, where denial and abnegation of social responsibility lie at its very core. Regardless of the degree of gravity we assign to these calculated risks imperiling our existence, we cannot ignore the ominous threat of planetary extinction unless humanity unites in moral preventative action. After offering an adumbrated exposition of our ecological crisis, I examine these complexifications through a combined methodology relying on causal layered analysis, risk mitigation concerns, and foresight praxis as new directions in futures studies.*

## Keywords

Bystander Effect, Climate Change, Global Warming, Climate Denialism, Anthropocene, Gaia Theory, Paris Accord, Risk Mitigation, Causal Layered Analysis (CLA)

We begin our story with witnessing a crime. We see it happening but nobody intervenes. It just happens and keeps on happening as some indifferent occurrence where everyone says, “It’s not my problem.” We find ourselves as bystanders hoping others will intercede but no one wants to get their hands dirty. Citizens are frozen. Police walk by. Not even government officials care that a murder is being committed. World collectives become onlookers who accept no responsibility let alone an obligation to act. We are passersby to ecocide.

Throughout this essay I argue that we are hypnotized by a global bystander effect as we aloofly watch the Earth slowly being destroyed. Like a cigarette addict, we know it is bad for us but we don’t want to kick the habit even as our lungs are filled with smoke and tar. I explore some possible reasons for this apathetic phenomena and why we continue to allow ourselves to be idle bystanders to our climate emergency. Next I offer foresight narratives through causal layered analysis methodology that forecasts different futures and risk mitigation strategies necessary to offer a way forward. It is my hope that re-envisioning moral futures will lead to collective global change that resuscitates Gaia from her deathbed.

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## A Promise of Hope

At the United Nations Climate Change Conference held in Paris in 2015, nearly two hundred countries agreed under the COP21 accord to limit the *increase* in global warming by 2020 to an ambitious, if not miraculous, 1.5 degrees Celsius above preindustrial levels.<sup>1</sup> They didn't make it. Most scientists agreed that this was not possible given our current rate of human population growth and entrenched reliance on fossil fuels. This goal would require a complete cessation of any new exploration of gas, oil, and thermal coal, including new coal mines, oil and gas wells, fracking initiatives, and pipeline expansions, as well as a complete global shift away from dependence upon carbon-based resources to clean or renewable energies and alternative technologies (cf. Leahy, 2015). Given that the fuel sector is a 1 trillion dollar industry, it is unimaginable that the world would stop manufacturing automobiles, concrete buildings, power plants, and disposable goods that require carbon fuels simply out of financial self-interest and practical need. Put concisely, it would be tantamount to economic suicide. More unfathomably, it would require relinquishing our immediate comforts and overall quality of life as we know it.

Regardless of pedestrian social indifference to green movements and stubborn resistance to change, the renunciation of carbon energies would wither and devolve the global standard of living to that of primitive times. In fact, the Paris resolution is not an international enforceable treaty nor is it legally binding; it is merely a *promise* to try. In other words, a hollow platitude: as long as fossil fuels are the cheapest and most readily available forms of energy consumption, they will continue to be burned out of ease and necessity (cf. Orlando, 2015). Without enforceability, accountability, liability, or compensation, such assurances reveal the caricature of political cackle. Impractical commitments, dubious governmental policies, and duplicitous politicians were scarcely able to live up to such pledges when superpowers and capitalist incentives condition the infrastructures of our world societies ensuring that the lights and furnaces will remain on. The need for economic security, social stability, predictability, habit, and ready-at-hand resources is hardly going to disappear, let alone change overnight. Furthermore, human nature guarantees that desire, avarice, consumerism, and the quest for materialism will do their best to preserve the status quo.

## Global Bystanders in the Face of Ecological Crisis

Here on Earth we are destroying our planet. This is an irrefutable empirical fact. Greenhouse warming, climate catastrophes, and aberrant weather phenomena occur every day throughout the globe and yet we do very little to prevent it, let alone reverse its course. Moreover, we have caused it. Despite the fact that we see the ruin with our own eyes and do practically nothing to mitigate the ecological crisis, world masses have adopted a *collective bystander syndrome*,<sup>2</sup> where denial and abnegation of social responsibility lie at its very core. Such lethargy, placidness, and unwillingness to act on a global scale are tantamount to moral transgression. Although many conscientious and concerned bystanders are wielding protests against rampant ecological despoliation and organizing civil disobedience campaigns such as the youth climate change and Extinction Rebellion (XR) movements, many global citizens, particularly in the developed world, are simply watching or idly strolling by as our planet is sluggishly being destroyed from collective inactivity to prevent, subvert, and rehabilitate our dying mother Earth.<sup>3</sup>

Such bystander apathy, pluralistic ignorance, and diffusion of responsibility are psychological phenomena that are recalcitrant to reason. Like with the homeless and vagabonds on the streets, we have largely become spectators passively observing the deterioration of the Earth's biosphere without so much as lifting a finger to help. We just watch, waiting for someone else to jump in and fix things. What explains such lassitude? Whether in passivity or push back, the collective bystander effect serves as an existential threat to humanity.

This disturbing global phenomenon is evident from the fact that much of world citizenship, including all national governing leaders in every civil country, has sound scientific knowledge of our planetary plight where there is no ambiguity with regards to the severity of our ecological emergency, and the dangerous consequences that befall us. The world watches and looks on, whether helplessly, indifferently, or interpassively, as the impending death of Gaia is slowly succumbing to preventable inaction. Although many claim to be ignorant of climatology and the Earth sciences, even adopting skeptical and dismissive attitudes toward the validity claims made by natural scientists who study such matters for a living every day, we cannot deny empirical facts without succumbing to delusion.

