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# The global crisis is a crisis of civilization: a political ecology perspective

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**Abstract:** Inspired by the intellectual currents of political ecology, this essay aims to shed light on the crisis of the contemporary world. The social sciences, or plain science, require a profound and urgent renewal in order to highlight the hegemonic structures of knowledge; Over-specialized studies, so common in recent decades, are barely capable of capturing fragments or pieces of reality, overlooking or ignoring the political power relations closely linked to the world they seek to study. It is clear that a radical transformation is required in all areas of social life and the first step is to accept that we are not facing a simple economic, technological or cultural change, but rather a transformation of human civilization.

**Keywords:** Political Ecology, Complex Thinking, Crisis Modern Civilization.

## La crisis global es una crisis de civilización: una perspectiva de ecología política

**Resumen:** Inspirado en las corrientes intelectuales de la ecología política, este ensayo pretende arrojar luz sobre la crisis del mundo contemporáneo. Las ciencias sociales, o la ciencia a secas, requieren una profunda y urgente renovación con el fin de poner de relieve las estructuras hegemónicas del conocimiento; los estudios sobreespecializados, tan comunes en las últimas décadas, apenas son capaces de capturar fragmentos o pedazos de la realidad pasando por alto o ignorando las relaciones de poder políticas estrechamente vinculadas con el mundo que pretenden estudiar. Es evidente que se requiere una transformación radical en todos los ámbitos de la vida social y el primer paso es aceptar que no estamos ante un simple cambio económico, tecnológico o cultural, sino ante una transformación de la civilización humana.

**Palabras clave:** Ecología Política, Pensamiento Complejo, Crisis Civilización Moderna.

## INTRODUCTION

The term «political ecology» has been used explicitly by numerous authors for over three decades. Far from being consolidated knowledge, «political ecology» is a new area under construction that attempts to analyze conflicts from a perspective that articulates the relationships between nature and human beings with social relationships, in particular relationships of power. It emerged with great impetus during the 1990s, as corroborated by the appearance of journals on political ecology in the UK, the USA, Spain, France, Italy, Greece, and India (*Capitalism, Nature, Socialism, Journal of Political Ecology, Ecología Política, Journal de Ecologie Politique, Capitalismo, Natura, Socialismo, The Ecologist, Down to Earth, and Nature and Society*). The number of authors embracing this interdisciplinary field (or *hybrid discipline*) has expanded and multiplied in recent years. Some of these authors have made theoretical reflections and defined a set of new concepts that have emerged from social movements (Martinez-Alier, *et al.*, 2014).

### **Political ecology: an unanesthetized view**

Anesthetized, the citizens of the world, including a significant number of critical analysts, have been unable to ask the adequate questions that reality demands. Anesthesia works by obscuring reality's true image, clouding perception. Anesthesia distorts terms, hides words, masks concepts, offers false landscapes, and creates a world of myth and dogma. The greatest myth claims that the human species is currently living in a marvelous world: modernity. Using scientific evidence, this essay aims to demonstrate the exact opposite.

This essay is therefore based on the thesis that even the most radical or advanced scientific research studying the contemporary reality is flawed and either lacks effective analytical instruments or only arrives at limited interpretations because, as Albert Einstein stated, «...we cannot solve the problems we have created with the same thinking that created them». In fact, even though science today has reached its maximum expression in terms of both the number of researchers (8 million according to UNESCO, 2015) and the complexity of its fields of study (according to a study by Boyack and Klavans, 2013, analyzing the fields of study of 20 million scientific papers), it mostly generates over-specialized studies that capture only fragments or pieces of reality in which researchers overlook or ignore the relationships of political power linked with the phenomena that they study. In an attempt to overcome this situation, political ecology offers four crucial contributions: (a) It conjoins *complex thinking* and *critical thinking*; (b) it provides a «species perspective» in terms of time and space; (c) it identifies double exploitation as the ultimate cause of all current problems; and (d) it acknowledges the existence of a crisis of modern civilization.

### **Complex Thinking plus Critical Thinking**

Complex thinking refers to the ability to interconnect different dimensions of reality. It therefore emerges as a countercurrent within science devoted to overcome the fragmentation of knowledge, monodisciplines, and, in particular, the use of separate approaches to address natural and social phenomena. Its most recognized representative is French philosopher and sociologist Edgar Morin (see Montouri, 2013) who established the main

theses regarding complex thinking in order to achieve a comprehensive, interdisciplinary or holistic approach (Morin, 2008 and 2014). In turn, critical thinking goes beyond the dominant vision of techno-science at the service of corporate capital in order to adopt an environmentally and socially conscious science that no longer seeks to only interpret or transform the world, but rather, more precisely speaking, to emancipate it. This convergence of complex and critical thinking turns political ecology into a potentially powerful field engaged in struggles that humankind wages in order to overcome the increasingly more evident global chaos to which modern or industrial civilization is doomed.

### **Looking at Reality from A Species Perspective**

Given that the conflicts between society and nature have reached a global scale and appear as singular or unprecedented in human history, political ecology has taken on a «species perspective» (a humankind perspective) both in time and space. In order to understand the current situation, we no longer need history made by historians, but rather history made by archeologists, paleoecologists, paleontologists, and biologists. Concurrently, human action in virtually all corners of the planet leads to the adoption of a cross-scale perspective in which socio-environmental processes at a local scale affect global processes and vice versa. This spatial perspective topologizes the analysis and makes it possible to understand that all phenomena are simultaneously partness and wholeness, as Koestler (1967) suggested in his theory of holons.

### **Two Core Contradictions**

Political ecology also unveils that multiple crises ultimately result from two unparalleled *contradictions* in human history: the *exploitation of human labor* and the *exploitation of nature's labor*. It also assumes that both forms of exploitation are intertwined and, consequently, the search for *social justice* and the search for *environmental justice* is the very same quest. It should be added that it is a minority within minorities, which, as we shall see, represents less than 1% of the total human population, that imposes these two forms of exploitation.

### **We Are Facing A Crisis of Civilization**

For all the aforementioned reasons, political ecology sets forth that the succession of crises in recent decades in fact reflects a *crisis of civilization*, an idea that was proposed by the author and other thinkers some three decades ago (Toledo, 1993). The modern world, based on capitalism, techno-science, oil and other fossil fuels, individualism, competition, patriarchy, the illusion of representative democracy, and a «progress-» and «development-oriented» ideology, far from creating a balanced world, is leading the human species, living human beings, and the whole planetary grid towards a state of chaos. Three supreme processes that have triggered global disorder emerge as a result of the consolidation and expansion of modern civilization: the disarticulation of planetary balance (the greatest threat of which is climate crisis); the concentration of wealth that generates social inequality, and the erosion, inefficacy, and dysfunctionality of the most

important institutions, such as the State, the justice apparatus, electoral democracy, and the dissemination of knowledge. These are three entropic expressions that generate disorder within which the modern world has inevitably become trapped (González de Molina and Toledo, 2014).

### **The advent of modernity**

The word *modern* appeared for the first time in English in the late sixteenth century and although it initially denoted pertaining to the present times, its meaning gradually transformed to imply «a future totally different from the past.» Moreover, it also held the connotation of «a world that is better than ever.» The modern world is a social invention that can be traced back only three-hundred years. Although it is hard to identify its exact origin, it can be located at some point in which there is a convergence between industrialism, scientific thinking, capital-dominated markets, and a predominant use of fossil fuels (coal, oil, gas, and uranium). The birth of science can be «officially» dated in 1662 and 1666, when the first scientific societies were founded in England (the Royal Society) and France (the Académie Royal des Sciences). The inauguration of an oil well spitting «black gold» took place on August, 17, 1859 in the southeast of the United States. The industrial revolution reflected an intimate relationship between the use of fossil energy and scientific and technical innovation. The first stage of the industrial revolution is related to the invention of the coal-powered steam engine (1784), the second stage is related to the use of oil that paved the way to the internal combustion engine and electric energy; the third stage relates to the uranium-powered nuclear industry; and the fourth stage, the digital stage, relates to robotics, biotechnology, artificial intelligence and geospatial systems. As we will see, all this triggered an increase in human population. Demography, industrialization, and energetics were gradually taken over by the interests of capital, its war mechanisms, and the monopolization of wealth.

From the perspective of a history of the species spanning 300,000 years, the emergence of the modern age occurred in just «a blink of an eye.» In only a few decades, humankind transitioned from a solar or organic metabolism to an industrial metabolism (González de Molina and Toledo, 2014). The exasperation humankind is currently experiencing is mainly due to what has happened in the last one-hundred years, a lapse of time equivalent to merely less than 1% of the history of the human species. During the last century, all the processes linked with human phenomena experienced acceleration, increasing at unprecedented rates and generating phenomena of such complexity that human knowledge has been challenged beyond its capacity.