What we know about the Earth's climate system, namely, how our atmosphere, lands, and seas are affected by

heat that is absorbed from the sun and displaced onto weather phenomena, such as storms, heatwaves, rising ocean levels, droughts, and so on, is that human beings have altered it from the way it would have developed organically if there were no humans inhabiting the Earth.<sup>4</sup> What is certain is that carbon dioxide (CO<sub>2</sub>) in the Earth's atmosphere traps the sun's heat, and that burning fossil fuels, such as natural gas, oil, coal, peat, and tars, produces more CO<sub>2</sub> beyond that which would exist or is already there in nature. Since the industrial revolution, we have systematically cultivated and are dependent upon carbon fuels, which have increased CO<sub>2</sub> levels by at least one third higher than they would have occurred naturally. As a result, the planet has become hotter; *ergo* human beings are the cause of global warming and the Anthropocene.

Satellite and ground-based measures have shown that warming ocean levels are on average eight inches higher than before 1900 and the Earth's temperature is 1.3°F hotter. Periodic reports issued by the Intergovernmental Panel on Climate Change (IPCC) generally agree that by 2100 the Earth's likely temperature will be between 3.2°F to 7.2°F above what it was in 2000, depending upon how much fossil fuel consumption continues during the next century.<sup>5</sup> As warming sea waters expand and hotter air melts polar ice caps and glaciers, there has been a trickle-down effect on the Earth's atmospheric systems that has produced complex interaction effects and redistributions of climate phenomena. Because the Earth does not respond passively to changes in temperature, it may produce various unpredictable and variegated climate-related responses to the effects of human intervention that supervene on climate systems on a global scale. Melting ice and glaciers increase water levels and flooding,<sup>6</sup> while increasing cloud cover reflects light back into space, affects vegetation, and holds in greenhouse gases. Opposing phenomena and exchange effects are inevitable, and are different throughout the world. With thawing conditions in the Arctic, permafrost could release extra carbon dioxide and methane frozen for thousands of years into the atmosphere, while rising tides, changes in ice sheets and ocean currents, and La Niña's and El Niño's Southern Oscillation climate patterns could bring on severe storms, floods, tornadoes, hammering winds, hurricanes, tsunamis, and the like, followed by deadly heatwaves, droughts, compromised agricultural production, and depleted water supplies in other parts of the globe.

Climate in the past cannot be compared to climate today, which is a category mistake, because this assumes that all the conditions in the past apply equally today, and that the Earth's ecosystems can withstand anything regardless of what is being dumped into the atmosphere; while we must seriously consider how the Earth's climate systems have been impacted by human activity, and how the increase in greenhouse emissions over the past 200 years have profound implications for the future of civilization. Our anthropogenic infestation, including increased toxins and pollutants, is what any substantial talk about global warming or climate change is really all about. Due to the proliferation in the human population since the industrial revolution, accompanied by vast consumption and waste across all civilizations, today's climate emergency becomes a whole other ball game. When mountain glaciers melt, they feed and alter the course of rivers differently, which leads to flooding in some places and droughts in others. When ocean currents are affected this alters weather and atmospheric climate patterns, while differing evaporation levels on both sea and land may lead to rain or snow or increased temperature. These complex interaction effects are varied throughout the world, hence happening at different rates and in different places.

Since differences in temperature affect wind force and weather patterns, they can lead to a whole host of varying local and regional climates, which may affect ecosystems, plant life, and animal migration looking to adapt to less harsher environments, or they face the specter of extinction. A warmer world will also force extra carbon dioxide to be absorbed into the oceans leading to increased acidification, hence permeating all living creatures and underwater ecosystems, such as coral reefs. By plonking more human CO<sub>2</sub> emissions into the atmosphere, along with methane, nitrous oxide, and other industrial chemicals, this increases the amount of water vapor due to evaporation, which traps in even more heat and augments the warming process.

Burning noxious coal churns out the majority of greenhouse gases, supplying the world with about 25 percent of its energy demands and about half of the electricity used in the United States alone. China, the US, and India are the biggest producers of coal, mainly because it is cheap and plentiful, and accounts for nearly 40 percent of the world's energy-related CO<sub>2</sub> emissions. As the world population increases, so will its energy demand, and coal use is likely to be our number one source of warming over any other fossil fuel. But even if we stopped burning fuel, driving gas-guzzlers, and turned off our air conditioners, we would still emit greenhouse gases due to agriculture, food production, concrete manufacturing, pollution, aerosols, and deforestation, just to name a few. Clearing forests and tilling land for farming releases large amounts of carbons stored in the soil, such as methane and nitrogen oxides,

as well as when plant matter decays and wood is burned. And with nearly 8 billion human inhabitants today, over 6 times as many people since 1800, we produce so much waste containing saturated stores of methane that we now have landfills so large they can be seen from space.

No natural source can explain our current global warming predicament. Deluded politicians, conservative reactionaries, and misguided researchers or academics who play on people's emotional prejudices and spoon-feed the ignorant masses propaganda or pseudo-science as natural justification for the recent warming are merely incompetent charlatans or speculative fools spouting off brazen nonsense without a proper appraisal of the facts. And political, capitalist, corporate, and personal self-interests are likely to be the main culprits motivating climate sceptics, criticism, and denial of the planetary crisis that is altering the Earth's energy balance. This is particularly the case when big business, such as the oil and gas sector, has invested capital in extracting oil from ground wells and tar sands, or in probing natural gas sources despite the fact that hydraulic fracturing (fracking) has triggered earthquakes during its exploratory operations, such as in Canada.

Mining, drilling, and transport accidents have also had disastrous consequences on the environment that have polluted our lands, ecosystems, and waters, such as sour gas destroying lakes, drinking water, and aquatic resources used for irrigation, as well as petroleum spills and leaks on coastal drilling rigs and offshore platforms that have decimated animal and marine life while sullyng our oceans. And government has an invested interest in excavating these resources because it is good for the overall welfare of the state. The fossil fuel industry is deeply tied to a nation's economy for jobs, prosperity, and personal well-being depend upon carbon energies for production and commerce, which in turn supports a whole host of vital industrial, trade, and factory occupations including steel, cement, plastics, appliance and automobile manufacturing, engineering, construction, and small business. And when political policies threaten to interfere with established social expectations and financial profits, everything from the gross domestic product to social class, material wealth, public health, and personal happiness are affected. And here lies our paradox and fundamental ambivalence: in order to save the planet, including ourselves, we have to give up the primary means in which we depend upon to enjoy life.