### **The ecological crisis and the social crisis: two strands of the same conundrum**

According to political ecology, the crisis of modern civilization is shaped by two phenomena: the depredation and parasitism that a minority exercises over nature and the rest of the human population (Toledo, 2019). It is both an ecological crisis and a social crisis that are inextricably intertwined.

## The Ecological Crisis

During the last 300 years, the impact of human activity on the planet has escalated dramatically as a result of the increasingly accelerated growth of three processes: population growth, industrialization, and the use of fossil fuels. All of this is framed within a doubly exploitative economic regime that has become more and more dominant: capitalism. Population growth multiplied tenfold between the year 1700 (an estimated 680,000 inhabitants) and the year 2000 (an estimated 6 billion). The human population doubled in one hundred years (between 1800 and 1900). It doubled again in the following 70 years (between 1900 and 1970), and almost doubled again in only 50 years (from 4 billion in 1970 to 7.8 billion in 2020). Only two modern monstrosities engendered by the human species have multiplied at that pace: cars and cattle-raising.

All these actions have led humankind to dramatically alter the biogeochemical, climatic, and water cycles, thus affecting the balance of the oceans (due to overfishing and plastic pollution), the forests and jungles (due to deforestation), and has endangered thousands of animal and plant species. These processes are irretrievably interconnected and generate synergies that accelerate these imbalances. For all the above reasons, the climate crisis is most alarming because it triggers unexpected phenomena (Table 1), such as floods, hurricanes, cyclones, typhoons, extreme temperatures, drought, forest fires, melting glaciers, and biodiversity damage. In addition, there is the added introduction of unknown substances into nature as a result of industrialization. It is estimated that approximately 350,000 new substances have been introduced during the industrial age, including heavy metals, plastics, pesticides, and antibiotics, the effects of which are unknown in most cases. The amount of new substances entering the planetary space every year by far exceeds the scientists' capacity to analyze and monitor them.

**Table 1.** Basic data from the IPCC report, 2021.

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- The global mean temperature was 1.09°C higher between 2011 and 2020 than between 1850 and 1900.

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  - The last five years were estimated to be the hottest recorded since 1850.

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  - The most recent sea level increase rate has almost tripled by comparison with 1901-1971.

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  - Human influence is «very probably» (90%) the main cause of global glacier retreats since the 1990s and the decrease of Arctic sea ice.

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  - It is «virtually certain» that hot extremes, including heat waves, have become more frequent and intense since the 1950s, whereas cold extremes have become less frequent and less severe.

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  - It is unmistakable that human influence has heated up the atmosphere, oceans, and land.

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Source: IPCC, 2021

## The Social Crisis

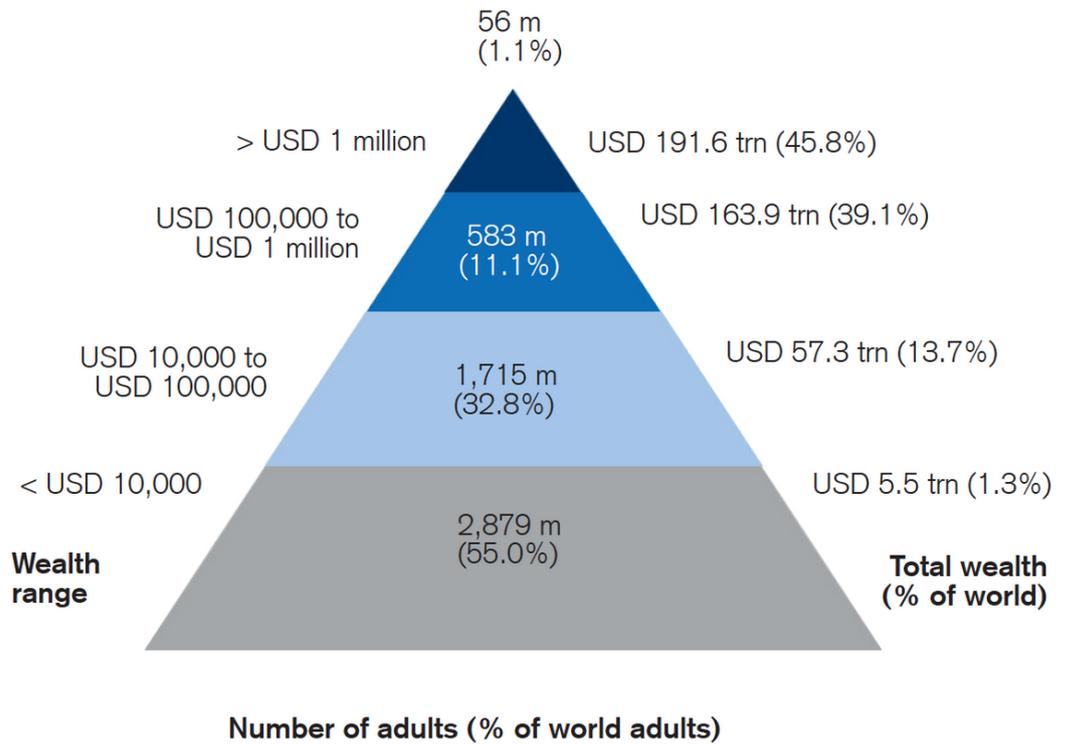
Although the number of studies about social inequality and the concentration of wealth has multiplied daily, the World Inequality Lab, based in Paris, and the Oxfam Interna-