## Earth Futures

Futurists, visionaries, designers, technologists, and foresight practitioners of all disciplines have adopted a number of research methodologies in analyzing and proposing viable alternatives to possible futures and potential foresight impacts including causal layered analysis (CLA) (Inayatullah, 2004; Milojević & Inayatullah, 2015, pp. 157-158; Hoffman, 2019, p. 73), narrative foresight (Milojević & Inayatullah, 2015), stage theory uses of the future (Inayatullah, 2020), imaginings (Hoffman, 2019), backcasting (Boulding & Boulding, 1995; Fry, 2019), and six pillars modelling (Inayatullah, 2008) have been predominant trends. These approaches, in various ways, aim toward (re)visioning potential, alternative, and preferred futures that may bring about new realities through social change agents, political activism, visionary creativity, motivational impetus, and emerging discourse perspectives that challenge and reframe entrenched ossified scripts and schemas in order to advance futures studies through deconstructive, reconstructive, rehabilitative, and insight praxis.

Scientist James Lovelock posits that the Earth or Gaia, named after the Greek goddess, is like a supra-living organism that regulates our planet. Composed of all its features, such as the atmosphere, biosphere, upper layers of rock, mountains and oceans, and minerals and chemical compounds deep in its core, Gaia functions to regulate its internal environment like an evolving superorganic system. An assumption governing contemporary Earth System Science, Lovelock (2006) defines Gaia theory as:

A view of the Earth that sees it as a self-regulating system made up from the totality of organisms, the surface rocks, the ocean and the atmosphere tightly coupled as an evolving system . . . having a goal—the regulation of surface conditions so as always to be as favourable as possible for contemporary life. (p. 162)

Although Gaia does not have agency, choice, or a command-and-control system, it does involve what Tim Flannery (2010) calls an “unconscious cooperation of all life that has given form to our living Earth” (p. 36) through evolutionary forces (p. 57).<sup>7</sup> Because both living and non-living aspects of the Earth are indissolubly interwoven, it becomes logical to posit that the Earth as a complex, evolving self-regulatory macrosystem is akin to an organism

that would do what it could to control, adjust, and synchronize its surface temperatures in sea and on land in order to favor life. Regardless if we view this hypothesis concretely or metaphorically, the continuous interaction and commerce between complex ecological systems is beyond any doubt. Now, Lovelock insists, Gaia is “sick,” infected by a disease called man.

In applying foresight methodology, we may view humanity as a passive bystander watching listlessly as Gaia is being destroyed. The empirical evidence I will continue to present makes this core metaphor all the more ominous because the world is simply looking on rather than doing something to halt its course, as if it is a spectator’s sport.

**Table. 1:** Global bystanders

GLOBAL BYSTANDERS	GAIA	FUTURE
Scenario 1	Watch	Destroyed
Scenario 2	Intervene	Subverts Disaster
Scenario 3	Help	Saves
Scenario 4	Repair	Heals
Scenario 5	Safeguard	Prevents Disaster

Table 1 schematizes potential futures based on a range of scenarios from our current state of affairs and route of actions to intervening parameters that could alter the course of outcomes based on Earth science predictions. Scenario 1 depicts our current situation where global bystanders are simply inertly observing as Gaia is being repeatedly assaulted on the street and becoming more maimed and decrepit. Without intervention, it is forecasted that Earth will fall into illness and die. Scenario 2 introduces a potential future where, if humanity acts now, even if only marginally, it can subvert this disaster from happening, but it is likely to still leave Gaia in the infirmary where she will need medical attention in order to survive. This is fated to happen if the world waits until it is too late to deal proactively with the climate crisis and only intervenes at the last moment when the Earth has become too unmanageable to live. Scenario 3 envisions directly helping the person in trouble rather than remaining a spectator on the sidelines and avoiding responsibility, which may even be interpreted as a heroic act and the most ethical thing to do following a moral imperative. This will require a concerted effort by global social collectives to save a drowning man in a team effort. Here ecocide is not merely subverted but Gaia is saved from destruction caused by the Anthropocene. Scenario 4 is Gaia being treated by healthcare workers where repair, healing, nurturance, and rejuvenation occur after being rescued from being battered and robbed by an assailant. Scenario 5 ensures that appropriate safeguards are put into place so the innocent are no longer hit and victimized, laws are changed in favor of environmental protection, police are on the streets patrolling for crime, citizens are ordered to assist in prevention, criminals are prosecuted, and global community ensures that regulations keep us all safe so we can prosper. Here humanity becomes a watershed sentinel where respect and mutual recognition for human and ecological welfare is the new morality preserving shared conscientious coexistence. If these visions of the future are not entertained by world masses currently gawking as the wrecking ball strikes, Gaia will surely have her revenge.

**The Revenge of Gaia**

The Earth system is no longer operating effectively within its set of bounds and constraints because its conditions have been strained and pushed to the limits governing the principles of homeostasis that maintain order, optimal temperature, and climate stability. In fact, Gaia’s future looks grim: Although she’s “a tough bitch,”<sup>8</sup> Lovelock (2006) predicts “she will die from overheating” (p. 45). Since circa 1970, the world’s mountain glaciers have shrunk at an alarmingly accelerated rate. The poles and ice caps are melting, and sea-levels have risen by 8 inches on average worldwide. Greenland’s ice sheets are breaking up or disappearing, and warmer air and ocean temperatures rapidly contribute to sea-level rise. As polar ice sheets continue to shrink, islands will begin to sink. Arctic animal life will decrease, migrate, or die off, and loss of habitat will make it difficult for polar bears as a species to survive. And below the arctic, a mountain pine beetle epidemic has ravaged indigenous forests of pines and spruce in western Canada and the northwestern United States due to increased warming, while millions of bees are dying throughout North America and Europe due to the so-called “colony collapse disorder” that affects pollination, and hence loss of agricultural crops, and we still don’t know why, although the use of pesticides,

insecticides, infections, pathogens, loss of habitat, and so forth are the usual suspects.

The Earth's temperature is 1.3°F higher than it was 100 years ago, with some places warming more while others less, and the continental United States has had more than twice as many record highs as record lows in the first decade of the 21<sup>st</sup> Century. Milder winters and early spring thaws alter the naturally occurring temperature cycles of the seasons, hence hastening seed sprouting, blooming of plants and flowers, migration, disrupting hibernation, feeding and breeding patterns, nesting timing of birds, insects, and mammals, and the spawning of fish, amphibians, crustaceans, mollusks, and other aquatic animal life such as corals, fungi, algae, and the like—all affecting ecosystems on a mass scale.

Changing geologies, altitudes, and climates trigger changes in ecosystems all over the world, affecting everything from vegetation growth to desertification, shifts in insect and animal populations, drastic alterations in terrains, ocean and land habitats, and food and water supplies. As some ecosystems dissolve, new ones will form, just as climate feedback loops account for irregularities in temperature, cloud formations, wind, reflection of light and heat, and other weather phenomena. Our greenhouse planetary sweat suit has led some scientists to predict that due to Arctic amplification (viz., increased melting leads to less reflection leads to increased warming leads to more melting, and so on), the Arctic Ocean could potentially be ice-free (in the summer) by 2100 if not by 2050 or before depending upon our rate of warming. And the global sea-level could rise anywhere between 2 to 6 feet by 2100. We may also expect to see more weather extremes such as excess heatwaves, droughts, forest fires, severe storms, and floods all over the globe, as we have already witnessed. The hotter it is the more water evaporates from soil and water bodies, which leaves the land dry and brittle, hence affecting crops, bush, and topography ripe for wildfires; and because water vapor is stored in the atmosphere, when it rains it pours, hence leading to rising water levels, erosion, flooding, storm surges, monsoons, hurricanes and so forth that will become increasingly more destructive in scope and severity.

As sea levels become more elevated, land will be subsumed under the ocean tides, from Miami to coastal Bangladesh, potentially displacing millions of people who are forced to move, while low-lying island nations such as the Maldives in the Indian Ocean could simply disappear. Climate change could conceivably make matters even worse in disenfranchised countries where political instability, violence, poverty, military conflict, and civil wars are historically correlated with warmer temperatures and drought, such as in Sudan and other parts of Africa. We only need to be reminded of the recent mass diaspora of Syrian refugees flooding Europe to imagine millions of displaced, panicked, and desperate souls invading foreign lands due to climate migration. Think of the breadth of pandemonium, injuries, illnesses, social trauma, civil disorder, looting, death, and escalating police and military violence that would occur within nations and between borders. Entire continents could be affected, hence shaking the foundations of modern societies; and even major superpowers will likely lack the infrastructure to deal with mass migration due to insufficient resources, processing facilities, housing, food and water supplies, public-health systems, medical intervention, civilian unrest, state opposition, threats of criminality and terrorism, and concerns about national security.

We are likely to see an exponential increase in heat-related deaths, such as in the summer of 2015 due to anomalous heatwaves that roasted Iraq, Egypt, India, Pakistan, and Europe, among other countries; and health and public institutions will be overwhelmed by the chaos. Climate related health risks such as ground level ozone and other forms of air pollution can burn the eyes, bring on asthma attacks or allergic reactions, and inflame the lungs, especially in those who have respiratory difficulties, such as the old and very young. Infectious diseases could become air born or carried by insects, such as mosquitos transmitting malaria, dengue, Chikungunya or the Zika virus, and public health systems would be scrambling to prevent or stop their spread. Changing patterns of rainfall, including droughts and floods, will affect farming and food crops, where malnutrition and death are to be expected, especially in developing countries such as India and Africa where half of the deaths of all children are attributed to hunger, malnutrition, sickness, and starvation. And when food and water supplies become contaminated, especially in countries with poor sanitation and feeble public-health systems, outbreaks of diarrheal disease, cholera, typhoid fever, pestilence, and the like are inevitable. We don't need to be reminded of the recent horrific COVID-19 pandemic that changed the world, and other epidemics before that, such as SARS, Swine Flu, and Ebola: magnify that by millions if not more.

The question becomes, Can we sustain our planet under these conditions? Or is it too late? If things continue this way, where the world continues to heat up but carries on with business as usual, it only becomes a logical matter of time when it will be impossible to reverse the damage. In all likelihood, we will accelerate our own demise. With

the continued sprawl in overpopulation competing for water, food, and basic material resources necessary for survival, only to have more babies under the blazing sun adding to already unbearable social conditions amongst the existing privation and economic impoverishment, not to mention national, cultural, and religious factions teaming with envy, hate, and malice fueling further division, criminality, and war, we may anticipate a future full of destitution, anguish, despondency, and gloom. Regardless of our inability to predict futurity, we may only reasonably conclude one thing: The number one threat to human annihilation is actions produced by man.