tional reports are the two most renowned sources of this topic.

The World Inequality Lab is an initiative of Thomas Piketty, a French economist who authored *Capital in the Twenty-First Century*, translated into numerous languages, as well as other books. The data and analyses conducted by the Lab, currently led by a collective, is based on the work of over 100 researchers by means of a database. This extensive network collaborates with statistical institutions, fiscal authorities, universities, and international organizations in order to harmonize, analyze, and disseminate international data that can be compared using a historical perspective. The Lab's most recent report (World Inequality Report, 2022) describes the following situation: The wealthiest 10% takes 52% of the global income and 76% of the wealth, the middle class takes 39.5% and 22% respectively, and the impoverished sector only takes 8.5% of the global income and 2% of the wealth. Note that this latter segment represents no less than half of the world's population: approximately 3.9 billion! Comparing these figures with those from the past, it becomes evident that not only are they worse than those from the early twentieth century when the European empires reached their maximum domination, but they are also worse than the figures from 1820. If the current impoverished segment of the population takes 8.5% of the global income, in 1820 this segment took 14%, except that in that time they represented 1 billion inhabitants whereas today the dispossessed are almost four times this figure. This scenario is confirmed by a source from the opposite pole of the spectrum: the Global Wealth Pyramid 2021 published annually by Credit Suisse with the intention of arrogantly and cynically celebrating the growing numbers of billionaires in the world. According to the Swiss bank the current scenario is worse (Figure 1). The wealthiest 12% take 84.9% of the global wealth, the middle class takes 13.7% and the poor only take 1.3%. The idea that we are living in an increasingly fair world is a mere fantasy inflated by thousands of spokespeople. Scientific evidence unveils the real situation and deflates that vision that uses media propaganda to anesthetize the population.

In turn, based on hard data, the Oxfam International reports unveil the crude reality. For example, since the pandemic began a new billionaire has emerged every 26 hours, while inequalities have increased. Oxfam International's most recent report, «Inequality Kills», states that inequality contributes to the death of at least 21 people every day, i.e., one person every four seconds. These estimates are based on the number of deaths caused globally due to violence, hunger, the climate crisis, and a lack of access to health-care. This accelerated during the last two years of the COVID-19 pandemic. The wealth of the world's ten richest men has doubled, increasing from 700 billion dollars to 1.5 trillion dollars (a rate of 15,000 dollars per second, i.e., 1,300 million dollars per day) during the first two years of the pandemic, thus deteriorating the income of 99% of humankind, forcing more than 160 million people into poverty.

**Figure 1.** The Global Wealth Pyramid of 2021.



Source: Credit Suisse Global Wealth Report, 2021.

### The core dilemma between the anthropocene or capitalocene

Paul Crutzen (1933-2021), the geologist awarded the Nobel Prize in 1995, brilliantly conceptualized the global crisis in two brief papers (2000 and 2002) in which he characterized our times as the «Anthropocene» epoch, the age in which the impact the human species had on the planet, turned humans into a new «geological force.» This paved the way for hundreds of publications and dozens of books that confirmed for academia and public opinion the biology-based dogma that beyond the economic, social, cultural, historical or gender specificities, it is humankind or the human species that is fully to blame. Humankind ends converted into an abstract entity, into an undifferentiated whole. Today, a couple of decades later, there is sufficient evidence that researchers in the social sciences and the humanities not only revisit and slightly alter the idea of the «Anthropocene», but in fact decisively question it. Jason W. Moore, the historian who wrote *Capitalism in the Web of Life* (2015), theoretically developed an alternative concept: the «Capitalocene». It is no longer humankind who has caused the current tremendous ecological crisis, but actually relationships that capitalism has constructed and imposed on human beings and humans in relation to nature (see also Moore, 2016).