James Lovelock and many other noted climate scientists are painting an ominous picture of the fate of humanity: As the planet continues to warm, most living things will eventually die. Once we pass a threshold state, a proverbial point of no return, the damage is irreversible. This is not simply hysterics or paranoia, as climate skeptics and denialists will attempt to persuade us to believe, but cold sober facts based on all the available objective evidence we have. In Lovelock's (2006) estimate, "before this century is over, billions of us will die and the few breeding pairs of people that survive will be in the arctic region where the climate remains tolerable. . . Not only will wildlife and whole ecosystems go extinct, but the planet will lose a precious resource: human civilization" (p. xix). With the thought of an Exodus to the North Pole as our sole chance of survival, it becomes fitting that Lovelock's conclusion is rather biblical: "Gaia now threatens us with the ultimate punishment of extinction" (p. 147). Will she take her revenge? Sir Crispin Tickell nicely summarizes the penumbra of this menace when reflecting on our current predicament:

Looking at the global ecosystem as a whole, human population increase, degradation of land, depletion of resources, accumulation of wastes, pollution of all kinds, climate change, abuses of technology, and destruction to biodiversity in all its forms together constitute a unique threat to human welfare unknown to previous generations. . . When applied to the problems of present society, the concept of Gaia can be extended to current thinking about values: the way we look at and judge the world around us, and above all how we behave. This has particular application in the field of economics, where fashionable delusions about the supremacy of market forces are so deeply entrenched, and the responsibility of government to protect the public interest is so often ignored. Rarely do we measure costs correctly: thus the mess of current energy and transport policy, and the failure to assess the likely impacts of climate change. . . We are dangerously ignorant of our own ignorance, and rarely try to see things as a whole. (cited in Lovelock, 2006, pp. xvi-xvii)

If the Earth is unable to continue to regulate itself due to runaway greenhouse effects, destruction of tropical rainforests, suffocation of the oceans, and diminution in planetary biodiversity, the whole house will collapse. With increased desertification and deforestation, as well as the disintegration of oceanic ecosystems deprived of precious nutrients, such as algae and phytoplankton, which food chains depend upon, there will be little woodlands and ocean life left to absorb the various gases out of the atmosphere. And with increased heat coming from the sun through the ozone and with decreased surface and cloud reflection—cooling systems operative within these vital regulatory ecosystems on land and sea, the Earth will become largely uninhabitable. As plant and algal life die and decompose, and when ice glaciers melt and permafrost thaws, they release carbons and methane into the air, hence amplifying the warming. And as increased temperatures bake forests, scrubland, timber, peat, and crops, the continents becomes one giant tinderbox. Here Lovelock warns of a massive expansion of tropic deserts and oceans so hot you can soft-boil eggs.

### **Too Big to Fix**

When large numbers of people are less likely to react to emergencies to help victims and people in distress, hence eschewing any personal responsibility, then how do we understand this global bystander phenomenon when it involves billions of people? It would be fallacious and disingenuous to deny knowledge or assume pluralistic ignorance of our ecological emergency when the leading scientific authorities, research and academic institutions, private industry, policy analysts, economists, world governmental agencies, and international climate and earth science advocacy groups all plead the world masses to curb our carbon emissions and turn to more environmentally friendly forms of renewable energy in order to subvert our portentous catastrophe. The ecological apocalypse is looming before our very eyes, yet we are unable to overcome the diffusion.

How do we make sense of our global bystander effect? Why do world collectives turn a blind eye to the common sense reality that lies before them? Is this simply due to denial, or the unconscious illusion of constancy? Despite the fact that we need to take very seriously the possibility that we may be on the verge of human extinction if we do not take immediate collective global action, individuals in solitude and in social masses simply are not contemplating our perilous future with any foresight. There may be many reasons for this, from cognitive or information overload, collective self-deception or bad faith (*mauvaise foi*), optimistic over-confidence or blind faith in the future, failure to consider futurity in terms of its possibilities and probabilities, underestimation of the stakes involved, overestimation of the predictability of the past while underestimating the unknowns of the future, ignoring the need for future preparation without the benefit of hindsight, or simply looking to others to provide evidence for *why* we should act while trying to appear poised and unflustered as a means of saving face, covering over shame of ignorance, and/or to project the tacit conviction that others are enveloped in a naive reactionary defense (cf. Cialdini, 2001; Yudkowsky, 2008). Perhaps a simple economy of splitting and emotional detachment is at play, or some grandiose hubris governing egotistical narcissism that opines “We are the center of all things!,” hence hardly giving a passing thought to a world greater than us? May I further suggest it is because it is simply too big of a problem to fully understand, let alone fix. And even when there is sufficient understanding of the problem, individual action alone can do nothing to ameliorate it. Solutions require collective actions on a mass scale. Until this happens, we will remain bystanders witnessing our own gradual deterioration due to powerlessness and ennui.

When collective societies are under the influence or dominion of state power, it becomes cognitively reflexive, hence natural, to turn over responsibility and accountability to society or one’s nation to remedy, as that is what citizens come to expect from its government, leaders, or political patriarchy conditioned by parental transference. It is also too complex of an issue for any one person or group of people to fully mend, let alone do something about reversing a worldwide phenomenon. All of humanity’s psychological defenses get mobilized—from disavowal (“Yes, I know, but”), dissociation, rationalization, intellectualization, and so on when confronting such a massive conundrum. How do we just shut off the lights, stop driving to work, and using fuel when the world revolves around every form of energy we rely on for our livelihoods and survival? By definition, this makes it a systemic structural issue that involves the agreement and cooperation of greater social collectives willing to be ideologically unified and committed to concrete change through resolute and deliberate action. But given human nature and the competing array of desires, emotions, ideology, and psychological complexes that constitute the political animal, can we really expect a global meeting of minds that will end in consensus and united action? Or will want, greed, politics, capital, and military strategy insure that such collective valuation practices remain only a fantasy?

Individuals, communities, and even whole nations who adopt environmentally conscientious practices, such as limiting the consumption of fossil fuels, stop having so many children, adopt green practices using renewable energies such as wind and solar power, and alternative technologies like electric automobiles and geothermal sources of heat and cooling systems in order to reduce their carbon footprints, and so forth, will virtually make no difference in the grander scheme of the Earth’s biosphere. Although such efforts are noble, it will take a union of nations committed to concrete change on a worldwide scale. And how would this be accomplished without state intervention? Moreover, how could it be enforceable given that national self-interest governs all policy in every nation state? And even if this were for our own good and was enforceable, would this not violate the very principles of liberty, democracy, and distributive justice? And what will happen when the Earth becomes too overpopulated, as the projected growth and scientific evidence suggests? With billions more people to feed burning more and more fossil fuels, our planetary sweat suit is bound to become one big unbearable sauna. More people, more warming, less food, less water, less land, less money: Here we have a perfect formula for death.

### **(Re)visioning the Future**

Because planetary change is an enormous undertaking, involving communicative discourse in all spheres of globalized societies—from the personal, collective, systemic, geopolitical, and wholesale structures that undergird our being in the world, mapping out all the intersystemic issues at play is beyond the scope of this immediate project. Rather than overwhelm our circumscribed analysis with sundry overdetermined processes that affect our current global plight and interconnected ontic web of relations to worldhood, I wish to remain focused on the ecological crisis I have attempted to adumbrate. Using causal layered analysis applications, we may map out four strata or



dimensions of reality as: (1) the litany of phenomena that presents as real, including quantitative (concrete) problems, qualitative perceptions, and appearances of presence (i.e. empirical, illusory, fantasized, or otherwise); (2) structural systemic processes that are socially embedded with causal efficacy; (3) worldview (*Weltanschauung*) philosophies, discourses, distortions, ideologies, or overarching narratives of life (bios, cosmos, theos); and (4) mythic or metaphorical meaning that unconsciously resonates within subjectivity and culture, what I would also ascribe to the symbolic, ethical, and aesthetic parameters of the psyche resonating within our feeling soul and social self-consciousness, whether individually or collectively instantiated through emotional, intersubjective, and transformational stories we may deeply identify with and covet. These four dimensions of reality or contexts of being are fluid, process-oriented dialectical encounters with our experience of the world, what in philosophy we might call ontological relativity as epistemic perspectivalism on the multiplicity of Being.

**Table 2:** Causal Layered Analysis of the Ecological Crisis (Sources: United Nations; World Economic Forum)

<b>Dimension</b>	<b>Current Day Environment</b>	<b>Risk</b>	<b>2050 Alternative Futures</b>	
	<i>Problems &amp; Pressures</i>	<i>Mitigation &amp; Intervention</i>	<i>Positive Future</i>	<i>Negative Future</i>
Litany	Extreme weather Climate action failure Natural disasters Biodiversity loss Human-made disasters Water crises	Global Catastrophic Anthropogenic Existential Technogenic Psychogenic	Flourishing ecologies Sustainment Universal equity Global justice New Enlightenment Egalitarianism	Extinction Apocalypse Dystopia Surviving hardships Radical self-interest Nihilism
Systemic	Anthropocene  Social  Economic  Geopolitical  Globalization  Technology	Corporatization Industry Government  Cultural values  Capitalism  Policy & Diplomacy  Education, Training & Information Exchange  AI, Biosecurity, & Nano Regulation	Healing Sustainability Amelioration  Ethical world  World central bank Living wage/Equity Distribution of wealth Postcapitalism  Effective leaders/ Cooperation-partnership  Universal education Interdependency  Safety-Security Post-tech revolution	Despoliation Decay Biodiversity loss  Lawless world Mass injustice Nuclear war/terror Diasporas/migration  Disparities Global poverty Elitism  Despots/Tyranny  Private/inequality State controlled Occluded  Disregulation/unsafe Techno apocalypse
Worldview	Immediate life matters Utility/Status quo Personal/Corporate gain National self-interest Denial/Hedonism Pursuit of pleasure	Generational Intergenerational Transgenerational	Optimism Transglobalization Egalitarianism World hospitality Agency/Activism Holism	Pessimism Apathy Nihilism Fate/Fatalism Loss of freedom Failure to act Fracturization
Myth/Metaphor/Symbolic	Gaia is sick	Ecocide	Gaia as Mandala	Death

Table 2 schematizes our current ecological crisis. Relying on recent data from the United Nation’s Intergovernmental Panel on Climate Change and the World Economic Forum (2020), environmental problems and pressures rank as the immediate top litany threats to humanity and planetary survival, including extreme weather flux, climate action failure, increased natural disasters, biodiversity loss, human-made disasters, and water crises throughout the globe. If we anticipate how the future could be impacted, I introduce a conventional binary between positive or favorable outcomes and negative or unfavorable ones by the year 2050, where it is anticipated that the world population will breach 10 billion: It should be understood that facts and events could fall within a spectrum or continuum on these two extreme poles.

Mediation factors that condition the future must also consider current and foreseeable intervening risks that come into play in various scenarios, where mitigation and intervention strategies could determine anticipatory, speculative, or predicted outcomes. The scale of risk must be considered from: (1) *Global*, affecting everyone; (2) *Catastrophic*, on communal, national, and international levels, where uncertain events or conditions would cause significant negative long-term impact on several countries and industries worldwide if they were to occur; (3) *Anthropogenic*, which corresponds to *existential risks* from human activities that are not inherent or derived from natural events themselves (e.g., the Anthropocene would not occur naturally without human interference); (4) *Technogenic*, which are risks from technology and associated engineering, such as AI, superintelligences, robotics, biogenetics, biodigital applications, nanotechnology, and biosecurity concerned with human misapplications or error; and (5) *Psychogenic*, which has to do with the psychological motivations, conflicts, complexes, and disorders that drive human cognition, emotion, behavior, and pathology. Table 3 depicts the scope of these intervening risks.

**Table 3:** Scale of risk factors

SCALE OF RISK FACTORS	TYPE	SCOPE OF IMPACT
Global	Natural/Human?	Whole World
Catastrophic	Natural/Human?	International
Anthropogenic	Existential	Anthropocene/Anthropological
	Technogenic	Technological/Sociological
	Psychogenic	Psychological/Sociological

With regard to systemic structural components that ontologically inform our environmental crisis, we must confront the reality of the Anthropocene that we as humanity have caused. Of the other intersystemic processes and interaction effects at work in creating our ecological emergency are the social environs and human dynamics that are broadly operative in world collectives including the economy, geopolitics, globalization, and technology that drive everything from the stock exchange, business industry, international peace relations, global security, and our concrete daily existence. Risk factors that constantly need monitoring and analyzed have to do with the systemic operations and degree of autonomy we grant to corporatization, free industry and regulated trade; governmental vision, infrastructure, and action; the role of cultural values, such as democracy, freedom, ethics, aesthetics, and spirituality; the role of capital, wealth, and money exchange; geopolitical advocacy, policy decisions, and diplomacy; access to education, training, and information exchange; and technological risks to artificial intelligence, biosecurity, molecular nanotechnology, and regulation of industry standards surrounding research, design, manufacturing, and distribution of goods, products, and services.