The narrative describing how the climate crisis began (Serratos, 2021), has revealed that it emerged in England and in the most industrialized countries in the wake of the industrial revolution. Towards 1825, England was emitting 80% of the global CO<sub>2</sub> and in 1900, England and the United States together emitted 60% of the global CO<sub>2</sub>. Between 1850 and today, the

historical culprits of the climate crisis are: the United States (40%), the European Union (29%), as well as Canada, Japan, Australia, and the rest of Europe (19%). Latin America, Africa, and the Middle East as a whole represent a mere 8%. Similarly, it is the elites with their exaggerated and wasteful consumption who represent the main cause of the crisis. The emissions produced by the wealthiest 1% are thousands of times larger than those produced by the poorest population. At the same time, it was discovered that the crisis accelerated as of 1950 in a phase that has come to be known as *The Great Acceleration* (Mc Neill & Peter, 2016). During the last seven decades, the number of machines, buildings, highways, dams, mines, nuclear power plants, cars, cattle, refineries, paper mills, telephones, fertilizers, plastics, etcetera multiplied exponentially. The crisis was thus not created by humans, but by capitalism. To speak of the «Capitalocene» rather than the «Anthropocene» is thus an issue of historical justice (Serratos, 2021; Cano-Ramirez, 2017).

To summarize, «Using the notion of the Anthropocene oversimplifies history since it does not challenge the normalized inequalities, the alienation or the violence embedded in strategic relationships of power and the production of modernity. It is a story that is easy to tell, since it does not force us to think *at all* about the aforementioned relationships. The tapestry of human activity in the warp and weft of life is reduced to an abstraction: a homogeneous unit of action. To a large extent, inequality, commodification, imperialism, patriarchy, racial formations, and many more factors have not been considered. In the best of scenarios, these relationships are acknowledged, but are given secondary importance. The surrounding context is expressed through a narrative of sheer common sense which I think is nonetheless also deeply deceitful: the opposition of the «human enterprising spirit» and «nature's vast forces» (Moore, 2015: 202).

### **The capitalocene and the role of corporations**

The best evidence of the existence of the *Capitalocene Epoch* can be found through studying the impact of corporations on the natural world and human beings. In fact, today we experience and suffer the Age of Corporate Capital in which a few dozens transnational corporations monopolize and control the global markets where the products of human activity are commercialized. The scale at which these corporations operate and the speed at which they multiply and expand is unprecedented. A handful of corporations have direct or indirect influence over the balance of the oceans, the atmosphere, and the largest terrestrial ecosystems, thus affecting key functions, such as the regulation of the global climate. In fact, seventy-five mining corporations dominate the extraction of platinum, palladium, cobalt, nickel, iron, copper, zinc, silver, and gold; thirty corporations monopolize the production of oil, gas, and cement, and ten monopolize the production of paper. Thirteen companies dominate marine fishing and five salmon farming.

Monopolies reach their highest expression in the food sector. Three companies dominate agrochemicals (Syngenta, Bayer, and Basf), seeds (Monsanto, Dupont, and Syngenta), and machinery and agricultural equipment (Deere, CNH, and AGCO); and six companies control 75% of all pesticides (Syngenta, Bayer, Basf, Dow Agro, Monsanto, and Dupont).

Similarly, six corporations or their corporate fusions control 100% of the genetically modified crops that are cultivated today (soybean, corn, and cotton) in 190 million hectares in 29 countries (United States, Brazil, Argentina, etcetera). All genetically modified crops are obliged to use glyphosate, an herbicide classified by the World Health Organization (WHO) as probably carcinogenic. At present, genetically modified soy and corn crops in South America have caused the greatest destruction of biodiversity, turning 80 million hectares of tropical vegetation and its innumerable flora and fauna into monocrop land, a biological catastrophe ignored by the largest international conservation and environmental organizations. Parallel to this, there is the commodification and transformation of food; only three companies dominate the production of cocoa beans, bananas, and seeds, five dominate the production of palm oil, and six companies dominate the production of meat (JBS, Tyson Food, Carguillo, BRT, Vion, and Nippon Meat).