From the standpoint of our overall worldviews, our immediate social consciousness is not up to par. We currently live in a climate of immediate gratification and absorption in our own personal and social lives that revolve around utility, production, profit, economic gain, self-interest (individualistic, familial, communal, national), intellectual property, abnegation of responsibility for greater matters outside of our control, and psychological desires and defenses such as hedonism and denialism under the sway of the pleasure principle. Ecological self-consciousness is foreign territory despite international efforts to address the climate crisis and potential for nuclear Armageddon. The risks presented here are far reaching from our immediate generations to intergenerational successions to transgenerational impacts on humanity to come.

Visions of the future are fluid and pliant. We can never know what will happen or transpire in all potential worlds outside of reason, logic, and sensible predictive science. But empirical facts and abductive speculation point us toward many foresight narratives and ominous scenarios we can mediate. As I have asked beforehand (Mills, 2016),

Are we on the brink of extinction? Are we living in the end times? Will there be an eschatological apocalypse? Will there be a nuclear holocaust? Will new plagues ravage the world? Will there be future dystopias where the planet is a miserable place to live or life merely becomes surviving perennial hardships? Or will we transform these doomsday scenarios through visionary praxis, prevention, invention, intervention, and determinate grit? Could the future be replete with flourishing ecologies (posthuman or otherwise), Sustainment (see Fry, 2004), universal equity initiatives, global justice, new world order Enlightenment paradigms, and global egalitarian values adopted by all? Will we have mass ecological despoliation, decay, and biodiversity loss that wreaks havoc on our future environments? Will we have a lawless world governed by widespread injustice that has undergone nuclear war and terror, diasporas and mass migrations, widening disparities that have led to global poverty, where the elite and wealthy run the world, or are governed by totalitarian dictators, despots, and autocrats who rule with iron tyrannical gloves? Or will there be ecological healing, sustainability, amelioration of environmental hazards, where we live in a globalized ethical world that recognizes and treats all of humanity as equal citizens of the cosmos (cosmopolitans), where there is a distribution of wealth, goods, and services, equity and a living wage for all, even a world central bank or postcapitalist system that makes all economies interrelated and ontically interconnected to every human being on the planet? Will our future leaders gravitate toward this cosmopolitan vision of cooperative global partnership, harmonization, and interdependent unity of social collectives under the humanistic rubric of agape?

What will the future of education, training, and information exchange in the advanced age of science and technology look like? Will it remain dominated by private for-profit industry, where there is pronounced inequality in opportunity, means, and funding, even occlusive or prohibitive of those who have no income; or will education and vocational training be state controlled at no cost where academics and instruction are an interdependent valued commodity to society? Will technology designs and securities evolve to regulate dual-use capabilities where ethical programming and nanomanufacturing of machines, AI devises, and superintelligences are safe and non-threatening through post-technical revolutions; or will dual-use technics succumb to dysregulation, un-modulation, and unsafe production and distribution that could lead to a techno apocalypse?

Worldviews are just as polarized. Schopenhauerian pessimism rings its bell with widespread bystander apathy, nihilistic outlooks, belief in predetermined fate or fatalism, external locus of control, loss of freedom, and learned helplessness leads to social splitting, division, fracturing, decay, and anarchy. The more optimistic sectarian champions the vision of transglobal egalitarianism where there is a welcoming world hospitality view of valuing plurality and difference that advances individual agency, social liberty, and collective ethical and political activism oriented toward a more harmonized, just, and holistic republic. This is where the myth of Gaia emerges from the ashes of a suffocating sickness where overheating, deterioration, and ecocide are evaded for a foresight narrative of nurturance, health, and flourishing. Here on Earth our dying destiny can be replaced by a (re)visioning of wholeness that is symbolized by the mandala, itself a sphere. For the psychologist C.G. Jung, the mandala represents Holism, the archetype of unity, where centeredness, inclusion, and harmony form a unitive integrated symbolic. As a symbol of inclusive unification and wholeness, the mandala further signifies a philosophy of containment where diversity, heterogeneity, and plurality unite under an implicate order of integration. Here Gaia can rehabilitate and recover from her impending death and become a luminous goddess where all species and phenomena of Being form an interconnected and interdependent ontology of totality and completeness, a flowering overflowing garden.

### **Concluding Postscript**

Bringing about desired futures requires shared aspirations, values, cooperation among social collectives, and good governance. It starts with preferred images of our future environments (Hoffman, 2019, p. 63), ones that are possible to achieve through education, social self-consciousness, innovation, even revolution (see McAllum, 2018), where visions of reparation and wholeness guide political systems toward collective unity in transforming forethought into concrete tangible practice that enables humanity to approach global problems with greater ecological awareness, maturity, moral responsibility, and strategic efficacy.

Rather than view our current ecological crisis as used or disowned futures that have been written off as waste with the foregone conclusion of doom, we can change the landscape through ethical agency and action by creating and living the myth one wants to become, as a form of inner sense (Mills, 2020) propelling our being and moral duty to the world and future generations to come. We already see this happening in millennial and postmillennial

culture embodied by the youth climate change protests, school strikes for climate, and the Extinction Rebellion movement that has transpired all over the world using non-violent civil disobedience in an attempt to pre-empt mass extinction and minimise the risk of societal collapse. Not only have these social consciousness movements inspired protest and narrative foresight change, they spur concrete action directed toward governments failing to protect the citizenry from current and future environmental conditions the youth do not want to inherit. These discourses and actions are progressive ameliorations of our global bystander syndrome that may affect a future sea change in international politics, public policy, Earth science research, and environmental protection.