The exploitation of human labor becomes evident when the food supply chains are examined, where producers take a minimum percentage of the product's final price. See the excellent documentaries produced by ROTTEN about cocoa, sugar, water, avocados, and grapes in Netflix<sup>1</sup>. The chocolate drama albeit shocking is a clear illustration of what happens in most cases. A total of 5 million small-scale farming families from Ghana and Ivory Coast representing a population of 30 million people cultivate most of the cocoa used by the chocolate industry. It is a sector that in general lives in extreme poverty. Purchasers, traders, and specifically four industrial firms (Barry Callebaut, Cargill, ADM, and Blommer) take most of the millionaire profits yielded by cocoa beans, originally endemic to Mexico.

Finally, in the financial sector, *Russia Today* revealed that four oligopolistic gigabanks are controlling the world of finances (The Big Four): Black Rock, State Street, FMR (Fidelity), and Vanguard. Three gigabanks control 22 trillion dollars in assets, slightly under the almost 24 trillion dollars of the GDP in the United States. Taking into account the assets of the fourth gigabank (Fidelity) corresponding to 4.9 trillion dollars, their overall capital exceeds the US GDP!

### **2050: The specter of a collapse**

Upon making projections for the year 2050, the scenario described in the sections above becomes more complicated. Five phenomena can be foreseen to occur inexorably that year. The first one is demographic. Between 2020 and 2050, there will be another two billion human beings on the planet who will need food, water, air, housing, education, health, transportation, employment, security, recreation, and culture. At the same time, fossil fuels –which today move the modern world– will have become depleted: first oil, then gas, followed by coal and uranium. All the projections made by experts in energy see renewable energy conversions (solar energy, wind energy, hydro energy, geothermal power, etcetera) as not viable, or insufficient. The climate crisis that continues unresolved will increase extreme, surprising, and unexpected climate events. Its most serious effect is that with the

<sup>1</sup> Available in <https://www.netflix.com/mx/title/80146284>

melting of the polar ice caps and the main mountain glaciers -which is already occurring- will reduce the water reserve, drying out the rivers that irrigate the largest food production zones (the most dramatic example is the Himalayas, on which China, India and Pakistan depend). Finally, unless the unsustainable and polluting agroindustrial systems are abandoned and replaced by agroecological systems, there is no way there will be enough healthy food in the future. In 2050, 1.4 billion rural producers will have to provide food for themselves, as well as for an urban population of over 6.3 billion consumers!

### **Guidelines to advance towards a new civilization**

The convergence of the COVID-19 pandemic, the ecological crisis at a local, regional, national, and global scale, the latent threat of nuclear war, and social inequality at its highest level ever in the history of the human species, evidences that the global crisis is a crisis of civilization. It is obvious that a radical transformation is required in all realms of social life and the first step is to accept that we are not facing a simple economic, technological or cultural change, but rather a transformation of civilization. This essay aims to describe a crisis of the modern world and should address how to overcome it. This implies starting to visualize the founding aspects of a new civilization. This task goes beyond the goals of this paper. Nonetheless, it is possible to outline in a preliminary way a series of guidelines that emerge as almost self-evident answers to the main issues addressed that can be summarized around ten key topics: 1. The re-emergence of nature as the leading force in all fields, above all in the world of politics; this consequently leads to: 2. Citizens recovering *species awareness*, i.e., adopting a perspective that enables an understanding of global phenomena in time and space and that moves people to take action; 3. Retrieving spirituality in all spheres of social life (since spirituality has been *coopted* by the main monotheistic religions for the past two thousand years); 4. The re-emergence of a *communal consciousness*, i.e., the social or collective instinct that has been marginalized or excluded by modern society, which has focused on promoting individualism and competition; 5. Social empowerment (i.e., the empowerment of civil society) *vis-à-vis* political power (political parties and the government) and economic power (companies, corporations, and markets); 6. Bottom-to-top governance, i.e., the implementation of radical or participatory democracy and the sudden or gradual dissolution of representative or electoral democracy; 7. Retrieving territories, i.e., local and municipal communities exercising control over the processes taking place in the spaces they habit and/or benefit from; 8. Replacing large-scale companies and corporations by cooperatives and family or small-scale businesses (social and solidarity-based economies); there are today close to three million cooperative organizations, based on partnerships rather than employer-worker relationships, with nearly one billion members (World Cooperative Monitor, 2020); 9) The politization of science and technology and its change of orientation toward social and environmental justice. All the above should re-orient human action (praxis) toward: 10. Striving for *harmonious living*, like the indigenous peoples of the world, and discarding modern dogmas of development, progress, and growth.

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