## Notes

- 1- The international trade agreement was reached on December 12, 2015 involving 196 countries committed to reducing carbon emissions as a global priority with an eventual intermediary goal of not breaching the 1.5 degrees Celsius mark, .5 degrees less than the 2 degrees Celsius limit set at the 2009 Copenhagen climate talks (Orlando, 2015; United Nations Framework Convention on Climate Change, 2009; Weaver, 2015). Refer to Article 2: “to pursue efforts to limit the temperature increase to 1.5 degrees C above preindustrial levels” (United Nations Framework Convention on Climate Change, 2015). See Schaefer (2015) for criticism of the accord and Anderson, Broderick and Stoddard (2020) for their analysis of how climate progressive nations have fallen far short of the Paris-compliant policy.
- 2- In a series of now famous social science experiments, social psychologists John Darley and Bibb Latané (Darley & Latané, 1968; Latané & Darley 1969) discovered how average citizens would fail to act to intervene with individuals in distress or during emergency situations when collectively witnessed by a group of strangers or small crowd. Throughout various staged scenarios, those who were alone during a mishap or crisis were more likely to act to help a person in need than in a group of people randomly experiencing the same situation. Bystanders were often observed to exhibit a diffusion of responsibility, even apathy, when in the presence of others who could just as readily respond to visible emergencies or requests for help. For example, in a series of smoke experiments in a public setting, individuals would collectively fail to report the incident even in the presence of fire. Given the degree of perceived threat, felt responsibility, the social monitoring of other’s reactions to the situation, and required need for assistance, bystanders would often defer to others, feign ignorance, watch what others do, fade into anonymity, and/or walk away.  
The degree of ambiguity, the severity of the situation, the perceived judgment and competence of the bystander to assist, the familiarity of the environment where the emergency occurs, and the level of personal safety felt will influence the degree of action taken. The more ambiguous the situation, lack of knowledge on the part of the bystander, the significance of the consequences involved, the forms of action required, the cohesiveness of group membership, and the implementation of choice of assistance contemplated or taken all inform the level of bystander effects and moral lassitude manifested. In general, the more people around a scene the less likely one feels personally responsible to assist or intervene in times of need or crisis, instead believing “It’s somebody else’s problem.”
- 3- This analogy obviously does not apply to developing and disenfranchised countries where large portions of the world’s population live in poverty, many in war zones and under inhumane conditions, where they are at best food insecure and at worst starving. If they are concerned about climate change it seems likely that this will be in the context of their ability to live, feed, and house their families. Those in developed and democratic nations, however, take such privileges for granted, and where there is a failure of political leadership in addressing our ecological crisis. The United Nations may have given Greta Thunberg a big round of applause, but it’s pretty meaningless without effective action from individual governments, and the often insidious role of those with vested interests in perpetuating the status quo.
- 4- Although I rely on many authorities and sources (see Diamond, 2005; Emmott, 2013; Flannery, 2010; Lovelock, 2006; Rees, 2003), Climate Central (2012) is a highly respected independent, nonpartisan and nonprofit science and journalism organization composed of scientists specializing in all climate-related matters, such as ecosystems and adaptation, chemistry, energy systems, and climate statistics. The following empirical facts and statistics are largely culled from this organization’s findings and the Intergovernmental Panel on Climate Change (2015).
- 5- See the IPCC’s (2015) Climate Change 2014 Synthesis Report: Fifth Assessment Report. The IPCC was formed in 1988 by the United Nations Environment Programme and the World Meteorological Organization due to the

increasing awareness of the effects of human-generated greenhouse gas emissions on the rise in the Earth's temperature and its relation to climate change. Its mandate is to "provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts." The Panel is comprised of several different working groups dealing with specific aspects of climate change, including observations from the past in comparison to the present and future prediction models, the tangible effects humans have made on the world's ecosystems and the Earth's biosphere, the potential impact of alternative and renewable energies, and so on. The main task of the IPCC is to collect, analyze, weigh, and distill the work of all the major scientific discoveries and published research findings that bare on all aspects of climate systems and the Earth sciences, and provide written assessments and summaries on technical applications and the results for both professional audiences and policy makers. Each assessment report is examined and critiqued by hundreds of independent scientists from different disciplines and sub-disciplines, who often disagree with each other, before final reports and recommendations are presented in an objective non-partisan manner before governments and external experts who re-review the findings; while review editors make sure that all research and professional opinions are considered, are accurate, inclusive, and valid. The IPCC assessment reports, therefore, are the most scientifically objective and authoritative sources of knowledge we have on climate change in the world today. Anyone refuting this authority, which is comprised of hundreds of independent sources, would have to be prepared to defend alternative empirical findings that would challenge this body of knowledge. To date, I know of no other credible authority or data base that can support alternative claims to the contemporary state of affairs we are currently facing.

- 6- Greenland's icecaps are melting three times the rate since 1997 due to rising ocean temperatures, which account for one third of the world's sea-rise level; and Antarctica's melting ice sheets make the Eastern coastline of the United States particularly vulnerable to extreme weather events including flooding due to rising tides and high sea-levels as ocean currents sweep the melting waters northward (*Scientific American*, 2017, pp. 18, 21). The forecast is so bleak that researchers at Ohio State University have recently concluded that the Greenland ice sheet has melted past the point of no return and would continue to shrink even if global warming miraculously stopped today (*The Economist*, 2020). Also recently, at least one-third of the huge ice fields in the Himalayan mountain chain are fated to melt, affecting almost 2 billion people throughout Asia (Carrington, 2019). What we can reasonably predict is if the melting continues, it will reconfigure the majority of the world's coastlines.
- 7- Cf. Lovelock (2006): "I call Gaia a physiological system because it appears to have the unconscious goal of regulating the climate and the chemistry at a comfortable state for life" (p. 15).
- 8- This quote is attributed to Lynn Margulis by Crispin Tickell in the *Foreword* to Lovelock's (2006), *The Revenge of Gaia*, p. xvi.

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